50-295

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 26, 1997

Ms. Irene Johnson, Acting Manager
Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: DRAFT SAFETY EVALUATION OF PROPOSED IMPROVED TECHNICAL SPECIFICATIONS, ZION NUCLEAR POWER STATION (TAC NOS. M94267 AND M94268)

Dear Ms. Johnson:

Enclosed is a draft license amendment and safety evaluation (SE) on the Commonwealth Edison Company (ComEd) proposed conversion of the Zion Nuclear Power Station, Units 1 and 2, Technical Specifications (TS) to the improved Technical Specifications (ITS) based on NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," issued in September 1992, and on guidance provided in the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," published on July 22, 1993 (58 FR 39132). The draft SE is based on the staff's review of your initial application dated November 3, 1995, and supplements, including your amendment request dated September 20, 1996, adding a reference describing enhancements made to the Combustion Engineering steam generator tube sleeve installation process. The draft license amendment and SE have not been approved by NRC management.

The draft amendment and SE are provided for your review to verify their accuracy and to prepare the certified TS. The staff requests that ComEd review the enclosed draft amendment and SE and provide comments, in writing, and a certified TS, by July 28, 1997. The staff will review your comments and will incorporate changes as appropriate before issuing the ITS and a final SE.

The staff notes that several amendments to the existing TS have been issued since your initial application and requests that you pay particular attention to confirming that the scope of changes to the existing TS discussed in the draft SE is appropriate.

In addition, we ask that your response address the following:

- Please confirm agreement with the new condition 2.C.(12) and Appendix D that will be added to the operating license reflecting the commitments ComEd has made regarding relocation of the Zion TS and license requirements to licensee-controlled documents.

- Please confirm the implementation date is acceptable.

DFol
1/1

- Several Discussion of Changes (DOC) have changed following recent discussions with your staff. Please submit copies of the revised DOC.

- NRC previously informed ComEd about ITS implementation problems experienced at San Onofre Nuclear Generating Station (SONGS) related to diesel generator testing, control element assembly position indication surveillance, and engineered safety feature response time testing. Please confirm that Zion will be in compliance with the ITS diesel generator surveillance requirements before startup and that the other two SONGS issued have been reviewed and determined that these issues do not apply to Zion;

- ComED was previously informed of a channel functional testing issue that arose at the Peach Bottom Atomic Power Station. This issue involved the ITS definition of Channel Functional Testing and discontinuing use of the term "and/or." Please confirm that this issue has been reviewed to the extent it applies to Zion and determine that ComEd is prepared to make the transition; and

- The following pages in the submittal dated June 6, 1997, were not copied completely and should be resubmitted: 1, 4, 6b, 7, 8, 9, 10b, 11, 12, 13, 27b, 28, 31a, 32, 35, 36, 132, 136, 192b, 192c, 199a, 213, 246a, 250, 251, 252, 257, 265a, 309a, and 311.

Between the issuance of the ITS conversion amendment and its implementation, license amendment requests must include justifications for changes to both the existing TS and ITS.

Please do not hesitate to contact me at (301) 415-3101 if you have any questions.

Sincerely,
Original signed by:
Lawrence W. Rossbach

Clyde Y. Shiraki, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-295 and 50-304

Enclosure: Draft ITS License Amendment and Safety Evaluation

cc w/o encl: See next page

Distribution w/encl: Docket File, T5C3 PUBLIC OGC, O15B18
ACRS, T2E26 M. Parker, RIII A. Vegel, Zion SRI
Distribution w/o encl: PDIII-2 r/f R. Zimmerman, O12G18 J. Roe, JWR
E. Adensam, EGA1 R. Capra C. Moore C. Shiraki
E. Tomlinson, O13H15 L. Rossbach

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NAME	CSHIRAKI		CMOORE		LROSSBACH		RCAPRA	
DATE	06/26/97		06/26/97		06/26/97		06/26/97	

DOCUMENT NAME: ZITSSE.LTR OFFICIAL RECORD COPY

- Several Discussion of Changes (DOC) have changed following recent discussions with your staff. Please submit copies of the revised DOC.

- NRC previously informed ComEd about ITS implementation problems experienced at San Onofre Nuclear Generating Station (SONGS) related to diesel generator testing, control element assembly position indication surveillance, and engineered safety feature response time testing. Please confirm that Zion will be in compliance with the ITS diesel generator surveillance requirements before startup and that the other two SONGS issues have been reviewed and determined that these issues do not apply to Zion.

- ComEd was previously informed of a channel functional testing issue that arose at the Peach Bottom Atomic Power Station. This issue involved the ITS definition of Channel Functional Testing and discontinuing use of the term "and/or." Please confirm that this issue has been reviewed to the extent it applies to Zion and determine that ComEd is prepared to make the transition.

- The following pages in the submittal dated June 6, 1997, were not copied completely and should be resubmitted: 1, 4, 6b, 7, 8, 9, 10b, 11, 12, 13, 27b, 28, 31a, 32, 35, 36, 132, 136, 192b, 192c, 199a, 213, 246a, 250, 251, 252, 257, 265a, 309a, and 311.

Between the issuance of the ITS conversion amendment and its implementation, license amendment requests must include justifications for changes to both the existing TS and ITS.

Please do not hesitate to contact me at (301) 415-3101 if you have any questions.

Sincerely,

Lawrence W. Rossbach

for Clyde Y. Shiraki, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-295 and 50-304

Enclosure: Draft ITS License
Amendment and SE

cc w/o encl: See next page

I. Johnson
Commonwealth Edison Company

Zion Nuclear Power Station
Unit Nos. 1 and 2

cc:

Michael I. Miller, Esquire
Sidley and Austin
One First National Plaza
Chicago, Illinois 60603

Dr. Cecil Lue-Hing
Director of Research and Development
Metropolitan Sanitary District
of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611

Phillip Steptoe, Esquire
Sidley and Austin
One First National Plaza
Chicago, Illinois 60603

Mayor of Zion
Zion, Illinois 60099

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

U.S. Nuclear Regulatory Commission
Zion Resident Inspectors Office
105 Shiloh Blvd.
Zion, Illinois 60099

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Station Manager
Zion Nuclear Power Station
101 Shiloh Blvd.
Zion, Illinois 60099-2797

Document Control Desk-Licensing
Commonwealth Edison Company
1400 Opus Place, Suite 400
Downers Grove, Illinois 60515

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

Ms. Irene Johnson, Acting Manager
Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M94267 AND M94268)

Dear Ms. Johnson:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. to Facility Operating License No. DPR-39 and Amendment No. to Facility Operating License No. DPR-48 for the Zion Nuclear Power Station, Units 1 and 2, respectively. The amendments are in response to your application dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 28, 1997, and submittals dated June 6, 1997 and July , 1997.

The amendments replace, in their entirety, the Zion Technical Specifications with a set based on NUREG-1431, "Standard Technical Specifications - Westinghouse Plants" issued in September 1992, and on guidance provided in the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," published on July 22, 1993 (58 FR 39132). The amendments also modify the licenses by relocating requirements from four license conditions to the Technical Specifications and one license condition to the Updated Final Safety Analysis Report.

A copy of the related Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Clyde Y. Shiraki, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-295 and 50-304

Enclosures:
1. Amendment No. to DPR-39
2. Amendment No. to DPR-48
3. Safety Evaluation
4. Notice

cc w/encls: see next page

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-295

ZION NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.
License No. DPR-39

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997, and submittals dated June 6, 1997 and July , 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, paragraphs 2.C.(2), 2.C.(4), 2.C.(7)(b), 2.C.(8), 2.C.(9), and 2.C.(10) of Facility Operating License No. DPR-39 are hereby amended to read and paragraph 2.C.(12) of Facility Operating License No. DPR-39 is hereby added as follows:

2.C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

2.C.(4) (Deleted ; Am.)

2.C.(7)(b) (Deleted ; Am.)

2.C.(8) (Deleted ; Am.)

2.C.(9) (Deleted ; Am.)

2.C.(10) (Deleted ; Am.)

2.C.(12) Additional Conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No. , are hereby incorporated into this license. Commonwealth Edison Company shall operate the facility in accordance with the Additional Conditions.

3. This license amendment is effective as of the date of its issuance and shall be implemented prior to Unit 2 entering Mode 4. Implementation of this amendment shall include the relocation of certain technical specification requirements to the appropriate licensee-controlled documents as described in the licensee's application dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997, and submittals dated June 6, 1997 and July , 1997, and evaluated in the staff's Safety Evaluation Report attached to this amendment.

FOR THE NUCLEAR REGULATORY COMMISSION

Clyde Y. Shiraki, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachments:
1. License pages 6 and 7
   and page 1 to Appendix D
   of the License
2. Technical Specifications

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENT NO. ____

FACILITY OPERATING LICENSE NO. DPR-39

DOCKET NO. 50-295

Replace the following pages of the Operating License with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change.

REMOVE	INSERT
6	6
6a	
7	7
	Appendix D, page 1

(3) (Deleted 3-11-83; Am. 82)

(4) (Deleted ; Am.)

(5) The licensee shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the (Updated) Final Safety Analysis Report for the Zion Nuclear Power Station and as approved in the SERs dated March 10, 1978, May 26, 1978, June 26, 1978, February 14, 1979, April 13, 1979, March 24, 1980, November 24, 1980, December 9, 1980, March 7, 1983, June 7, 1988, January 7, 1991, August 27, 1993, and August 31, 1993, subject to the following provision:

> The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(6) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provision of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Zion Nuclear Power Station Security Plan," with revisions submitted through September 22, 1993; "Zion Power Station Training and Qualification Plan," with revision submitted through March 2, 1993; and "Zion Nuclear Power Station Safeguards Contingency Plan," with revisions submitted through December 4, 1992. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein. (revised 1-15-81; Am. 61; revised 10-11-88; Am. 113)

(7) Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel pool as described in the application dated January 15, 1992, as supplemented October 2 and 16, 1992.

(a) Deleted
(b) (Deleted ; Am.)
(c) (deleted 1-15-81; Am. 61)
(d) (deleted 1-15-81; Am. 61)
(e) (deleted 1-15-81; Am. 61)

(8) (Deleted ; Am.)

(9) (Deleted ; Am.)

(10) (Deleted ; Am.)

(11) The licensee shall maintain the commitments made in response to the March 14, 1983, NUREG-0737 Order, subject to the following provision:

The licensee may make changes to commitments made in response to the March 14, 1983, NUREG-0737 Order without prior approval of the Commission as long as the change would be permitted without NRC approval, pursuant to the requirements of 10 CFR 50.59. Consistent with this regulation, if the change results in an Unreviewed Safety Question, a license amendment shall be submitted to the NRC staff for review and approval prior to implementation of the change.

(12) Additional Conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No. , are hereby incorporated into this license. Commonwealth Edison Company shall operate the facility in accordance with the Additional Conditions.

3. This amended license is issued without prejudice to subsequent licensing action which may be taken by the Commission.

4. This license is effective as of the date of issuance and shall expire at midnight on April 6, 2013.

FOR THE ATOMIC ENERGY COMMISSION

Original signed by Roger S. Boyd

A. Giambusso, Deputy Director
for Reactor Projects
Directorate of Licensing

Date of Issuance: October 19, 1973

APPENDIX D

ADDITONAL CONDITIONS
OPERATING LICENSE NO. [DPR-39]

Commonwealth Edison Company (the term licensee in Appendix D refers to Commonwealth Edison Company) shall comply with the following conditions on the schedules noted below:

Amendment Number	Additonal Condition	Implementation Date
	The licensee is authorized to relocate certain Technical Specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these technical specification requirements to the appropriate documents, as described in the licensee's application dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997 and submittals dated June 6, 1997 and July , 1997, and evaluated in the staff's Safety Evaluation Report attached to this amendment.	This amendment shall be implemented prior to Unit 2 entering Mode 4.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-304

ZION NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.
License No. DPR-48

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997, and submittals dated June 6, 1997 and July , 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, paragraphs 2.C.(2), 2.C.(4), 2. C.(7)(b), 2.C.(8), 2.C.(9), and 2.C.(10) of Facility Operating License No. DPR-48 are hereby amended to read and paragraph 2.C.(12) of Facility Operating License No. DPR-48 is hereby added as follows:

2.C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.   , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

2.C.(4) (Deleted ; Am.)

2.C.(7)(b) (Deleted ; Am.)

2.C.(8) (Deleted ; Am.)

2.C.(9) (Deleted ; Am.)

2.C.(10) (Deleted ; Am.)

2.C.(12) Additional Conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No.   , are hereby incorporated into this license. Commonwealth Edison Company shall operate the facility in accordance with the Additional Conditions.

3. This license amendment is effective as of the date of its issuance and shall be implemented prior to Unit 2 entering Mode 4. Implementation of this amendment shall include the relocation of certain technical specification requirements to the appropriate licensee-controlled documents as described in the licensee's application dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997, and submittals dated June 6, 1997 and July   , 1997, and evaluated in the staff's Safety Evaluation Report attached to this amendment.

FOR THE NUCLEAR REGULATORY COMMISSION

Clyde Y. Shiraki, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachments:
1. License pages 4, 5, 6, and 7 and page 1 to Appendix D of the License
2. Technical Specifications

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENT NO. ____

FACILITY OPERATING LICENSE NO. DPR-48

DOCKET NO. 50-304

Replace the following pages of the Operating License with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change.

REMOVE	INSERT
4	4
5	5
6	6
7	7
	Appendix D, page 1

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

(1) Maximum Power Level

Commonwealth Edison Company is authorized to operate the Zion Nuclear Power Station Unit No. 2 at steady state reactor core power levels not to exceed 3250 megawatts thermal.

Amendment No.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) (Deleted 3-11-83; Am. 72)

(4) (Deleted : Am.)

(5) The licensee shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the (Updated) Final Safety Analysis Report for the Zion Nuclear Power Station and as approved in the SERs dated March 10, 1978, May 26, 1978, June 26, 1978, February 14, 1979, April 13, 1979, March 24, 1980, November 24, 1980, December 9, 1980, March 7, 1983, June 7, 1988, January 7, 1991, August 27, 1993, and August 31, 1993, subject to the following provision:

The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(6) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provision of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Zion Nuclear Power Station Security Plan," with revisions submitted through September 22, 1993; "Zion Power Station Training and Qualification Plan," with revision submitted through March 2, 1993; and "Zion Nuclear Power Station Safeguards Contingency Plan," with revisions submitted through December 4, 1992. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein. (revised 10-11-88; Am. 102)

(7) Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel pool as described in the application dated January 15, 1992, as supplemented October 2 and 16, 1992.

(a) Deleted
(b) (Deleted : Am.)
(c) (deleted 1-15-81; Am. 58)
(d) (deleted 1-15-81; Am. 58)
(e) (deleted 1-15-81; Am. 58)

(8) (Deleted : Am.)

(9) (Deleted : Am.)

Amendment No.

(10) (Deleted   ; Am.   )

(11) The licensee shall maintain the commitments made in response to the March 14, 1983, NUREG-0737 Order, subject to the following provision:

The licensee may make changes to commitments made in response to the March 14, 1983, NUREG-0737 Order without prior approval of the Commission as long as the change would be permitted without NRC approval, pursuant to the requirements of 10 CFR 50.59. Consistent with this regulation, if the change results in an Unreviewed Safety Question, a license amendment shall be submitted to the NRC staff for review and approval prior to implementation of the change.

(12) <u>Additional Conditions</u>

The Additional Conditions contained in Appendix D, as revised through Amendment No.   , are hereby incorporated into this license. Commonwealth Edison Company shall operate the facility in accordance with the Additional Conditions.

3. This license is issued without prejudice to subsequent licensing action which may be taken by the Commission.

4. This license is effective as of the date of issuance and shall expire at midnight on November 14, 2013.

FOR THE ATOMIC ENERGY COMMISSION

Original signed by Roger S. Boyd

A. Giambusso, Deputy Director
for Reactor Projects
Directorate of Licensing

Date of Issuance: November 14, 1973

APPENDIX D

ADDITONAL CONDITIONS
OPERATING LICENSE NO. [DPR-48]

Commonwealth Edison Company (the term licensee in Appendix D refers to Commonwealth Edison Company) shall comply with the following conditions on the schedules noted below:

Amendment Number	Additonal Condition	Implementation Date
	The licensee is authorized to relocate certain Technical Specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these technical specification requirements to the appropriate documents, as described in the licensee's application dated November 3, 1995, as supplemented by submittals dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997, and submittals dated June 6, 1997 and July , 1997, and evaluated in the staff's Safety Evaluation Report attached to this amendment.	This amendment shall be implemented prior to Unit 2 entering Mode 4.

ATTACHMENT TO LICENSE AMENDMENT NOS.   AND

FACILITY OPERATING LICENSE NOS. DPR-39 AND DPR-48

DOCKET NOS. 50-295 AND 50-304

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number.

Remove Pages	Insert Pages
All	All

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.   TO FACILITY OPERATING LICENSE NO. DPR-39

AND AMENDMENT NO.   TO FACILITY OPERATING LICENSE NO. DPR-48

COMMONWEALTH EDISON COMPANY

ZION NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-295 AND 50-304

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TABLE OF CONTENTS (Continued)

I. INTRODUCTION

Zion Nuclear Power Station (Zion) currently operates with technical specifications (TS) issued on April 6, 1973 (Unit 1) and November 14, 1973 (Unit 2) with the original operating licenses as amended from time to time over the years. By letter dated November 3, 1995, as supplemented by letters dated November 22, 1995, March 15, 1996, April 30, 1996, May 8, 1996, May 17, 1996, May 21, 1996, June 6, 1996, July 5, 1996, July 17, 1996, September 13, 1996, September 20, 1996, November 1, 1996, December 11, 1996, January 2, 1997, February 3, 1997, two submittals dated May 8, 1997 and submittals dated June 6, 1997 and July   , 1997, Commonwealth Edison Company (ComEd or the licensee) proposed to amend Appendix A of the licenses to revise, in their entirety, the Zion TS. The proposed amendment is based on NUREG-1431, "Standard Technical Specifications - Westinghouse Plants" issued in September 1992, and on guidance provided in the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (Final Policy Statement), published on July 22, 1993 (58 FR 39132). The overall objective of the proposed amendment, consistent with the NRC's Final Policy Statement, was to completely rewrite, reformat, and streamline the existing Zion TS.

In addition to basing its improved TS on NUREG-1431 and the Commission's Final Policy Statement, the licensee used portions of the existing TS as a basis for the Zion Improved Technical Specifications (ITS). Plant-specific issues, including plant-unique design features, plant-unique requirements, and plant-unique operating practices were discussed with the licensee in a series of meetings during development of the TS amendment request. In addition, meetings were held with the Owners Groups to discuss matters of a generic nature that were not incorporated in NUREG-1431; these generic issues were considered for specific applications in the Zion ITS. Consistent with the Commission's policy statement, Zion proposed relocating some Current Technical Specification (CTS) requirements to other, licensee-controlled documents. In addition, emphasis was placed on human factors principles to add clarity and understanding to the Zion ITS and to define more clearly the appropriate scope of the ITS. Further, significant changes were proposed to the Bases section of the Zion ITS to enhance the clarity and understanding of each specification.

In addition to the November 3, 1995 ITS submittal, the licensee has submitted, and the staff has accepted, a number of changes to the Zion CTS. The review and approval of these TS amendments was independent of the Zion ITS review effort. These previous TS changes are reflected, as appropriate, in the Zion ITS. This Safety Evaluation (SE) describes only those TS changes which affected implementing the Zion ITS.

The Commission's proposed action on the Zion license amendment request was published in the Federal Register on December 29, 1995 (60 FR 67366). Changes in the licensee's proposed ITS that resulted from discussions with the licensee during the staff's development of an SE are discussed in this SE. These plant-specific changes serve to clarify the TS with respect to the guidance in the Commission's policy statement and NUREG-1431. Therefore, the

changes are within the scope of the action described in the initial Federal Register notice.

During its review of the Zion license amendment application, the NRC staff relied on the NRC's Final Policy Statement and on NUREG-1431. This SE documents the basis for the staff's conclusion that Zion can convert its CTS to those based on NUREG-1431, as modified by plant-specific changes, and that the use of the Zion ITS is acceptable for continued plant operation. The staff also acknowledges that, in accordance with the Commission's policy statement, the conversion to the STS is a voluntary process. Therefore, the Zion ITS reflects some differences from NUREG-1431 that correspond to the existing licensing basis for the plant. The staff has identified the changes to the Zion CTS and has included an explanation of the significant changes in this SE. Individual section topics and the corresponding section numbers are identical to those given in NUREG-1431.

For the reasons stated *infra* in this SE, the staff finds that the TS issued with this license amendment satisfy Section 182a of the Atomic Energy Act, 10 CFR 50.36, and the guidance in the Commission's Final Policy Statement, and that they are in accord with the common defense and security and provide adequate protection to public health and safety.

II. BACKGROUND

Section 182a of the Atomic Energy Act requires that applicants for nuclear power plant operating licenses shall state:

> [S]uch technical specifications, including information of the amount, kind, and source of special nuclear material required, the place of the use, the specific characteristics of the facility, and such other information as the Commission may, by rule or regulation, deem necessary in order to enable it to find that the utilization . . . of special nuclear material will be in accord with the common defense and security and will provide adequate protection to the health and safety of the public. Such technical specifications shall be a part of any license issued.

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of TS. In doing so, the Commission placed emphasis on those matters related to the prevention of accidents and those matters related to the mitigation of accident consequences; the Commission noted that applicants were expected to incorporate into their TS "those items that are directly related to maintaining the integrity of the physical barriers designed to contain radioactivity." Statement of Consideration, "Technical Specifications for Facility Licenses; Safety Analysis Reports," 33 Fed. Reg. 18610 (December 17, 1968). Pursuant to 10 CFR 50.36, TS are required to include items in five specific categories, including (1) safety limits, limiting safety system settings and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the rule does not specify the particular requirements to be included in a plant's TS.

For several years, the NRC and industry representatives have sought to develop guidelines for improving the content and quality of nuclear power plant TS.

On February 6, 1987, the Commission issued an interim policy statement on TS improvements, "Proposed Policy Statement on Technical Specification Improvements for Nuclear Power Reactors" (52 FR 3288). During 1989 through 1992, the utility Owners Groups and the NRC staff developed improved Standard Technical Specifications (STS) that would establish models of the Commission's policy for each primary reactor type. In addition, the staff, licensees, and the Owners Groups developed generic administrative and editorial guidelines in the form of a "Writers Guide" for technical specifications, which affords a significant enhancement of human factors considerations and was used throughout the development of licensee-specific improved TS.

In September 1992, the Commission issued NUREG-1431, which was developed utilizing the guidance and criteria contained in the Commission's interim policy statement. It was established as a model for developing improved technical specifications for Westinghouse plants. NUREG-1431 reflects the results of a detailed review of the application of the interim policy statement criteria to generic system functions, which were published in a "Split Report" issued to the NSSS Owners Groups in May 1988. NUREG-1431 also reflects the results of extensive discussions on various drafts of standard technical specifications, so that the application of the TS criteria and the Writers Guide would consistently reflect detailed system configurations and operating characteristics for all NSSS designs. As such, the generic Bases presented in NUREG-1431 provide an abundance of information regarding the extent to which the standard technical specifications present requirements which are necessary to protect public health and safety.

On July 22, 1993, the Commission issued its Final Policy Statement. Therein, the Commission expressed its view that satisfying the guidance in the policy statement also satisfies section 182a of the Atomic Energy Act and 10 CFR 50.36. The Final Policy Statement described the safety benefits of the improved STS and encouraged licensees to use the improved STS as the basis for plant specific TS amendments, and for complete conversions to improved STS. Further, the Final Policy Statement provided guidance to evaluate the required scope of the technical specifications, and finalized the guidance criteria to be used in determining which of the design conditions and associated surveillances need to be located in the TS. The Commission noted (58 FR at 39136) that, in allowing certain items to be relocated to licensee-controlled documents while requiring that other items be retained in the TS, it was adopting the qualitative standard enunciated by the Atomic Safety and Licensing Appeal Board in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). There, the Appeal Board observed:

> [T]here is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a technical specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the

Act and the regulations is that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

In accordance with this approach, existing TS requirements which fall within or satisfy any of the criteria in the Final Policy Statement should be retained in the TS, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other licensee-controlled documents. These Final Policy Statement criteria were codified in a change to 10 CFR 50.36. See Final Rule, "Technical Specifications," 60 FR 36953, July 19, 1995. The criteria are as follows:

1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

2. A process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident or Transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

4. A structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

In its license amendment application, the licensee proposed changes to existing TS requirements using the Final Policy Statement and NUREG-1431 as guidance. Changes to NUREG-1431 were also proposed by the licensee due to differences between the plant specific licensing basis and the design basis provided in NUREG-1431.

In this SE, the licensee's proposed changes to the Zion CTS are grouped into four general categories as follows: (1) Relocated Requirements; i.e., removal of requirements from CTS (an NRC controlled document) and relocation of those requirements to licensee controlled documents (Bases, QA manual, etc.), or plant procedures, (2) Administrative Changes; i.e., reformatting and rewording the remaining CTS requirements, and removal of details from CTS that are not required to ensure compliance with the TS requirements and that are not normally found in TS, (3) Less Restrictive Changes; i.e., CTS requirements that are not carried over into the ITS, and (4) More Restrictive Changes; i.e., requirements from NUREG-1431 that are not included in CTS but which will be voluntarily adopted by the licensee for inclusion in the ITS. In addition to the above, the licensee has identified differences between NUREG-1431 and the proposed ITS. These changes/differences are discussed in this SE. Each

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change has a specific identifier. This identification of changes is extracted from Attachment C.1 and Attachment C.2 of the licensee's submittal. Attachment C.1, Current Tech Spec Markup, is the Zion CTS which has been annotated to identify the disposition of all CTS requirements; i.e., relocated, deleted, modified, or retained.

III.0 DISCUSSION

III.1 RELOCATED REQUIREMENTS

The licensee has evaluated the Zion CTS requirements against the four criteria in the Final Policy Statement to determine what CTS requirements do not meet the criteria for retention in TS and may, therefore, be relocated from CTS to licensee controlled documents. The results of this evaluation are listed in a Summary Disposition Matrix that is included in the licensee's May 3, 1995, submittal. This matrix identifies the CTS requirements that will be relocated. These relocated requirements will be maintained in the Updated Final Safety Analysis Report (UFSAR). Changes to the UFSAR will be controlled under 10 CFR 50.59.

In addition to the above matrix, the licensee has provided a specific discussion for each relocated requirement as well as a generic No Significant Hazards Consideration and Probabilistic Risk Assessment (PRA) assessments for the relocated requirements. The staff reviewed the licensee's submittals and concluded that they are acceptable.

CTS 3.2.1.F BORIC ACID SYSTEM

LCO Statement: One Boric Acid System shall be OPERABLE per unit.

Discussion:

The boric acid system ensures negative reactivity control is available for normal operation (normal makeup and chemical shim reactivity control) and provides an alternate method for borating the reactor coolant system. However, this system is not assumed to mitigate any design basis accident or transient and does not satisfy any of the screening criteria for retention in TS. Other systems (e.g., SI pumps) and other borated water sources (RWST) are assumed in the safety analysis. Therefore, the Boric Acid System LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.2.2.C.3 NIS DETECTOR TEMPERATURE CONTROL

LCO Statement: One of the two reactor cavity ventilation fans shall be operating whenever T_{avg} is greater than 145 degrees F.

Discussion:

The fans support OPERABILITY of the out-of-core nuclear instrumentation by removing gamma and thermal heat from the biological shield wall around the reactor vessel and supplying ventilation to cool the out-of-core

instrumentation cavities. If the fans become inoperable, the associated nuclear instrumentation becomes inoperable, resulting in entering the appropriate ACTIONS of the nuclear instrumentation Specification. The fans are not, however, part of the engineered safeguards system and are not required to operate after a loss-of-coolant accident. Therefore, they do not satisfy any of the screening criteria for retention in TS and are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.3.1.C.1 PRESSURIZER SAFETY VALVES (< 200°F)

<u>LCO Statement:</u> At least one code safety valve shall be operable whenever the vessel is closed, except during hydrostatic tests.

Discussion:

This LCO requires Pressurizer Safety Valves to be OPERABLE in Modes 1 through 5. However, the Pressurizer Safety Valves only provide overpressure protection in Mode 1 through 3, and in Mode 4 <u>above</u> the low temperature overpressure protection (LTOP) arming temperature (≤ 200 degrees Fahrenheit). At temperatures <u>below</u> the LTOP arming temperature (part of Mode 4 and Mode 5), overpressure protection is provided by the LTOP system. The Pressurizer Safety Valves are not assumed to function to mitigate a DBA or transient below the LTOP arming temperature, and the screening criteria for retention of this requirement in TS are not satisfied. The LCO and surveillances for Pressurizer Safety Valves at ≤ 200 degrees Fahrenheit are relocated to the FSAR where future changes will be controlled under 10 CFR 50.59. LCO 3.4.10 in the Zion ITS contains the requirements for Pressurizer Safety Valves at temperatures > 200 degrees Fahrenheit. Pressurizer Safety Valves are not required to be OPERABLE in Mode 6 because an overpressurization event in this Mode is not a credible event (the vessel head is removed).

CTS 3.3.1.G REACTOR VESSEL HEAD VENT SYSTEM

<u>LCO Statement:</u> At least one reactor vessel head vent path consisting of at least two valves in series powered from an emergency bus shall be OPERABLE and closed.

Discussion:

The reactor vessel head vents are provided to exhaust noncondensable gases and/or steam from the RCS during startup of the reactor. They are not an initial value or an assumption of any analyzed UFSAR DBA or Transient and are not a process variable, design feature, or operating restriction as defined in Criterion 2 of 10 CFR 50.36. The reactor vessel head vents also do not satisfy Criterion 1, 3, or 4 of 10 CFR 50.36. Since the screening criteria have not been satisfied, the Reactor Vessel Head Vent System LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.3.2.C STEAM GENERATOR PRESSURE/TEMPERATURE (P/T) LIMITS

<u>LCO Statement:</u> The secondary side of the steam generator must not be pressurized above 200 psig if the temperature of the primary and secondary coolant is below 70°F.

Discussion:

The limitation on steam generator pressures and temperatures ensures that pressure-induced stresses on the steam generators do not exceed the maximum allowable fracture toughness limits. These limitations are consistent with and based on typical structural analysis results. However, since the reactor vessel and not the secondary side of the steam generator is the limiting component for failure of a fission product barrier, there is no specific UFSAR DBA or Transient analysis related to the secondary side of the steam generator. Steam generator pressure and temperature limits are not part of the initial values or assumptions of a UFSAR DBA or Transient that assumes the failure of or presents a challenge to the integrity of a fission product barrier and are not a process variable, design feature, or operating restriction as defined in 10 CFR 50.36, Criterion 2. Steam generator pressure and temperature limits also do not satisfy Criterion 1, 3, and 4 of 10 CFR 50.36. Since the screening criteria have not been satisfied, the Steam Generator P/T Limits LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.3.2.D PRESSURIZER HEATUP AND COOLDOWN LIMITS

<u>LCO Statement:</u> The pressurizer heatup rate shall not exceed 100°F/hr and the pressurizer cooldown rate not exceed 200°F/hr. The spray shall not be used if the temperature difference between the pressurizer and the spray fluid is greater than 320°F.

Discussion:

The heatup and cooldown rate limits are placed on the pressurizer to prevent non-ductile failure and assure compatibility of operation with the fatigue analysis performed. These limitations are consistent with other structural analysis results. However, since the reactor vessel, not the pressurizer is the limiting component for failure of a fission product barrier, there is no analyzed UFSAR DBA or Transient related to the pressurizer. The pressurizer heatup and cooldown limitations are not part of the initial values or assumptions of a DBA or Transient that assumes the failure of or presents a challenge to the integrity of a fission product barrier and are not a process variable, design feature, or operating restriction as defined in Criterion 2 of 10 CFR 50.36. The pressurizer heatup and cooldown limits also do not satisfy Criterion 1, 3, or 4 of 10 CFR 50.36. Since the screening criteria have not been satisfied, the Pressurizer Heatup and Cooldown Limits LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.3.4 RCS STRUCTURAL INTEGRITY

LCO Statement: The structural integrity of the primary system boundary shall be maintained at a level comparable to the original acceptance standards throughout the life of a unit. Weld repairs shall be made to the original acceptance levels.

Discussion:

The inspection programs for ASME Code Class 1, 2, and 3 components ensure that the structural integrity of these components will be maintained throughout the component's, life. ASME Code Class 1, 2, and 3 components are monitored so that the possibility of component structural failure does not degrade the safety function of the system. The monitoring activity is of a preventive nature rather than a mitigative action, and does not satisfy the screening criteria for retention in TS. This Technical Specification is more directed toward prevention of component degradation and continued long term maintenance of acceptable structural conditions. Hence, it is not necessary to retain this Specification to ensure immediate operability of safety systems. In addition, inspections are already required by 10 CFR 50.55a to be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda for structural integrity and weld repairs.

Since the screening criteria have not been satisfied, the RCS Structural Integrity LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.3.5 RCS CHEMISTRY

LCO Statement: The Reactor Coolant System chemistry shall be maintained within the limits specified in Table 3.3.5-1.

Discussion:

Poor reactor coolant water chemistry contributes to the long term degradation of system materials of construction and is not of immediate importance to the plant operator. Reactor coolant water chemistry is monitored for a variety of reasons. One reason is to reduce the possibility of failures in the reactor coolant system pressure boundary caused by corrosion. However, the chemistry monitoring activity is of a long term preventive purpose rather than mitigative, and does not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Reactor Coolant System Chemistry LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.8.9 ACCIDENT MONITORING INSTRUMENTATION

LCO Statement: The accident monitoring instrumentation channels shown in Table 3.8.9-1 shall be OPERABLE.

Discussion:

Each individual accident monitoring parameter has a specific purpose, however, the general purpose for all accident monitoring instrumentation is to ensure sufficient information is available following an accident to allow an operator to verify the response of automatic safety systems, and to take preplanned manual actions to accomplish a safe shutdown of the plant.

The NRC position on application of the deterministic screening criteria to post-accident monitoring instrumentation is documented in a letter dated May 9, 1988 from T.E. Murley (NRC) to W.S. Wilgus (NRC Split Report to Owners Groups). The NRC staff position is that the post-accident monitoring instrumentation table list should contain, on a plant specific basis, all Regulatory Guide 1.97 Type A and Regulatory Guide 1.97 Category 1 instruments. Accordingly, this position has been applied to the Zion Regulatory Guide 1.97 instruments. Those instruments meeting these criteria have remained in Technical Specifications. The instruments not meeting these criteria will be relocated.

The following instruments are proposed for relocation:

1. PZR PORV Position Indicator
2. PZR PORV Block Valve Position Indicator
3. PZR Safety Valve Position Indicator (Primary: Temperature Detectors)
4. PZR Safety Valve Position Indicator (Secondary: Acoustic Monitors)

Position indication failure would not affect success of mitigative actions, and does not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied for instruments which do not meet Regulatory Guide 1.97 Type A variable requirements or Category 1 variable requirements, their associated LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.9.2 PENETRATION PRESSURIZATION SYSTEMS

LCO Statement: A) The penetration (electrical and mechanical) and the liner weld channels shall be OPERABLE, and B) At least two of the three penetration pressurization air compressors shall be OPERABLE.

Discussion:

The function of the Penetration Pressurization (PP) system is to prevent leakage of containment air through penetrations and liner welds under all conditions by supplying air above the containment post accident design pressure to the positive pressure zones incorporated in the penetration and weld channel design. All containment penetrations are double barrier assemblies consisting of a closed sleeve, or for special penetrations such as

the fuel transfer tube, a double gasketed closure is used. The space between the double barriers is continuously pressurized by the PP system.

The Penetration Pressurization System is not credited in any Design Basis Accident, and does not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Penetration Pressurization System LCOs and surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.13.1.A.5 COMMUNICATIONS

<u>LCO Statement:</u> Direct communication between the control room and containment shall be OPERABLE.

Discussion:

Communication between the control room personnel and personnel performing CORE ALTERATIONS is maintained to ensure that personnel can be promptly informed of significant changes in the plant status or core reactivity condition during refueling. The communications allow for coordination of activities that require interaction between the control room and containment personnel engaged in core alterations/fuel handling operations. However, the refueling system design accident or transient response does not take credit for communications. Therefore, the Communications LCO and Surveillances do not satisfy the screening criteria for retention in TS and are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.13.1.A.6 FUEL HANDLING SRO

<u>LCO Statement:</u> A licensed fuel handling foreman or licensed senior reactor operator shall be present at the reactor cavity during any movement of fuel within the containment.

Discussion:

During alteration of the core of a nuclear power unit (including fuel loading or transfer), a person holding a senior reactor operator license or a senior reactor operator license limited to fuel handling, with no other concurrent duties, shall be present to directly supervise the activity. The presence of an SRO during core alteration in containment is not used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a design basis accident (DBA) and is not relied upon to mitigate the consequences of an accident. This requirement does not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Fuel Handling SRO LCO are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.13.5 REFUELING EQUIPMENT OPERABILITY

<u>LCO Statement:</u> The fuel transfer system and manipulator crane OPERABILITY shall be verified. All interlocks shall be checked and a load test equivalent to the weight of a fuel assembly shall be made prior to refueling

Discussion:

Operability of the refueling equipment ensures that the equipment used to handle fuel within the reactor pressure vessel functions as designed and that the manipulator crane has sufficient load capacity for handling fuel assemblies and/or control rods. Although the interlocks designed to provide the above capabilities can prevent damage to the refueling equipment and fuel assemblies, they are not assumed to function to prevent or mitigate the consequences of a design basis accident and do not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Refueling Equipment LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.13.7 SPENT FUEL PIT COOLING SYSTEMS

LCO Statement: At least one of the spent fuel pit cooling systems trains shall be OPERABLE.

Discussion:

The spent fuel pit cooling systems provide cooling to remove residual decay heat generated by spent fuel stored in the spent fuel pit, and are designed to prevent damage to stored spent fuel. Operability of the spent fuel pit cooling system trains ensure sufficient heat removal capability is available for the spent fuel pit. Although the spent fuel pit cooling systems are designed to prevent damage to stored spent fuel, they are not assumed to function to prevent or mitigate the consequences of a design basis accident and do not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Spent Fuel Pit Cooling Systems LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.13.8 FUEL INSPECTION PROGRAM

LCO Statement: A fuel inspection program shall be established to provide such information as can be determined from inspections performed on discharged fuel. This program shall include the removal and examination of any special test assemblies.

Discussion:

The fuel inspection program provides information on anomalous conditions of the fuel resulting from power operation. The results of the visual examinations and tests for failed fuel are reviewed as a basis for determining the requirements for further offsite fuel examinations. These examinations and tests help ensure fuel assembly performance is satisfactory and that fuel quality is maintained. The fuel inspection program, however, is not credited in the safety analysis and does not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Fuel Inspection Program LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.14 PLANT RADIATION MONITORING

LCO Statement: The radiation monitoring instrumentations shown in Table 3.14-1 shall be OPERABLE.

Table 3.14-1.

1. Area Monitors
   - A.1 and A.3 Fuel Storage Pool Area
   - D. Control Room
   - E. Technical Support Center
   - F. Auxiliary Building Area

2. Process Monitors
   - B. Component Cooling
   - D. Failed Fuel
   - E. Service Water
   - F. Steam Generator Blowdown
   - G. Gas Monitors
   - I. Technical Support Center

Discussion:

The area radiation and process monitors are used to indicate when the radiation in the area or effluent stream has exceeded its allowable setpoint. There are no safety related automatic functions assumed in accident analyses that are performed, i.e., triggered by these instruments. The instruments are not used to prevent or mitigate a design basis accident or transient and do not satisfy the screening criteria for retention in TS. In addition, 10 CFR Part 20 requires the licensee to have radiation monitoring capability to ensure that personnel exposure limits are not exceeded. In light of this, and since the screening criteria have not been satisfied, the Plant Radiation Monitoring LCOs and Surveillances for the instruments described in the LCO statement section above are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.19 FAILED FUEL MONITORING

LCO Statement: The instrumentation 1RTPR27 and 2RTPR27 shall be operable during reactor power operation except as noted in 3.19.2 and 3.19.3.

Discussion:

The failed fuel monitoring instrumentation will detect major failed fuel immediately. Over a long period of time the failed fuel monitors will show a trend indicating fuel failure. However, any long term fuel degradation would be detected during sampling required by Specification 3.3.6 (RCS Activity). The RCS Activity Specification will be retained in Technical Specifications. Past experience has shown that extensive fuel degradation does not occur under non-accident conditions. The failed fuel monitoring instrumentation is not credited in the safety analysis and does not satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the Failed Fuel Monitoring LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 3.22 SHOCK SUPPRESSORS (SNUBBERS)

LCO Statement: A) All safety related mechanical snubbers listed in station procedures shall be OPERABLE, and B) All safety related hydraulic snubbers listed in station procedures shall be OPERABLE.

Discussion:

The Snubbers prevent unrestrained pipe motion under dynamic loads which may occur during a seismic event, a DBA or Transient. The restraining action of the Snubbers ensures that the initiating event failure does not propagate to other parts of the failed system or to other safety systems. Snubbers also allow normal thermal expansion of piping and nozzles to eliminate excessive thermal stresses during heatup or cooldown. Snubbers are not used to detect a degradation of the reactor coolant pressure boundary, are not a process variable, design feature or operating restriction that is an initial condition of a DBA, and are not part of a primary success path to mitigate a DBA. They do not satisfy the screening criteria for retention in TS. Therefore, the Snubber LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59. Snubber inspections will be performed in accordance with the Zion ISI program which is referenced and required by 10 CFR 50.55a.

CTS 3.24 SEALED SOURCE CONTAMINATION

LCO Statement: Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material, or 5 microcuries of other alpha emitting material shall be free of greater than or equal to 0.005 microcuries of removable contamination.

Discussion:

The limitations on sealed source contamination are intended to ensure that the total body and individual organ irradiation doses do not exceed allowable limits in the event of ingestion or inhalation. These limitations are not, however, part of the initial assumptions of the accident analysis and do not satisfy the screening criteria for retention in TS. In addition, the licensee must conform to the requirements of 10 CFR Part 20 with respect to radiation contamination that could be inhaled or ingested. In light of this, and since the LCO does not satisfy the screening criteria for retention in TS, the Sealed Source Contamination LCO and Surveillances are relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

CTS 6.8 FLOODING PROTECTION

LCO Statement: In the event of the possibility of flooding, all doors listed in Table 6.8-1 shall be verified closed.

Discussion:

The requirements to maintain certain doors closed if a flooding potential exists ensures that safety-related equipment will not be adversely impacted by

a flooding event. However, the design basis for Zion does not include an external flooding type of event, coincident with a design basis accident (DBA). These doors are not required to prevent or mitigate a DBA and do not, therefore, satisfy the screening criteria for retention in TS. Since the screening criteria have not been satisfied, the flooding protection requirements have been relocated to the FSAR where future changes will be adequately controlled under 10 CFR 50.59.

Operating License Condition 2.C(7)(b) HEAVY LOADS CONTROLS

<u>License Condition:</u> No loads heavier than the weight of a single spent fuel assembly plus the tool for moving that assembly shall be carried over fuel stored in the spent fuel pool. The spent fuel handling tool, the burnable poison tool, the rod cluster control changing fixture and the thimble plug shall not be carried at heights greater than two feet over fuel stored in the spent fuel pool.

Discussion:

Existing license condition LC 2.C(7)(b), "Heavy Loads Control," pertains to the restriction on moving heavy loads over the spent fuel pool (SFP). The requirement of this license condition will continue to be met through physical design of the plant and administrative controls. A restriction on moving heavy loads over the SFP is not an initial condition of a DBA or transient analysis or a process variable monitored and controlled by an operator, and does not satisfy the screening criteria for retention in TS. This license condition is relocated to the FSAR where future changes will be controlled under 10 CFR 50.59.

These current specifications are not required to be in TS under 10 CFR 50.36 and do not meet any of the four criteria in 10 CFR 50.36. They are not needed to obviate the possibility of an abnormal situation or event that will give rise to an immediate threat to public health and safety. In addition, the staff finds that sufficient regulatory controls exist under the regulations cited above to maintain the effect of the provisions in these specifications. Accordingly, these current specifications may be removed from the CTS, and license, and placed in the FSAR, changes to which will be controlled under 10 CFR 50.59.

III.E <u>ADMINISTRATIVE CHANGES</u>

These changes are in three categories. One category consists of reformatting and rewording the requirements remaining after application of the Final Policy Statement to the Zion CTS. The reformatting and rewording are in accordance with the style of NUREG-1431 and will make the ITS more readily understandable to plant operators and other users.

The second category of Administrative Changes consists of relocation or deletion of CTS requirements that are descriptive in nature with respect to equipment, systems(s), Actions, or Surveillance Requirements covered by the CTS. These requirements are in the form of descriptive details that are not required to be in TS under 10 CFR 50.36, are not needed to obviate the

possibility of an abnormal situation or event that will give rise to an immediate threat to public health and safety, and do not meet any of the 10 CFR 50.36 criteria for retention in TS. Therefore, these details can be relocated to the TS Bases, UFSAR, Quality Assurance Manual (QAM), or to plant procedures without an impact on safety as indicated in this SE. Details relocated to the Bases, UFSAR, and QAM will be controlled under ITS Section 5.5.12, 10 CFR 50.59, and 10 CFR 50.54(a), respectively. CTS in this category are administratively relocated details for which the removal from TS and relocation to licensee-controlled documents has been found acceptable as discussed herein. These relocated CTS are identified in the following discussions and are listed by CTS number, brief subject description, and associated controls in Appendix A to this SE. CTS relocated to plant procedures will be controlled in accordance with the Zion procedure control process. Relocation of CTS to plant procedures, and deletion of CTS requirements have also been found acceptable as discussed herein. Changes in this second category of Administrative changes are further classified as Administrative (designated as A in the SE), or less restrictive-administrative (designated as L-A in SE). Changes in the L-A classification do not involve changes to requirements, but may include some relaxation in the method(s) of complying with them. The staff has reviewed the less restrictive aspects of changes classified as L-A and found them acceptable.

Administrative changes also include deletion of some CTS requirements for which the applicability has expired; e.g., requirements that were applicable until a specified refueling outage, and that refueling outage has passed. Requirements that applied for limited periods of time or plant conditions are no longer applicable; therefore, the removal of such requirements, as described in the following sections, is a purely administrative change.

The licensee had provided a justification for these Administrative change as well as a generic No Significant Hazards Consideration. These changes are identified in Attachment C.1 (CTS Markup) of the licensee's submittal which is an annotated copy of the Zion CTS that shows the Administrative Changes made and provides a numerical reference to a justification for the changes. The justifications are contained in Attachment C.2 (Discussion of Changes). The staff has reviewed the material provided by the licensee in support of the proposed changes, has concluded it is acceptable, and, therefore, the proposed changes are acceptable. Justifications for the changes are included in this SE. The content of these justifications is primarily that provided by the licensee which the staff has reviewed and found acceptable. The changes are listed in a numerical sequence which conforms to the format of NUREG-1431. Within each numerical section, the CTS requirements that are applicable to that section are identified by CTS and the specific justification number associated with them. In many cases, a single justification applies to the changes for several CTS requirements.

1.0 USE AND APPLICATION

CTS 1.1 and 1.15

A. 1. The term ACTION has been modified to be consistent with the definition provided in NUREG-1431. The revised definition is an editorial enhancement and has not changed the intent of the term.

Usage of the term ACTIONS is provided in Chapter 1. Use and Application.

CTS 1.2 and 1.3

A. 2. The definitions for ACTUATION DEVICE and ACTUATED EQUIPMENT have been deleted since these terms do not appear in the "improved" Zion Technical Specifications or NUREG-1431.

CTS 1.6, 1.10, 1.12, 1.19, 1.44, and 1.50

A. 3. The Definition for terms 1.6, 1.10, 1.12, 1.19, 1.44 and 1.50 have been deleted by previously approved Technical Specifications amendments.

CTS 1.15

A. 4. The phrase "DEFINED TERMS" has been deleted from the definitions section. This phrase is not used in the proposed Technical Specifications, and as such, is shown in lower case letters.

CTS 1.9, 1.4

A. 5. The definition for CHANNEL FUNCTIONAL TEST has been replaced by CHANNEL OPERATION TEST (COT). COTs apply to the testing of both analog and digital channels. The definition for COT also permits the use of "actual" signals in addition to "simulated" signal during performance of operational tests.

The "Logics" portion of the CHANNEL FUNCTIONAL TEST definition has been replaced with ACTUATION LOGIC TEST, MASTER RELAY TEST, and SLAVE RELAY TEST. Testing of the logic portion of the Engineered Safeguards and Reactor Protection Systems will be addressed by the definition of ACTUATION LOGIC TEST and MASTER RELAY TEST. The current Technical Specifications do not use the definition of ACTUATION LOGIC TEST even though it is contained in the definitions section. Logic testing is performed as stated in the definition of CHANNEL FUNCTIONAL TEST subsection b. Logics. This definition does not include a requirement to test logics in conjunction with each possible interlock logic state. As such, the definition of ACTUATION LOGIC TEST has been changed to reflect the current licensing basis and design of Zion Station's Reactor Protection Logic and Safeguards Logic System. Zion Station's logic design precludes testing in each interlock state, dependent upon plant configuration. In many instances the logic state cannot be defeated to allow testing in varying states. Operational verification of actuation devices and equipment is included in new definition, SLAVE RELAY TEST.

CTS 1.11

A. 6. The definition of CONTAINMENT INTEGRITY has been deleted from the proposed Zion Technical Specifications. This was done because of the confusion associated with the definition of CONTAINMENT INTEGRITY when this definition was compared to the respective LCOs. The change is editorial in that all the requirements are specifically addressed in the LCO for the containment (LCO 3.6.1)

and the remainder of the LCOs in the Containment Systems chapter with the exception of the Penetration Pressurization (PP) System.

The PP System has been relocated to licensee controlled documents in accordance with the NRC Final Policy Statement on Technical Specification Improvement and 10 CFR 50.36, as revised. This relocation is discussed under <u>RELOCATED REQUIREMENTS</u> in Section III.1 of this SE.

CTS 1.13, 1.20, 1.22, 1.32, and 1.48

A. 7. The definitions for IDENTIFIED LEAKAGE, PRESSURE BOUNDARY LEAKAGE, CONTROLLED LEAKAGE, and UNIDENTIFIED LEAKAGE have been combined into one term; LEAKAGE. The definitions of each of the categories of LEAKAGE in the "improved Technical Specifications" are consistent with the definitions in the "current" Zion Technical Specifications. The "controlled leakage" from reactor coolant pump seal water injection or leakoff continues to be excepted from both identified and unidentified leakage.

CTS 1.16

L-A. 9. The definition of DEGREE OF REDUNDANCY has been deleted from the Technical Specifications. This term is no longer used as a defined term in the Improved Technical Specifications.

CTS 6.10.3

A. 10. The definition of L_a has been moved within TS to the Definitions Section.

CTS 1.38

A. 12. The words "steady state" have been removed from the definition of RATED THERMAL POWER. These words are inconsistent with the license condition that establishes the maximum value for RATED THERMAL POWER and are a potential source of confusion. This is consistent with NUREG-1431.

CTS 1.21, 1.34

L-A. 13. The definitions of INSTRUMENT CHANNEL and PROTECTION LOGIC CHANNEL have been deleted from the Technical Specifications. These terms are no longer used as defined terms in the Improved Technical Specifications. The intended purpose of these terms has been incorporated into the Required Actions of the affected Technical Specifications. In addition, a "channel" is also defined in IEEE 279-1971.

CTS 1.24, 1.26, 1.43, 1.45, 1.49, 1.51

L-A. 14. The definitions of MEMBER(S) OF THE PUBLIC, PURGING, SITE BOUNDARY, SOURCE CHECK, UNRESTRICTED AREA, and VENTING have been deleted from the Technical Specifications. These terms are no longer used as defined terms in the Improved Technical Specifications. The intended purpose of these terms has been incorporated into the Required Actions of the affected Technical Specifications.

CTS 1.30
A. 15. OPERATIONAL MODE - MODE has been changed to MODE to be consistent with NUREG-1431. A statement has been added that reactor vessel head closure bolt tensioning is also a variable; as indicated in the current Table 1-1.

CTS 1.25
L-A. 16. The definition of OFF-SITE AC POWER SOURCES has been moved to the Bases of LCO 3.8.1, "AC Power Sources – Operating." The Bases is the appropriate place for details pertaining to what constitutes OPERABILITY. Changes to the Bases will be controlled using the Bases Control Process in Section 5 of the Technical Specifications.

CTS 1.27, 3.05
A. 18. The definition of OPERABILITY has been modified to only require a normal (offsite) or emergency (onsite) power source. Currently, when one source is not available, the definition of OPERABILITY alone would require the supported features to be declared inoperable. However, in the current Zion Technical Specifications, LCO 3.0.5 allows the features to be considered OPERABLE provided at least one source of power is still available and their redundant features are OPERABLE. LCO 3.0.5 requirements are incorporated into the improved Technical Specification LCO 3.8.1 ACTIONS for when a diesel or offsite power source is inoperable. Thus, the new requirements are effectively the same as the current requirements. Times to perform the OPERABILITY determination of the redundant features have also been provided.

CTS 1.28
A. 19. This definition of OPERATING has been deleted since it is covered by the definition of OPERABILITY. The word "operating" is not used as a defined term in the proposed Technical Specifications, and as such, is shown in lower case letters.

CTS 1.29, 1.40, 1.46, and Table 1.2
A. 20. The definitions of OPERATING CYCLE, REFUELING CYCLE OR OUTAGE, SURVEILLANCE FREQUENCY NOTATION and TABLE 1.2 have been deleted. All Surveillance Requirement Frequencies in the improved Technical Specifications are specified in terms of hours, days, months, years or other conditions. No defined terms are necessary. The words OPERATING CYCLE, REFUELING CYCLE OR OUTAGE, SURVEILLANCE FREQUENCY NOTATION and TABLE 1.2 are not used as defined terms in the proposed Technical Specifications, and as such, are shown in lower case letters.

CTS 1.33
A. 22. The PROCESS CONTROL PROGRAM (PCP) is described in licensee controlled documents (plant procedure). The PCP implements the requirements of 10 CFR Part 20 and 10 CFR Part 71. Moving of the PCP has previously been found acceptable by NRC, therefore,

maintaining the definition in licensee controlled documents is appropriate.

CTS 1.35
L-A. 23. The definition of PROTECTION SYSTEM has been moved to the Bases of the appropriate LCOs (3.3.1 and 3.3.2). The requirement to have an OPERABLE protection system is appropriate for inclusion in TS, but the definition of a protection system is not. Changes to the Bases will be controlled using the Bases Control Process in Section 5 of the Technical Specifications.

CTS 1.39, Table 1.1
L-A. 24. The definitions of REACTOR PRESSURE and T_{avg} have been relocated to plant procedures. This is acceptable since these defined terms are not used in the Improved Technical Specifications. Changes to the procedures will be controlled in accordance with the plant processes and practices. These changes are consistent with NUREG-1431.

CTS 1.41
A. 25. The definition for "REPORTABLE EVENT" has been deleted. Reporting Requirements have been removed from the Technical Specifications based on their existence in the applicable regulations (10 CFR 50.72 and 10 CFR 50.73).

CTS Table 1.1
A. 29. In the MODES table, the titles have been changed from "HOT STANDBY" to "STARTUP", "HOT SHUTDOWN" to "HOT STANDBY" and "HOT SHUTDOWN" and $T_{avg} \leq 350°F$ to "HOT SHUTDOWN" to be consistent with NUREG-1431. There are no changes in intent. In addition, since HOT SHUTDOWN now encompasses only one MODE (MODE 4), the Note in Table 1.1 is not needed.

CTS Table 1.1
A. 30. The REACTIVITY requirement in the MODES table for MODE 6 have been changed from "≤ .5% Δk/k" to "N/A" to be consistent with NUREG-1431. This change eliminates the confusion as to which MODE is applicable if reactivity exceeds the specified value (e.g., a value > .5% Δk/k implies the unit is no longer in MODE 6, however, the unit is clearly not in MODE 5 either). The reactivity requirements for these MODES are already (and will continue to be) controlled by boron concentration LCO limits in chapters 3.1 and 3.9. Therefore, since this change does not change the current requirements of these LCOs, this change is editorial in nature only.

CTS Table 1.1
A. 31. The LOW POWER PHYSICS TESTS MODE has been deleted since the only requirement specified (power level) is also stated in each Low Power Physics Test LCO. The LCOs have not changed the 5% power level requirement. This change is editorial in nature and consistent with NUREG-1431.

CTS Table 1.1, Footnote(**)

A. 32. Footnote (**) in the MODES table has been replaced by footnote (c) to indicate MODE 6 has one or more reactor vessel head closure bolts less than fully tensioned. The phrase "fuel in the reactor vessel has been removed from footnote (c) since it is included in the definition of MODE and, therefore, would be redundant.

CTS Table 1.1

A. 33. The FISSION POWER # column in the MODES table for MODES 1 and 2 has been changed from 2% to 5% to be consistent with NUREG-1431. This is also consistent with the current power restriction for Physics Tests (MODE 7) in the Zion Technical Specifications. The current Zion Technical Specifications, which meet the NRC Final Policy Statement criteria for inclusion in Technical Specifications, were reviewed for MODE Applicability to determine the impact of this change. The MODE Applicabilities of these Technical Specifications includes either both MODES 1 and 2 or MODES other than MODES 1 and 2. No Technical Specifications had MODE Applicabilities of only MODE 1 or MODE 2. As a result, the power level change from 2% to 5% is purely administrative since existing Technical Specification MODE Applicability requirements are unchanged.

CTS Table 1.1

A. 34. The FISSION POWER # column in the MODES table for MODES 3,4,5, and 6 has been changed from "0" to "N/A" to be consistent with NUREG-1431. With $k_{eff} \leq 0.99$, it is obvious that power is zero and does not need to be specified.

CTS Table 1.1

A. 35. The definition of T_{oper} in the MODES table has been replaced with N/A to be consistent with NUREG-1431. This change eliminates the confusion as to which MODE is applicable if the coolant temperature is not within the limits of current Specifications 3.2.1.C.1 and 3.3.2.A. This change is editorial in nature only, since the minimum temperature allowed for criticality is being maintained as an LCO (in Section 3.4), thus the current requirements are not being changed.

CTS Table 1.1

A. 37. In the MODES table, new Note (b) was added to MODES 4 and 5 to state that all reactor vessel head closure bolts are fully tensioned. This avoids the potential misinterpretation that the reactor vessel head closure bolts could be detensioned while in MODES 4 or 5.

2.0 SAFETY LIMITS

CTS 1.1.1 and Fig. 1.1-1b

A. 2. This figure, and the references to it, have been deleted. The figure is not applicable since Unit 2 has started up from refueling outage Z2R12.

CTS 1.1, 1.1.1, Fig. 1.1-1A

A. 3. The phrases "and coolant flow" and "for four-loop operation" have been deleted since they are not needed. Zion is not licensed to operate in configurations other than four loop operation. Four loop operation is required by proposed LCO 3.4.4. Therefore, reduced coolant flow is not allowed and is not a consideration for the reactor core safety limits.

CTS Fig. 1.1-1a, Footnote *

A. 4. This footnote has been deleted. The figure is now applicable to both units 1 and 2 since unit 2 has started up from refueling outage Z2R12.

CTS 6.4

L-A. 3. In the event a Safety Limit is exceeded, the actions to not resume reactor operation until authorized by the NRC, to prepare a separate report for each occurrence, and to report the shutdown to the Site Vice President or his designated alternate, have been deleted. The requirements regarding plant shutdown, reports, and resumption of plant operation are duplicative of regulations (10 CFR 50.36 and 10 CFR 50 Appendix E), and are inappropriate for inclusion in TS. The requirement to report the plant shutdown to the Site Vice President has no safety significance and can be controlled by the licensee outside of TS.

CTS 6.4

A. 4. Current Specifications 6.1.7.A.1 and 6.1.7.B.1 require the Safety Limit violation to be reviewed by both the offsite and onsite review and investigative functions, respectively. These CTS requirements are moved to the Quality Assurance Manual. These details are not necessary to adequately describe the requirement (i.e., reporting of safety limit violation), are not mandated by 10 CFR 50.36, and do not meet the criteria for retention in TS. Therefore, they can be moved to a licensee controlled document without an impact on safety. Administrative controls required by the Quality Assurance Program require all LERs, which include Safety Limit violations, to be reviewed by both the offsite and onsite review and investigative functions. Changes to the QAM will be controlled in accordance with 10 CFR 50.54. CTS moved to the QAM are administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

3.0 <u>APPLICABILITY</u>

CTS 3.0.1

A. 1. The following changes to LCO 3.0.1 are editorial in nature:

a. The phrase "shall be applicable..." was replaced with the phrase "shall be met...". This change was made to be consistent with the other LCO 3.0 Specifications and the concept of an LCO being met, a more positive statement than, being applicable.

b. OPERATIONAL MODES was changed to MODES to be consistent with the recommendations of NUREG-1431 and is consistent with terminology in the MODES Table (proposed Table 1.1-1).

c. The phrase "...and ACTION requirements" was replaced by "...as provided in LCO 3.0.2 and LCO 3.0.7" since these LCOs address the concept of meeting the Required Actions of the associated Conditions when not meeting a LCO. This also makes clear the connection between LCOs 3.0.1, 3.0.3 and 3.0.7.

CTS 3.0.2

A. 2. The following changes to LCO 3.0.2 are editorial in nature:

a. The phrase "Adherence to the requirements of the..." was deleted and the paragraph begun with "Upon discovery of a failure to meet a...". This phrase is consistent with the phrase in LCO 3.0.1 regarding the requirement to meet the LCO and will serve to clarify the start of Completion Times.

b. The phrase "...shall be met except as provided in LCO 3.0.5 and LCO 3.0.6." was used in lieu of "...within the specified time interval shall constitute compliance with the Specification". This change was made to be consistent with the concept of meeting the Conditions, Required Actions and Completion Times if the LCO is not met. To include "within the specified time intervals" would be redundant. The phrase "except as provided in LCO 3.0.5 and LCO 3.0.6" was added to be consistent with proposed LCO 3.0.5 and LCO 3.0.6 wording.

c. The phrase "time interval" was changed to "Completion Times" and "and/or associated ACTION" and "ACTION statement" changed to "Required Action of the associated Conditions" to be consistent with the usage of these terms throughout the Technical Specifications.

d. The phrase "need not be completed" was changed to "is not required" to be more correct and provide a more positive statement.

e. The phrase "LCO is restored" was changed to "LCO is met or no longer applicable" to be consistent with LCO 3.0.1.

f. The phrase "...unless otherwise stated" was added at the end of LCO 3.0.2 to establish the concept of requiring Required Actions to be completed once the Condition is entered even if the requirements of the LCO are restored.

CTS 3.0.3

A. 3a. The following changes to LCO 3.0.3 are editorial in nature:

1. The phrase "If a Limiting Condition for Operation and/or associated ACTION requirements cannot be satisfied" was changed to

"When a LCO is not met, and the associated Required Actions and Completion Times are not met..." to be consistent with LCO 3.0.1 and LCO 3.0.2 concept of meeting a LCO.

2. The phrase "...an associated Action is not provided" was added to clarify that the conditions which must exist for the requirements of LCO 3.0.3 to become applicable also include when a Condition, Required Action and Completion Time are not specifically provided in the specification. An additional phrase of "or is directed by the associated Actions" is included for completeness.

3. LCO 3.0.3 part a. was changed to include "...the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable." for clarification. Also the phrase "This requirement need not be completed if:" was deleted because the previous phrase of "...The reactor is placed in a MODE in which the specification is not applicable;" left some confusion as to what to do when the Applicability is another specified condition in the Applicability.

4. The terms HOT SHUTDOWN and COLD SHUTDOWN were replaced with their respective MODE designations in accordance with the MODES Table (proposed Table 1.1-1).

5. The phrase "...are completed within the specified time interval as measured from initial discovery." was changed to "...in accordance with the LCO or Required Actions, completion of the actions required by LCO 3.0.3 is not required." This was to provide clarification and to be consistent with the usage of Completion Times (time interval) so as to not be redundant.

6. The proposed sentence "LCO 3.0.3 is applicable in MODES 1, 2, 3 and 4." was added to provide a positive statement regarding when LCO 3.0.3 is applicable and to better describe how the MODES and other specified conditions in the Applicability work together. This is consistent with the current Applicability since the actions only required the unit to be placed in MODE 5 (COLD SHUTDOWN).

CTS 4.0.1, 4.0.3

A. 4. The following changes to LCO 4.0.1 (proposed SR 3.0.1) are editorial in nature:

a. The phrase "Surveillance Requirements shall be applicable during the OPERATIONAL MODES or other conditions specified..." has been changed to "SRs shall be met during the MODES or other specified condition in the Applicability..." to be consistent with the change from OPERATIONAL MODES to MODES and the use of the word "met" versus "applicable", as described in the Discussion of Changes for LCO 3.0.1.

b. The sentence "Failure to perform a Surveillance Requirement within the allowed surveillance interval defined by Specification 4.0.2 shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation" has been moved from LCO 4.0.3 to establish the major basis of the Surveillance Requirements in the first proposed Surveillance Requirement Specification, SR 3.0.1. It has been modified to state, "Failure to meet a Surveillance whether such failure is experienced during performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO, except as provided in SR 3.0.3." since meeting the Surveillance, as well as performing it, constitutes compliance with an LCO.

c. The moving of the sentence "Surveillance Requirements do not have to be performed on inoperable equipment." from LCO 4.0.3 to proposed SR 3.0.1 is also part of establishing the major basis for the Surveillance Requirements in the first proposed Surveillance Requirement Specification, SR 3.0.1. It has also been modified to include variables not within limits since Specifications cover more than equipment (e.g., containment pressure).

CTS 4.0.2
A. 5a. The following changes to LCO 4.0.2 (proposed SR 3.0.2) are editorial in nature:

1. The sentence "Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval." was modified to "The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met." to clearly establish what constitutes meeting the specified Frequency of each Surveillance Requirement.

2. The sentence "Exceptions to this Specification are stated in the individual Specifications." has been added to provide exceptions in individual Frequencies where the allowances provided in SR 3.0.2 are not allowed.

CTS 4.0.2 NOTE
A. 6. This Note has been deleted since the Table it referenced was deleted.

CTS 3.0.4
A. 8a. The following change to LCO 3.0.4 is editorial in nature:

1. The phrase "unless otherwise excepted" was modified to "Exceptions to this Specification are stated in the individual Specifications.

These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time." This ensures the appropriate understanding of the use of LCO 3.0.4 and clarifies what the statement "LCO 3.0.4 is not applicable" means when stated in a Specification.

2. The phrase "OPERATIONAL MODE" was changed to "MODE" to be consistent with the terminology in the Definition section (Section 1.1).

CTS 4.0.4
A. 9. The following changes to LCO 4.0.4 (proposed SR 3.0.4) are editorial in nature:

a. The sentence "Entry into an OPERATIONAL MODE or other specified condition shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the stated surveillance interval or as otherwise specified." has been changed to "Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency." to be consistent with the use of the term MODE instead of OPERATIONAL MODE and to be consistent with the concept of meeting the Surveillance Requirements.

b. The phrase "OPERATIONAL MODES" has been changed to "MODES" and "ACTION requirements" to "Required Actions" in the second sentence to be consistent with their use in the Definitions Section 1.1 and throughout the proposed Zion Technical Specifications.

c. The phrase "as required to comply" has been changed to "required to comply with" for consistency with the rest of Specification 3.0 and NUREG-1431.

CTS N/A
A. 10. LCO 3.0.5 was added to clarify that equipment may be restored to service under administrative controls when it has been removed from service or declared inoperable to comply with Required Actions. The purpose of this Specification is to provide an exception to LCO 3.0.2 to allow the performance of Surveillance Requirements to demonstrate the OPERABILITY of the equipment being returned to service, or to demonstrate the OPERABILITY of other equipment or variables are within limits that otherwise could not be performed without returning the equipment to service. This concept, although currently utilized, is not formally recognized in the present Technical Specifications. Without this concept many Surveillance Requirements in Technical Specifications could not be performed and various equipment would not be able to be restored to OPERABLE status, and still other equipment would not

be able to be maintained OPERABLE. This change is consistent with NUREG-1431.

CTS N/A
A. 11. LCO 3.0.6 was added to provide guidance regarding support system OPERABILITY. This Specification provides the requirements to be met if there is inoperability or degradation of the support system function, based on whether or not there is an LCO specified in the Technical Specifications for that support system. This LCO is a clarification to the definition of OPERABILITY and is necessary to establish the relationship between the support systems and the supported systems in order to preclude cascading to multiple supported system Conditions and Required Actions and to eliminate the potential confusion associated with entering multiple LCOs' Required Actions. Whenever LCO 3.0.6 is entered, the Safety Function Determination Program (TS 5.5.13) is invoked to ensure that the plant status is evaluated for potential loss of safety function as a consequence of the support system inoperability. This is consistent with NUREG-1431.

CTS N/A
A. 12. LCO 3.0.7 was added to provide guidance regarding Exception LCOs such as LCOs 3.1.9 and 3.1.10. Exception LCOs allow certain Technical Specification requirements to be temporarily changed to accommodate performance of special tests or operations. Without the Exception LCOs, conducting these required special tests or operations would cause TS to be violated. LCO 3.0.7 provides guidance regarding what LCOs are applicable during special tests or operations in order to preclude possible confusion. This change is consistent with NUREG-1431.

3.1 REACTIVITY CONTROL SYSTEMS

CTS 3.2.1.C.3, 3.2.1.D.1, 3.2.1.D.2.a, 3.2.1.E, 3.2.1.H, 4.2.1.A.1, 4.2.1.A.2, 4.2.1.B, 4.2.1.D.2, 4.2.1.E, 4.2.3.A, and Fig. 3.2-8
L-A. 2. Information in these CTS regarding comparing MTC negativity, shutdown rod withdrawal sequence, control rod insertion restrictions, assignment of rod bank designators, and boron concentration have been moved to plant procedures, the Bases, or the core operating limits report (COLR). This information provides details of design or processes which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since this information is not necessary to adequately describe the actual regulatory requirement or to interpret the Technical Specification requirement, it can be moved to procedures or the Bases without an impact on safety. Materials moved to the Bases will be controlled in accordance with the Bases Control Program (5.5.12). Changes to procedures will be controlled in accordance with Zion plant procedure change process. Changes to the COLR will be controlled in accordance with TS Section 5.6.5. This change is consistent with NUREG-1431. CTS

moved to the Bases or COLR represent administratively relocated details. These CTS are identified by CTS number and a brief subject description in Appendix A.

CTS 3.2.1.B.1

A. 5. The mode of applicability for SDM when T_{avg} is > 200°F has been clarified to include up to "MODE 2 with k_{eff} < 1.0." In MODE 1 and in MODE 2 with $k_{eff} \geq 1.0$, SDM is ensured by complying with proposed LCO 3.1.7, "Control Bank Insertion Limits." This change is considered editorial in nature and is consistent with NUREG-1431.

CTS 3.2.1.C.3, 3.2.1.D.1

A. 16. The applicability of the requirements for shutdown and control bank insertion limits have been clarified. "When approaching criticality" has been clarified as MODES 1 and 2 which includes any operation of the reactor with $k_{eff} \geq 0.99$. This change provides only more definitive applicability which is considered to be equivalent and, therefore, is considered to be administrative.

CTS 4.2.1.D.1

A. 17. The current Specification contains a clarification that indicates that rods which have been sufficiently moved to satisfy the SR during the preceding Frequency period do not have to be surveilled. This is an unnecessary statement since it is the method of application for all surveillances. Any normal operation which fulfills a surveillance can be credited if appropriately documented. Therefore, deletion of this clarification is purely administrative since no actual change in practice occurs.

CTS 3.2.3.C. Action

A. 24. This requirement has been deleted since it is redundant to the requirements of Specification 3.0.4. Specification 3.0.4 prohibits entering the applicability of an LCO unless the requirements of the LCO are met. Therefore, a specific action which prohibits proceeding to criticality is not needed.

CTS 4.2.3.C.2

A. 26. The requirement to verify rod drop times for any rod(s) affected following maintenance or modification to the rod drive system, which would affect the rod drop time, has been relocated to plant procedures. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, or replacement of component, post maintenance testing is required to demonstrate OPERABILITY of the system or component. Particular Surveillance Requirements needed to demonstrate OPERABILITY of the system must be evaluated for each maintenance item. Explicit post maintenance Surveillance Requirements have, therefore, been deleted from the Specifications, since they are adequately addressed by the definition of OPERABILITY and existing Surveillance Requirements.

CTS 3.2.1.H

A. 36. The NRC notification and reporting requirements have been omitted. The NRC amended 10 CFR 50.72 and 10 CFR 50.73 to more clearly identify which plant conditions need to be reported to the NRC. These regulations require a report if the Technical Specifications are violated or if the condition is outside accident analysis. If a discovered reactivity anomaly meets these conditions, a report to the NRC would be required. Therefore, this specific reporting requirement (of current Specification 3.2.1.H) has been removed since it is adequately addressed by 10 CFR 50.72 and 10 CFR 50.73. This is consistent with NUREG-1431.

CTS 3.2.3.A.1

A. 39.a The action to restore alignment of a misaligned control rod has been omitted. Restoration of compliance with the LCO is always an option and need not be explicitly stated in the Required Actions. Since this results in no difference in the available options, this change is administrative.

CTS 4.2.3.A.1

A. 44. The Frequency for verifying individual rod positions within alignment limits has been changed from "once a shift" to 12 hours. This change reflects the current shift duration for operations personnel and is consistent with NUREG-1431. Therefore, this change is considered an administrative change which is consistent with NUREG-1431.

CTS 4.2.3.D.1.a

L-A. 48. The identification of a specific method to perform this surveillance has been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. Changes to plant procedures will be controlled in accordance with Zion plant procedures change process. This change is consistent with NUREG-1431.

CTS 4.2.3.D.1.a

A. 49. The Frequency at which the position of a control rod with an inoperable position indicator must be checked has been changed from "every shift" to "once per 12 hours." This change represents an administrative change only since the duration of a shift for operations personnel is currently 12 hours.

3.2 POWER DISTRIBUTION LIMITS

CTS 3.2.2.A.1.1, 3.2.2.A.3, 4.2.2.A.1.1, 4.2.2.B.1, 4.2.2.A.5, 4.2.2.A.6, and 4.2.2.C.2

L-A. 3. Information in these CTS regarding peaking factor tolerances, determination of flux differences, development of flux maps, logging of Quadrant Power Tilt Ratio (QPTR), flux difference alarm indications, and the number of thermocouples in a quadrant have been moved to plant procedures, the Bases or core operating limits report (COLR). This information provides details of design or processes which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement they can be moved to licensee controlled documents without an impact on safety. Materials moved to the Bases will be controlled in accordance with the Bases Control Program (5.5.12). Changes to procedures will be controlled in accordance with Zion plant procedures change process. Changes to the COLR will be controlled in accordance with TS Section 5.6.5. This change is consistent with NUREG-1431. CTS moved to the Bases or COLR represent administratively relocated details. They are identified by CTS number and brief subject description in Appendix A.

CTS 4.2.2.A.1.1

A. 10. The requirement to verify Hot Channel Factors are within limits following initial core loading has been deleted. This one time verification was completed long ago and is no longer required. Similarly, the limitation of exposure levels for definition of the hot channel factors is no longer required (this issue was resolved in WCAP-13589-A). These administrative changes represent no impact on plant operation.

CTS 3.2.2.A.4.4, 3.3.2.B.1 and 3.3.2.B.3

A. 13. The CTS requirement is that the Axial Flux Difference (AFD) and QPTR be maintained "except during physics tests." This exception is not necessary and is deleted. This is because the ITS Applicability for AFD and QPTR are at power levels (15% and 50% respectively) above those powers at which PHYSICS TEST can be performed (≤ 5%). Elimination of this exception poses no change in requirements, therefore, the change is administrative.

CTS N/A

15. A Note has been added to the proposed AFD LCO which clarifies the applicable requirements. The Note indicates that AFD is considered outside of its target band if two or more excore channels indicate it to be outside of the target band. This change is consistent with the Westinghouse methodology which includes Specifications on axial flux distribution and quadrant power tilt ratio. A single excore channel which indicates outside the target band is indicative of a potential QPTR concern and is

limited by that Specification. Two or more excore channels outside of the target band may indicate an AFD concern. This change is an administrative clarification of the methodology only and is consistent with NUREG-1431.

CTS 3.2.2.A.6.2

A. 17. An additional clarification of plant operation has been added which requires the reduction in power to ≤ 50% RTP be initiated immediately. The existing Specification does not specifically identify the amount of time to reduce power to ≤ 50% RTP. This clarification continues to allow a controlled reduction in power. This change is consistent with NUREG-1431.

CTS 3.2.2.A.7.2

A. 20. The CTS requirement precludes a power increase to greater than 50% of Rated Thermal Power (RTP) unless AFD requirements are met. The CTS wording is being deleted because this requirement is now addressed by ITS LCO 3.0.4 which requires the LCO (3.2.3.b in conjunction with its Required Actions A.1 and C.1 and the Note for Condition C) to be met prior to entering the applicable MODE or Condition. This change is consistent with NUREG-1431.

CTS 4.2.2.A.3

A. 24. The determination of the target flux difference is accomplished on a monthly basis. However, updates of the target AFD are only implemented if the deviation is more than the measurement accuracy. It is superfluous to require "update" when the measured AFD is within the measurement accuracy of the target AFD. This change is consistent with current implementation of the Zion Technical Specification 4.2.2.A.3.

CTS 3.2.2.A.5 and 3.2.2.A.6

A. 26. The existing Specification for monitoring the Heat Flux Hot Channel Factor requires the turn-on power fraction to be monitored and surveilled with an "APDMS type surveillance." This terminology is no longer applicable to the plant. The equivalent turn on power limit has been administratively relocated to fuel Specifications and design procedures which assure that it remains at or above 100% RTP for the life of each core. Therefore, references to the power limit as a fraction of turn on power (P_T) have been conservatively rephrased in terms of fractions of RTP.

CTS N/A

A. 29. A Note has been added to proposed AFD SR 3.2.3.2 and SR 3.2.3.3 which clarify the use of the logged values. The Note indicates that AFD is considered to have been at the logged value for the duration of the preceding surveillance interval if the AFD values are not available. The values may still be available from computer logs even though the alarm is inoperable and should be utilized. This change is an administrative clarification of the methodology only and is consistent with NUREG-1431.

CTS 3.2.2.B.1.a

A. 31. Action 3.2.2.B.1.a of the existing Specification allows QPTR to be restored to within limits. Restoration of limits is always allowed and need not be explicitly stated. This change is consistent with the application of the Writer's Guide for the Restructured Technical Specifications (NUMARC 93-03, Section 4.1.6.g).

CTS 3.2.2.B.2, 3.2.2.B.3, 4.2.2.B.1.a, and 4.2.2.B.1.b

A. 33. This information has been administratively moved to Applicability requirements for the proposed Specification. This change is consistent with NUREG-1431.

CTS 3.2.2.C.2 and 4.2.2.C.2

A. 38. The allowance to monitor QPTR with incore thermocouples if an excore power range channel is inoperable is retained (CTS 3/4.2.2.C.2). This is an administrative retention of current requirements.

3.3 <u>INSTRUMENTATION</u>

3.3.1 <u>RTS INSTRUMENTATION</u>

CTS 2.1.1.A, 2.1.1.B.1 through 4.a, 2.1.1.B.5.a, 2.1.1.B.6 through 8, 2.1.1.C, and 2.1.2

A. 1. The Limiting Safety System Settings (LSSSs) have been moved to proposed specification 3.3.1, "Reactor Trip System (RTS)". A separate LSSS section is not part of the new Technical Specifications. The LSSS in the RTS Specification are shown as Allowable Values which, based on Zion Station specific setpoint methodology, establish a threshold for protective system actions to prevent exceeding acceptable limits during a Design Basis Accident. This change is purely administrative and intended to provide all reactor trip Functions in a single location in the Technical Specifications. The change is consistent with NUREG-1431.

CTS 2.1.1.B.4.b, 2.1.1.B.5.b, 2.1.1.B.6, 2.1.2.B Footnotes ★ and ★★, Fig. 2.1-2 ★★, and Table 3.1-1, 6A, 7A, and Footnotes ▿ and ▿▿.

A. 2. Refueling outage Z2R12 has been completed which completed the installation of the Gamma Metrics Neutron Monitors on both units. The footnotes and alternative values associated with pre-Z2R12 setpoints are no longer applicable and have been deleted. As such, this change is purely administrative.

CTS 2.1 Note 1 (Sheet 2)

L-A 3. Descriptive information related to f(ΔI) has been relocated to the Bases for clarification. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can

be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) in Section 5 of the Technical Specifications. This change is consistent with NUREG-1431. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and brief subject description in Appendix A.

CTS 2.1.1.B.4.a Note 1

A. 4. The f(ΔI) Function is revised consistent with the format of NUREG-1431. This change is in the format of the presentation only. There is no technical change.

CTS 2.1.1.A.2 Footnote ★ and 2.1.2.D Footnote ★.

A. 5. Installation of Gamma Metrics (License Amendment 143/137) has been completed for both Zion Station units. Therefore, the footnotes related to Gamma Metric installation have been deleted. As such, this change is purely administrative.

CTS 3.1.2.a and 4.1.2

A. 6. Testing and failed channel requirements are specified in the Improved Technical Specifications (ITS) Actions Table and Table 3.3.1-1 for each instrument Function. The markup and Discussion of Changes for the Functions in the Current Technical Specifications (CTS) Tables 3.1-1 and 4.1-1 delineate specific changes for each instrument Function. This change in format and presentation of information is consistent with NUREG-1431.

CTS 3.1.2.b

L-A. 7. In CTS 3.1.2.b, the requirement for testing only one channel of a protection set at a time has been moved to plant procedures to be consistent with the ITS. This requirement is adequately addressed by surveillance procedures and general plant testing philosophy. Removing multiple channels from operation within a given function simultaneously is not explicitly precluded by ITS, however multiple inoperable channels would, in many cases, result in entry into LCO 3.0.3, or would result in conditions precluding further unit operations. Changes to these surveillance procedures will be controlled in accordance with Zion plant procedures change processes.

CTS 3.1.2.C

A. 8. In CTS 3.1.2.c, the requirement to place failed channels or channels being tested in the tripped MODE has been revised to be consistent with NUREG-1431. NUREG-1431 and NRC Generic Letter 91-18 require the appropriate Technical Specification action to be entered if a component is rendered inoperable, the Technical Specifications will then prescribe the appropriate action to be taken.

CTS 4.1.2

A. 9. In CTS 4.1.2, the statement "Performance of any surveillance test in this specification is not required if the unit is in the hot or cold shutdown operating mode provided that prior to exceeding the hot shutdown mode the specified tests have been performed" has been deleted as it is adequately addressed by the new Specification SR 3.0.4. This is consistent with NUREG-1431. This change is purely administrative.

CTS 3.1.3

A. 10. Testing, failed channel requirements, and applicable actions are specified in the ITS Actions Table and Table 3.3.1-1 for each instrument Function. The markup and Discussion of Changes for the Functions on CTS Tables 3.1-1 and 4.1-1 delineate specific changes for each instrument Function. This change in format and presentation of information is consistent with NUREG-1431.

CTS Table 3.1-1

11. The following changes are related to CTS Table 3.1.1. The changes are in format only and are intended to simplify and clarify the information to the operators.

A. The "No. of Channels" column (Column 1) is changed to "Required Channels." With less than the required channels available for a Function, a Condition with the appropriate Required Actions is now specified on the new Table 3.3.1-1.

B. The "Minimum OPERABLE Channels" and "Minimum Degree of Redundancy" columns are eliminated from Table 3.1-1. This information including Note +++ is now incorporated into the Conditions provided for each Function. Notes are provided in each Condition, where appropriate, to allow testing when a channel is inoperable. These Notes specify the time allowed for testing. New actions allow continued operation with a single channel inoperable.

CTS Table 3.1.1 Column 1

11. The following change is related to CTS Table 3.1.1. The change is in format only and is intended to simplify and clarify the information to the operators.

L-A The "No. of Channels to Trip" column is eliminated from the Table and discussed in the Bases for each Function. This information provides details of design or process which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) in Section 5 of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 3.1-1

A. 12. In CTS Table 3.1.1, the "Operator Action" column is replaced with a "Conditions" column. Specific condition(s) are specified for each instrument Function. The Conditions specify the appropriate operator action for each instrument Function. All Conditions are listed in the Actions Table in the ITS. This format change is consistent with NUREG-1431. The changes to each instrument Function are evaluated separately in this document.

CTS Table 3.1-1

A. 13. The ITS includes a new column for each instrument Function. This column specifies the MODE(S) in which the instrument Function is required OPERABLE. The MODES specified for each instrument Function are based on the safety analyses assumptions made for that instrument Function or the diverse protection that Function provides. Specifying applicable MODES for each Function is consistent with NUREG-1431.

CTS Table 3.1-1

A. 14. An "Allowable Value" column has been added to the RTS Table and the "Setpoint" column removed. The Allowable Values for each Function (where applicable) have been calculated in accordance with WCAP-12582, "Westinghouse Setpoint Methodology for Protection Systems Zion Units 1 and 2, Eagle 21 Version" which has been previously approved by the NRC staff. The Allowable Values are used to determine channel OPERABILITY consistent with safety analysis assumptions. Trip Setpoints for the RTS instruments will be maintained in plant procedures. The inclusion of a single Allowable Value column is consistent with NUREG-1431. The OPERABILITY requirements for the instrumentation in Table 3.1-1 do not change. Therefore, this is a purely administrative change.

CTS Table 3.1-1

A. 15. A Surveillance Requirement column is included on the same Table in the ITS. This column contains the numbers of the Surveillance Requirements applicable to each instrument Function. Each Surveillance is numbered and identified, along with its Frequency, in the Surveillance Requirement section of the Technical Specification. The inclusion of the Surveillance Requirement numbers in the Function Table is for clarification to present all the information for a particular Function on a single Table. This format is consistent with NUREG-1431.

CTS Table 3.1-1 Items 2,3,4,and 5

17. Power Range Neutron Flux (low setpoint, high setpoint, high positive and negative flux rate)

A. Table 3.1-1 in the CTS establishes the minimum OPERABLE channels requirement at 3, with a requirement to shut down if less than 3 channels are OPERABLE. However, there are 4 channels of power range instrumentation. Therefore, CTS allow unlimited plant operation with one channel inoperable. The ITS requires 4

channels to be OPERABLE, but includes a Condition that allows unlimited plant operation with an inoperable channel provided that channel is placed in "Trip". These are the same requirements stated in a different manner. Therefore, this change is Administrative. This is consistent with NUREG-1431.

CTS Table 3.1-1, Item 6

18. Source Range Neutron Flux

A. The number of Required Channels is identified as "1" for the Sources Range Neutron Flux function. This is consistent with CTS Table 3.1-1 when considered in light of the exception provided by CTS 3.1.2.C. For the sources range neutron flux monitors, inoperable channels are not required to be placed in trip, and only one is required to be OPERABLE. Therefore, an inoperable monitor does not impede startup or continued operation in CTS. To retain this capability in ITS, only one monitor is specified as required. If more than one was specified, LCO 3.0.4 would not allow startup with a monitor inoperable unless the applicable Actions were taken. However, the applicable Actions would preclude startup. Therefore, to be consistent with CTS and to retain CLB, only one monitor is required.

CTS Table 3.1-1, Item 7.b

19. Intermediate Range Neutron Flux

A. The MODE of Applicability has been stated to be consistent with NUREG-1431 and accurately reflect the interlocks of P-6 and P-10. This change is a clarification of the OPERABILITY requirements of the intermediate range instrumentation and does not represent a technical change.

In the ITS, the number of Required Channels is identified as "1" for the Intermediate Range Neutron Flux function. This is consistent with CTS Table 3.1-1 when considered in light of the exception provided by CTS 3.1.2.c. For the intermediate range neutron flux monitors, inoperable channels are not required to be placed in trip, and only one is required to be OPERABLE. Therefore, an inoperable monitor does not impede startup or continued operation in CTS. To retain this capability in ITS, only one monitor is specified as required. If more than one was specified, LCO 3.0.4 would not allow startup with a monitor inoperable unless the applicable Actions were taken. However, the applicable Actions would preclude startup. Therefore, to be consistent with CTS and to retain CLB, only one monitor is required.

CTS Table 3.1-1, Items 8 and 9

20. Overtemperature ΔT and Overpower ΔT

A. The minimum OPERABLE channels requirement has been increased from 3 channels to 4 channels. Since the new Actions are constructed

to allow continued operation with a single channel inoperable, this format assures the reliability of the Function and that a single failure will not cause a loss of function. This is consistent with NUREG-1431.

A. The formulas and values for Overtemperature and Overpower ΔT calculations are moved from the Safety Limits section to Notes at the end of the RTS Specification. This is a change in format only and is consistent with NUREG-1431.

CTS Table 3.1-1, Items 10 and 12

21. Pressurizer Low Pressure and Pressurizer High Level

A. The minimum OPERABLE channel requirement has been increased from 3 to 4 for Pressurizer Pressure Low and from 2 to 3 for Pressurizer High Level. Since the new Actions are constructed to also allow continued operation with a single channel inoperable, this format change still assures the reliability of the Function and that a single failure will not cause a loss of function. Since there are no changes in instrumentation OPERABILITY requirements, this change is purely administrative. This change is consistent with NUREG-1431.

CTS Table 3.1-1, Item 11

22. Pressurizer High Pressure

A. The minimum OPERABLE channels requirement has been increased from 3 to 4. Since the new Actions are constructed to also allow continued operation with a single channel inoperable, this format still assures the reliability of the Function and that a single failure will not cause a loss of function. Since there are no changes in instrumentation OPERABILITY requirements, this change is purely administrative. This change is consistent with NUREG-1431.

CTS Table 3.1-1, Item 13

23. Low Primary Coolant Flow (P-7 and P-8)

A. The minimum OPERABLE channels requirement has been increased from 2 per loop to 3 per loop. Since the new Actions are constructed to also allow continued operation with a single channel inoperable, this format still assures the reliability of the Function and that a single failure will not cause a loss of function. Since there are no changes in instrumentation OPERABILITY requirements, this change is purely administrative. This change is consistent with NUREG-1431.

CTS Table 3.1-1, Items 14,15, and 16

24. RCP Bus Undervoltage, RCP Bus Underfrequency and RCP Breaker Trip

A. The minimum OPERABLE channels requirement for these Functions has been changed from 3 to 4. Since new Actions are constructed to

also allow continued operation with a single channel inoperable, this format still assures the reliability of the Function and that a single failure will not cause a loss of function. Since there are no changes in instrumentation OPERABILITY requirements, this change is purely administrative. This change is consistent with NUREG-1431.

CTS Table 3.1-1, Items 17 and 18

25. Low Steam Generator Level in Coincidence with Feed Flow - Steam Flow Mismatch and Low-Low Steam Generator Level

A. The minimum required channels are changed from 1 for Low Steam Generator Level Coincident with Feed Flow - Steam Flow to "2 per SG" and from 2 per loop for Low-Low Steam Generator Level to "3 per SG." Since the new Actions are constructed to also allow continued operation with a single channel inoperable, this format still assures the reliability of the Function and that a single failure will not cause a loss of function. Since there are no changes in instrumentation OPERABILITY requirements, this change is purely administrative. This change is consistent with NUREG-1431.

A. The Low-Low Steam Generator Level interlock with the loop isolation valve position is deleted. This interlock is no longer used since operation in MODES 1 and 2 with a loop isolation valve closed is no longer permitted as stated in the facility Operating License. Therefore, this change is purely administrative.

CTS Table 3.1-1, Item 20

27. Turbine Trip

A. The component parts of this Function are now specified, Low Auto Stop Oil Pressure and Turbine Stop Valve Closure. This format facilitates the inoperability of each of these Functions separately. Each of these Functions will initiate a reactor trip. This is consistent with NUREG-1431 and the Zion plant design.

CTS Table 3.1-1, Item 22

29. Reactor Trip Breakers

A. This Function is now divided into 3 Functions, Reactor Trip Breakers (RTB), Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms, and Reactor Trip Bypass Breakers and Associated Undervoltage Trip Mechanism. This format facilitates the inoperability of each of these Functions separately as opposed to relating all inoperabilities to the Reactor Trip Breakers. A Note has also been included to specify that the RTB Undervoltage and Shunt Trip Mechanisms are only required for closed, OPERABLE RTBs. Another Note has been included for the RTB Bypass Breakers and their Associated Undervoltage Trip Mechanisms to specify their Applicable Mode. This division represents an administrative

change to clarify the requirements which apply when a RTB, RTB Bypass Breaker or a diverse trip mechanism is inoperable.

CTS Table 3.1-1, Note +

A. 31. This generic note to place the unit in cold shutdown is not applicable in all cases and has been replaced by Conditions specific to the individual instrument Functions of the RTS Specification. The Conditions specify the appropriate operator action for each instrument Function. This allows the actions applicable to an inoperable Function to specify the appropriate MODE change necessary to place the unit in a condition where the inoperable instrument Function is no longer required to be OPERABLE. These MODE changes are consistent with the applicable safety analyses assumptions, and assure consistency between the MODE of Applicability and the Required Actions.

CTS Table 3.1-1, Notes **, ###, and ####

L-A. 32. The applicable setpoint document references have been moved to the Bases. Reference to this document was provided to specify an allowable tolerance for channel calibration "as left values" based on the Current Technical Specifications specifying absolute values. The proposed Technical Specifications specify the Allowable values, as previously addressed, and contain inequalities where necessary (instrument channels). As such, the footnote referencing Zion Station's setpoint methodology provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to the Bases without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 3.1-1, Note ★

A. 34. This Note permitting normal operation when block conditions exist has been incorporated in the applicable Actions for the instrument Function to which the Note applies. The applicable MODE and specified Actions describe appropriate plant conditions and actions for this instrument Function consistent with NUREG-1431.

CTS Table 3.1-1, Notes ★★ and ##

A. 35. These Notes represent "actions" for the operator. Consistent with NUREG-1431 format, these Notes are incorporated into the Actions for the instrument Functions to which it applies. If the MODE of Applicability for a given Function is different than "Hot Shutdown" the Action is modified to place the unit in a MODE or Condition in which the affected instrument Function is no longer required OPERABLE.

CTS Table 3.1-1, Note ***

A. 36. The Actions required by this Note, for the source range instrumentation, have been incorporated into the applicable Actions for this instrument Function (See Discussion #18 above). This is consistent with NUREG-1431 and represents a format change only.

CTS Table 3.1-1, Notes # and ##

A. 37. This Note consists of a MODE of Applicability, required channel, and Action information. This information has been incorporated in the applicable section of the new Technical Specifications consistent with NUREG-1431. This represents a format change only. For a detailed discussion of changes to the affected instrument Functions see the Automatic Reactor Trip Logic and Reactor Trip Breaker Function discussions.

CTS Table 4.1-1 Heading

A. 38. The instrumentation surveillance test definitions have been revised in accordance with NUREG-1431. Old definitions have been revised as detailed in Section 1.0 above. In addition, new test names have been introduced. The new surveillance test terms are summarized below:

a. The channel functional test definition in the CTS has been divided into two new definitions as follows:

1. CHANNEL OPERATIONAL TEST (COT) - This term is intended to cover the bulk of the instrument channels where the signal is processed (either analog or digital).

2. TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) - This term is intended to cover those instrument channels where the trip device signal is not processed but used directly initiate a function. Examples include undervoltage and underfrequency relays, turbine trip and RCP breaker position trip.

b. ACTUATION LOGIC TEST - This term exists in the CTS but was not used in the Reactor Protection System Specification. The equivalent logics portion of the CHANNEL FUNCTIONAL TEST definition was applied instead. The new Technical Specifications use the ACTUATION LOGIC TEST term and the logic portion of the CHANNEL FUNCTIONAL TEST definition has been deleted.

The new instrumentation defined terms are consistent with NUREG-1431. The use of these terms is intended to standardize the terminology within the Westinghouse Owners Group.

CTS Table 4.1-1 Title

A. 39. Table 4.1-1, "Reactor Protection System Testing and Calibration Requirements," is not used in the ITS. The requirements of this Table are incorporated into CTS Table 3.1-1, and CTS Table 3.1-1

becomes Table 3.3.1-1, in the ITS. This is a format change only, technical differences in testing requirements are discussed on an instrument Function basis.

CTS Table 4.1-1, Item 1
40. Manual Reactor Trip
A. The required surveillance is changed from a CHANNEL FUNCTIONAL TEST to a TADOT. This is in accordance with the discussion in #38 above regarding the new instrument test definitions. This change is consistent with NUREG-1431 and represents an administrative change to conform with the new standard. The Frequency remains unchanged at 18 months or "R."

CTS Table 4.1-1 Item 1, Remarks No. 1
40. Manual Reactor Trip
L-A. The remarks from Table 4.4-1 are incorporated into the Bases for the new Surveillance Requirement SR 3.3.1.13 or into plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. Changes to procedures will be made in accordance with the Zion procedure control process. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 4.1-1, Items 2,3,4, and 6
41. Power Range Neutron Flux Instrumentation

The Surveillance Requirements for these instrument channels have been reorganized and revised to be consistent with NUREG-1431.

A. The daily heat balance calibration (D^3) is changed to SR 3.3.1.2 and assigned to the Power Range Neutron Flux High Function. This Surveillance need only be noted for one power range instrument Function as the adjustments performed affect the detector output and consequently all the power range Functions. Assigning this test to a single power range Function is an administrative change that conforms to NUREG-1431.

The daily heat balance Surveillance Requirement is clarified by requiring a comparison to and adjustment of the excore instrumentation if the absolute difference is >2%. This change is consistent with the Zion interpretation of CTS and the Zion General Operating Procedures. This change is an administrative correction and is consistent with NUREG-1431.

A. A Note modifies proposed SR 3.3.1.2 by stating that the Surveillance is not required to be performed until 12 hours after reaching 40% RTP. The 40% RTP requirement is necessary due to the inaccuracy of the calorimetric below this power. The 40% RTP requirement is consistent with the Zion interpretation of CTS and conforms to the Zion General Operating Procedures for the first calorimetric when escalating power. The 12 hours allowed to perform this Surveillance is a reasonable time and is consistent with the CTS interpretation of one shift.

A. The incore to excore axial imbalance comparison (EFPM[5]) is changed to SR 3.3.1.3. This surveillance verifies the F(ΔI) input to the Overtemperature ΔT Function. As such, this SR has been assigned to the Overtemperature ΔT Function. Assigning this test to the Overtemperature ΔT Function is an administrative change that conforms to NUREG-1431.

A. The incore to excore axial imbalance comparison (EFPM[5]) Surveillance Requirement is corrected by requiring a comparison and adjustment if the absolute difference is ≥ 3%. The requirement to adjust NIS channels when the absolute difference is ≥ 3% is consistent with CTS 3.2.2.C and NUREG-1431.

A. A Note clarifies ITS SR 3.3.1.3 (CTS 3.2.2.C.1) by stating that the Surveillance is only required to be performed when THERMAL POWER is > 90% RTP. This change is consistent with the Zion interpretation of CTS and the Zion General Operating Procedures. This change is an administrative correction that is consistent with NUREG-1431.

A. The CHANNEL FUNCTIONAL TESTS for the power range instrumentation are performed as part of the quarterly CHANNEL CALIBRATION. This is an administrative change to standardize terminology.

CTS Table 4.1-1, Items 6 and 7

42. Source and Intermediate Range Instrumentation

A. The Note modifying the CHANNEL CHECK Surveillance has been deleted. Specifying "when in service" is not required. SR 3.0.4 requires surveillances to be performed prior to entering the MODE of Applicability and while in the MODE of Applicability for the affected equipment. When the equipment is no longer required to be OPERABLE by Technical Specifications the surveillances do not have to be performed.

CTS Table 4.1-1, Items 8 and 9

43. Overtemperature and Overpower ΔT

A. The CHANNEL CALIBRATION required every 18 months is now modified by a Note. The Note requires that the Reactor Coolant System resistance temperature detector bypass loop flow rate be verified. The test will verify the rate lag compensation for flow from the

core to the RTDs. This change is purely administrative since verification of the rate lag compensation was implicit in the definition for CHANNEL CALIBRATION. This change is consistent with NUREG-1431.

CTS Table 4.1-1, Items 10,11,12, and 13

44. Pressurizer Low Pressure, Pressurizer High Pressure, Pressurizer High Level, Low Primary Coolant Flow

A. The current CHANNEL FUNCTIONAL TEST requirement has been changed to a CHANNEL OPERATIONAL TEST. The Frequency remains unchanged. This change represents an administrative change to make the new Specification consistent with NUREG-1431.

CTS Table 4.1-1, Items 14 and 15

45. RCP Bus Undervoltage and RCP Bus Underfrequency

A. The requirement to perform a CHANNEL FUNCTIONAL TEST every 18 months for these Functions has been deleted. The CTS and proposed ITS require a CHANNEL CALIBRATION every 18 months which encompasses the same functional requirements as a CHANNEL FUNCTIONAL TEST. Therefore, specifying a CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST every 18 months is redundant. This change is consistent with NUREG-1431.

CTS Table 4.1-1, Item 16

46. RCP Breaker Trip

A. The CHANNEL FUNCTIONAL TEST for this instrument Function has been changed to a TADOT. The Frequency remains unchanged. The RCP Breaker Trip Function does not have signal processing performed on the associated channels and requires only the TADOT Surveillance. The new terminology represents an administrative change to assign Functions the appropriate test requirements consistent with NUREG-1431.

CTS Table 4.1-1, Items 17 and 18

47. Low-Low Steam Generator Level and Low Steam Generator Level in Coincidence with Feed Flow Steam Flow Mismatch

A. The current CHANNEL FUNCTIONAL TEST requirement has been changed to a CHANNEL OPERATIONAL TEST. The Frequency remains unchanged. This change represents an administrative change to make the new Specification consistent with NUREG-1431.

CTS Table 4.1-1, Item 21

49. Automatic Reactor Trip Logic

A. The monthly CHANNEL FUNCTIONAL TEST has been changed to an ACTUATION LOGIC TEST. This change represents an administrative change to conform to industry standard defined testing

requirements. The Frequency remains the same. The use of ACTUATION LOGIC TEST is consistent with NUREG-1431.

CTS Table 4.1-1, Item 22

50. Reactor Trip Breaker and Undervoltage and Shunt Trip Mechanisms.

A. The RTB Undervoltage and Shunt Trip Mechanisms have been separated into an individual line item. This is a clarification of OPERABILITY requirements and allowed outage times. Separate Conditions apply in the new Specifications to the RTBs and the diverse trip mechanisms. This is a format change only.

A. The required test was changed from a CHANNEL FUNCTIONAL TEST to a TADOT. The Frequency remains unchanged. This change represents an administrative change to conform to the industry standard defined test term consistent with NUREG-1431.

L-A. The applicable elements of Note #9 from Table 4.4-1 are relocated to the Bases for the associated Surveillance Requirement specified in the new Technical Specification. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 4.1-1 Notation

A. 53. The Table notation footnote has been deleted. In the ITS this Table is not used. All Frequency terms are spelled out in the Specifications. This is a format change only.

CTS 1.1 and Table 4.1-1

A. 54. Note 1 and Note 2 (Overtemperature and Overpower ΔT formulas) from the Reactor Core Safety Limits, Section 1.1, have been moved to the new Reactor Trip System Instrumentation Specification 3.3.1. This is a format change only to conform to NUREG-1431.

CTS 3.2.2.G.1.m

L-A. 55. The details of the performance of a flux map have been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to plant procedures without an impact on safety. Changes to these details will be controlled in accordance with Zion plant procedure change process.

CTS 3.1.1

A. 57. Three Notes have been included which modify the LCO. The purpose of the Notes is to allow a specified period of time to conduct surveillance testing without entering an Action for multiple

inoperable channels. The inclusion of the Notes is necessary to support the usage rules of NUREG-1431 and is not considered a technical change. This same allowance is contained in CTS Notes "##" and "+++". The technical aspects associated with these Notes are discussed in Discussion #30 in Section III.4 and Discussion #33 in Section III.4, of this evaluation.

CTS Table 4.1-1, Item 21

A. 59. A second note has been proposed to SR 3.3.1.5 as applied to the Reactor Protection Auto Trip Logic. Note 2 to SR 3.3.1.5 will exclude the need to verify Reactor Trip Bypass Breaker (RTBB) actuation when performing Reactor Protection ACTUATION LOGIC TESTing on a 31 day STAGGERED TEST BASIS. SR 3.3.1.14 will require the performance of an ACTUATION LOGIC TEST of the Reactor Trip Logic to include the RTBBs on an 18 month frequency. Automatic trip logic testing for the RTBBs cannot be performed at Zion Station without inducing a reactor trip, and as such cannot be performed on line. The frequency of this test has been proposed at 18 months and is consistent with Zion Station's current licensing basis. Therefore, this Note is a format change only and purely administrative.

A. Finally, a third note has been proposed to SR 3.3.1.5, as applied to the Reactor Protection Auto Trip Logic. Note 3 exempts the performance of logic testing for the Safety Injection Input from Engineered Safety Feature Actuation System every 31 days on a STAGGERED TEST BASIS. Trip Actuation testing of the Safety Injection Input from Engineered Safety Feature Actuation System cannot be performed without inducing a reactor trip and as such, will be performed on an 18 month frequency. This is consistent with the Zion CLB. Therefore, this Note is a format change only and purely administrative.

3.3.2 <u>ENGINEERED SAFETY FEATURE ACTUATION (ESFAS) INSTRUMENTATION</u>

CTS 3.4.2.a

A. 1. Testing and failed channel requirements are specified in the Improved Technical Specification (ITS) Action Table and Table 3.3.2-1 for each instrument Function. The markup and Discussion of Changes for the Functions in the Current Technical Specifications (CTS) Tables 3.4-1 and 4.4-1 delineate specific changes for each instrument Function. This change in format and presentation of information is consistent with NUREG-1431.

CTS 3.4.2.b

LA. 2. In CTS 3.4.2.b, the requirement limiting testing to only one channel of a protection set at a time has been moved to plant procedures to be consistent with the ITS. This requirement can be adequately addressed by surveillance procedures and general plant testing philosophy. Removing multiple channels from operation within a given function simultaneously is not explicitly precluded by ITS, however multiple inoperable channels would result in entry

into LCO 3.0.3, or would result in conditions precluding further unit operations. Changes to these surveillance procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.4.2.c

A. 3. The CTS generic requirement (3.4.2.C) to place failed channels or channels being tested in the tripped MODE is no longer used. This requirement conflicts with CTS 3.4.2.d and 3.4.5. These latter CTS allow channels to be bypassed for up to 12 hours for testing, and 6 hours of plant operation with less than the required channels, respectively. Placing a channel in Trip could cause a plant trip, thereby negating the specific allowances of CTS 3.4.2.d and 3.4.5. In lieu of the generic requirement, ITS LCO 3.2.2 will include appropriate Actions for inoperable instrumentation, including instrumentation made inoperable by testing. These Actions will ensure the plant is placed in the appropriate MODE for the existing plant conditions without incurring a plant trip transient.

CTS 4.4.2

A. 4. Surveillance Requirements for each instrument Function are specified on Table 3.3.2-1. This change in format and presentation of information is consistent with NUREG-1431.

CTS 3.4.3

A. 5. The MODE of Applicability for each instrument Function is specified on Table 3.3.2-1 and is consistent with the assumptions of the applicable safety analyses and the applicable MODE for the affected equipment. This change represents an administrative change to improve clarity.

CTS 3.4.4, 3.4.5

A. 6. Testing, failed channel requirements, and applicable Actions are specified in the ITS Actions Table and Table 3.3.2-1 for each instrument Function. The licensee's markup and Discussion of Changes for the instrument Functions on Table 3.4-1 and CTS 4.4-1 delineate specific changes for each instrument Function. This change in format and presentation of information is consistent with NUREG-1431.

CTS Table 3.4-1 Headings

A. 7. The ITS includes a new column for each instrument Function. This column specifies the MODE(S) in which the instrument Function is required OPERABLE. The MODES specified for each instrument Function are based on the safety analyses assumptions made for that instrument Function and the applicable MODE for the affected equipment. Specifying applicable MODES for each Function is consistent with NUREG-1431.

CTS Table 3.4-1 Column 1

A. 8. The "No. of Channels" column (column 1) is changed to "Required Channels." With less than the required channels available for a

Function, a Condition with the appropriate Required Actions is specified on the proposed Table 3.3.2-1. This change is consistent with the format of the ITS and is intended to simplify and clarify the information presented to the operator. The Actions specified for each instrument Function are discussed on an individual Function basis.

CTS Table 3.4-1 Column 2

L-A. 9. The "No. of Channels to Trip" column (column 2) is eliminated from the Table and discussed in the Bases for each Function. This change is consistent with NUREG-1431 and represents a change only in the location of the information. This information provides details of design or process which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 3.4-1 Column 3

A. 10. The "Minimum OPERABLE Channels" column is eliminated from Table 3.4-1. This information is now incorporated into the Conditions provided for each instrument Function. Notes are also provided in each Condition where appropriate, to allow testing when a channel is inoperable. The new Conditions and Notes supply specific information for each Function regarding operator action required for one or more instrument channels inoperable. This change is consistent with the format of the ITS and represents a change in presentation only. The specific changes to individual instrument Functions are discussed on a Functional basis below.

CTS Table 3.4-1 Column 4

A. 11. The "Minimum Degree of Redundancy" column is eliminated from Table 3.4-1. This information is now incorporated into the Conditions provided for each instrument Function. The new Conditions and Notes supply specific information for each Function regarding operator action required for one or more instrument channels inoperable. The requirements for redundancy are discussed in detail in the expanded Bases of the ITS. This change is consistent with the format of the ITS and represents a change in presentation only. The specific changes to individual instrument Functions are discussed on a Functional basis below.

CTS Table 3.4-1 Column 5

A. 12. The "Operator Action" column is replaced with a "Conditions" column. Specific Condition(s) are specified for each instrument Function. The Conditions specify the appropriate operator action for each instrument Function. All Conditions are listed in the Actions Table of the ITS. This presentation of required operator

actions is consistent with NUREG-1431 and represents a format change only. Specific changes to individual instrument Functions are discussed on a Functional basis below.

CTS Table 3.4-1

A. 13. A Surveillance Requirement column is included in the proposed Table 3.3.2-1. This column contains the number of the Surveillance Requirements applicable to each instrument Function. Each Surveillance is numbered and identified along with its Frequency in the Surveillance Requirement section of the Technical Specifications. The inclusion of the Surveillance Requirement numbers in the Function table is for clarification to present all the information for a particular Function on a single table. This format change is consistent with NUREG-1431.

CTS Table 3.4-1 Item I.2

A. 16. Safety Injection - Automatic Actuation
The title of this Function was changed to more accurately describe the components encompassed by the Function (logic and relays). This is an editorial change consistent with NUREG-1431.

CTS Table 3.4-1 Item I.3

A. 17. Safety Injection - Low Pressurizer Pressure
The minimum OPERABLE channel requirement has been changed from 2 to 3 channels. Since the new Actions are also constructed to allow continued operation with a single channel inoperable as in the CTS this change is purely administrative. This change is also consistent with NUREG-1431.

CTS Table 3.4-1 Item I.4

A. 18. Safety Injection - High Steam Line Differential Pressure

a. The title of this Function has been revised to delete the reference regarding the interlock with loop isolation valves. Operation with a loop isolated is not permitted and this reference is no longer applicable. This represents an administrative change.

b. The minimum OPERABLE channel requirement has been increased from 2 to 3 per steam line. Since the CTS Actions are also constructed to allow continued operation with a single channel inoperable, as in the CTS this change is purely administrative. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item I.5

A. 20. Low-Low T_{avg}
The minimum OPERABLE channel requirement has been changed from 3 to 1 per loop. Since the Actions also allow continued operation with one channel inoperable as in the CTS this change is purely administrative.

CTS Table 3.4-1 Item I.5
A. 21. Low Steam Line Pressure
The minimum OPERABLE channel requirement has been changed from 3 to 1 per steam line. Since the Actions also allow continued operation with one channel inoperable as in the CTS this change is purely administrative.

The time constraints for the lead/lag controller reference in NUREG-1431 are generic industry numbers. The Station-specific values are 10 seconds for lead, and 1.8 seconds for lag. Setpoints have a ± 1% established tolerance for instrument channel and setpoint errors.

CTS Table 3.4-1 Item I.6
A. 22. High Containment Pressure
The minimum OPERABLE channel requirement has been changed from 3 to 4. Since the Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Item II.2
A. 24. Containment Spray - Automatic Actuation
The title of this Function was changed to more accurately describe the components encompassed by the Function (logic and relays). This is an editorial change consistent with NUREG-1431.

CTS Table 3.4-1 Item II.3
A. 25. Containment Spray - High-High Containment Pressure
The minimum OPERABLE channel requirement has been changed from 3 to 4. Since the Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Item III.A.2
A. 28. Reference to safety injection has been deleted from the Technical Specification Phase A Instrumentation line item. This item only provided reference that any safety injection results in containment isolation. Based on this being a direct output of safety injection (no separate logic system), surveillance of this function and any Required Actions is directly addressed by the Safety Injection function itself. Details on system functions and interrelationships are addressed in the Bases of the ITS. As such, deletion of this item is purely administrative.

CTS Table 3.4-1 Item III.B.2
A. 30. Containment Isolation - Phase B - Automatic Actuation
The title of this Function was changed to more accurately describe the components encompassed by the Function (logic and relays). This is an editorial change consistent with NUREG-1431.

CTS Table 3.4-1 Item III.B.3

A. 31. Containment Isolation - Phase B - High-High Containment Pressure
The minimum OPERABLE channel requirement has been changed from 3 to 4. Since the Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Item IV.2

A. 33. Steam Line Isolation - Automatic Actuation
The title of this Function was changed to more accurately describe the components encompassed by the Function (logic and relays). This is an editorial change consistent with NUREG-1431.

CTS Table 3.4-1 Item IV.3

A. 34. Steam Line Isolation - High-High Containment Pressure
The minimum OPERABLE channel requirement has been changed from 3 to 4. Since the Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Item IV.4

A. 36. Steam Line Isolation - Low-Low T_{avg}
The minimum OPERABLE channel requirement has been revised from 3 to 1 per loop (total of four) to be consistent with NUREG-1431. Since the new Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Item IV.4

A. 37. Steam Line Isolation - Low Steam Line Pressure
The minimum OPERABLE channel requirement has been revised from 3 to 1 per steam line (total of four) to be consistent with NUREG-1431. Since the new Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Items V.2, V.[illegible]

A. 40.a. Auxiliary Feedwater - Automatic
The title of this Function was changed to more accurately describe the components encompassed by the Function (logic and relays). This is an editorial change consistent with NUREG-1431.

40.c. The format of this function has been revised to be consistent with the presentation contained in NUREG-1431. AFW Automatic Actuation Logic consists of relay and contact actuation developed in the circuitry of the auxiliary feed pump control circuits. Input signals are derived from the steam generator water level Low-Low Function and the reactor coolant has Undervoltage Function.

CTS Table 3.4-1 Item V.3
A. 41. Auxiliary Feedwater - SG Water Level Low-Low
The minimum OPERABLE channel requirement has been revised from 2 per SG to 3 per SG to be consistent with NUREG-1431. Since the new Actions also allow continued operation with one channel inoperable as in the CTS, this change is purely administrative.

CTS Table 3.4-1 Item V.4
A. 42. Auxiliary Feedwater - Undervoltage - RCP Busses
The minimum OPERABLE channel requirement has been revised from 3 to 1 per bus (total of three) to be consistent with NUREG-1431. Since the actions allow continued operation with one channel inoperable, this change is purely administrative.

CTS Table 3.4-1 Item V.5
A. 43. Auxiliary Feedwater - SI
Reference to safety injection (SI) has been deleted from the Technical Specification Auxiliary Feedwater Instrumentation line item. This item only provided reference that any safety injection results in an auxiliary feedwater auto start. Based on this being a direct output of safety injection (no separate logic system), surveillance of this function and any Required Actions is directly addressed by the Safety Injection function itself. Details on system functions and interrelationships are addressed in the Bases of the ITS. As such deletion of this item is purely administrative.

CTS Table 3.4-1, Footnotes # and ★ and ##
L-A. 50. The applicable setpoint references are moved to the expanded Bases of the ITS. References to setpoint information and the refueling outages that are complete have been deleted from the Specification. Reference to the Limiting Safety System Settings (LSSS) is not necessary since this information is now shown in the ESFAS Specification as Allowable Values and thus it is redundant. The footnote provides details which are not directly pertinent to the actual requirement. Since these details are not necessary, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 3.4-1, Footnote ★★
L-A. 51. The Note describing switch operation has been moved from the Specification to the Bases. In ITS, this information is contained in the expanded Bases. This information provides details of design or process which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control

Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 3.4-1 Footnote ***

A. 52. The Note which refers to "Maintain Hot Shutdown" represents actions for the operator. Consistent with NUREG-1431, this Note has been incorporated into the Required Actions for the instrument Functions to which it applies. If the MODE of Applicability for a given Function is different than "Hot Shutdown" the Action has been modified to place the unit in a MODE or Condition in which the affected instrument Function is no longer required OPERABLE.

CTS Table 4.4-1 Headings

A. 53. The instrumentation surveillance test definitions have been revised in accordance with NUREG-1431. The changes are justified in the licensee's Discussion of Changes for Section 1.0 "Definitions" of the CTS. Old definitions have been revised and new test names introduced. The new surveillance test terms are summarized below:

a. The old CHANNEL FUNCTIONAL TEST definition has been divided into two new definitions as follows:

1. CHANNEL OPERATIONAL TEST (COT) - This term is intended to cover the bulk of the instrument channels where the signal is processed (either analog or digital).

2. TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) - This term is intended to cover those instrument channels where the trip device signal is not processed but used directly to actuate a Function, such as a manual switch.

b. ACTUATION LOGIC TEST - This term exists in the CTS definitions but was never applied in the Safeguards Instrument Specification. The logics portion of the current CHANNEL FUNCTIONAL TEST definition was used instead. The proposed Safeguards Instrument Specification uses the ACTUATION LOGIC TEST definition. The logic portion of the CHANNEL FUNCTIONAL TEST definition no longer exists.

c. MASTER RELAY TEST - This term exists in the current Zion Technical Specification definitions but was not applied in the Safeguards Instrument Specification. The use of this defined term is consistent with NUREG-1431.

d. SLAVE RELAY TEST - This new term has been added to the Zion defined terms consistent with NUREG-1431. This test is required for equipment actuation relays. Usage of this term in LCO 3.3.2 has been modified by a note which excludes

testing of inoperable actuated equipment and actuated equipment that is in its required position. This note is intended to preclude failure of SR 3.3.2.5 and to declare ESFAS inoperable as a result of actuated equipment which cannot be actuated or continuity tested. This change is consistent with Zion Station's current licensing basis (CTS 3.4.3) which requires safeguards instrumentation and control to be operable when the engineered safeguards equipment actuated is required to be operable.

The use of these terms is intended to standardize testing and terminology in Westinghouse plants.

CTS Table 4.4-1

A. 54. Table 4.4-1, "Engineered Safeguards System Testing and Calibration Requirements" is not used in NUREG-1431. A single table is used which shows all requirements for a given instrument Function. This is a format change only, technical differences in testing requirements are discussed on an instrument Functional basis.

CTS Table 4.4-1 Item I.1

A. 55. Safety Injection - Manual

The required surveillance is changed from a CHANNEL FUNCTIONAL TEST to a TADOT. This is in accordance with the discussion in item #53 regarding the new instrument test definitions. This change is consistent with NUREG-1431. The Frequency remains unchanged at 18 months.

CTS Table 4.4-1 Item I.2

A. 56. Safety Injection - Automatic Actuation

This Function consists of logic and actuating relays (master and slave) and currently requires a periodic CHANNEL FUNCTIONAL TEST. For this Function, the test involves verification that the appropriate SI equipment actuates on a SI signal. The CTS term is eliminated. It is replaced with NUREG-1431 terminology as detailed in discussion 53 of this section. The applicable NUREG-1431 terminology is SLAVE RELAY TEST, and involves the same verification of SI equipment actuation as the CTS. There is no change in TS requirements, and this change is Administrative. This is consistent with NUREG-1431.

CTS Table 4.4-1 Item II.1

A. 57. Containment Spray - Manual Actuation

The required surveillance is changed from a CHANNEL FUNCTIONAL TEST to a TADOT. This is in accordance with the discussion in item #53 regarding the new instrument test definitions. This change is consistent with NUREG-1431. The Frequency remains unchanged at 18 months.

CTS Table 4.4-1 Item III.A.1
A. 59. Phase A - Manual
The required surveillance is changed from a CHANNEL FUNCTIONAL TEST to a TADOT. This is in accordance with the discussion in item #53 regarding the new instrument test definitions. This change is consistent with NUREG-1431. The Frequency remains unchanged at 18 months.

CTS Table 4.4-1 Item III.B.1
A. 61. Phase B - Manual
The required surveillance is changed from a CHANNEL FUNCTIONAL TEST to a TADOT. This is in accordance with the discussion in item #53 regarding the new instrument test definitions. This change is consistent with NUREG-1431. The Frequency remains unchanged at 18 months.

CTS Table 4.4-1 Item IV.1
A. 63. Steam Line Isolation - Manual
The required surveillance is changed from a CHANNEL FUNCTIONAL TEST to a TADOT. This is in accordance with the discussion in item #53 regarding the new instrument test definitions. This change is consistent with NUREG-1431. The Frequency remains unchanged at 18 months.

CTS Table 4.4-1 Item V.1
A. 66. AFW - Manual
This Function has been eliminated from the ESFAS Specification as explained in item #39 of this document. This Function is adequately tested as part of the Inservice Testing Program.

CTS Table 4.4-1 Item V.2
A. 67. This function consists of three separate actuation logics associated with the auxiliary feedwater components. The CTS monthly CHANNEL FUNCTIONAL TEST has been replaced with the appropriate logic tests assigned to the Function.

The turbine driven pump start on steam generator low-low level cannot be tested while the unit is operating. Therefore, the ACTUATION LOGIC TEST is only required on an 18 month Frequency. The 18 month Frequency is consistent with CTS Table 4.4-1 Note b.

CTS Table 4.4-1 Item V.4
A. 68. AFW - Undervoltage - RCP Busses
The CHANNEL FUNCTIONAL TEST requirement has been deleted. The frequency associated with this test is the same as the channel calibration, therefore this test is duplicative of the calibration.

CTS Table 4.4-1 Item VI.1
A. 69. Steam Generator (S/G) Water Level High
The Surveillance Requirements associated with the SG Water Level High-High Function have been incorporated in the Turbine Trip and

Feedwater Isolation Function consistent with NUREG-1431. This change is purely administrative.

CTS Table 4.4-1 Notes a and b

A. 70. Notes "a" and "b" on Table 4.4-1 have been deleted since the information contained in these notes is only applicable to the terminology which exists in the Zion CTS. As stated previously in this document, the existing CHANNEL FUNCTIONAL TEST has been eliminated and specific ACTUATION LOGIC TESTS, MASTER RELAY TESTS and SLAVE RELAY TESTS have been proposed. For each of these tests a definition has been provided in Section 1.1, "Definitions". The MASTER RELAY TEST will be performed on the same Frequency as an ACTUATION LOGIC TEST. The MASTER RELAY TEST will ensure each master relay is energized and that a continuity check will be made up to and including the slave relay. The SLAVE RELAY TEST will be performed on a quarterly basis and includes, as a minimum, a continuity check of the associated testable actuation devices. Testing of the SG Water Level Low start of the Turbine Driven Auxiliary Feedwater pump is specified in the ITS as every 18 months.

CTS 3.4.2.d

A. 71. CTS Specification 3.4.2.d states that during testing of each Automatic Actuation Channel, the channel may be bypassed for up to 8 hours for actuation logic and master relay testing and 12 hours for slave relay testing provided the remaining Automatic Actuation Channel is OPERABLE. NUREG-1431 contains a note in the Conditions which apply to an inoperable Automatic Actuation Logic train which allows a logic train to be bypassed for surveillance testing provided the other train is OPERABLE. To eliminate the potential for mis-application of the Note contained in NUREG-1431 and to provide consistency with Note usage, the information relative to bypassing an Automatic Actuation Logic train for surveillance testing has been moved to the LCO. The Note has been slightly reworded to indicate that entry in the applicable Condition may be delayed for up to 8 hours for actuation logic and master relay testing and 12 hours for slave relay testing provided the remaining Automatic Actuation Channel is OPERABLE. This is consistent with the CTS and is a purely administrative change.

3.3.3 POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

CTS 3.8.8.B.1, 3.8.9 Applicability, and Table 3.14-1 Item 1.C

A. 1. The MODES in which the Post Accident Monitoring Instrumentation is required to be OPERABLE has been moved from the Applicability to proposed Table 3.3.3-1. This change was made to provide consistency with the RTS and ESFAS Specifications. In addition, MODE 7 has been deleted since the only requirement specified (Power Level) is also stated in each Low Power Physics LCO. The LCOs have not changed the 5% power level required. This change is editorial in nature and consistent with NUREG-1431.

CTS 3.8.9 Action b

A. 3. Proposed Condition C directs the operator to Table 3.3.3-1 whenever one or more functions with two required channels are inoperable. The Completion Time for Condition C is immediately. This is a change in format only. The specific Conditions referenced in Table 3.3.3-1 are discussed later in this document.

CTS 3.8.8.B Action 2

A. 6. Condition G applies to two hydrogen monitors inoperable. The Required Action is to restore one hydrogen monitor to an OPERABLE status within 72 hours. The 72 hour restoration time is consistent with the action contained in CTS 3.8.8.B. "Containment Hydrogen Sampling". As such, the addition of this Condition is a change in format only.

CTS 3.8.8.B Action 2

A. 7. Two new Conditions (Conditions F and H) have been proposed when the Required Actions and Completion Times of Conditions E and G are not met. Condition H applies when one of the two hydrogen monitors has not been returned to an OPERABLE status within 72 hours. The Required Action of Condition H is to be in at least MODE 3 within 6 hours. Placing the unit in MODE 3 within 6 hours is consistent with CTS 3.8.8.B.2. Condition E applies to all other Post Accident Monitoring (PAM) Functions except Containment Area (High Radiation) and Reactor Vessel Water Level. Condition F corresponds to the shutdown statement contained in CTS 3.8.9.b to "...be in at least MODE 4 within the next 12 hours". Thus, the addition of Condition F and H are format changes only and are purely administrative.

CTS Table 3.8.9-1

A. 8. Proposed Table 3.3.3-1 contains a new Applicable Mode column consistent with the format used in the RTS and ESFAS Specifications. This change is purely administrative.

CTS Table 3.8.9-1 Column 1

A. 9. In CTS Table 3.8.9-1, the Total Number of Channels column has been deleted. This information is not required in the Specification as the actions are based on the Required Number of Channels. This is an administrative change consistent with NUREG-1431.

CTS Table 3.8.9-1 Column 3

A. 10. In CTS Table 3.8.9-1, the Minimum OPERABLE Channel column has been deleted. As a result of the change of format, this information is not required. The new Actions specify 1 channel or 2 channels inoperable instead of "one less than." This is an administrative change consistent with NUREG-1431.

CTS Table 3.8.9-1 Items 8 and 10

A. 11. In CTS Table 3.8.9-1, the number of required channels for SG water level (wide range) and AFW flow rate were revised from "1/SG" to "4." Requiring the total number of channels OPERABLE conforms to

the new Actions of NUREG-1431. This change is purely administrative.

CTS Table 3.8.9-1 and Table 4.8.9-1

A. 12. Two additional Functions are included in the PAM Specification. Containment Area Radiation (High Range) from CTS 3.14, "Plant Radiation Monitoring" and the Hydrogen Monitors from CTS 3.8.8.B, "Containment Hydrogen Sampling." These instruments meet the criteria for inclusion in the PAM Specification. Placing the requirement for these instruments in the PAM Specification is consistent with the ITS and represents an administrative change.

CTS Table 3.8.9-1

A. 13. A new column has been added to the proposed Table 3.3.3-1. This column contains the applicable Conditions to be entered whenever one or more functions with one or more required channels are inoperable. This change is consistent with the format used in the RTS and ESFAS Specifications and is purely administrative.

CTS Table 3.8.9-1, Footnote ***

L-A. 14. Footnote "***" in CTS Table 3.8.9-1 which stated that "an OPERABLE (core exit thermocouple) channel consists of at least 2 core exit thermocouples per quadrant" has been moved to the BASES. This information provides details of design or process which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated details. They are identified by CTS number and a brief subject description in Appendix A.

CTS Table 3.8.9-1 Items 18 and 19

L-A. 15. The details associated with the Reactor Vessel Water Level (RCP running or RCP stopped) have been moved to the plant procedures. Both the wide and narrow range channel are required to be OPERABLE in MODES 1, 2, 3, and 4. Knowing the status of the RCPs is only required for the operator to determine which range (wide or narrow) should be used. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual requirement, they can be moved to licensee controlled documents without an impact on safety. As such, placing these details in plant procedures is acceptable since both Functions (wide and narrow range) are required to be OPERABLE and plant procedures direct the operator to the appropriate instrument based on plant conditions. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS Table 3.8.9-1 Item 21 Footnote and Table 4.8.9-1 Item 21 Footnote

A. 16. The Note related to the neutron flux monitoring instrumentation has been deleted. Zion Station has completed the necessary modifications to the Nuclear Instrumentation System during refueling outages Z1R13 for unit 1 and Z2R13 for unit 2. As such, deletion of this Note is purely administrative.

CTS Table 3.8.9-1 Item 22 Footnote

A. 17. The Note associated with containment isolation valve position indicators has been modified and two new Notes added consistent with the NUREG-1431. These Notes clarify the application of this requirement to actual plant design. This change is administrative and conforms with NUREG-1431.

CTS 4.8.8.B.1.c

A. 20. The term refueling cycle was replaced with 18 months. This change is consistent with NUREG-1431 and is purely administrative.

CTS 4.8.8.B.1.c Footnote and Table 4.14-1 Note 2

L-A. 21. The details of the CHANNEL FUNCTIONAL TEST have been moved to the appropriate plant procedures. For the Containment Area High Range Radiation Monitors, the CHANNEL FUNCTIONAL TEST has been eliminated (See discussion 19 in Section 3.3.3-3 of this document). However, the same detail associated with the CHANNEL FUNCTIONAL TEST apply to the CHANNEL CALIBRATION. This change is consistent with the general philosophy of NUREG-1431 to relocate procedural material outside of Technical Specifications. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual requirement, they can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS Tables 3.14-1 and 4.14-1, Item 1.C

L-A. 22. The Containment Area (High Range) detector designators (1R-AR02, 2R-AR02, 1R-AR03 and 2R-AR03) have been moved to plant procedures. This change is consistent with the general philosophy of NUREG-1431 to relocate procedural material outside of Technical Specifications. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual requirement, they can be moved to plant procedures without an impact on safety. Materials moved to plant procedures will be controlled in accordance with Zion plant procedures change process.

CTS Table 3.14-1 Item 1.C

A. 23. The "Minimum Channels Operable" column of CTS Table 3.14-1 has been replaced by the "Required Channels" column of proposed Table 3.3.3-1. The CTS requires 1 channel of 1(2)R-AR02 and 1 channel of 1(2)R-AR03 to be OPERABLE. Table 3.3.3-1 requires 2 channels of Containment Area (High Range) to be OPERABLE. The two Required Channels of Table 3.3.3-1 are 1 channel of 1(2)R-AR02 and 1 channel of 1(2)R-AR03. As such, the requirements of the CTS and proposed Table 3.3.3-1 are the same and the change results in presentation only. This change is purely administrative.

CTS Table 4.14-1 Item 1.C

L-A. 28. The monthly source check requirement for the Containment Area (High Range) radiation monitors has been moved to the appropriate plant surveillance procedures. Per CTS definition 1.45, a "SOURCE CHECK shall be the qualitative assessment of channel response when the Channel sensor is exposed to a radioactive source." NUREG-1431 requirements for adequate assurance of OPERABILITY of radiation monitors only include CHANNEL CHECKs, CHANNEL FUNCTIONAL TESTs, and CHANNEL CALIBRATIONs. Therefore, since this monthly qualitative assessment of channel response is an additional activity beyond the standard testing and which is not necessary to describe the actual regulatory requirement, it can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS 3.14.A Action b

A. 29. The statement regarding the Applicability of LCO 3.0.3 is omitted since it is no longer necessary. LCO 3.0.3 provides appropriate actions when there is no applicable Condition provided in the specific LCO. In MODES 1, 2, 3, and 4 (the only MODES for which LCO 3.0.3 is applicable), applicable Conditions are provided, therefore, the Applicability of LCO 3.0.3 as a default Condition is moot. Since this change does not actually change the application of the requirements, this change is one of format and presentation only, and is, therefore, considered an administrative change.

3.3.4 <u>REMOTE SHUTDOWN SYSTEM</u>

There are no administrative changes in this section.

3.3.5 <u>LOSS OF POWER (LOP) DIESEL GENERATOR (DG) START INSTRUMENTATION</u>

CTS Tables 3.4-1 and 4.4-1, Items V.6 and V.7

A. 2. The Station Blackout and Secondary Undervoltage Function associated with the turbine driven AFW pump has been retained in the Engineered Safety Features Actuation System (ESFAS) section as functional unit 6.a.2.

The Station Blackout and Secondary Undervoltage Function associated with the diesel generators have been moved to the Loss of Power DG Start Instrumentation LCO. The term "Station Blackout" is now referred to as "undervoltage for each required 4.16 kV ESF bus". This change is appropriate since it more specifically identifies that the function (i.e., undervoltage) results in an auto start of the respective DG which in turn results in sequencing of safe shutdown loads, inclusive of the motor driven AFW pumps. The term "Secondary Undervoltage" is now referred to as the "Degraded Voltage" to conform with the standard terminology. The primary purpose of these Functions is to ensure reliable power by initiating DG starts and subsequent loading of the ESF buses. This is an administrative change to conform to NUREG-1431.

CTS Table 3.4-1, Item 6

A. 3. The CTS requirements for the number of loss of power instrumentation channels has been changed from 3 1/bus to 2 channels for each required bus. For the turbine driven AFW pump, each of the four non-ESF buses which input into the start logic contain two undervoltage relays. The undervoltage relays on each bus are arranged in a two-out-of-two logic which, in turn, feed the two-out-of-four turbine driven AFW pump start logic. This change more accurately reflects the bus undervoltage design and is consistent with NUREG-1431.

CTS Table 4.4-1 Item V.7

A. 6. In CTS Table 4.4-1, the requirement to perform a CHANNEL CHECK monthly has been replaced by a requirement to perform a TADOT. This change was made to more accurately reflect the terminology used in the ITS. Performance of this surveillance requirement in the CTS involves manually tripping the degraded voltage relay by depressing the trip test pushbutton and verifying the actuation of the associated contact. As such this test more closely represents a TADOT than a CHANNEL CHECK as currently specified in the CTS.

CTS Table 4.4-1 Items V.6 and V.7

A. 7. In CTS Table 4.4-1, the requirement to perform a CHANNEL FUNCTIONAL TEST every Refueling (18 months) has been deleted. This surveillance requirement is not needed since a CHANNEL CALIBRATION is also required every Refueling (18 months). By definition the CHANNEL CALIBRATION encompasses the entire channel including required sensors, alarms, interlocks and trip setpoints. Thus, a CHANNEL CALIBRATION includes a CHANNEL FUNCTIONAL TEST. This change does not alter the intent of the CTS requirement and is purely administrative.

CTS Table 3.4-1

A. 8. The # and ## footnotes and the values associated with secondary undervoltage (until startup from Z1R14 and Z2R14) have been deleted from Table 3.4-1. These items provided information designating which Secondary Undervoltage (degraded voltage)

setpoints were in effect based on a phased implementation of setpoint changes and modifications related to secondary undervoltage. ITS will be implemented after completion of these modifications and setpoint changes on both units, and as such, deletion of these items is purely administrative.

3.3.6 CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION

CTS Tables 3.14-1 and 4.14-1, Items 1.B and 2.A.2

L-A. 2. The individual Containment Purge Isolation detector designators (1R-AR04A, 1R-AR04B, 2R-AR04A and 2R-AR04B) and Containment Ventilation detector designators (1R-PR40A, 1R-PR40C, 1R-PR40E, 2R-PR40A, 2R-PR40C and 2R-PR40E) have been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated requirements. They are identified by CTS number and a brief subject description, and appropriate controls in Appendix A.

CTS Table 3.14-1 Item 1.B

A. 3. The "Minimum Channels Operable" column of Current Technical Specification (CTS) Table 3.14-1 has been replaced by the "Required Channels" column of proposed Table 3.3.6-1. For the Containment Fuel Handling Area Monitors the CTS requires 1 channel of 1(2)R-AR04A and 1 channel of 1(2)R-AR04B to be OPERABLE. Table 3.3.6-1 requires 2 channels of Containment Fuel Handling Area Monitors to be OPERABLE. The two Required Channels of Table 3.3.6-1 are 1 channel of 1(2)R-AR04A and 1 channel of 1(2)R-AR04B. For the Containment Atmosphere Radiation Monitor, the CTS requires 1 channel of particulate (channel 1), 1 channel of iodine (channel 3), and 1 channel of gaseous (channel 5) to be OPERABLE. Table 3.3.6-1 requires 3 channels of the Containment Atmosphere Radiation Monitor and three channels of the Containment Purge Radiation Monitor to be OPERABLE. The 3 Required Channels (per monitor) are: 1 channel of particulate (channel 1), 1 channel of iodine (channel 3), and 1 channel of gaseous (channel 5). As such, the requirements of the CTS for the Containment Atmosphere Radiation Monitor and Containment Fuel Handling Area Radiation Monitor, and proposed Table 3.3.6-1 are the same and the change results in presentation only. This change is purely administrative.

CTS Table 3.14-1 Item 2.A.2

A. 5. In CTS Table 3.14-1, the Applicable Modes for the Containment Ventilation monitor has been changed as follows:

Mode 7 has been deleted since the only requirement specified (Power Level) is also stated in each Low Power Physics LCO. The LCOs have not changed the 5% power level required. This change is editorial in nature and is consistent with NUREG-1431.

CTS Table 3.14-1, Action 22

A. 6. The action required in the CTS when one Containment Fuel Handling Area Monitor is inoperable has been revised. The CTS states to "stop all movement of nuclear fuel and reactor components in the vicinity of the reactor, refueling cavity, and transfer canal (containment side) or suspend vent and purge operations and close each vent and purge valve providing direct access from the containment atmosphere to the outside atmosphere". Proposed Specification 3.3.6 states to "isolate the containment purge supply, containment purge exhaust, and containment pressure and vacuum relief penetrations by use of one closed valve in each penetration". The requirements of proposed Specification 3.3.6 are equivalent to the actions required in the CTS since they both isolate the containment atmosphere from the outside atmosphere, or allow exiting the specified conditions by stopping CORE ALTERATIONS or movement of irradiated fuel within the containment.

CTS Table 4.14-1, Items 1.B and 2.A.2, and Note 4

L-A. 8. The monthly source check requirement for the Containment Fuel Handling Area monitors and the Containment Ventilation monitor channels has been moved to the appropriate plant surveillance procedures. Per CTS definition 1.45, a "SOURCE CHECK shall be the qualitative assessment of channel response when the Channel sensor is exposed to a radioactive source." NUREG-1431 requirements for adequate assurance of OPERABILITY of radiation monitors only include CHANNEL CHECKs, CHANNEL FUNCTIONAL TESTs, and CHANNEL CALIBRATIONs. The details of performance of the surveillances have generally been relocated to plant procedures. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS 3.14.A Action b

A. 10. The statements regarding the Applicability of LCO 3.0.3 and LCO 3.0.4 are omitted. ITS LCO 3.3.6 includes Conditions and Required Actions for all possible combinations of inoperability, and LCO 3.0.3 is, therefore, not applicable. In addition, ITS LCO 3.3.6 allows unlimited plant operation in Condition A. LCO 3.0.4 is, therefore, also not applicable, and a separate statement to that effect is not necessary. This change is a format change, only. No new requirements are added, and no existing requirements are deleted. Therefore, this is an Administrative change that is consistent with NUREG-1431.

CTS Table 4.14-1 Note 2

L-A. 12. The details for performance of these specific Channel Functional Tests have been moved to plant procedures. This information

provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.13.4 and 4.13.4

L-A. 13. CTS 3.13.4 requires that the radiation monitoring system be in continuous operation during CORE ALTERATIONS. This requirement is overly restrictive since it applies whether or not the containment purge supply and exhaust valves and the pressure and vacuum relief valves are closed. When these valves are closed, the safety function of the radiation monitoring system (isolate the containment atmosphere from the outside atmosphere in the event of a fuel handling accident) is satisfied, and continuous operation is not required. The safety function of the radiation monitoring system is captured in the ITS in LCO 3.3.6 which requires the instrumentation to be OPERABLE during CORE ALTERATIONS. Therefore, the CTS requirement for continuous operation may be moved to plant procedures without an impact on safety since it does not describe a safety requirement. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

3.3.7 <u>CONTROL ROOM EMERGENCY FILTRATION SYSTEM (CREFS) ACTUATION INSTRUMENTATION</u>

CTS Tables 3.14-1 and 4.14-1, Item 2.H

L-A. 1. The individual Control Room isolation radiation monitor designators (OR-PR29A (Channel 1), (OR-PR29C (Channel 3), (OR-PR29E (Channel 5), and (OR-PR29G (Channel 7) have been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated requirements. They are identified by CTS number, a brief subject description, and appropriate controls.

CTS Table 4.14-1 Item H

L-A. 2. The monthly source check requirement for the Containment Area (High Range) radiation monitors has been moved to the appropriate plant surveillance procedures. Per CTS definition 1.45, a "SOURCE CHECK shall be the qualitative assessment of channel response when the Channel sensor is exposed to a radioactive source." As stated, this is a "qualitative" function and, as such, is of no

value in determining OPERABILITY. The NUREG-1431 requirements for radiation monitors CHANNEL CHECKs, CHANNEL FUNCTIONAL TESTs, and CHANNEL CALIBRATIONs are included in the ITS. These ITS requirements provide adequate assurance of radiation monitor OPERABILITY without the monthly source check. Therefore, since this monthly qualitative assessment of channel response is an additional activity beyond the standard testing and which is not necessary to describe a safety requirement, it can be moved to a procedure without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS Table 4.14-1 Note 2
L-A. 3. The details for performance of these specific Channel Functional Tests have been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual requirement, they can be moved to procedures without an impact on safety. Changes to these procedures will be in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS Table 3.14-1 Item H
A. 4. The Applicability during physics test exceptions is incorporated into the proposed APPLICABILITY of MODES 1, 2, 3, and 4. The requirements for instrumentation remain applicable during these MODES unless they are changed in accordance with LCO 3.0.7. Since LCO 3.3.7 is not changed in this manner, the current Mode 7 is incorporated. This is an administrative change in presentation only.

CTS Table 3.14-1
A. 8. This proposed Note ("Separate Condition entry is allowed for each flow path") provides explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," this Note provides direction consistent with the intent of the existing Actions for actuation instrumentation.

CTS Table 3.14-1 Action 23
A. 9. A Note is incorporated to prevent a shutdown if the Required Action of "Initiate CREFS" cannot be accomplished due to CREFS inoperability for a reason other than the inoperable actuation instrumentation. LCO 3.7.9 allows a 7 day Completion Time with CREFS inoperable. Without this Note, inoperable instrumentation would require shutdown if the CREFS were already inoperable since the Required Action could not be met. Addition of this Note is purely administrative since the TS already allow complete inoperability of the system for 7 days.

CTS 3.14.A Action b

A. 10. The statements regarding the Applicability of LCO 3.0.3 and LCO 3.0.4 are omitted. ITS LCO 3.3.7 includes Conditions and Required Actions for all possible combinations of inoperability, and LCO 3.0.3 is, therefore, not applicable to the CREFS functions in MODES 1-4. However, the LCO 3.0.3 statement has been retained during the plant condition of moving irradiated fuel in the fuel handling building in these modes. In addition, ITS LCO 3.3.7 allows unlimited plant operation in Condition A. LCO 3.0.4 is, therefore, also not applicable, and a separate statement to that effect is not necessary. This change is a format change, only. No new requirements are added, and no existing requirements are deleted. Therefore, this is an administrative change that is consistent with NUREG-1431.

3.3.8 <u>FUEL HANDLING BUILDING EMERGENCY FILTRATION SYSTEM (FHBEFS) ACTUATION INSTRUMENTATION</u>

CTS 3.13.2.A.2 and Tables 3.14-1 and 4.14-1, Item 1.A

L-A. 1. The fuel storage pool area radiation monitor designator (OR-AR03) has been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases represent administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS Table 4.14-1 Note 3

L-A. 2. The SOURCE CHECK requirements of Table 4.14-1 are moved to plant procedures. Per CTS definition 1.45, a "SOURCE CHECK shall be the qualitative assessment of channel response when the Channel sensor is exposed to a radioactive source." NUREG-1431 requirements for adequate assurance of OPERABILITY of radiation monitors only include CHANNEL CHECKs, CHANNEL FUNCTIONAL TESTs, and CHANNEL CALIBRATIONs. Therefore, since this monthly qualitative assessment of channel response is an additional activity beyond the standard testing and which is not necessary to describe the actual regulatory requirement, it can be moved to licensee controlled documents without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS Table 4.14-1 Note 2

L-A. 3. The details for performance of these specific Channel Functional Tests have been moved to plant procedures. This information provides details of design or process which are not directly

pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS 4.13.2

A. 4. An additional Required Action option is provided that provides for exiting the Applicability of the LCO. This is always an option that is listed merely for completeness.

CTS 3.13.4 and 4.13.4

L-A 5. The requirement of CTS 3.13.4 to ensure the fuel building radiation monitor is in continuous operation during CORE ALTERATIONS has been moved to plant procedures. The safety function of the fuel building radiation monitor is to divert the effluent of the fuel building exhaust system through the charcoal absorbers in the event of a fuel handling accident which results in the release of radioactive material to the fuel building atmosphere. During CORE ALTERATIONS with the equipment hatch intact, the containment building atmosphere is isolated from the fuel building atmosphere. Thus, an inadvertent release of radioactive material during CORE ALTERATIONS would not affect the atmosphere of the fuel handling building. During periods when the equipment hatch is not intact (i.e., the hatch is removed or loosened from the containment penetration flange), the containment atmosphere is in direct communication with the fuel building atmosphere and a release of radioactive material during CORE ALTERATIONS may affect the fuel building atmosphere. Proposed Specifications 3.3.8, "Fuel Handling Building Exhaust Filter System (FHBEFS) Actuation Instrumentation" and 3.7.13, "Fuel Handling Building Exhaust Filter System (FHBEFS) ensure the appropriate instrument and filtration capabilities are OPERABLE to prevent an unfiltered release to the outside atmosphere while in this plant configuration. Therefore, the requirement to maintain the fuel building radiation monitor in continuous operation during CORE ALTERATIONS is adequately covered in proposed specifications 3.3.8 and 3.7.13, or performs no safety function (i.e., when the equipment hatch is intact). Since the non-safety function of CTS 3.13.4 does not describe an actual regulatory requirement (it does not meet the criteria for inclusion in the improved Technical Specifications), it can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion Station plant procedure change process.

CTS Table 3.14-1 Item 1.A.2 and Action 21

L-A. 7. The Applicability of this Specification has been modified to remove the requirement for system OPERABILITY during operation of the crane with heavy loads. System OPERABILITY during movement of heavy loads was required to cope with the consequences of dropping

heavy loads on irradiated fuel. However, administrative controls are in place at Zion that preclude the movement of heavy loads over irradiated fuel. These administrative controls are consistent with NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants (7/80)," and are described in the UFSAR. Use of administrative controls for movement of heavy loads has been found acceptable by the staff as stated in GL-85-11. GL 85-11 concludes in part, that administrative controls are in place and are sufficient such that heavy loads considerations limits to the extent practicable the risks associated with handling heavy loads, and no additional licensing requirements are warranted. Based on the above, the staff concludes that the proposed change is acceptable. System OPERABILITY will continue to be required during Core Alterations and during movement of irradiated fuel.

CTS 3.14.A Action b

A. 8. The statement regarding the Applicability of LCO 3.0.4 is omitted since it is no longer necessary. LCO 3.0.4 was identified as not applicable to allow entry into the Applicable MODES with the required equipment inoperable. LCO 3.0.4 has been revised to incorporate the allowances of Generic Letter 87-09 which indicate that entry into the Applicable MODES is allowed if the applicable Condition allows unlimited continued operation. Since compliance with the appropriate Condition of LCO 3.3.8 will allow unlimited continued operation, the exception to LCO 3.0.4 applicability is not required. The similar exception to the applicability of LCO 3.0.3 is retained. LCO 3.0.3 provides appropriate actions when there is no applicable Condition provided in the specific LCO. Since this LCO is applicable during movement of irradiated fuel assemblies and this may be concurrent with operation in MODES 1, 2, 3, and 4, the exception is retained to clearly indicate that a shutdown is not required as a result of noncompliance with this LCO. This is acceptable and appropriate since fuel movement in the fuel handling building is unrelated to the safe operation of the reactor with containment integrity established. Since this change does not actually change the application of the requirements, this change is one of format and presentation only, and is therefore considered an administrative change.

CTS Table 3.14-1 Item 1.A

L-[illegible] 9. The Applicability of this Specification has been modified to remove the need for system OPERABILITY during movement of fresh non-irradiated fuel assemblies. The current Applicability includes "during fuel handling operation" which is inclusive of both irradiated and non-irradiated fuel assemblies. This change is acceptable since the analysis for a fuel handling accident in the spent fuel pool only considers the drop of a spent fuel assembly on the floor of the spent fuel pool. Dropping a non-irradiated fuel assembly would not result in the release of radioactivity material such that Regulatory limits or plant administrative limits would be challenged. Administrative controls will be utilized to address the movement of non-

irradiated fuel assemblies in the spent fuel pool. The acceptability of controlling movement of heavy loads administratively is addressed in discussion No. 7 of this SE section, above, i.e., administrative control of heavy loads movement was found acceptable by the staff as discussed in GL 85-11. Based on the above, the staff concludes that the proposed change is acceptable.

3.3.9 PTEFS ACTUATION INSTRUMENTATION

CTS Tables 3.14-1 and 4.14-1, Item 2.C

L-A. 1. The pipe chase radiation monitor designators (1R-PR07A, 1R-PR07B, 2R-PR07A, and 2R-PR07B) have been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual requirement, they can be moved to plant procedures without an impact on safety. Changes to plant procedures will be controlled by the Zion procedure change control process. This chance is consistent with NUREG-1431.

CTS Table 4.14-1 Item 2.C

L-A. 2. The SOURCE CHECK requirements of Table 4.14-1 are moved to plant procedures. Per CTS definition 1.45, a "SOURCE CHECK shall be the qualitative assessment of channel response when the Channel sensor is exposed to a radioactive source." NUREG-1431 requirements for adequate assurance of OPERABILITY of radiation monitors only include CHANNEL CHECKs, CHANNEL FUNCTIONAL TESTs, and CHANNEL CALIBRATIONs. Therefore, this monthly assessment of channel response is an additional activity beyond the standard testing and which is not directly necessary to describe the actual regulatory requirement, it can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with the Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS Table 4.14-1 Note 2

L-A. 3. The details for performance of these specific Channel Functional Tests have been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. Changes to these procedures will be controlled accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS Table 3.14-1 Item 2.C

A. 4. The Applicability during physics test exceptions is incorporated into the proposed APPLICABILITY of MODES 1, 2, 3, and 4. The

requirements for instrumentation remain applicable during these MODES unless they are changed in accordance with LCO 3.0.7. Since LCO 3.3.7 is not changed in this manner, the current Mode 7 is incorporated. This is an administrative change in presentation only.

CTS 3.14.A Action b

A. 5. The statements regarding the Applicability of LCO 3.0.3 and LCO 3.0.4 are omitted. ITS LCO 3.3.9 includes Conditions and Required Actions for all possible combinations of inoperability, and LCO 3.0.3 is, by definition, not applicable. In addition, ITS LCO 3.3.9 allows unlimited plant operation in Condition A. As stated above, LCO 3.0.4 is, by definition, not applicable, and a separate statement to that effect is not necessary. This change is a format change, only. No new requirements are added, and no existing requirements are deleted. Therefore, this is an Administrative change that is consistent with NUREG-1431.

3.4 <u>REACTOR COOLANT SYSTEM</u>

Operating License Condition 2.C(4)

A. 1. Operating License Condition 2.C(4) which prohibits reactor operations with less than 4 loops is reflected in proposed LCO 3.4.4 which will replace current License Condition 2.C(4). However, details currently contained in the Condition and related to the method for revising the requirement have been omitted since they are duplicative of 10 CFR 50.59 and 10 CFR 50.90. This is an administrative change only.

CTS 3.2.1.C.2.a, 3.2.1.G, 3.3.1.E.2, 4.2.1.C.2, 4.2.1.G: Reactivity Controls
3.2.4.A, 3.2.4.A Note #: DNB Parameters
3.3.1.A.4, 3.3.1.A.5, 3.3.1.A.5 Note *, 3.3.1.B.1, 4.3.1.A.1, 4.3.1.A.2, 4.3.1.A.3.b, 4.3.1.A.3.c, 4.3.1.A.4.c, 4.3.1.A.4.d, 4.3.1.A.5.a, 4.3.1.A.5.b: Reactor coolant loops and coolant circulation information
3.3.1.E.3.a, 3.3.1.E.3.b, 3.3.1.E.3.d, 3.3.1.E.3.e, 3.3.1.E.3.f, 4.3.1.E.3.a, 4.3.1.E.3.d, 4.3.1.E.3.f: Isolated RCS loop startup
3.3.1.A.4 Note *, 3.3.2.A Action, 3.3.2.F.1, 3.3.2.F.2, 3.3.2.G.3: RCS integrity
Table 3.3.3-1: RCS pressure isolation valves
3.3.3.A, 3.3.3.B, 3.3.3.D, 3.3.3.E, 3.3.3.F, Table 3.3.3-1 Note a1, 4.3.3.A.1, 4.3.3.C, 4.3.3.F.d: RCS leakage
Table 3.14-1 Function 2.A.2; Table 4.14-1 Functions 2.A.2.a, 2.A.2.c, 2.A.2.d, 2.A.2.f: Containment ventilation process monitors
4.3.1.C.1: Pressurizer safety relief valve equipment numbers
4.3.1.F.1.a, 4.3.1.F.1.b, 4.3.1.F.2, 4.3.2.G.1.a.2: PORVs and associated valves
4.3.6, Table 4.3.6-1 Note †: Primary coolant analysis
4.8.3.A.2: RHR isolation valve equipment numbers, position indicators and annunciators

L-A. 4. These CTS contain information and details in the categories of reactivity controls, DNB parameters, reactor coolant loops and coolant circulation information, isolated RCS loop startup, RCS

integrity, RCS pressure isolation valves, RCS leakage, containment ventilation process monitors, PORVs and associated valves, Primary coolant analysis, RHR isolation valve equipment numbers, position indicators and annunciators. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to plant procedures or licensee controlled documents without an impact on safety. The Bases will be controlled by the Bases Control Program (5.5.12) of the proposed Technical Specifications. Changes to procedures will be controlled in accordance with Zion plant procedure change process. Changes to the UFSAR will be controlled in accordance with the 10 CFR 50.59 process, and changes to the PTLR will be controlled by the PTLR process in Chapter 5 of the proposed Technical Specifications and 10 CFR 50.59 (UFSAR portion). This change is consistent with NUREG-1431. CTS moved to the Bases, and UFSAR, are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.3.1.A.5 Footnote

A. 7. The information in this footnote states that an RHR Loop may be considered OPERABLE with either normal or emergency power available. This is duplicative of the definition of OPERABILITY and is, therefore, deleted. This is an administrative change only.

CTS 3.3.1.B Action

A. 17. The required action to restore a required steam generator to operable status prior to increasing the RCS temperature above 200 F has been deleted. This requirement is adequately covered by proposed SR 3.0.4 and represents an administrative change in presentation only. Required Actions for steam generators determined to be inoperable during MODES 1 and 2, 3, and 4 are provided in LCO 3.4.4, LCO 3.4.5, and LCO 3.4.6, respectively.

CTS 3.3.1.D Action 4 and 4.3.1.D.2 and 4.3.1.F.3

A. 20. These CTS require that the motive and control power for the PORV and block valves be transferred from the normal source to the standby AC on-site power supply. At Zion Station, the pressurizer heaters, PORVs, and block valves are permanently connected to a EDG backed Engineered Safety Features (ESF) bus. In this arrangement, there is no capability to transfer the PORV and block valves to another power source, nor is there any need for such a transfer. This CTS surveillance does not reflect the Zion design, and is deleted. This is an administrative change since the Zion Station design provides the safety assurance previously associated with this SR.

CTS 3.3.1.F Actions b.c.and d. and 3.3.3.F Action a

A. 25. The action to "restore compliance" is omitted. Restoration of compliance with the LCO is always an option and need not be explicitly stated in the Required Actions. Since no actual change in practice or operating restrictions occurs, this change is purely administrative.

CTS 3.3.1.F

A. 27. This proposed Note ("Separate Condition entry is allowed for each...") provides explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," this Note provides direction consistent with the intent of the existing Actions.

CTS 3.3.2.G.1.c, 3.3.2.G.2, 3.3.2.G Actions a.2, b.2, and c.2, and 4.3.2.G.1.b

A. 34. The requirement to have one PORV and its isolation valve open are more generically presented as an open RCS vent of at least a specific size. The presentation also includes a Note to the Surveillance which indicates that the verification is only required when utilizing this method of overpressure protection. Additionally, the requirement that no accumulators shall be OPERABLE is presented as each operable (capable of injection) accumulator must be isolated. Since these are different only in the method of presentation for the same requirement, this change is purely administrative.

CTS 3.3.3.F

A. 35. A Note is added to clarify that pressure isolation valve requirements do not apply to valves that must be open to the RCS (the RHR valves when RHR is being established or used). This is consistent with current practice, plant design and NUREG-1431, and is considered an administrative clarification of current requirements.

CTS 4.3.1.F.1.a

A. 37. PORV functional testing is currently required to be performed in MODE 3 or 4. This is maintained by including a Note for the PORV cycling surveillance that indicates the SR is only required in MODES 1 and 2. Therefore, the SR must be current (i.e., performed and meeting the acceptance criteria) prior to entering either MODE 1 or MODE 2. This change represents an administrative change in the format for presentation of requirements only. Further, this change is consistent with the Bases for LCO 3.4.11 ACTIONS Note 2 (as identified in NUREG-1431) which indicate that it is acceptable to enter MODE 3 to perform such testing.

CTS 4.3.2.G.2

A. 40. The explicit requirement to perform the surveillance prior to entering the applicable MODES is deleted. This requirement is adequately provided by the standard application of LCO 3.0.4.

CTS 3.3.3.E Footnote

A. 47. These requirements and footnotes have been deleted. As indicated, these requirements were only applicable during Unit 1 Cycle 7. This cycle has been completed and these requirements are no longer needed. Therefore, this is an administrative change.

CTS 4.3.3.B.1

A. 51. A Note is added to the surveillance for RCS water inventory balance to allow the unit to establish steady state operation before the surveillance is required. This is considered to be equivalent to the current requirement to record the amount of makeup level required "to maintain pressurizer level and volume control tank level" since these amounts would be meaningless unless the plant is in steady state operation. In addition, a Frequency is established for this surveillance.

CTS 4.3.3.B.2

A. 52. The required surveillance to monitor the containment and reactor cavity sumps water accumulation has been replaced by a requirement to have operating sump radiation monitors in accordance with NUREG-1431. This change more clearly represents the method currently used to determine leakage rates from the containment and reactor cavity sumps.

CTS 4.3.3.B.3, 4.3.3.B.4, and 4.3.3.B.5

L-A. 53. The Surveillances for monitoring containment pressure, temperature, and humidity for the purpose of leakage identification, and the surveillances for reactor head flange leak-off and the reactor vessel leak detection system, have been moved to plant procedures. The primary indicator of leakage is the surveillance of the RCS water inventory balance (SR 3.4.13.1). Secondary indications of leakage are also required in LCO 3.4.15; these include sump levels and radioactivity monitors. The remainder of the identified leakage indications provide only tertiary information that is generally slower in response or specific to a particular location. Thus, the specified primary and secondary leakage monitoring requirements are sufficient to identify compliance with the leakage limits. Since the details being removed are not necessary to adequately describe the actual regulatory requirement, they can be moved to plant procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS 4.3.3.F.c

L-A. 56. This CTS requirement, which requires leakage testing of RCS pressure isolation valves following maintenance, is being moved to plant procedures. Any time the operability of a system or component has been affected by repair, maintenance or replacement of a component, testing is required to demonstrate OPERABILITY of the system or component. This is an inherent part of the definition of OPERABILITY, and a separate TS requirement is not

necessary. Therefore, this CTS requirement is only information that provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. Explicit post maintenance Surveillance Requirements have therefore been moved from the specifications. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 4.3.3.F

A. 58. A Note is added to clarify that repetitive testing is not required if meeting the frequency of "following valve actuation... or flow through the valve" would result in an "endless testing loop." This is not the intent of the required Frequency and the Note is an administrative method of declaring the intent, and is consistent with NUREG-1431.

CTS 3.3.1.A.5, Action b

A. 69 CTS 3.3.1.A.5 RHR Loop OPERABILITY requirements Action b requires that with no RHR loop operable:
Suspend all operations involving a reduction in boron concentration, <u>AND</u>
Return both RHR loops to OPERABLE status, <u>OR</u>
Return both RHR loops to operation if required to maintain temperature at least 10 F below saturation.

ITS 3.4.7 (MODE 5 RHR Loop OPERABILITY requirements) Required Actions C.1 and C.2 require that with two RHR loops or one RHR loop and one SG inoperable:
Suspend all operations involving a reduction in boron concentration, <u>AND</u>
Restore one RHR loop to OPERABLE status

Further, ITS LCO 3.4.7 would still not be met, and Required Actions B.1 and B.2 require:
Restore a second RHR loop to OPERABLE status, <u>OR</u>
Restore an SG to operable status

However, ITS LCO 3.4.7 would still not be met, and Required Actions A.1 and A.2 require:
Suspend all operations involving a reduction in boron concentration, <u>AND</u>
Restore one RHR loop to operation

ITS LCO 3.4.7 Note 1.b requires RHR to be in operation to maintain temperature at least 10 F below saturation. Thus, from the same starting condition, compliance with both the CTS and the ITS leads to the same final condition:

All operations involving a reduction in boron concentration suspended unless RHR is operating.
Two independent means of decay heat removal OPERABLE.and RHR in operation as necessary to maintain temperature at least 10 F below saturation

Therefore the CTS and ITS requirements remain functionally equivalent and differences between the two are administrative.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS 3.8.1.A, and 3.8.2.A, and 3.8.3.A

A. 2. These CTS contain a reference to CTS 3.3.2.G (low temperature RCS operation) that has no relationship to the stated requirements. This reference serves no purpose and is, therefore, deleted. Since there is no difference in requirements, this is an administrative change.

CTS 3.8.1.C, 3.8.2.C, and 3.8.3.C

A. 7. In CTS 3.8.1.C, CTS 3.8.2.C and CTS 3.8.3.C the requirement to ensure the remaining ECCS pumps (Chemical and Volume Control, SI or RHR) are OPERABLE whenever one ECCS pump is inoperable is being deleted. CONDITION B of proposed Specification 3.5.2 provides the REQUIRED ACTIONS when two or more ECCS pumps are inoperable. As such, this change is purely administrative.

CTS 3.8.1.F.1

A. 10. The word "between" in CTS 3.8.1.F.1* has been changed to "≥ and ≤" to clarify the intent of the requirement. The accident analysis includes the end points as acceptable limits, therefore, "≥ and ≤" is more correct than "between."

CTS 3.8.1.F.1

A. 11. The specific requirements of Refueling Water Storage Tank (RWST) water volume and boron concentration in CTS 3.8.1.F.1* have been deleted from the LCO statement since they relate to the definition of OPERABILITY. These same requirements are stated in proposed SR 3.5.4.1 and SR 3.5.4.2.

CTS 3.8.1.F.2, Footnotes (pg. 167), 3.8.5.A.2.b, and Footnotes (pg. 174)

A. 13. CTS 3.8.1.F.2** and CTS 3.8.5.A.2.b.** have been deleted. The requirement is not applicable since Unit 2 has started up from refueling outage Z2R12.

CTS 4.8.2.A.4, 4.8.3.A.7, and 4.8.5.A.4

A. 19. In CTS 4.8.2.A.4, CTS 4.8.3.A.7, and CTS 4.8.5.A.4 stating that power may be restored to the valves in MODES 5 and 6 has been deleted. The requirements of CTS 4.8.2.A.4, CTS 4.8.3.7, and CTS 4.8.5.A.4 will be contained in proposed Specification 3.5.2 which has an APPLICABILITY of MODES 1, 2, and 3. Therefore, when the unit is placed MODES 5 or 6 it will be outside the APPLICABILITY

of the proposed Specifications 3.5.2. As such, the requirement no longer applies. This allowance is stated in proposed LCO 3.0.1.

CTS 4.8.2.A.4, 4.8.3.A.7, 4.8.5.A.3, 4.8.5.A.4, and 4.8.5.A.4.b

L-A. 20. The requirement for testing the valves specified in CTS 4.8.2.A.4, CTS 4.8.3.A.7, CTS 4.8.5.A.3, CTS 4.8.5.A.4, and CTS 4.8.5.A.4.b on a "Refueling Outage" frequency (i.e., every 18 months) has been moved to the IST program; which specifies the appropriate testing frequency. Controls for inservice testing of ASME Code Class 1, 2, and 3 components are provided in proposed Specification 5.5.6, "Inservice Testing Program". The frequency for testing of these valves remains at 18 months. Therefore, since there is no difference between ITS and CTS, this change is administrative.

CTS 4.8.2.A.4

A. 21. The requirements stated in CTS 4.8.2.A.4 related to the boron injection tank have been deleted. The plant modification to remove the boron injection tank is complete.

CTS 4.8.2.A.4

A. 22. The special requirements pertaining to MOV-SI8803A, MOV-SI8803B, AOV-SI8870A, AOV-SI8870B and AOV-SI8883 specified in CTS 4.8.2.A.4 have been deleted. These requirements are not applicable since the boron injection tank modifications have been completed.

CTS 3.8.4.A

A. 24. The requirement of CTS 3.8.4.A to "manually" initiate the safety injection signal to initiate operation of the ECCS pumps has been changed to include starting by "an actual or simulated" actuation signal. This allows the plant to credit an actual automatic actuation signal to verify the OPERABILITY of the automatic start feature of these pumps. The requirement to test the ECCS pumps is unchanged. Therefore, this is an administrative change. This change is consistent with NUREG-1431.

CTS 3.8.4.B, 3.8.4.C.2, 4.8.4.B, and 4.8.4.C.2

L-A. 26. Any time repairs, maintenance or modifications has affected the OPERABILITY of a system or component, these CTS require post-maintenance testing to demonstrate OPERABILITY of the system or component. Demonstration of system/component OPERABILITY by performance of applicable SRs is implicit in the definition of OPERABILITY. TS which explicitly require post maintenance surveillance requirements are inappropriate because: 1) they are redundant to the implicit aspects of the OPERABILITY definition, 2) the surveillances needed to demonstrate OPERABILITY must be determined as a function of the corrective Actions taken and may not be the same as in the TS, and 3) this type of detail is not required by 10 CFR 50.36. Therefore, these CTS are moved to Plant Procedures. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 4.8.4.A
A. 27. The Frequency, "at each refueling outage", specified in CTS 4.8.4.A has been changed to "18 months" to be consistent with the deletion of the Surveillance Frequency Notation (Table 1.2).

CTS 4.8.4.A
L-A. 28. The details and methods to verify the requirements of CTS 4.8.4.A are satisfactorily completed (i.e., by visually observing control board indications) have been moved to plant procedures. Proposed SR 3.5.2.5 and SR 3.5.2.6 demonstrate that each automatic ECCS valve actuates to the required position on an actual or simulated SI signal and that each ECCS pump starts on receipt of an actual or simulated SI signal. In addition, the Inservice Testing Program required by proposed Specification 5.5.6 requires periodic operation (i.e., valve strokes, pump performance test) of class 1, 2, and 3 components. The combination of these surveillances ensures that testing of the centrifugal charging, safety injection and residual heat removal systems is adequately performed to demonstrate system operability. Changes to the procedures will be controlled in accordance with Zion plant procedure change process. This is consistent with NUREG-1431.

CTS 3.8.4.C.1 and 3.8.4.C.3
A. 30. The specific details of CTS 3.8.4.C.1 and CTS 3.8.4.C.3 have been removed from the LCO since they relate to the definition of OPERABILITY. These details are also covered in proposed SR 3.5.2.1, 3.5.2.2, 3.5.2.3, 3.5.2.5 and SR 3.5.2.7.

CTS 3.8.5.A.1, 3.8.5.A.2.a, and 3.8.5.A.3
A. 32. The specific requirements of Accumulator water volume, pressure, boron concentration and valve position in CTS 3.8.5.A have been deleted from the LCO statement since they relate to the definition of OPERABILITY. These same requirements are stated in proposed SR 3.5.1.1, SR 3.5.1.2, SR 3.5.1.3, SR 3.5.1.4, and SR 3.5.1.5

CTS 3.8.5.B
A. 34. This CTS addresses accumulator OPERABILITY and Actions to be taken if one or more accumulators is inoperable. These Actions include placing the unit first in MODE 3, and subsequently in MODE 5. However, the accumulators are only required to be OPERABLE in MODES 1 and 2, and MODE 3 with reactor pressure > 1000 PSI. Once the plant is in MODE 3 with reactor pressure ≤ 1000 PSI, the accumulators are no longer required to be OPERABLE, and CTS 3.8.5.B is no longer applicable. Therefore, the CTS requirement to go to MODE 5 is incorrect. The ITS corrects this problem by terminating the Actions at MODE3 with reactor pressure ≤1000 PSI. This change is a correction, only. There are not changes in plant operation associated with it. Therefore, this change is purely administrative.

CTS 3.8.5
A. 35. A new CONDITION has been added (CONDITION D) requiring LCO 3.0.3 entry if two or more accumulators are inoperable. The CTS would

also require LCO 3.0.3 entry with two or more inoperable accumulators. This new CONDITION is required since proposed Section 1.3, "COMPLETION TIMES" requires entry into all applicable CONDITIONS. With the addition of proposed CONDITION A, two accumulators can be inoperable (each for different reasons) thus invalidating the accident analysis. Therefore, the new CONDITION ensures LCO 3.0.3 is entered when two accumulators are inoperable.

CTS 4.8.5
A. 36. An allowance has been added to not require a boron sample of the accumulators if the addition of borated water is from the Refueling Water Storage Tank (RWST). This is purely administrative since the boron concentration requirement of the RWST (≥ 2400 and ≤ 2600 ppm) is more restrictive than the boron concentration of the accumulators (≥ 2300 and ≤ 2600 ppm). Therefore, an addition from the RWST will always meet the boron requirements of the accumulator. The RWST boron concentration is verified to be within limits every 7 days.

3.6 CONTAINMENT SYSTEMS

CTS 3.5.1, 3.6.2.A, 3.8.8.A, 3.9.3.A, 3.9.6, 3.10.1, and 3.10.2
A. 2. In CTS 3.5.1, CTS 3.6.2.A, CTS 3.8.8.A, CTS 3.9.3.A, CTS 3.9.6, 3.10.1 and 3.10.2, MODE 7 has been deleted since the only requirement specified (power level) is also stated in each Low Power Physics Test LCO. The LCO has not changed the 5% power level required. This change is editorial in nature and consistent with NUREG-1431.

CTS 4.5.1.a.1, 4.8.8.A.1, 4.8.8.A.2.a, 4.8.8.A.2.b, 4.8.8.A.2.c, 4.8.8.a.3, and 4.9.1.A
L-A. 4. In CTS 4.5.1.a.1, CTS 4.8.8.A.1, CTS 4.8.8.A.2.a, CTS 4.8.8.A.2.b, CTS 4.8.8.A.2.c, CTS 4.8.8.A.3, and CTS 4.9.1.A the details regarding the performance and acceptance criteria for surveillance testing of the associated equipment have been moved to plant specific procedures or the bases. These CTS are information which provide details of design or processes which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement and are not necessary to interpret the Technical Specification requirement, they can be moved to license controlled documents without an impact on safety. Changes to the Bases will be controlled in accordance with TS 5.5.12. Changes to procedures will be controlled in accordance with Zion plant procedure change process. These changes are consistent with NUREG-1431. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.5.1.a.3
L-A 5. The surveillance requirement of CTS 4.5.1.a.3 to verify a cooling water return pressure of greater than or equal to 47 psig for each cooler has been moved to the Bases. The cooling water supply to the Reactor Containment Fan Coolers (RCFC) is provided by the Service Water (SW) System. The RCFC SW outlet valves are provided with stops which limit valve travel in the open direction. The valve stops are set such that the SW return flow from the RCFCs will be greater than 47 psig at the top of the cooling coils. To ensure the SW system is properly balanced (i.e., to provide the required flow at the required pressure to system components), a SW flow model program has been developed. A periodic surveillance (SR3.7.8.1) is included in the ITS which will verify the system configuration is maintained. In addition to the SR, a valve position program ensures the valves in the SW system remain in their required position through the use of administrative controls. The RCFC cooling water return pressure provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual requirement, they can be moved to licensee controlled documents without any impact on safety. Placing the RCFC cooling water return pressure in the Bases is acceptable since proposed SR 3.7.8.1 ensures the SW system is balanced. Materials moved to the Bases will be controlled in accordance with the Bases Control Program (5.5.12). CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.5.1.b.1
A. 6. The requirement of CTS 4.5.1.b.1 to perform an automatic start test using a safety injection test signal has been changed to allow either an actual or simulated actuation signal. The use of an actual actuation signal represents an improved test method when compared to the use of simulated actuation signal to initiate an automatic start. There are not changes in the surveillance requirements. Therefore, this is an administrative change. This change is consistent with NUREG-1431.

CTS 3.6.1.A.2 and 3.6.1.B
A. 8. The requirement to have two of three iodine removal systems OPERABLE when the CS system is required to be OPERABLE has been clarified through the use of proposed Specification 3.6.7, "Spray Additive System." The proposed revised Specification maintains the requirement for two spray additive subsystems to be OPERABLE in the MODES which require the CS system to be OPERABLE. Since there are no changes in requirements, this change is purely administrative.

CTS 3.6.1.E, 3.6.1.F, and 3.6.1.G

A. 19. The details related to the NaOH concentration limits and minimum level in the Spray Additive System tank (CTS 3.6.1.E), the minimum CS diesel day tank volume (CTS 3.6.1.F), and the CS pump performance test (CTS 3.6.1.G) have been relocated from the LCOs to the Surveillance Requirements section of the Specifications. In Zion Station's Improved Technical Specifications (ITS) these requirements are proposed as SR 3.6.7.1, SR 3.6.7.2, SR 3.6.6.3, and SR 3.6.6.6 respectively.

CTS 4.6.1.G and 4.9.1.A

A. 24. The Frequency, "at each refueling outage" specified in CTS 4.6.1.G and CTS 4.9.1.A has been changed to "18 months" to be consistent with the deletion of the Surveillance Frequency Notation (Table 1.2).

CTS 4.6.1.G

L-A. 25. The appropriate details and methods to verify that the requirements of CTS 4.6.1.G are satisfactorily completed (i.e., by visually observing control board indication) have been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. This is consistent with NUREG-1431. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.9.1.A

A. 30. In CTS 3.9.1.A, the Isolation Valve Seal Water (IVSW) System is required to be OPERABLE unless the reactor is in cold shutdown. The MODES of applicability for proposed Specification 3.6.9 are MODES 1, 2, 3, and 4. This is consistent with the requirement for maintaining the containment OPERABLE in these MODES. In MODES 5 and 6, containment is not required to be OPERABLE. The change clarifies that the IVSW system is not required in MODES 5 and 6.

CTS 3.9.1.B

A. 31. The specific requirements of the IVSW tank pressure and volume in CTS 3.9.1.B. have deleted from the LCO statement since they relate to the definition of OPERABILITY. These same requirements are stated in proposed SR 3.6.9.1 and SR 3.6.9.2 respectively.

CTS 3.9.3

A. 35. In CTS 3.9.3, the asterisk footnote which states that locked or sealed closed valves may be opened on an intermittent basis under administrative controls has been included as a Note in the Actions. As such, this change is purely administrative.

CTS 3.9.3
A. 36. In CTS 3.9.3, the asterisk Note which provides an allowance to consider certain dual function valves OPERABLE if they are capable of being manually or locally closed has been deleted. This allowance was granted until startup from refueling outages Z1R13 and Z2R13. Implementation of the Zion Station's ITS will occur after refueling outages Z1R13 and Z2R13 and thus the specified condition is irrelevant. As such, removal of this Note is purely administrative.

CTS 3.9.3
A. 37. The following additional Notes have been proposed to modify the Actions for containment isolation valves (CIVs):

1) Separate condition entry is allowed for each penetration flow path;

2) Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves;

3) Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

In addition, Items 1 and 3 have also been written to address airlocks and included in proposed Specification 3.6.2, "Containment Air Locks." These changes are considered editorial in nature since the Notes only provide clarification to allowances or requirements which exist in the CTS. This change is consistent with NUREG-1431.

CTS 3.9.3
A. 38. In CTS 3.9.3, existing Actions B and C are retained as ITS LCO 3.6.3 Condition A. The proposed change provides clarification regarding penetrations with two isolation valves, and as such, is purely administrative. This is a companion Condition to new LCO 3.6.3 Conditions B and C addressed later in this SE.

CTS 3.9.3
A. 39. In CTS 3.9.3, existing Action "a" which requires that inoperable containment valves be restored to OPERABLE status within 4 hours, has been deleted. The option to restore inoperable equipment to an OPERABLE status, and thus exit the associated Action statement is implicit within Technical Specifications. In addition, the 4 hour restoration time is consistent with the proposed Completion Time for one or more penetration flow paths with one CIV inoperable. As such, this change is purely administrative and is consistent with NUREG-1431.

CTS 4.9.3.A.1

L-A. 44. The Surveillance Requirement CTS 4.9.3.A.1 to demonstrate the OPERABILITY of each CIV by performance of a cycling test prior to returning the valve to service after maintenance, repair or replacement work on the valve or its associated actuator, control or power circuit has been relocated to plant procedures. Any time repairs, maintenance or modifications have affected the OPERABILITY of a system or component, post-maintenance testing is required to demonstrate OPERABILITY of the system or component. Particular Surveillance Requirements needed to demonstrate OPERABILITY of the system must be evaluated for each maintenance or modification item. Explicit post-maintenance and modification Surveillance Requirements have, therefore been deleted from the Specification since they are appropriate for plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 4.9.3.A.2.a, 4.9.3.A.2.b, and 4.9.3.A.2.c

L-A. 45. The details of which containment isolation signals are tested contained in CTS 4.9.3.A.2.a have been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to the Bases without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A. In addition, the requirements to verify that on a Phase "A" containment isolation test signal each Phase "A" isolation valve actuates to its isolation position and, on a Phase "B" containment isolation test signal each Phase "B" isolation valve actuates to its isolation position; and that upon a "containment isolation signal" each containment vent valve actuates to its isolation position has been changed to allow the use of either an actual or simulated actuation signal. The use of an actual actuation signal represents an improved test method when compared to the use of a simulated actuation signal to initiate the containment isolation function. There are not changes to the surveillance requirements. Therefore, this change is administrative. This change is consistent with NUREG-1431.

CTS 3.9.5.A

A. 47. Proposed Specification 3.6.1 requires containment to be OPERABLE in MODES 1, 2, 3, and 4. This is consistent with CTS 3.9.5.A which requires containment integrity to be established whenever a nuclear core is installed in the reactor unless the reactor is in the Cold Shutdown condition and the SHUTDOWN MARGIN is ≥ 1% $\Delta k/k$. Proposed Specification 3.1.2, SHUTDOWN MARGIN (SDM) - T_{avg} ≤ 200°F requires the SDM to be ≥ 1% $\Delta k/k$ and proposed Specification 3.9.1, Boron Concentration, requires boron concentration in MODE 6 to be such that a core K_{eff} of ≤ 0.95 is maintained. As such, the change is purely administrative.

CTS 3.9.5.B

A. 48. In CTS 3.9.5.B, the requirement not to violate containment integrity when the reactor vessel head is removed unless the reactor is in Cold Shutdown and the SHUTDOWN MARGIN is ≥ 5% $\Delta k/k$ has been deleted. The only MODE in which the reactor vessel head can be removed is MODE 6 per proposed Table 1.1-1. In addition, in MODE 6 proposed Specification 3.9.1, "Boron Concentration" requires the boron concentration to be such that a core K_{eff} of ≤ 0.95 is maintained. As such, the change is purely administrative.

CTS 3.9.5 and 3.10.1.A

A. 51. A 1 hour Completion Time has been established for restoring the containment to OPERABLE status when the containment is inoperable. The CTS does not provide an allowed outage time (Completion Time). Rather, the CTS requires entry into LCO 3.0.3 which allows 1 hour to initiate Actions to place the unit in Hot Shutdown. The proposed 1 hour Completion Time allows some time to return the containment to an OPERABLE status prior to requiring a unit shutdown. As such, this change is purely administrative.

CTS 3.9.6

L-A. 54. CTS 3.9.6 addresses a limitation on the maximum opening (in degrees) of the containment purge supply and exhaust valves. In addition to this, CTS 3.9.6 included a statement to the effect that the purge valves "shall only be opened for safety related reasons." That part of CTS 3.9.6 dealing with only opening the containment purge supply and purge exhaust valves for safety related reasons has been moved to the Bases. The details of what constitutes safety related reasons is currently maintained in the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls.

CTS 3.9.6
L-A. 55. In CTS 3.9.6, the requirement to limit the maximum opening of the containment purge supply and purge exhaust valves to 50 degrees, and the associated surveillance requirement (CTS 4.9.6.B) which verifies the valves are limited to a maximum opening of 50 degrees every 18 months, have been removed from the Technical Specifications. Permanent plant modifications have been made to the valve actuators which prevent the valves from opening greater than 50 degrees. Removal or alteration to the valve actuators such that the valves could open greater than 50 degrees would constitute a change to the facility design. Changes to the facility design must be evaluated using the criteria set forth in 10 CFR 50.59 to determine if the change involves an unreviewed safety question. Any change deemed to involve a unreviewed safety question must first be submitted for NRC approval. In addition, specific surveillances prescribing a periodic verification of the system design are considered continually met by the design control process. As such, removing these requirements from the Technical Specifications does not result in a reduction of safety.

CTS 3.9.6.B
L-A. 56. The requirement to maintain the containment pressure and vacuum relief line isolated whenever the containment purge supply and/or purge exhaust line(s) is open has been moved to the Bases. The analysis used to evaluate operation of the 42 inch containment purge supply and purge exhaust valves, and the 10 inch containment pressure and vacuum relief valves in MODES 1, 2, 3, and 4 did not impose a restriction to preclude simultaneous operation. This requirement was included in the Zion Station Technical Specifications by License Amendment 135/124 for units one and two respectively. License Amendment 135/124 imposed new requirements on the operation of the containment purge supply and purge exhaust valves, and the containment pressure and vacuum relief valves, to address the NRC Interim Staff Position cited in an October 23, 1979 letter from A. Schwencer (NRC) to D.L. Peoples (ComEd). In addition, License Amendment 135/124 also provided the necessary integration of the February 29, 1980 Confirmatory Order (Appendix A, Item B.4 relating to containment purge operation) into the Technical Specifications. Neither the NRC Interim Staff Position, nor the Zion Station Confirmatory Order stipulated the requirement which precludes opening the containment purge supply and purge exhaust valves simultaneously with the containment pressure and vacuum relief valves. The requirement was originally intended to preclude multiple release paths. However, an analysis performed by ComEd concluded that the containment purge supply and purge exhaust valves (when restricted to a maximum opening of 50 degrees), and the containment pressure and vacuum relief valves are able to close against the containment pressure rise which may occur in the event of a DBA. As such, the requirement to preclude simultaneous opening of the containment purge supply and purge exhaust valves, and the containment pressure and vacuum relief valves is overly conservative and is not supported analytically.

This position is implicitly supported in NUREG-1431 in that there is no similar restriction on normal purge and mini purge valve operation. Placing this information in the Bases provides assurance it will be maintained. Materials moved to the Bases will be controlled in accordance with the Bases Control Program (5.5.12). CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.9.6.A
L-A. 58. In CTS 4.9.6.A, the Surveillance Requirements to: 1) verify the containment pressure and vacuum relief line is isolated prior to beginning purging operations, 2) verify the containment purge supply and purge exhaust isolation valves are closed upon completion of purge operation, and 3) verify the containment pressure and vacuum relief isolation valves are closed upon completion of venting operations have been moved to plant procedures. These CTS requirements provide details on how to conduct the SR to verify that the Containment Purge Supply and Purge Exhaust valves cannot be opened greater than 50 degrees. They are not, however, directly pertinent to the actual requirement. Since these details are not necessary to describe the actual regulatory requirement, they can be moved to plant procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. A justification for this change was also provided in discussion #56 of this SE section.

CTS 3.9.6 Act. B.
L-A. 61. The requirements pertaining to the operation of the containment pressure and vacuum relief subsystem have been moved to plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures without an impact on safety. As such, the procedures contain the appropriate steps to preclude opening the containment pressure and vacuum relief valves and the containment purge supply and purge exhaust valves at the same time. In the unlikely event both sets of valves were open simultaneously, actions would be initiated to isolate either both purge lines or isolate the containment pressure and vacuum relief line. The inability to isolate either the containment pressure and vacuum relief line or the containment purge supply and/or purge exhaust line upon discovery that both lines are open simultaneously may be indicative of an inoperable CIV, and as such, would require entry into the appropriate LCO. Changes to procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.10.2 Action a.1

A. 62. A Note has been added to the actions when one containment air lock door is inoperable. The purpose of the Note is to provide clarification that proposed Required Actions A.1, A.2 and A.3 are not applicable if both doors in the same air lock are inoperable and proposed Condition C is entered. This change is purely administrative and is presented to assist the operator in determining which Required Actions to enter when two doors in the same air lock are inoperable.

CTS 3.10.1.A, 4.10.1.A.5, 4.10.1.A.6, and 4.10.1.A.7

L-A. 63. In CTS 3.10.1.A, and CTS 4.10.1.A, the details related to the containment leakage rate testing limits have been moved from the Technical Specifications. Details and limits provided in Federal Regulations (10 CFR Part 50, Appendix J) are not required to be in Technical Specifications. As such, these details and limits have been provided in the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to the Bases without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the improved Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.10.1.A.3

A. 66. This CTS states that airlock testing shall be in accordance with (CTS) 4.10.1.A.2. The requirements of CTS 4.10.1.A.2 are captured in the SRs of ITS LCO 3.6.2, and the reference in CTS 4.10.1.A.3 is no longer needed. It is, therefore, deleted. Since there is no difference in requirements this is an administrative change.

CTS 3.10.2.A

L-A. 68. In CTS 3.10.2.A, the details regarding OPERABLE containment air lock doors have been moved to the Bases for Containment Air Locks consistent with NUREG-1431. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled documents without an impact on safety. Changes to the Bases will be controlled using the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.10.2
A. 76. The provision of CTS 3.10.2 Action a.4 which states that Specification 3.0.4 is not applicable, has been deleted. Proposed Specification 3.6.2, "Containment Air Locks" does not contain this allowance since the Actions with one personnel air lock door inoperable allows continued operations. As such, a specific exception to the provisions of Specification 3.0.4 is not necessary.

CTS 3.10.3, 3.10.4
L-A 82. The requirements of CTS 3.10.3 and CTS 3.10.4 to perform periodic examinations of containment tendons and anchorages and concrete have been removed from the LCO and placed in proposed SR 3.6.1.2. The Frequency of proposed SR 3.6.1.2 is in accordance with the Containment Tendon Surveillance Program. This change is consistent with NUREG-1431.

CTS 3.10.6
L-A. 87. The containment minimum design temperature limit has been moved from the Technical Specifications to the UFSAR. The minimum temperature limit is not assumed in any accident analysis, is not a requirement for containment OPERABILITY, and was inappropriately included in TS. This limitation is already located in plant procedures. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation (3.6.5) or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to UFSAR without an impact on safety. Changes to the UFSAR will be controlled using 10 CFR 50.59. CTS moved to the UFSAR are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.10.5
A. 90. In CTS 4.10.5, the Surveillance Frequency for the verification of containment pressure has been specified as once per "12 hours" instead of the "once per shift." At Zion Station, the normal shift is 12 hours. As a result, this is an editorial change.

CTS 4.5.1.a.2
L-A 95. SR 4.5.1.a.2, verification of Service Water (SW) flow to the Reactor Containment Fan Coolers (RCFC), has been revised in the Zion ITS. The flow verification (SR 3.6.6.2) now verifies that the SW System configuration is within the assumptions of the SW System hydraulic flow analysis that was performed to verify SW System design basis.

Specifically, SW flow of 1500 gpm was verified to the RCFC coolers by performance of a flow analysis, given a minimum SW component alignment. The SW System alignment assumptions of the flow analysis are also verified as being met by performance of

SR 3.7.8.1. Due to SW System configuration and operational requirements, performing a flow verification using normal SW System alignment does not provide verification of SW flow to the RCFC units in an accident. Verification on a weekly basis that the SW alignment is within the bounds of the assumptions of the flow analysis is equivalent to realigning SW System configuration to accident conditions and measuring flow.

ITS SR 3.7.8.1 is a valve lineup verification for SW System alignment. It verifies that a given SW pump and component alignment, accident SW flow is maintained to all SW loads under limiting DBA conditions. SR 3.7.8.1 will be performed weekly, with an acceptance criteria that ensures SW flow meets accident assumptions. If the SW system is outside its design basis, LCO 3.0.3 applies. This is equivalent to having no RCFCs OPERABLE in LCO 3.6.6.

3.7 PLANT SYSTEMS

CTS 3.7.1.C and 3.7.3.A.1

A. 4. It is always an option to restore equipment to OPERABLE status as opposed to completing compensatory actions. This unnecessary action (to restore the...) is superfluous and complicates the Technical Specifications, and has consequently been deleted throughout the proposed Zion Technical Specifications, except for those cases where it is the only Required Action for a Condition.

CTS 3.7.1

A. 5. This proposed Note ("Separate Condition entry is allowed for each flow path") provides explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," this Note provides direction consistent with the intent of the existing Actions for inoperable main steam safety valves. As such, it is an administrative change.

CTS 4.7.1

A. 10. Testing for these valves can only be accomplished through removal and bench testing or by testing with reactor coolant system pressure. A Note is incorporated to allow testing of the main steam safety valves in MODE 3 after pressure is sufficient to perform the test. This is consistent with current practice and is purely administrative.

CTS 3.8.7.C, 3.13.2.A Action, 3.13.2.A.1, 3.13.2.A.2, 3.8.6.A., 3.8.6.B, 3.8.6.C, 3.8.6.D, 3.7.1.C, 3.7.2.A, 4.7.3.B, 4.13.2.A.1.b, 4.13.2.A.2.b, 4.13.2.B.1, and Table 4.7-1

L-A. 12. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Some examples include deletion of the phrase "with four reactor coolant loops and associated steam generators in operation" from the

requirement to have OPERABLE safety valves, deletion of a Table with valve orifice sizes along with reference to the Table, extraneous details associated with auxiliary feedwater flow paths and pumps requirements, details of how to demonstrate OPERABILITY of the service water supply to auxiliary feed, details of the number of component cooling pumps and heat exchangers required to shut down the plant from various conditions, and deletion of the phrase "with ventilation flow through the HEPA and charcoal filters" from the requirement to have an exhaust system OPERATING. This type of information and details are not necessary to adequately describe the actual regulatory requirement. Therefore, they can be moved to licensee controlled documents without an impact on safety. This information has been moved to the Bases and plant procedures. The Bases will be controlled by the Bases Control Program (5.5.12) of the proposed Technical Specifications. Changes to procedures will be controlled in accordance with the Zion plant procedures change process. This change is consistent with NUREG-1431. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.7.2 Actions f and h

A. 18. The Note regarding the nonapplication of Specification 3.0.3 is clarified to reflect the intent that a shutdown should not be attempted for any reason while adequate Auxiliary Feedwater (AFW) is not available. This is the current intent of the existing Note and the change is purely administrative.

CTS 4.7.2.A.1.b

L-A. 20. The details relating to the acceptance criteria in this CTS Surveillance Requirement have been revised to specify the developed head required. These details are consistent with the details specified in the ASME Code. The detail specifying the 105 GPM flow rate to each steam generator has been deleted. The pump performance limits are specified as part of the IST program requirements and as such, are not needed to be included in TS. Changes to the IST Program will be controlled in accordance with Section 5.5.6 of the ITS. This change is consistent with NUREG-1431.

CTS 3.7.3.A Action B

A. 25. The Required Actions and Completion Times are revised to reflect the impact of the inoperable water source on the AFW capability. Due to system design, the backup water source (service water), may be available to some AFW pumps, but not others. Therefore, it may not be necessary to shut down, but other remedial action may be required. With the ITS requirement to "Enter the appropriate Required Actions and ... for AFW ...," the appropriate actions are determined by the remaining capabilities. With the condensate storage tank and the Service Water System supply to the AFW pumps inoperable, the current Actions allow the unit to stay in the applicable MODES. The allowance was provided since the AFW System

is used during plant normal cooldown. However, this allowance does not recognize that an inoperable CST or service water supply does not necessarily mean that all water supplies are unavailable to all trains or pumps. Therefore, this allowance has been deleted. This change is consistent with NUREG-1431 and is purely administrative.

CTS 4.7.3.A.2
L-A. 26. The existing CST Surveillance Requirement for manual valves for the lined-up tank to be verified locked open once per month has been moved to plant procedures. Moving the requirement to verify the suction source supply valves are locked open is considered acceptable considering the procedural controls governing the position of these valves. In addition, configuration control events have been reviewed, and there have been no events rendering the AFW pumps inoperable that would have been prevented through this surveillance. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.8.6.A and 3.8.7
A. 36. The APPLICABILITY of the LCOs for the Component Cooling System and the Service Water System have been clarified to include MODE 4. Currently, the Actions require that if the minimum requirements cannot be met, the reactor(s) shall be brought to a cold shutdown condition. Although not clear, this could be considered an applicability that includes MODE 4, and the clarification is, therefore, an administrative change. This change is consistent with NUREG-1431.

CTS 3.13.2.A
L-A. 38. The Applicability of this Specification has been modified to remove the requirement for system OPERABILITY during the operation of the crane with loads over irradiated fuel in the fuel building. System OPERABILITY during movement heavy loads was required to cope with the consequences of dropping heavy loads on irradiated fuel. However, administrative controls are in place at Zion that preclude the movement of heavy loads over irradiated fuel. These administrative controls are consistent with NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and are described in the UFSAR. Use of administrative controls for movement of heavy loads has been found acceptable by the staff as stated in GL 85-11. GL 85-11 concludes, inpart, that administrative controls are in place and are sufficient such that heavy loads considerations limits, to the extent practicable, the risks associated with handling heavy loads, and no additional licensing requirements are warranted. Based on the above, the staff concludes that the proposed change is acceptable. System OPERABILITY will continue to be required during movement of irradiated fuel.

CTS 3.13.2 Applicability

A. 40. The conditions of Applicability have been clarified to describe the conditions identified in the existing Specification. This change is consistent with NUREG-1431 and is purely administrative.

CTS 3.13.2

A. 41. Required Actions have been added (Required Actions A.1 and A.2) to identify appropriate actions for the FHBEFS not in operation when required. This is incorporated in accordance with current Technical Specification 3.13.2.

CTS 3.13.13

A. 47. The requirement to immediately suspend all other movement of fuel assemblies has been deleted. The action to immediately move the non-complying fuel assembly to Region 1 will effectively preclude movement of other fuel assemblies since only one assembly can be moved at one time. Therefore, specifically stating the action is unnecessary and has been deleted.

CTS 3.18.1

A. 53. The limit for steam generator activity is presented in a format using DOSE EQUIVALENT I-131. The intent of the Specification, as stated in the objective section of the CTS, is to limit the I-131 which could be released as a result of a steam generator tube break; thus the change is purely administrative.

CTS 3.18

A. 54. Appropriate Actions have been provided if the secondary activity limit is not met. Currently, if the limit is not met, no specific Action is provided. Thus, Specification 3.0.3 applies, which is essentially equivalent to the proposed Required Action.

CTS 3.9.4

A. 60. The Applicability for Main Steam Isolation Valves was revised to be consistent with that of other containment isolation valves (CIVs). The Conditions and Surveillance Requirements were also revised to consider MODES 2 and 3 when MSIVs are closed and deactivated, and MODE 4. Since the MSIVs are also CIVs and currently required in these MODES by the CIV Specification, this change is an administrative clarification for consistency. Mode 7 has been deleted as this is a subset of Mode 2 in the ITS.

CTS 3.9.4 Action

A. 62. The shutdown action has been revised to eliminate the requirement to exit a MODE for which the Required Action is not applicable, i.e., the CTS Action for MODE 1 requires the plant to be placed in MODE 2; once this is accomplished the Condition is no longer applicable, however, the Action continues to require the plant to be placed in MODE 3. Since the condition is really not applicable once the plant is in MODE 2, the action to place the plant in

MODE 3 can be eliminated with no impact. Therefore, this is an administrative change.

CTS 3.9.4 Action

A. 67. The CTS statement "Specification 3.0.4 not applicable" is deleted. A specific statement to this effect is not needed in the ITS. By definition, LCO 3.0.4 is not applicable to ITS LCO 3.7.2 because Condition C allows unlimited plant operation with one MSIV inoperable.

3.8 <u>ELECTRICAL POWER SYSTEMS</u>

CTS 3.0.5 Note

A. 2. The second part of the CTS 3.0.5 Note has been incorporated into each of the Electrical Power Systems Specifications applicable during MODES 5 and 6, by requiring that the associated features be declared inoperable, or imposing Required Actions consistent with those currently required for those features.

CTS 3.15.1.A, 3.15.1.C, 3.15.1.D, 3.15.1.E, 3.15.1.F, 3.15.2.C, 3.15.2.D, 3.15.2.E, 3.15.2.G, and 4.15.1.E

L-A. 4. The specific description of the circuits that make up the normal and reserve offsite power circuits, the numerical designations for the ESF busses, station 125 VDC batteries, and inverters, and the requirement to record the amount of water added to the station batteries, have been moved to plant procedures or the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to procedures or the Bases without an impact on safety. The Bases will be controlled by the Bases Control Program (5.5.12) of the proposed Technical Specifications. Changes to procedures will be controlled by in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.15.1.B.2 and 4.15.1.B.3

L-A. 7. The methods for performance of the DG surveillance testing are identified in the Bases for each SR rather than through a reference to Regulatory Guide (RG) 1.108 as in current Specification 4.15.1.B. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to plant procedures without an impact on safety. Changes to these procedures will be controlled in accordance with Zion plant

procedure change process. This change is consistent with NUREG-1431.

CTS 4.15.1.B

9. Several Notes to the Surveillances have been added to provide explicit direction and allowance to avoid interpretational ambiguity. Refer to markup of CTS page 257 for Notes added based on each of the following discussions:

A. 9a Since the CTS do not specify unit-specific controls for the starting and loading of the common DG, the requirement being added to stipulate that the unit controlling the monthly test of the common DG may be alternated, is considered an administrative delineation of current testing methodology.

A. 9b The current Surveillances with the DG load requirements have only an implied allowance for operating load range (since it is impossible to operate literally at the specified load; no greater and no less). The Notes allowing momentary transients have no real impact on the diesel generator's load carrying capability and the transient should not invalidate the test since the load is normally greater than the 100% load rating for most of the test. Refer also to discussion 3.8-11a for related issue.

A. 9j The current Technical Specifications do not provide specific direction for loading methodology. The information provided in this Note is additional details concerning the performance of the Surveillance Requirements.

CTS 4.15.1.B.2.a, 4.15.1.B.3.b, and 4.15.1.B.3.c

A. 11a Current Surveillances with DG load requirements have only an implied allowance for operating load range (since it is impossible to operate literally at the specified load; no greater and no less). The ITS Surveillances are being proposed to include an operating range to explicitly bound the existing ambiguity based on the required load for each division. Since this range is within a normally expected operating band, this portion of the change is purely administrative.

CTS 4.15.1.B.2.a

A. 12. Proposed SR 3.8.1.3 dictates that DG operation continue for one hour. This is a more explicit presentation, but consistent with the current requirement for operation until operating temperatures have stabilized. Plant experience has shown that 60 minutes is the maximum time the diesel generator requires to reach operating temperature. Therefore, this change is purely administrative.

CTS 4.15.1.B.2.b and 4.15.1.B.2.c

A. 13. The Frequency of the starting air compressors and fuel oil transfer pumps tests is being proposed as 31 days, consistent with the Frequency for DG testing, and current requirements. The presentation, however, no longer shows these subsystem performance

verifications coinciding with the monthly DG test, as currently required. Since the testing is performed within the same required interval, and the acceptance criteria remain unchanged, whether it occurs "during the diesel generator test specified" or not, is unimportant. This is therefore, an administrative change.

CTS 4.15.1.B.3.a, 4.15.1.B.3.b, 4.15.1.B.3.c, 4.15.1.B.3.d, 4.15.1.D.1, and 4.15.1.E.4

A. 14. The currently identified Frequency of "during each refueling outage" is being more explicitly presented in the proposed Surveillances. Each current Surveillance with this limitation is being proposed as "18 months." With the 25% allowance of SR 3.0.2, this portion is only a change in the presentation of current practice. It is, therefore, an administrative change.

CTS 4.15.1.B.3.b

A. 16. Current Surveillances include requirements for testing in accordance with RG 1.108. RG 1.108 C.2.a(3) requires a 24-hour DG run each refueling outage. The 1-hour run requirement of CTS 4.15.1.B.3.b is encompassed by a 24-hour run requirement. Therefore, the 1-hour run Surveillance is adequately addressed by the proposed SR 3.8.1.11 specified 24-hour run. Combining these requirements in the proposed change is administrative.

CTS 4.15.1.B.3.b, 4.15.1.B.3.c, 4.15.1.B.3.f, and 4.15.1.E.4.f

A. 17. The noted allowance to credit a common DG (or common battery) test if performed in the required Frequency for the opposite unit, is being removed. It is deemed unnecessary for inclusion in the ITS. The stated allowance is applicable to many other Surveillances; for other shared equipment as well as other common DG Surveillances. Testing of a component for any single requirement can satisfy any number of different Surveillances (even on different Units) if the testing criteria are met. In these instances, it is the DG itself being tested, and not any Unit-unique features. Surveillances on Unit-unique features will require separate testing for each Unit. Since there is no change in stated requirements, this change is deemed administrative.

CTS 4.15.1.B.4

L-A. 20. This Surveillance is not specifically detailed in the proposed ITS. Procedural controls on DG inspections recommended by the manufacturer are sufficient to ensure the DG receives the necessary inspections. Removal of these details from the Technical Specifications will have no effect on DG OPERABILITY. The maintenance inspections will be maintained as part of the Maintenance Plan. Changes to the Maintenance Plan will be controlled utilizing the guidance of 10 CFR 50.65. This change is consistent with NUREG-1431.

CTS 4.15.1.D.1.b

A. 21. This auto-transfer tests the automatic closure of the DG output breaker ("standby feed") when the connected main or reserve feed

is tripped. This "auto-transfer" occurs as a portion of both the loss-of-power test (required to comply with RG 1.108 testing), and the LOCA/loss-of-power test (performed as required by current Surveillance 4.15.1.b.3.a). Therefore, eliminating a unique reference to this testing is an administrative change only.

CTS 4.15.1.D.1.b

L-A. 22. Parallelling the reserve or main feed with the standby (DG) feed would require manual efforts by the operator. Normal parallel feed prevention is precluded by procedural controls. The design feature that provides automatic parallel feed prevention is not credited for OPERABILITY of the DGs or offsite circuits in the accident analysis. As such, this Surveillance is being moved from the CTS to plant procedures. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. An ITS Surveillance is not necessary to assure DG OPERABILITY.

CTS 4.15.1.E.4.c

L-A. 26. The duration of the battery service test has been moved from the CTS to the Bases. The battery service test consists of additional details that are also not currently dictated by the CTS (e.g., initial state of charge, current draw, final acceptance criteria). Specifying performance of a "service test" is adequate to convey that the duration must be consistent with the plant specific licensed service duration. Together the details of this test can be adequately controlled in the Bases. Materials moved to the Bases are details important to the understanding of the actual Technical Specification requirement, and as such will be controlled in accordance with the Bases Control Program (5.5.12). CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.15.1.E.4.d

L-A. 28. Consistent with the presentation in NUREG-1431, the details in this CTS that constitute "degradation" are moved to the Bases. These details will be controlled using the Bases Control Program in Section 5.0. of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.15.1.E.4.e

L-A. 29. The current detail relating to acceptable battery charger performance testing ("without exceeding the design temperature rise"), is moved from the CTS to the Bases. Electrical power equipment is designed to function at a specified output with a specified temperature rise above ambient. Operation of this equipment within the specified parameters is an implicit part of OPERABILITY. Therefore, this specific acceptance criterion, which is not detailed in NUREG-1431, represents a performance criterion that can be adequately controlled administratively. Provided the

battery charger can meet the specified testing parameters, the charger can be considered OPERABLE to meet its intended function. Materials moved to the Bases are details important to the understanding of the actual Technical Specification requirement, and as such will be controlled in accordance with the Bases control Program (5.5.12). CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.15.1.F and 3.15.2.G

A. 30. CTS 3.15.1.F appears to allow indefinite operation with only 3 of 4 inverters connected to their respective instrument busses. However, Specification 3.15.G.2 restricts the time an inverter can be inoperable (Note: the ITS clearly state that inverter OPERABILITY includes a requirement for connection to its respective instrument bus) to 14 days. The ITS is being written with this 14-day allowance for one inoperable inverter. Additionally, a Note is provided in LCO 3.8.7 to assure Electrical Power Distribution System Actions are followed in the event an instrument bus is de-energized. The conversion of these current requirements clarifies a potential ambiguity and is an administrative change.

CTS 3.15.2.A

A. 32. Current Actions that detail "provided [remaining DGs...] remain OPERABLE" are not necessary to be detailed in the proposed Actions. The provisions of current Specification 3.15.2.H, as well as the proposed Actions for multiple inoperabilities (e.g., LCO 3.8.1, Condition G for two or more inoperable DGs), assure an appropriate repair time if other required DGs and offsite circuits are not OPERABLE. The stated repair time for a single inoperable offsite feed or DG will continue to apply when only one offsite circuit or DG is inoperable. Eliminating the noted detail from the current Actions is, therefore, an administrative change only.

CTS 3.15.2.B and 3.15.2.H

35. Action H of proposed ITS LCO 3.8.1 provides appropriate shutdown actions (be in MODE 3 within 6 hours) when the inoperable electrical power systems have not been restored to OPERABLE status within the time provided in the other Actions. This results in the following change.

35a CTS 3.15.2.B requires the plant to be placed in hot shutdown (MODE 3) when no offsite power is available to a unit. However, CTS do not impose a specific time constraint to reach MODE 3. The "implied" time constraint is interpreted as 6 hours, consistent with the provisions of LCO 3.0.3. This is an Administrative change that is consistent with NUREG-1431.

CTS 3.15.2.B, 3.15.2.G, and 3.15.2.H

35. The ITS Actions being proposed provide appropriate shutdown actions (be in MODE 5 within 36 hours) when the inoperable electrical power systems have not been restored to OPERABLE status within the time provided in the other Actions. This results in the following change (refer to CTS markup pages 264 and 267).

A. 35c The CTS require the plant to be placed in cold shutdown (MODE 5) when the Actions have not been met. However, CTS do not impose a specific time constraint to reach MODE 5. The "implied" time constraint is interpreted as 36 hours, consistent with the provisions of LCO 3.0.3. This is an administrative change that is consistent with NUREG-1431.

CTS 3.15.2.B and 4.15.2.B

A. 36. Zion CTS include a requirement that the DGs be started and loaded in the event of a loss of offsite power (LOOP). This requirement is not necessary in TS and is deleted in the ITS because the design of the DGs at Zion is for automatic starting and loading in the event of a LOOP. The DGs are required to be OPERABLE by TS, and the automatic capabilities are periodically demonstrated by performance of Surveillance Requirements (SRs). Since no safety related requirements are altered, this is an administrative change.

CTS 3.15.2.D, Table 3.15-1, and Table 3.15-2

L-A. 37. Specification 5.5.13, Safety Function Determination Program, is designed to accomplish the verification requirement of CTS 3.15.2.D to assure a minimum complement of safety systems is available to perform the assumed safety function. If this minimum complement is not available, the Program requirements will result in an immediate plant shutdown. The component versus bus listing in Tables 3.15-1 and 3.15-2 is not required in TS in order to implement Specification 5.5.13. This is a design feature that can be adequately addressed in licensee controlled documents. Accordingly, the component versus bus listings are moved to the UFSAR. Changes to the details moved to the UFSAR will be controlled by 10 CFR 50.59. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.15.2.C, Note

L-A. 40. The verifications of at least three SW and three Component Cooling Water (CCW) pumps with independent power supplies have been moved to the Bases. This information provides details of process commitments which are beyond the safety analysis requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to plant procedures or the Bases without an impact on safety. The Bases will be controlled by the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases are

administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.15.2.c

L-A. 41. This CTS requirement is modified by a footnote that requires the remaining DGs be verified OPERABLE on a daily basis. This footnote is, in turn, modified by another footnote that states that the daily verification of DG OPERABILITY can be an Administrative check. "Verification" of safety system OPERABILITY is an implicit TS requirement that is a continuous, ongoing activity of the SRO on shift. No explicit requirement is necessary to assure that DGs are verified OPERABLE. Therefore, this CTS is deleted. Elimination of this "verification" does away with a potential source of confusion, but does not change the manner in which the plant is operated. Therefore, this is an administrative change.

CTS 3.15.2.E

L-A. 43. The CTS which permits use of a cross-tie to allow one unit's battery to function in place of the other unit's battery has been moved to the Bases for LCO 3.8.4. The Bases will be controlled by the Bases Control Program (5.5.12) of the proposed Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 4.15.3.A

L-A. 47. The Surveillance requirement for a daily verification of DG fuel oil level when the DG is being run has been moved from Technical Specifications. This surveillance is currently covered by plant procedures that impose requirements to monitor fuel oil levels daily, regardless of diesel generator operating status. This detail is not deemed necessary for Technical Specification requirements, consistent with NUREG-1431. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.15.2.F and 4.15.2.F

A. 48. The activities required by the current Technical Specifications for an inoperable battery charger do not specify times for completion of the activity. Therefore, explicit limitations appropriate to the activity are being added in the ITS. The proposed times are consistent with the current interpretation of the requirements. Therefore, the following changes are administrative. These changes are consistent with NUREG-1431.

a. The time to close tie breakers to the battery charger of the other unit is proposed as 2 hours (LCO 3.8.4 Required Action B.1). This time is consistent with the NUREG-1431 allowance for restoration of an inoperable battery charger,

and represents a reasonable time for the operations staff to accomplish the breaker repositioning.

b. The allowed time for the initial verification that the cross-tied battery charger is operating within appropriate parameters is proposed to be 3 hours (LCO 3.8.4 Required Action B.2). This allows an hour, after completing the cross-tie, for evaluation of the cross-tied charger.

c. The testing requirement of CTS 4.15.1.E.1 is retained as two surveillances: ITS SR 3.8.4.1, verification of overall battery voltage, and ITS SR 3.8.6.1, verification of battery pilot cell voltage and specific gravity. Initial completion times for these two Surveillances are proposed to be 3 hours (LCO 3.8.4, Required Action B.3) and 8 hours (LCO 3.8.4 Required Action B.4), respectively, following completion of the cross tie. These times are reasonable considering what must be done to comply with the requirements. The verification of overall battery voltage is similar to Required Action B.2 discussed above and has the same 1 hour allowance. The check of pilot cell voltage, however, requires special equipment, procedures, and trained personnel, and requires more time for preparation and implementation. Six hours from completion of the cross tie is proposed for this activity.

CTS 4.15.1.B.2.b

A. 50. Zion CTS include a requirement to start and operate the DG starting air compressors each month. This requirement is being deleted. Air compressors are not safety related equipment, and their inclusion in TS is inappropriate. In addition, the air compressors will be exercised monthly in order to recharge the DG starting air receivers following the monthly DG start, and there is no need for a separate TS requirement.

CTS 4.15.1.B.3.e

L-A. 52. The details of the CTS requiring a specific flow rate from the DG fuel oil transfer pump have been moved to the IST Program. The IST Program will be controlled in accordance with Specification 5.5.6.

CTS 3.15.2.A and 4.15.2.A

A. 57. The NOTES modifying Zion CTS Sections 3.15.2.A and 4.15.2.A, related to Modification M22-1-93-00B for Unit 1 and Modification M22-2-93-001B for Unit 2, are deleted from the ITS submittal. The modifications have been completed,therefore the provisions no longer are applicable and the deletion therefore is an administrative change.

3.9 REFUELING OPERATIONS

CTS 3.13.1.A.1, 4.13.1.A.1, and 3.13.3.B

L-A. 3. The average reactor coolant temperature requirement in MODE 6 specified in CTS 3.13.1.A.1 and 3.13.3.C is not explicitly assumed in or supported by any accident analysis. It has, therefore, been deleted. The UFSAR evaluates 2 events which are postulated to occur in MODE 6, they are; a Fuel Handling Accident (in Containment for this discussion), and a boron Dilution During Refueling event. The UFSAR does not explicitly state the temperature of the coolant as an initial condition for these events. However, calculations have shown the density change associated with an increase in coolant temperature from 140°F to 210°F will have an insignificant effect on the conclusions of these analyses. Specifically, the time calculated in the boron dilution event before SHUTDOWN MARGIN is lost will only decrease by approximately 2 minutes. The acceptance criterion for a boron dilution event at Zion Station is 30 minutes. The results of the current boron dilution analysis of record show the operator has at least 50 minutes before SHUTDOWN MARGIN is lost. Therefore, a reduction of 2 minutes as a result of an increase in coolant temperature will not invalidate the conclusion established in Zion's boron Dilution During Refueling analysis.

For the Fuel Handling Accident in Containment, the decreased coolant density has an insignificant effect on the decontamination factor (coolant retention of iodine) associated with the refueling cavity. As such, the total iodine released from a damaged spent fuel assembly will not result in an increase in offsite doses.

The actual temperature to which the coolant will be allowed to increase will be administratively controlled by plant procedures to ensure the measured averaged RCS temperature will not exceed the maximum value assumed in the analysis. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431

CTS 3.13.1.A.2

L-A. 6. In CTS 3.13.1.A.2, the descriptive term "permanent and/or temporary" as they relate to source range nuclear instruments has been moved from the LCO to the Bases. This information provides details of design or process (definition of OPERABLE) which are not directly pertinent to the actual requirement; i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to the Bases without an impact on safety. Changes to the Bases will be controlled in accordance with the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by

CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.13.1.A.2

L-A. 7. In CTS 3.13.1.A.2, the requirement that each source range neutron monitor have visual indication and one have audible indication has been removed from the LCO to the Bases. This information provides details of design or process (definition of OPERABLE) which are not directly pertinent to the actual requirement; i.e., Limiting Condition for Operation or Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to the Bases without an impact on safety. Changes to the Bases will be controlled in accordance with the Bases Control Program in Section 5.5.12 of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.13.1.A.2

A. 8. The term "whenever core geometry is being changed" in CTS 3.13.1.A.2 has been deleted since it is covered by the Specifications new Applicability of "MODE 6".

CTS 4 13.1.A.2

L-A. 11. In CTS 4.13.1.A.2, the requirement to check temporary neutron monitors prior to installation has been moved to the plant procedures. The neutron monitors are required to be OPERABLE, but details of how it is established are not required in TS, and can be moved to plant procedures. Changes to these procedures will be controlled in accordance with Zion plant procedure change process.

CTS 3.13.1.A.3

L-A. 12. The requirement of CTS 3.13.1.A.3 for the reactor core to be subcritical for a period of at least 100 hours prior to the movement of an irradiated fuel assembly in the reactor has been moved to the plant procedures. The activities necessary prior to commencing movement of irradiated fuel (i.e. reactor head removal, flooding the refueling cavity) ensure there will be at least 100 hours of subcriticality before movement of any irradiated fuel. Therefore, this requirement has been moved to plant procedures consistent with NUREG-1431. Changes to these procedures will be controlled in accordance with Zion plant procedures.

CTS 3.13.1A.4 and 4.13.1.A.4

L-A. 13. The requirement that at least one "RHR heat exchanger" be in operation during CORE ALTERATIONS specified in CTS 3.13.1.A.4 and 4.1.13.A.4 has been removed from the LCO since it relates to the definition of OPERABILITY. This detail has been moved to the Bases. This information provides details of design or process (definition of OPERABLE) which are not directly pertinent to the actual requirement; i.e., Limiting Condition for Operation or

Surveillance Requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to the Bases without an impact on safety. Changes to the Bases will be controlled in accordance with the Bases Control Program (5.5.12) of the Technical Specifications. CTS moved to the Bases are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 3.13.9 Footnote

A. 19. The allowance to have the normal or emergency power source for an OPERABLE Residual Heat Removal (RHR) loop in MODE 6 inoperable as denoted by a "*" on CTS page 247a has been incorporated in the definition of "OPERABILITY," Section 1.1.

CTS 4.13.9.A.1

A. 20. This CTS requirement to verify one RHR Loop is operating is covered in the ITS by proposed SR 3.9.5.1 and SR 3.9.5.2. However, this CTS also includes a requirement to test the RHR Loops in accordance with the ISI program (CTS 4.0.5). This latter requirement is not carried over to the ITS at this location. In the ITS, the requirements for testing ASME class 1, 2 and 3 components pursuant to Section XI (CTS 4.0.5) have been removed to eliminate duplication with the requirements of 10 CFR 50.55a. However, control for inservice testing has been retained in Section 5.0, "Administrative Controls." The RHR Loops will continue to be tested in accordance with Section XI as part of the ISI Program required by Section 5.5 of the TS, but this CTS requirement will no longer be stated in TS. Since the actual requirements have not changed, this is an administrative change.

CTS 3.13.9.A.1, Action b

A. 21. This CTS provides requirements for the plant conditions which include water level less than 22 ft. above the reactor vessel flange and no RHR loop in operation. The Actions of this CTS, with one exception, are addressed in Proposed LCO 3.9.5. The exception is the requirement to "suspend all operations that would cause a decrease in decay heat removal capability." This item is deleted. In the above plant condition, no RHR Loops are OPERATING, so mechanical decay heat removal can not be decreased any further. Evaporative decay heat removal can be decreased by allowing water level to decrease, but ACTION A.2 of LCO 3.9.5 requires action to be initiated immediately to restore water level to greater than 22 ft. above the reactor vessel flange. Hence, proposed LCO 3.9.5 also addresses a decrease in evaporative cooling. The plant condition could be made worse, however, by the addition of decay heat load: e.g. adding irradiated fuel assemblies to the core, or by a reduction of boron concentration. These activities are precluded by Proposed LCO 3.9.5 and LCO 3.9.6 which prohibit activities involving a reduction in boron concentration or movement of irradiated fuel, respectively, when water level is less than 22 ft. above the vessel flange, and by

LCO 3.9.4 which prohibits movement of irradiated fuel when minimum RHR requirements are not met with water level greater than 22 ft. above the reactor vessel flange. Therefore, the CTS requirement is captured by ITS LCO 3.9.4, LCO 3.9.5, and LCO 3.9.6, and the potentially confusing CTS language regarding decay heat removal can be deleted. Since the CTS requirement is not being altered, this is an administrative change. This change is consistent with NUREG-1431.

CTS 3.13.9.B, Action a

A. 24. This CTS provides requirements for the plant conditions which include water greater than 22 ft. above the reactor vessel flange and no RHR Loop in operation. The Actions of this CTS, with one exception, are addressed in Proposed LCO 3.9.4. The exception is the requirement to "suspend all operations that would cause a decrease in decay heat removal capability." This item is deleted. In the above plant condition, no RHR Loops are OPERATING, so decay heat removal cannot be decreased any further. However, the plant condition could be made worse by the addition of decay heat load: e.g. adding irradiated fuel assemblies to the core. This is precluded by Proposed LCO 3.9.4 which prohibits the addition of irradiated fuel when RHR Loop requirements are not met. Therefore, the CTS requirement is captured by ITS LCO 3.9.4, and the potentially confusing CTS language regarding decay heat removal can be deleted. Since the CTS requirement is not being altered, this is an administrative change. This change is consistent with NUREG-1431.

CTS 3.13.10, Footnote*

L-A 28. This footnote is an exception to the CTS requirement to maintain reactor vessel water level at least 22 feet above the vessel flange. This exception is captured in the Applicability of ITS LCO 3.9.6, and a separate footnote is no longer necessary. Therefore, this CTS is deleted. Since there are no changes to TS requirements, this change is purely administrative.

CTS 3.13.3.B and 4.13.3.B

L-A. 30. CTS 3.13.3.B and 4.13.3.B include requirements that are applicable only when the equipment hatch is removed or when both doors of the personnel air lock are open. These CTS requirements include maintaining a shutdown margin greater that 10%k/k, and verifying reactor coolant boron concentration once per shift. The Zion fuel handling accident analysis only assumes a core k_{eff} of ≤0.95 without regard to the status of the equipment hatch or personnel air lock doors. Proposed LCO 3.9.1, "Boron Concentration," includes requirements that a minimum boron concentration, as specified in the COLR, be maintained to ensure a K_{eff} of ≤0.95. Proposed LCO 3.7.13 includes requirements that a Fuel Handling Building Exhaust Filter train be in operation during Core Alterations when the equipment hatch is removed or both personnel air lock doors are open to ensure doses at the site boundary do not exceed 10 CFR Part 100 guidelines. These proposed

requirements provide adequate assurance that a fuel handling accident will not result in unacceptable consequences. The above CTS impose requirements that go beyond the initial assumptions of the fuel handling accident analysis and, consequently, are not analyzed. Therefore, they serve no purpose and may be deleted. This change does not involve any decrease in requirements or safety within the Zion design basis and is, therefore, administrative.

4.0 DESIGN FEATURES

CTS 5.1, 5.2, 5.3, 5.4, 5.5.1, 5.5.2, 5.6, and Fig. 5.5.2-1

L-A. 1. These CTS include information such as the location of Zion relative to Waukegan, elementary descriptions of the RCS, reactor core, containment, and containment penetrations, details of new fuel storage such as "two parallel rows in each section", seismic acceleration values, and a diagram of the spent fuel storage pool. This information has been moved to the Updated Final Safety Analysis Report (UFSAR). This information provides details of design or process which are not necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to public health and safety. These details are also not necessary to adequately describe the pertinent regulatory requirement and can, therefore, be moved to licensee controlled documents without an impact on safety. Changes to the UFSAR are controlled by 50.59. This change is consistent with NUREG-1431. CTS moved to the UFSAR are administratively relocated requirements. They are identified by CTS number, a brief subject description, and applicable controls in Appendix A.

CTS 5.3

A. 2. An allowance for the use of lead test assemblies (LTAs) is explicitly identified. While no special test assemblies are currently in use, they are allowed as evidenced by their identified inclusion in the fuel inspection program (CTS 3/4.13.8). This added statement provides specific recognition of this CLB allowance and is intended to prevent confusion on whether or not a license amendment is required to conduct such a test. The requirements of 10 CFR 50.59 regarding the conduct of special tests remain applicable, and are sufficient to ensure that a limited number of lead test assemblies placed in nonlimiting core regions will not have an impact on safety (which is the criterion of 10 CFR 50.36(c)(4) for including the information as a Design Feature). Therefore, this addition is only a clarification of current technical specification allowances that are being retained in the ITS.

CTS 5.3

A. 3. The identification of the types of cladding allowed is revised to include ZIRLO. This is considered to be an administrative change since it is consistent with the types of fuel cladding allowed by 10 CFR 50.46. Also, this change is consistent with NUREG-1431.

5.0 ADMINISTRATIVE CONTROLS

CTS 6.1.1.B, 6.1.1.C, 6.1.4, 6.2.1.i, and Fig. 6.1-1

L-A. 1. Where possible, plant specific management position titles in the current Technical Specifications are replaced with generic titles as provided in ANSI/ANS 3.1. Personnel who fulfill these positions are still required to meet the qualifications detailed in proposed Specification 5.3. In addition, compliance details relating to the plant specific management position titles fulfilling the duties of these generic positions will continue to be defined, established, documented and updated in the Quality Assurance (QA) Manual. This approach is consistent with the intent of Generic Letter 88-06 which recommended, as a line item improvement, relocation of the corporate and unit organization charts to licensee controlled documents. Changes to the QA Manual will be controlled in accordance with 10 CFR 50.54(a). The intent of the Generic Letter, and of this proposed change, is to reduce the unnecessary burden on NRC and licensee resources being used to process changes due solely to personnel title changes during reorganizations. Since this change does not eliminate any of the qualifications, responsibilities or requirements for these personnel or the positions, the change is considered to be a change in presentation only and is, therefore, administrative. The specific replacements are:

5.1.1 & 5.2.1.b & 5.5.1.c.2	station manager for Station Manager (Note: Also in SL 2.2)
5.1.2 & 5.2.2.g	shift supervisor (SS) for Shift Engineer or Shift Foreman
5.2.1.c	corporate officer for nuclear safety for Site Vice President or Chief Nuclear Officer (Note: Also in SL 2.2)
5.2.2.d	radiation protection person for Radiation Protection Supervisor/Designee
5.2.2.e & 5.2.2.h	shift technical advisor (STA) for Shift Technical Advisor or Shift Control Room Engineer (SCRE)
5.2.2.f	operations manager for Operations Manager
5.2.2.f	supervisor in charge of the operations shift crews for Shift Operations Supervisor
5.3.1	supervisor of health physics department for Health Physics Supervisor assistant supervisor of health physics department for Lead Health Physicist

CTS 4.3.1.B.4.B, 4.3.1.B.5.B, 3.3.2.F.3, 3.11.1 Actions, 4.11.1, 3.12.1 Actions, 4.12.1, 3.12.2 Actions, 4.12.2, Table 4.17-1, Table 4.17-2, 6.1.3, 6.2.1, 6.3, 6.4, 6.6.1.E, 6.6.1.F, Figure 6.1-1 Note 3, and 6.6.3.B.1

L-A. 2. This information has been moved to plant procedures. This information provides details of design or process which are not directly pertinent to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to public health and safety. Since these details are also not necessary to adequately describe the pertinent regulatory requirement, are not mandated by 10 CFR 50.36, and do not meet the criteria in the Final Policy Statement, they can be moved to procedures without an impact on safety. Changes to procedures will be controlled in accordance with Zion Station plant procedure change process. This change is consistent with NUREG-1431. Specific application of this discussion is as follows:

CTS 4.3.1.B.4.B - It is not necessary to clarify that the steam generator can be declared OPERABLE after repairing degraded tubes since only the degraded tube would have resulted in the steam generator being inoperable (as it relates to this specification). Therefore, this requirement is removed from Technical Specifications. Additional restrictions on NRC notification prior to resumption of unit operation are contained in proposed Specification 5.6.9.

CTS 4.3.1.B.5 - Specifically identifying SPECIAL REPORTS and cross-referencing the associated Technical Specification number is not necessary to ensure compliance with the regulations and is not generally done. Therefore, this requirement is removed from Technical Specifications. The "Steam Generator Tube Inspection Report" will be contained in proposed Specification 5.6.9.

CTS 3.3.2.F Table 6.6-1 - The requirement to initiate a SPECIAL REPORT following an injection into the RCS when Tavg is ≥ 350°F has been eliminated as discussed in discussion #6 of this document section since it is a duplication of existing regulations. Therefore, the details associated with the content of the report are addressed in suitable documents as described above.

CTS 3.11.1, 4.11.1, CTS 3.12.1, 4.12.1, CTS 3.12.2 and 4.12.2 - As denoted on CTS page 225a "Radioactive Liquids, Outdoor Liquid Tanks" CTS page 234 "Gaseous Effluents, Gas Decay Tanks" and CTS page 235 "Gaseous Effluents, Explosive Gas Mixture" the requirements associated with these specifications have been incorporated in the Administrative Controls section Specification 5.5.10, "Explosive Gas and Storage Tank Radioactivity Monitoring Program." The Actions associated with CTS 3.11.1, 3.12.1, and 3.12.2 do not impose any conditions or limits on reactor operation and are not required to be in TS by 10 CFR 50.36. Therefore, they are moved to plant procedures and the Offsite Dose Calculation Manual (ODCM). Changes to procedures will be controlled in

accordance with Zion procedure control process. This change is consistent with NUREG-1431.

CTS Figure 6.1-1 - Note 3 of Table 6.1-1 specifies the activities which require two licensed individuals to be present in the control room. Activities such as reactor startup, reactor shutdown and reactor operation are encompassed by MODES 1, 2, 3, and 4 and, therefore, are addressed by Specification 5.2.2 "Unit Staff". Planned control rod manipulation, however, may be performed in MODES 5 or 6 which is not addressed by Specification 5.2.2. In these Modes, the reactor is adequately maintained in a shutdown condition (as required by the technical specifications) and control rod manipulation does not give rise to an event which would pose an immediate threat to public health and safety. As such, the requirement to maintain two NRC licensed individuals in the control room during planned rod manipulation can be adequately addressed in plant procedures.

CTS Table 4.17.1 - The following details have been moved to plant procedures: 1) filter bank equipment number designations, 2) the number of filters per bank in the hydrogen purge filters, the fuel/auxiliary building ventilation filters, and the control room ventilation system makeup filters. These are design details which are not necessary to describe any requirements. Therefore, they can be moved to plant procedures without an impact on safety.

CTS Table 4.17-1 Footnote ** - As part of the conversion to the improved Technical Specification references have been removed from the specifications and placed in plant procedures.

CTS Table 4.17-1 Footnote * - This footnote contains details that describe the function of the HEPA and charcoal filters with respect to efficiency and flow rates. These details are not acceptance criteria and are not necessary to describe the requirements for the Ventilation Filter Testing Program (VFTP). Since these details are not necessary, they can be removed from TS and placed in plant procedures.

CTS Table 4.17-2 - As part of the conversion to the improved Technical Specifications, equipment designations and specific location of plant equipment have been removed from the specifications and placed in plant procedures.

CTS Page 300 - Explicitly stating in the Technical Specifications that the Site Vice President and Operating Engineer are responsible for the Fire Protection Program is inconsistent with other types of information contained in the Administrative Controls Section. Responsibilities and Organization are adequately addressed in proposed Specifications 5.1 and 5.2 respectively. The specific details related to responsibilities are moved to plant procedures.

CTS Page 309 - Details related to the content of written procedures such as "including applicable checkoff lists" are inappropriate for inclusion in TS and are, therefore, deleted. This type of material is an inherent part of procedure development and the QA program associated with it.

CTS Page 310b and 311 - The requirement to report any Reportable Events (including exceeding a safety limit (CTS 6.4)) to the Site Vice President and to perform an OnSite Review of the event are details which ensure the event is brought to the attention of senior station management and to ensure a comprehensive review of the event is performed. These details exceed the requirements specified in 10 CFR 50.73 and are only intended to help facilitate compliance with the regulations. Therefore, placing these details in plant procedures is appropriate.

CTS Page 316 - For the Monthly Operating Report, specifying format, mailing address and presentation of the report are details which are not required to comply with the regulations. These details are more appropriately placed in plant procedures.

CTS Page 316 & 316a - Descriptive information associated with the requirement to submit monthly operating reports, and descriptive information associated with documents used in preparing the COLR are moved to plant procedures. Removal of this material from TS does not change the CTS requirements which are retained in Sections 5.6.4 and 5.6.5 of the ITS. Since the requirements are not changed, this is a purely administrative change.

CTS Page 316b - For the Core Operating Limits Report, specifying the mailing address is a detail which is not required to comply with the specification. The Core Operating Limit Report will be addressed in Specification 5.6.5. This detail is, therefore, moved to plant procedures.

CTS Page 324 - CTS 6.6.3.B.1 requires an LER to be submitted within 30 days of an ECCS actuation and injection when RCS temperature is $\geq$ 350 degrees Fahrenheit. This CTS also requires that the LER "include nozzle usage factor per TS 3.3.2.F.3 (factor for each affected safety injection nozzle whenever its value exceeds 0.70)." This requirement is moved from the TS to the plant procedures for preparing LERs. Details moved to plant procedures will be controlled in accordance with the Zion plant procedure change process.

CTS 6.1.3

A. - 3 The information regarding shift staffing currently provided in Figure 6.1-1 has been reformatted into the text provided in proposed Section 5.2.2. Since all requirements of the Figure remain applicable to Zion Station, this change is administrative only.

CTS 4.0.5, 4.0.5.a, 4.0.5.b, 4.0.5.c, 4.3.1.B.5.c, 4.3.4, Table 4.3.b-2, 4.22.1, 4.22.2, 3.3.2.F.3, 3.3.2.G.D, 6.1.3, 6.2.2, 6.3, 6.5, 6.6.2, 6.6.3.B.a, 6.6.3.B.f, 6.6.3.B.h, 6.6.3.B.1, 6.7.a, and Fig. 6.1-1

L-A. 6. This information duplicates current regulations regarding the required activity and is unnecessary. It is, therefore, deleted from Technical Specifications. Since the requirements remain applicable to Zion Station, this is considered an administrative change, only. This change is consistent with NUREG-1431.

CTS 6.7.b

L-A 7. The requirements of CTS 6.7.b regarding the ODCM "review and acceptance by the Onsite Review and Investigative Function" and "on the date specified by the Onsite Review and Investigative Function" are deleted. The CTS requirement that changes to the ODCM "shall become effective after approval of the Station Manager" is retained in Section 5.5.1 of the ITS. Deletion of this CTS material is acceptable because the Station Manager controls the Onsite Review and Investigative Function, and inclusion of this material is redundant.

CTS 6.2.1.c, 6.2.1.d, and 6.2.5

L-A. 8. The CTS requirements to establish, implement, and maintain procedures related to the Emergency Plan and Security Plan have been moved. Since the Security Plan requirements are specified in 10 CFR 50.54, 73.40, 73.55, and 73.56 and the Emergency Plan requirements are specified in 10 CFR 50.54 and 10 CFR Part 50, Appendix E, Section V, the staff has issued a Generic Letter (93-07) to remove the requirements from the Technical Specification and relocate them to their respective plans. The requirements for the review of the security program and implementing procedures and for the review of the station emergency plan and implementing procedures will be included in their respective plans. Further changes in these review requirements must be made in accordance with 10 CFR 50.54(p) for the Security Plan and 10 CFR 50.54(q) for the Emergency Plan. The extensive requirements for emergency planning in 10 CFR 50.47 and 50.54 and for security in 10 CFR 50.54 and 73.55 for drills, exercises, testing, and maintenance of the program, provide adequate assurance that the objective of the previous TS for a periodic review of the program and changes to the programs will be met. Therefore, duplication of the requirements contained in the regulations does not enhance the level of nuclear safety.

CTS 6.1.5 and 6.4.6

L-A. 9. The requirements on training may be deleted from Technical Specifications on the basis that they are adequately addressed by other Section 5.0 administrative controls as well as regulations. Technical Specification Section 5.3, Unit Staff Qualifications, provides adequate requirements to assure an acceptable, competent operating staff. Each member of the unit staff shall meet or exceed the minimum qualifications of specific Regulatory Guides or ANSI Standards acceptable to the NRC staff. Section 5.3 of

Technical Specifications describes the details of the required qualifications. Additionally, Technical Specification Section 5.2, Organization, details unit staff requirements. Specifications 5.2.2.a, 5.2.2.b, 5.2.2.c, and 10 CFR 50.54 describe the minimum shift crew composition and delineate which positions require an RO or SRO license. Training and requalification of those positions are as specified in 10 CFR Part 55. Based upon these considerations, duplicating the provisions relating to training in Section 5.4 of TS is not necessary to assure operation of the facility in a safe manner.

CTS 6.2.3 and 6.2.4

L-A. 10. The CTS requirements for review and approval process, and the temporary change process for procedures are moved to plant procedures. The requirement for procedure control is mandated by 10 CFR Part 50, Appendix B, Criterion II and Criterion V. ANSI N18.7-1976, which is an NRC staff endorsed document used in the development of the Commonwealth Edison Company QA plan, also contains specific requirements related to procedures.

ANSI N18.7-1976, Section 5.2.2 discusses procedure adherence. This section clearly states that procedures shall be followed, and the requirements for use of procedures shall be prescribed in writing. ANSI N18.7-1976 also discussed temporary changes to procedures, and requires review and approval of procedures to be defined. ANSI N18.7-1976, Section 5.2.15 describes the review, approval and control of procedures. This section describes the requirements for the licensee's QA Program to provide measures to control and coordinate the approval and issuance of documents, including changes thereto, which prescribe all activities affecting quality. The section further states that each procedure shall be reviewed and approved prior to initial use. The required reviews are also described. ANSI N45.2-1971, Section 6, also specifies that the QA Program describe procedure requirements. The QA Plan will be controlled in accordance with 10 CFR 50.54.

CTS 6.2.8

L-A. 11. The Radiological Environmental Monitoring Program requires that procedures be prepared for monitoring the radiation and radionuclides in the environs of the plant consistent with the guidance specified in 10 CFR Part 50, Appendix I. These procedures are developed to ensure that radioactive effluents are restricted to levels as low as reasonably achievable, and have no impact on plant nuclear safety. The details and description of the program are already contained in the ODCM, as specified by proposed TS 5.5.1. These regulatory requirements provide sufficient control of these provisions and removing them from TS is acceptable.

CTS 6.6.1 Footnote and 6.7.a

A. 14. Out of date references to 10 CFR Part 20 are updated to reflect the corresponding regulations currently in effect. Additionally,

a Note allowing a single submittal for a multiple unit station is included for the Occupational Radiation Exposure Report (similar to the existing allowance for the Annual Radiological Environmental Operating Report).

CTS 6.6.1.F.1 and 6.6.1.F.2

L-A. 17. Additional information is incorporated to detail the contents of the Core Operating Limits Report (COLR). The information added to the COLR consists of identifying additional LCOs that reference the COLR for their limits. Changing the LCO limits from specific values to a COLR reference continues to control the limits through a licensee controlled document. This change is consistent with NUREG-1431.

CTS 6.6.3.B.e

L-A. 18. The Special Report requirement related to the Waukegan Regional Airport Expansion Plans has been removed from the TS. ComEd commits to continue to collect and evaluate this information; however, an informational report will be submitted only if the activity or expansion plans would significantly increase the probability of an aircraft impact on the Zion Station site as described in the UFSAR. The current report is provided annually, but is not necessary to assure operation of the facility in a safe manner. In fact, the report provides no useful information unless the above identified determination of increased probability is identified. This is similar to other conditions which the licensee may identify and evaluate for potential impact on safety which are only reported if there is a change (e.g., under 10 CFR 50.59).

CTS 3.3.6 Action b and 6.6.3.B.g

L-A. 19. The details contained in the Special Report for each occurrence of exceeding the Primary Coolant Specific Activity LCO have been removed from the TS. The information included in this report will continue to be collected and evaluated, and it will continue to be submitted as part of the Annual Radiological Environmental Operating Report as identified in the ODCM. This change is consistent with the intent of Generic Letter 89-01 which removed procedural details related to radiological effluents, environmental monitoring, and associated reporting requirements from the TS and placed them in plant procedures. While this particular report was not addressed in Generic Letter 89-01, the reporting information was included in the Zion Station ODCM (Section 12.6.1.9) and is currently being reported in the proposed manner. Administrative controls are adequate for this type of information since the LCO provides appropriate actions for continued operation, and the information submittal is only after the fact for the evaluation of radiological effluents and environmental monitoring. Changes to these procedures will be controlled in accordance with Zion Station plant procedures and practices.

CTS Fig. 6.1-1 Note 3

A. 22. The information contained in CTS Figure 6.1-1 Note 3 is encompassed by the current regulations regarding RO and SRO staffing requirements as addressed in 10 CFR 50.54(k) and 50.54(m). These regulations for staffing requirements provide sufficient control of the requirements and removing these provisions from the TS is acceptable. Since the regulations containing the requirements remain applicable to Zion Station, this is an administrative change only.

Operating License Condition 2.C(9)

A. 23. A list of the applicable systems for the Primary Coolant Sources Outside Containment is included with the proposed Administrative Control 5.5.2 which will replace current License Condition 2.C(9). Since these controls are already applicable to these systems, there is no change in the requirements and this change is purely administrative.

Operating License Condition 2.C(10)

A. 24. The License Condition 2.C(10) requirement for "monitoring" is revised to "sampling and analysis" in proposed Administrative Control 5.5.3 which will replace current License Condition 2.C(10). Since this is essentially the intent of the "monitoring," there is no change in the requirements and this change is purely administrative.

CTS 4.0.5

A. 27. Several administrative changes are made in the identification of the Inservice Testing (IST) requirements. These include adding a frequency of "Biennially" as a definition. A statement that the IST is "in addition to other specified SRs" is omitted since this is readily obvious; and a statement is added to indicate that "SR 3.0.3 is applicable" to the IST Program. SR 3.0.3 is applicable to the current program frequencies without being stated since the program is listed in Section 3/4, "LCOs/SRs," and current SR 3.0.3 is generally applicable to all requirements in this section. Therefore, these changes are purely administrative.

CTS 4.3.1.B.1, 4.3.1.B.2, 4.3.1.B.3, and Table 4.3.B-1

A. 28. Several administrative changes are made in the identification of the steam generator (SG) tube surveillance program. Several statements are omitted because they represent duplication of the information that is retained or are unnecessary references. A reference to the Regulatory Guide is added consistent with the current TS Bases for the SG tube surveillance program. The references to the preservice inspection and the first inspection and their associated requirements are deleted since these inspections were completed long ago. Since there is no change from the current requirements, these changes are purely administrative.

CTS 4.3.1.B.4.A.10.A

L-A. One of the steam generator tube sleeving processes allowed by CTS 4.3.1.B.4.A.10 is the Combustion Engineering welded sleeve process described in Topical Report CEN-331-P, Revision 1-P. In the years since this welded sleeve process was authorized for use by Zion Station, technological advancements have resulted in enhancements to the sleeving process. These enhancements have been used by Zion Station during recent steam generator tube sleeve installations. As a result of a September 4, 1996, telephone conference call between ComEd and the NRC, it was determined that the Zion TS should be changed to identify, by reference in ITS 5.5.7, those specific enhancements implemented at Zion.

The process enhancements are the result of technological advancements which have occurred since initial approval of the TS amendment authorizing installation of Combustion Engineering welded sleeves on November 18, 1986. These process enhancements consist of:

- The disqualification of Inconel 600 tube plug material;
- Upgrade of the cross wound probe with the Plus Point Probe and its associated data acquisition and analysis equipment;
- Visual inspection equipment improvements;
- Sleeve welding equipment improvements;
- Sleeve installation equipment improvements; and
- Plug design improvements.

The staff considers that these changes are improvements to the installation of Combustion Engineering sleeves.

The licensee's letter dated September 18, 1996, states that it intends to utilize new processes after they have been qualified and verified to provide improved nondestructive examination techniques. The letter further states that ComEd intends to review such technological changes under 10 CFR 50.59 to ensure that an unreviewed safety question does not exist and that the changes do not require prior NRC review and approval. The staff's position is that enhancements to the Topical Report in areas other than the welding process itself may be implemented by ComEd under the provisions stated by the licensee. However, implementation of enhancements to the welding process itself would require prior staff review and approval.

CTS 3.10.3, 4.10.3, and 4.10.4

L-A. 29. Details of the containment tendon exams are moved to plant procedures. Only general descriptions of the content of the program are retained in Specification 5.5.5. The Containment

Tendon Surveillance Program provides control for monitoring any tendon degradation in the Zion Station pre-stressed concrete containments to ensure structural integrity. In addition, the program provides inspection frequencies and acceptance criteria which are in general conformance of Regulatory Guide 1.35. As such, the details associated with the inspection requirements and surveillance frequencies of the above CTS can be placed in station procedures. Changes to these procedures will be controlled in accordance with Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS 3.11.1 and 3.12.1

L-A. 30. Details of the these programs are replaced with more descriptive language of the intent of the program. These descriptions are equivalent to the current TS Bases and are therefore considered to be administrative. General descriptions of the content of the program are retained in Section 5.5.10 of the Technical Specifications. The remainder of the details are moved to plant procedures. Changes to procedures will be controlled in accordance with Zion plant procedure change process. These changes are consistent with NUREG-1431.

CTS 4.13.2, 3.17.1, and 4.17.1

A. 31. The specific frequencies for ventilation filter testing are replaced with an equivalent reference to specific positions on frequencies in Regulatory Guide 1.52, Revision 2. In addition, statements identifying the applicability of SR 3.0.2 & SR 3.0.3 are included consistent with the applicability of these SRs in the current TS. These changes are consistent with NUREG-1431 and with the current TS, and are therefore, administrative only.

CTS 3.17.1.C, 4.17.1.E, Table 4.17-1, and Table 4.17-2

L-A. 32. Several components of the ventilation systems currently identified in the Technical Specifications (i.e., the containment, hydrogen purge, and drumming station vents charcoal filter systems, and the containment purge exhaust, auxiliary building exhaust, instrument calibration room, hot lab exhaust and decon room exhaust particulate filter systems) provide only normal operation filtration for gaseous releases. These filters are not credited in post accident dose calculations and as such are not required to be included in the ITS. The testing requirements for the non-safety related ventilation filters are moved to plant procedures. Changes to these procedures will be controlled by the Zion plant procedure change process. This change is consistent with NUREG-1431.

CTS 4.22.1.A.3.a-c

L-A 35. CTS 4.22.1.A.3.a, b, and c, contains details outlining acceptable snubber sample population sample criteria which are moved to plant procedures. The logic used in selection of a sample population is outlined in O&M-4, which has been accepted by the NRC for snubber testing and is referenced in 10 CFR 50.55a, thus negating the need

for details which outline methods of compliance with the regulation in the Technical Specifications. Changes to plant procedures dictating sample population selection will be done in a fashion which will continue to meet the requirements specified in O&M-4. Changes to these procedures will be in accordance with Zion Station plant procedure change process. These changes are consistent with NUREG-1431.

CTS 6.9 and 6.2.1.e
L-A. 36. This information duplicates current regulations regarding the required activity and is unnecessary. The Process Control Program (PCP) is described in plant procedures. The PCP implements the requirements of 10 CFR Part 20. Since the above 10 CFR requirements remain applicable to Zion Station, this is considered an administrative change, only. Changes to these procedures will be controlled in accordance with Zion Station plant procedure change process. The proposed controls for the relocated document provide sufficient control of these requirements, and removing these provisions from the TS is acceptable. This change is consistent with NUREG-1431.

CTS 6.6.1.D Footnote
A. 37. The Zion Station is designed with only one radwaste system for both units. Therefore, this portion of the current Note ** does not apply and can be eliminated with no impact.

CTS 4.11.1, 4.12.1, and 4.12.2
A. 38. Statements identifying the applicability of SR 3.0.2 & SR 3.0.3 are included consistent with the applicability of these SRs in the current TS. This change is consistent with NUREG-1431.

CTS 3.3.2.E
L-A. 4[illegible]. The requirement of CTS 3.3.2.E, Hydrostatic Testing represents a duplication of the requirements contained in 10 CFR 50.55a and thus has not been included in the proposed Zion ITS. Initially, Zion Station had proposed to move this requirement to the proposed Administrative Section of the ITS. However, based on the October 25, 1993, letter from W.T. Russell to the four owners group Chairpersons, the "Inservice Inspection Program" was deleted (since it duplicated 10 CFR 50.55a).

CTS 4.22.1.A.4.a
L-A 43. CTS requirement 4.22.1.A.4.a has been moved to plant procedures. This requirement specifies the performance of mechanical snubber drag testing during functional tests. In light of other required testing (e.g.; activation, release rate), this testing does not provide any added data relevant to the determination of snubber functionality. This testing will continued to be performed as a "good practice" under licensee control in plant procedures. Based on the above information, it has been concluded that moving this test to plant procedures can be done without an impact on safety. Changes to these procedures will be controlled in accordance with

Zion plant procedure change process. This change is consistent with NUREG-1431, in that all snubber testing is relocated to licensee controlled documents.

CTS 4.22.3
L-A 44. CTS requirement 4.22.3 has been relocated to plant procedures. This requirement specifies the performance of service life monitoring for snubber components. This requirement was placed into the Technical Specifications to address snubber components with limited life (elastomers), which have since been improved and replaced. Monitoring will continue to be performed under licensee control. Changes to these procedures will be controlled in accordance with Zion Station plant procedure change process. This change is consistent with NUREG-1431, in that all snubber testing is relocated to licensee controlled documents.

CTS 6.10
A. 45. Information pertaining to the Containment Leakage Rate Testing Program implemented under 10 CFR Part 50, Appendix J, Option B, has been relocated to Specification 5.5.14, Containment Leakage Rate Testing Program.

CTS 6.1.3
A. 46. 5.3, Qualifications, has been modified to add a discussion that provides a reference to 10 CFR Part 55.4. New ITS 5.3.2, NRC Licensed Individual Qualifications, defines the position and duties of licensed and senior licensed operators as those individuals who perform the functions described in 10 CFR 50.54(m). This change is required in order for the station to meet the requirements of 10 CFR Part 55, and is an administrative change.

Operating License Condition 2.C(8)
A. 47. The License Condition 2.C(8) requirements for a secondary water chemistry program are included in the proposed Administrative Control 5.5.8 which will replace current License Condition 2.C(8). Since these requirements are already applicable and there has only been editorial rewording to be consistent with Zion Chemistry Department usage and NUREG-1431, there is no change in the requirements and this change is purely administrative.

Since these requirements result in the same limits as the current requirements, the changes are purely administrative and are therefore acceptable.

As discussed under the Evaluation Format and as summarized in Appendix A, to the extent that these changes involve the relocation of matters from the TS to licensee-controlled documents, they are not required to be in the TS under 10 CFR 50.36 and are not needed to obviate the possibility of an abnormal situation or event that will give rise to an immediate threat to public health and safety. The NRC staff concludes that the control of these provisions under applicable NRC regulations (e.g., 10 CFR 50.54, 50.59) is acceptable, and that the regulatory requirements provide sufficient control of these

provisions. Accordingly, the NRC staff has concluded that these requirements may be relocated from the TS to the above described licensee-controlled documents. Further, the NRC staff has concluded that the TS requirements that remain are consistent with current licensing practices, operating experience, and plant accident and transient analysis, and provide reasonable assurance that public health and safety will be protected.

III.3 LESS RESTRICTIVE CHANGES

These changes consist primarily of changes that take the form of partial or complete deletions of CTS, modifications of existing requirements, and increases in CTS allowed outage times (now completion times) for specified actions.

The licensee provided a specific justification for each Less Restrictive Change. In a limited number of instances, a single justification is applicable to more than one change in this category. However, the majority of justifications apply to a single change to CTS. In addition, the licensee has provided generic No Significant Hazards Considerations discussions. These generic discussions are generally applicable to more than one change to CTS, and are identified as L-(number). The staff has reviewed the material provided by the licensee in support of the proposed changes, and has concluded that the proposed changes are acceptable. The specific justification for each less restrictive change is included in this SE. The content of these justifications is primarily that provided by the licensee which the staff has reviewed and found acceptable. The changes are listed in a numerical sequence which conforms to the format of NUREG-1431. Within each numerical section, the CTS requirements that are applicable to that section are identified by the CTS and the related specific justification number.

1.0 USE AND APPLICATION

CTS 1.[illegible]
L-1 8. The definition of CORE ALTERATION has been changed. The term "any component" has been deleted and the term "fuel, sources, or other reactivity control components" incorporated in its place. Use of this terminology is appropriate because it places the emphasis on the important safety issue (reactivity control) without unduly restricting other activities such as indexing the fuel handling crane or placing lights and cameras in the reactor. In addition, the CTS term "or manipulation" is deleted in favor of the term "movement," which encompasses the CTS term. These changes represent less restrictive requirements, but do not impact plant safety. These changes are an enhancement to the CTS requirements and are also consistent with NUREG-1431.

CTS Table 1.1
L-2 36. The COOLANT TEMPERATURE (Tavg.) column in the MODES table for MODE 6 has been changed from "≤ 140°F" to "Not Applicable" to be consistent with NUREG-1431. This change eliminates the confusion as to which MODE is applicable if the reactor coolant temperature exceeds 140°F with the head removed (i.e., a temperature > 140°F

implies the unit is no longer in MODE 6, however the unit is clearly not in MODE 5 either). The UFSAR evaluates 2 events which are postulated to occur in MODE 6, they are: a Fuel Handling Accident in Containment, and a boron Dilution During Refueling event. For these events, the initial conditions stated in the UFSAR do not explicitly credit the coolant temperature. This change is an enhancement to the CTS requirements and is consistent with NUREG-1431.

2.0 SAFETY LIMITS

CTS 1.2.1
L-1 5. The Applicability has been changed from "with fuel assemblies installed in the reactor vessel" to "MODES 1, 2, 3, 4, and 5." The proposed Applicability does not require this Safety Limit to be met when fuel is in the vessel with one or more reactor vessel head closure bolts less than fully tensioned or with the head removed. With the reactor head bolts less than fully tensioned, it is highly unlikely that the RCS can be pressurized greater than the Safety Limit pressure due to the low temperature over-pressure protection requirements. With the head removed, it is not possible to pressurize the RCS greater than the Safety Limit pressure. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 6.4
L-1 1. The initial operator actions, if a Safety Limit has been violated, have been changed as follows:

a. For violation of SL 2.1.1, the requirement to trip the reactor immediately (effectively to be in MODE 3) has been changed to allow 1 hour to restore compliance and place the unit in MODE 3. This provides the necessary time to shutdown the unit in a more controlled and orderly manner than immediately tripping the reactor. However, the proposed time still minimizes the time allowed to operate in MODE 1 or 2 with a Safety Limit not met. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

b. For violation of SL 2.1.2, instead of tripping the reactor, additional actions have been added. In MODES 1 and 2, compliance with the Safety Limit must be restored and the reactor placed in MODE 3 within 1 hour. This provides the necessary time to shutdown the unit in a more controlled and orderly manner than immediately tripping the reactor. However, the proposed time still minimizes the time allowed to operate in MODE 1 or 2 with a Safety Limit not met. In MODES 3, 4, or 5, compliance with the Safety Limit must be restored within 5 minutes. These changes are an enhancement to CTS requirements and are consistent with NUREG-1431.

3.0 APPLICABILITY

CTS 3.0.3
L-1 3b. The time to reach MODE 3 (HOT SHUTDOWN) has been extended from 5 hours (1 hour to initiate action plus 4 hours to reach MODE 3) to 7 hours. This provides the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a unit upset that could challenge safety systems. This time is consistent with numerous other action requirements throughout the current Zion Technical Specifications which require shutdown to MODE 3. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.0.2
L-2 5c. The phrase "If a Completion Time requires periodic performance on a "once per..." basis, the above Frequency extension applies to each performance after the initial performance" was added to allow the 1.25 times the interval specified in the Frequency concept to apply to periodic Required Actions. This provides consistency for all performances of periodic requirements, whether they are Surveillances or Required Actions. This change to LCO 4.0.2 (proposed SR 3.0.2) represents a technical enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.0.3
L-3 7a. CTS 4.0.3 is similar to NUREG-1431 SR 3.0.3; i.e., both address Required Actions applicable when it is determined that a SR has not been performed within the required frequency. CTS 4.0.3 requires that the associated LCO be declared not met at the time it is determined that a SR has not been performed, and that the allowed outage time (AOT) limit of the LCO ACTIONS begin at this time. CTS 4.0.3 has been modified to be consistent with NUREG-1431 SR 3.0.3 and incorporated into the Zion ITS as SR 3.0.3. Under the new SR 3.0.3, a delay of 24 hours is allowed following discovery that a SR has not been performed before declaring the associated LCO not met. This allows an additional 24 hours to perform the SR before entering the LCO ACTIONS and starting the AOT clock. This delay is acceptable because the failure to perform a SR within the specified interval does not mean the system/component is inoperable, and an additional 24 hours to perform the SR represents less risk to plant safety than the risk associated with a plant shutdown transient. In addition to the above, the CTS restriction of applicability to those systems/components that have an AOT of less than 24 hours is deleted. This limitation appears to be reversed in that the risk associated with a 24 hour time extension is less with a system/component having an AOT of greater than 24 hours than it would be for a system/component with an AOT of less than 24 hours. The NUREG-1431 unrestricted applicability of the 24 hour delay is

adopted for the Zion ITS. These changes are enhancements to CTS requirements and are consistent with NUREG-1431.

CTS 3.0.4
L-4 8b. The phrase "...unless the conditions for the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements." was changed to "...when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability only for a limited period of time". This change removes an unduly restrictive requirement. For an LCO which has Required Actions and Completion Times which permit continued operation for an unlimited period of time, entry into a MODE or other specified condition is permitted. This is consistent with NRC's regulatory requirements for an LCO. The restriction on a change in MODE or other specified condition should apply only where the Required Actions establish a specified time interval in which the LCO must be met or a shutdown is required.

This phrase was changed to be consistent with Generic Letter 87-09 except that the Generic Letter 87-09 version of the Specification 3.0.4 phrase "...and the associated ACTION requires a shutdown if they are not met within a specified time interval" was changed to "..permit continued operation in the MODE or other specified condition in the Applicability only for a limited period of time." This statement is consistent with Generic Letter 87-09, Specification 3.0.4 guidance regarding the changing of MODES while relying upon the Required Action requirements when they permit continued operation for an unlimited period of time. This change also provides consistency for use of proposed LCO 3.0.4, since it is the permitting of continued operation for an unlimited period of time, not the requirement to shutdown, that determines the applicability of proposed LCO 3.0.4. This change to LCO 3.0.4 represents a technical enhancement to CTS requirements and is consistent with NUREG-1431.

3.1 REACTIVITY CONTROL SYSTEMS

CTS 4.2.1.A.1, 4.2.1.A.2, and 4.2.1.B
L-1 4. The Surveillance Frequency to verify Shutdown Margin (SDM) has been extended from every 12 hours ("once per shift") to 24 hours. While in the shutdown modes, boron concentration does not change rapidly and is prevented from stratifying by operation of reactor coolant pumps or residual heat removal pumps (as required by proposed LCOs 3.4.5, 3.4.7 and 3.4.8). In addition, boron dilution events that reduce SDM, such that the reactor becomes critical, are analyzed Technical Specifications are provided (LCO 3.3.1) to ensure adequate instrumentation is available to

alert the operators of this type of event. Therefore, the proposed Frequency of 24 hours is adequate. This change reduces the burden on plant operators without an impact on safety. Therefore, this change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS N/A
L-3 7. Current Specification 3.2.1.B does not provide actions if the SDM is not within the limit. Therefore, existing Specification 3.0.3 would apply which requires the plant to be placed in Cold Shutdown within 48 hours. A new Required Action has been proposed (Required Action A.1) to initiate boration within 15 minutes to restore SDM to within limits. Both actions result in the addition of negative reactivity and a return to compliance with the assumptions of the safety analysis. However, restoration of SDM is preferred since this would prevent a plant transient associated with the transition to Cold Shutdown. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.1.D
L-2 15. Current Specification 3.2.1.D does not provide any actions if the shutdown bank and control rod bank limits are not met. Therefore, Specification 3.0.3 would apply, which in these cases, would require the unit to be placed in MODE 3 in a total of 5 hours. Proposed LCO 3.1.6, "Shutdown Bank Insertion Limits," and LCO 3.1.7, "Control Bank Insertion Limits" provide new Required Actions and associated Completion Times when one or more shutdown banks or control banks are not within limits. The Required Actions allow 2 hours to restore the banks within limits. In addition, within 1 hour from the time the banks are discovered not to be within limits, SDM shall be verified to be ≥ 1.3% $\Delta k/k$, or boration initiated to restore the SDM to within limits. If the Required Actions and associated Completion Times cannot be met, the unit must be placed in a MODE in which the LCO does not apply within 6 hours. This change allows time to restore the rod banks to within limits before subjecting the plant to a shutdown transient and, if necessary, allows time to place the plant in a non-applicable mode in an orderly manner. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.2.1.D.1
L-1 20. The Frequency of the Surveillance Requirement which verifies rod operation by partial movement of all rods every 2 weeks has been extended to 92 days (consistent with NUREG-1431). Industry experience has shown that a 92 day surveillance interval is sufficient to detect failures in the Rod Control System. Furthermore, the proposed Frequency takes into consideration other information available to the operator such as individual rod position which is determined every 12 hours. Therefore, this is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS N/A
L-7 22. A new Required Action and Completion Time has been proposed when one demand position indicator per bank is inoperable for one or more banks. OPERABILITY of the Demand Position Indication System helps ensure that control rods are maintained in their required position and the plant is operating within the bounds of the accident analysis assumptions. When one demand position indicator for one or more banks is inoperable, an option is provided to verify, once per 12 hours, that all RPIs for the affected bank are OPERABLE, or to reduce THERMAL POWER to ≤ 50% RTP. Since operation with one bank demand position indication inoperable was not previously allowed, this change represents a less restrictive change for plant operations. However, with this change, the risk of an unnecessary plant shutdown transient can be avoided with no impact on safety. Therefore, this change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.3.C Action
L-2 25. If current Specification 3.2.3.c is not met while the reactor is critical, LCO 3.0.3 entry is required since no action is provided for this condition. LCO 3.0.3 would then require a shutdown to MODE 3 to be completed within a total of 5 hours. Proposed Condition "A" provides similar actions (i.e., shutdown to MODE 3) but allows 6 hours to perform the shutdown. This provides the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a unit upset that could challenge safety systems. Therefore, this change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.2.3.C.3
L-1 28. The requirement not to exceed 20 months in the performance of a rod drop timing test has been deleted. This Surveillance is now required prior to reactor criticality following each removal of the reactor head. Since a refueling outage is nominally 18 months for this plant, this is essentially a minor increase in the surveillance frequency. Additionally, the surveillance must be performed during a plant outage due to the plant conditions needed to perform the Surveillance and the potential for an unplanned transient if the Surveillance was performed at power. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS N/A
L-7 32. Appropriate Required Actions and Completion Times are provided for the Condition of more than one rod position indicator channel per control rod group inoperable. This is consistent with Amendment 61 for Union Electric Company's Callaway Plant (requested 9-7-90, approved 2-1-91). The NRC Staff's SER for this amendment indicates that "the requested amendments correct an oversight in the licensee's existing TS that would require operation of a

system important to safety without availability of the preferred monitoring capability." This same oversight exists in the old STS and in the new ITS. Both currently require a reactor shutdown (control rod manipulation) when complete control rod position indication is not available. The proposed new Condition will provide an increased time to attempt repair. The proposed 30 hours will significantly increase the probability of identifying and correcting the cause of the inoperability. Without the change, the plant is required to initiate a shutdown in 1 hour and be in MODE 3 within 7 hours. This is not sufficient time to notify the appropriate individuals, and allow them to identify and correct the cause of the inoperability. Therefore, the current requirements almost always result in a shutdown. The proposed Condition provides appropriate compensatory measures to continue to assure compliance with the assumptions of the safety analysis while providing sufficient time to identify and correct minor causes of inoperability. This will prevent the risk of an unnecessary plant transient associated with a shutdown.

CTS 3.2.3.D.1 Actions

L-5 33. The requirement to place the reactor in Hot Shutdown when the required actions associated with the Rod Position Indicator Specification cannot be met, has been modified to only require the plant to be brought to a power level of less than 50% RTP. A shutdown to MODE 3 places the unit outside the MODE in which the rod position indicators are required. However, reducing power to less than 50% RTP puts the core into a condition where rod position is not significantly affecting core peaking factors. Therefore, this is an appropriate action if the initial Required Action is not met and is consistent with the described Bases of NUREG-1431.

CTS 3.2.3.B.5

L-2 38. The time provided to re-evaluate the impact of a misaligned control rod on the applicable safety analysis has been extended from 3 days, 10 hours (10 hours is from current Specifications 3.2.3.A.1 and 3.2.3.A.2) to 5 days. The proposed Completion Time of 5 days is a sufficient amount of time to obtain the required input data and to perform the analysis. In addition, the requirement to perform an analysis of the potential ejected rod worth has been expanded to include an evaluation of all accidents which assume rod insertion upon a reactor trip. The analysis should determine if any core limits will be exceeded during a Design Basis Event for the duration of operation with a misaligned rod. Furthermore, performance of the Hot Channel Factor Surveillance (proposed SR 3.2.1.1 and SR 3.2.2.1) ensures that continued operation will not result in power distributions that may invalidate safety analysis assumptions at full power during this time period. Therefore, this change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS N/A
L-2 43. If current Specification 3.2.3.B.5 is not met, Specification 3.0.3 entry is required. Specification 3.0.3 would then require a shutdown to MODE 3 to be completed within a total of 5 hours. Proposed Condition "D" provides similar actions (i.e. shutdown to MODE 3) but allows 6 hours to perform the shutdown. This provides additional time to shut down the unit in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This increased time reduces the risk of mistakes and shutdown induced transients. The 6 hour time is consistent with proposed LCO 3.0.3. This is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.3.B.2
L-2 46. The shutdown actions associated with an inoperable control rod(s) have been revised. The existing Specification requires the unit to be placed in MODE 3 within 4 hours. The Completion Times associated with proposed LCO 3.1.5 require the unit to be placed in MODE 3 within 6 hours. A 6 hour Completion Time is reasonable to reach MODE 3 in an orderly manner without challenging plant systems. The increased time reduces the risk of mistakes and shutdown induced transients. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.3.B.1 and 3.2.3.B.3
L-4 47. This Specification has been omitted in accordance with the revised determination of OPERABILITY. Control rod OPERABILITY is contingent upon the control rod being able to perform its safety function. The safety function of the control rod is to drop into the core upon a valid trip actuation signal. Routine movement of control rods to control thermal limits is not part of the control rod safety function. The thermal limit Specifications (e.g., DNBR) provide adequate actions if a thermal limit is not met for any reason including mispositioned or immovable control rods due to rod urgent failure. These Specifications must be followed even if a thermal violation is the result of an inoperable or mispositioned control rod. Appropriate actions are also provided if a control rod is mispositioned due to the inability to move, as a result of a rod urgent failure, or any other reason. Additionally, if the control rod Surveillance which demonstrates that a control rod is not stuck cannot be performed, and the Surveillance has not been performed within its required frequency, then proposed SR 3.0.1 would require the affected control rods to be declared inoperable and appropriate action taken. Between Surveillance performances, if the control rod is unable to be moved, but determined to still be trippable, the control rod may continue to be considered OPERABLE since its safety function is still capable of being performed. Therefore, since all aspects of the control rods safety functions and the effects of their inoperability to other Specifications are adequately addressed, this Specification has been revised to omit an impact on the rod

OPERABILITY. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.2.3.D.1.a
L-6 50. The Surveillance Requirement to check the position of a control rod, whose rod position indicator is inoperable after any rod motion of the non-indicating rod exceeding 12 steps, has been revised. A new Condition has been proposed when one or more rods with inoperable position indicators have been moved in excess of 24 steps in one direction since the last determination of the rod position. Verification of the position of the rods with inoperable position indicators must be performed by using the movable incore detectors within 4 hours, or THERMAL POWER must be reduced to ≤ 50% RTP. A Completion Time of 4 hours is an acceptable period of time to verify the rod position. The 12 hour Completion Time is an acceptable period of time to reduce power ≤ 50% RTP to avoid undesirable power distribution from continued operation ≥ 50% RTP. This change represents a relaxation from the current Specification by allowing rods with inoperable position indicators to be moved in excess of 24 steps rather than only 12 steps (before requiring a position verification more frequently than once per 12 hours) and specifies a Completion Time of 4 hours to complete the required actions. Movement of control rods up to 24 steps under these conditions is acceptable since a rod may be mispositioned up to 24 steps for short periods before causing undesirable power distributions that may result for continued operation at 50% RTP. Also, the probability of a control rod being significantly out of position (under these conditions) and the occurrence of an event sensitive to that control rod position is small. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

3.2 POWER DISTRIBUTION LIMITS

CTS 3.2.2.A.1.1
L-1 1. The MODES of Applicability for Hot Channel Factors have been changed from "At all times" to MODE 1. This is appropriate since the underlying fuel safety limits cannot be challenged in any other operational MODES. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.2.A.1.2
L-2 7. The requirement to place the reactor in Hot Shutdown has been modified to require the unit to be placed in MODE 2, when the Required Actions and Completion Times specified in the LCO cannot be met. This change is a less restrictive specification than the existing requirements, however, it is justified due to the relatively low power levels which must be maintained in MODE 2 and the inability of the reactor to exceed the underlying fuel safety limits when the Hot Channel Factor or the nuclear enthalpy rise Hot Channel Factor deviates from the COLR limits while operating at low power levels. This change is consistent with NUREG-1431.

CTS 4.2.2.A.1.1

L-3 9a. The controls applied to assuring that power operations conducted in a load following manner do not result in unacceptable localized core power peaking have been revised to comply with the Westinghouse W(Z) methodology. The required Surveillances are specified in proposed Specification 3.2.1, which require periodic comparisons of $F^C_Q(Z)$ and $F^W_Q(Z)$. This change in methodology removes some conservatism and results in a better representation of the hot channel factor.

CTS 3.2.2.A.4.4

L-4 14. The Applicability of this Specification is not clearly indicated by "shall be maintained." Therefore, the MODES of Applicability are proposed to be clearly defined as MODE 1 at power levels greater than 15% RTP. This change is justified because of the inability to exceed the underlying fuel safety limits during plant transients which may occur at power levels below 15%. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.2.A.4.5

L-5 16. The amount of time allowed to respond to Axial Flux Difference (AFD) out of limits when THERMAL POWER is greater than 90% RTP has been clarified as 15 minutes and, failing restoration, the time to reduce power to less than 90% RTP has been increased from immediately to 15 minutes. This change is reasonable to allow the operators time to verify that the condition exists, take appropriate actions to attempt to restore the AFD, and perform a controlled reduction in power without the risk of causing unnecessary transients on plant systems. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.2.A.6.2

L-6 18. The requirement to reduce the high neutron flux setpoint to no greater than 55% RTP has been deleted. This change is justified because the underlying safety limits are not of a nature which requires immediate shutdown of the unit if they are exceeded. This is evidenced by the allowance to operate outside the target band during certain circumstances specified in the Specification. Administrative control of plant power level is adequate to assure that the power level is maintained below 50%. This change is consistent with NUREG-1431.

CTS 4.2.2.A.6

L-7 28. The Frequency requirements for monitoring AFD when THERMAL POWER is < 90% and the AFD alarm is inoperable for greater than 24 hours have been reduced from once per half hour to once per hour. AFD does not change more rapidly because the alarm has been inoperable for ≥ 24 hrs, and therefore, there is no basis for increasing the Frequency. The one hour Frequency is based on the maximum allowed cumulative penalty time and the actual, prudent Frequency of the surveillance will be as often as necessary to assure compliance

with the LCO. Therefore, an increased Frequency provides no additional assurance or benefit after 24 hours of operation with the alarm inoperable. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.2.B.2
L-8 32. This requirement, which addresses exceeding the Quadrant Power Tilt Ratio (QPTR) without known causes has been deleted. This CTS imposes requirements that are very subjective in nature and which, as a consequence, are very difficult to define. The Specification has been replaced with a Condition which requires reduction of reactor power to a Condition in which the Specification does not apply if the appropriate actions are not taken when QPTR is not within limits. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 3.2.2.B.3
L-9 34. The requirement to shut down if QPTR exceeds 1.09 has been deleted. It is no longer applicable since the requirements to reduce reactor power 3% for every 1% by which QPTR exceeds 1.0 when QPTR is greater than 1.02 address limiting the potential effects of quadrant power tilt. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.2.2.B.1.a
L-10 35. The requirement to calculate QPTR once each shift has been revised. Proposed SR 3.2.4.1 will normally require QPTR to be calculated once per 7 days. This Frequency is considered acceptable given the availability of QPTR alarms in the control room. This change is consistent with NUREG-1431.

CTS 4.2.2.B.1.b
L-11 36. The requirement 4.2.2.B.1.b has been revised as with Surveillance Requirement SR 3.2.4.2 which is performed once every 12 hours when the QPTR alarm is inoperable. This Surveillance Requirement requires the use of the appropriate instrumentation, given plant configuration and power. Using the excore (power range neutron flux), movable incore detectors, or core exit thermocouples, as appropriate, to verify the QPTR will provide the most accurate method available to calculate the QPTR limits and provide assurance that the appropriate limits are monitored and maintained when the unit is in operation. Reducing the frequency from 4 times per shift is a less restrictive change. The Frequency is adequate to detect any relatively slow changes in QPTR, because for those cases of quadrant power tilt that occur quickly (e.g. a dropped rod), there typically are other indications of abnormality that prompt a verification of core power tilt. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS N/A
L-12 37. A Note is added to proposed SR 3.2.4.1 and SR 3.2.4.2 that allows three power range channels to be used for calculating QPTR when

one power range channel is inoperable, but only if THERMAL POWER is below 75% RTP. With an Nuclear Instrumentation System (NIS) power range channel inoperable, tilt monitoring for a portion of the reactor core becomes degraded. Large tilts are likely detected with the remaining channels before they are sufficient to result in exceeding a peaking factor limit from below 75% RTP, but the capability for detection of small power tilts (which may result in exceeding a peaking factor limit when above 75% RTP) in some quadrants is decreased. Therefore, use of only three detectors is limited to < 75% RTP. This is a less restrictive change because the permissive does not exist in CTS. It is acceptable, however, because the risk of a plant shutdown transient is avoided without impact on safety. Therefore, this change is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS N/A

L-13 39. SR 3.2.4.3 has been added to the ITS to allow verification of QPTR within limits by use of the movable incore detectors. A Note has also been added to proposed SR 3.2.4.1, SR 3.2.4.2 and SR 3.2.4.4 which would allow verification of QPTR within limits by use of the movable incore detectors in lieu of other methods. The current requirements also indicate that a calculation or the core excore thermocouples could be used. However, the use of the movable incore detectors provides an alternate accurate method for measuring QPTR that is at least equivalent to the monitors and calculations. Therefore, use of the moveable incore detectors should be allowed at any time for determination of the QPTR. This change is an enhancement to CTS requirements and is consistent with NUREG-1431.

3.3 INSTRUMENTATION

3.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION (RTS)

CTS Table 3.1-1 Item 1

16. Manual Reactor Trip

L-1 The Action has been revised to allow 48 hours for restoration of a channel. The 48 hour allowed outage time is found to be acceptable since the Manual Reactor Trip Function is not credited in the safety analysis and there are two automatic initiation trains and another manual initiation train available. The Action also reflects placing the plant in a nonapplicable MODE or Condition consistent with the philosophy of Specification 3.0.3 if the channel is not restored within the allowed outage time. This change is consistent with NUREG-1431.

CTS Table 3.1-1, Items 2,3,4, and 5

17. Power Range Neutron Flux (low setpoint, high setpoint, high positive and negative flux rate)

L-2 The Actions have been revised to be consistent with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times

for the Reactor Protection Instrumentation Systems," June 1, 1990. WCAP-10271 has been reviewed and approved by the NRC, and is applicable to Zion. The Actions allow 6 hours to place the inoperable channel in trip. A Note has been included in the Actions to allow bypassing an inoperable channel for surveillance testing and setpoint adjustment of other channels. The allowed outage times and time allowed for bypassing a channel are justified in WCAP-10271. In addition, the requirement to go to MODE 5 is deleted. In MODE 3 the reactor is shutdown and the power range instrumentation cannot detect neutron levels in this range. Other RTS trip Functions and administrative controls provide protection in MODES 3, 4, 5, or 6. This change is consistent with NUREG-1431.

CTS Table 3.1-1 Item 6.b

18. Source Range Neutron Flux

L-1
L-2

The CTS requirement to immediately verify shutdown margin if a source range channel is inoperable is deleted. Now, in MODE 2 and MODES 3, 4, and 5 with the Rod Control System capable of rod withdrawal, an Action is provided to open the Reactor Trip Breakers (RTB) immediately in the event of an inoperable source range channel. This change is acceptable because this Action ensures the unit is put in the most stable condition possible under the circumstances. Upon opening the RTBs the unit enters a condition where the source range channels provide a monitoring function only. If the required source range channel is not returned to an OPERABLE status, the actions require operations involving positive reactivity additions to be suspended, unborated water sources to be isolated and the performance of a Shutdown Margin calculation. This change is consistent with NUREG-1431.

CTS Table 3.1-1, Items 10 and 12

21. Pressurizer Low Pressure and Pressurizer High Level

L-1 The MODE of Applicability has been revised to MODE 1 above the P-7 interlock. This is consistent with NUREG-1431 and reflects the Zion system design which automatically results in a block of these trips when power is decreased below the P-7 setpoint.

L-2 The Actions have been revised to be consistent with NUREG-1431 including the applicable changes of WCAP-10271. WCAP-10271 has been reviewed and approved by the NRC, and is applicable to Zion. The Action allows 6 hours to place the inoperable channel in trip. Four hours are allowed for bypassing an inoperable channel for surveillance testing of other channels. A total of 12 hours is allowed for reducing power below P-7 where these Functions are no longer required. The Actions and allowed outage times are justified in WCAP-10271 and its supplements.

CTS Table 3.1-1 Item 11

22. Pressurizer High Pressure

L-2 The Action has been revised to be consistent with NUREG-1431 including the applicable changes of WCAP-10271 and its

supplements. The Action allows 6 hours to place a channel in trip. Four hours are allowed for bypassing an inoperable channel for surveillance testing of other channels. A total of 12 hours is allowed for reducing power to MODE 3 where the Function is no longer required. The Action and allowed outage time are justified in WCAP-10271. WCAP-10271 has been reviewed and approved by the NRC. The CTS requirement to place the unit in cold shutdown if the minimum conditions are not met has been deleted.

CTS Table 3.1-1 Item 13

23. Low Primary Coolant Flow (P-7 and P-8)

L-1 The MODE of Applicability has been revised to MODE 1 above P-8 (single loop) and MODE 1 above P-7 but below P-8 (two loop). This is consistent with NUREG-1431 and reflects the Zion system design.

L-2 The Actions have been revised to be consistent with NUREG-1431 including the applicable changes of WCAP-10271. The Action allows 6 hours to place the inoperable channel in trip. Four hours are allowed for bypassing an inoperable channel for surveillance testing of other channels. A total of 12 hours is allowed for reducing power below P-7 (two loop) and 10 hours is allowed for reducing power below P-8 (single loop) where these Functions are no longer required. The Actions and allowed outage times are justified in WCAP-10271 and its supplements. WCAP-10271 has been reviewed and approved by the NRC.

CTS Table 3.1-1, Items 14, 15, and 16

24. Reactor Coolant Pump (RCP) Bus Undervoltage, RCP Bus Underfrequency and RCP Breaker Trip

L-1 The MODE of Applicability has been revised to MODE 1 above the P-7 interlock for the Reactor Coolant Pump (RCP) bus Undervoltage and Underfrequency trips. The MODE of Applicability has been revised to MODE 1 above P-8 for the RCP Breaker Position (Single Loop) trip and MODE 1 above P-7 but below P-8 for the RCP Breaker Position (Two Loop) trip. This is consistent with NUREG-1431 and reflects the Zion system design.

L-2 The Actions have been revised to be consistent with NUREG-1431 including the applicable changes of WCAP-10271. The Actions for RCP Bus Undervoltage, RCP Bus Underfrequency and RCP Breaker Trip (below P-8) allow 6 hours to place the inoperable channel in trip. For the RCP Breaker Trip (above P-8) the Action allows 6 hours to restore the channel. Restoration is required in this case since the trip logic above P-8 only requires a single channel to provide a reactor trip. For the RCP Bus Undervoltage and RCP Bus Underfrequency Functions, 4 hours are allowed for bypassing an inoperable channel for surveillance testing of other channels. A total of 12 hours is allowed for reducing power below P-7 and 10 hours is allowed for reducing power below P-8 where the associated Functions would no longer be required. For the RCP Bus Underfrequency and Undervoltage Functions the Actions and allowed

outage times are justified in WCAP-10271. For the RCP Breaker Position Function the Actions and allowed outage times have been added consistent with NUREG-1431.

CTS Table 3.1-1, Items 17 and 18

25. Low Steam Generator Level in Coincidence with Feed Flow - Steam Flow Mismatch and Low-Low Steam Generator Level

L-2 The Actions have been revised to be consistent with NUREG-1431 including the applicable changes of WCAP-10271 and its supplements. The Actions allow 6 hours to place the inoperable channel in trip. Four hours are allowed for bypassing an inoperable channel for surveillance testing of other channels. A total of 12 hours is allowed for reaching MODE 3. The Actions and allowed outage times are justified in WCAP-10271.

CTS Table 3.1-1 Item 19

26. Safety Injection

L-1 The Actions have been revised to be consistent with NUREG-1431. The Actions now allow 6 hours to restore a train to OPERABLE status, and a total of 12 hours is allowed to reach MODE 3. The Action specifies restoration since the trip logic for this Function is 1-out-of-2. The allowed outage time is reasonable considering that in this Condition the remaining OPERABLE train is adequate to perform the safety function, and there is a low probability of an event occurring during the allowed outage time.

CTS Table 3.1-1 Item 20

27. Turbine Trip

L-1 The MODE of Applicability has been revised to MODE 1 above P-7. NUREG-1431 specifies MODE 1 above the P-9 interlock. The P-9 interlock is typically 50% RTP and enables the Turbine Trip/Reactor Trip Function to minimize the pressure/temperature transient on the reactor when the turbine trips. Although the Zion units are designed to accept a 50% step loss of load without the need for a reactor trip the units do not have a P-9 interlock. As such, the Actions direct the operators to reduce Thermal Power below P-7.

L-2 The Actions have been revised to be consistent with NUREG-1431 including the applicable changes of WCAP-10271. The Actions allow 6 hours to place a channel in trip. Four hours are allowed for bypassing an inoperable channel for surveillance testing of other channels. A total of 10 hours is allowed for reducing power below P-7. For the Low Fluid Oil Pressure Function, the Actions and allowed outage times are justified in WCAP-10271. For the Turbine Stop Valve Closure Function the Actions and allowed outage times have been added to be consistent with NUREG-1431 and have been shown to be acceptable based on instrument reliability and unit operating experience.

CTS Table 3.1-1 Item 21

28. Automatic Trip Logic

L-1 The Actions have been revised to be consistent with NUREG-1431. In MODE 1, the Actions now allow 6 hours to restore a train to OPERABLE status, and total of 12 hours is allowed to reach MODE 3. The Action specifies restoration since the trip logic for this Function is 1-out-of-2. The allowed outage time is reasonable considering that in this Condition the remaining OPERABLE train is adequate to perform the safety function and there is a low probability of an event occurring during the allowed outage time.

CTS Table 3.1-1 Item 22

29. Reactor Trip Breakers (RTB)

L-1 The Actions have been modified to be consistent with NUREG-1431.
L-2 In MODES 1 or 2, the Actions allow 1 hour to restore an inoperable RTB or RTB Bypass Breaker to OPERABLE status. Restoration is specified since tripping the breaker would trip the reactor. A total of 7 hours is allowed to reach MODE 3 if the breaker is not restored to OPERABLE status. For the Undervoltage and Shunt Trip Mechanisms in MODES 1 and 2 the Actions allow 48 hours to restore the inoperable trip mechanism or place the plant in a MODE where the mechanisms are no longer required. The Actions and allowed outage times are justified in WCAP-10271 and the 1 hour restoration time and 6 hours to reach MODE 3 are consistent with the Actions provided in LCO 3.0.3.

CTS Table 3.1-1, Note +++

L-1 33. Notes regarding OPERABLE channel requirements during testing are incorporated in the individual Conditions for each instrument Function. The 2 hour time allowed for testing is increased to 4 hours as justified in WCAP-10271. The elimination of this generic Note and the placing of specific Notes in each applicable Condition and the time allowed for testing are consistent with NUREG-1431.

CTS Table 4.1-1, Items 2,3,4, and 5

41. Power Range Neutron Flux Instrumentation

The Surveillance Requirements for these instrument channels have been reorganized and revised to be consistent with NUREG-1431.
L-1 The Frequency of the power range neutron flux low setpoint
L-2 Surveillance (S/U^2) is changed from prior to reactor startup and monthly when in service to every 92 days. Verification of the power range neutron flux low setpoint is accomplished during the quarterly CHANNEL CALIBRATION. The Technical Specification requirement regarding surveillance test performance, SR 3.0.4, requires that a Surveillance Requirement be met prior to entering the MODE of Applicability for the equipment affected. Testing of this power range Function must be satisfactorily completed prior to entering MODE 2 (startup) and specifying prior to startup is unnecessary. The Frequency of 92 days is consistent with all other power range instrumentation Channel Operational Tests (COT)

and is adequate for the low power setpoint. The 92 day Frequency is justified in WCAP-10271.

CTS Table 4.1-1, Items 6 and 7

42. Source and Intermediate Range Instrumentation

L-1
L-2 The SR for the source range and intermediate range CHANNEL OPERATIONAL TESTS have been modified by two Notes. Note 1 states that the SR is not required to be performed until 4 hours after reducing power below P-10 for the intermediate range channels. Note 2 states that the SR is not required to be performed until 4 hours after reducing power below P-6 for the source range channels. The 4 hour delay allows a normal shutdown to be completed and the unit removed from the Mode of Applicability for this SR without a delay to perform the testing required by this SR. This change is consistent with NUREG-1431. The 92 day Frequency for performance of the COT was justified in WCAP-10271.

CTS Table 4.1-1, Items 19 and 20

48. Safety Injection and Turbine Trip

L-1 The safety injection quarterly CHANNEL FUNCTIONAL TEST has been changed to an 18 month Trip Actuating Device Operational Test (TADOT). This Function is not a processed signal, but rather an output from the Engineered Safety Feature (ESF) logic to the reactor protection system, so the TADOT is an appropriate test and is not intended to be a technical change. The test Frequency has been relaxed to 18 months from quarterly. This change does represent a relaxation in operating requirements, but is consistent with current industry practice and is justified based on operating history and the known reliability of the equipment. Additionally, this change is consistent with NUREG-1431.

L-1 The turbine trip quarterly CHANNEL FUNCTIONAL TEST has been changed to a TADOT required prior to exceeding P-7 if not performed in the previous 31 days. These Functions are not processed signals with analytical values, but rather a "go/no go value" intended to provide input on turbine condition. As such the TADOT is an appropriate test. The test Frequency has been relaxed to only prior to exceeding P-7. This change represents a relaxation in operating requirements, but is consistent with current industry practice and is justified based on operating history and the known reliability of the equipment. Additionally, this change is consistent with NUREG-1431.

CTS Table 4.1-1, Items 24, 25, 26, and 27

L-1 52. The surveillance frequency associated with interlocks P-7, P-8 and P-10 have been revised to "31 days on a STAGGERED TEST BASIS". For P-7, P-8 and P-10 the frequency was "monthly". The proposed change reflects the current philosophy which requires logic trains to be tested every 31 days on a STAGGERED TEST BASIS. This testing frequency is based on industry operating experience considering instrument reliability and operating history data. In NUREG-1431, permissives are regarded as channels and are tested

every 18 months (CHANNEL CALIBRATION and COTs). For Zion Station, the permissives are treated as trains. This is because each permissive requires a combination of logic to perform its function and, by definition, a channel loses its identity when it enters into logic (IEEE-279). During the performance of a CHANNEL CALIBRATION or a COT, only the setpoint associated with the permissive is tested. However, during an ACTUATION LOGIC TEST all combinations of logic required for actuation are tested. The proposed change relaxes the current requirement by testing permissives on a STAGGERED TEST BASIS however, the proposed testing frequency far exceeds the industry testing requirements for the same function and is acceptable.

3.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS) INSTRUMENTATION

CTS Table 3.4-1 Column 6

L-1 14. An "Allowable Value" column has been added to the ESFAS Table and the "Setpoint" column has been removed. The Allowable Values for each Function (where applicable) have been calculated in accordance with WCAP-12582, "Westinghouse Setpoint Methodology for Protection Systems Zion Units 1 and 2, Eagle 21 Version" which was previously approved by the NRC staff in June 1993. The Allowable Values are used to determine channel OPERABILITY consistent with safety analysis assumptions. Trip Setpoints for the ESFAS instruments will be maintained in plant procedures. The inclusion of a single Allowable Value column is consistent with NUREG-1431.

CTS Table 3.4-1 Item I.1

15. Safety Injection - Manual Actuation

L-1 The CTS Required Action to immediately go to hot shutdown has been revised to allow 48 hours for restoration of a channel. The 48 hours is considered acceptable because 1) the safety injection (SI) Manual Initiation Function is not credited in the safety analysis, and 2) redundancy is afforded by the credited automatic actuation trains. If this function is not restored to OPERABLE status within this allowed time, the plant must be placed into a MODE where the function is no longer required. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item I.3

17. Safety Injection - Low Pressurizer Pressure

L-1
L-2 The Required Action has been revised to be consistent with NUREG-1431. Six hours are allowed to place the inoperable channel in trip. The Action also now reflects placing the plant in a nonapplicable MODE or Condition if the channel cannot be placed in trip or restored in the allowed time. The Action is also modified by a Note that allows a channel to be bypassed for 4 hours for surveillance testing. The allowed outage time and time allowed for testing are justified in WCAP-10271, and are acceptable since they do not result in a increase in core melt frequency over the expected life of the units.

CTS Table 3.4-1 Item I.4

18. Safety Injection - High Steam Line Differential Pressure

L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described for item 17 of this section.

CTS Table 3.4-1 Item I.5

19. Safety Injection - High Steam Line Flow

L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described for item 17 of this section.

CTS Table 3.4-1 Item I.5

20. Low-Low T_{avg}

L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described for item 17 of this section.

CTS Table 3.4-1 Item I.5

21. Low Steam Line Pressure

L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described in item 17 of this section.

CTS Table 3.4-1 Item I.6

22. High Containment Pressure

L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described in the discussion for item 17 of this section.

CTS Table 3.4-1 Item II.1

23. Containment Spray (CS) - Manual

L-1 The Required Action has been revised to allow 48 hours for restoration of a channel. The 48 hours is considered acceptable because 1) the CS Manual Initiation Function is not credited in the safety analysis and 2) redundancy is afforded by the credited automatic actuation trains. If this function is not restored to OPERABLE status within this allowed time, the plant must be placed into a MODE where the function is no longer required. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item II.3

25. Containment Spray - High-High Containment Pressure

L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. Six hours are allowed to place the inoperable channel in bypass. The Action also now reflects placing the plant in a nonapplicable MODE or Condition if the channel cannot be restored or placed in bypass within the allowed time. The Action is also modified by a Note that allows an additional channel to be bypassed for up to 4 hours for surveillance testing. The allowed outage time and time allowed for testing are justified in WCAP-10271, and are acceptable.

CTS Table 3.4-1 Item III.A.1

26. Containment Isolation - Phase A - Manual

L-1 The Required Action has been revised to allow 48 hours for restoration of a channel. The 48 hours is considered acceptable because 1) the Phase A Manual Initiation Function is not credited in the safety analysis and 2) redundancy is afforded by the credited automatic actuation trains. If this function is not restored to OPERABLE status within this allowed time, the plant must be placed into a MODE where the function is no longer required. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item III.B.1

29. Containment Isolation - Phase B - Manual

L-1 The Required Action has been revised to allow 48 hours for restoration of a channel. The 48 hours is considered acceptable because 1) the Phase B Manual Initiation Function is not credited in the safety analysis and 2) redundancy is afforded by the credited automatic actuation trains. If this function is not restored to OPERABLE status within this allowed time, the plant must be placed into a MODE where the function is no longer required. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item III.B.3

31. Containment Isolation - Phase B - High-High Containment Pressure

L-1
L-2 The Required Actions have been revised to be consistent with NUREG-1431. The change and justification are the same as described for item 25 of this section.

CTS Table 3.4-1 Item IV.1

32. Steam Line Isolation - Manual

L-1 The Required Action has been revised to be consistent with NUREG-1431. Forty-eight hours are allowed to restore an inoperable channel. The action also reflects placing the plant in a nonapplicable MODE or Condition if the channel cannot be restored within the allowed time. The allowed outage time (48 hours) is reasonable considering the nature of this Function, the available redundancy and automatic actuation, and the low probability of an event occurring during this interval. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item IV.2

33. Steam Line Isolation - Automatic Actuation

L-1 The Required Action has been revised to allow six hours to restore a train to OPERABLE status. The current Action requires the plant to be placed into Hot Shutdown within 4 hours, 24 hours to restore the channel, or place the plant in Cold Shutdown with the next 24 hours, (a total of 52 hours to Cold Shutdown). The ITS will allow 6 hours to restore the channel to OPERABLE status, or place the plant in MODE 3 within 6 hours, and to either be in MODE 4 or have the Main Steam Isolation Valves (MSIV) closed within 18 hours (a total of 30 hours to MODE 4 or valve closure). Allowing 6 hours to restore the channel to OPERABLE status prior to

initiating a plant shutdown, and then allowing 6 hours to reach MODE 3 versus 4 hours, allows additional time to restore a channel to OPERABLE status before inducing a plant shutdown. The time to reach MODE 4 has similarly been reduced in that actions to reduce RCS temperature are not required until 28 hours into the event by the current Technical Specifications. The plant will no longer be required to be placed into Cold Shutdown and an option has been added allowing the MSIVs to be closed. This is justified because the steam line isolation automatic actuation safety function is not required below MODE 3 when the MSIVs are open, and not at all with the valves closed. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item IV.3
34. Steam Line Isolation - High-High Containment Pressure
L-1 L-2 The Required Actions have been revised to be consistent with NUREG-1431. The change and justification are the same as described in the discussion for item 25 of this section.

CTS Table 3.4-1 Item IV.4
35. Steam Line Isolation - High Steam Line Flow
L-1 L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described for item 17 of this section.

CTS Table 3.4-1 Item IV.4
36. Steam Line Isolation - Low-Low T_{avg}
L-1 L-2 The Required Actions have been revised consistent with NUREG-1431. The change and justification are the same as described for item 17 of this section.

CTS Table 3.4-1 Item IV.4
37. Steamline Isolation - Low Steam Line Pressure
L-1 L-2 The required actions have been revised consistent with NUREG-1431. The change and justification are the same as described for item 17 of this section.

CTS Table 3.4-1 Item V.1
39. Auxiliary Feedwater (AF) - Manual
L-1 The Manual AF Start Function is eliminated from Table 3.4-1. This manual actuation is not specifically credited in the safety analyses and the deletion is consistent with NUREG-1431. The AF pumps are tested quarterly as part of the Inservice Testing Program System. Each pump start is manually initiated as part of the test. The Frequency of the pump testing in the Inservice Test Program is greater than the Frequency specified for manual actuation testing in the instrument specification. This change eliminates the duplication of testing requirements contained in existing regulations (10 CFR 50.55a) and the Technical Specifications.

CTS Table 3.4-1 Item V.2

40. Auxiliary Feedwater - Automatic

L-1 The Required Action has been revised to allow six hours to restore a train to OPERABLE status. The current Action requires the plant to be placed into Hot Shutdown within 4 hours, 24 hours to restore the channel, or place the plant in Cold Shutdown with the next 24 hours, (a total of 52 hours to Cold Shutdown). The ITS will allow 6 hours to restore the channel to OPERABLE status or place the plant in MODE 3 within 6 hours, and in MODE 4 within 18 hours (a total of 30 hours to MODE 4). Allowing 6 hours to restore the channel to OPERABLE status prior to initiating a plant shutdown, and then allowing 6 hours to reach MODE 3 versus 4 hours, allows additional time to restore a channel to OPERABLE status before inducing a plant shutdown. The time to reach MODE 4 has similarly been reduced in that actions to reduce RCS temperature are not required until 28 hours into the event by the current Technical Specifications. The plant will no longer be required to be placed into Cold Shutdown; this is justified because the auxiliary feedwater automatic initiation safety function is not required below MODE 3. This change is consistent with NUREG-1431.

CTS Table 3.4-1 Item V.3

41. Auxiliary Feedwater - SG Water Level-Low-Low

L-1
L-2 The Required Action has been revised to be consistent with NUREG-1431. The change and justification are the same as described in the discussion for item 17 of this section.

CTS Table 3.4-1 Item V.4

42. Auxiliary Feedwater - Undervoltage - RCP Busses

L-1
L-2 The Required Action has been revised to be consistent with NUREG-1431. Six hours are allowed to place an inoperable channel in trip. The Action also reflects placing the plant in a nonapplicable MODE or condition if the channel cannot be placed in trip or restored within the allowed time. The Action is modified by a Note that allows a channel to be bypassed for 4 hours for surveillance testing. The allowed outage time and the time allowed for testing are justified in WCAP-10271.

CTS Table 3.4-1 Footnote +

L-1 49. The generic note to place the unit in Cold Shutdown has been replaced by Conditions specific to the individual instrument Functions of the ESFAS Specification. This format is consistent with NUREG-1431, allows the Actions applicable to an inoperable Function to specify the minimum MODE change necessary to place the unit in a condition where the inoperable Function is no longer required OPERABLE consistent with the applicable safety analyses assumptions, and assures consistency between the MODE of Applicability and the Required Actions. Although in most cases this change represents a relaxation, it does limit the risk of unnecessary plant transients by reducing inappropriate and excessive MODE changes.

CTS Table 3.4-1 Footnote ***
52.

L-1 The time to reach MODE 3 (Hot Shutdown) has been extended from 4 hours to 6 hours. This provides the necessary time to shutdown the unit in a controlled and orderly manner that is within the capabilities of the plant assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a plant transient that could challenge safety systems. This time is also consistent with NUREG-1431 and proposed LCO 3.0.3.

CTS Table 4.4-1 Item I.2
56. Safety Injection - Automatic Actuation

This Function consists of logic and actuating relays (master and slave). The monthly CHANNEL FUNCTIONAL TEST has been eliminated and more appropriate logic and relay tests are now assigned to this Function consistent with NUREG-1431:

L-1 ACTUATION LOGIC TEST every 31 days on a STAGGERED TEST BASIS (one train of logic is tested every month).

L-1 MASTER RELAY TEST every 31 days on a STAGGERED TEST BASIS (one set of relays is tested with the associated actuation logic train every month).

CTS Table 4.4-1 Item II.2
L-1 58. Containment Spray - Automatic Actuation

This Function is similar to the automatic actuation Function for safety injection discussed in item #56 of this section. The monthly CHANNEL FUNCTIONAL TEST has been eliminated and more appropriate logic and relay tests are now required. Item #56 of this section discusses these changes in more detail.

CTS Table 4.4-1 Item III.B.2
L-1 62. Phase B - Automatic

This Function is similar to the automatic actuation Function for safety injection discussed in item #56 of this section. The monthly CHANNEL FUNCTIONAL TEST has been eliminated and more appropriate logic and relay tests are now required. Item #56 of this section discusses these changes in more detail.

CTS Table 4.4-1 Item IV.2
L-1 64. Steam Line Isolation - Automatic

This Function is similar to the automatic actuation Function of safety injection discussed in item #56 of this section. The monthly CHANNEL FUNCTIONAL TEST has been eliminated and more appropriate logic and relay tests are now required. Item #56 of this section discusses these changes in more detail.

CTS Table 4.4-1 Item V.2

L-1 67. AFW - Automatic

This function consists of three separate actuation logics associated with the auxiliary feedwater components. The CTS monthly CHANNEL FUNCTIONAL TEST has been replaced with the appropriate logic tests assigned to the function. The ACTUATION LOGIC TEST every 31 days on a STAGGERED TEST BASIS (one train of logic is tested every month) is incorporated, consistent with NUREG-1431, for the turbine driven pump start on undervoltage on the reactor coolant pump bus, and for motor driven pump start on steam generator low-low water level. The turbine driven pump start on steam generator low-low water level cannot be tested while the unit is operating, and therefore, the ACTUATION LOGIC TEST is only required on an 18 month frequency. The 18 month frequency is consistent with CTS Table 4.4-1, Note B.

CTS N/A

L-2 71. A Note is added for an instrument channel made inoperable solely for the performance of required surveillances, to allow delay of entry into applicable Conditions and Required Actions for up to 4 hours when a second channel associated with the same function is also inoperable. Without this Note, a given function with an inoperable channel or train would require entry into LCO 3.0.3 during surveillance testing of an associated channel or train. The changes to the allowed outage time and time allowed for testing are justified in WCAP-10271 and its supplements and are acceptable since they do not result in an increase in core melt frequency over the expected life of the units. Therefore, this change is justified and acceptable.

3.3.3 <u>POST ACCIDENT MONITORING (PAM) INSTRUMENTATION</u>

CTS 3.8.9 Action

L-1 2. Current Technical Specification (CTS) Action 3.8.9.a has been revised to provide a format similar to those found in the RTS and ESFAS Specifications. Condition A of proposed Specification 3.3.3, "Post Accident Monitoring (PAM) Instrumentation" addresses one or more functions with one required channel inoperable. Condition A now allows 30 days to restore a single inoperable channel to OPERABLE status. The change from 7 days to 30 days is based on the remaining OPERABLE channel, the passive nature of the instrument (no required automatic action) and the low probability of an event requiring PAM instrumentation during this interval. The proposed Completion Time is consistent with NUREG-1431.

CTS 3.8.8.B, Action 1 and 3.8.9, Action a

L-2 4 Proposed Condition A allows 30 days to restore a required PAM channel to OPERABLE status. Condition B applies when the Required Action and associated Completion Time of Condition A are not met. Required Action B.1 specifies action to be initiated in accordance with proposed Specification 5.6.7 (PAM Report). This Action allows continued operation with one PAM instrument channel

inoperable provided an adequate alternate method of monitoring the parameters is identified and justified in a special report to the NRC, and is implemented. For the instruments listed in CTS Table 3.8.9-1, this represents a relaxation from the requirement to be in MODE 4 within 12 hours. For the containment hydrogen monitors, this represents a relaxation from the requirement to be in at least MODE 3 within 6 hours. The proposed action to submit a report in lieu of the shutdown requirements is acceptable based on the small probability of an event requiring the PAM instrumentation and the alternate means of monitoring the affected parameter. Providing this proposed action will minimize the potential for plant transients that can occur during plant shutdown. This change is consistent with NUREG-1431.

CTS 3.8.9 Action a

L-3 4.a. Proposed Condition D applies when two required Containment Area Radiation channels or two required Reactor Vessel Water Level Instrument System (RVLIS) channels are inoperable. Required Action D.1 specifies actions to be initiated in accordance with proposed Specification 5.6.7 (PAM Report). This Action allows continued operation with two Containment Area Radiation channels or two RVLIS channels inoperable provided an adequate alternate means of monitoring these parameters are identified and justified in a special report to the NRC. This allowance is currently permitted in the CTS for the Containment Area Radiation function and is being proposed to include the RVLIS function. RVLIS is used to assist in detecting a gas bubble or voiding in the reactor vessel, to assist in detecting the approach to inadequate core cooling, and to indicate voiding in the RCS during forced flow conditions. Throughout the Zion Station Emergency Operating Procedures (EOPs), most steps involving RVLIS are used in conjunction with the core exit thermocouples (CETs) or hot leg temperature indications. Decisions within the EOPs based on primary system coolant temperatures are derived from the CETs and hot leg temperatures, with the RVLIS readings provided as confirmation. As such, a loss of the RVLIS function would not significantly impact the ability of the operator to detect the onset of inadequate core cooling. The proposed action is acceptable based on the small probability of an event requiring RVLIS and the alternate means of monitoring the primary coolant temperature. This change is consistent with NUREG-1431.

CTS 3.8.9 Action b

L-4 5. Proposed Condition E corresponds to the CTS Action "b" and allows 7 days to restore one channel to OPERABLE status instead of 48 hours. The Completion Time of 7 days is acceptable based on the small probability of an event requiring the PAM instrumentation during this time period, the passive nature of the instruments and the availability of alternate means to obtain the information. Providing a 7 day Completion Time will minimize the potential for plant transients that can occur during shutdown. This change is consistent with NUREG-1431.

CTS 4.8.8.B.1.a

L-5. 18. The CTS surveillance which verifies no valid alarms are present and that the Containment Hydrogen Monitors are in the "Standby" mode each shift has been deleted. Alternatively, a CHANNEL CHECK every 31 days has been proposed. This change was made to conform to NUREG-1431 and is consistent with the CHANNEL CHECKS currently performed on other PAM instrumentation. The Containment Hydrogen Monitors are normally maintained in the "Standby" position. The monitors are manually placed in the "Analyzed" position following a loss of coolant accident as directed by the Emergency Operating Procedures. Verification each shift that the monitors are in the "Standby" position is overly restrictive since, once the monitors are placed in "Standby", their positions are not routinely changed. In addition, if a monitor is placed in "Off" (or during maintenance or surveillance), a "High Hydrogen Concentration in Containment Or System Off" alarm is received in the control room alerting the operators of an abnormal condition. If it is determined that the containment hydrogen concentration monitor is inoperable, then the annunciator response procedure directs the operator to take the applicable actions specified in the technical specification. Therefore, based on the available indication in the control room and the fact that the Containment Hydrogen Monitors typically remain in the "Standby" position, deletion of the once per shift verification will not impact the capability to assess the OPERABILITY of these monitors. Furthermore, the proposed CHANNEL CHECK once every 31 days will ensure that a gross instrumentation failure has not occurred. The CHANNEL CHECK is a comparison of the parameters indicated on one channel to the parameters indicated on the other channel. The CHANNEL CHECK requirement is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. The 31 day Frequency is based on industry operating experience that demonstrates channel failure is rare.

CTS 4.8.8.B.1.b and Table 4.14-1, Item 1.c

L-6 19. The monthly and quarterly channel functional test requirements for the Containment Hydrogen Monitors and the Containment Area High Range Radiation Monitors, respectively, have been deleted to be consistent with NUREG-1431. The functional test requirements are now effectively addressed by the CHANNEL CALIBRATIONS. CHANNEL CALIBRATIONS are required to be performed once per 18 months. The Containment Hydrogen Monitors and the Containment Area High Range Radiation Monitors provide indication and alarm function only. In NUREG-1431, channels which have no interlocks or actuation, such as the Hydrogen Monitors and the Containment Area High Range Radiation Monitors typically do not have functional test requirements. For the Containment Area High Range Radiation Monitor, the CHANNEL CALIBRATION will verify that the local and remote annunciator alarm actuates when: a) the instrument indicates measured level greater than the alarm setpoint, b) a circuit failure occurs, c) the instrument indicates a downscale failure or, d) the instrument control is not set in the operate

mode. For the Containment Hydrogen Monitor, the CHANNEL CALIBRATION incorporates the same requirements which exist in the CTS for a Channel Functional test. Therefore, replacing the existing Channel Functional Test with a CHANNEL CALIBRATION continues to ensure the requirements contained in the CTS are met. In addition, industry operating experience has shown that the monthly CHANNEL CHECKS and 18 month CHANNEL CALIBRATIONS are adequate for maintaining these instruments OPERABLE. This change is consistent with NUREG-1431.

CTS Table 3.14-1 Item 1.C

L-7 24. The MODE 4 Applicability has been deleted. The variables monitored by PAM instruments are related to the diagnosis and preplanned actions required to mitigate design basis accidents (DBA). The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, plant conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be OPERABLE in these MODES. This change is consistent with NUREG-1431.

CTS Table 3.14-1, Item 1.C and Action 21

L-8 25. The Action for a single inoperable Containment Area radiation monitor channel has been changed. Thirty days are allowed for restoration of the inoperable channel or initiation of an alternate method for monitoring. The change to 30 days for restoration or initiation of the alternate monitoring method is based on the remaining OPERABLE channel, the passive nature of the instrument (no required automatic action) and the low probability of an event requiring PAM instrumentation during the interval. This change is consistent with NUREG-1431.

CTS Table 4.14-1 Item 1.C

L-9 27. The daily CHANNEL CHECK has been changed to a monthly CHANNEL CHECK consistent with the ITS. This change was made to conform to NUREG-1431 and is consistent with the CHANNEL CHECKS currently performed on other PAM instrumentation. The Containment Area High Range radiation monitors are provided to monitor the containment atmosphere following a loss of coolant accident. High radiation levels in containment provide a potential for offsite releases since the containment structure is the final fission product barrier. In addition, by knowing the radiation levels in containment following a loss of coolant accident, an assessment can be made in determining the need to invoke site emergency plans. The proposed frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels. In addition, failure of the Containment Area High Range radiation monitor will result in a "Cont HRRM INST Fail" alarm in the control room alerting the operators of an abnormal condition. If it is determined that the

Containment Area High Range radiation monitor is inoperable, then the annunciator response procedure directs the operator to take the applicable actions specified in the technical specification. Therefore, based on the available alarm indication in the control room and the known reliability of these instruments, relaxing the frequency at which a CHANNEL CHECK is performed will not impact the OPERABILITY of the Containment Area High Range radiation monitor.

3.3.4 REMOTE SHUTDOWN SYSTEM

There are no less restrictive changes in this section.

3.3.5 LOSS OF POWER (LOP) DIESEL GENERATOR (DG) START INSTRUMENTATION

CTS Table 4.4-1
L-2 2. A modification has been installed in Units 1 and 2 which eliminates an identified single failure vulnerability in the diesel generator loss of power start and sequencing circuit. Prior to installation of this modification, a diesel generator would receive an auto start signal based on an ESF bus undervoltage condition, but would not sequence its associated safe shutdown equipment unless a loss of voltage coincidence was made up on two of three non-ESF buses. The non-ESF bus portion of this logic was found to not be capable of withstanding a single failure, thereby preventing automatic sequencing of the safe shutdown load as a result of a loss of offsite power in the event of a single failure. A portion of the circuit associated with ESF bus undervoltage has been modified to result in a start and sequencing of the safe shutdown loads based on a loss of power to the respective ESF bus. Single failure capability has been restored as a result of this modification in that failure of any given circuit will only affect one bus. Accordingly, this instrumentation is proposed to be specified in the ITS for diesel generator start instrumentation.

CTS Table 4.4-1, Items 6 and 7
L-2 3. For the DGs, each of the ESF buses contain two undervoltage relays. The undervoltage relays on each bus are arranged in a two-out-of-two logic which, in turn, initiates auto start and safe shutdown sequencing of the DGs. The reason for and acceptability of this change is further addressed in discussion 2, above.

CTS Table 3.14-1, Item V.6
L-1 4. The CTS Actions associated with the Station Blackout and Secondary Undervoltage Functions if the requirements of the LCO can not be met are to place the unit in HOT SHUTDOWN within four hours. The proposed LOP DG specification allows six hours to place a single inoperable channel in trip. The Action is further modified by a Note that allows the inoperable channel to be bypassed to allow surveillance testing of other channels. A Condition is also provided for two or more inoperable channels in a Function. The

Required Action is to restore one channel to OPERABLE status in 1 hour. If the Action specified for one or two channels inoperable cannot be met, a third Condition is provided which requires the appropriate Conditions be entered for the DG made inoperable by the LOP DG Start Instrumentation. These actions are consistent with the ITS, allow time to repair equipment and take into account the low probability of an event requiring an LOP DG Start during the allowed intervals.

3.3.6 <u>CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION</u>

CTS Table 3.14-1 Item 2.A.2

5. In CTS Table 3.14-1, the Applicable Modes for the Containment Ventilation monitor has been changed as follows:

L-1 In proposed Specification 3.3.6, Containment Ventilation Isolation Instrumentation, the Containment Atmosphere Radiation Monitor will only be required in Modes 1, 2, 3, 4, and during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment when the containment purge supply and exhaust valves, or containment pressure and vacuum relief valves are open. The function of the radiation monitor is to provide an isolation signal to the valves in the containment purge penetrations and the containment pressure control penetration. The isolation signal is necessary to prevent a release of fission product radioactivity to the environment in the event of an accident. As such, the mode of applicability has been modified to only require the Containment Atmosphere Radiation Monitor to be OPERABLE when the affected valves are opened.

CTS Table 4.14-1, Item 1.B and Note 5

L-2 9. The CTS requirement to complete a CHANNEL FUNCTIONAL TEST within 72 hours of the start of refueling operations has been deleted. In the ITS the function must be OPERABLE when in the MODE of Applicability. If the required surveillances have been performed in the specified interval and no other condition exists that would question the OPERABLE status of the valves, additional testing beyond the specified quarterly interval is not required. This change is a relaxation of current requirements and is consistent with NUREG-1431.

3.3.7 <u>CREFS ACTUATION INSTRUMENTATION</u>

There are no less restrictive changes in this section.

3.3.8 <u>FHBEFS ACTUATION INSTRUMENTATION</u>

There are no less restrictive changes in this section.

3.3.9 <u>PTEFS ACTUATION INSTRUMENTATION</u>

There are no less restrictive changes in this section.

3.4 REACTOR COOLANT SYSTEM

CTS 3.2.1.C.2.b

L-1. 2. The Required Action is revised to require only that the plant be made subcritical in MODE 2, rather than placed in MODE 3; and the Completion Time is expanded to 1 hour. The Required Action change is consistent with the Specification Applicability and the Completion Time is revised to be consistent with the Bases which indicate that the time should provide for an orderly shutdown. Past attempts to place the plant in a subcritical condition in an orderly manner have taken more than the NUREG-1431 identified 30 minutes (just under one hour). This change is consistent with plant capability and is acceptable.

CTS 3.2.4.B

L-2. 5. If current Specification 3.2.4.A regarding Departure from Nucleate Boiling (DNB) is not met, 2 hours are provided to restore the parameter to within limits, or the unit must be reduced to less than 5% power within the next 4 hours. Proposed LCO 3.4.1, Condition A provides a similar 2 hour action to restore the parameter but allows 6 hours to perform the shutdown to MODE 2. This provides the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, and is consistent with NUREG-1431.

CTS 4.2.4.A.1

L-3. 6. A Note has been added to the SR for Reactor Coolant System (RCS) total flow rate to allow the unit to enter MODE 1 and attain near full power. These conditions are necessary to obtain accurate flow measurements using the heat balance methodology. The Note is necessary if the SR is not current to allow entry into the Applicable MODE.

CTS 3.3.1.A.1

L-2. 8. If current Specification 3.3.1.A.1 is not met, 1 hour is provided to either restore the parameter to within limits, or place the unit in HOT SHUTDOWN. Proposed Condition A allows 6 hours to perform the shutdown to MODE 3. This provides the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a unit upset that could challenge safety systems and is consistent with NUREG-1431.

CTS 3.3.1.A.2, Footnote (pg. 73), 3.3.1.A.3, Footnote (pg. 73a), and 3.3.1.B.1

L-4. 9. The CTS requirements for RCS loops (and OPERABLE steam generators) in MODE 3 have been revised to be consistent with NUREG-1431. The most significant change is a reduction from all four loops required to only two loops required to be OPERABLE. This reduction in requirements is acceptable for the following reasons. The most limiting accident for Hot Zero Power (HZP) conditions is the bank withdrawal accident. Plant specific analyses for a bank

withdrawal from subcritical events have been conducted and are presented in UFSAR 15.4.1. These analyses demonstrate that the acceptance criteria for rod withdrawal events are met, assuming only two loops in operation. In light of this, the overly restrictive CTS requirements for four loops in operation can be reduced to two loops in the ITS without an impact on safety. The other bounding accidents at HZP are a main steam line break and a rod ejection accident. For these accidents, having only a single OPERABLE RCS loop will not impact the FSAR conclusions. Therefore, these accidents are bounded by the proposed ITS requirement for two OPERABLE PCS loops. In addition to the above, and considering that the most limiting HZP accident is the bank withdrawal event, the number of OPERABLE RCS loops required is further reduced to one if the Rod Control System is not capable of withdrawing rods. This is acceptable because a single RCS loop is adequate to deal with the remaining bounding accidents (rod ejection and main steam line break). Finally, the Required Actions and Completion Times are revised to allow time to restore inoperable (or non-operating) equipment, unless all required loops are inoperable. The allowed time is one hour. This is acceptable because it allows time for operators to assess the plant condition and more properly determine the appropriate action for that plant condition.

CTS 3.3.1.A.4
L-5. 12. The Required Actions for one of the two required loops inoperable are separated depending on the capability of the remaining OPERABLE loop. Since an RCS loop may not be sufficient to attain MODE 5 in a timely manner, the Required Action is only to restore a second loop. This change is consistent with NUREG-1431.

CTS 4.3.1.A.5
L-6. 14. A Note is added to allow one of the required loops to be removed from service for testing. This permits tests to be performed on the inoperable loop when such testing is safe and possible. This change is consistent with NUREG-1431.

CTS 4.3.1.A.5
L-7. 15. A Note is added to allow both of the required loops to be removed from service for planned heatup to MODE 4 provided at least one RCS loop is in operation. This Note provides for the transition to MODE 4 where an RCS loop is permitted to be in operation and replaces the heat removal function provided by the RHR loops. This change is consistent with normal plant evolutions and with NUREG-1431.

CTS 3.3.1.B.1
L-4. 16. The requirements for RCS steam generators in MODE 4 have been revised such that the number of steam generators required is reduced to only the steam generators required to support the RCS loops required to be OPERABLE. This may be as few as none if both loops of the residual heat removal (RHR) system are operable.

This change has no impact on safety since a steam generator is not depended upon for the heat removal safety function if the RCS loop is not in operation. This change is consistent with NUREG-1431.

CTS 3.3.1.C.2
L-8. 18. The Applicability for required operability of the code safety valves is revised to be only above the conditions where low temperature overpressure protection (LTOP) is possible. In the conditions where LTOP is possible, adequate relief capabilities are required to be operable without the code safety valves.

CTS 3.3.1.F Actions a.b, and c, and 4.3.1.F.1.c
L-9. 24. As indicated in the LCO Bases (consistent with the safety analysis), the PORVs are only required to be available for manual control. Automatic operation is not required. Therefore, Required Actions and Surveillance Requirements associated with automatic control are not appropriate for the Specification. Further, degraded PORV conditions related to seat leakage or other causes that do not prevent manual use, do not affect OPERABILITY requirements as identified for this Specification since these conditions do not invalidate the assumptions of the safety analysis regarding the PORV capabilities. Therefore, Required Actions and Surveillance Requirements associated with leakage are also not appropriate for the Specification. Proposed LCO 3.4.11 has been limited to address only the safety analysis requirements for PORVs, i.e., manual RCS pressure control. This change is consistent with the NRC Policy Statement and with the Bases in NUREG-1431.

CTS 3.3.1.E.3.c and 4.3.1.E.3.c
L-12. 29. The requirements for boron concentration of a loop to be unisolated are reduced from "greater than or equal to the boron concentration of the unisolated (or operating) loops" to "greater than or equal to the required boron concentration in the unisolated portion of the RCS." Requiring a boron concentration in the loop to be isolated to be higher than is required for the entire RCS is unnecessarily restrictive. Proposed LCOs 3.1.2 and 3.9.1 provide adequate requirements to assure reactivity control in MODES 5 and 6, respectively. Boron concentrations above that necessary to assure compliance with these LCOs provide no significant additional benefit toward assuring safe operation of the plant. In addition, LCO 3.4.8 c. is added to allow opening of either stop value if the isolated loop is drained. Unisolating a drained loop will not affect RCS boron concentration. Therefore, these requirements are relaxed to be equivalent to the requirements for the unisolated portion of the RCS.

CTS 4.3.1.D
L-10. 31. A Note is added which now allows pressurizer safety valve lift settings to be adjusted under ambient (hot) conditions in MODES 3 or 4 if a preliminary cold setting has been made. This change

is an enhancement to CTS requirements and is consistent with NUREG-1431.

CTS 4.3.1.F.b
L-11. 33. The check valves in the PORV actuation system are not required to operate through a complete cycle of full travel in order to accomplish their safety function. These valves are only required to open during normal operation to establish the necessary accumulator pressure. Once that pressure is established, the only safety function is to maintain that pressure by being leak tight. Therefore, the surveillance for the check valves is revised to "verify the capability of the check valves to maintain accumulator pressure."

CTS 4.3.2.G.1.A.4
L-15. 38. The Surveillance Frequency for verifying a PORV isolation valve is open during conditions with the potential for LTOP has been extended from every 12 hours ("once per shift") to 72 hours. The 72 hour Frequency is considered adequate in view of other administrative controls available to the operator in the control room, such as valve position indication, that verify that the PORV block valve remains open. Additionally, the proposed Frequency is consistent with NUREG-1431.

CTS 3.3.3.A
L-2. 42. If unidentified leakage is not reduced and the source is not identified within 24 hours, the unit must be placed in hot shutdown within the next 4 hours. Proposed Condition B provides a similar 24 hour action to restore the parameter but Condition C allows 6 hours to perform the shutdown to MODE 3. This provides the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a unit upset that could challenge safety systems.

CTS 3.3.3.C and 3.3.3.D
L-2. 44. If pressure boundary leakage exists or if total leakage exceeds its limit, the unit must be placed in cold shutdown within 24 hours. Proposed Condition C allows 36 hours to perform the shutdown to MODE 5. This provides the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a unit upset that could challenge safety systems.

CTS 4.3.3.D
L-2. 46. If total leakage exceeds its limit, an additional Required Action is provided which allows 4 hours to attempt to reduce leakage to within the limit. This extra time reduces the potential for a unit upset that could challenge safety systems.

CTS 4.3.3.A and 4.3.3.A.2

L-14. 49. The allowance to either have the containment radioactivity monitors operable or perform manual sampling of the containment atmosphere is revised to allow an option of performing an RCS water inventory balance once per 24 hours since the inventory balance is the primary means of quantifying leakage. This change is consistent with NUREG-1431.

CTS 3.3.3.F Action b

L-2. 54. The required action to isolate the high pressure portion of the RCS from the low pressure portion of the system when an RCS pressure isolation valve (PIV) is inoperable is modified to allow initial isolation, within 4 hours, by a single isolation valve. A second required action is also proposed which will maintain the requirement for isolation by a second valve, but will allow 72 hours to accomplish the isolation. The extended interval is based on the time usually required to perform this action and the low probability of another valve failing during this period. This change is consistent with NUREG-1431.

CTS 4.3.3.F.b

L-15. 55. The time for the plant to have been in MODE 5 before Pressure Isolation Valve (PIV) testing is required is extended from 72 hours to 7 days. This extended period of MODE 5 operation does not increase the probability of operation of the PIVs since the change in plant status over the four additional days of shutdown time does not change significantly. Seven days also provides additional time to plan and implement the required surveillance testing and is consistent with NUREG-1431.

CTS 4.3.3.F.e, 4.3.3.F.f and Table 3.3.3-1 Note b

L-15. 57. The requirement to perform PIV testing simply due to reductions in RCS pressure are deleted. Any impact on leakage due only to the pressure reduction would be offset by the increased pressure when the plant is returned to normal operating pressure. Thus, the proposed Frequencies are considered sufficient to adequately assure the capability of the PIVs to perform their functions. This change is essentially a Surveillance Frequency extension and is consistent with NUREG-1431.

CTS 3.3.6 Applicability, 3.3.6 Actions, and Table 4.3.6-1

L-16. 61. The Applicability for RCS specific activity requirements are limited to MODES 1 and 2, and MODE 3 with RCS average temperature ≥ 500°F. Other MODES do not have sufficient pressure to make a release of the activity in the reactor coolant likely since the saturation pressure of the reactor coolant is below the lift pressure settings of the main steam safety valves. This change is consistent with NUREG-1431.

CTS 3.3.6 Action A

L-16. 62. The CTS ACTION for specific activity not within the 100/E microcuries per gram limit when in a mode of applicability is to

shut down the reactor and perform the sampling and analysis requirements of item 4a) of CTS Table 4.3.6-1 until the specific activity is restored to within the limit. The ITS REQUIRED ACTION for gross specific activity not within the 100/E μCi/gm limit will continue to require shut down, but not the sampling. More sampling for this limit before shut down does not contribute to the safety of the plant, and SR 3.0.4 requires verification of being within the limit before entering into the MODE of applicability. This change is in accordance with NUREG-1431.

CTS Table 4.3.6-1 and Footnote

L-15. 63. The surveillance Frequencies for RCS specific activity have been extended. These Frequencies have been determined sufficient to identify trends and slowly occurring changes (for slow minor leaks). Additionally, catastrophic failure is readily identified by other means (e.g., radiation monitors near the main steam lines, etc.). Therefore, there is no challenge to the safety systems resulting from these change in Frequency. This change is consistent with NUREG-1431.

CTS 3.3.6

L-17. 66. A Note is added to the Required Actions for Condition A to exclude the applicability of LCO 3.0.4. This exception is acceptable due to the conservatism incorporated in the limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation. This change is consistent with NUREG-1431.

CTS Table 3.14-1 and Table 4.14-1

L-13. 67. The number of required channels of containment radiation monitors is reduced to one of either the gaseous or particulate monitors. The iodine monitor is no longer required. While redundancy of radiation monitors is a preferred design, it is not required since the single radiation monitor is redundant to and diverse from the other required leakage monitor (sump monitors). Additionally, all monitors in this Specification are secondary indicators of reactor coolant system (RCS) leakage. The primary indication is provided by the RCS water inventory balance (proposed SR 3.4.13.1), and other backup indicators will continue to be provided under administrative control. Therefore, requiring only two diverse monitors does not impact the capability to identify RCS leakage. This change is consistent with NUREG-1431.

CTS 3.3.3.D

L-2. 70. In CTS 3.3.3.D, if RCS total leakage cannot be reduced to within limits, the reactor must be placed in hot shutdown within 4 hours, and in cold shutdown within 24 hours. Proposed ITS 3.4.13 Condition C.1 allows 6 hours to place the plant in Mode 3 and 36 hours to reach Mode 5. The proposed Completion Times provide the necessary time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the

minimum required equipment is operable. This extra time reduces the potential for a unit trip that could challenge safety systems. This change is consistent with NUREG 1431.

CTS N/A
L-18. 71. CTS 4.3.2.G.1.a requires performance of a CHANNEL FUNCTIONAL TEST, excluding valve operation, on the PORV actuation channel within 31 days prior to entering a condition in which the PORV is required OPERABLE. This Specification creates unnecessary scheduling burdens and resource expenditures, and establishes the potential for missed surveillance during unplanned shutdowns. A Note has been added to the ITS to allow entry into the Mode of applicability for up to 12 hours prior to performing the surveillance. Without this note, the SR would have to be performed or verified performed even though the units is not in the Mode of Applicability. This creates an unnecessary resource burden on the Station, and if not performed could lead to an increased potential for a missed surveillance, Technical Specification noncompliance, and delays in plant shutdown actions. This note will facilitate scheduling performance of the SR without impacting plant activities and reduce the potential for missed surveillances and delays in plant cooldown actions. This change is consistent with NUREG 1431.

CTS 4.3.2.G.2
L-19. 72. CTS 4.3.2.G.2 requires, in part, all accumulators be verified to be incapable of injection into the RCS prior to entering a condition in which they are required to be inoperable. A Note has been added to ITS SR 3.4.12.3 that indicates that accumulator isolation is only required for an accumulator if its pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR. If the accumulators are at a pressure that is less than the limits allowed by the PTLR, then isolating the accumulators is not required to prevent a low temperature overpressure event.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS 3.8.1.C, 3.8.2.C, and 3.8.3.C
L-1. 8. These CTS address inoperability of ECCS subsystems (Chemical and Volume Control System (CVCS) charging, safety injection (SI), and Residual Heat Removal (RHR), respectively). Each of these CTS allows one of its related ECCS subsystems to be inoperable for 7 days. However, there is no CTS that addresses more than one of the above ECCS subsystems being inoperable at the same time, and a plant condition of this nature invokes LCO 3.0.3. In the ITS, a condition is proposed (LCO 3.5.2, Condition B) which allows two or three ECCS subsystems to be inoperable at the same time for up to 72 hours, provided the remaining OPERABLE ECCS subsystems can provide 100% of required flow for a DBA. This relaxation from CTS requirements is acceptable because it avoids the risk associated

with a shutdown transient while there is still adequate ECCS flow. This change is consistent with NUREG-1431.

CTS 3.8.1.D, 3.8.2.D, and 3.8.3.D

9. The Shutdown Actions associated with CTS 3.8.1.D, CTS 3.8.2.D, and CTS 3.8.3.D have been changed to be consistent with the requirements of proposed LCO 3.0.3. This results in the following changes:

L-2. Time to reach MODE 3 is extended from 4 hours to 6 hours. This is acceptable because it provides the necessary time to shut down the plant in a controlled and orderly manner.

L-3. The proposed REQUIRED ACTIONS of Specification 3.5.2 have been terminated at MODE 4 to be consistent with the LCO Applicability. The Shutdown Actions of the CTS requires the reactor to be placed in MODE 5 even though the LCO is only applicable when going from "hot shutdown" (MODE 3) to "hot standby" (MODE 2).

CTS 3.8.1.G

14. The Shutdown Actions of CTS 3.8.1.G have been changed to be consistent with the requirements of proposed LCO 3.0.3. This results in the following changes:

L-2. Time to reach MODE 3 is extended from 4 hours to 6 hours. This is acceptable because it provides the necessary time to shut down the plant in a controlled and orderly manner.

CST N/A

L-4. 15. An 8-hour COMPLETION TIME has been established when the RWST boron concentration is not within limits. The CTS do not provide an allowed outage time (i.e., COMPLETION TIME) when the boron concentration is not within limit. An 8-hour Completion Time to restore RWST boron concentration to within limits is justified considering the contents of the tank are still available for injection following a Design Basis Accident and it provides a reasonable amount of time to return the RWST to OPERABLE status. This change is consistent with NUREG-1431.

CTS N/A

L-5. 16. A 1-hour COMPLETION TIME has been established for all CONDITIONS, other than boron concentration not within limits, which result in the inoperability of the RWST. The CTS do not provide an allowed outage time (i.e., COMPLETION TIME) for an inoperable RWST. A 1-hour COMPLETION TIME to restore the RWST to OPERABLE status minimizes the time the RWST is not available while still providing some time (1 hour) to restore the RWST to OPERABLE status prior to requiring a plant shutdown. The 1-hour COMPLETION TIME is equivalent to the 1 hour allowed by existing LCO 3.0.3 to restore equipment to OPERABLE status or prepare for a unit shutdown. This change is consistent with NUREG-1431.

CTS 4.8.3.A.6
L-8. 23. The requirement of CTS 4.8.3.A.6 to stroke the containment recirculation sump to RHR pump suction valves at a containment pressure of 20 psig following each containment leak rate has been deleted. This is acceptable because these valves are "stroke tested" as part of the Inservice Testing (IST) program (proposed Specification 5.5.8) and are included in the Zion Station Motor Operated Valve (MOV) program which is used to implement the requirements of Generic Letter (GL) 89-10.

CTS 3.8.5.A
L-6. 31. The APPLICABILITY for accumulator OPERABILITY in CTS 3.8.5.A has been changed from "whenever reactor coolant system pressure exceeds 1000 psig" to "MODES 1 and 2, and MODE 3 with reactor coolant system pressure > 1000 psig." This effectively excludes current MODE 4 whenever the RCS pressure is > 1000 psig. At temperature less than 350°F (MODE 3) and pressures ≤ 1000 psig, the ECCS pumps can provide adequate injection to ensure the limits specified in 10 CFR 50.46 are not violated without the contribution from the accumulators.

CTS 3.8.5.A
L-7. 33. In CTS, if an accumulator boron concentration goes below 2300 PPM, the accumulator is inoperable and 1 hour is allowed to restore OPERABILITY before a shutdown is required. This is overly restrictive, and a new CONDITION has been added in the ITS (LCO 3.5.1, CONDITION A) which allows one accumulator to be inoperable due to boron concentration not within limits for 72 hours. This relaxation from CTS is justified because it decreases the risk associated with a shutdown transient when one accumulator is below the minimum boron concentration. One accumulator in this condition will have no effect on the volume of water available for injection and an insignificant effect on core subcriticality during reflood. The magnitude of any boron reduction is limited because a reduction in an accumulator only occurs as a result of the addition of water with a boron concentration of less than 2400 ppm. At Zion, boron concentration is determined after any increase in accumulator volume of 5% of indicated tank volume that is not the result of makeup from the RWST, the boron concentration of which is maintained at 2400 PPM. This ensures that any reduction in boron concentration below the lower limit of 2300 ppm is promptly identified, the magnitude of the change limited, and the safety function of the accumulator is maintained. This change is consistent with NUREG-1431.

CTS 3.8.5.B
L-[illegible]. 34. The current shutdown Actions have been changed to be consistent with the requirements of LCO 3.0.3. This results in the time to reach MODE 3 being extended from 4 hours to 6 hours. This increased time is more consistent with the time required to conduct an orderly shutdown to MODE 3 without challenging safety systems and is acceptable.

3.6 CONTAINMENT SYSTEMS

CTS 3.6.1.C

L-1. 13. In CTS 3.6.1.C, the Completion Time for restoring an inoperable containment spray (CS) system (pressure function) or Spray Additive system (iodine removal function) has been increased from 48 hours to 72 hours. The extended Completion Time provides a reasonable amount of time to restore the inoperable component to OPERABLE status thus reducing the risk of an unnecessary plant transient. The proposed change takes into account the redundant heat removal capability afforded by the remaining OPERABLE containment spray pumps and reactor containment fan coolers which continue to ensure that the containment pressure reduction function and containment iodine removal function are available (assuming no single failure) during a DBA, and the low probability of an accident occurring during this time. The Completion Time of 72 hours is consistent with other specifications with redundant components and is consistent with NUREG-1431.

CTS 3.6.1.D

15. The shutdown actions associated with CTS 3.6.1.D have been changed to be consistent with NUREG-1431. This results in the following changes:

L-2. The time to reach MODE 3 is extended from 4 hours to 6 hours. This is acceptable because it provides the necessary time to shut down the plant in a controlled and orderly manner.

L-2. The existing provision which requires the reactor be brought to Cold Shutdown within 24 hours after the maximum of 48 hours in Hot Shutdown has been replaced with a Completion Time of 84 hours to be in Cold Shutdown.

The proposed change results in an overall increase in the time allowed to reach cold shutdown by 8 hours. This change provides a reasonable amount of time to perform an orderly shutdown thus further minimizing the risk of a potential transient from a too rapid decrease in unit power. In addition, the extended interval to reach MODE 5 allows additional time for attempting restoration of the affected components and is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in the lower temperature regions of MODE 3.

CTS 3.6.1.E

L-3. 17. In CTS 3.6.1.E, the allowed Completion Time for returning an inoperable Spray Additive System to service has been extended from 8 hours to 72 hours, consistent with NUREG-1431. This Completion Time is considered acceptable since the containment spray system would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. In addition, alternate methods would be available during the post accident

recovery period to address long term corrosion protection. The most probable cause for an inoperable Spray Additive System would result from tank parameters not being within limits. In this condition, some portion of the spray additive tank would still be available for injection into the containment to provide pH adjustment of the water in the containment sump. Finally, the allowed Completion Time is reasonable based on the low probability of a design basis event occurring during this time period. This change is consistent with NUREG-1431.

CTS 3.6.1.E

18. The shutdown actions of CTS 3.6.1.E for an inoperable Spray Additive System have been changed to be consistent with NUREG-1431. This results in the following change:

L-4. The existing provision which requires the reactor to be brought to Cold Shutdown within 24 hours has been replaced with a Completion Time of 84 hours to be in Cold Shutdown.

This change provides a reasonable amount of time to perform an orderly shutdown thus further minimizing the risk of a potential transient from a too rapid decrease in unit power. In addition, the extended interval to reach MODE 5 allows additional time for attempting restoration of the affected components and is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in the lower temperature regions of MODE 3.

CTS 4.6.1.E

L-5. 22. In CTS 4.6.1.E the Frequency at which the concentration of NaOH in the spray additive tank is checked has been extended from "quarterly" to "184 days". The 184 day Frequency is sufficient to ensure that the concentration in the tank remains greater than or equal to the established limit. This is based on the low likelihood of an uncontrolled change in concentration since the tank is normally isolated. This change is consistent with NUREG-1431.

CTS 3.6.2.A

26. The shutdown actions of CTS 3.6.2.A whenever one containment spray recirculation phase system is inoperable have been changed to be consistent with the proposed actions associated with an inoperable containment spray train. This results in the following changes:

L-2. The time to reach MODE 3 is extended from 4 hours to 6 hours.

L-2 The existing provision which requires the reactor be brought to Cold Shutdown within 12 hours after the maximum of 48 hours in Hot Shutdown has been replaced with a Completion Time of 84 hours to be in Cold Shutdown.

These changes provide a reasonable amount of time to perform an orderly shutdown thus further minimizing the risk of a potential transient from a too rapid decrease in unit power while also providing additional time to attempt restoration of the affected components.

CTS 3.8.8.A
L-6. 27. A Note has been added to Required Action A.1 of proposed Specification 3.6.8 when one hydrogen recombiner is inoperable. The Note states that LCO 3.0.4 is not applicable. This Note is appropriate since the other hydrogen recombiner remains available, the probability of a LOCA occurring that would generate an amount of hydrogen that would exceed the flammability limit is small, and there is sufficient time available after a LOCA for operator action to prevent hydrogen accumulation from exceeding the flammability limit. This change is consistent with NUREG-1431.

CTS 3.8.8.A
L-7. 28. A new Condition and Required Action have been added to proposed Specification 3.6.8. This Condition describes the Required Action and Completion Time for two inoperable hydrogen recombiners. This change allows up to 7 days to restore one hydrogen recombiner to OPERABLE status based on the capability of maintaining the hydrogen control function. To utilize this action time, the Required Actions require that the hydrogen control function be verified available within 1 hour and once per 12 hours thereafter. The verification can be performed by administrative means and will assure that other methods of controlling hydrogen are capable of performing this safety function in the event of a DBA. For Zion Station, the alternate hydrogen control capability is accomplished with the Containment Hydrogen Purge System. This method of hydrogen control is acceptable since the Hydrogen Purge System is capable of maintaining the hydrogen concentration in containment below flammability limits, thus ensuring the pressure and temperature assumed in the safety analysis are not exceeded.

CTS 4.8.8.A.1
L-8. 29. The Frequency for completing a Recombiner System functional test has been extended from 6 months to 18 months, consistent with the guidance in NUREG-1431. This change is based on the relative simplicity of the Recombiner System and industry experience which shows that the recombiner availability can be assured with reduced testing. This change is consistent with NRC staff recommendations as stated in NUREG-1366, "Improvements to Technical Specification Surveillance Requirements" Section 8.5.

CTS 3.9.1
L-27. 32. A new Condition, Required Action and Completion Time has been proposed when the Isolation Valve Seal Water (IVSW) System is inoperable. The proposed change allows 72 hours to restore the IVSW System to an OPERABLE status. For the same condition, the CTS would require entry into Specification 3.0.3. With the IVSW

System inoperable the effectiveness of certain containment isolation valves cannot be assured. The 72 hour Completion Time allows a short period of time to restore the IVSW System to an OPERABLE status without requiring a unit shutdown. In addition, in the event of a DBA without the benefit of the IVSW System, both the whole body and thyroid offsite doses would be within the values specified in 10 CFR Part 100. The most probable cause for an inoperable IVSW System would be due to tank parameters being out of limit, failure of the safety related makeup water capability, or failure of the nitrogen makeup capability. In these conditions, some volume of water is still available to provide sealing to certain containment isolation valves. As such, the IVSW is still capable of ensuring the effectiveness of certain valves. The 72 hour Completion Time is acceptable considering the fact that in the event of a DBA and without the benefit of the IVSW System, offsite dose exposure would be within the values of 10 CFR Part 100.

CTS 3.9.1
L-16 33. The following change has been made to the shutdown requirements as a result of the IVSW System being made inoperable for reasons other than those specified in proposed Conditions A or B. A six (6) hour Completion Time has been established for placing the unit in MODE 3 (Hot Shutdown) when the IVSW System cannot be restored to OPERABLE status. The current Specification does not provide an allowed outage time (Completion Time). Rather, the current Specifications require entry into LCO 3.0.3 which effectively allows 5 hours to place the unit in Hot Shutdown. The proposed change results in a 1 hour extension of the time allowed to reach MODE 3. This provides the necessary time to shutdown the unit in a controlled and orderly manner that is within the capability of the unit assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a plant transient that could challenge safety systems.

CTS 3.9.3
L-9. 40. In CTS 3.9.3, the Action requiring isolation of the affected penetration was revised to address check valves. This is because in some containment penetration designs, a check valve functions as one of the two isolation valves. As such, the check valve may be used to isolate the penetration by isolating the source of flow through the check valve. This action then establishes the check valve as an isolation barrier which cannot be adversely affected by a single active failure. As such, this proposed Action established compensatory measures utilizing check valves which are equivalent to those already included in the CIV Specification. This change is consistent with NUREG-1431.

CTS 3.9.3 and 3.9.6
L-10. 42. A new Condition, Required Action and Completion Time has been proposed when two CIVs in a penetration flow path, with two CIVs, are inoperable. The affected penetration flow path must be

isolated within 1 hour by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining the containment OPERABLE 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. This change is consistent with NUREG-1431.

CTS 3.9.3
L-11. 43. A new Condition, Required Action and Completion Time has been proposed for penetrations with only one CIV and a closed system. When one or more penetration flow paths become inoperable, the affected penetration flow path must be isolated by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within 72 hours. At Zion Station, the penetration flow paths which credit a closed system as one of the containment isolation barriers are: main steam, feedwater, auxiliary feedwater, component cooling water, service water, penetration pressurization, and steam generator blowdown. The main steam, feedwater, auxiliary feedwater and steam generator blowdown flow paths utilize the steam generator tubes as one of the isolation barriers. The component cooling water and service water flow paths are closed loops inside containment and operate at pressures greater than the containment design pressure of 47 psig. The penetration pressurization flow paths, which provide pressurized air to various penetrations and weld channels at pressures greater than the containment design pressure, utilize the structural portions of the penetration and weld channel which they serve as one of the isolation barriers. The provisions of this proposed Condition would not apply to the main steam isolation valves or feedwater isolation valves since these valves are governed by other Specifications (3.7.2 and 3.7.3). The Completion Time of 72 hours represents a relaxation from the existing requirement which requires entry into LCO 3.0.3. The 72 hour Completion Time is considered reasonable due to the relative stability of a closed system (hence reliability) to act as a penetration isolation barrier and the low probability of an event requiring a containment isolation function concurrent with a rupture of the piping in the closed system. In addition, 72 hours is a relative short period of time considering that other penetration flow paths, which utilize two valves as the redundant containment isolation barriers, are permitted unrestricted operations as long as one of the isolation barriers is intact (e.g., a closed valve).

CTS 3.9.5.C
L-12. 49. CTS 3.9.5.C restricts the addition of positive reactivity by rod motion when containment integrity is not set except for rod drop tests and rod disconnecting, provided the reactor is initially subcritical by at least 5% $\Delta k/k$. In MODES 1, 2, 3 and 4, proposed Specification 3.6.1, "Containment" requires the containment to be

OPERABLE, and as such, ensures that containment integrity is established. In MODE 6 when containment integrity is not set, proposed Specification 3.9.1, "Boron Concentration" requires that a core K_{eff} of ≤ 0.95 be maintained. Therefore, in MODES 1, 2, 3, 4 and 6 the requirement of CTS 3.9.5.C is maintained. In MODE 5 however, positive reactivity changes made by rod drive motion will be allowed when containment is not intact and the reactor is subcritical by less than 5% $^{\Delta k}/k$. In this MODE, the requirements of Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤ 200° F" ensures that an adequate amount of negative reactivity is available to maintain the reactor subcritical. In addition, Specification 3.3.1, "RTS Instrumentation", requires a source range instrument to be OPERABLE to provide core protection against a rod withdrawal accident. The requirements of Specification 3.1.2 and Specification 3.3.1 provide the necessary protection to limit the consequences of an inadvertent criticality which could result from rod drive motion in MODE 5 or could result in a condition which would require the containment to perform its intended safety function.

CTS 3.9.5.D

L-13. 50. CTS 3.9.5.D restricts the addition of positive reactivity by boron dilution when containment integrity is not set unless the reactor is maintained subcritical by at least 5% $^{\Delta k}/k$. In MODES 1, 2, 3 and 4, proposed Specification 3.6.1, "Containment" requires the containment to be OPERABLE, and as such, ensures that containment integrity is established. In MODE 6 when containment integrity is not set, proposed Specification 3.9.1, "Boron Concentration" requires that a core K_{eff} of ≤ 0.95 be maintained. Therefore, in MODES 1, 2, 3, 4 and 6 the requirement of CTS 3.9.5.C is maintained. In MODE 5 however, positive reactivity changes made by boron dilution will be allowed when containment integrity is not set and the reactor is subcritical by less than 5% $^{\Delta k}/k$. In this MODE, the requirements of Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤ 200°F" ensures that an adequate amount of negative reactivity is available to maintain the reactor subcritical. In addition, Specification 3.3.1, "RTS Instrumentation", requires a source range instrument be OPERABLE to provide indication of neutron flux. The requirements of Specification 3.1.2 and Specification 3.3.1 ensure that the addition of positive reactivity in MODE 5 from a boron dilution will not result in any condition which would require the containment to perform its intended function.

CTS 3.9.5 and 3.10.1.A

L-14. 52. A 6 hour Completion Time has been established for placing the unit in MODE 3 (Hot Shutdown) when an inoperable containment cannot be restored to OPERABLE status within 1 hour. The CTS does not provide an allowed outage time (Completion Time). Rather, the CTS requires entry into LCO 3.0.3 which allows 5 hours to place the unit in Hot Shutdown. The proposed Specification results in an extension of the time allowed to reach MODE 3. This provides the

necessary time to shutdown the unit in a controlled and orderly manner that is within the capability of the unit assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a plant transient that could challenge safety systems. This time is also consistent with NUREG-1431.

CTS 3.9.6
L-15. 57. In CTS 3.9.6, the current Action to terminate purge operation and close at least one in-series purge isolation valve on each affected penetration within 1 hour when one containment purge supply and/or purge exhaust isolation valve is open greater than 50 degrees, has been deleted. This is acceptable because the purge supply and purge exhaust valve have been permanently modified to preclude them from opening to greater than 50 degrees, and the requirement is no longer necessary. The proposed ITS Specification for CIVs also applies to the purge supply and purge exhaust valves. As such, whenever a purge valve is determined to be inoperable (for reasons other than the opening measured in degrees of angle) the Required Actions of the associated LCO are applied. In the event one containment purge valve in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated within 4 hours. 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. In addition the remaining containment purge valve in the affected penetration flow path will be capable of performing its isolation function.

CTS 3.10.2.A
L-18. 70. A Note has been added which allows entry and exit of an air lock with one inoperable door to perform repairs on affected air lock components. The allowance permits the OPERABLE air lock door to be opened for a short time thus allowing a temporary breach in the containment boundary. The allowance to open the OPERABLE door is acceptable due to the low probability of an event which could pressurize containment while the OPERABLE door is opened and the desirability of repairing the affected door and restoring full, containment OPERABILITY at the earliest opportunity.

CTS 3.10.2.A
L-19. 72. In CTS 3.10.2.A, the allowance to continue operation with one air lock door inoperable has been modified to remove the restriction which limits this condition until the next overall air lock leakage test. This restriction was removed because the air lock remains capable of performing its safety functions with the available redundant seals on the OPERABLE door. Therefore, continued operations may proceed indefinitely subject to the other restrictions of the Specification. This change is consistent with NUREG-1431.

CTS 3.10.2
L-21. 75. A new Condition and associated Required Actions have been added which allows continued operation when the personnel air lock is inoperable due to an inoperable interlock mechanism. This permissive does not exist in CTS. Use of the air lock is permissible under the control of a dedicated individual since an equivalent level of assurance that only one door will be open at a time is provided. This change is consistent with NUREG-1431.

CTS 4.10.2.A.3
L-22. 81. In CTS 4.10.2.A.3, the requirement to perform an air lock interlock test at a 6 month (184 day) interval has been modified by a Note which indicates that the Surveillance is only required to be performed upon entry into containment. This is based on the consideration that the only possible challenge to the interlock mechanism occurs when an entry into containment is made. This change is consistent with NUREG-1431 and will provide an equivalent level of assurance of air lock OPERABILITY.

CTS 3.10.5
L-23. 84. CTS 3.10.5 requires containment pressure to be restored "immediately" whenever it is outside its specified limits. Proposed Specification 3.6.4, "Containment Pressure" provides a 1 hour Completion Time for restoring containment pressure to within limits. In the CTS "immediately" is not defined, nor is an "immediate" reduction in containment pressure to limits feasible, given the containment volume. Therefore the reactor would have to be placed in hot shutdown within four hours. The 1 hour Completion time allows some time to restore containment pressure prior to requiring a unit shutdown. The 1 hour Completion Time also allows adequate time for any preparations required prior to shutdown.

CTS 3.10.5 and 3.10.6
L-24. 85. In CTS 3.10.5 and CTS 3.10.6, the time to reach MODE 3 (Hot Shutdown) has been extended from 4 hours to 6 hours. This provides the necessary time to shutdown the unit in a controlled and orderly manner that is within the capabilities of the plant assuming the minimum required equipment is OPERABLE. This extra time reduces the potential for a plant transient that could challenge safety systems. This time is also consistent with NUREG-1431.

CTS 3.10.6
L-25. 88. CTS 3.10.6 requires containment temperature to be restored "immediately" whenever it is outside its specified limits. Considering the size of the containment, it is almost certain that the required temperature reduction, even a small one, can not be accomplished "immediately." Therefore, under these conditions, the CTS requirement for a plant shutdown within four hours would be invoked. This is unnecessarily restrictive, and Proposed Specification 3.6.5, "Containment Temperature," provides eight

hours to restore containment temperature to within limits. This is acceptable because the containment pressure following a LOCA is not sensitive to the initial containment temperature, and an increase in containment temperature would not result in unacceptable containment pressures. Allowing eight hours to restore containment temperature to within limits would avoid the risk of an undesirable shutdown transient with its potential safety consequences and associated operational risks. This change is also consistent with NUREG-1431. The staff, therefore, finds this change acceptable.

CTS 4.10.6
L-26. 91. In CTS 4.10.6, the Surveillance Frequency for the verification of containment temperature has been revised to once per "24 hours" instead of "once per shift." The 24 hour Frequency 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). In addition,other indications are available in the control room to alert the operator to an abnormal containment temperature condition.

CTS 4.9.3.A.2
L-28. 93. This change to the requirements of the CTS 4.9.3.A.2 excepts certain automatic containment isolation valves from the 18 month surveillance testing that would demonstrate satisfactory operation. The valves are excepted because they are locked, sealed, or otherwise secured in the required position under administrative controls. These valves are secured in their required position and do not reposition in order to fulfill their safety function. Therefore, no automat:c operation is required. This exception is consistent with NUREG-1431.

CTS 4.5.1.b.2
L-29. 94. This change to the requirements of CTS 4.5.1.b.2 eliminates the 18 month surveillance for those required (Accident Inlet, Accident Outlet, and Normal Inlet) dampers that have been secured in the accident position. It would be superfluous to verify the position of such dampers, and any alteration which would allow the dampers to be repositioned would constitute a change to the facility design which would require NRC review and approval under 10 CFR 50.90.

3.7 PLANT SYSTEMS

CTS 3.7.1.C
L-[illegible] 1. This Specification has been revised to include a new Required Action to reduce power to within the limits of proposed Table 3.7.1-1 within four hours, if a required Main Steam Safety Valve (MSSV) is inoperable. This will ensure that the available MSSV capacity will be sufficient to prevent overpressurization of the main steam system for anticipated transients. This provides a

prompt corrective action for an inoperable MSSV which is necessary for compliance with the current Technical Specifications and is consistent with NUREG-1431. However, as indicated in NRC Information Notice 94-60, a simple reduction in power does not provide adequate compensatory action for unlimited continued operation. Therefore, the Required Action to reduce the Power Range Neutron Flux-High trip setpoint is retained, but with a proposed Completion Time of 72 hours, and a NOTE to indicate such action is only required if the control rods are capable of withdrawal and the moderator temperature coefficient is positive. Such a Completion Time allows time to perform minor repairs, or otherwise restore OPERABILITY, without implementing an unnecessary trip setpoint change, during which there is increased potential for a plant transient. Further, setpoint changes should only be required for extended operation (beyond 72 hours) in this condition. Finally, the bases indicate "The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period, and the preceding prompt reduction in THERMAL POWER...." This is identical to the Bases provided for the 72 hour Completion Time of NUREG-1431 LCO 3.2.1A, Required Action A.4, (which is also a trip setpoint reduction). Therefore, a Completion Time of 72 hours is acceptable.

CTS 3.7.1.F and 3.8.7.D

L-1. 7. The shutdown actions have been changed to require shutdown to MODE 3 within 6 hours (consistent with the requirements of NUREG-1431) if the power level is not reduced to within limits when the required MSSVs are inoperable or, when the Actions for the Service Water system are not met. This is an effective relaxation of the Completion Time from 4 hours to reach MODE 3, to 6 hours to reach MODE 3. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems.

CTS 3.8.7.A, 3.8.7.B, and 3.8.7.C

L-6. 11. CTS details regarding the number of service water (SW) pumps that must be operable, the status of the SW discharge header, and the status of components, have been moved to the Bases. Additionally, the Bases contain operability discussions for the turbine building branch header isolation valves, the loop header isolation valves, the supply header cross-tie and isolation valves, and the Booster Pump Suction and Strainer Backwash Header isolation valves. As indicated in the Bases, the operability requirements for all these SW components are interrelated and are dependant upon the SW system configuration. A weekly SR (SR 3.7.8.1) has been added to verify the SW alignment supports design basis accident flows to SW components, specifically the Reactor Containment Fan Coolers. The requirement for AC and DC power in support of opposite unit service water pumps has been moved to ITS LCOs 3.8.1, 3.8.4, and 3.8.9 to provide continuity with the ITS Definition of OPERABILITY and usage rules.

The operability requirements in the new Bases were derived from a SW Hydraulic Model Calculation which has been included in the list of Bases references. These operability requirements ensure that acceptable SW system performance is achieved for Loss of Offsite Power (LOOP) and LOCA events, considering shared system configurations. The flow model determines the minimum acceptable SW alignment that will provide the minimum SW flow to specific SW components assumed by the accident analyses. Specifically, 1500 gpm SW flow to the Reactor Containment Fan Coolers is maintained when SW configuration is in accordance with the BASES discussion. The Bases will be controlled by Specification 5.5.12.

CTS 3.7.2 Actions c and d

L-3. 17. The CTS requirement to ensure that repairs to an inoperable turbine driven auxiliary feedwater pump "begins immediately and that every reasonable effort is made to continue the repairs uninterrupted" is deleted. In addition, the requirement to determine that repairs can be made within 7 days on the turbine driven pump has also been deleted. These are subjective requirements that lack criteria for evaluating compliance and are inconsistent with the basis for AOTs in Technical Specifications. They are, therefore, inappropriate for inclusion in TS.

CTS 4.7.2.A.1

L-4. 19. The Surveillance interval has been changed from "once per month" to quarterly on each pump. However, this quarterly test is made more restrictive by requiring one pump be tested each month, i.e., the Frequency is specified as "31 days on a STAGGERED TEST BASIS." The quarterly Frequency for testing each pump is consistent with ASME Code requirements and consistent with other similar pump testing frequencies important to safety (e.g., ECCS pumps). Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The ASME Code, Section XI indicates that performance of inservice testing at 3 month intervals is sufficient to satisfy this need. The STAGGERED TEST BASIS requirement adds additional reliability to the overall system.

CTS 4.7.3.B and 3.7.3 Action A 2)A

L-5. 23. The requirement to demonstrate the OPERABILITY of the Service Water System as the backup supply to the auxiliary feedwater pumps has been revised to allow for verification of Service Water System OPERABILITY by administrative means. This change allows credit to be taken for the normal periodic Surveillances and testing of the Service Water System as a demonstration of OPERABILITY and availability of alternate water supplies. Additionally, such a "demonstration" would require introducing non-condensate quality service water into the feedwater, resulting in an unnecessary reduction in the quality of the water. This change is consistent with NUREG-1431.

CTS N/A

L-6 35. The required compensatory actions for inoperable Service Water components are revised to be consistent with the Bases-described OPERABILITY requirements addressed in item 11 in this section of this SE. The revision adds LCO 3.7.8, Conditions A, B, C, and E which identify six Conditions related to the inoperability of key components, and defines Required Actions for each Condition. The components of concern are those that are vital to overall SW system OPERABILITY (depending on the system configuration), as described in the Bases. A significant feature of the revised Actions and associated Bases is that continued plant operation is acceptable because it is acceptable to re-configure the SW system such that the OPERABILITY of a specific component is no longer required for overall system OPERABILITY instead of requiring the component to be restored to OPERABLE status, provided the minimum flow requirements for mitigating the consequences of a DBA consistent with the licensing basis for the plant are maintained at all times. This less restrictive change is acceptable because (1) adequate SW system flow for DBA considerations will be maintained at all times, and (2) the added flexibility could reduce the risk of unnecessary shutdown transients due to inoperable components.

CTS 3.13.11 and 4.13.11.A

L-9. 44. These CTS require at least 23 feet of water over the top of irradiated fuel assemblies in the storage pool whenever irradiated fuel assemblies or control rods are being moved in the storage pool. The applicability of the requirement to movement of control rods in the storage pool is deleted. The applicability to movement of irradiated fuel assemblies is retained in the Zion ITS (LCO 3.7.14). This deletion is acceptable because control rods are not heavy loads, and dropping a control rod on irradiated fuel will not result in a release of radioactivity. Therefore, the 23 feet of water over the irradiated fuel is not required to remove iodine fission products. This is consistent with NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants (7/80)." This change is also consistent with NUREG-1431.

CTS 4.13.11.A

L-10. 45. The requirement to determine fuel storage pool water level within 2 hours prior to the start of fuel movements has been deleted. This is consistent with the application of SR 3.0.4 throughout the Improved Technical Specifications. SR 3.0.4 states: "Entry into a MODE or other specified condition in the Applicability shall not be made unless the LCO's Surveillances have been met within their specified Frequency." Successful completion of this Surveillance to satisfy the requirement of SR 3.0.4 is sufficient to ensure the requirements of the Surveillance are met. Additionally, SR 3.0.1 states that "Failure to meet a Surveillance whether such failure is experienced during performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO." Therefore, a reduction of the water level below the

minimum required would invalidate the Surveillance, thus requiring the water level to be increased and the Surveillance successfully performed prior to fuel movement. A "special" performance of the Surveillance within 2 hours prior to the start of fuel movement is not required. This is consistent with NUREG-1431.

CTS 4.13.11.A
L-11. 46. The Surveillance Frequency has been changed from 24 hours to 7 days. The potential for a large rate of change of water level in the fuel storage pool is low due to the large volume of water in the pool and the low probability of a pool draindown event. This is also consistent with NUREG-1431. In addition, the fuel storage pool has alarms that will indicate low water level.

CTS 3.13.14
L-12. 48. A new allowance has been added to the Applicability. Boron concentration is now only required when fuel assemblies are in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool. The boron concentration is required to ensure subcriticality if a fuel assembly is misloaded into Region 2. If a pool verification is performed after the last movement, in effect, a "second check" has been performed to ensure proper loading of all fuel assemblies. Therefore, since no fuel is misloaded and no further fuel loading is occurring, the boron concentration is not needed (i.e., as long as the fuel assembles are loaded in the approved Regions, boron is not necessary to maintain $k_{eff} \leq 0.95$.)

CTS 4.18.1
L-13. 56. This Surveillance Requirement has been deleted. This Surveillance does not verify that the activity is less than the limit, but only trends the gross activity, and determines the iodine partition factor of the blowdown tank. Neither of these two analyses provides quantitative information related to current I-131 activity in the secondary coolant which is needed to ensure the accident analysis assumptions are met.

CTS 3.9.4 Action
L-14. 61. The restoration time for an inoperable MSIV in MODE 1 has been extended from 4 hours to 8 hours. This time is considered acceptable because of the low probability of an event requiring the MSIV to function and because the MSIVs isolate a closed system penetrating containment. These valves differ from many containment isolation valves in that the closed system provides an additional means for containment isolation.

CTS 3.9.4 Action
L-14. 63. The number of inoperable MSIVs addressed by the ACTIONS in MODE 3 has been increased from one to "one or more." This change is acceptable since the Required Action is to close the MSIVs. If

the MSIVs are closed, they are already performing their required function. This change is consistent with NUREG-1431.

CTS 3.9.4 Action
L-1. 64. An 8 hour time period has been provided to close and de-activate the inoperable MSIVs in MODES 2, 3, and 4. This time is acceptable because of the low probability of an event requiring the MSIV to function and because the MSIVs isolate a closed system penetrating containment. These valves differ from many containment isolation valves in that the closed system provides an additional source of containment isolation.

CTS 3.9.4 Action
L-1. 66. The time specified to transition to MODE 5 with inoperable MSIV(s) has been extended from 30 hours to 36 hours. This extension is consistent with the allowable time specified in LCO 3.0.3 to conduct a cooldown to HOT SHUTDOWN, and is consistent with NUREG-1431.

3.8 ELECTRICAL POWER SYSTEMS

CTS 3.0.5.a
L-1. 1. Current Technical Specification (CTS) 3.0.5 describes how the OPERABILITY of a system, subsystem, train, component or device is determined when either its emergency AC power or normal AC power source is inoperable. When a system, subsystem, train, component or device redundant to one associated with the inoperable AC source is discovered inoperable, the CTS requirements result in entering ACTIONS for both redundant systems, subsystems, trains, components or devices being inoperable.

This limitation is also imposed in the proposed LCO 3.8.1 Required Actions for an inoperable offsite circuit, for two inoperable offsite circuits, and for an inoperable DG. However, the Improved Technical Specifications (ITS) also provides time to verify redundant features are OPERABLE after an AC source is discovered inoperable, as well as restoration time if a redundant inoperability is discovered. Twenty-four hours have been provided if an offsite circuit is inoperable, 12 hours have been provided if both unit-specific circuits are inoperable, and 4 hours if one DG is inoperable. These times provide a reasonable time to restore the feature or AC source to OPERABLE status commensurate with the level of degradation of plant systems.

CTS 4.15.1A, 4.15.1.C, and 4.15.1.F
L-2. 5. The CTS Surveillance requires checking the "status" of the offsite circuit and instrument inverters daily. The proposed Frequency (based on NUREG-1431) for confirming the breaker lineup and indicated power availability or voltage for each offsite circuit and inverter (i.e., a more detailed presentation of "status") is 7 days. Since breaker re-alignments are governed by procedure and are not expected to change position without the prior knowledge

and approval of the Operations staff, and loss of power availability is readily detected by alarm and other indications, a weekly Frequency is deemed sufficient to provide proper assurance of circuit OPERABILITY. Verification of plant status by each oncoming shift provides sufficient administrative control to assure continued OPERABILITY between the more formal weekly Surveillances.

CTS 4.15.1.B.2 and Table 4.15-2

L-14. 8. CTS Table 4.15-2, Diesel Generator (DG) Test Schedule, has been removed from TS, and the DG test frequency is revised to "31 days." Requirements for accelerated DG testing will now be controlled through implementation of the Maintenance Rule in 10 CFR 50.65. The staff has concluded that implementing the provisions of the Maintenance Rule and applicable regulatory guidance will ensure reliable DG performance. Changes to the Zion Maintenance Plan with respect to DG test frequencies will be made in accordance with 10 CFR 50.65 and Regulatory Guide 1.160.

CTS 4.15.1.B

9. Several Notes to the Surveillances have been added to provide explicit direction and allowance to avoid interpretational ambiguity.

L-4. 9d The auto-transfer being tested only ensures that the credited offsite circuit (System Auxiliary Transformer) is capable of powering the safeguards buses. However, if that offsite circuit is connected and supplying power to the safeguards buses, the auto-transfer is not required to perform any function. CTS provide no allowance for the auto-transfer to be inoperable. The Note to SR 3.8.1.7 is being added to provide the appropriate exception to the auto-transfer when the safeguards buses are being powered from the System Auxiliary Transformer.

L-5. 9e Verification that each DG is demonstrated OPERABLE every 31 days when tested in accordance with Regulatory Guide 1.108 has been modified by a Note. Note 2 of proposed SR 3.8.1.2 allows a modified DG start which involves idling and gradual acceleration of the DG to synchronous speed. Utilization of this Note can only be made when the applicable procedures are modified as recommended by the DG manufacturer. The intent of the modified start is to reduce stress and wear on the diesel engines. Verification that each DG starts and achieves, in ≤ 12 seconds, its minimum voltage and frequency will be performed each 184 days as specified in proposed SR 3.8.1.6. The addition of this Note is consistent with NUREG-1431.

CTS 3.15.2.A, and 4.15.2.A

L-7. 33. The current requirement to start and load the DGs ("testing specified in Section 4.15.1.B.2") under degraded offsite power conditions (i.e., an inoperable offsite circuit) is being deleted. The normal Technical Specification surveillance testing schedule

for the DGs provides adequate assurance that the OPERABLE DGs will be capable of performing their intended safety functions. The inoperability of an offsite AC source does not affect the reliability of the OPERABLE DGs. In some circumstances, the inoperability of an AC source will automatically start the associated DG. In these cases, the DG will already be supplying the safety bus, and any requirement to test the DG would be superfluous. Additionally, one probable cause of an offsite AC source becoming inoperable is severe weather or an off-normal grid condition. NRC Information Notice 84-69 warns against operating DGs tied to offsite power when the unit's AC sources are abnormally degraded or threatened. As addressed in Information Notice 84-69, when a DG is operated connected to offsite sources and non-vital loads, disturbances in these areas can adversely affect DG reliability. If DGs are required to be paralleled to the offsite grid during severe weather or other off-normal grid conditions, further grid disturbances can also cause the loss of that DG and leave its safety bus without AC power. This change is consistent with NUREG-1431.

CTS 3.15.2.B, 3.15.2.D, 3.15.2.E, 3.15.2.H, and 3.15.2.C

34. The following additional Actions or Completion Times are being provided for inoperable AC sources (refer to CTS markup of pages 264, 265, 266 and 267):

L-8. 34a Proposed LCO 3.8.1 Action E, which incorporates the current actions of 3.15.2.H, provides an additional 24 hours to restore at least one offsite circuit prior to requiring the unit to be placed in hot shutdown. This allowance is consistent with the time recommended in Regulatory Guide 1.93, and NUREG-1431.

L-8. 34b Proposed LCO 3.8.9 Action A and D provide a maximum time of 14 hours (8 hours in Required Action A.1 plus 6 hours in Required Action D.1) prior to requiring the unit to be in hot shutdown, and 44 hours (8 hours in Required Action A.1 plus 36 hours in Required Action D.2) to be in cold shutdown. (The CTS require hot shutdown within 4 hours, and an implied requirement to go to cold shutdown after an additional/48 hours, but no specified time to cold shutdown.) These times are consistent with NUREG-1431 and are acceptable because of:

- They provide additional time for operator action, thus reducing the potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit; and

- There is only a minimal potential for an event to occur in conjunction with a single failure of a redundant component in the train with AC power available.

L-8. 34c Proposed LCO 3.8.4 Action A and C, and LCO 3.8.9 Action C and D, provide a total of 38 hours to reach cold shutdown (i.e., restore within 2 hours or be in MODE 5 in the following 36 hours). These times are longer than the 24 hours currently allowed in Specification 3.15.2.E. However, the CTS does not impose a minimum time to reach MODE 3. The proposed ITS requires that MODE 3 be reached in 6 hours, and MODE 5 in 36 hours. Since the time to reach MODE 3 is reduced (from no limit to 6 hours) additional time to reach MODE 5 (24 hours to 36 hours) is acceptable. Once the plant is in MODE 3, the potential for a DBA is substantially reduced, and additional time can be allowed to reach MODE 5 without impacting safety while still minimizing the potential for exceeding cooldown rates. The proposed times are similar to the controlled shutdown requirements of LCO 3.0.3 (i.e., 37 hours to reach MODE 5), which typically apply only when a complete loss of function exists or the unit is in an unanalyzed condition. The proposed Actions apply when only one division is inoperable; therefore safety function remains. The proposed time (one hour longer than allowed for a loss of function) is also consistent with NUREG-1431.

L-8. 34d Proposed LCO 3.8.1 Action E provides an out-of-service time of 12 hours when an offsite circuit and a diesel generator are concurrently inoperable. This allowance is consistent with the time recommended in Regulatory Guide 1.93 and in NUREG-1431. This Action also provides the 12 hour out-of-service time if two offsite feeds and a DG are inoperable if the inoperable sources affect only one division (i.e., one division has both offsite feeds inoperable, as well as its DG, while the remaining divisions have both offsite feeds and DGs OPERABLE). In this latter case, the condition is still similar to that assumed in Regulatory Guide 1.93 in that a "typical" design could allow each of two offsite feeds to be associated solely with independent divisions. Should this latter case result in a de-energized bus, the Actions of LCO 3.8.9 are more restrictive than LCO 3.8.1 Action F. However, the condition is included in TS to avoid a situation where "an associated ACTION is not provided," which would require an unnecessary shutdown pursuant to LCO 3.0.3.

L-8. 34e Proposed LCO 3.8.1 Action I and LCO 3.8.9 Action E provide appropriate shutdown actions ("Enter LCO 3.0.3") when unacceptable combinations of multiple inoperable sources occur. This Action provides necessary clarification since these combinations of inoperable sources could be interpreted to be allowed if this Action were not provided. This Action is similar to the requirements of current Specification 3.15.2.H (this change, therefore, is essentially administrative).

L-8. 34f LCO 3.8.3 Action D is added to address low air pressure in the required air receiver for one or more diesel generators (less than a five start capacity but at least a one start capacity). The required air pressure must be restored within 48 hours or the

diesel declared inoperable. This time period is considered adequate since it gives sufficient time to restore air receiver pressure, but limits the amount of time a low air pressure condition can exist. In addition, since a one start capacity still exists, the diesel generator can still perform its safety function.

L-8. 34g Proposed Specification 5.5.13, "Safety Function Determination Program," provides the mechanism to assure consequential inoperabilities do not result in a loss of safety function. This program, in conjunction with proposed LCO 3.0.6, may allow certain combinations of multiple inoperabilities to exist concurrently and not impose an immediate shutdown as is currently required by Specification 3.15.2.H. This relaxation is justified based on the program confirming that the assumed safety function(s) can still be performed with the multiple inoperabilities (e.g., if they are all associated with the same electrical train).

CTS 3.15.2.C and 4.15.2.C

L-9. 38. The proposed LCO 3.8.1 Required Actions B.3.1 and B.3.2 provide an allowance to avoid unnecessary testing of the OPERABLE DG when a DG is declared inoperable. This change is consistent with that approved for the River Bend Station (Amendment #64, dated 9/29/92). The intent of the current actions is to confirm that no common-mode failure has rendered more than one DG inoperable. This assurance can be ascertained in many cases by means other than the existing requirement for a DG start and load. If an assessment can determine no common-mode failure exists on the remaining OPERABLE DGs, the proposal allows for not requiring an unnecessary DG start. Minimizing DG starts is recommended to avoid unnecessary diesel wear, thereby enhancing overall DG reliability (refer to Generic Letter 84-15).

Furthermore, if a DG start is necessary (e.g., common-mode failure can not be ruled out), the requirement to load the DG (requiring paralleling with offsite power) is eliminated. Sufficient assurance of continued DG OPERABILITY is provided with the start-only test. These changes are consistent with NUREG-1431.

CTS 3.15.2.C Note*

L-10. 39. CTS Requirement:

The CTS requirement for a 7-day outage time for (0) or common DG under specific circumstances is being changed to allow a 7-day outage for the (0) DG at all times. The common diesel generator ((0) DG) is shared between Unit 1 and Unit 2. The current Technical Specifications allow a 7-day outage time for an inoperable (0) DG on an operating unit only under specific circumstances.

The 7-day AOT for the (0) DG is necessary in order to avoid dual unit outages when performing maintenance and testing on the (0)

DG which typically takes longer than 72 hours. Periodic maintenance is necessary to maintain an acceptable level of DG reliability. Maintenance and testing required for the DG typically requires a total time period of 14 days, base on recommendations provided by the diesel generator manufacturer, and Technical Specification Surveillance Requirements. In order to perform all the required work within the Technical Specification 7 day period, the work is segmented into multiple work periods. These are typically 7 days periods and are associated with refueling outages.

In the CTS the common DG may be taken out of service for up to seven days with one unit in Mode 1, 2, 3, or 4, providing the following limitations are met:

1) the common diesel generator is made inoperable for maintenance and testing

2) one unit is in MODE 5 or 6,

3) three remaining diesel generators are OPERABLE (two OPERABLE on the operating unit and one OPERABLE on the unit in MODE 5 or 6),

4) the three remaining OPERABLE diesel generators shall be demonstrated OPERABLE by performance of Surveillance Requirement 4.15.1.B.2 within 48 hours prior to removal of the common diesel (0) from service,

5) prior to taking the common diesel generator (0) out of service, verify that at least three service water pumps and three component cooling water pumps are OPERABLE with their associated emergency power supplies,

6) during the 7 day period, the three remaining OPERABLE diesel generators shall be verified OPERABLE daily, in addition to any testing required by Surveillance Requirement 4.15.1.B.2,

7) during the 7 day period, for the unit in MODE 5 or 6, no mid-loop or reduced RCS inventory operations, as defined in NRC Generic Letter 88-17, will be performed while fuel is in the vessel,

8) in the event one or more diesel generators (other than the common diesel generator (0)) for the operating unit becomes inoperable, the operating unit will be brought to MODE 3 within 12 hours and MODE 5 within the next 30 hours, and

9) in the event two diesel generators (other than the common diesel generator (0)) on the unit in Mode 5 or 6 become

inoperable, the operating unit will enter Actions 3.15.2.C and 3.0.5.

ITS Proposal:

The 7-day limit is being proposed to be independent of opposite unit operating condition, with the application restrictions deleted or addressed within the Technical Specification in a differing form as addressed below. This change cannot in and of itself be considered separate of the changes implemented throughout the ITS. The ITS has addressed shared system interrelationship, requiring more equipment for operational and shutdown modes than the current Technical Specifications (CTS) require. That taken in conjunction with programs such as the Safety Function Determination Program, and heightened redundant component verification, will preserve the minimum number of systems and components necessary for event mitigation consistent with analysis assumptions. As addressed below, and taken in the aggregate, application of a 7 day restoration period for the common diesel generator, independent of the operational mode of a second unit, does not result in a decrease in overall plant safety.

1) The common diesel generator is made inoperable for maintenance and testing.

The current requirement allows applying the 7 day limit only to testing and preplanned maintenance. In the ITS proposal, the 7 days is being provided for any reason the diesel is found to be inoperable. The effect of an inoperable DG on overall plant safety is independent of the reason the DG is inoperable. Therefore, if it is acceptable for the (0) DG to be inoperable for 7 days for maintenance, it is acceptable for the DG to be inoperable for 7 days for any reason. Moreover, the only reason the (0) DG would be inoperable for extended periods (i.e., 7 days) would be for preventive or corrective maintenance. Since the CTS does not identify any specific type of maintenance, the CTS is effectively without meaning. The CTS constraint is, therefore, deleted. Systems required to be operable which are supported by the diesel generator will be evaluated in accordance with the Safety Function Determination Program and redundant component verifications required by ITS LCO 3.8.1, thereby maintaining Technical Specifications required functions.

2) one unit is in MODE 5 or 6.

The Service Water (SW) and Component Cooling (CC) systems are common to both units at Zion. Shared system interrelationships have been addressed in the ITS such that the minimum number of component necessary to mitigate an accident in one unit while supporting controlled shutdown or maintaining shutdown conditions on the opposite unit are preserved. The systems and components

required to be operable in the ITS are consistent with the minimum required number of systems and components necessary for event mitigation. The safety function determination program, in conjunction with redundant component verifications contained with LCO 3.8.1 (which must be met for both units) will preserve this minimum number of components required for event mitigation. Therefore, operation under a limited duration is not affected by the operational mode of the either unit.

3) three remaining diesel generators are OPERABLE (two OPERABLE on the operating unit and one OPERABLE on the unit in MODE 5 or 6).

   The ITS requires 4 DGs to be OPERABLE to support a unit in MODES 1-4 (2 unit specific DGs, the common DG, and one opposite unit DG). With the (0) DG inoperable, the ITS will continue to require a minimum of 3 DGs to be OPERABLE. This is consistent with the existing requirement: i.e., no change.

4) the three remaining OPERABLE diesel generators shall be demonstrated OPERABLE by performance of Surveillance Requirement 4.15.1.B.2 within 48 hours prior to removal of the common diesel (0) from service.

   The NRC staff has determined that anticipatory testing of DGs such as described in this CTS requirement is harmful to DGs and should not be required. Successful performance of routine surveillances provide adequate assurance of DG reliability without the need for extra testing. This is reflected in GL 93-05 (NUREG 1366), Rev. 3 to RG 1.9, and in the ITS (NUREGs 1430-1434). The Zion ITS will not include this CTS requirement, but will provide added assurance of remaining component OPERABILITY with the (0) DG inoperable through LCO 3.8.1 Required Actions B.3.1 and B.3.2, and through implementation of the Safety Function Determination Program.

5) prior to taking the common diesel generator (0) out of service, verify that at least three service water pumps and three component cooling water pumps are OPERABLE with their associated emergency power supplies.

   The CTS requires three component cooling water and three service water pumps to be operable for a single unit in Mode 1, 2, 3, or 4 with the opposite unit in Modes 5, or 6 . Based on the ITS requiring four component cooling water and four service water pumps to be operable for the same condition, operation with one diesel generator inoperable will still result in at least three pumps being available to function in the event of a design basis accident. This is consistent with the minimum required number of pumps for

event mitigation. The Safety Function Determination Program, in conjunction with redundant component verifications contained with LCO 3.8.1 will preserve this minimum number of components required for event mitigation.

6) during the 7 day period, the three remaining OPERABLE diesel generators shall be verified OPERABLE daily, in addition to any testing required by Surveillance Requirement 4.15.1.B.2.

Operability verification is an ongoing iterative process. Based on CTS defining this verification as a administrative check, ongoing plant awareness of equipment configuration and status, which is a continuous process, fulfills this requirement. Therefore this specified action is a continuous process and is an unnecessary level of detail for the Technical Specifications.

7) during the 7 day period, for the unit in MODE 5 or 6, no mid-loop or reduced RCS inventory operations, as defined in NRC Generic Letter 88-17, will be performed while fuel is in the vessel.

During mid-loop operation, Generic Letter 88-17 required plants to provide two alternate methods for adding inventory to the RCS, that are in addition to the normal decay heat removal systems (GL 88-17, expeditious action 6). The Zion Station response stated that the two methods would be a high head injection pump and gravity feed from the refueling water storage tank (the normal method of decay heat removal is the Residual Heat Removal System). The (0) DG does not provide power to either of the two alternate methods. Should one or more DGs (other than the (0) DG) for the operating unit become in operable, the operating unit will be brought to MODE 3 within 12 hours and MODE 5 within the next 30 hours.

8&9) Shutdown actions for additional equipment inoperabilities (service water, ECCS, diesel generators) are addressed within the context of the Safety Function Determination program, redundant component operability verifications, and the conditions for addition diesel inoperabilities contained in LCO 3.8.1 and LCO 3.8.2.

A detailed probalistic assessment regarding the unrestricted 7 day AOT for the (0) DG has been performed at Zion. The results of this assessment support the above conclusions, particularly with respect to deleting the CTS constraints that the 7 day AOT be limited to those times when the (0) DG is inoperable for maintenance and one unit is in MODE 5 or 6.

CTS 4.15.2.E

L-11. 44. With an inoperable battery, the unit is required to take action to complete a shutdown to cold shutdown. During this inoperability, any accident would not assume any functioning of components on this DC train (i.e., no credit is assumed for the battery charger to perform any safety function with an inoperable battery). Even if the battery charger were found to also be inoperable, no additional actions would apply. Therefore, there is no impact on safety, or other rationale for a Technical Specification requirement for monitoring the battery charger output voltage. Therefore, this requirement is deleted.

CTS 3.15.3.A

L-3. 45. A new Action is being proposed to allow fuel oil level to be less than 40,000 gallons (a 7 day supply) for up to 48 hours, provided a 6 day supply exists (36,100 gallons). Proposed LCO 3.8.3 Action A requires that diesel fuel oil storage tank level be restored to at least 40,000 gallons within 48 hours of finding the level less than 40,000 gallons, or the associated diesel generator must be declared inoperable. The 48 hours, combined with the 6 day fuel oil limit requirement, provides sufficient time to arrange for additional fuel oil to either be transferred from another tank or for fuel oil to be delivered from offsite, but is limited enough to provide a high level of assurance that sufficient fuel oil will be available for the diesel generators. The proximity of the Zion site to railroads, interstate highways, and major metropolitan areas, provides assurance that this discussion would be valid in adverse weather, such as snow storms.

CTS 4.15.2.C

L-6. 51. An appropriate Action (LCO 3.8.9 Condition C) is included for inoperable AC instrument buses. The current TS require that the buses be OPERABLE, but does not include any actions if a bus is inoperable. Therefore, the plant would be required to implement LCO 3.0.3 and initiate a shutdown within 1 hour. The proposed actions will allow 2 hours to attempt to restore the bus to OPERABLE status before requiring the plant to shutdown. Since LCO 3.0.3 allows 1 hour for preparation to initiate the shutdown, the change results in an effective increase of one hour before the shutdown must be initiated. The short increase in the time frame considers the importance to safety of restoring the bus, but also recognizes the redundant capability afforded by the other instrument buses, the low probability of a DBA occurring during this additional time frame, and the reduced risk of an induced transient during a required shutdown if the shutdown is avoided by restoration of the bus. This change is consistent with NUREG-1431.

CTS 4.15.1.E.4.e

L-12. 53. The test duration for the battery chargers is revised from 12 hours to 4 hours. Surveillance data from previous charger testing was compiled. Review of this data found that after

4 hours, 95% of maximum temperature was reached, with the remaining 5% increase (reaching equilibrium temperature) occurring within the next 4 hours. These tests produced a maximum recorded equilibrium temperature of 192.2°F, which is well below the manufacturer's recommended maximum temperature of 310°F. Therefore, during a 4 hour duration test, the charger temperature approaches equilibrium, and ensures that the manufacturer's recommended maximum temperature will not be exceeded.

3.9 REFUELING OPERATIONS

CTS 3.13.1.A.1

L-1. 2. The requirement to maintain SHUTDOWN MARGIN equal to or greater than 5% $\Delta k/k$ using control rods and/or coolant concentration has been reworded. The proposed wording states that the "boron concentration shall be maintained within the limit specified in the COLR." Thus, the LCO now specifies a boron concentration rather than a SHUTDOWN MARGIN value. However, the methodology utilized to determine the limit specified in the Core Operating Limits Report (COLR) ensures a SHUTDOWN MARGIN of $\geq$ 5% $\Delta k/k$ is maintained during all refueling operations. The value of the refueling boron concentration limit (equivalent to $\geq$ 5% $\Delta k/k$) has been relocated to the COLR. The refueling boron concentration limit is a parameter which may change on a cycle specific basis. Changes to the refueling boron concentration limit are made in accordance with NRC approved methodology referenced in Chapter 5.0, "Administrative Controls" of the Improved Technical Specifications, and 10 CFR 50.59. Plant procedures will continue to ensure that the boron concentration limit specified in the COLR is not violated. Thus, the SHUTDOWN MARGIN during refueling will be maintained equal to or greater than 5% $\Delta k/k$. This change is consistent with NUREG-1431.

CTS 4.13.1.A.1

L-2. 4. The Frequency for verifying boron concentration in CTS 4.13.1.A.1 has been changed from "once per shift" to "72 hours." Considering the large volume of the refueling canal, RCS and refueling cavity, a 72-hour sampling Frequency is adequate to identify slow changes in boron concentration. In the event of a boron Dilution During Refueling event, the rapid change in boron concentration will be detected by the source range nuclear instrumentation required by proposed LCO 3.9.2, "Nuclear Instrumentation. Based on the availability of the source range nuclear instrumentation, sampling on a 72-hour Frequency to verify boron concentration is acceptable. This change is consistent with NUREG-1431.

CTS 3.13.3.C

L-3. 15. The CTS requirement to have the containment vent and purge system OPERABLE during Core Alterations is deleted. This is acceptable because OPERABILITY of the containment vent and purge system is not a requisite condition to conduct Core Alterations. The function of the containment vent and purge system is to reduce the

containment atmosphere airborne particulate to help maintain the exposure of personnel working in containment As Low As Reasonably Achievable (ALARA). During, Core Alterations and during handling of irradiated fuel in containment, a reduction in the containment atmosphere radioactivity is not an assumption of any accident analysis. Therefore, an OPERABLE containment vent and purge system is not required to conduct these activities. However, if the containment ventilation isolation valves are open under the above conditions, they must be capable of being closed by OPERABLE containment ventilation isolation instrumentation. Section 3.3.6 of the ITS addresses isolation instrumentation OPERABILITY requirements. This change is consistent with NUREG-1431.

CTS 4.13.3.A
L-4. 16. In CTS 4.13.3.A, the requirement to verify containment door status every shift has been changed to every 7 days. Proposed SR 3.9.3.1 verifies each containment penetration required by LCO 3.9.3, "Containment Penetrations" is in the required status during CORE ALTERATIONS or the movement of irradiated fuel assemblies within containment. The doors in the emergency air lock and in the personnel air lock when the equipment hatch is installed, will be either interlocked or administratively controlled to ensure they are not opened simultaneously. When the equipment hatch is removed or both doors in the personnel air lock are opened, the requirements of LCO 3.7.13, "Fuel Handling Building Exhaust Filter System" shall be met. The 7-day Frequency for SR 3.9.3.1 is adequate based on the availability of door interlocks or administrative controls for maintaining one door in each air lock closed. The 7-day Frequency has been shown through industry experience to be adequate for assuring the containment doors are closed. This change is consistent with NUREG-1431.

CTS 4.13.10.A
L-5 29. The requirement to determine reactor vessel water level depth within 2 hours prior to the start of fuel movements as specified in CTS 4.13.10.A has been deleted. Proposed SR 3.0.4 states: "Entry into a MODE or other specified condition in the Applicability shall not be made unless the LCO's Surveillances have been met within their specified Frequency." For the reactor vessel water level, this would require that the water level in the refueling cavity had been verified to be ≥ 22 ft above the top of the reactor flange within the previous 24 hours (plus the 25% allowed by SR 3.0.2) prior to performing CORE ALTERATIONS or moving irradiated fuel assemblies in containment. In addition, SR 3.0.1 states that "Failure to meet a Surveillance whether such failure is experienced during performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO." As such, a reduction of the water level below 22 ft would invalidate the Surveillance, thus requiring the water level to be increased and the surveillance requirement successfully met prior to CORE ALTERATIONS or movement of irradiated fuel

assemblies. Therefore, a "special" performance to verify the reactor vessel water level is within limits 2 hours prior to the start of CORE ALTERATIONS or movement of irradiated fuel assemblies within containment is not required. This change is consistent with NUREG-1431.

CTS 3.13.3.B and 4.13.3.B
L-6. 31. A new Note has been added to proposed Specification 3.9.5 to allow both RHR pumps to be aligned to the RWST to facilitate filling the refueling cavity or to perform required testing. The Note is necessary since the LCO requires two RHR loops to be OPERABLE and one loop in operation. To fill the refueling cavity the suction of the RHR pumps are aligned to the RWST and the water is pumped into the refueling cavity through the RCS hot legs. For Westinghouse plants with a single RCS drop line, it is not possible to align one pump to the RWST while the other pump is aligned to the RCS. A similar condition exists during the RHR full flow test. That is, both pumps are required to take a suction from the RWST and inject water into the core. While the practice of filling the refueling cavity and performing RHR full flow tests obviously occurs in Westinghouse plants, the proposed Note acknowledges that it is acceptable to have both RHR pumps in a given configuration necessary to support required testing and plant evolutions.

4.0 DESIGN FEATURES

There are no less restrictive changes in this section.

5.0 ADMINISTRATIVE CONTROLS

CTS 6.1.3
L-1. 4. The requirements for Operations management to be Senior Reactor Operator (SRO) licensed are revised from the "Operations Manager or Shift Operations Supervisor and Operating Engineer" to the "operations manager or the supervisor in charge of the operations shift crews." (Note that the requirement for the on-shift Shift Engineers and Shift Foreman to have an SRO, is addressed in Item 6 in the Administrative changes discussion for Section 5.0 in this SE.) This reduces the number of required SRO licenses for Operations management to one; but it assures that the licensed individual is in direct line responsibility for the operations shift crew. A Note is included to clarify that the single individual may fulfill the requirement for both units. This change is consistent with NUREG-1431.

CTS 6.6.1.A
L-4. 12. The requirement to submit a Startup Report is deleted from the ITS. The report requires a summary of plant startup and power escalation testing following receipt of the Operating License, an increase in licensed power level, the installation of nuclear fuel with a different design or manufacturer than the current fuel, and

modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant. The report provides a mechanism for the staff to review the appropriateness of licensee activities after-the-fact, but contained no requirement for staff approval. The 10 CFR Part 50, Appendix B, QA Plan and Startup Testing Program (UFSAR) provide assurance that the listed activities are adequately performed and that appropriate corrective actions, if required, are taken. Specifically, any changes involving the Operating License, an increase in licensed power level, the installation of nuclear fuel with a different design or manufacturer than the current fuel, or modifications that may significantly alter the nuclear, thermal, or hydraulic performance of the plant, will continue to require NRC review and approval in accordance with 10 CFR 50.90. Inasmuch as this Startup Report was required to be provided to the staff within 90 days following completion of the respective milestone, it was clearly not necessary to assure operation of the facility in a safe manner for the interval between completion of the startup testing and submittal of the report. Additionally, because there was no requirement for the staff to approve the report, the Startup Report is not necessary to assure operation of the facility in a safe manner.

CTS 6.6.1.B
L-2. 13. The date of submittal for the Annual Occupational Exposure Report is revised from March 1 to April 30. This report is provided to supplement the information required by 10 CFR 20.2206(b) which is filed on or before April 30, in accordance with 10 CFR 20.2206(c). The supplemental information report submittal date is therefore revised to correspond to the required submittal date of the report being supplemented.

CTS 6.6.1.C
L-2. 15. The date of submittal for the Annual Radiological Environmental Operating Report is revised from May 1 to May 15. This minor change in the submittal date is consistent with NUREG-1431 which represents the NRC's most recent guidance on this topic.

CTS 6.6.3.B.i
L-4. 20. The reporting of a challenge to the pressurizer power operated relief valves (PORVs) or the safety valves is omitted. Reporting of these challenges was committed to in a ComEd submittal dated April 12, 1982 in response to TMI Action Item II.K.3.3. This action plan was originally implemented only to provide a venue for data gathering. This requirement has been in effect since 1980 and enough data should be available to fulfill the need. Further, there is no plant specific need for submitting this data. See also: NUREG-0565, items 2.1.2.c & 2.1.2.e; NUREG-0611, items 3.2.4.h & 3.2.4.j; NUREG-0626, items F-2.5 & F-3.5; and NUREG-0635, item 3.2.4.d.

CTS Table 4.17-1

L-3. 33. The allowed control room ventilation system makeup air flow rate is increased to a band of 1600 cfm to 2200 cfm from the previous band of 2000 cfm ±10%. Analyses have been conducted which verify that the system can adequately perform its required function of providing a habitable environment in the control room under post accident conditions at a flow rate of 1600 cfm to 2200 cfm. The system flow rates are manually controlled, and the increased band allows for more flexibility when the system is operating to avoid the necessity for adjustment of the air flow dampers to maintain the flow rate within the smaller band.

CTS 4.15.1.B.5 and 6.6.3.B.m

L-4 34. The DG failure reporting requirements of 4.15.1.B.5 have been removed from the ITS, this deletion of reporting requirements is consistent with recommendations of Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Diesel Generators," and implementation of the Maintenance Rule (10 CFR 50.65).

As discussed under the Evaluation Format and as summarized in the attached table, to the extent that these less restrictive requirements involve the relocation of matters from the CTS to licensee-controlled documents, they are not required to be in the TS under 10 CFR 50.36 and are not needed to obviate the possibility of an abnormal situation or event that will give rise to an immediate threat to public health and safety. The NRC Staff concludes that the control of these provisions under applicable NRC regulations (e.g., 10 CFR 50.59) is acceptable. Accordingly, the Staff has concluded that these requirements may be relocated from the TS to the above-described licensee-controlled documents. Further, the staff has concluded that the TS requirements that remain are consistent with current licensing practices, operating experience, and plant accident and transient analyses, and provide reasonable assurance that public heath and safety will be protected.

III.4 MORE RESTRICTIVE CHANGES

The licensee has adopted a significant portion of NUREG-1431 requirements that are not included in CTS. Inclusion of these NUREG-1431 requirements represents self imposed, more restrictive changes. These changes include such things as adding new LCOs with associated Required Actions and surveillances, increases in MODE applicability for CTS, and reduced CTS allowed outage times. The licensee had provided a specific justification for each More Restrictive Change as well as a generic No Significant Hazards Consideration. The staff has reviewed all the material provided by the licensee in support of the proposed changes and has concluded that the proposed changes are acceptable. A specific justification for each change is included in this SE. The changes are listed in a numerical sequence which conforms to the format of NUREG-1431. Within each numerical section, the CTS requirements that are applicable to that section are identified by CTS and specific justification number associated with them.

1.0 USE AND APPLICATION

CTS N/A
M. 21. Not used

CTS 1.42
M. 26. An assumption of the analysis (fuel and moderator temperature assumption) has been added to the definition of SHUTDOWN MARGIN. In addition, the definition also states that for any Rod Control Cluster Assemblies (RCCAs) not capable of being fully inserted, the reactivity worth of the RCCAs must be accounted for in the determination of SDM.

CTS N/A
M. 27. The definitions of SLAVE RELAY TEST, STAGGERED TEST BASIS and TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) have been added consistent with NUREG-1431.

CTS Table 1.1
M. 28. The units in the REACTIVITY column of the MODES table have been changed from "Δk/k" to "k_{eff}". In MODES 3, 4 and 5 the relative values have remained unchanged (i.e.: a K_{EFF} of 0.99 is equal to -1% Δ k/k). However for MODES 1 and 2, the REACTIVITY CONDITION has become more restrictive since it now specifies that MODES 1 and 2 are applicable when K_{eff} is ≥ 0.99.

2.0 SAFETY LIMITS

CTS 1.1
M. 1. The Applicability has been changed to not only include when the reactor is critical, but also when in MODE 2 and subcritical. This ensures that the Reactor Core SLs are also met during reactor startup since there is a potential for an inadvertent criticality with the reactor near normal operating temperature and pressure conditions. This is an additional restriction on plant operation. This change is consistent with NUREG-1431.

3.0 APPLICABILITY

CTS 3.0.3
M. 3c. The time to reach MODE 4 has been specified and the time to reach MODE 5 has been reduced from 53 hours (1 hour to initiate action, 4 hours to reach MODE 3 and 48 hours more to reach MODE 5) to 37 hours. This is consistent with NUREG-1431 and provides adequate time to reach the required MODES without causing undue stress on the unit.

CTS 4.0.2
M. 5b. The sentence "For Frequencies specified as "once", the above interval extension does not apply." was added to clarify that the 1.25 times the interval specified in the Frequency does not apply to these Surveillances. This is because the interval extension

concept is based on scheduling flexibility for repetitive performances, and these Surveillances are not repetitive in nature and essentially have no interval as measured from the previous performance. This change to LCO 4.0.2 (proposed SR 3.0.2) represents a technical enhancement.

CTS 4.0.3
M. 7b. The two paragraphs below have been added to proposed SR 3.0.3:

> "If the Surveillance is not performed within the delay period, the LCO must be immediately declared not met, and the applicable Condition(s) must be entered".
>
> "When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered".

This has been done to clarify when the Completion Times of the Required Actions begin while in the delay period of proposed SR 3.0.3, and what to do if the SR fails or the delay period is exceeded.

3.1 REACTIVITY CONTROL SYSTEMS

CTS 3.2.1A
M. 1. Current Specification 3.2.1.A does not provide an action if the Shutdown Margin (SDM) is not within the limit (LCO 3.0.3 does not apply since the plant is in Cold Shutdown). Therefore, an appropriate action has been added as proposed LCO 3.1.1 Condition "A". This is an additional restriction on plant operation and is consistent with NUREG-1431.

CTS 4.2.1.A.2
M. 3. The allowance to verify SDM "upon achieving Cold Shutdown" has been changed to require verification prior to entering Cold Shutdown (MODE 5) from either a Refueling Condition (MODE 6) or Hot Shutdown (MODE 4). This requirement is due to the application of proposed Surveillance Requirement SR 3.0.4 which precludes entry into a MODE in which an LCO is applicable, unless the required Surveillances have been performed within their specified Frequency. Therefore, SDM must be verified within 24 hours prior to entering MODE 5. This is an additional restriction on plant operation and is consistent with NUREG-1431.

CTS 4.2.1.B
M. 8. The allowance to verify SDM "upon achieving Hot Shutdown" (MODE 4) has been changed. For the case where Hot Shutdown (MODE 4) is entered from MODE 5, the Surveillance is now required prior to entering MODE 4. This requirement is due to the application of

proposed Surveillance Requirement SR 3.0.4 which precludes entry into a MODE in which an LCO is applicable, unless the required Surveillances have been performed within their specified Frequency. Therefore, SDM must be verified within 24 hours prior to entering MODE 4 from MODE 5. For entry into the applicable MODES from MODE 1 or MODE 2 with $k_{eff} \geq 1.0$, a finite Completion Time has been added. The current Surveillance has no finite time to complete the verification. The proposed Surveillance (SR 3.1.1.1) also limits this time to 24 hours. This provides adequate time to perform the SDM verification, taking into account other activities likely to be in progress (e.g., reactor cooldown). This change represents an additional restriction on plant operations.

CTS N/A

M. 9. A shutdown action has been provided for when the upper Moderator Temperature Coefficient (MTC) limit is not restored. This change represents an additional restriction on plant operation to ensure safety analysis assumptions are maintained.

CTS 3.2.1.C.1

M. 10. CTS 3.2.1.C.1 requires that the reactor core conditions at which the MTC is always more negative than TS 3.2.1.C.1.a be determined "immediately prior to startup." Neither the term immediately or startup is defined, and compliance with this CTS is subject to wide interpretation. This requirement is more narrowly defined in the ITS by changing the Applicability to MODE 1 and MODE 2 with $K_{eff} \geq 1.0$. This change is consistent with NUREG-1431.

CTS 3.2.1.C.1.b

M. 11. A 24 hour Completion Time has been provided. The current requirement (Specification 3.2.1.C.1.b) does not specify a Completion Time for this action. Proposed LCO 3.1.4, Required Action A.1, only allows 24 hours to develop appropriate administrative controls and restore the MTC to within limits. Also, a NOTE is added that requires the administrative controls to be developed even if the MTC is returned to within its limits before the new administrative controls are implemented. This is an additional restriction on plant operation and is consistent with the intent of NUREG-1431.

CTS 3.2.1.C.1

M. 12. New requirements have been added for the exception to moderator temperature coefficient limits during low power PHYSICS TESTS (proposed LCO 3.1.10). Use of the exception will now require SHUTDOWN MARGIN to be ≥ 1.3% Δk/k and the lowest RCS loop average temperature to be ≥ 530°F. Required Actions have also been provided for when requirements are not maintained within the limit when the PHYSICS TESTS LCO is applicable. In addition, Surveillance Requirements have been added to periodically verify the SDM and RCS temperature are within limits. These are

additional restrictions on plant operation and the new requirements are consistent with NUREG-1431.

CTS 3.2.1.D.3
M. 13. The PHYSICS TESTS associated with these exceptions are not expected to be performed at Zion Station and are omitted. Since these specifications allow exceptions to the normal requirements, their omission is considered to be an additional restriction on plant operations.

CTS N/A
M. 14. A new Surveillance Requirement has been proposed which verifies the estimated critical control bank position (ECP) is within the limits specified in the COLR prior to achieving criticality. Performing the ECP calculation prior to criticality avoids a large error from changes in xenon concentration, but allows the operator flexibility to schedule the ECP calculation with other startup activities. This change represents an additional restriction on plant operations.

CTS 4.2.1.D.1
M. 18. The Frequency for verifying that each shutdown and control bank is within the limits specified in the COLR has been changed from once per shift to 12 hours. This administrative change reflects the current shift duration for operations personnel and is consistent with NUREG-1431. However, an additional Surveillance Frequency has been included that reduces the normal Frequency from 12 hours (once per shift) to "once within 4 hours and every 4 hours thereafter when the rod insertion limit alarm is inoperable." This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 4.2.1.D.1
M. 21. The distance which rods must travel to verify freedom of movement has been identified in the Bases as ≥ 10 steps in either direction. The current Specification does not specify a distance which the rods must travel. Movement of rods by 10 steps is sufficient to ensure rod OPERABILITY without causing significant radial or axial power tilts or oscillations to occur. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.3.C
M. 23. The applicability of Specification 3.2.3.C has been changed from when the reactor is "critical" to "MODES 1 and 2." The proposed change will now include any time k_{eff} in the reactor is ≥ .99. In addition, SR 3.0.4 requires the surveillance to be performed prior to entry into these applicable conditions. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.3.D.1

M. 27. The exception contained in the current Rod Position Indicator (RPI) Specification for hot rod drop timing measurement has been deleted. The applicability for the proposed RPI Specification is MODES 1 and 2. Since rod drop timing measurements are typically performed in MODE 3, the exception is no longer necessary. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.3.B.2 and 3.2.3.B.4

M. 29. The allowance that "...one inoperable control rod shall be permitted during power operation" has been deleted. One inoperable control rod is identified (in the current TS Bases) as acceptable provided that the power distribution limits are met, trip shutdown capability is available, and the potential hypothetical ejection of the inoperable rod is not worse than the case analyzed in the safety analysis report. This was applied to misaligned control rods and control rods which were not movable but still trippable. Trippable rods will no longer be considered inoperable since the safety function is still available. The plant has not operated with untrippable control rods but the current actions do not restrict such use for untrippable, inoperable rods below the 200 step level. As proposed, continued operation is allowed only with misaligned control rods, not with an untrippable control rod. Therefore, this change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.1.D.1 and 3.2.1.D.2.a

M. 30. New requirements have been added for the exceptions to insertion and alignment limits for performance of PHYSICS TESTS. In MODE 2, requirements have been added (proposed LCO 3.1.10) to maintain the lowest RCS loop average temperature ≥ 530°F and to maintain SHUTDOWN MARGIN ≥ 1.3% Δk/k. Also, the requirement to maintain THERMAL POWER ≤ 5% RTP (MODE 7 in the CTS) is retained. Required Actions have also been provided for when these requirements are not maintained when the test exception LCO is applicable. In addition, Surveillance Requirements have been added to periodically verify compliance with the LCO requirements. These are additional restrictions on plant operation and are consistent with NUREG-1431.

CTS 3.2.1.D.3.a

M. 31. New requirements have been added for the exceptions to insertion and alignment limits during the performance of control rod worth measurements. At low power, requirements for SDM, and alignment and insertion limits may now be suspended during SDM tests provided the reactivity equivalent to at least the highest estimated control rod worth is available for trip insertion from OPERABLE control rods. This provides equivalent reactivity insertion capability but ensures the capability is provided by OPERABLE control rods. Also, the requirement to maintain THERMAL

POWER ≤ 5% RTP (MODE 7 in the CTS) is retained. When measuring control rod worth, Required Actions have been provided when the requirements of proposed LCO 3.1.9 are not met. In addition, Surveillance Requirements have been added to ensure these requirements are met during SDM tests. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.1.H
M. 34. An Applicability for Specification 3.2.1.H has been added. This Applicability is for MODES 1 and 2 and ensures that the limits on core reactivity are maintained during conditions when the core reactivity balance may be changing. This change represents an additional restriction on plant operations.

CTS 4.2.1.H
M. 35. The Surveillance Frequency of Specification 4.2.1.H has been changed to require performance of the Surveillance only on the first startup following fuel loading, instead of every startup following a shutdown greater than 72 hours unless more than one shutdown has occurred within the previous 2 month period. A requirement has been added to complete the Surveillance prior to entering MODE 1 after each fuel loading to ensure operation in MODE 1 is not allowed without first verifying core reactivity is within the limit. This is considered to be an additional limitation on plant operation. Since the Frequency is not periodic in the CTS (only once per startup) and the plant does not normally shutdown every 92 EFPD, the proposed Frequency will result in more frequent verification of reactivity. This Frequency is considered sufficient since the measured parameter will identify only a gross anomaly. Trending of other data per current administrative controls provides adequate information to prevent failure of these SRs. In addition, the Surveillance is also required to be performed every 92 EFPDs after the initial performance. This change is also an additional restriction on plant operation. Although the requirement to perform the Surveillance upon startup after each shutdown greater than 72 hours has been deleted, the existing Surveillance is only required if a shutdown has not occurred within the previous 2 months. Since the plant normally runs at high power levels, if the plant has not been shutdown within the previous 2 months, it is reasonable to expect that the 92 EFPD Frequency will occur. Therefore, the proposed new Frequency covers this condition and requires the Surveillance to be performed. Therefore, the deletion of the current Surveillance Frequency is not considered less restrictive when coupled with the additional Frequencies.

CTS N/A
M. 37. When measured core reactivity is not within limits, Required Actions have been provided to determine the reactor core is acceptable for continued operation within 72 hours and to establish appropriate operating restrictions and Surveillance

Requirements within that time frame. Also, a NOTE has been added that requires the operating restrictions and SRs to be developed and implemented even if the core reactivity is returned to within limits before the additional controls are implemented. If core reactivity is not restored within the 72 hour Completion Time, shutdown actions have been provided to place the unit in a nonapplicable MODE (MODE 3) within 6 hours. This change is consistent with NUREG-1431 and represents an additional restriction on plant operation to ensure safety analysis assumptions are maintained.

CTS 3.2.3A.1
M. 39.b The action which allows continued operation with a misaligned control rod by determining the core peaking factors and applying their applicable Specification is also omitted. Practically, this was never a viable option since the action could not be completed within the allowed 2 hour time frame. Determining the core peaking factors requires a flux map which typically takes 3 to 4 hours (and often 8 hours) to complete and apply. However, since this change removes an option for continued operation from the Technical Specifications, this change represents an additional restriction on plant operations consistent with NUREG-1431.

CTS N/A
M. 40. An additional short term action is included to verify SDM within limits or initiate boration to restore SDM to within limits within 1 hour. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.3.A.2 and 3.2.3.B.3
M. 41. The action to declare the misaligned control rod inoperable if it cannot be realigned within 8 hours has been deleted. A new Condition, Required Action, and Completion Time have been proposed when the Required Action and associated Completion Time for a misaligned control rod cannot be met. The proposed Required Action requires the unit to be placed in MODE 3 within 6 hours. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.2.3.B.5
M. 42. The current alternative options to verifying SDM every 12 hours are omitted, and additional actions require the Heat Flux and Nuclear Enthalpy Rise Hot Channel Factors to be verified to be within limits within 72 hours. This change represents an additional restriction on plant operations and is consistent with NUREG-1431.

CTS N/A
M. 45. New Conditions have been added to address one or more untrippable control rod and more than one misaligned rod. Continued operations with untrippable control rods is precluded by proposed Condition "A" of LCO 3.1.5. Proposed Required Actions A.1 and

A.2 have been added to verify the SDM is ≥ 1.3% Δk/k or to initiate boration to restore SDM to ≥ 1.3% Δk/k. These actions are to be performed concurrent with the action requiring a shutdown (Required Action C.1) to MODE 3. This latter action is consistent with the current actions. Therefore, the new actions represent an additional restriction on plant operations and are consistent with NUREG-1431.

CTS 4.2.1.C.1.a

M. 51. CTS Surveillance 4.2.1.C.1.a requires MTC to be verified to be within limits prior to exceeding 5% power. The CTS only specified a limitation for the upper MTC value, no lower limit. The ITS LCO for MTC has been proposed to include both the upper and lower MTC limitations, thereby requiring verification that the lower limit is being complied with prior to exceeding 5% power. The addition of a lower limitation and associated surveillance represents an additional restriction on plant operations to ensure safety analysis assumptions are maintained.

3.2 POWER DISTRIBUTION LIMITS

CTS 3.2.2.A.1.1, 3.2.2.A.1.2, and Footnote **

M. 2. The PHYSICS TEST exceptions for the Hot Channel Factor limits have been deleted. In addition, the provision for returning to power for the purpose of physics testing has been deleted. Deletion of this allowance places an additional restriction on plant operations by requiring full compliance with the Specification when returning to power. Physics testing which may be required will be conducted in a MODE in which the proposed Specification does not apply (i.e., MODE 2). This change is an additional restriction on plant operations, consistent with NUREG-1431.

CTS 3.2.2.A.1.1

M. 4. The requirement to reduce reactor power and neutron overpower setpoint in proportion to the amount which $F_Q(Z)$ exceeds its limit has been clarified to require the power and setpoint be reduced ≥ 1% for each 1% $F_Q(Z)$ exceeds its limit. In addition, Completion Times for performing these actions have been provided. This change represents an additional restriction on plant operation, consistent with NUREG-1431.

CTS N/A

M. 5. In addition to the requirements to reduce reactor power and the neutron overpower trip setpoint by the amount $F_Q(Z)$ exceeds its limit (or greater), three additional requirements have been added. These requirements require the Overpower ΔT trip setpoint be reduced when $F^C_Q(Z)$ exceeds its limit, and for Axial Flux Difference (AFD) acceptable limits or Allowed Power Limit (APL) be reduced when $F^W_Q(Z)$ exceeds its limit. These additional restrictions on plant operation are consistent with NUREG-1431.

CTS N/A
M. 6. Two additional requirements have been added which require the performance of Surveillance Requirements 3.2.1.1 and 3.2.1.2 prior to exceeding the reactor power limit or AFD limit established as a result of $F_Q(Z)$ exceeding its limit. These conditional Surveillance Requirements are an additional restriction on plant operations, consistent with NUREG-1431.

CTS 3.2.2.a.1.2
M. 8. A Completion Time of 6 hours is provided to place the plant in a MODE in which the LCO does not apply upon failing to comply with the Required Actions and Completion Times specified when the Hot Channel Factor is not within limits. This is an additional restriction on plant operations since the current requirements contain no time limit. This change is consistent with NUREG-1431.

CTS 3.2.2.A.1.2, 3.2.2.A.2.2, 4.2.2A.1.2, and 4.2.2.A.2.2
M. 9b. The existing Specifications related to operation under the Axial Power Distribution Monitoring System (APDMS) have been deleted since the Westinghouse methodology provides assurance that the associated safety limits are maintained. Removal of this option represents an additional restriction on plant operation. This change is consistent with NUREG-1431.

CTS 4.2.2.A.1.1
M. 11. The requirement that the verification of Hot Channel Factors following each reload be conducted "in the full power configuration" has been revised. The intent of this phrase was to provide for steady state "at power" operation (i.e., 40-75% RTP per ANSI/ANS 19.6.1-1985). The combination of the added SR Note and the Surveillance Frequencies will assure the flux maps on which the verification is based are initially developed under these conditions (as indicated in the proposed Bases). In addition, this Surveillance may require additional verifications if equilibrium conditions are established at several power levels. This change represents a potential additional restriction on plant operations.

CTS N/A
M. 12. The Required Actions to be taken if $F^N_{\Delta H}$ exceeds the limit in the COLR have been modified. The existing Specifications require the same actions to be taken when either the $F_Q(Z)$ or $F^N_{\Delta H}$ exceed the limit in the COLR. The proposed revised Specifications have separated the two limits into different Specifications. The Specification applicable to $F^N_{\Delta H}$ has been written to require more appropriate Required Actions when the limits in the COLR are not met. These new actions include a 4 hour period to reduce power to less than 50% RTP (assuming the condition is not restored to within the limits) and reduce the Power Range Neutron Flux—High trip setpoint. A note is also added which requires an additional surveillance to monitor and track the unit status with respect to $F^N_{\Delta H}$ as it returns to full power. This latter action is proposed to

be required even if compliance with the LCO is restored within the additional surveillances' Completion Times. The proposed Specification is an additional restriction on plant operations since additional conditions must be met if the nuclear enthalpy rise Hot Channel Factor limit is exceeded. This change is consistent with NUREG-1431.

CTS N/A
M. 22. A Note has been added to this Specification which allows only 16 hours of operation with AFD outside of its target band without penalty deviation time during Surveillance of power range channels. Since this allowance was previously unlimited, this change represents an additional restriction on plant operation. This change is consistent with NUREG-1431.

CTS 4.2.2.A.3
M. 23. The initial Frequency for measuring the target AFD following a reload has been decreased to within 31 EFPD following the refueling. This is an additional restriction on plant operations.

CTS N/A
M. 25. A new Surveillance Requirement has been added which requires AFD to be verified to be within its limits once each 7 days. This additional restriction on plant operation is consistent with NUREG-1431.

CTS 4.2.2.A.6
M. 27. The requirements to monitor AFD periodically when the AFD alarm is inoperable have been modified. The proposed Specification imposes an increased Frequency (once per 30 minutes during the first 24 hours) for performance of the Surveillance when the AFD alarm is inoperable and THERMAL POWER is ≥ 90%. This change is consistent with NUREG-1431.

CTS 3.2.2.B.1.b and 3.2.2.B.1.c
M. 30. The existing Quadrant Power Tilt Ratio (QPTR) Specification allows the unit staff to choose between three actions if QPTR exceeds its limit. The proposed Specification requires the completion of a series of actions including the two substantive items (3.2.2.B.1.b and c) in the existing Specification. In addition to requiring the measurement of Core Peaking Factors and limiting power based on the amount of QPTR (within 2 hours and once per 12 hours thereafter), the proposed Specifications require verification of safety analyses conformance and calibration of excore detector instrumentation to eliminate the indicated QPTR prior to increasing power following exceeding the QPTR. In addition, the peaking factors are required to be surveilled again after increasing power if the QPTR instrumentation has been recalibrated. This change is an additional restriction on plant operation and is consistent with NUREG-1431 except that proposed Required Action A.2 allows any method for determination of QPTR rather than limiting the determination to a calculation. The QPTR

monitors continue to provide reliable indication of QPTR after entry into the condition and should not be precluded from use (consistent with current Zion requirements). Inoperable monitors are addressed by a revised Surveillance Requirement Frequency which is consistent with the proposed Required Action A.2 Completion Time.

3.3 INSTRUMENTATION

3.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

CTS Table 3.1-1 Item 1

16. Manual Reactor Trip

M. The minimum OPERABLE channels requirement has been increased from "1 channel" to "2 channels." This change is consistent with NUREG-1431 and assures a single failure does not result in a loss of function.

M. The MODE of Applicability has been revised to add MODES 3, 4, and 5 with the Rod Control System capable of rod withdrawal along with appropriate Actions and SRs. This is consistent with NUREG-1431 and represents an additional restriction on plant operations to assure reactor trip capability exists when control rods may be withdrawn.

CTS Table 3.1-1 Item 6.b

18. Source Range Neutron Flux

M. The MODE Applicability has been revised to add MODES 3, 4, and 5 when the Rod Control System is capable of rod withdrawal along with appropriate Actions and SRs. This is consistent with NUREG-1431 and represents an additional restriction on plant operations to help ensure the consequences of an uncontrolled rod withdrawal accident are mitigated. In addition, the Applicability has been further revised to add MODES 3, 4, and 5 with the Rod Control System not capable of rod withdrawal. In this condition, the source range detectors are not required to trip the reactor, but a single channel is required OPERABLE to monitor core neutron levels and provide indication of reactivity changes that may occur.

CTS Table 3.1-1, Item 22 and Note ##

M. 30. The time that an Reactor Trip Breaker (RTB) can be bypassed for maintenance or testing while one of the diverse trip features is inoperable has been specified (LCO Note 3) as 2 hours. CTS Note "##" does not contain a time to restore the affected breaker to an OPERABLE status. This is an additional restriction on plant operations and is consistent with NUREG-1431.

to ensure that one of the inputs to the P-7 interlock is available. In addition, appropriate Conditions, Required Actions, Completion Times and Surveillance Requirements have also been included for P-6, P-7, P-8, and P-10 This is an additional restriction on plant operations.

CTS Table 4.1-1

M 59. Three Notes have been incorporated in the ACTUATION LOGIC TEST required as ITS SR 3.3.1.5. The first Note exempts performance of the actuation logic interlock associated with the two loop loss of reactor coolant flow, and two loop RCP breaker position trips when reactor power is above the P-8 interlock. Zion Station's RPS Logic System design precludes performance of these tests when power level is in excess of the P-8 interlock. This is consistent with the current Technical Specifications which do not use the definition of ACTUATION LOGIC TEST even though it contained in the definitions section. Logic testing is performed as stated in the definition of CHANNEL FUNCTIONAL TEST subsection b, Logics. This latter definition does not include a requirement to test logics in conjunction with each possible interlock logic state. As such, a note which precludes performance above the interlock setpoint, but requires testing when power is reduced below the interlock has been incorporated. This note will require testing to be performed if the unit remains in the MODE of Applicability in excess of 7 days if not performed in the previous 31 days on a STAGGERED TEST BASIS. This Note is included to reflect the implementation of the current licensing basis and design of Zion Station's Reactor Protection Logic and Safeguards Logic System. However, since the current Technical Specifications are not specific about performance of this testing, this change is more restrictive than the current Technical Specifications.

CTS N/A

M. 60 Condition R was modified to include an additional condition to enter Required Action R.1 if one or more interlocks with TWO Channels are inoperable. This is to address the case where a failure of a single interlock channel causes the interlock function to be inoperable. This requires the interlock to be in its required state within one hour. If this cannot be met, Required Actions S.1 and T.1 require a plant shutdown. Thus, all possible failure modes of the interlock functions are addressed. This more restrictive requirement is an enhancement to plant safety.

3.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS) INSTRUMENTATION

CTS Table 3.4-1 Item I.1

15. Safety Injection - Manual Actuation

M. The minimum OPERABLE channel requirement has been increased from "1 channel" to "2 channels." This change is consistent with NUREG-1431 and assures a single failure does not result in a "loss of function."

CTS Table 3.4-1 Item I.2

16. Safety Injection - Automatic Actuation

M. The Required Action has been revised to allow six hours to restore a train to OPERABLE status. The current Action requires the plant to be placed into Hot Shutdown within 4 hours, 24 hours to restore the channel, or place the plant in Cold Shutdown with the next 24 hours, (a total of 52 hours to Cold Shutdown). The ITS will allow 6 hours to restore the channel to OPERABLE status, or place the plant in MODE 3 within 6 hours and MODE 5 within 36 hours (a total of 42 hours to MODE 5). Allowing 6 hours to restore the channel to OPERABLE status prior to initiating a plant shutdown, and then allowing 6 hours to reach MODE 3 versus 4 hours, allows additional time to restore a channel to OPERABLE status before inducing a plant shutdown, however, the time to reach MODE 5 has been shortened by 10 hours. Therefore, for an extended inoperability, the plant will be required to reach the Cold Shutdown condition in less time (10 hours less) than the current Technical Specifications.

CTS Table 3.4-1 Item I.5

19. Safety Injection - High Steam Line Flow

M. a. The minimum OPERABLE channel requirement has been revised from 3 to 2 per steam line to be consistent with NUREG-1431. Since the new Actions allow continued operation with 1 channel per line inoperable, this format ensures the reliability of the Function for each steam line.

CTS Table 3.4-1 Item II.1

23. Containment Spray - Manual

M. The minimum OPERABLE channel requirement has been revised from 2 channels to 1 channel to reflect actual design. Manual actuation of the containment spray and phase "B" isolation functions require 2 push buttons in a two-of-two logic. As such, failure of 1 push button renders both functions inoperable.

CTS Table 3.4-1 Item II.2

24. Containment Spray - Automatic Actuation

M. b. The change and justification are the same as described for item 16b of this document.

CTS Table 3.4-1 Item III.A.1

26. Containment Isolation - Phase A - Manual

M. a. The minimum OPERABLE channel requirement has been increased from "1 channel" to "2 channels." This change is consistent with NUREG-1431 and assures a single failure does not result in a "loss of function."

CTS Table 3.4-1 Item III.B.1

29. Containment Isolation - Phase B - Manual

M. The minimum OPERABLE channel requirement has been revised from 2 channels to 1 channel to reflect actual design. Manual actuation of the containment spray and phase "B" isolation

functions require 2 push buttons in a two-of-two logic. As such, failure of 1 push button renders both functions inoperable.

CTS Table 3.4-1 Item III.B.2
30. Containment Isolation - Phase B - Automatic Actuation
M. The changes and justification to this CTS item are the same as described in discussion #16 of this SER section.

CTS Table 3.4-1 Item IV.1
32. Steam Line Isolation - Manual
M. The minimum OPERABLE channel requirement has been increased from 1 per loop to 1 per MSIV and MSIV bypass valve. This change reflects the necessary manual initiation channels required to ensure isolation of a main steam line.

CTS Table 3.4-1 Item IV.4
M. 35. Steam Line Isolation - High Steam Line Flow
The minimum OPERABLE channel requirement has been revised from "3" to "2 per steam line" (total of eight) to be consistent with NUREG-1431. Since the new Actions allow continued operation with 1 channel per line inoperable, this format ensures the reliability of the Function for each steam line.

CTS Table 3.4-1 Item VI.1
M. 38. Turbine Trip and FW Isolation
Turbine Trip and Feedwater Isolation Functions have been added to the ITS. The SG Water Level High High Function (P-14) which was listed under CTS Table 3.4-1 Item [illegible] has been relocated to the Turbine Trip and Feedwater Isolation Function. Placing P-14 in this function is appropriate since SG Water Level High is an actual trip function and not an interlock permissive. Reference to Safety Injection input to Turbine Trip and Feedwater isolation has not been made, due to these functions being directly addressed by the safety injection function itself.

CTS N/A
M. 47. A new permissive (P-4) has been incorporated in the engineered safeguards instrumentation Technical Specification. The function of P-4 is to avert or reduce the continued cooldown of the RCS following a reactor trip which could cause an insertion of positive reactivity. In addition, appropriate Conditions, Required Actions, Completion Times and Surveillance Requirements have also been included for P-4, P-11, and P-12. This is an additional restriction on plant operations.

CTS Table 4.4-1
M. 65. Turbine Trip and FW Isolation
This new Function has been added consistent with NUREG-1431. The automatic actuation Function requires the appropriate logic and relay tests assigned to all the automatic Functions, ACTUATION LOGIC TEST and MASTER and SLAVE RELAY TESTS. The surveillance

tests for the SG Water Level instrumentation included in this Function remain unchanged from the current requirements.

CTS Table 4.4-1

M. 69a. Permissives

The frequency at which the permissives are tested in the engineered safeguards table has been revised from "Quarterly" to "31 days on a STAGGERED TEST BASIS". This testing frequency is based on industry operating experience considering instrument reliability and operating history data. In NUREG-1431, permissives are regarded as channels and are tested every 18 months (CHANNEL CALIBRATION and COTs). For Zion Station, the permissives are treated as trains. This is because each permissive requires a combination of logic to perform its function and, by definition, a channel loses its identity when it enters into logic (IEEE-279). During the performance of a CHANNEL CALIBRATION or a COT, only the setpoint associated with the permissive is tested. However, during an ACTUATION LOGIC TEST all combinations of logic required for actuation are tested. This is an additional restriction on plant operations.

3.3.3 POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

CTS Table 3.14-1, Action 31: 1 and 2

M. 26. A new Required Action has been provided when two Containment Area (High Range) channels are inoperable. The new Required Action is to initiate action in accordance with Specification 5.6.7. Specification 5.6.7, "Post Accident Monitoring Report" contains the details of the report requirements. This change is more restrictive than the current requirements because 72 hours was previously allowed for each inoperable Containment Area (High Range) monitor.

3.3.4 REMOTE SHUTDOWN SYSTEM

CTS N/A

M. 1. LCO 3.3.4, Remote Shutdown System, has been added to the Technical Specifications, consistent with NUREG-1431. This change is an additional restriction on plant operations. The Bases for proposed LCO 3.3.4 provide additional information regarding this Specification. The Remote Shutdown Specification ensures the OPERABILITY of the instruments and controls located outside the control room required to shutdown the unit and maintain it in a safe condition in MODE 3. Appropriate Actions and Surveillance Requirements have also been included.

3.3.5 LOSS OF POWER (LOP) DIESEL GENERATOR (DG) START INSTRUMENTATION

CTS N/A

M. 1. LCO 3.3.5, Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation, has been added to the Technical Specifications, consistent with NUREG-1431. This change represents an additional

restriction to plant operations. The Bases for proposed LCO 3.3.5 provides additional information regarding this Specification. The LOP DG Start Instrumentation Specification ensures the OPERABILITY of the instruments required to start the DGs upon the loss or degradation of voltage to the ESF buses. Appropriate Actions and Surveillance Requirements have also been included.

CTS Tables 3.4-1 and 4.4-1, Items V.6 and V.7

M. 3. For the Station Blackout Function, the "No. of Channels" specified in CTS Table 3.4-1 has been changed from "3/bus" to "two channels for each required ESF bus."

3.3.6 <u>CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION</u>

CTS Table 3.14-1 Item 1.B

M. 4. The Applicable Modes for the Containment Fuel Handling Area monitors have been changed from "Mode 6 when purging during fuel handling operations", to "during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment when the containment purge supply and exhaust valves or containment pressure and vacuum relief valves are open". The proposed change requires these monitors to be OPERABLE whenever the valves in the containment purge penetrations or pressure and vacuum relief penetration are opened. This is an additional restriction on plant operations in that the Containment Fuel Handling Area monitors will be required whenever there is a direct path from the containment atmosphere to the outside atmosphere by way of the containment purge penetrations or the vacuum and relief penetration. In addition, this change is also more restrictive since the Applicability now includes CORE ALTERATIONS which also has the potential of releasing significant quantities of radioactive material to the containment atmosphere in the unlikely event of damage to an irradiated fuel assembly.

CTS Table 3.14-1 Item 2.A.2

M. 5. In CTS Table 3.14-1, the Applicable Modes for the Containment Ventilation monitor has been changed to add Mode 4 since in this mode the potential exists for an accident that could release fission product radioactivity into the containment. In addition, the change is consistent with other requirements for containment isolation signals (phase A) in Mode 4.

CTS Table 3.14-1, Item 2.A.2 and Action 25

M. 7. The action required in the CTS when one Containment Ventilation radiation monitoring channel is inoperable has been modified. Proposed Specification 3.3.6 will only allow 4 hours to restore the inoperable channel instead of the 14 days currently allowed in the CTS. Specification 3.3.6 will also require the affected valves be closed if the channel is not restored to an OPERABLE status in the required time, or if two channels are inoperable. This change limits the time the containment ventilation isolation

instrumentation is allowed in a degraded condition while continuing to ensure both sets of ventilation valves (Purge/Exhaust and Pressure/Vacuum Relief) will receive an isolation signal in the event of an accident. This change represents an additional restriction on plant operations.

3.3.7 CREFS ACTUATION INSTRUMENTATION

CTS Table 3.14-1 Item H

M. 5. The requirements for OPERABILITY of the Functions which actuate the control room exhaust filtration system have been extended to include "during movement of irradiated fuel assemblies" and "during core alterations." This change is consistent with NUREG-1431 and is an additional restriction on plant operation.

CTS Table 3.14-1

M. 6. Additional Required Actions are included to clarify the appropriate actions if the initial Required Actions and Completion Times cannot be met. These additional Required Actions place the plant in a condition for which the LCO is no longer applicable. This is always an option and the intent of current LCO 3.0.3. However, since LCO 3.0.3 allows an additional 1 hour to prepare to initiate the shutdown, this change is an additional restriction on plant operation consistent with NUREG-1431.

CTS Table 3.14-1

M. 7. The Safety Injection Function has been added to the required equipment which must be OPERABLE. The OPERABILITY of this actuation instrumentation increases the reliability of the system. This is consistent with NUREG-1431 and is an additional restriction on plant operation.

3.3.8 EHBEFS ACTUATION INSTRUMENTATION

There are no more restrictive changes in this section.

3.3.9 PTEFS ACTUATION INSTRUMENTATION

CTS Table 3.14-1 Action 20

M. 6. An additional Condition is incorporated into the proposed PTEFS ACTIONS as a default condition if the Required Action and Completion Time of Condition A is not met. This default Condition is essentially equivalent to the current TS in that since no default is provided in the CTS, LCO 3.0.3 would be applicable. The proposed Condition requires the plant to be in MODE 3 in 6 hours and in MODE 5 in 36 hours. This is equivalent to the CTS; however, the CTS LCO 3.0.3 also allows one hour to prepare for this shutdown. This one hour is omitted. Therefore, this change represents additional restrictions on plant operation.

3.4 REACTOR COOLANT SYSTEM

CTS N/A

M. 3. An additional Surveillance Requirement (SR) is provided to check the minimum temperature for criticality when the RCS loop T_{avg} alarm is not capable of alarming (e.g., already in alarm or inoperable) and the temperature is near the lower limit. This is an additional restriction on plant operation.

CTS 4.3.1.A.3

M. 10. An additional Surveillance Requirement (SR) is provided to check the OPERABILITY of the required steam generators by verifying the secondary side water level. This is an additional restriction on plant operation.

CTS 3.3.1.A.3 Footnote # and 3.3.1.A.4 Footnote #

M. 11. The allowance for removal of the operating pump has been limited to one hour in an 8 hour period. This limitation prevents multiple back to back entries into this Note allowance. This is an additional restriction on plant operation.

CTS 4.3.1.A.5

M. 13. An additional Surveillance Requirement (SR) is provided to verify that the correct breaker alignment and indicated power are available to a required pump that is not in operation. This is an additional restriction on plant operation.

CTS 3.3.1.D and 4.3.1

M. 19. An additional group of pressurizer heaters is required to be OPERABLE and a Required Action is provided for one inoperable required group. In addition, a new SR is provided to verify the capacity of each required group of pressurizer heaters on a periodic basis. This change represents an additional restriction on plant operation.

CTS 3.3.1

M. 21. Required Actions are included for an inoperable safety valve. A limited amount of time is provided to allow restoration of operability. These Required Actions require shutdown in a time frame less than LCO 3.0.3 and, therefore, represent an additional restriction on plant operation.

CTS 3.3.1.E and 4.3.1.E

M. 22. The allowance for an isolated loop in MODE 4 with RHR in operation is removed. The current specification can be applied in MODES 4, 5, or 6 since these are the MODES during which an RHR loop can be in operation. However, in MODE 4, an isolated loop represents the potential for an event to begin from an unanalyzed condition. A new LCO, Actions, and two new SRs are provided to implement the accident analyses assumption that all four loops are available in MODE 4, as well as MODES 1, 2, and 3. During MODES 5 and 6, isolation is still acceptable as allowed by proposed LCO 3.4.8.

The proposed MODE 4 requirement is an additional restriction on plant operation.

CTS 3.3.1
M. 23. Additional requirements for boron concentration and temperature parameters during startup of isolated RCS loops in MODES 5 and 6 are provided consistent with NUREG-1431. These requirements are necessary since these parameters have a potential to impact the shutdown margin by causing a positive reactivity addition. This is an additional restriction on plant operation.

CTS 3.3.1.F Action c
M. 26. The time allowed to place the plant in MODE 4 is reduced from 18 hours (i.e.. be in MODE 3 within 6 hours and MODE 4 within the following 12 hours) to 12 hours total in accordance with NUREG-1431. This is an additional restriction on plant operation.

CTS 4.3.1.A.4.b
M. 28. Current TS SR 4.3.1.A.4.b requires verification of steam generator secondary side water level using a wide range instrument. This is conservatively revised to require use of the narrow range instrument (on which the same level in % terms represents a much higher water level). This change is consistent with current practice and represents a more restrictive requirement on plant operation than is provided in the CTS.

CTS 4.3.2
M. 30. A Note is added to Condition A and an additional Condition is provided to clarify that the RCS evaluation is required to be completed regardless of plant operating conditions. This may be considered as an additional restriction on plant operation since the current action is "determine acceptability" or shutdown.

CTS 3.3.2.G
M. 32. Additional Required Actions are included to provide appropriate actions if the various requirements of the Specification are not met. Since no actions are in the current Specification and LCO 3.0.3 is not applicable, these additional Required Actions represent additional restrictions on plant operation. This change is consistent with NUREG-1431.

CTS 3.3.3.F Action [illegible] Footnote
M. 41. The requirement for check valves used to isolate leaking PIVs is extended to any valve used for this purpose. Additionally, the valve used to isolate must be capable of maintaining the high pressure system. This change is an additional restriction on plant operation and is in accordance with NUREG-1431.

CTS 3.3.3.A
M. 43. Once hot shutdown is reached, the current requirements allow an additional 24 hours to either reduce the leakage or identify the source. Following that 24 hours, the unit must be placed in cold

shutdown within the next 24 hours. Proposed Condition C provides a total of 36 hours to perform the shutdown to MODE 5. This provides sufficient time to shut down the plant in a controlled and orderly manner within the capabilities of the unit, assuming the minimum required equipment is OPERABLE.

CTS 3.3.3.D

M. 45. If pressure boundary leakage exists or primary to secondary leakage exceeds its limit, an additional Required Action is proposed that requires the unit to be placed in hot shutdown within 6 hours. This provides sufficient time to shut down the plant in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE.

CTS 4.3.3.A and 4.3.3.B

M. 48. The Applicability for RCS Leakage Detection Instrumentation is revised to include MODES 1, 2, 3, and 4. Since the RCS pressure does not usually exceed 500 psig until well into MODE 4, this is an additional restriction on plant operation. This change is consistent with NUREG-1431.

CTS 4.3.3

M. 50. Required Actions are included for inoperability of the RCS leakage detection instrumentation in accordance with NUREG-1431. Since no such ACTIONS were previously provided, this change represents an additional restriction on plant operation.

CTS 4.8.3.a

M. 65. Specific Required Actions are provided for inoperable RHR system interlocks rather than requiring an entire RHR subsystem to be declared inoperable. These actions require prompt isolation of the affected penetration and represent an additional restriction on plant operation. The change is in accordance with NUREG-1431.

CTS Table 3.14-1 Action 25

M. 68. The current TS require restoration of the inoperable radiation monitor within 14 days or the development of a plan of action to restore the required inoperable monitor. The proposed Required Actions for an inoperable required radiation monitor provide a predetermined plan of action and require implementation within 24 hours of inoperability. These changes are additional restrictions on plant operation in accordance with NUREG-1431. The proposed specification does not require restoration of OPERABILITY of the monitor in a specific time frame; however, since the plan of action required at the end of the 14 days may have been replacement at the next outage with grab sample monitoring until that outage, the proposed specification is considered at least as restrictive as the current specification. The grab sample monitoring is also considered to be an appropriate compensatory action since this monitor is a secondary monitor of leakage (the primary being an RCS water inventory balance), and

the grab samples continue to provide early indication of a trend toward abnormal leakage. For these same reasons, a shutdown is an inappropriate action for loss of this monitor, as recognized in the current TS.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS 3.8.1, 3.8.2.A, and 3.8.3.A

M. 1. Zion Station's CTS 3.8.1.A requires two centrifugal charging pumps systems (VC), CTS 3.8.2.A requires two safety injection (SI) systems, and CTS 3.8.3.A requires two residual heat removal (RHR) pump systems to be OPERABLE whenever the reactor is going from "hot shutdown" to "hot standby". The corresponding MODES of "hot shutdown" and "hot standby" are MODES 3 and 2 respectively. As such, the CTS do not require the Emergency Core Cooling System (ECCS) function of the VC, SI or RHR pumps to be OPERABLE until after entry into MODE 3 and prior to entering MODE 2. Proposed Specification 3.5.2, "ECCS -OPERATING" requires two ECCS trains to be OPERABLE in MODES 1, 2, and 3. An ECCS train consists, in part, of one VC pump, one SI pump, and one RHR pump. The proposed change is more restrictive than the CTS since the VC, SI and RHR pumps must be OPERABLE before entering the APPLICABILITY (MODE 3) of Specification 3.5.2.

CTS 4.8.1, 4.8.2, and 4.8.3

M. 5. Surveillance Requirements have been added for the Centrifugal Charging System, Safety Injection and Residual Heat Removal System to verify proper valve position (SR 3.5.2.1 and SR 3.5.2.3), automatic valve actuation (SR 3.5.2.5) and automatic pump starting (SR 3.5.2.6). These additional requirements are provided to verify OPERABILITY of the associated equipment. These are additional restrictions on plant operation, and are consistent with NUREG-1431.

CTS 3.8.1.C, 3.8.2.C, and 3.8.3.C

M. 6. The provisions of CTS 3.8.1.C, CTS 3.8.2.C and CTS 3.8.3.C which allow recovery from a reactor trip with one ECCS subsystem inoperable (i.e., VC, SI, or RHR pump), have been deleted by the application of proposed LCO 3.0.4. LCO 3.0.4 does not allow entry into a MODE or other specified condition in the APPLICABILITY, unless the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the APPLICABILITY, for an unlimited period of time with the LCO not satisfied. CTS 3.8.1.C, CTS 3.8.2.C and CTS 3.8.3.C do not meet the above LCO 3.0.4 requirements to allow a MODE change with a subsystem inoperable and do not warrant an LCO 3.0.4 exception. This is an additional restriction on plant operation.

CTS 3.8.1.D, 3.8.2.D, and 3.8.3.D

9. The Shutdown Actions associated with CTS 3.8.1.D, CTS 3.8.2.D, and CTS 3.8.3.D have been changed to be consistent with the

requirements of proposed LCO 3.0.3. This results in the following changes:

M. The allowance for continued operation in HOT SHUTDOWN (MODE 3) for 48 hours has been deleted, and

M. The requirement to be in MODE 4 within 12 hours has been added.

CTS 3.8.1.F.1
M. 12. CTS 3.8.1.F.1* requires the RWST volume and boron concentration to be within limits whenever the reactor is going from "hot shutdown" to "hot standby" or "operating". The corresponding MODES of "hot shutdown", "hot standby" and "operating" are MODES 3, 2, and 1 respectively. As such, the CTS does not require the RWST to be OPERABLE until after entry into MODE 3 and prior to entering MODE 2 or MODE 1. Proposed Specification 3.5.4, "Refueling Water Storage Tank" requires the volume and boron concentration of the tank to be within limits in MODES 1, 2, 3 and 4. The proposed change is more restrictive than the CTS since the RWST must be OPERABLE before entering the MODE of Applicability (MODE 4). In addition, appropriate ACTIONS and Surveillance Requirements have also been added. This addition is necessary to support operation of the Containment Spray (CS) trains in MODE 4. This is an additional restriction on plant operation. This change is consistent with NUREG-1431.

CTS 3.8.1.G
M. 14. The Shutdown Actions of CTS 3.8.1.G have been changed to be consistent with the requirements of proposed LCO 3.0.3. The current total time to reach MODE 5 (4 hours to reach MODE 3, 48 hours continued operation time allowed in MODE 3, and 12 hours to reach MODE 5 from MODE 3) has been changed from 64 hours to 36 hours. This is an additional restriction on plant operations. This change is consistent with NUREG-1431.

CTS N/A
M. 17. A Note has been added to Specification 3.5.2 to allow both safety injection (SI) pump flow paths or both RHR pump flow paths to be isolated in MODE 3 by closing the isolation valves to perform required testing. This allowance is necessary to permit performance of pressure isolation valve (PIV) testing and localized post maintenance hydrostatic tests. In MODES 1, 2, and 3 the valves used to isolate the SI and RHR pump flow paths are deenergized in the open position. Zion Station's CTS allows power to be restored to these valves for plant testing, plant evolutions requiring operation of these valves, and in MODES 5 or 6. The proposed Note is more restrictive than the CTS since it limits the times when both SI pump flow paths and both RHR pump flow paths may be isolated to the performance of required testing. The details of required testing are provided in the Bases for Specification 3.5.2. This change is consistent with NUREG-1431.

CTS 4.8.2.A.4, 4.8.3.A.7, and 4.8.5.A.4

M. 18. The allowance to restore power, to the valves specified in CTS 4.8.2.A.4, CTS 4.8.3.A.7 and CTS 4.8.5.A.4 to permit plant testing or other evolutions requiring operation of these valves, has been deleted except as noted in proposed Specification 3.5.2 (See discussion #17 above). Power is removed from these valves to ensure a single failure will not render both ECCS subsystems inoperable. The deletion of this allowance is an additional restriction on plant operation.

CTS 3.8.4.A

M. 25. In CTS 3.8.4.A, the allowance to block the centrifugal charging, safety injection and non-operating RHR pumps from starting during testing has been deleted. Proposed SR 3.5.2.6 requires that the pumps actually start. This is an additional restriction on plant operation.

CTS 3.8.5.B

34. The current shutdown Actions have been changed to be consistent with the requirements of LCO 3.5.3. This results in the following changes:

M. The requirement to reduce reactor coolant system pressure to ≤ 1000 psig within 12 hours has been added.

M. The provision which allows continued operation in HOT SHUTDOWN (MODE 3) for 48 hours has been deleted.

CTS 4.8.5

M. 37. A limit has been placed on the amount of time, after the accumulator level has increased, that the sample must be taken and analyzed. The CTS does not specify a time. This is an additional restriction on plant operation.

CTS 3.8.5

M. 38. A new Specification (LCO 3.5.5, "Seal Injection Flow") has been added. This addition is provided to ensure the maximum seal injection flow rate assumed in the LOCA analysis is met. Appropriate ACTIONS and Surveillance Requirements have been included. This is an additional restriction on plant operation.

3.6 CONTAINMENT SYSTEMS

CTS 3.5.1

1. The number of Reactor Containment Fan Coolers (RCFCs) required to be OPERABLE in Zion's Current Technical Specifications (CTS) 3.5.1 has been increased from four to five. This change is required because the emergency power supply to four of the five RCFCs is provided by the unit specific Emergency Diesel Generators (EDGs). The fifth RCFC is supplied by the common EDG. Each unit specific EDG supplies two RCFCs and one Containment Spray (CS) pump. The containment pressure analysis assumes a non-mechanistic failure

which causes two of the five RCFCs and one of the three CS pump to become inoperable. Therefore, to ensure an adequate number of RCFCs is available in the event of a Design Basis Accident (DBA), five RCFCs are required to be OPERABLE in MODES 1, 2, 3, and 4. In addition, the shutdown actions associated with one inoperable RCFC has been changed from 36 hours to 84 hours. The extended time to reach cold shutdown allows additional time for attempting restoration of the inoperable RCFC. In this condition, four RCFCs remain OPERABLE to fulfill the containment cooling requirements in the event of a DBA (only three are credited in the safety analysis). This change is consistent with the allowance provided for the diverse CS System when one of the three CS pumps is inoperable.

CTS 3.5.1, 3.6.1.C, and 3.6.2.A

M. 3. In CTS 3.5.1, 3.6.1.C, and CTS 3.6.2.A an additional restriction has been added on the length of time which the unit may operate with one RCFC, one CS train or one CS recirculation header inoperable. This restriction limits the Completion Time for restoration of a component to 14 days from discovery of failure to meet the associated LCO. If for example, a CS train and an RCFC are inoperable concurrently, separate Actions are entered and the associated Actions are performed with separate Completion Times. Since these are multiple conditions for different components that are inoperable, it is possible (but extremely unlikely) that the unit can have at least one component inoperable for an unlimited time, and yet a shutdown would not be required (i.e., individual components are repaired within their restoration times, but there is always at least one component inoperable). The new Completion Time establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.6.1.A.1 and 3.6.1.A.2

M. 7. In CTS 3.6.1.A.1 and CTS 3.6.1.A.2 the MODES of applicability during which the containment spray (CS) system is required to be OPERABLE to perform the pressure reduction function and iodine removal function has been modified from "whenever the reactor is going from hot shutdown to hot standby" to "MODES 1, 2, 3, and 4". The corresponding MODES of "hot shutdown and hot standby" are MODES 3 and 2 respectively. As such, the CTS does not require the CS system to be OPERABLE until after entry into MODE 3 and prior to entering MODE 2. Proposed Specification 3.6.6, "Containment Spray (CS) and Reactor Containment Fan Coolers (RCFCs)" and Specification 3.6.7, "Spray Additive System" require the CS system and Spray Additive system to be OPERABLE prior to entry into MODE 4. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 4.6.1.A.1

M. 10. A new Surveillance Requirement has been proposed for the CS system. SR 3.6.6.4 verifies the properties of the diesel driven CS pump fuel oil are tested in accordance with the Diesel Fuel Oil Testing Program. This SR is provided to verify system OPERABILITY and is an additional restriction on plant operations. This change is consistent with NUREG-1431.

CTS 3.6.1.B

M. 11. In CTS 3.6.1.B the MODES of applicability during which the CS system is required to be OPERABLE to perform the pressure reduction function and iodine removal function has been modified from "whenever the reactor is in hot standby" to "MODES 1, 2, 3, and 4". The corresponding MODES of "hot standby and operating" are MODES 2 and 1 respectively. As such, the CTS requires the pressure reduction function and the iodine removal function of the CS system to be OPERABLE in MODES 2 and 1. Proposed Specification 3.6.6, "Containment Spray (CS) and Reactor Containment Fan Coolers (RCFCs)," and Specification 3.6.7, "Spray Additive System," require the CS system and Spray Additive system to be OPERABLE prior to entry into MODE 4. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.6.1.C

M. 12. In CTS 3.6.1.C, the provision which allows recovery from a reactor trip with a system inoperable has been deleted by the application of LCO 3.0.4. LCO 3.0.4 does not allow entry into a MODE or other specified condition in the Applicability, unless the associated Actions to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. CTS 3.6.1.C does not meet the above LCO 3.0.4 requirements to allow a MODE change with a system inoperable and does not warrant an LCO 3.0.4 exception. This change is an additional restriction on plant operation, consistent with NUREG-1431.CTS 3.6.1.D

M. 15. The shutdown actions associated with CTS 3.6.1.D have been changed to be consistent with NUREG-1431. The provision which allows continued operation in Hot Shutdown (MODE 3) for 48 hours has been deleted.

CTS 3.6.1.E

M. 16. In CTS 3.6.1.E, the MODES in which the Spray Additive System is required to be OPERABLE have been changed from "when the reactor is critical" to "MODES 1, 2, 3, and 4". This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.6.1.E

M. 18. The shutdown actions of CTS 3.6.1.E for an inoperable Spray Additive System have been changed to be consistent with

NUREG-1431. A new Required Action has been added to place the unit in MODE 3 within 6 hours.

CTS 3.6.1.G
M. 20. In CTS 3.6.1.G, the allowance to block the spray pumps from starting during the system test has been deleted. Proposed SR 3.6.6.6 requires the associated pumps to actually start. This is an additional restriction on plant operation, and is consistent with NUREG-1431.

CTS 3.6.1.F
M. 21. The minimum volume of fuel oil for the containment spray day tank specified in CTS 3.6.1.F has been increased from 40 gallons to 46 gallons. This change is the result of a ComEd Calculation (No. 22s-B-006M-037) which determined the minimum volume of fuel oil needed in the CS diesel pump day tank to ensure the CS diesel pump will continue to operate at maximum load during the DBA LOCA. This change is an additional restriction on plant operations.

CTS 3.6.2.A
M. 26. The shutdown actions of CTS 3.6.2.A whenever one CS Recirculation Phase System is inoperable have been changed to be consistent with the proposed actions associated with an inoperable CS Train. The provision which allows continued operation in Hot Shutdown (MODE 3) for 48 hours has been deleted. (See the less restrictive change for CTS 3.6.2.A in Section 3.6-3 of this SE for related discussions)

CTS 3.9.1
M. 33. The following change has been made to the shutdown requirements as a result of the Isolation Valve Seal Water (IVSW) System being made inoperable for reasons other than those specified in proposed Conditions A or B. A 36 hour Completion Time has been established for placing the unit in MODE 5 (Cold Shutdown) when the IVSW System cannot be restored within 72 hours. The current Specification does not provide an allowed outage time (Completion Time). Rather, the current Specifications require entry into LCO 3.0.3 which allows 53 hours to place the unit in Cold Shutdown. The proposed Completion Time (36 hours to be in MODE 5) is an acceptable duration based on operating experience to reach the required condition from full power conditions in an orderly manner without challenging plant systems. This change results in a reduction in the time allowed to reach MODE 5.

CTS 4.9.1
M. 34. The following new Surveillance Requirements have been proposed:

1) SR 3.6.9.3 verifies the automatic valves in the IVSW System actuate to their correct position on an actual or simulated actuation signal. Performance of this Surveillance Requirement helps demonstrate that the IVSW System can fulfill its intended

design function of assuring the effectiveness of certain containment isolation valves, on a containment isolation signal. 2) SR 3.6.9.5 verifies the IVSW air operated header injection valves open within the limits specified in the Inservice Testing Program. The Applicable Safety Analysis for the IVSW System assumes that within 60 seconds after the DBA, isolation of the containment is complete. These changes represent additional restrictions on plant operation.

CTS 3.9.? and 3.9.6

M. 41. An additional Required Action and associated Completion Time have been proposed for penetration flow paths with inoperable CIVs that cannot be restored to OPERABLE status within the specified time. In these cases, the affected penetration flow paths must be verified to be isolated on a periodic basis. This Required Action 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 isolated position should an event occur. The associated Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified is "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days." This completion time is based on engineering judgement 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. In addition, the Required Actions have been modified by a Note that allows valves and blind flanges to be verified closed by uses of administrative means. Allowing verification by administrative means is considered acceptable since the probability of misalignment of these devices once they have been verified in the proper position is small. This change is consistent with NUREG-1431 and is a restriction on plant operations to ensure the compensatory measures requiring isolation of containment penetrations are maintained.

CTS 3.9.5 and 3.10.A

M. 53. A 36 hour Completion Time has been established for placing the unit in MODE 5 (Cold Shutdown) when an inoperable containment cannot be restored to OPERABLE status within 1 hour. The CTS does not provide an allowed outage time (Completion Time). Rather, the CTS requires entry into LCO 3.0.3 which allows 53 hours to place the unit in Cold Shutdown. This change represents an additional restriction on unit operations. The proposed Completion Time of 36 hours to be in MODE 5 is an acceptable duration based on operating experience to reach the required Condition from full power conditions in an orderly manner without challenging plant systems.

CTS 3.10.2.A
M. 71. In CTS 3.10.2.A, the Required Actions for one containment air lock door inoperable have been revised to be more restrictive. The proposed change requires an OPERABLE air lock door be closed within 1 hour. This change is consistent with NUREG-1431.

CTS 3.10.2
M. 77. A Completion Time of 1 hour has been specified to assure that at least one door in the affected air lock is closed. The Specified time is consistent with the allowed outage time associated with an inoperable containment. In addition this change is consistent with NUREG-1431 and is an additional restriction on plant operation.

CTS 3.10.5 and 3.10.6
M. 83. In CTS 3.10.5 and CTS 3.10.6, the Applicability is implied to be MODES 1 and 2 since the shutdown actions require the reactor to be placed in hot shutdown whenever the LCO(s) can not be met. Proposed Specification 3.6.4, "Containment Pressure" and Specification 3.6.5, "Containment Temperature" have an Applicability of MODES 1, 2, 3, and 4. This change ensures these conditions (pressure and temperature) are within the limits assumed in the applicable containment accident analysis which is evaluated for MODE 1, 2, 3, and 4. These changes are additional restrictions on plant operation.

CTS 3.10.5 and 3.10.6
M. 86. In CTS 3.10.5 and CTS 3.10.6, a requirement to be in MODE 5 (Cold Shutdown) has been added. The proposed time to reacn MODE 5 is 36 hours which is consistent with NUREG-1431. The change represents an additional restriction on plant operation and is necessary to achieve consistency with the change to the Applicability of the Specification.

CTS 3.10.3, 3.10.4, 3.10.5, and 3.10.6
M. 89. The allowance to not apply the provisions of Specification 3.0.3 (proposed LCO 3.0.3) when containment is degraded beyond the specified limits of CTS 3.10.3, 3.10.4, 3.10.5, and 3.10.6 has been deleted. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 4.6.2.A
M. 96. The Modes of Applicability for CTS 3.6.2.A, Containment Spray Recirculation System, have been revised to include MODE 4. CTS Modes of Applicability are MODES 1, 2, and 3, while the Actions require the unit to be placed into Cold Shutdown (MODE 5). This is an added requirement on plant operations, making the Recirculation Spray System applicability and the Containment Spray System applicability match in the ITS.

to be available to provide an emergency makeup water source for the steam generator. This is identified in the LCO Note and an additional Condition and Required Actions are also provided. However, automatic actuation is not required for this situation as reflected in the Notes for the actuation surveillances. In addition, the condensate storage tank is required to be operable to support the AFW pump. These are additional restrictions on plant operation.

CTS 3.7.2.a, 3.7.2.b, 3.7.2.c, 3.7.2.d, 3.7.2.e, and 3.7.2.g
M. 14. An additional Completion Time has been added to not only require an AFW pump to be restored within 7 days from discovery of an inoperable pump (proposed Required Actions A.1 and B.1), or 8 hours if two inoperable AFW pumps (proposed Required Action D.1), or the flow path within 72 hours (proposed Required Action C.1), but also within 10 days from discovery of a failure to meet any of the requirements of the LCO. Currently, if for example, a flow path and a pump are concurrently inoperable, separate Actions are entered and the associated Actions are performed with separate Completion Times. Since there are multiple Conditions for different components that are inoperable, it is possible, (however it is extremely unlikely), that the unit can have at least one component inoperable for an unlimited time, and yet a shutdown would never be required (i.e., individual components are repaired within these required restoration times, but there is always at least one component inoperable). The new Completion Time establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO. This is an additional restriction on plant operation.

CTS 3.7.2.a, 3.7.2.b, 3.7.2.c, 3.7.2.d, 3.7.2.e, and 3.7.2.g
M. 15. An additional shutdown action has been added, to be in MODE 3 in 6 hours, to be consistent with the requirements of LCO 3.0.3. This is an additional restriction on plant operation.

CTS 3.7.1.C
M. 16. The CTS provides a preface for inoperable MSSVs which states that the Actions for inoperable MSSVs are applicable only when four RCPs are in operation. This preface has been deleted in the ITS. The ITS Actions for inoperable MSSVs must be implemented whenever an MSSV is inoperable and the unit is in the Mode of Applicability for MSSVs (Modes 1, 2, and 3). This is an additional restriction on plant operation that is a safety enhancement. This change is consistent with NUREG-1431.

CTS 4.7.2
M. 21. A Surveillance Requirement, and associated Notes, has been added for the AFW System to verify automatic pump starting (SR 3.7.5.2). This additional requirement is necessary to verify OPERABILITY of the associated equipment. This is an additional restriction on plant operation. This change is consistent with NUREG-1431.

CTS 3.7.3 Action A.2.a

M. 24. The Completion Time requirements to determine the OPERABILITY of the Service Water System as the backup supply to the auxiliary feedwater pumps is decreased from 8 hours (4 hours to restore and 4 hours to demonstrate) and once daily (per CTS SR 4.7.3.B) to "within 4 hours and once per 12 hours thereafter." This change is consistent with the change from "demonstration of OPERABILITY" to "administrative verification of OPERABILITY" discussed above since less time is necessary to complete the Required Action. This change is also consistent with NUREG-1431.

CTS 4.7.3

M. 27. The requirement to demonstrate the OPERABILITY of the Service Water System as the backup supply to the auxiliary feedwater pumps within 4 hours and once daily has been revised to require actual alignment of the Service Water System as the AFW source within 4 hours, if the volume of the CST is not adequate to allow time for manual transfer of the suction source following a DBA, or if the CST is unavailable for some reason other than insufficient water level. This change provides an AFW suction source and prevents an unnecessary shutdown.

CTS 3.8.6.C

M. 28. The Component Coding Water (CCW) Conditions have been revised to add a Condition for an inoperable flow path based on the OPERABILITY of pumps and flow paths. A 7 day restoration time has been provided for one inoperable flow path which includes a CCW heat exchanger. In this condition, the remaining CCW components are adequate to perform the heat removal function. The 7 day restoration time is consistent with the current licensing basis for an inoperable pump and is reasonable, based on the redundant capabilities afforded by the OPERABLE components, and the low probability of a DBA occurring during this time period.

CTS 3.8.6.E

M. 29. The condition of two inoperable CCW heat exchangers has been deleted and is now being addressed by LCO 3.0.3. This change is being made since in this condition the CCW System can no longer adequately perform its safety function. This change represents an additional restriction on plant operation.

CTS 3.8.6.E

M. 30. The shutdown actions have been changed to be consistent with the requirements of LCO 3.0.3, and with the typical shutdown requirements of NUREG-1431 for other failures. This results in reducing the time to reach MODE 3 from 8 hours to 6 hours and reducing the time to reach MODE 5 from greater than 48 hours to 36 hours. This change represents an additional restriction on plant operation to be consistent with NUREG-1431.

CTS 3.8.6

M. 31. A Note has been added to the Actions requiring entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4" for the residual heat removal loops made inoperable by an inoperable CCW component. This ensures the proper actions are taken in this event. This change is consistent with NUREG-1431 and represents an additional restriction on plant operation.

CTS 4.8.5

M. 32. An additional Surveillance Requirement has been provided. SR 3.7.7.1 was added to ensure that each CCW pump will start automatically on an actuation signal. This change represents an additional restriction on plant operation necessary to ensure the OPERABILITY of the CCW System.

CTS 3.8.7.D

M. 34. The time to reach MODE 5 has been reduced from a total of 72 hours to 36 hours to be consistent with accepted industry standards. This change represents an additional restriction on plant operation.

CTS 4.8.7

M. 37. Additional Surveillance Requirements have been provided. SR 3.7.8.2 was added to ensure that each service water (SW) System automatic valve will actuate to the correct position on an actuation signal. SR 3.7.8.3 was added to ensure that each SW pump will start automatically on an ESF actuation signal. SR 3.7.8.4 was added to ensure the operability of the auto-start on low header pressure feature of the SW pumps. These changes represent additional restrictions on plant operation to ensure the OPERABILITY of the SW System.

CTS 3.13.2.A.1

M. 39. The Applicability of the requirements for operation of the fuel handling building exhaust filter system have been expanded from "if there is any irradiated fuel stored in the pool with less than 60 days decay time" to "during movement of irradiated fuel assemblies in the fuel handling building when irradiated fuel assemblies with < 60 days decay time are in the fuel handling building." This includes any time the fuel assembly is in the building (during irradiated fuel movements) rather than just while the fuel assembly is stored in the fuel pool. This is consistent with NUREG-1431 and is an additional restriction on plant operation.

CTS 3.13 and 3.13.3

M. 42. An additional restriction is added to assure compliance with the NRC Safety Evaluation which supported the removal of the equipment hatch during refueling operations and CORE ALTERATIONS. This is an additional restriction on plant operation.

M. 43. A new Surveillance Requirement (SR 3.7.13.1) has been added to LCO 3.7.13 to verify that the ventilation system is operable during the period of time the Shield Wall or Equipment Hatch is not intact. This is done by verifying that a ventilation spool piece has been installed between the Auxiliary Building and Pipe Tunnel, such that no ventilation flow path exists from the FHBEFS to the Pipe Tunnel.

CTS 3.13.16
M. 49. This allowance has been deleted. Specification 3.0.4 (proposed LCO 3.0.4) is applicable in the proposed Zion Improved Technical Specifications. This change achieves consistency with NUREG-1431. This is an additional restriction on plant operation.

CTS 3.17.1.A
M. 51. The MODES of Applicability have been clarified to include "during movement of irradiated fuel assemblies" and "during CORE ALTERATIONS." Also included are appropriate Required Actions for these conditions. This is an additional restriction on plant operation, and is consistent with NUREG-1431.

CTS 4.17.1.B
M. 52. Additional Surveillance Requirements have been provided. SR 3.7.9.3 was added to ensure that the system actuates on an actual or simulated actuation signal. SR 3.7.9.4 was added to ensure that the system can maintain appropriate building pressures during the emergency mode. This change represents an additional restriction on plant operation to ensure the OPERABILITY of the CREFS.

CTS 4.18.1
M. 55. The required Surveillance Frequency has been revised from an event oriented frequency to a periodic frequency of 31 days (proposed SR 3.7.3.1). This SR ensures the I-131 activity is verified to be within the limits of the accident analysis assumptions. This is an additional restriction on plant operation.

CTS 4.9
M. 58. LCO 3.7.3, "Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulation Valves (MFRVs), and MFRV Bypass Valves," has been added to the Technical Specifications, consistent with NUREG-1431. This change is an additional restriction on plant operations, and is consistent with safety analyses.

CTS 3.17
M. 59. LCO 3.7.10, "Control Room Ventilation System (CRVS)," LCO 3.7.11, "Pipe Tunnel Exhaust Filter System," and LCO 3.7.12, "ECCS and Containment Spray Cubicle Exhaust Filter System," have been added to the Technical Specifications, consistent with NUREG-1431. These changes are additional restrictions on plant operations (with the exception of filter testing), and are consistent with safety analyses.

CTS 3.9.4 Action

M. 65. In MODES 2 and 3 when inoperable MSIVs are closed and de-activated to comply with Action requirements, an additional action has been provided. This action requires verification that the inoperable MSIVs remain closed and de-activated on a periodic basis. This change provides assurance that the action requirement requiring the inoperable MSIVs to be closed is maintained. The change represents an additional restriction on plant operation.

CTS 3.8.6

M. 68. Two additional Conditions, Required Actions, and Completion Times have been added to the ITS. These additions are made because of the requirement to have four Component Cooling (CC) pumps and three CC heat exchangers OPERABLE with one unit in MODES 1, 2, 3, or 4, and the other unit in MODES 1, 2, 3, 4, 5, or 6. These new Conditions address one inoperable heat exchanger with both units in MODES 1, 2, 3, or 4, and a heat exchanger inoperable with the second unit in MODES 5 or 6. Depending on the MODES of the units, two Completion Times are now provided. These Conditions cover the situation where there are no CC pumps or flow paths inoperable, but a CC heat exchanger is inoperable. This is an additional restriction on plant operation.

3.8 ELECTRICAL POWER SYSTEMS

CTS 3.15 and 3.15.1

M. 3. The CTS requirement of "the unit shall not be made critical" corresponds to the ITS applicability of MODES 1 and 2. The proposed applicability has been expanded to include MODES 3 and 4 (i.e., the CTS equivalent of Hot Standby and Hot Shutdown) when requiring the full complement of electrical power systems.

Furthermore, Specifications have been proposed for electrical power system requirements during Cold Shutdown and Refueling (ITS MODES 5 and 6), as well as during any handling of irradiated fuel assemblies. These are additional restrictions on plant operations.

CTS 4.15.2

M. 6. A new Surveillance is included in the proposed Specifications to test the starting independence of the diesel generators on a ten year frequency. This test is in accordance with NUREG-1431 and represents an additional restriction of plant operation.

CTS 4.15.1.B

M. 9. Several Notes to the Surveillances have been added to provide explicit direction and allowance to avoid interpretational ambiguity.

M. 9c Notes 3 and 4 are added to ITS SR 3.8.1.3. These additional restrictions on performance of this SR are not imposed in the CTS.

Therefore, this addition represents a more restrictive requirement for plant operation.

M. 9f The following surveillances have been modified by Notes which preclude testing in certain modes. SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.15, SR 3.8.1.16, SR 3.8.4.4, SR 3.8.4.5 and SR 3.8.4.6. The purpose of these Notes is to prevent routine testing which could disturb the electrical distribution system and potentially challenge safety systems. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

M. 9g An additional restriction has been included for the 31 day SR and (the new) 184 day SR for DG testing. The SRs require the DGs to be at normal standby conditions prior to commencing the test. A discussion of what constitutes normal standby conditions is stated in the Bases. The SRs have also been modified by a Note which excludes starting a DG from the normal standby condition when the SR is being used to re-establish DG operability following corrective or preventative maintenance.

M. 9h The CTS do not explicitly address surveillances required to verify opposite unit DGs OPERABILITY when required to support opposite unit service water pumps. The ITS will require all diesel surveillances except as noted. Note 6 to SR 3.8.1.3 indicates that the surveillance test is not required for an opposite unit DG that is supporting required Service Water features, if the opposite unit is shutdown and the opposite unit DG is the only DG OPERABLE. The reason for Note 6 is to preclude requiring the OPERABLE opposite unit DG from being paralleled with the offsite power network. With limited AC sources available, a single event could compromise the DG. It is the intent that this SR must still be capable of being met, but actual performance is not required during periods when the opposite unit DG is required to be OPERABLE by the shutdown unit and it is the only DG OPERABLE.

M. 9i The CTS do not explicitly address surveillances required to verify opposite unit DGs OPERABILITY when required to support opposite unit Service Water pumps. The ITS require all DG surveillances except as noted. Note 3 is added to SRs 3.8.1.14 through 17. This note excludes testing requirements tied to the initiation of a safety injection signal. The SI signal is generated on a unit specific basis, and the opposite unit DGs cannot receive this signal.

CTS 4.15.1.B

M. 10 The required monthly DG start currently is required to meet only a specific start time per RG 1.108. However, neither RG 1.108 nor the CTS identifies the specific time. This Surveillance is being revised to include a specific time requirement to verify that the DG start occurs in ≤ 12 seconds every 184 days (SR 3.8.1.6). This is an additional restriction on plant operations.

CTS 4.15.1.B.3.c

M. 11b A new test requirement for DG load rejection of the largest single load is included in the ITS. A single failure of a load on the DG must also be considered and be shown not to affect other loads. Therefore, the test for capability to reject the largest single load is incorporated. This change is consistent with R.G. 1.108, C.2.a(4) (single largest load rejection) except that explicit limitations on the time allowed to restore steady state voltage and frequency have been added. Incorporating this test is consistent with NUREG-1431, and is an additional restriction on plant operations.

CTS 4.15.1.B.3.b

M. 15. The explicit ITS Surveillances include explicit acceptance criteria for starting time. This detail is not reflected in the CTS, and represents an additional restriction on plant operations.

CTS N/A

M. 18. A new surveillance requirement has been added to verify noncritical DG protective functions are bypassed on an actual or simulated loss of voltage signal, or an actual or simulated ESF actuation signal. The purpose of this test is to demonstrate that noncritical protective functions will not trip a DG when the DG is needed to mitigate the consequences of an accident. This is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 4.15.1

M. 23. A weekly verification of proper breaker alignment and voltage on safeguards and instrument buses is being added to the ITS, as SR 3.8.9.1. This is an additional restriction on plant operations consistent with NUREG-1431.

CTS 4.15.1.E and 4.15.1.E.3

M. 24. Battery electrolyte Surveillances currently do not specify acceptance criteria for the required measurements. LCO 3.8.6, associated ACTIONS, and Table 3.8.6-1 (with footnotes) are being proposed to detail specific limits and allowable corrective action times when outside of these limits. Since the current requirements would not explicitly restrict corrective actions or excessive limits, this change is an added restriction on plant operations.

CTS 3.15.2.A and 3.15.2.C

M. 31 In the event of concurrent DG and offsite circuit inoperabilities, the existing ACTIONS appear to allow independent application of allowed repair times. When a subsequent inoperability occurs just prior to restoration of the previous inoperability and close to the expiration of the allowed 72 hours, this independent application can provide an unlimited time of operation with an inoperable AC source. While these simultaneous inoperabilities are expected to be rare, a maximum restoration time limit is

imposed. The proposed Technical Specifications format presents this as an additional Completion Time of "10 days from discovery of failure to meet the LCO." This represents an additional restriction on plant operation.

CTS 3.15.2.B, 3.15.2.D, and 3.15.2.H

M. 35.b The ITS Actions being proposed provide appropriate shutdown actions (be in MODE 3 within 6 hours and in MODE 5 within 36 hours) when the inoperable electrical power systems have not been restored to OPERABLE status within the time provided in the other Actions. This results in the allowance for continued operation in hot shutdown (MODE 3) for 48 hours being deleted. No time is being proposed to "wait" in hot shutdown. This is an additional restriction on plant operations.

CTS 3.15.2.A

M. 42. Proposed Actions G and H result in a total of 8 hours to reach MODE 3, and a total of 38 hours to reach MODE 5; both are more restrictive on plant operations than the currently allowed 12 hours and 42 hours.

CTS 3.15.3.A

M. 46. New requirements are being added for maintaining starting air parameters and fuel oil properties within limits. Appropriate Actions and Surveillance Requirements have also been added. These are additional restrictions on plant operations consistent with NUREG-1431.

CTS 4.15.1.E.4.d

M. 54. An allowance to perform a "modified performance discharge test" in lieu of a performance discharge test for the batteries is added to SR 3.8.4.6. Since the modified performance discharge test is a more severe test than, and completely encompasses the performance discharge test, this added option would result in more restrictive testing.

CTS 3.15.1.B, 3.15.1.D, and 3.15.1.E

M. 55. Proposed LCOs 3.8.1, 3.8.4, and 3.8.9 have been modified to require standby AC and DC power (diesel generators and DC) for an opposite unit service water pump when credited for an operating unit. The proposed Service Water LCO (3.7.8) will require at least one service water pump from the opposite unit to be operable to address passive failure considerations. Further, LCO 3.7.8 may require more than one opposite unit pump based on system configuration. Current Technical Specifications require three service water pumps to be operable, but allow one pump from the opposite unit to be shared as long as specific provisions (i.e. cross-tie valves open, independent AC and DC power) are met and the pump has both standby AC and DC power available. In the current Technical Specifications this is an option, with the ultimate requirement to have three pumps operable. Based on the incorporation of passive failure considerations and recent system

flow performance capability modeling, it has been determined that utilization of an opposite unit pump is no longer an option, but is required for system operability. As such, LCOs 3.8.1, 3.8.4, and 3.8.9 have been modified to require AC and DC power for opposite unit service water pumps in order to maintain continuity with the ITS usage rules and definition of operability. LCOs 3.8.1, 3.8.4, and 3.8.9 will require the AC and DC buses associated with required pumps and their associated diesel generators to be operable. Explicitly requiring these opposite unit systems (at least one diesel, DC source, and associated distribution systems) to be operable anytime the unit is in Modes 1, 2, 3, or 4 is an added restriction on plant operation not contained in the current Technical Specifications.

CTS 3.15.1.B, 3.15.2.C, and 3.15.2.D

M. 56. Based on the justification provided in discussion 55, above, Required Actions have been added to the Zion Station ITS for the inoperability of: 1) an opposite unit diesel, 2) an opposite unit DC electrical power supply, and 3) an opposite unit AC or DC bus. The inoperability of either the DC electrical power supply or AC and DC buses defaults immediately to declaring the required features inoperable. This will result in entry into the Applicable Conditions and Required Actions for the equipment rendered inoperable. The allowed inoperability of a opposite unit diesel generator will be 14 days. This 14-day AOT is acceptable because 1) this is a new requirement that does not exist in CTS and represents a safety enhancement, even with a 14-day AOT, 2) the potential for a dual unit LOOP coincident with a passive failure in the SW system during this period is low, and 3) the 14 days allows time to perform necessary maintenance on the opposite unit DGs to maintain their reliability.

3.9 <u>REFUELING OPERATIONS</u>

CTS 3.13.1.A.1, 3.13.1.A.2, 3.13.1.A.4, and 4.13.1.A

M. 1. The Applicability of Current Technical Specifications 3.13.1.A.1, 3.13.1.A.2, and 3.13.1.A.4 has been changed to include all of MODE 6. Currently, these specifications are only applicable during CORE ALTERATIONS. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13

M. 5. Appropriate Required Actions and associated Completion Times have been added for: refueling boron concentration not within limits (proposed LCO 3.9.1); inoperable source range neutron flux channel(s) (proposed LCO 3.9.2), and containment penetrations not in required status (proposed LCO 3.9.3). This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13.1.A.2

M. 9. The allowance to have one source range neutron monitor OPERABLE "at other times" in CTS 3.13.1.A.2 has been deleted. Two source range neutron monitors will be required at all times during MODE 6 operations. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 4.13.1.A.2

M. 10. The requirement of CTS 4.13.1.A.2 to verify the OPERABILITY of the (source range) neutron monitor(s) is proposed to be replaced by two separate Surveillances. A CHANNEL CHECK, specified by SR 3.9.2.1, is required to be met every 12 hours. A CHANNEL CALIBRATION, specified by SR 3.9.2.2, is required to be met every 18 months on all components except the neutron detectors. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13.3.A

M. 14. The requirement to maintain "containment integrity" during CORE ALTERATIONS specified in CTS 3.13.3.A has been expanded to include "movement of irradiated fuel assemblies within containment." During movement of irradiated fuel within containment the potential exists for a fuel handling accident. To ensure the offsite doses resulting from a fuel handling accident are within the values of 10 CFR Part 100, containment integrity must be established. In addition, proposed LCO 3.9.3, "Containment Penetrations" also specifies that one door in the emergency air lock must be closed and that each penetration providing direct access from the containment atmosphere to the outside atmosphere be isolated, or capable of being isolated by an automatic isolation valve on an isolation signal. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 4.13.3.C

M. 17. The requirement to test the containment vent and purge system and verify system OPERABILITY prior to CORE ALTERATIONS specified in CTS 4.13.3.C is proposed to be located in SR 3.9.3.1, SR 3.9.3.2 and SR 3.9.3.3. SR 3.9.3.1 demonstrates that each open containment ventilation isolation valve is not blocked from closing. Also, performance of SR 3.9.3.1 will demonstrate that each open valve is capable of being closed by an automatic isolation signal. SR 3.9.3.2 and SR 3.9.3.3 demonstrate that each open containment ventilation isolation valve actuates to its isolation position on an actual or simulated high radiation signal. The Applicability of SR 3.9.3.1, SR 3.9.3.2 and SR 3.9.3.3 is more restrictive than the current requirement since it also includes any time irradiated fuel assemblies are moved within containment. The Frequency of 7 days for SR 3.9.3.1 is more restrictive than prior to CORE ALTERATIONS. The Frequency of 18 months for SR 3.9.3.2 and SR 3.9.3.3 is consistent with other

similar valve actuation tests. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13.9.A, Action b

M. 23. Additional Required Actions and Completion Times have been provided for inoperable RHR loops when the water level above the top of the reactor vessel flange is < 22 ft. Proposed Required Action A.2 of LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level" provides an option to immediately initiate action to establish the water level above the top of the reactor vessel flange to ≥ 22 ft. Proposed Required Action B.2 requires action to be initiated immediately to restore one RHR loop to operation if no RHR loop is in operation. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13.9.B Action a

M. 25. An additional Required Action and Completion Time have been provided when the RHR loop requirements have not been met and the water level above the top of the reactor vessel flange is > 22 ft. Proposed Required Action A.3 of LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level" requires that action be initiated immediately to satisfy the RHR loop requirements. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13.9.B Action b

M. 26. The allowance to remove a RHR loop from operation for up to one hour per eight hour period during CORE ALTERATION in CTS 3.13.9.B has been modified by the addition of the phrase "provided no operations are permitted that would cause reduction of the Reactor Coolant System boron concentration." This is an added restriction with respect to removing a RHR loop from operation. The restriction, which prohibits operations that would cause dilution of the RCS boron concentration, is necessary because forced circulation is required to ensure mixing of the borated coolant. Mixing of the coolant (RCS, Refueling Cavity, Refueling Canal) is an assumption in the "Dilution During Refueling" event described in UFSAR Chapter 15. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

CTS 3.13.10

M. 27. The Applicability of CTS 3.13.10, "Water Level - Reactor Vessel" has been modified in proposed LCO 3.9.6, "Refueling Cavity Water Level". CTS 3.13.10 only addresses movement of fuel assemblies within the pressure vessel. The proposed Applicability of LCO 3.9.6 includes any time there is movement of irradiated fuel assemblies within containment. This additional restriction is appropriate since a fuel handling accident, which may result in the release of radioactivity, can occur while moving irradiated fuel assemblies in an area other than "within the pressure vessel". As such, a refueling cavity water level ≥ 22 ft above

the top of the reactor vessel flange ensures an adequate volume of water is available to retain iodine fission product activity in the event of a dropped irradiated fuel assembly. This change is an additional restriction on plant operations and is consistent with NUREG-1431.

4.0 DESIGN FEATURES

CTS 5.6
M. 4. Two new Specifications (4.3.2, Drainage, and 4.3.3, Capacity) are included consistent with NUREG-1431. These requirements represent plant design features which are important to spent fuel cooling and shielding capabilities. The "Drainage" limit is based on pool design to prevent draining the pool below this level which is above the top of the spent fuel racks. The "Capacity" limit is based on the NRC's previous approval of the spent fuel rerack design (Amendments 142/131).

5.0 ADMINISTRATIVE CONTROLS

CTS N/A
M. 5. Additional detail is provided regarding the required duties of both the station manager and the shift engineer/shift foreman (shift supervisor). Furthermore, a specific limitation of 2 hours is added to address shift crew composition less than the minimum requirements. The CTS do not include this limitation. These details represent additional restrictions on plant operation consistent with NUREG-1431.

CTS 6.6.1.C Footnote
M. 16. Additional information is incorporated to detail the contents of the submittal of the Annual Radiological Environmental Operating Report. These details represent additional restrictions on plant operation consistent with NUREG-1431.

CTS 6.6.3.B and Table 3.14-[illegible]
M. 21. The Special Report requirements are expanded to include additional post accident monitors (PAMs) as listed in proposed LCO 3.3.3. The content of these reports is also revised to indicate that "action taken" should identify the "preplanned alternate method of monitoring implemented." These additional reports and details represent additional restrictions on plant operation consistent with NUREG-1431.

CTS N/A
M. 25. A new Diesel Fuel Oil Testing Program is included in the proposed Administrative Controls to increase the assurance of compliance with design and operational requirements. In addition, two new programs are included in the proposed Administrative Controls in accordance with the implementation of the NRC Policy Statement on Improved Technical Specifications. These include:

5.5.12 - "Technical Specification Bases Control Program"; and
5.5.13 - "Safety Function Determination Program."

These more restrictive requirements strengthen the Zion TS and are therefore acceptable.

III.5 NUREG DIFFERENCES

This section provides a discussion of the more significant deviations from NUREG-1431 that were made to support the development of Zion Station's Improved Technical Specifications. Each NUREG-1431 section has been annotated to show the proposed differences and to provide a numerical reference to a justification for each difference. The annotated NUREG-1431 is Attachment D (NUREG DIFFERENCES) of the licensee's submittal. The justifications for the differences are provided in Attachment E (Discussion of Differences). In addition to the above, there are deviations of lesser significance, which are not discussed individually. These deviations are annotated in the margin of the affected page in Attachment D, and include such things as: typographical errors, grammatical corrections, plant specific nomenclature, and minor format changes. In addition, the NUREG-1431 markup also includes the accepted changes to Revision 0 of NUREG-1431 which resulted from the Industry/NRC Lead Plant process.

1.0 USE AND APPLICATION

1. In the definition of CHANNEL CALIBRATION, the description of resistance temperature detectors (RTD) and thermocouple sensor calibrations has been omitted on the basis that it is too prescriptive. The existing Zion Technical Specifications definition for CHANNEL CALIBRATION requires calibration of the sensor (where possible) but the technique for calibrating RTDs and thermocouples is not specified. Whether the RTD or thermocouples are calibrated using cross calibration methods or bath immersion is irrelevant to the definition. Both techniques are valid. Therefore, it should be sufficient for the purpose of the definition to simply require that they be calibrated. Furthermore, the requirement to calibrate the display has also been deleted on the basis that it will create confusion with respect to establishing the operability of a channel. The existing Zion definition does not require calibration of displays. If a channel is capable of performing its safety function, but only the display is not functioning, the channel should be considered OPERABLE.

2. The definitions for ENGINEERED SAFETY FEATURES (ESF) RESPONSE TIME and REACTOR TRIP SYSTEM (RTS) RESPONSE TIME are not included in the Zion ITS. Zion Station's current licensing basis (CLB) does not require response time testing of the RTS and ESF instrumentation, and this CLB is retained in the ITS.

3. Not used (This SE follows the format of the licensee's NUREG Differences submittal. Changes made during the submittal development sometimes resulted in a Discussion of Change (DOC) being deleted. Rather than renumbering the remaining DOCs and changing the associated NUREG markup.

the affected DOC No. became NOT USED; i.e., there are no changes or discussions related to that number. This is consistent throughout this section of the SE.)

4. The definition of the PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) has been revised to include the PORV lift settings and enable temperature associated with the Low Temperature Overpressure Protection (LTOP) System. Technical Specification 3.4.12 states that the PORV lift settings are specified in the PTLR. The current definition for PTLR does not identify these lift settings as being contained in the PTLR. The LTOP enable temperature was added to the PTLR since changes in the heatup/cooldown figures could change the enable temperature. This change corrects the PTLR definition to be consistent with all the requirements that are contained in the PTLR. Referenced methodologies for the PTLR would contain the methodology used to develop the heatup and cooldown figures, as well as the methodology for developing the LTOP setpoints.

5. The purpose of this change is to clarify the scope of a TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) and thus establishing some distinction between a TADOT, a CHANNEL CALIBRATION and/or a CHANNEL OPERATIONAL TEST (COT). The definition of TADOT as it currently exists in NUREG-1431 requires the same testing requirements as those stipulated for a COT. The TADOT definition has been revised to eliminate the "adjustment of the trip actuating device so that it actuates at the required setpoint within the required accuracy." Therefore, a TADOT is only performed on those devices which have no trip setpoint (e.g., manual actuation pushbuttons or switches) or devices where verification of the trip setpoint is not required (i.e., UV relays).

6. The definition of ACTUATION LOGIC TEST has been changed to reflect the current licensing basis and design of Zion Station's Reactor Protection Logic and Safeguards Logic System. Specifically, the requirement to verify logic output with and without each possible interlock logic state has not been adopted. Zion Station's logic design precludes testing in each interlock state, dependent upon plant configuration. In many instances the logic state cannot be defeated to allow testing in varying states. Zion Station will continue to perform logic testing of the interlock itself, while function of the interlock will be implicitly addressed by the Mode of Applicability for the interlocked functions.

2.0 SAFETY LIMITS

1. NOT USED

2. The Mode of Applicability for the RCS Pressure Safety Limit has been expanded to include Mode 6. This change is necessary, as Mode 6 is entered when the first vessel stud is less than fully tensioned. In this configuration, the RCS is still capable of being pressurized, accordingly the Safety Limit should still be applicable. Zion Station's current Technical Specifications do not contain any Mode limitations on

this Safety Limit, therefore, this change is consistent with Zion Station's current Licensing Basis.

3.0 LCO APPLICABILITY

1. The Bases for LCO 3.0.4 are modified for clarity by changing the term "unit startup" to "MODE or other specified condition," and by adding examples of how LCO 3.0.4 is applied to some Zion specific situations. Changing the term "unit startup" as indicated is appropriate because LCO 3.0.4 is applicable at times other than when a unit is starting up. The addition of Zion specific examples to the Bases provides information that is beneficial regarding how LCO 3.0.4 is to be interpreted when complying with the Required Actions of other LCOs.

2. The proposed LCO 3.0.7 is revised to be more generic so that it is clearly applicable to more than only "test" exceptions. The LCO identifies that it is intended to permit performance of special tests and operations. The change to "Exceptions LCOs" from "Test Exception LCOs" is purely administrative since it is only a change in terminology and not in application. Additionally, the listing of Exception LCOs is moved to the Bases and identified as examples so that changes to these Specifications do not require changes to LCO 3.0.7. These changes are intended to reduce the administrative burden of "exceptions."

3. This change eliminates the potential confusion that may arise with respect to the application of an unplanned event which satisfies the requirement of a given SR by including a discussion in the Bases of SR 3.0.1. Currently, only Section 3.8 contains the Note which states that "credit may be taken for unplanned events that satisfy this SR". In addition, the Notes also contain a restriction on the MODE of performance such that the surveillance is not to be performed in a MODE where perturbation to the electrical distribution system would cause a challenge to safety systems. The intent of the Note is applicable to any SR. The revision to the Bases for SR 3.0.1 will provide the necessary clarification so that the usage of this allowance can be applied consistently throughout the Technical Specifications.

4. 10 CFR Part 50, Appendix J, Option B, has been implemented, and the correct reference is now the Containment Leakage Rate Testing Program.

3.1 REACTIVITY CONTROL SYSTEMS

1. Section 3.1
Throughout Section 3.1, the references to "rod" have been generically revised to "control rod" except in instances where it may introduce confusion or poor grammar. Similarly, references to "shutdown rods" have been revised to "shutdown bank control rods" consistent with plant terminology.

2. LCO 3.1.3; Core Reactivity
A NOTE is added for Condition A to require Required Action A.2 to be completed. This is needed since completion of Required Action A.1

restores compliance with the LCO and would eliminate the requirement to perform Required Action A.2.

3. LCO 3.1.3: Core Reactivity.
LCO 3.1.7: Control Bank Insertion Limits.
SR 3.1.3.1 and SR 3.1.7.2 are reformatted into two separate Surveillances for clarity: one with an event related Frequency and one with a periodic Frequency. This portion is a format change only. The Surveillance Frequency is also revised from 31 EFPD to 92 EFPD. Plant specific experience with this parameter has shown it to be slow to change. Trending of this parameter on a 92 EFPD Frequency will provide sufficient information to prevent reactivity anomalies. This Frequency is not in the current Zion Station TS, and prior performances following startups (with a much longer period between Surveillances) indicate the proposed Frequency is adequate.

4. LCO 3.1.4: Moderator Temperature Coefficient.
The end of life lower MTC limit surveillances have not been adopted. Zion Station's current licensing basis contains only a beginning of core life positive MTC limit surveillance. Calculation methodology provides sufficient margin to the lower limits, and these predictions are verified at the beginning of life of each core. Additionally, the core is monitored for reactivity anomalies on a periodic basis. If an anomaly is detected, the Technical Specifications require a re-evaluation of core design and safety analysis, and a determination that the reactor core is acceptable for continued operation. Based on the performance of a beginning of life validation of design and periodic monitoring, the intent of these surveillance requirements is met.

5. LCO 3.1.4: Moderator Temperature Coefficient.
A NOTE is added for Condition A to require Required Action A.1 to be completed. This is needed since realignment of the control banks restores compliance with the LCO and would eliminate the requirement to perform Required Action A.1.

6. LCO 3.1.5: Rod Group Alignment Limits.
All references to "shutdown rods" have been revised to read "shutdown bank control rods" to avoid confusion with the generic use of the term control rods. This is a terminology change only and does not impact the content of the specification.

7. LCO 3.1.5: Rod Group Alignment Limits.
The LCO requires all indicated rod positions to be within 12 steps of their group step counter demand position. The proposed change deletes the requirement to have individual indicated rod positions within alignment limits of their group step counter demand position, but instead requires rod positions to be within limits of its demand position. The revised wording supports the analytical basis for Specification 3.1.5 in that it assures that each individual control rod is maintained within an assumed alignment limit of its associated group/bank. By revising the statement of the LCO, implicit requirements relative to rod position indication OPERABILITY are disassociated from

alignment limits. Thus, the inoperability of rod position indications would solely be addressed in Specification 3.1.8, "Rod Position Indication" and would not impact Specification 3.1.5.

8. LCO 3.1.5; Rod Group Alignment Limits.
Deleted NUREG-1431 Required Action (RA) B.1. This required action is only a "Restore..." type action which is unnecessary since it is always a possibility. In addition, the remaining RAs are sequentially renumbered.

9. LCO 3.1.5; Rod Group Alignment Limits.
Omitted the second Frequency of NUREG-1431 SR 3.1.5.1. Past practice indicates that this increased frequency due to an inoperable alarm is an unnecessary burden on the Operations staff. Rod positions do not "drift" significantly over the normal frequency (once a shift), and any operator action to change rod position is monitored at the time of the change. Additionally, rod position indication is prominently displayed before the operator and a rod position review can be readily completed from such indication. Rod misposition would be readily identified from such a review. However, documentation of a formal surveillance would take an inordinate amount of time compared to the actual position indication review. This is considered an unnecessary burden since this informal monitoring has been considered to be sufficient (per the CTS). Therefore, rod position review with an inoperable monitor is proposed to continue to be performed in the above described manner without requiring a formal documentation of the rod position review.

10. LCO 3.1.5; Rod Group Alignment Limits.
The ITS moved the details of the method of performance of NUREG-1431 SR 3.1.5.2 to the Bases. This change is necessary for proper interpretation as indicated in the NUREG-1431 Bases when the rod is electrically immovable (i.e., the SR cannot be performed), but remains trippable (and OPERABLE).

11. LCO 3.1.6; Shutdown Bank Insertion Limits.
The Applicability of "MODE 2 with any control bank not fully inserted" is revised to "MODE 2." These are essentially equivalent since MODE 2 is not normally entered without at least one control bank in the "not fully inserted" position. Also this change resolves a mismatch between the LCO Applicability and the Required Action B.1 which requires the plant to be in MODE 3. Further, this change is consistent with NUREG-1431 for applicability of safety rod insertion limits.

12. LCO 3.1.6; Shutdown Bank Insertion Limits.
LCO 3.1.7; Control Bank Insertion Limits.
The NOTE is revised to clarify that it is meant only for the bank being moved to perform the SR. The other banks must continue to meet the LCO. In addition, the Applicability NOTE is moved to the LCO section to avoid confusion in the application of SR 3.0.4 for MODE changes (i.e., does entry/exit into/from the Applicability Note constitute a MODE change?)

13. The Frequency at which the position of a control rod with an inoperable position indicator must be checked has been changed from "every shift" to "once per 12 hours." This change represents an administrative change only since the duration of a shift for operations personnel is currently 12 hours.

14. Not used.

15. LCO 3.1.7; Control Bank Insertion Limits.
NUREG-1431 Required Action C.1 is revised from "Be in MODE 3" to "Be in MODE 2 with k_{eff} < 1.0 since this action is sufficient to place the unit in a condition in which the requirements of the LCO are no longer applicable.

16. LCO 3.1.7; Control Bank Insertion Limits.
The Frequency for NUREG-1431 SR 3.1.7.1 is revised to omit the limit of "within 4 hours" requirement. A Frequency of "Once prior to achieving criticality" is adequate. The time of the performance of an estimate for criticality is not of concern; the correct accounting of parameters is. Very good estimates can be made well in advance with appropriate input. Administrative controls are sufficient to determine if a previous estimate should be reperformed. These same controls would apply within the "required" 4 hour time frame if parameters used in the estimate change during that period.

17. LCO 3.1.8; Rod Position Indication.
The ITS revised RAs A.1 and B.1 to eliminate specification of method for verifying rod position. The movable incore detectors are only one suitable method; past practice has shown other methods can also provide adequate rod position verification. Plant specific experience has shown that rod movement can be identified from core exit thermocouple data. These data are sufficient to determine that the rod has not moved, and along with the last known position of the control rod, provide an equally acceptable method for verifying control rod position. Therefore, this method should be permitted as it is in the CTS. Further, since more than one acceptable method exists, the identification of a single method in the surveillance is not appropriate and the identification of acceptable methods is moved to the Bases.

18. LCO 3.1.8; Rod Position Indication.
The ITS separated Required Actions A.2, B.2 and C.2 into a separate "Required Action and Completion Time not met" Condition since it is repeated three times. Also, since the Bases discussion indicates that under these applicable entry conditions "reducing power to < 50% RTP puts the core into a condition where rod position is not significantly affecting core peaking factor," this should be an acceptable action if the remaining RAs (i.e., NUREG-1431 Required Actions A.1, B.1 or C.1) are not met. Further, the proposed Required Action to "Initiate Action to reduce THERMAL POWER to ≤50% RTP" is an appropriate compensatory measure because any shutdown default, as required by NUREG-1431, would reinstate compliance with NUREG-1431 Required Actions A.2, B.2, and C.2

to reduce power to ≤50% power. Therefore, Required Action D.1 will never be completed and is unnecessary.

19. LCO 3.1.8: Rod Position Indication.
The ITS combined Required Action B.1 with Required Action A.1 since it is the same required action with only a different Completion Time. In both cases the "Condition" is for inoperable indication and the Required Action is the same. The only difference is that movement of an inoperable control rod initiates a different "time zero" for determination of the Completion Time. Similar requirements throughout the NUREG-1431 do not identify these as separate Conditions. Since this is not really a separate condition but only a separate Completion Time, the "entry condition" is moved to the Completion Time column. Also, both requirements are moved to Condition B so that conditions for one rod position indication (RPI) inoperable and more than one RPI inoperable would be closer together.

20. LCO 3.1.8: Rod Position Indication.
NUREG-1431 Required Action C.1.2 is not incorporated. With one demand position indicator inoperable, the NUREG-1431 RA represents a "tightened" limit since the LCO for alignment is within ± 12 steps of demand (this allows the most withdrawn rod and the least withdrawn rod to be as much as 24 steps apart). Loss of one demand position indicator does not affect the acceptability of this alignment since it does not put the core into a condition where rod position is significantly affecting the core peaking factor. Therefore, the limits for alignment are not "tightened" in this Condition. Current TS require only compliance with the "within ± 12 steps" limit and this remains applicable. Additionally, most banks have two demand indicators and compliance with the alignment LCO can be readily determined with only one bank demand indicator inoperable.

21. LCO 3.1.8: Rod Position Indication.
The ITS added an additional Condition (new Condition D) for "More than one RPI per group inoperable for one or more groups." This condition addresses the unlikely situation in which control rod position indication is lost entirely. This change is consistent with Amendment 61 for Callaway Plant (requested 9-7-90, approved 2-1-91). The NRC Staff's SER for this amendment indicates that "the requested amendments correct an oversight in the licensee's existing TS that would require operation of a system (control rods) important to safety without availability of the preferred monitoring capability (rod position indication)." This same oversight exists in the old STS and in the new ITS. Both currently require a shutdown (control rod manipulation) without complete control rod position indication. This new Condition will provide an increased time to attempt repair while limiting the likelihood of control rod misalignment during this period. The safety function of the control rods (trippability) is unaffected by this condition, and as such, control rod misalignment is the primary concern. The proposed 30 hours will significantly increase the probability of identifying and correcting the cause of the inoperability, while allowing time to plan alternative monitoring of control rod position

should a plant shutdown be required. Without the change, the plant is required to initiate a shutdown in 1 hour and be in MODE 3 within 7 hours. This may not afford sufficient time to notify the appropriate individuals, brief them in the situation and alternatives for control rod monitoring, or to allow them to identify and correct the cause of the inoperability. Therefore, the current requirements as written will result in a plant shutdown without adequate time to address corrective actions or monitoring capabilities. The proposed Condition provides appropriate compensatory measures to continue to assure compliance with the assumptions of the safety analysis while providing sufficient time to identify and correct minor causes of inoperability, or to preplan alternative measures relative to monitoring control rod position during a plant shutdown.

22. LCO 3.1.8; Rod Position Indication (RPI).
The ITS revised SR 3.1.8.1 to be consistent with the current TS and with the similar SRs of other PWRs owned by ComEd (i.e., Byron and Braidwood). The Zion RPI System response is of a design which is one generation prior to that on which the NUREG-1431 is based, and is not linear over the entire indicated range of rod travel. While the system can be "calibrated" to agree within the required 12 steps, minor operational fluctuations would quickly invalidate such a "calibration." Historically, the system requires frequent adjustment to maintain the "calibration" in the range of rod travel of interest at the time. Hence, the system would not meet the NUREG-1431 proposed SR.

23. LCO 3.1.9; PHYSICS TEST Exceptions—MODE 1.
These Test Exception requirements are not adopted since they are not expected to ever be required.

24. LCO 3.1.10; PHYSICS TEST Exceptions—MODE 2.
LCO 3.1.11; SRM Test Exceptions.
The MODE of Applicability is revised such that the LCO is not applicable only while in MODE 2. In its place, a requirement is added to the LCO to limit THERMAL POWER to ≤ 5% RTP. As written in the NUREG, when power exceeds 5%, the Applicability is exited and the Required Actions do not have to be taken since the LCO is no longer applicable. The proposed revisions correct this application inconsistency. An appropriate SR is also included, as is the appropriate Condition for NUREG-1431 LCO 3.1.11.

25. LCO 3.1.10; PHYSICS TEST Exceptions—MODE 2.
SR 3.1.10.1 is not adopted. The referenced SRs are performed Quarterly and are required by SR 3.0.4 to be OPERABLE for entry into MODE 2. The initiation of a PHYSICS TEST does not impact the power range or intermediate range monitors in any way. As such, the additional surveillance test is not warranted. Further, this additional performance of the SR is not required by the current TS. Therefore, this SR is not proposed to be included.

26. LCO 3.1.11: SDM Test Exceptions.
The LCO has been revised to match format of other test exception LCOs, and specifically identify the LCOs for which an exception is provided. The LCOs are also identified in the BASES.

27. LCO 3.1.11: SDM Test Exceptions.
The Applicability of "MODE 2 when measuring SDM" has been deleted since this is only required for completely new cores and is not anticipated to be needed.

28. LCO 3.1.11: SDM Test Exceptions.
The SHUTDOWN MARGIN limit is identified in the Required Actions to avoid confusion as to the applicable limit since the requirements of LCO 3.1.1 have been excepted by LCO 3.1.11.

29. LCO 3.1.10: PHYSICS TEST Exceptions.
The requirements of LCO 3.4.2, "RCS Minimum Temperature for Criticality" are deleted from the list of LCO requirements which may be suspended during the performance of Physics Tests. For the current Zion plant design configuration, the minimum temperature for criticality and the minimum temperature for Physics Tests are the same. Therefore, all temperature conditions meeting the criterion for suspension of the requirements of LCO 3.4.2, already satisfy the temperature criterion of LCO 3.4.2 and suspension of the requirements of LCO 3.4.2 is superfluous.

3.2 <u>POWER DISTRIBUTION LIMITS</u>

1. LCO 3.2.1: Heat Flux Hot Channel Factor.
LCO 3.2.2: Nuclear Enthalpy Rise Hot Channel Factor.
The ITS increased Completion Times for NUREG-1431 LCO 3.2.1, Required Action A.2 and LCO 3.2.2, Required Action A.1.2.2 from 8 hours to 72 hours. The current Zion TS do not contain a time limit for these Required Actions. A Completion Time of 72 hours will allow time to perform a second flux map to confirm the results, or determine that the condition was temporary, without implementing an unnecessary trip setpoint change, during which there is increased potential for a plant transient. Following a significant power reduction, at least 24 hours are required to re-establish steady state xenon prior to taking a flux map, and approximately 8 to 12 hours to obtain a flux map, and analyze the data. Further, setpoint changes should only be required for extended operation in this condition. Finally, the Bases for making this setpoint change are exactly the same as the NUREG-1431 Bases provided for the 72 hour Completion Time of NUREG-1431 Required Action A.3, which is also a trip setpoint reduction.

2. LCO 3.2.1: Heat Flux Hot Channel Factor.
The ITS increased Completion Time for NUREG-1431 Required Action B.1 from 2 hours to 4 hours. The current Zion TS do not contain this Required Action. Further, the NUREG-1431 provides no information on the Completion Time Bases. However, the Required Action is the same as for

NUREG-1431 LCO 3.2.1A Required Action A.2, and the same Bases for the Completion Time would be applicable to 4 hours.

3. LCO 3.2.2: Nuclear Enthalpy Rise Hot Channel Factor.
The ITS deleted NUREG-1431 Required Action A.1.1. This Required Action is only a "Restore..." type action which is unnecessary since it is always a possibility.

4. LCO 3.2.2: Nuclear Enthalpy Rise Hot Channel Factor
LCO 3.2.4: QUADRANT POWER TILT RATIO.
The ITS increased Completion Time for NUREG-1431 LCO 3.2.2, Required Actions A.2 and A.4 and LCO 3.2.4, Required Action A.2 from 24 hours to 48 hours. Zion's current TS 3.2.2.A.1.2 allows 48 hours to determine that the Nuclear Enthalpy Rise Hot Channel Factor is restored to within limits. Further, the 24 hours proposed by the NUREG-1431 is not sufficient time to accomplish these Required Actions. Following a significant power reduction, at least 24 hours are required to re-establish steady state xenon prior to taking a flux map, which then takes approximately 8 to 12 hours to perform and analyze. Thus, a total of 48 hours are proposed to complete these Required Actions.

5. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
The ITS clarified the applicability of the target band time limits and the associated Notes describing the penalty deviation time accumulation. The NOTE in part b. could be read as applicable only when in the power range associated with part b. The NOTE in part c. could be read to be applicable anytime below 50% RTP even though the LCO is only applicable above 15% RTP.

6. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
NUREG-1431 Required Action C.1 has been revised to require action to immediately begin a reduction of THERMAL POWER to < 50% RTP. Power reduction to < 15% (per the proposed Condition D) is overly conservative since entry into the required action is either due to operation with cumulative penalty deviation time > 1 hr which is allowed below 50% RTP (see part c. of the LCO), or due to AFD being outside the acceptable operation limits which is not possible below 50% RTP. Therefore, in either case, a power reduction to < 50% RTP restores compliance with the LCO, and is a sufficient Required Action. A Required Action of reducing power to < 15% RTP would never have to be met since a power reduction to < 50% would always restore compliance with the LCO. Additionally, the Condition C Note to require completion of the Required Action is omitted since restoration of compliance is a sufficient action. If the Condition is entered as a result of exceeding the penalty deviation time limit, the required action will most likely have to be completed anyway. Further, if compliance is restored prior to completion of the Required Actions, there is no identified reason to have to complete the power reduction.

7. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
The ITS moved SR 3.2.3.2 Frequency Note to the Surveillance column to match the Writers Guide. This is the only non-conforming SR Frequency Note identified.

8. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
The ITS revised SR 3.2.3.2 Note to allow use of actual AFD data if the date are available from another source such as the process computer. Inoperability of the alarm does not necessarily prevent the actual AFD values from being available (e.g., from the computer logs), and a penalty should not be required if the AFD can be shown to be within the target flux difference.

9. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
LCO 3.2.4: QUADRANT POWER TILT RATIO.
The ITS reformatted NUREG-1431 SR 3.2.3.2 into two separate Surveillances with applicability based on power level. The ITS also reformatted NUREG-1431 SR 3.2.4.1 into two separate Surveillances with applicability based on alarm operability. These are format changes only.

10. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
The ITS revised NUREG-1431 SR 3.2.3.3 to retain current Surveillance requirements (4.2.2.A.3) which indicate that the target flux difference should be updated every EFPM. Current implementation of this surveillance only requires the update when the target flux difference variation is greater than 1/2 percent since this is approximately the error band of the determination.

11. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
In this ITS, NUREG-1431 SR 3.2.3.3 and SR 3.2.3.4 are conducted on a core average value rather than on an individual excore channel basis.

12. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
NUREG-1431 SR 3.2.3.3 method b. may not be appropriate since the trend of the target may not always be in the direction of the "end of cycle or 0% AFD." Zion's current TS 4.2.2.A.3 allows the use of the most current measurement for the current month or by extrapolation of the two most recent values in lieu of the NUREG-1431 requirement to use the most recent and interpolate to end of cycle or 0%. Use of the last measured value and interpolating to the predicted value will provide the best value for use during the next 31 EFPY. This change is consistent with Zion Station's existing licensing basis.

13. LCO 3.2.4: QUADRANT POWER TILT RATIO.
Required Action A.2 is revised to omit the method of determining QPTR. The Action requires use of a calculation. However, the monitors were adequate to require entry into the Required Action and unless they have been determined to be inoperable, they are still sufficient to determine the QPTR. Further, the movable incore detectors are also available to determine QPTR. Therefore, specifying the method is unnecessarily restrictive. This change reflects the Zion CLB.

14. LCO 3.2.4; QUADRANT POWER TILT RATIO.
The ITS deleted NOTE for NUREG-1431 Required Action A.3.3: This NOTE is not necessary since the Completion Times of NUREG-1431 RAs A.3.2 and A.3.3 make this the only possible sequence of performing the RAs.

15. LCO 3.2.4; QUADRANT POWER TILT RATIO.
NUREG-1431 LCO 3.2.4, Action A, requires that Reactor Power be reduced in 2 hours AND Heat Flux Hot Channel Factors be determined in 24 hours, if the QPTR is not within limits. The Zion CTS allow an option; i.e., reduce Reactor Power OR determine Heat Flux Hot Channel Factors. The licensee will adopt the NUREG requirements with the exception that 48 hours is allowed to determine Heat Flux Hot Channel Factors. This change is less restrictive than the NUREG, but is more restrictive than the Zion CLB. In addition, 48 hours is a more realistic time because at least 24 hours is required to re-establish steady state xenon prior to taking a flux map following a transient or significant power reduction, and an additional 8 to 12 hours is required to obtain a flux map and analyze the data.

16. LCO 3.2.4; QUADRANT POWER TILT RATIO.
A NOTE is added to NUREG-1431 SR 3.2.4.1 and SR 3.2.4.2 to allow the use of other methods of determining QPTR in lieu of the required method under specified conditions. Besides being appropriate, this change eliminates confusion regarding the SR to be performed for two conflicting conditions: a) QPTR not within limit while a power range channel is inoperable and THERMAL POWER ≥ 75% RTP; and b) QPTR alarm inoperable while a power range channel is also inoperable and THERMAL POWER ≥ 75% RTP.

17. LCO 3.2.4; QUADRANT POWER TILT RATIO.
An additional method of performing QPTR verification is provided by proposed SR 3.2.4.4. The core exit thermocouples may be used to confirm that the normalized symmetric power distribution is consistent with the indicated QPTR and any previous data indicating a tilt. The core exit thermocouple monitoring is performed with at least four thermocouples in each quadrant (symmetrically located) using the calculated enthalpy rise associated with them. The thermocouple enthalpies are corrected to match the assembly powers from a recent flux map. Using this method, the tilt indicated by the core exit thermocouples will be a complete tilt (as indicated by a flux map), and not a "zeroed" tilt as provided by the excore detectors. Therefore, it is inappropriate to apply the excore QPTR limits directly to the indicated core exit thermocouple tilt. Consistent with the intent of QPTR measurements, a target value for core exit thermocouples is established for each quadrant and routinely verified, such that when the core exit thermocouples are used, a current target tilt value is available to be subtracted from the current indicated core exit thermocouple tilt (like the process to determine tilt using the excore detectors). The limits of LCO 3.2.4 can then be applied to the difference between these tilt values.

18. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
The Completion Time for NUREG-1431 Required Action B.1 has been revised to "Immediately" reduce THERMAL POWER (rather than allowing 15 minutes). This change avoids confusion of appropriate action if Required Action B.1, "Reduce THERMAL POWER to < 90% RTP" in 15 minutes is not met. NUREG-1431 does not provide a default condition for "Required Action and associated Completion Time of Condition B not met." The usual default condition of LCO 3.0.3 would not be appropriate since that would provide an additional hour to begin the power reduction. Therefore, the Required Action is revised to require an immediate action that can always be met, and results in a prompt compensatory action.

19. LCO 3.2.3: AXIAL FLUX DIFFERENCE.
The Note in the Applicability section is moved to the LCO section to avoid confusion regarding the application of LCO 3.0.4 when the Note is entered and exited. Specifically, if an LCO is not met, LCO 3.0.4 does not allow entry into a MODE or other specified condition in the Applicability except under certain specified conditions. Any Note in the Applicability section can easily be misconstrued to be an "other specified condition" in the Applicability and require application of LCO 3.0.4 when entering or exiting the Note, i.e., entering an "other specified condition." The Note should only provide a specific exception to the LCO requirements while in the applicable MODES, not change the Applicability of the Specification. In order to clarify this intent, the Note is moved from the Applicability section to the LCO section of the Specification. In addition, all Notes were collected in one location following the LCO. Two of the Notes are applicable to the entire LCO and the other two notes are clarified as indicated above. These changes should prevent any possible confusion regarding applicability of the individual Notes to any individual portion of the Specification.

20. LCO 3.2.2: Nuclear Enthalpy Rise Hot Channel Factor.
In NUREG-1431 SR 3.2.1.2, the $F_Q(Z)$ value of 2.0 percent has been moved to the COLR. The 2.0 percent $F_Q(Z)$ value was based on the Westinghouse assumption that F_Q would change by no more than 2.0 percent monthly between flux maps. This assumption was based on calculations for previous (pre-1983) core designs which pre-dated the low leakage loading patterns, high amounts of burnable poisons, and 18 month cycles typical of recent cores. Recently, some Westinghouse-designed cores have experienced increases in the measured $F_Q(Z)$ as high as 5 to 6 percent between monthly flux maps over certain burnup ranges. Therefore, for those cores which are predicted to have larger increases in $F_Q(Z)$ over certain burnup ranges, a larger penalty will be provided on a cycle-specific basis. The penalties will be calculated using NRC-approved methods. The allowance to move the $F_Q(Z)$ penalty factor to the COLR has been approved by the NRC in the SER for WCAP-10217-A, "Relaxation of Constant Axial Offset Control-F_Q Surveillance Technical Specifications," dated November 26, 1993.

21. LCO 3.2.1: Heat Flux Hot Channel Factor $F_Q(Z)$.
Required Action B in the NUREG-1431 has been modified to allow an alternative to reducing AFD limits when $F^W_Q(Z)$ is not within limit. The proposed change allows the option to reduce Thermal Power below the Allowed Power Level (APL). The APL represents the highest percentage of RATED THERMAL POWER at which the unit can operate and still be assured that $F_Q(Z)$ will be maintained below the required limit. This is due, in part, to the fact that the determination of APL considers the function of W(Z), where W(Z) is a cycle dependent function that accounts for power distribution transients encountered during normal operation. Since the function of W(Z) varies over core height, the resultant effect on APL will also vary. Thus, a reduction in Thermal Power below the APL represents an enhanced approximation of the reduction in Thermal Power necessary to ensure the $F_Q(Z)$ limit is not violated and thereby affords an equivalent level of protection currently provided by reducing the AFD limits. A detailed discussion of APL as it applies to the Heat Flux Hot Channel Factor is provided in WCAP-10217-A, which was found acceptable by the NRC Staff as in an SER dated November 26, 1993.

22. LCO 3.2.1: Heat Flux Hot Channel Factor $F_Q(Z)$.
A new Required Action (Required Action B.2) has been added which requires a verification that $F^W_Q(Z)$ is restored to within limits prior to increasing Thermal Power or restoring AFD limits. The addition of this step is consistent with NUREG-1431 step A.4 in that it ensures that core conditions during operations at higher power levels or relaxed AFD limits are consistent with safety analysis assumptions.

23. LCO 3.2.1: Heat Flux Hot Channel Factor $F_Q(Z)$.
A Note has been added to existing Required Action A.4 and proposed Required Action B.2. The intent of this Note is to ensure the associated Required Action is performed even though the requirements of the LCO may have been met by taking the preceding actions.

3.3 INSTRUMENTATION

3.3.1 REACTOR TRIP SYSTEM (RTS) INSTRUMENTATION

1. Three Notes have been included which modify the NUREG-1431 LCO by allowing a specified amount of time before declaring subsequent channels or trains inoperable during testing or maintenance (RTB only). The Notes are necessary to facilitate the usage rules for the Improved Technical Specifications (ITS). Without the Notes a given function with multiple channels or trains inoperable may require entry into LCO 3.0.3. Notes 2 and 3 were previously stipulated in NUREG-1431 Required Actions Q and R respectively and have been moved to the LCO for consistency.

2. The format of the ACTIONS Table has been changed to provide consistency with the usage rule throughout the ITS. In addition, some Conditions and Required Actions have been modified to reflect the Zion Station design. The following discussions address the changes made to the Actions Table:

a) Numerous Required Actions separated by an "OR" logic have different Completion Times. This was corrected by establishing separate default Conditions where applicable.

b) The typical usage rule of "Enter all applicable Conditions" is not accurate for these LCOs. For example, numerous entry conditions are "one channel inoperable." Therefore, with one channel of anything inoperable, these Conditions would be required to be entered if they were in any other Section. This was corrected by making all conditions not entered directly to read "As required by Required Action A.1 and referenced in Table 3.3.1-1."

c) NUREG-1431 Condition A is for "one or more channels inoperable." However, for most of the RTS Functions (and all of the ESFAS Functions), only one Required Channel is allowed to be inoperable. This Condition should be limited to "one channel inoperable for one or more Functions" to avoid confusion. For example, if there is an applicable Condition for two channels inoperable (i.e., one or more), then entry into that Condition is appropriate and LCO 3.0.3 is not required. However, entry into the Condition for more than one channel of anything is not appropriate and entry into LCO 3.0.3 is intended since there is no appropriate entry condition. Also, entry into the Condition for a second channel inoperable leads one to the Table and then to the applicable Condition. This could easily be misinterpreted as a required "second entry" into the Condition meant to be applicable for only a single channel inoperable. This is reinforced by the inconsistent NUREG-1431 change to add a Condition "V" for two trains inoperable (enter LCO 3.0.3) but not indicate that LCO 3.0.3 entry is necessary for any two Required Channels. To correct this, Condition A has been revised for "One or more Functions with one channel inoperable".

d) Related to item c above, Condition A for "one or more channels inoperable" is apparently intended to provide an applicable condition for more than one channel of a Function which is inoperable on a "per loop, per SG, etc." basis. However, separate entry condition for each loop, SG, etc. is not allowed by the LCO. To correct this, the Function entries on Table 3.3.1-1 were redefined on a per loop, per SG, etc. basis. In addition, the Bases were enhanced to discuss the ACTIONS NOTE for separate Condition entry to clarify Functions on a per loop, per SG, etc. basis.

e) Required Action B.2.2 requires the RTBs to be opened in 55 hours when one Manual Reactor Trip Function is inoperable. Condition B is only applicable in MODES 1 and 2. Therefore, once the unit is in MODE 3 it is outside the mode of applicability for Condition B, and Condition C which addresses the Manual Reactor Trip Function in MODES 3, 4, and 5 applies. To correct this, Required Action B.2.2 has been deleted and the Required Actions of Condition C are applicable.

f) Required Actions D.1.2 and D.2.2 and the Note which states "Only required to be performed when the power range neutron flux input to QPTR is inoperable" are duplicates of Surveillance Requirements 3.2.4.1 and 3.2.4.2. As such, these Required Actions are unnecessary and inconsistent with the rest of the NUREG-1431 format. To correct the inconsistency, Required Actions D.1.2 and D.2.2 have been deleted. The Bases section, however, has retained a discussion which alerts the operator that an inoperable power range channel may impact the QPTR function.

g) The Conditions and Required Actions associated with an inoperable source range channel and intermediate range channel have been modified. For Zion Station the Current Licensing Bases (CLB) only require 1 source range channel and 1 intermediate range channel to be OPERABLE. In Mode 1 below the P-10 interlock the safety analysis credits the Power Range Neutron Flux Low Function as the primary trip to ensure that protection is provided against a positive reactivity excursion from low power or subcritical conditions. For the intermediate range channel the proposed Required Action with no intermediate range channel OPERABLE is consistent with Condition G in NUREG-1431 except the time to reduce power to below P-6 has been extended to 24 hours. The 24 hour Completion Time is consistent with Zion Station's CLB for an inoperable intermediate range channel. For the source range channel the proposed Required Action with no source range channel OPERABLE is consistent with Condition L in NUREG-1431 except Required Action B.2 has been modified by a Note which allows unborated water source flow paths to be unisolated temporarily under administrative controls.

3. The Note associated with SR 3.3.1.4 has been deleted since it is redundant with the requirements of SR 3.0.4.

4. The following changes relate to the COTs required by NUREG-1431 SR 3.3.1.7 and SR 3.3.1.8.

   - The Note in the Required Actions for SR 3.3.1.8 has been deleted. Performance of a COT verifies the inputs to the P-6 and P-10 interlock logic; it does not verify the state of the interlock function. The instrument channels (intermediate range and power range) lose their identity when their signal enters the logic portion of the interlock circuit. Thus, verification of the interlock state (i.e. logic) is not covered by the definition of a COT.

   - In SR 3.3.1.8, the Note in the Frequency column and the Frequencies of "Prior to reactor startup" and "every 92 days thereafter" have been deleted. Performance of required surveillance testing is addressed by SR 3.0.4 and SR 3.0.1. Therefore, this information is redundant to NUREG-1431 usage rules and is not necessary.

- The Frequencies of "Four hours after reducing power below P-10 for power and intermediate instrumentation" and "Four hours after reducing power below P-6 for source range instrumentation" have been moved to Notes in proposed SR 3.3.1.7. The allowance for the power range instrument has been deleted since performance of a COT for these channels can be performed when reactor power is > P-10 and thus a 4 hour exemption is not necessary.

- The Note in SR 3.3.1.7 has been deleted since the same allowance exists by allowing four hours to perform the COT after reducing power below P-6 as stated above. The Note in proposed SR 3.3.1.7 addresses entry into Mode 3 by either a controlled shut down through Mode 2 or from an immediate entry into Mode 3 as a result of a reactor trip.

5. A new SR (SR 3.3.1.8) has been included for calibration of the power range instruments every 92 days consistent with Zion Station's CLB. NUREG-1431 requires a calibration of the same instruments every 18 months.

6. The performance of a TADOT every 92 days (SR 3.3.1.9) has been deleted. The functions to which the SR applied (RCP Undervoltage and RCP Underfrequency) are tested on a different frequency.

7. The performance of a COT every 18 months (SR 3.3.1.13) has been deleted. The functions to which the SR applies (Reactor Trip System Interlocks) are tested during the performance of an ACOT.

8. The Notes in SR 3.3.1.14 and SR 3.3.1.15 which state that verification of setpoints is not required for the performance of a TADOT have been deleted. The definition of TADOT (Section 1.0) has been revised to eliminate the discussion related to setpoint. As such, these Notes are no longer necessary.

9. The Frequency of SR 3.3.1.15 has been revised for clarification and consistency. The Note which states that the SR is "Only required when not performed within (the) previous 31 days" has been deleted. The Frequency of "Prior to reactor startup" does not agree with the Applicability of "Above the P-7 interlock". The proposed Frequency of "once within 31 days prior to exceeding P-7" is consistent with the usage rules and clarifies that the SR is only required to be performed one time before exceeding P-7.

10. The requirement to verify RTS Response Time (SR 3.3.1.16) has been deleted. Zion Station's CLB does not require response time testing of the RTS instrumentation. However, in support of Zion Station's replacement of the Westinghouse 7100 analog process protection system with the Eagle 21 digital process protection system, a commitment was made to NRC to test the portion of the overall response times affected by Eagle 21. This commitment was found acceptable by the staff as documented in the Safety Evaluation for Amendment Nos. 138 and 127 to

Facility Operating Licenses DPR-39 and 48, respectively, and is implemented by plant procedures.

11. NOT USED

12. The Trip Setpoint column in proposed Table 3.3.1-1 has been eliminated. The instrument setpoint methodology used at Zion Station has previously been approved by the NRC Staff. The Allowable Values for the instrument functions in Table 3.3.1-1 were derived from the analytical limits contained in the safety analyses using the approved setpoint methodology. Where analytical limits do not exist for a given function, the Allowable Values are based on a plant specific evaluation of the functional requirement for the instrument channel.

13. The Required Channels for the Reactor Coolant Pump Breaker Position, Undervoltage RCP and Underfrequency RCP Functions have been restated from "per RCP" to "4". This change removes the ambiguity associated with separate condition entry for these functions.

14. The following changes were made to the Reactor Trip Breaker Function and the Reactor Trip Breaker Undervoltage and Shunt Trip Mechanism Function to address the design of the RTB Bypass Breakers at Zion Station. The RTB Bypass Breakers at Zion Station will only trip automatically from the undervoltage trip mechanism. The shunt trip mechanism can only be operated manually from the breaker and thus does not fulfill the requirement for a diverse trip feature.

    - Function #20 "Reactor Trip Bypass Breakers and Associated Undervoltage Trip Mechanism" has been added to Table 3.3.1. This Function is required to be OPERABLE whenever an RTB Bypass Breaker is racked-in and closed for bypassing an RTB as stated in new footnote "(j)". By design only one RTB Bypass Breaker can be racked-in and closed at a time, therefore only one breaker is required. In addition, the undervoltage trip mechanism associated with RTB Bypass Breakers must be OPERABLE. The Conditions and Surveillance Requirements are the same as the Reactor Trip Breaker Function.

      Footnote "(k)" has been deleted since the Reactor Trip Breaker Function no longer includes the RTB Bypass Breakers.

    - New footnote "(i)" has been added which only requires the Reactor Trip Breaker Undervoltage and Shunt Trip Mechanism Function for closed and OPERABLE RTBs. Also, the Required Channels has been changed from "1 each per RTB to "2". This change is necessary to clarify that both the undervoltage trip and shunt trip mechanisms are OPERABLE for an RTB.

15. As stated in discussion #12 above, only the Allowable Values were retained in the RTS Instrumentation Table 3.3.1-1. As such, the Bases discussion related to Trip Setpoints and Allowable Values has been revised to reflect the methodology used in determining protective

instrument setpoints. The changes are largely in presentation and intended to clarify that the Allowable Values are derived from the analytical limits contained in the safety analyses and that the Trip Setpoint is determined from the Allowable Value plus some margin to account for instrument uncertainties.

16. Throughout the Specifications and Bases reference is made to the position of the RTBs and the capability of the Rod Control System. For example the phrase "with Reactor Trip Breakers closed and the Rod Control System capable of rod withdrawal" is often used. This phrase is essentially a carry over from the old Westinghouse Standard Technical Specifications and is intended to ensure no control rod movement, intentional or otherwise. The phrase has been abbreviated without changing the intent by stating "Rod Control System is capable of rod withdrawal".

17. The statement "each of the analyzed accidents and transients" has been modified by including the phrase "analyzed for mitigation by the RTS". This is necessary since all accident and transients can not (and should not) be detected by one or more RTS Function. For example the Fuel Handling Accident in Containment would not be detected by an RTS Function. This accident is typically analyzed for shutdown MODES when the RTS is not required to be OPERABLE.

18. The discussion related to the Power Range Neutron Flux Functions and why they are not required in MODES 3, 4, 5 or 6 has been deleted. In some cases control rods may be withdrawn in MODES 3, 4 or 5 for rod drop testing. Control rods may also be withdrawn in MODE 6 for a single assembly while in the Rod Control Cluster Assembly (RCCA) change fixture.

19. Zion Station does not have a Boron Dilution Protection System (BDPS). In addition, the source range detectors are no longer de-energized above the P-6 setpoint. These NUREG-1431 provisions are therefore omitted from the Zion ITS.

20. A clarification was made that low temperature overpressure protection is only required below the LTOP enable temperature. This only includes a portion of MODE 4.

21. The following changes were made to the Turbine Trip Function:

"Fluid Oil" has been changed to "Auto Stop Oil" consistent with plant terminology.

P-9 has been replaced by P-7 since P-9 is not part of the Zion Station design and the corresponding power level was changed from 50% to 10%. A discussion was added to address the effects on P-7 on increasing and decreasing power for both the Auto Stop Oil and Turbine Stop Valve Functions.

"Turbine Electrohydraulic Control System" was changed to "Turbine Lube Oil System" since lube oil pressure is monitored rather than EHC fluid pressure.

22. GENERAL COMMENT. The discussion of the Actions in the Bases has been revised to conform to the changes made to the Conditions, Required Actions and Surveillance Requirements in the Action Table of the proposed ITS (discussion #11, above). In part, the revised Actions Table removed the default actions to a separate Condition. For example, "be in MODE 3", "Reduce THERMAL POWER to < P-7", and "Open RTBs" are now new Conditions. For many of the RTS functions described in the Bases this change resulted in the elimination of the shutdown action discussions.

23. The discussion associated with Insert "J" was previously contained in Condition U and merely represents relocated information.

24. The Note discussion in the Bases for Condition D has been enhanced to address the full intent of the Note. Specifically, the Note also applies to setpoint adjustment of other channels, as such, this information has been included in the Zion ITS.

25. The NUREG-1431 Bases statement for Condition U is replaced with Insert M. This insert reflects the Zion plant specific design regarding interlocks associated with RTS functions P-6, P-7, P-8, P-10, and P-13.

26. Information has been provided which clarifies that only the protective functions with installed bypass capability can be tested in bypass. For Zion Station, the Eagle 21 Process Protection System has installed bypass capability, and the instrument functions processed by Eagle 21 can be bypassed.

27. Clarifying information was provided related to Nuclear Instrumentation System (NIS) channel adjustments in SR 3.3.1.2 and SR 3.3.1.3. In SR 3.3.1.2 an adjustment consists of setting the gain in the NIS power range channels to match the results of the calorimetric heat balance. In SR 3.3.1.3 a calibration is performed (if required) and new currents are installed based on the most recent incore flux map.

28. As stated in discussion #5 above, calibration of the power range instrument channels has been maintained on a 92 day frequency consistent with Zion Station's CLB. The source and intermediate range instrument channels will be calibrated on a frequency of 18 months. Calibration of the source and intermediate range instruments consists of the electronic portions of the channels. No additional calibration is required in MODES 2 or 1 (i.e., obtaining detector plateaus or preamp discriminator curves).

29. SR 3.3.1.5 Actuation logic testing for the Reactor Protection System is modified by a Note that exempts performance of the actuation logic interlock associated with the two loop loss of reactor coolant flow, and two loop RCP breaker position trips when reactor power is above the P-8

interlock. Zion Station's RPS Logic System design precludes performance of these tests when power level is in excess of the P-8 interlock. As such, a note which precludes performance above the interlock, but requires testing when power is reduced below the interlock has been incorporated. This note requires testing to be performed if the unit remains in the MODE of Applicability in excess of 7 days if not performed in the previous 31 days on a STAGGERED TEST BASIS.

A second note has also been proposed to SR 3.3.1.5, as applied to the Reactor Protection Auto Trip Logic. This note exempts the performance of logic testing for the Safety Injection Input from Engineered Safety Feature Actuation System every 31 days on a STAGGERED TEST BASIS. Trip Actuation testing of the Safety Injection Input from Engineered Safety Feature Actuation System cannot be performed without inducing a reactor trip and as such, is performed on an 18 month frequency in accordance with proposed SR 3.3.1.13.

30. A note has been proposed to SR 3.3.1.5 and a new surveillance has been proposed as SR 3.3.1.16, as applied to the Reactor Protection Auto Trip Logic. The note to SR 3.3.1.5 will exclude the need to verify Reactor Trip Bypass Breaker (RTBB) actuation when performing Reactor Protection ACTUATION LOGIC TESTing on a 31 day STAGGERED TEST BASIS. SR 3.3.1.16 will require the performance of an ACTUATION LOGIC TEST of the Reactor Trip Logic to include the RTBBs on an 18 month frequency. Automatic trip logic testing for the RTBBs cannot be performed at Zion Station without inducing a reactor trip, and as such cannot be performed on line. The frequency of this test has been proposed at 18 months and is consistent with Zion Station's current licensing basis.

31. New SR 3.3.1.16, Actuation Logic Testing, is proposed. This SR will be performed prior to entry into MODE 2 if not performed in the previous 31 days. This change is being proposed based on the design of Zion Station's Reactor Protection Logic System, in that testing cannot be accomplished above the interlock setpoint. The frequency of testing proposed is consistent with Zion Station's current licensing basis.

32. Condition R of LCO 3.3.1 is modified to include a Condition of "two or more interlock channels inoperable". The Required Action for this additional Condition is also R.1. Without this change to Condition R, NUREG-1431 Condition U would require entry into LCO 3.0.3 with two interlock channels inoperable, even when the interlock was in the required state for existing plant conditions. With the change, if Required Action R.1 cannot be satisfied, Condition S is entered and the plant is shut down. The combination of modified Condition R and Condition S provide the equivalent of Condition U if two or more interlock channels are inoperable and the interlock <u>is not</u> in the required state. However, with modified Condition R, unnecessary plant shutdowns/transients can be avoided if the affected interlock <u>is</u> in the required state. This is a safety enhancement.

3.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS) INSTRUMENTATION

1. Two Notes have been included which modify the LCO by allowing a specified amount of time before declaring subsequent channels or trains inoperable during testing. The Notes are necessary to facilitate the usage rules for the Improved Technical Specifications (ITS). Without the Notes a given function with multiple channels or trains inoperable may require entry into LCO 3.0.3. Note 1 was previously stipulated in NUREG-1431 Required Actions C, G and H, and has been moved to the LCO for consistency.

2. The format of the ACTIONS Table has been changed to provide consistency with the usage rule throughout the ITS. In addition, some Conditions and Required Actions have been modified to reflect the Zion Station design. The following discussions address the changes made to the Actions Table:

   a) Numerous Required Actions separated by an "OR" logic have different Completion Times. This was corrected by establishing separate default Conditions where applicable.

   b) The typical usage rule of "Enter all applicable Conditions" is not accurate for these LCOs. For example, numerous entry conditions are "one channel inoperable." Therefore, with one channel of anything inoperable, these Conditions would be required to be entered if they were in any other Section. This was corrected by making all conditions not entered directly to read "As required by Required Action A.1 and referenced in Table 3.3.2-1."

   c) NUREG-1431 Condition A is for "one or more channels inoperable." However for all of the ESFAS Functions (and most of the RTS Functions), only one Required Channel is allowed to be inoperable. This Condition should be limited to "one channel inoperable for one or more Functions" to avoid confusion. For example, if there is an applicable Condition for two channels inoperable (i.e., one or more), then entry into that Condition is appropriate and LCO 3.0.3 is not required. However, entry into the Condition for more than one channel of anything is not appropriate and entry into LCO 3.0.3 is intended since there is no appropriate entry condition. Also, entry into the Condition for a second channel inoperable leads one to the Table and then to the applicable Condition. This could easily be misinterpreted as a required "second entry" into the Condition meant to be applicable for only a single channel inoperable. This is reinforced by the inconsistent change in NUREG-1431 that adds a Condition "V" in the RTS Specification for two trains inoperable (enter LCO 3.0.3) but does not indicate that LCO 3.0.3 entry is necessary for any two Required Channels. To correct this, Condition A has been revised for "One or more Functions with one channel inoperable".

   d) Related to item c above, Condition A for "one or more channels inoperable" is apparently intended to provide an applicable

condition for more than one channel of a Function which is inoperable on a "per loop, per SG, etc." basis. However, a separate entry condition for each loop, SG, etc. is not allowed by the LCO. To correct this, the Function entries on Table 3.3.2-1 were redefined on a per loop, per SG, etc. basis. In addition, the Bases statement was enhanced to discuss the ACTIONS NOTE for separate Condition entry to clarify Functions on a per loop, per SG, etc. basis.

e) The default Required Actions associated with an inoperable channel of SI Pressurizer Pressure-Low have been modified to include an option to reduce pressurizer pressure to < P-11. The addition of this action is appropriate since reducing pressurizer pressure to < P-11 removes the function from its associated MODE of Applicability.

f) The default Required Actions associated with an inoperable channel of SI High Steam Flow in Two Steam Lines Coincident with Tavg-Low or Coincident with Steam Line Pressure-Low have been modified to include an option to reduce Tavg to < P-12. The addition of this action is appropriate since reducing Tavg to < P-12 removes these functions from their associated MODE of Applicability.

g) The default Required Actions associated with an inoperable channel of Steam Line Isolation Automatic Actuation Logic and Actuation Relays, and High Steam Flow in Two Steam Lines Coincident with Tavg-Low or Coincident with Steam Line Pressure-Low, have been modified to include an option to close and deactivate all main steam isolation valves and associated bypass valves. The addition of this action is appropriate since isolating all main steam isolation valves and associated bypass valves removes these functions from their associated MODE of Applicability.

h) The default Required Actions associated with an inoperable channel of Turbine Trip and Feedwater Isolation Automatic Actuation Logic and Actuation Relays, and SG Water Level-High, have been modified to include an option to close and deactivate or isolate with a closed manual valve, all main feedwater isolation valves, main feedwater regulating valves, and associated bypass valves. The addition of this action is appropriate since closing and deactivating or isolating with a closed manual valve all main feedwater isolation valves, main feedwater regulating valves, and associated bypass valves removes these functions from their associated MODE of Applicability.

i) The default Required Actions associated with an inoperable channel of Steam Line Isolation Manual Initiation have been modified to include an option to close and deactivate the main steam isolation valve and associated bypass valve on the affected main steam line. The addition of this action is appropriate since closing and deactivating the main steam isolation valve and associated bypass

valve on the affected main steam line removes this function from its associated MODE of Applicability.

3. SR 3.3.2.3 in NUREG-1431 has been eliminated from Zion Station's proposed ITS. In NUREG-1431, this SR applies to the Automatic Actuation Logic and Actuation Relays (Balance of Plant (BOP) ESFAS) line item in Table 3.3.2-1. Zion Station does not have a BOP ESFAS; therefore, the current licensing basis does not address this function. As such, this SR is not applicable for inclusion in the ITS.

4. SR 3.3.2.7 in NUREG-1431 has been omitted from Zion Station's proposed ITS. SR 3.3.2.7 is the performance of a TADOT every 92 days. In NUREG-1431, this SR is applicable to the Auxiliary Feedwater Loss of Offsite Power, Undervoltage Reactor Coolant Pump, and Auxiliary Feedwater Pump Suction Transfer on Suction Pressure-Low functions. In Zion Station's proposed ITS, the Loss of Offsite Power function has been moved to Specification 3.3.5, "Loss of Power (LOP) Diesel Generator Start Instrumentation," and the Auxiliary Feedwater Pump Suction Transfer on Suction Pressure-Low function has been deleted since it is not part of the Zion Station design. Therefore, these functions are either addressed elsewhere in the ITS, or not required and SR 3.3.2.7 is not necessary. For the Undervoltage Reactor Coolant Pump function, the Current Technical Specifications (CTS) require a Channel Functional Test and a Channel Calibration every 18 months. These tests are performed every 18 months since they can not be performed while the unit is at power. Since a Channel Functional Test require the same level of testing as a TADOT, the performance of a TADOT every 92 days would not be practical. Therefore, SR 3.3.2.7 does not apply to the Undervoltage Reactor Coolant Pump function.

5. The Note in SR 3.3.2.7 which states that the verification of setpoints is not required for the performance of a TADOT has been deleted. The definition of TADOT (Section 1.0) has been revised to eliminate the discussion related to setpoint. As such, this Note is not necessary.

6. The requirement to verify ESFAS Response Time (SR 3.3.2.10) has been deleted. Zion Station's CLB does not require response time testing of the ESFAS instrumentation. However, in support of Zion Station's replacement of the Westinghouse 7100 analog process protection system with the Eagle 21 digital process protection system, a commitment was made to NRC to test the portion of the overall response times affected by Eagle 21. This commitment was found acceptable by the staff as documented in the Safety Evaluation for Amendment Nos. 138 and 127 to Facility Operating Licenses DPR-39 and 48, respectively, and is implemented by plant procedures.

7. SR 3.3.2.11 in NUREG-1431 has been eliminated from Zion Station's proposed ITS. In NUREG-1431, this SR applies to the ESFAS Interlock Reactor Trip P-4 function line item in Table 3.3.2-1. Zion Station performs an AOT for this line item in the proposed ITS. As such, this SR is not applicable for inclusion in the ITS.

8. A new Surveillance Requirement has been proposed. SR 3.3.2.8 is the performance of an ACTUATION LOGIC TEST every 18 months. This SR is applicable to the Auxiliary Feedwater SG Water Level-Low (Turbine Driven Pump) function. The performance of this test every 18 months is necessary since the design of Zion Station does not facilitate testing of this function while the unit is at power. The auto-start logic for the Turbine Driven Auxiliary Feedwater pump is two-of-three low levels in two-of-four SGs. Proposed SR 3.3.2.8 is consistent with the CTS.

9. GENERAL COMMENT. Table 3.3.2-1 contains conforming changes related to Conditions, Required Actions and Surveillance Requirements that were previously described in this SER. Therefore, individual changes to the Conditions, Required Actions and Surveillance Requirements will not be addressed unless the change is beyond the scope of the previous discussion.

10. The Trip Setpoint column in proposed Table 3.3.2-1 has been eliminated. The instrument setpoint methodology used at Zion Station has previously been approved by the NRC Staff. The Allowable Values for the instrument functions in Table 3.3.2-1 were derived from the analytical limits contained in the safety analyses using the approved setpoint methodology. Where analytical limits do not exist for a given function the Allowable Values are based on a plant specific evaluation of the functional requirement for the instrument channel.

11. A new footnote has been added to Table 3.3.2-1 for the Steam Line Isolation Manual Initiation function. Footnote "(e)" modifies the MODE of Applicability for this function by stating that the function is required in MODES 2 and 3 "except for steam lines with their MSIV and MSIV bypass valves closed and de-activated". This note is appropriate since steam lines with their MSIV and MSIV bypass valves closed have fulfilled the isolation function required to be performed in the event of a main steam line break.

12. The Auxiliary Feedwater Automatic Actuation Logic and Actuation Relay function has been specified as three separate line items. They are: (1) SG Water Level-Low (Motor Driven Pumps), (2) Undervoltage Reactor Coolant Pump (Turbine Driven Pump), and (3) SG Water Level-Low (Turbine Driven Pump). Specifying three separate line items is necessary due to the special testing requirements associated with the Auxiliary Feedwater Turbine Driven Pump. A brief description of the special testing requirements is provided in discussion #8 above.

13. The Auxiliary Feedwater Loss of Offsite Power function has been removed from Table 3.3.2-1 and placed in Specification 3.3.5, "Loss of Power (LOP) Diesel Generator Start Instrumentation". This change was made because the Loss of Offsite Power function does not provide a direct start of the Auxiliary Feedwater pumps. Instead, this function provides an indirect start of the Auxiliary Feedwater pumps by way of the safe shutdown sequencer associated with an undervoltage condition on the respective ESF bus.

14. As stated in discussion #10 above, only the Allowable Values were retained in the ESFAS Instrumentation Table 3.3.2-1. As such, the Bases discussion related to Trip Setpoints and Allowable Values has been revised to reflect the methodology used in determining protective instrument setpoints. The changes are largely in presentation and intended to clarify that the Allowable Values are derived from the analytical limits contained in the safety analyses and that the Trip Setpoint is determined from the Allowable Value plus some margin to account for instrument uncertainties.

15. The statement "each of the analyzed accidents" has been modified by including the phrase "analyzed for mitigation by the ESFAS". This is necessary since all accidents and transients can not (and should not) be detected by one or more ESFAS Functions. For example the Fuel Handling Accident in Containment would not be detected by an ESFAS Function. This accident is typically analyzed for shutdown MODES when the ESFAS is not required to be OPERABLE.

16. The parenthetical phrase "Keff < 1.0" has been deleted. Shutdown Margin and Keff are mutually exclusive, and for safety injection, the use of Keff is inappropriate.

17. At Zion Station, isolation of the main feedwater system in the event of an SI is intended to prevent excessive cooldown of the primary system, not to limit secondary side mass losses. The NUREG Bases are revised to reflect this ZION plant specific design feature.

18. GENERAL COMMENT. The Applicable Safety Analyses, LCO, and Applicability section of the Bases has been reformatted to provide some level of consistency within the section, and to the corresponding section in the RTS Bases. In general, a brief discussion on what each function protects against is provided, followed by any special instrument considerations (i.e., environmental concerns, logic etc.) and lastly by the applicability of the function as it pertains to the LCO. For the manual initiation functions, the applicability discussion is included with the automatic actuation function discussion when both functions have the same applicability. A brief statement to clarify this point has been included where applicable.

19. Slave Relay Testing has not been incorporated as a Surveillance Requirement for the Steam Line Isolation Automatic Actuation Logic and Actuation Relays. The Steam Line Isolation Automatic Actuation Logic actuates a master relay that directly actuates the MSIVs, as such, Zion Station's design does not incorporate slave relays. Accordingly, only a master relay test is required.

20. GENERAL COMMENT. The discussion of the Actions in the Bases has been revised to conform to the changes made to the Conditions, Required Actions and Surveillance Requirements in the Action Table of the proposed ITS (discussion #9 above). In part, the revised Actions Table removed the default actions to a separate Condition. For example, "be in MODE 3 within 12 hours" and "be in MODE 4 within 18 hours" are now

new Conditions. For many of the ESFAS functions described in the Bases this change resulted in the rearrangement of the shutdown action discussions.

21. Five new Conditions, Required Actions and Completion Times were added to address the revised format of the Actions Table. As such, conforming discussions have been provided in the Bases. The information contained in these discussions is essentially covered elsewhere in the NUREG-1431 Bases.

22. Information has been provided which clarifies that only the protective functions with installed bypass capability can be tested in bypass. For Zion Station, the Eagle 21 Process Protection System has installed bypass capability and the instrument functions processed by Eagle 21 can be bypassed.

23. The Slave Relay Testing surveillance, SR 3.3.2.5 has been modified by a note which excludes inoperable actuated equipment and equipment that is locked, sealed, or otherwise secured in its required position. This note is required to preclude failure of this surveillance when the actuated equipment is inoperable or secured in position, as actuation and continuity testing may not be possible in this condition. This change is consistent with Zion Station's current licensing basis (CTS 3.4.3) which requires safeguards instrumentation and control to be operable when the engineered safeguards equipment is required to be operable.

24. Reference to Automatic Actuation Logic and Actuation Relay testing, and Safety Injection input have not been incorporated into the Phase A isolation function on Table 3.3.2-1. Similarly, the Safety Injection input has not been incorporated into Turbine Trip and Feedwater Isolation and Auxiliary Feedwater functions of Table 3.3.2-1. Zion Station's design does not have inputs into a separate logic for these engineered features. These engineered features are directly actuated from the Safety Injection signal itself, and as such are directly addressed by the Safety Injection function. The Bases has been written to address this interrelationship. Maintaining reference to the Safety Injection input will create confusion relative to other actuation logics which are tested on differing frequencies.

25. Condition Q. is modified to include a Condition of "two or more interlock channels inoperable". The Required Action for this additional Condition is also Q.1. Without this change to Condition U, NUREG-1431 Condition S would require entry into LCO 3.0.3 with two interlock channels inoperable, even when the interlock was in the required state for existing plant conditions. With the change, if Required Action Q.1 cannot be satisfied, Condition R is entered and the plant is shut down. The combination of modified Condition Q and Condition R provide the equivalent of Condition S if two or more interlock channels are inoperable and the interlock <u>is not</u> in the required state. However, with modified Condition Q, unnecessary plant shutdowns/transients can be

avoided if the affected interlock _is_ in the required state. This is a safety enhancement.

26. The lead/lag controller constants referenced for the Main Steam Line Pressure instruments associated with Functions 1.g and 4.e of Table 3.3.2-1 have been changed to reflect Zion-specific values. These values are different than the generic numbers used in NUREG-1431.

3.3.3 POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

1. The Applicability of LCO 3.3.3 has been changed from "MODES 1, 2, and 3" to "According to Table 3.3.3-1." The change was made to address the applicability of the hydrogen monitoring function. This function is only required in MODES 1 and 2. Referencing Table 3.3.3-1 in the Applicability and incorporating the applicable MODES on the PAMs table is consistent with Specification 3.3.1, "RTS" and Specification 3.3.2, "ESFAS".

2. The Note in the ACTIONS Table stating "LCO 3.0.4 is not applicable" has been moved to the Required Actions for which it applies. Placing the Note within the applicable Required Action is appropriate since the Note is intended to only modify those actions which address the restoration of inoperable channels.

3. The ACTIONS Table has been reformatted to be similar to the proposed ACTIONS Table in Specification 3.3.1 and Specification 3.3.2. The proposed ACTIONS Table directs the user "immediately" to Table 3.3.3-1 when one or more functions have two required channels inoperable. Table 3.3.3-1 then provides the appropriate Required Actions to be taken. Default conditions are then specified within the ACTIONS Table. Other than presentation, the proposed ACTIONS Table only differs from the NUREG-1431 version in that it provides a default condition to MODE 3 for the hydrogen monitor function since this function is only applicable in MODES 1 and 2.

4. Table 3.3.3-1 has been revised to reflect the plant specific parameters associated with Zion Station's Regulatory Guide 1.97 analyses which was previously approved by the NRC staff. The proposed table contains all Category I and Type A variables identified for Zion Station.

3.3.4 REMOTE SHUTDOWN SYSTEM

1. The Table listing of the Remote Shutdown System instrumentation and control is proposed to be removed from the Technical Specifications and relocated to the Bases or other licensee controlled documents. This change reflects the Zion CLB is consistent with the provisions of Generic Letter 91-08 for removal of lists and has been approved for the Clinton Power Station (Amendment #68) on that basis. In addition, this change was also included in the joint BWR-6 submittal for Clinton, River Bend, Grand Gulf and Perry Nuclear Station.

2. A special test to perform a TADOT of the reactor trip breaker open/closed indication is not needed since the open and closed indication is located at the reactor trip breaker (not on the remote S/D panels). A TADOT is performed on the reactor trip breakers as part of the requirements contained in Specification 3.3.1, "Reactor Trip System Instrumentation".

3.3.5 LOSS OF POWER (LOP) DIESEL GENERATOR (DG) START INSTRUMENTATION

1. The applicability of "Modes 1, 2, 3, and 4, and when associated DG is required to be OPERABLE by LCO 3.8.2, AC Sources Shutdown" has been modified to state "When associated DG is required to be OPERABLE." This change is necessary to require the DG LOP instrumentation associated with opposite unit DG(s) to be OPERABLE when that DG(s) is required in support of opposite unit Service Water Pumps. This change will not alter the intent of requiring DG LOP instrumentation in Modes 1, 2, 3, 4, 5, or 6 by virtue of the necessary DG(s) being addressed and required in these Modes by LCOs 3.8.1 and 3.8.2.

2. The ACTIONS Note was modified to clarify that separate entry condition is allowed for each function on each bus. This change is necessary since the LCO is specified as three functions consisting of two channels on each bus. In addition, the phrase "per bus" in Conditions A and B was changed to "on one or more buses" to clearly indicate that an inoperable channel for a given function could be on one or more buses.

3. The SR to perform a CHANNEL CHECK has been deleted. The Zion Station design does not include instrumentation capable of assessing channel behavior during plant operations. The instrumentation associated with this LCO are voltage sensing relay devices whose function is to change state at a preset value. As such, these devices are not intended to assess channel behavior.

4. Performance of a TADOT has been specified for the degraded voltage function only, since this is the only function containing installed testable devices. The undervoltage devices do not have installed testing capability.

5. A new SR (SR 3.3.5.2) is proposed for each of the functions associated with the LCO. An ACTUATION LOGIC TEST is required to verify the OPERABILITY of the logic circuitry associated with the devices. The LOP DG Start Instrumentation actuates on a two-out-of-three logic.

The requirement to verify system actuation response time (SR 3.3.5.3) has been deleted. Zion Station's CLB does not require response time testing of the devices associated with LOP DG Start Instrumentation. For a loss of power event concurrent with an ESF actuation which initiates an SI signal, the accident analyses assume the DG start signal is generated by the ESFAS. For a loss of power event which is not concurrent with an SI signal, actuation of systems necessary to mitigate core damage is not required. As such, system actuation response time is not critical.

7. NOT USED

8. The Trip Setpoints and Allowable Values discussion has been revised to provide consistency to Specification 3.3.1, "RTS Instrumentation and Specification 3.3.2, "ESFAS Instrumentation". In addition, an explanation has been provided explaining the relationship between the voltage on the 4.16 kV buses and the voltage measured by the individual voltage measuring devices.

3.3.6 CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION

1. The title of Specification 3.3.6 has been changed from "Containment Purge and Exhaust Isolation Instrumentation" to "Containment Ventilation Isolation Instrumentation". For the Zion Station containment design, the containment purge supply and exhaust valves, and the containment pressure and vacuum relief valves provide a direct pathway from the containment atmosphere to the outside atmosphere. Therefore, Specification 3.3.6 has been modified to reflect the instrumentation necessary to provide isolation capability to these penetrations.

2. The Applicability statement of the LCO has been modified to specify the MODE of applicability for the instruments which provide ventilation isolation. This is necessary because not all of the instruments proposed in Table 3.3.6-1 are required to be OPERABLE in the MODES specified in the NUREG-1431. The proposed format is consistent with the format used in the RTS and ESFAS Specifications.

3. Conditions B and C were revised to reflect the Zion Station design. For the Manual Initiation Function one channel is required for each containment purge supply, containment exhaust, containment pressure relief and containment vacuum relief valve. As such, only one channel can be inoperable for each valve. In addition, the automatic actuation train function has been deleted. This is because the signals which initiate valve closure are not processed through the actuation logic cabinets. There are no master or slave relays associated with this instrumentation. Valve closure on a signal from the proposed radiation monitors is accomplished using relays and contacts associated with the individual circuitry of the affected components. Thus, with one manual channel inoperable the corresponding automatic function is also inoperable.

4. A new Condition (Condition D) and associated Required Action and Completion Time has been proposed for the fuel handling area radiation monitor. The purpose of this monitor is to provide a qualified backup detection method in the event of a fuel handling accident inside containment. Condition D also addresses the condition when two or more containment atmosphere radiation monitor or containment purge radiation monitor channels are inoperable, or when the Required Actions and associated Completion times for Condition A are not met. The proposed Required Action is to isolate the penetrations which provide a direct pathway from the containment atmosphere to the outside atmosphere. This is accomplished by closing at least one valve in each of these

penetrations. This change reflects the Zion CLB which the licensee has opted to retain in the ITS.

5. The surveillance tests for ACTUATION LOGIC TEST (SR 3.3.6.2), MASTER RELAY TEST (SR 3.3.6.3) and SLAVE RELAY TEST (SR 3.3.6.5) have been deleted. As stated in discussion #3 above, the automatic actuation of the components associated with this specification are not processed through actuation logic cabinets and have no master or slave relays associated with their circuitry. Verification that the affected components actuate as required is demonstrated during the performance of the COT specified in proposed SR 3.3.6.2.

6. Trip Setpoints are not provided for these functions. Primarily, these functions are initiated by radiation monitors whose setpoints may be varied to match plant operating status and environment. The setpoints are not based on any specifically identified radiation level for actuation, but rather are set to provide the actuation and filtration as soon as possible into an event which may require such filtration. These setpoints are typically significantly below any setpoint that would be based on regulated dose limits, but sufficiently above operating levels to prevent inadvertent isolation. The setpoints for these ventilation systems are currently administratively controlled, and are proposed to continue to be administratively controlled to allow for ease of revision of the setpoint as necessary to match changing plant conditions.

7. The containment ventilation instrumentation only acts as a backup to the Safety Injection signal in MODES 1, 2, 3 and 4 since these are the only MODES in which this function is required to be OPERABLE. This NUREG-1431 requirement is therefore unnecessary.

3.3.7 <u>CREFS ACTUATION INSTRUMENTATION</u>

1. LCO 3.3.7:
The CREFS is a single train system actuated only by an SI signal or by a Sampler Particulate Iodine Noble Gas (SPING) radiation monitor. Several changes were made to the Actions to reflect the single train system, with no manual actuation switch in the control room, and to maintain current surveillance practices.

2. LCO 3.3.7:
The CREFS does not include a toxic gas protection mode. This LCO is therefore unnecessary.

3. LCO 3.3.7:
A Note is added to prevent a Required Action from requiring the system to be placed in operation when the system is inoperable for other reasons and can not be placed in operation. Without the Note, when the Required Action could not be met, a shutdown would be required in accordance with Condition B, even though the entire system is allowed to be inoperable for up to 7 days per LCO 3.7.9.

4. LCO 3.3.7
The CREFS has only one operational mode which includes rerouting the control room ventilation flow through the charcoal filters. Therefore, the Required Action need only indicate that the system be placed in operation, not specifically in the "emergency mode" or the "radiation protection mode."

5. LCO 3.3.7
The current Frequency of 24 hours for a CHANNEL CHECK of the CREFS actuation instrumentation is retained. The SPING radiation monitors are very reliable and this Frequency is considered adequate. Additionally, since four channels of intake radiation monitoring are provided, redundancy is available that was not considered in the 12 hour Frequency identified in NUREG-1431.

6. LCO 3.3.7
Trip Setpoints are not provided for these functions. Primarily, these functions are initiated by radiation monitors whose setpoints may be varied to match plant operating status and environment. The setpoints are not based on any specifically identified radiation level for actuation, but rather are set to provide the actuation and filtration as soon as possible into an event which may require such filtration. These setpoints are typically significantly below any setpoint that would be based on regulated dose limits, but sufficiently above operating levels to prevent inadvertent isolation. The setpoints for these ventilation systems are currently administratively controlled, and are proposed to continue to be administratively controlled to allow for ease of revision of the setpoint as necessary, to match changing plant conditions.

7. LCO 3.3.7
The applicability of the SI function is revised to match the Applicability of the SI Function in LCO 3.3.2. This clarifies that this function is not required during movement of irradiated fuel assemblies or core alterations while in MODES 5 or 6.

3.3.8 <u>FHBEFS ACTUATION INSTRUMENTATION</u>

1. LCO 3.3.8:
The FHBEFS is a single train system and is required to be "in operation" under certain conditions. Several changes were made to the Actions to reflect the single train system's multiple modes of operation, and to maintain current surveillance practices. The Applicability is also amended to reflect the plant specific licensing basis that requires the FHBEFS during movement of irradiated fuel assemblies in containment with the equipment hatch not intact, and during CORE ALTERATIONS.

2. LCO 3.3.8
A NOTE is added to indicate LCO 3.0.3 is not applicable for this system since the FHBEFS Actuation Instrumentation does not impact the safe operation of the plant or the analyzed response to the operational event. Movement of irradiated fuel assemblies while in MODES 1, 2, 3 or 4 is independent of reactor operations. Therefore, an inoperable FHBEFS

Actuation Instrumentation is not sufficient reason to require a reactor shutdown.

3. LCO 3.3.8
The current Frequency of 24 hours for a CHANNEL CHECK of the FHBEFS actuation instrumentation is retained. The installed radiation monitor is very reliable and this Frequency is considered adequate. Since this system is typically not used for extended periods (i.e., only while moving irradiated fuel assemblies) and is verified to be OPERABLE prior to beginning the fuel movements, CHANNEL CHECKs more frequently than daily are not warranted.

4. LCO 3.3.8
The LCO is modified to delete reference to Table 3.3.8-1. This Table serves no useful purpose at Zion Station. The purpose of this Table in NUREG-1431 is to identify the various instrumentation functions, the required channels for each function, and the SRs associated with each function. At Zion Station, the FHBEFS has only one safety function; i.e., post accident mode of operation. This function is initiated by a single area radiation monitor, only. There are no other initiation capabilities, including manual initiation. Since the FHBEFS instrumentation has only one function, there is no need for a Table such as Table 3.3.8-1. The Table is, therefore, deleted. The setpoint for the single area radiation monitor (which is shared between Unit 1 and Unit 2) for the FHBEFS is currently controlled administratively. Zion Station proposes to retain this CLB item which allows the setpoint to be controlled as a function of plant conditions.

3.3.9 <u>PTEFS ACTUATION INSTRUMENTATION</u>

1. LCO 3.3.9:
An additional specification is proposed to require the appropriate actuation instrumentation to support the PTEFS. The proposed TS is modeled from the NUREG-1431 LCO 3.3.8; the PTEFS is a single train system that is currently not addressed in the TS except for filter testing. Several changes to the Actions are proposed to reflect the single train system, including retention of the current 7 day AOT (for an inoperable filter), and current surveillance practices.

2. LCO 3.3.9
Trip Setpoints are not provided for these functions. Primarily, these functions are initiated by radiation monitors whose setpoints may be varied to match plant operating status and environment. The setpoints are not based on any specifically identified radiation level for actuation, but rather are set to provide the actuation and filtration as soon as possible into an event which may require such filtration. These setpoints are typically significantly below any setpoint that would be based on regulated dose limits, but sufficiently above operating levels to prevent inadvertent isolation. The setpoints for these ventilation systems are currently administratively controlled, and are proposed to continue to be administratively controlled to allow for ease of revision of the setpoint as necessary, to match changing plant conditions.

3.4 REACTOR COOLANT SYSTEM

1. LCO 3.4.1: RCS Pressure, Temperature, and Flow DNB Limits
   LCO 3.4.10: Pressurizer Safety Valves
   LCO 3.4.12: Low Temperature Overpressure Protection (LTOP) System
   LCO 3.4.14: RCS PIV Leakage
   The Applicability NOTE is moved to the LCO section to avoid confusion in the application of SR 3.0.4 for MODE changes (e.g., does entry/exit into/from the Applicability Note constitute a MODE change?).

2. LCO 3.4.1: RCS Pressure, Temperature, and Flow DNB Limits
   The NOTE is revised to clarify that it is meant to apply during the entire transient created by power ramps. These transients often continue for a short period of time beyond the power ramp. This clarification is consistent with current application of this existing note.

3. LCO 3.4.1: RCS Pressure, Temperature, and Flow DNB Limits
   LCO 3.4.7: RCS Loops – MODE 5
   LCO 3.4.12: LTOP System
   LCO 3.4.14: RCS PIV Leakage
   LCO 3.4.18: RCS Isolated Loop Startup
   A Note is added to various NUREG-1431 SRs (SR 3.4.7.1, 3.4.12.3, 3.4.14.2, 3.4.14.3, 3.4.18.1 and 3.4.18.2) to indicate that the Surveillance is only required when the identified equipment is necessary for compliance with the LCO. As written in NUREG-1431, it was possible to fail the SR, but be in compliance with the LCO. This is contrary to SR 3.0.1.

4. LCO 3.4.1: RCS Pressure, Temperature, and Flow DNB Limits
   SR 3.4.1.4 provides only a confirmation of the reading accuracy from SR 3.4.1.3 which has already identified acceptable flow rate. This parameter does not normally change significantly, and there is no need to perform this item in the first 24 hours of full power operation. The 7-day Frequency is reasonable based on it being a confirmatory check. Also, since this Surveillance is a new addition to the Zion Technical Specifications and is a more restrictive requirement than currently exists, the allowance is acceptable.

5. LCO 3.4.2: RCS Minimum Temperature for Criticality
   NUREG-1431 Required Action A.1 is revised from "Be in MODE 3" to "Be in MODE 2 with k_{eff} < 1.0" since this action is sufficient to place the unit in a condition in which the requirements of the LCO are no longer applicable.

6. LCO 3.4.2: RCS Minimum Temperature for Criticality
   The Completion Time for Condition A is revised to 1 hour. The Bases for this item indicate that the time is intended to allow the plant to be placed in MODE 3 in an orderly manner. However, at Zion, experience has shown that an orderly shutdown requires just under 1 hour (59 minutes) to complete. Therefore, the NUREG-1431 completion time is increased to be consistent with plant capability.

7. LCO 3.4.2: RCS Minimum Temperature for Criticality
The Frequency for SR 3.4.2.1 is revised to provide a modified start time since the Note provides specific conditions for applicability of the SR. This type of Frequency prevents an immediate state of noncompliance upon entry into the conditions identified in the Note by providing for a short period of time after entry to conduct the initial performance of the SR. This change is consistent with similar SRs within the NUREG.

8. LCO 3.4.5: RCS Loops – MODE 3
NUREG-1431 entry Condition C is revised to omit "and reactor trip breakers closed," since this is not in the LCO. Also, this is redundant to the rest of the entry condition, "Rod Control System capable of withdrawal," since the RCS is not capable of withdrawal unless the reactor trip breakers are closed.

9. LCO 3.4.5: RCS Loops – MODE 3
LCO 3.4.6: RCS Loops – MODE 4
LCO 3.4.7: RCS Loops – MODE 5
Reformatted the Conditions to move the most likely to occur Condition to Condition A, and revised all Conditions to address only equipment required by the LCO. NUREG-1431 Conditions revised to a more standard presentation of noncompliance with the requirements, i.e., one required item inoperable or two required items inoperable, without addressing the status of equipment that is not required. This is an editorial clarification only.

10. LCO 3.4.5: RCS Loops – MODE 3
NUREG-1431 Required Actions C.2 and D.1 are revised to match the requirements of the LCO. "De-energize the CRDMs" is only one way to make the rod control system not capable of withdrawal. "Disable" the CRDMs is a more generic description that does not dictate a specific method to restore compliance with the LCO.

11. LCO 3.4.5: RCS Loops – MODE 3
LCO 3.4.6: RCS Loops – MODE 4
LCO 3.4.7: RCS Loops – MODE 5
NUREG-1431 SR 3.4.5.3, SR 3.4.6.3, and SR 3.4.7.3 are revised to assure the SR is applicable and performed even if the pump that is not required to be in operation is operating.

12. LCO 3.4.6: RCS Loops – MODE 4
LCO 3.4.7: RCS Loops – MODE 5
NUREG-1431 LCO 3.4.6 Note 2 and NUREG-1431 LCO 3.4.7 Note 3 are omitted. These Notes are not related to the OPERABILITY or operation of heat removal loops. These notes provide only an operational limitation to prevent a transient; this is similar to many notes in procedures that are provided to caution the operator against potential actions that might result in a transient. Hence, this Note is proposed to be provided in the Bases and in procedures only.

13. LCO 3.4.7; RCS Loops – MODE 5, Loops Filled
LCO 3.4.8; RCS Loops – MODE 5, Loops Not Filled
NUREG-1431 LCO 3.4.7 and LCO 3.4.8 are combined into a single LCO 3.4.7, "RCS Loops-MODE 5." NUREG-1431 differences between the two LCOs are revised such that the need for separation is no longer applicable. Proposed LCO 3.4.7 requires two OPERABLE RHR loops if a steam generator is not OPERABLE (i.e., LCO 3.4.7.b not met). This is equivalent to LCO 3.4.8 since a steam generator will not be OPERABLE if all loops are not filled. Item c of NUREG-1431 LCO 3.4.8, Note 1 is not included in the proposed LCO 3.4.7. These controls for draining of the reactor coolant system have been previously controlled by administrative means. These controls are considered adequate and are proposed to be continued as addressed in the Bases for Note 1 of proposed LCO 3.4.7. Proposed LCO 3.4.7 Note 3 is also different from NUREG-1431 LCO 3.4.8 since it would not be possible to meet the conditions set forth in the Note if all loops are not filled (i.e., there could not be one RCS loop in operation). Therefore, this additional Note does not present any additional relaxation. Finally, the MODE 5 requirements for RCS Loops were not separated in the CTS and are the preferred presentation format.

14. LCO 3.4.7; RCS Loops – MODE 5
The LCO is revised to require an OPERABLE SG rather than a SG with a specific secondary side water level. The water level is required by SR 3.4.7.2, and OPERABLE requires that the SG also be otherwise capable of heat removal (e.g., not drained on the primary side).

15. LCO 3.4.7; RCS Loops – MODE 5
The more restrictive requirements of NUREG-1431 Note 1 are not adopted. Note 1 would allow the operating pump to be removed from operation for only one hour in any 8 hour period. However, under some MODE 5 conditions, heat removal can be accomplished without a pump operating. Therefore, as long as the conditions in Note 1 are met, a pump should not be required. This is consistent with the current Zion requirements.

16. LCO 3.4.7; RCS Loops – MODE 5
The more restrictive requirements of NUREG-1431 Note 2 are not adopted. Note 2 would allow an RHR loop to be inoperable only for the purpose of surveillance testing. However, other types of testing are also necessary and the safety of the plant is not related to the type of testing. Therefore, the allowance is proposed to be for any testing.

17. LCO 3.4.9; Pressurizer
The Frequency of SR 3.4.9.2 is revised to retain the current Frequency of 18 months. The pressurizer heaters at Zion Station have exhibited high reliability for the life of the plant, such that an 18 month Frequency is considered sufficient.

18. LCO 3.4.10; Pressurizer Safety Valves
The NOTE limitation of 54 hours in MODE 3 is omitted. Such a limitation places unnecessary restrictions on the startup sequence for the plant. This exception is used when the valve lift settings have been made under cold conditions, but there has not been a correlation established

between the lift settings made under cold conditions and lift settings made under hot (ambient) conditions. This testing provides confirmation of OPERABILITY (proper lift setting) under hot conditions. The 54 hour limit imposed for this exception is intended to establish a bound on the duration of the exception. However, MODE 3 is entered at 350°F, and ambient conditions do not exist until the no-load T_{avg} (approximately 550°F) is reached. Based on the variability of startup sequences (i.e., required testing, RTD cross calibrations, etc.), a fixed limit of 54 hours is not appropriate. By removing the limit, the bound will become MODE 2, allowing for variability in startup sequences and timing, while still providing assurance of OPERABILITY prior to unit startup.

19. LCO 3.4.10: Pressurizer Safety Valves
LCO 3.4.12: Low Temperature Overpressure Protection (LTOP) System
The actual numerical values for an LTOP enable temperature are replaced with a reference to such a temperature specified in the PTLR. The LTOP enable temperature will then be calculated and controlled by the licensee in accordance with the topical reports identified in the PTLR.

20. LCO 3.4.10: Pressurizer Safety Valves
The Completion Time for Required Action A.1 is revised to 1 hour. The completion time of 15 minutes is not justified since the Completion Time for the complete loss of many functions is 1 hour under LCO 3.0.3, and substantial pressurizer relief capability remains available. This 1 hour Completion Time is consistent with the CTS.

21. LCO 3.4.10: Pressurizer Safety Valves
The last sentence of SR 3.4.10.1 is duplicative of the LCO, and is unnecessary. This requirement is only needed if the LCO allows ± 3% of the nominal setpoint but the SR must restrict the as-left to ± 1%. This is not the case for Zion since the LCO is only for ± 1%.

22. LCO 3.4.11: Pressurizer PORVs
NUREG-1431 Actions Note 2 is omitted; however, the intent is accomplished by an added Note in SR 3.4.11.2. Note 2 allowed entry into the Applicable MODES while in any of the Conditions. However, its stated purpose (in the Bases) was to allow entry into the appropriate conditions for conducting the surveillances. A more appropriate way to accomplish the intent is to modify the SR Frequency through the use of the proposed Note in the Surveillance. Such a Note will also allow the appropriate conditions for testing to be attained without unintentionally allowing nonconservative MODE changes.

23. LCO 3.4.11: Pressurizer PORVs
NUREG-1431 Condition A is deleted. Per the BASES, this LCO requires only that the PORVs be capable of being manually cycled. Therefore, if the PORV is still capable of being manually cycled it meets the LCO and is not inoperable; and no Condition entry is required. Similarly, the phrase "and not capable of being manually cycled" is deleted from NUREG-1431 Conditions B and E since this constitutes inoperability and is redundant.

24. LCO 3.4.11: Pressurizer PORVs
The "separate Condition entry" Note is modified to also apply to each inoperable block valve. This change is consistent with both the application of ITS to "enter all applicable conditions," and with the intent of Required Action F.3 which provides 72 hours to restore the remaining inoperable block valves after one inoperable block valve is restored. As written in NUREG-1431, the 72 hours of Required Action F.3 will never be fully utilized since (without separate Condition entry) the 72 hours of Required Action C.2 will always expire first. With Required Action F.3 omitted and "separate Condition entry" allowed for block valves, the time to restore the inoperable block valve will depend on when it became inoperable, not when the first block valve became inoperable. This is consistent with the intent.

An editorial preference was also incorporated to separate the immediate compensatory actions from the restoration actions for both inoperable PORVs and inoperable block valves. This eliminates duplicate actions of NUREG-1431 E.2 and F.1.

25. LCO 3.4.11: Pressurizer PORVs
The NUREG-1431 Conditions are reformatted to eliminate duplicate Required Actions of NUREG-1431 Condition D and Condition G, and Required Actions E.3 and E.4.

26. LCO 3.4.11: Pressurizer PORVs
NUREG-1431 Required Action C.1 is revised to reflect plant design. Zion Station does not have a switch to place a PORV in manual control. However, power can be easily removed and restored within the control room to accomplish the same effect. This is consistent with the current TS.

27. LCO 3.4.11: Pressurizer PORVs
NUREG-1431 SR 3.4.11.3 is revised to reflect plant design. The solenoid valves are tested in the PORV surveillance (SR 3.4.11.2). The check valves are not required to open as a safety function. Their safety function is to maintain pressure in the accumulator. Therefore, the SR is revised to test the leak tightness of the check valves. If the check valve won't open to establish appropriate pressure in the accumulator, the PORV will be inoperable due to inadequate pressure, not because the check valve won't open.

28. LCO 3.4.12: LTOP System
The LCO, Actions and Surveillances are revised to include an additional plant specific, previously approved method for pressure relief.

29. LCO 3.4.12: LTOP System
The current TS 3.3.2.G ACTION e which excludes the applicability of LCO 3.0.4 is retained for the PORVs. This provision has been retained to maintain the current flexibility for startup; which should not be precluded since a limited time is allowed in the Conditions provided for inoperable PORVs, and many aspects of PORV OPERABILITY are not required

in the operational MODES (i.e., above the conditions with a potential for LTOP.)

30. LCO 3.4.12: LTOP System
NUREG-1431 Required Action B.1 NOTE is moved to the LCO and SR sections to avoid entry into the Actions. Entry into the Actions without performing the Required Actions has no safety benefit. Also, the limitation of 15 minutes has no real basis and is removed. "During switchover operation" is sufficient to define the limitations; this is usually significantly less than 15 minutes.

31. LCO 3.4.12: LTOP System
NUREG-1431 Required Action D.1 is deleted. This "required action" could easily be misinterpreted as an allowance to enter the identified condition when LCO 3.0.4 would not otherwise allow such entry. If LCO 3.0.4 does not prevent entry into the identified conditions, then such an action would restore compliance and is an allowed option without specifying the Required Action. Such allowance can be identified in the BASES.

32. LCO 3.4.12: LTOP System
NUREG-1431 Condition G entry condition of "Required Action and associated Completion Time ... not met" is revised to exclude the "immediately ... initiate action to..." Required Actions (Conditions A and B). This is consistent with the philosophy of not needing a default condition for any Required Actions to immediately initiate some sort of action. This is consistent with the usage of default conditions throughout the NUREG-1431; there are no other locations within NUREG-1431 which have default actions specified for immediately initiate action Required Actions.

33. LCO 3.4.13: RCS Operational Leakage
Required Actions are revised to retain the current Zion Completion Time of 24 hours to either identify or reduce unidentified leakage. Four hours is not sufficient time to identify or reduce the leakage. The extended time does not significantly increase the probability of failure and may prevent an unnecessary shutdown.

34. LCO 3.4.13: RCS Operational Leakage
The information in SR 3.4.13.1 Frequency Note was moved to the SR and a pressure limitation was added to assure meaningful data. The NUREG-1431 Frequency of 72 hours does not provide for some period of time to perform the SR if the SR is not current (last performed more than 90 hours ago) and steady state operation is subsequently established. Therefore, the SR would immediately be overdue. SR 3.0.3 may be applicable to allow 24 hours to perform the SR; but this is not clear and may be overlooked. Therefore, a condition based Frequency has been added with a time zero beginning with the establishment of steady state conditions.

35. LCO 3.4.14; RCS PIV Leakage
The LCO was revised to require OPERABLE valves rather than only meet a leakage limit, since the Actions and Surveillances address more than leakage limits (i.e., interlock functions).

36. LCO 3.4.14; RCS PIV Leakage
Note 1 of SR 3.4.14.1 was revised to eliminate a conflict with Frequency.

37. LCO 3.4.14; RCS PIV Leakage
The ITS omitted Note 2 of NUREG-1431 SR 3.4.14.1 since it will never be used. Note 1 indicates that the SR is only required in MODES 1 and 2. NUREG-1431 Note 2 indicated that the SR is not required when in the shutdown cooling mode of operation. However, the plant will not be in the shutdown cooling mode of operation in MODES 1 or 2. Therefore, Note 1 is sufficient to preclude the conditions identified in Note 2.

38. LCO 3.4.14; RCS PIV Leakage
The ITS added proposed Note 3 to SR 3.4.14.1 to omit applicability of last Frequency to the RHR motor operated valves as approved in Zion Amendment 112/101. The ITS also revised the SR acceptance criteria in accordance with the identified amendment.

39. LCO 3.4.14; RCS PIV Leakage
The ITS omitted NUREG-1431 Notes for SR 3.4.14.2 and SR 3.4.14.3 since the associated Applicabilities of LCO 3.4.12 and LCO 3.4.14 should prevent any conflict.

40. LCO 3.4.15; RCS Leakage Detection Instrumentation
The ITS reformatted Actions to delete Required Actions A.2 and B.2 and Condition F. These actions are unnecessary since appropriate compensatory actions are provided for the inoperable leakage monitoring equipment, and since the inoperable equipment is not really the primary indication of leakage for a PWR. The primary indication is provided by the RCS water inventory balance conducted per SR 3.4.13.1. Additionally, other monitored parameters (e.g., humidity, temperature, and pressure) provide indications of potential leakage. Generally, leakage sources are slow to propagate. Other monitored parameters can be trended to identify any unusual conditions and the need for any additional action. As such, shutdown due to loss of these secondary indications is not warranted and is not required by the current TS if appropriate other indications ("compensatory actions") are available.

41. LCO 3.4.15; RCS Leakage Detection Instrumentation
The Surveillance Frequency for the Sampler Particulate Iodine Noble Gas (SPING) containment atmosphere radioactivity monitor is revised to retain the current Zion Frequency of 24 hours. Industry and plant specific experience indicate that the SPING radioactivity monitors are very reliable; therefore, the extended time does not significantly increase the probability of failure and prevents an unnecessary use of manpower.

41.a The requirement to perform a CHANNEL CALIBRATION on the containment sump monitor has not been adopted. At Zion Station water accumulation in the sumps is determined by sump pump run times (in minutes) multiplied by a known volumetric flow rate for the pumps (in GPM). An accumulation rate can then be determined by dividing this value by the total elapsed time the water has accumulated in the sump. The sump pump run time instruments are not calibrated since there are no adjustments associated with the instrument.

42. LCO 3.4.16: RCS Specific Activity
The ITS omitted NUREG-1431 Required Action B.1 to perform SR 3.4.16.2. This SR must be performed to verify "restoration" of the specific activity to within limits, and, therefore does not need to be otherwise required. Further, if the Condition is entered and the plant is in MODE 2 within 4 hours, the NUREG-1431 Required Action is in conflict with the NOTE of SR 3.4.16.2 and its Bases. Finally, this action is not required by the current Zion Technical Specifications.

43. The phrase "from a sample taken in MODE 1 after a minimum of 2 effective full power days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours" has been deleted. This information is redundant to the information in the Note which already modifies the Frequency. This format is acceptable to the staff.

44. LCO 3.4.18: RCS Isolated Loop Startup
The LCO was revised to focus the requirements on conditions needed to unisolate an isolated RCS loop, rather than on conditions requiring the isolated loop to remain isolated. Additionally, the ITS added a NOTE to allow adequate boron concentration to override the temperature requirements: This is consistent with Zion's current safety analysis.

45. LCO 3.4.18: RCS Isolated Loop Startup
The Conditions and Required Actions were reformatted to eliminate the use of Notes. This is an editorial change only.

46. LCO 3.4.19: RCS Loops Test Exceptions
The ITS omitted entire LCO since no test exceptions are required. Zion Station will not be operated in the natural circulation mode.

47. LCO 3.4.3: RCS Pressure/Temperature Limits
Conditions A and C were revised to correct an inconsistency with Required Action B.2 which requires the plant to be placed in MODE 5 with RCS pressure < 500 psig. This is inconsistent with the entry conditions for Condition A which would no longer be applicable once the plant is in MODE 5 regardless of the pressure. This is also inconsistent with the Required Actions of Condition C which also allow any pressure in MODE 5 since the Completion Time is prior to entering MODE 4. Since the intent is clearly to prevent nonductile failure which could be brought on by overpressurizing, the Conditions and Completion Times are revised for consistency with the Required Actions that maintain low pressure.

48. LCO 3.4.17; RCS Loop Stop Valves
SR 3.4.17 has been broken into two separate SRs to facilitate the Zion Station design. This change is necessary since valve position indication for the RCS Loop Stop Valves is lost when the breaker for the associated valve is opened. This change is necessary to avoid entering the associated Actions for Specification 3.4.17 every 31 days each time the RCS Loop Stop Valve breakers are closed, or to avoid making a containment entry every 31 days. The proposed format is consistent with the approach used in Specification 3.5.1, "Accumulators".

49. LCO 3.4.15; RCS Leakage Detection Instrumentation
The ITS revised the Completion Time of proposed Required Actions A.1 and B.2 from "Once per 24 hours" to "Once per 24 hours during steady state operation" since SR 3.4.13.1 can only provide useful information in MODE 1 during steady state operations. This is acceptable since the design includes several other monitoring systems (e.g., atmospheric radiation monitors, humidity, temperature, and pressure), which provide indication of potential leakage.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

1. In the APPLICABILITY of Specification 3.5.1 the phrase "pressurizer pressure" was changed to "reactor coolant system pressure" since the range of the pressurizer pressure instrumentation is only 1700 psig to 2500 psig. The APPLICABILITY of specification 3.5.1 includes MODE 3 with (RCS) pressure > 1000 psig.

2. In SR 3.5.1.1 the FREQUENCY has been changed from "12 hours" to "Prior to removing power from the valve". For the Zion Station design, the position of the accumulator discharge valves during power operations is provided by the ESF Status Panel Lights. The function of the ESF Status Lights is to alert the operators that an ESF component is not in the correct position. For the accumulator isolation valves, the lights would be ON when the valves are closed, not when the valves are full open. As such, when the ESF Status Lights are OFF, there is no assurance that the valves are full open. To ensure the valves are in their assumed accident position, the valves are verified to be full open prior to being deenergized. Prior to deenergizing the accumulator discharge valves, indication is provided by the position switches internal to the valve motor operator. When the valves are deenergized, the position indication circuit is also deenergized. Since a motor operated valve should not change position with power removed, the valves are assumed to be in their accident position. Verification that the valves are deenergized is assured by performing SR 3.5.1.6. In addition, the accumulator discharge valves are administratively controlled to ensure a mispositioned valve is unlikely.

3. The maximum accumulator nitrogen cover gas pressure is not assumed in any accident analysis for Zion Station. The limit on maximum gas pressure, as stated in NUREG-1431, is to prevent accumulator relief valve actuation and ultimately preserve accumulator integrity. Since this parameter is not an assumption in any accident analysis and is not

included in Zion Station's Custom Technical Specifications (CTS), the requirement was not incorporated in proposed Specification 3.5.1.

4. In SR 3.5.1.6 the phrase "when pressurizer pressure is ≥ [2000] psig" has been deleted. In the Zion Station design, permissive P-11 is not interlocked to automatically open the accumulator discharge valves when RCS pressure is above the P-11 setpoint. To ensure accumulator OPERABILITY and to comply with SR 3.0.4, power to the accumulator discharge valves will be removed prior to exceeding 1000 psig in MODE 3.

5. A discussion has been provided to reflect the design of Zion Station's accumulator discharge valves with regard to an SI actuation signal and permissive P-11. When RCS pressure increases above the P-11 setpoint, an alarm alerts the operators to open the accumulator discharge valves. This differs from NUREG-1431 where the accumulator discharge valves automatically open when the P-11 setpoint is exceeded.

6. In the APPLICABILITY section of the BASES, the phrase "rate of RCS blowdown is such that..." has been deleted. When considering the factors which influence the performance of the ECCS pumps to maintain peak clad temperature below the 10 CFR 50.46 limits, the rate of RCS blowdown is just one of many variables evaluated. To imply that below 1000 psig in MODE 3, ECCS performance is adequate based on the decreased rate of RCS blowdown, is not entirely accurate and may cause some confusion. In some scenarios, the decreased rate of RCS blowdown may cause an increase in peak clad temperature. However, in all cases (i.e., all MODES) the ECCS pumps are capable of preserving the 10 CFR 50.46 acceptance criteria.

7. The Note in the APPLICABILITY of Specification 3.5.2 in NUREG-1431 has been modified as follows:

   a) The Note has been moved from the APPLICABILITY to the LCO. Allowing the SI and RHR pump flow paths to be isolated while in MODE 3 is an exception to the LCO (i.e., having less than two ECCS trains OPERABLE), not the APPLICABILITY.

   b) The Note has been modified to allow both residual heat removal flow paths to be isolated for performance of required testing. This allowance is necessary since the check valves in the RHR cold leg injection lines are Pressure Isolation Valves (PIVs) and are required to be tested at a pressure > 1850 psig. In addition, the phrase "to perform pressure isolation valve testing per SR 3.4.14.1" has been replaced by "for performance of required testing". The details of required testing are appropriately contained in the Bases.

   c) The 2 hour restriction which limits the time both SI or RHR pump flow paths are isolated has been deleted. Zion Station's CTS do not restrict the time the injection flow paths are isolated for testing. The current practice at Zion Station is to return the isolated injection flow paths to service immediately following the

completion of the PIV leakage test. The 2 hour time limit specified in NUREG-1431 is not required.

d) The allowance to operate in MODE 3 with ECCS pumps declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System" for up to 4 hours is not required. For Zion Station, the LTOP region is reached in MODE 4.

8. The Current Licensing Basis (CLB) for Zion Station is to allow one centrifugal charging pump, or one SI pump, or one RHR pump to be inoperable for up to 7 days provided the remaining ECCS pumps are OPERABLE. This allowance has been incorporated into Zion's proposed Improved Technical Specifications.

9. A listing of the valves (and their required positions) in the ECCS flow path which could render both ECCS trains inoperable has been incorporated as a Table in the Bases (proposed Table B 3.5.2-1). Locating this level of detail in the Bases is consistent with the information typically contained in the Bases. In addition, the FREQUENCY has been changed from "12 hours" to "Prior to removing power from the valve operator". The position indicators for the valves listed in proposed Table B 3.5.2-1 are provided on the ESF Status Panel. A discussion of how the lights on the ESF Status Panel function and why it is necessary to verify valve position prior to deenergizing the motor operators is provided in discussion #2 of this document section. In addition, a new SR (SR 3.5.2.2) has been proposed to verify power is removed from the valve operators every 31 days.

10. Proposed SR 3.5.2.4 has been incorporated to ensure there are no shorts in the closing control circuit switch contacts for each SI pump to RWST recirculation stop valve and in the opening control circuit switch contacts for each recirculation sump to RHR pump isolation valve. Zion Station has previously received NRC staff approval to allow these valves to remain energized provided the switch contacts are checked for shorts every 92 days.

11. SR 3.5.2.4 in NUREG-1431, which verifies each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head, has been deleted. The requirements to test ASME Code Class 1, 2, and 3 components in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (as required by 10 CFR 50.55a) is specified in proposed Technical Specification 5.5.8, "Inservice Testing Program". The acceptance criteria set forth in the Inservice Testing Program for ECCS pumps bounds the required pump head assumed in the safety analysis. Therefore, specifying a separate SR whose acceptance criterion is less stringent than other Technical Specifications requirements is redundant.

12. The paragraphs in the BACKGROUND section of BASES 3.5.2 which describe an ECCS train have been reworded for clarification purposes. Since the ECCS train concept is different than the existing CTS ECCS requirements,

additional clarification of Specification 3.5.2 is considered beneficial.

13. In the APPLICABILITY section of BASES 3.5.2, the phrase "SI signal setpoint is manually bypassed by operator control" has been deleted. Below MODE 3 several SI signals are required to be OPERABLE. As such, the SI signal can not be bypassed until the unit is below MODE 4.

14. The Zion Station onsite emergency power supply design incorporate 3 emergency diesel generators (EDGs). Each EDG powers 2 ECCS pumps. A loss of 1 EDG would cause 2 of the 6 ECCS subsystems to be inoperable. The pumps are paired such that upon the loss of an EDG only 1 high head pump and one medium head pump, or 1 high head pump and 1 low head pump, or 1 medium head pump and 1 low head pump are lost.

15. The ECCS throttle valve stems at Zion Station are provided with collars welded in place to ensure the valves can not be inadvertently repositioned. These valves essentially function as fixed orifices since their positions are not required to change during an accident and the valves are not required to be repositioned.

16. RWST temperature is not specified in Zion Station's CTS. There is no installed instrumentation capable of measuring tank temperature. The minimum and maximum RWST temperature limits used in the accident analysis are preserved by the environmental conditions of the Auxiliary Building since the RWST is contained within the confines of the Auxiliary Building. Temperature excursions in the Auxiliary Building above 120°F or below 40°F do not typically occur and would be insufficient in duration to allow the water in the RWST to reach thermal equilibrium.

17. The frequency for proposed SR 3.5.4.2 (NUREG SR 3.5.4.3) is changed from 7 days to 31 days. The Current Licensing Basis (CLB) for Zion Station is to verify the boron concentration and water volume of the RWST every 31 days.

18. The design of the Containment Spray pumps is such that a portion of the pump discharge flow is directed through an eductor back to the suction of the pump. The flow through the eductor provides the motive force to draw NOH from the spray additive tank. While this flow path does provide minimum flow through the pumps, the Containment Spray pumps, unlike the ECCS pumps, are not expected to operate at or near their shutoff head.

19. For the Zion Station design, the Containment Spray pumps do not take suction from the containment recirculation sump following switchover from the injection phase to the recirculation phase of a LOCA. If required, the RHR pumps are capable of being aligned to provide containment spray.

20. The Zion Station design does not utilize a Boron Injection Tank (BIT). In addition, the station is not analyzed for an inadvertent ECCS

actuation or a feedline break since these details were not required at the time of initial licensing.

21. The LCO for Specification 3.5.5 has been reworded to reflect the actual assumption used in the safety analysis.

22. Proposed SR 3.5.5.1 has been modified to remove prescriptive details outlining performance methods which verify the manual seal injection valves are set to provide a flow equivalent to ≤ 80 gpm at 0 psig RCS pressure. This surveillance has been rewritten to specify the analytical limit, moving performance methods to the Bases. The FREQUENCY has also been modified from "31 days" to "Prior to entering MODE 2 whenever RCS pressure has been < 1000 psig". During a unit heatup from cold shutdown, the seal injection valves are throttled as required to ensure the RCP seals receive the required flow. At approximately 1000 psig the seal injection valves are typically set. Minor adjustments are then made using the RCP Labyrinth ΔP Controller Valve. If after entering MODE 2 further adjustment of the manual throttle valves is required, the unit would enter the REQUIRED ACTIONS of LCO 3.5.5 until the flow has been confirmed to be within the limit of the safety analysis.

23. SR 3.5.2.3 in NUREG-1431 verifies the ECCS piping is full of water every 31 days. This SR was not retained in the proposed Zion Station Improved Technical Specifications because the installed piping does not contain the appropriate vent paths to ensure there is no entrained gas in the piping. This requirement is not specified in Zion Station's CTS.

24. The last two sentences in the first paragraph in the Applicability of Specification 3.5.2 were deleted since they do not accurately reflect the basis for the centrifugal and safety injection pumps at Zion Station. As previously stated in the Background Section, the design basis for the centrifugal charging, SI, and RHR pumps is based on vendor supplied test curves. Actual pump curves are periodically checked as part of the IST program to verify acceptable degradation. To establish an acceptable limit of pump performance, all pump curves are evaluated. The most limiting point from each curve is chosen and a new combined curve is generated that bounds all of the individual curves. This curve is then degraded to allow for future degradation and measurement uncertainties. The amount of degradation applied to the curve bounds the required developed head assumed in the safety analysis.

3.6 CONTAINMENT SYSTEMS

The Notes which allowed air lock doors located in high radiation areas to be verified by administrative means has been deleted. At Zion Station access to the air lock doors does not require entry into a high radiation area. Both the inner door and outer door can be locked from outside containment.

2. A Note has been added to the LCO for Containment Isolation Valves (CIVs). The Note states that this specification is not applicable to

main steam isolation valves or main feedwater isolation valves. The main steam isolation valves and main feedwater isolation valves are addressed in other specifications. As such, this Note eliminates the conflict which would exist between the Required Actions and/or Completion Times of the valve specifications and the CIV specification. The appropriate actions and surveillance requirements are contained in the valve specifications to ensure their containment isolation function is met.

3. In Specification 3.6.3, the Note for the Required Actions and SRs which state that "Valves and blind flanges in high radiation areas may be verified by use of administrative means" has been modified by removing the phrase high radiation areas. This change allows verification of valves and blind flanges under the controls of the Equipment Out of Service Program to be verified by administrative means. This method of verification is deemed acceptable since the Equipment Out of Service Program will maintain positive controls over valve and blind flange position by precluding operation of these devices without prior approval of a Senior Reactor Operator. In addition, valves and blind flanges under the control of the Equipment Out of Service Program are clearly identified by tags which alert station personnel that these devices can not be repositioned. All station personnel with unrestricted access to the protected area are instructed in the use of Equipment Out of Service Program as part of the General Employee Training Program.

4. A 72 hour Completion Time is proposed when one CIV is inoperable in a penetration with only one CIV and a closed system. The 72 hour Completion Time is based on the fact that a closed system is a passive device and functions to provide an isolation barrier without any automatic or operator actions. As such, the reliability of a closed system to act as a penetration isolation boundary is relatively high. The 72 hour Completion Time also permits some period of time to repair the inoperable CIV without isolating the penetration which may result in a unit shutdown.

5. Zion Station has conducted an evaluation which concluded that the containment purge valves were capable of closing against the maximum containment pressure resulting from a DBA when limited to a maximum opening of 50 degrees. In addition, the 10 inch pressure and vacuum relief valves are also capable of closing against the maximum design containment pressure rise. As such, the Current Licensing Basis (CLB) allows these valves to be open in MODES 1, 2, 3 and 4 for safety related reasons.

Periodic valve position verification of containment isolation valves or containment spray valves are not part of Zion Station's CLB. A review was conducted of valve mispositioning events at Zion Station which concluded that there were not any valve mispositioning events which would have been identified or prevented by the inclusion of this surveillance requirement. The conclusion was reached that this surveillance would add little to the safety of Zion Station, based on

past operating experience. As such, Zion Station management has elected not to include these SRs in the proposed ITS.

7. The requirement to verify the isolation time of each power operated valve has been eliminated. Power operated CIVs which do not receive a containment isolation signal are not assumed in the applicable safety analysis. Therefore, these valves are not required by the CIV specification.

8. This change represents a unique plant specific design. Post accident recirculation phase containment spray (CS) is provided by the discharge of the Residual Heat Removal (RHR) pumps through the CS spray header. The CS pumps do not have the capability to take suction from the containment recirculation sump or from the discharge of the RHR pumps (i.e., piggy back). As such, an additional Condition has been provided for an inoperable CS recirculation header. The 7 day Completion Time for restoring an inoperable CS recirculation header is consistent with Zion Station's CLB.

9. Three new SRs have been added to support the Zion Station design. Two SRs relate to fuel oil since the motive force for one of the CS pumps is a diesel engine. Verification of the fuel oil tank level is consistent with Zion Station's CLB. Verification of fuel oil properties is a new requirement. The Reactor Containment Fan Cooler (RCFC) damper position verification is also consistent with Zion Station's CLB, except that the ITS permits exempting required dampers that have been immobilized in their accident position from the periodic position checks, since such checks would be superfluous.

10. The paragraph in the Bases Background section which states "All penetrations required to be closed during accident conditions are"..."capable of being closed by an automatic containment isolation system" is not entirely correct. The Containment is required to be OPERABLE in MODES 1, 2, 3, and 4. However, in Zion Station's Current Technical Specifications, as well as NUREG-1431, the Containment Pressure-High function contained in Specification 3.3.2, ESFAS is only required in MODES 1, 2, and 3. As such, there is no automatic isolation capability in all the MODES in which the Containment is required to be OPERABLE. To correct this inconsistency, the Bases were clarified by stating the automatic containment isolation function is capable in MODES 1, 2, and 3, and the manual isolation function is capable in MODE 4.

11. The Background section for the Containment Air Locks has been revised to reflect plant design. The Zion Station design includes two air locks. The personnel air lock, which is integrated into the equipment hatch, is a conventional design and is used for normal containment ingress and egress. The emergency air lock is an escape tube from containment and, as such, differs in design. In addition, editorial enhancements have been made to the Background section to facilitate readability.

12. The Zion Station design has not been evaluated for an inadvertent containment spray actuation. The event which results in the worst

negative containment pressure condition is a cooldown from 120°F to 65°F. This evaluation was originally provided in response to NRC questions during the initial licensing process for Zion Station. Therefore, that portion of the Applicable Safety Analyses in the Bases for LCO 3.6.6.A dealing with inadvertent containment spray actuation is deleted.

13. The Zion Station design does not have the capability to verify the flow (rate) from the spray additive tank. As such, this SR is not part of the CLB. To perform this SR, a system modification would have to be performed. Therefore, this SR was not proposed as part of Zion Station's ITS.

14. The following bracketed items in NUREG-1431 were not incorporated in the Zion Station ITS since they do not conform to the Zion Station design:

    a) Required Action D, SR 3.6.3.6, SR 3.6.3.9, SR 3.6.3.11 - These items pertain to containment designs which utilize a shield building. Zion Station's containments are reinforced concrete structures with integral steel liners. They do not include a separate shield building.

    b) Required Action E, SR 3.6.3.7 - These items pertain to containment purge valves which have resilient seal material. The Zion Station containment purge valves do not have resilient seal material.

    c) SR 3.6.3.10 - the surveillance requirement to verify the maximum opening of the containment purge supply and purge exhaust valves has not been incorporated in the proposed Technical Specifications. Permanent plant modifications have been made to the valve actuators which prevent the valves from opening greater than 50 degrees. Removal of or alteration to the valve actuators such that the valves could open greater than 50 degrees would constitute a change to the facility design, which would require review under 10 CFR 50.59.

15. NUREG-1431 provides a specific action to enter LCO 3.0.3 when any combination of three or more trains are inoperable. This action is necessary because NUREG-1431 has separate actions for two containment cooling trains inoperable and one CS train inoperable. As such, without the LCO 3.0.3 entry condition the unit may be outside its design basis. In the Zion Station ITS, the actions are constructed to allow one CS train and two RCFCs to be inoperable. In this condition the unit still has the necessary components (i.e., 2 CS trains and 3 RCFCs) to perform its intended safety function in the event of a DBA. As such, for Zion Station's ITS, an action for entry into LCO 3.0.3 is not required.

16. SR 3.6.6.A.4 in NUREG-1431, which verifies each CS pump's developed head at the test flow point is greater than or equal to the required developed head, has been deleted. The requirements to test ASME Code Class 1, 2, and 3 components in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (as required by 10 CFR 50.55a) is

specified in proposed Technical Specification 5.5.8, "Inservice Testing Program". The acceptance criteria set forth in the Inservice Testing Program for CS pumps bound the required pump head assumed in the safety analysis. Therefore, specifying a separate SR whose acceptance criteria are less stringent than other Technical Specification requirements is unnecessary.

17. A new LCO and associated Bases have been added. LCO 3.6.9, "Isolation Valve Seal Water (IVSW) System," is provided to help ensure containment leakage following the worse case design basis accident is reduced to less than the maximum value assumed in the safety analysis. This LCO is unique to Zion Station and is contained in the CTS (3.9.I). The IVSW system satisfies Criterion 3 of the NRC Policy Statement and is therefore inserted in the TS.

18. In CTS 3.9.6, the requirement to limit the maximum opening of the containment purge supply and purge exhaust valves to 50 degrees, and the associated surveillance requirement (CTS 4.9.6.B) which verifies the valves are limited to a maximum opening of 50 degrees every 18 months, have been removed from the Technical Specifications. Permanent plant modifications have been made to the valve actuators which prevent the valves from opening greater than 50 degrees. Removal of or alteration of the valve actuators such that the valves could open greater than 50 degrees would constitute a change to the facility design, which would require review under 10 CFR 50.59. In addition, specific surveillances prescribing a periodic verification of the system design are considered continually met by the design control process. As such, removing these requirements from the Technical Specifications does not result in a reduction of safety since the design of the containment purge supply and purge exhaust valves ensures the valves are not opened greater than 50 degrees. As addressed above, not including this surveillance in Zion's ITS is consistent with the NUREG-1431 reviewers' note stating that this surveillance requirement is not required if permanent modifications have been installed limiting valve opening to less than 50%.

19. References to Appendix J have been changed to the Containment Leakage Rate Testing Program following implementation of 10 CFR Part 50, Appendix J, Option B.

20. NUREG-1431 SR 3.6.3.5 (Zion ITS SR 3.6.3.1) is modified to exempt certain automatic containment isolation valves from testing per the IST program to demonstrate satisfactory operation. The exempted valves are those that are locked, sealed, or otherwise secured in their required post accident position and are maintained in that position under administrative controls. This change is consistent with NUREG-1431, Rev 1.

21. This change to the Zion ITS eliminates the 18 month surveillance that would verify the RCFC dampers were in their accident position. The surveillance was eliminated because the dampers have been secured in the

accident position. Any alteration which would allow the dampers to be repositioned would constitute a change to the facility design.

22. NUREG-1431 SR 3.6.6A.2 is modified and becomes ITS SR 3.6.6.2. ITS SR 3.6.6.2 provides verification that, for a given SW pump and component alignment, accident SW flow is maintained to RCFC units under limiting DBA conditions. This SR is performed every 31 days and is similar to SR 3.7.8.1, which is performed weekly. Specifically, SW flow of 1500 gpm is verified to the RCFC coolers by performance of a flow analysis. The assumptions of this flow analysis are verified as being met by performance of SR 3.6.6.2.

3.7 PLANT SYSTEMS

1. NUREG-1431 LCO 3.7.1; Proposed LCO 3.7.1:
As indicated in NRC Information Notice 94-60, a simple reduction in power does not provide adequate compensatory action for unlimited continued operation when moderator temperature coefficient is not less than or equal to zero and the control rods are capable of withdrawal. Therefore, setpoint changes are required for extended operation when rods are capable of withdrawal and moderator temperature coefficient is not less than or equal to zero. These changes are consistent with the recommendations made by Westinghouse in Nuclear Safety Advisory Letter 94-001, dated January 20, 1994. The Required Action to reduce the Power Range Neutron Flux trip setpoint is proposed with a Completion Time of 72 hours. Such a Completion Time allows time to perform minor repairs, or otherwise restore OPERABILITY, without implementing an unnecessary trip setpoint change, during which there is increased potential for a plant transient. Finally, "The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period, and the preceding prompt reduction in THERMAL POWER...." This is exactly the same Bases as the Bases provided for the 72 hour Completion Time of NUREG-1431 LCO 3.2.1A, Required Action A.4, (which is also a trip setpoint reduction). Therefore, a Completion Time of 72 hours is proposed. Also, included in this change is a revision to the LCO wording to require all Main Steam Safety Valves (MSSV) to be OPERABLE. This is to prevent any confusion between the allowable power level (100%) and the Power Range Neutron Flux trip setpoint (109%) when all MSSVs are OPERABLE.

2. NUREG-1431 LCO 3.7.1; Proposed LCO 3.7.1:
Tables 3.7.1-1 and 3.7.1-2 and SR 3.7.1.1 are revised to omit the valve designations by number and instead, to identify them by orifice size.

3. NUREG-1431 LCO 3.7.2; Proposed LCO 3.7.2:
NUREG-1431 LCO 3.7.3; Proposed LCO 3.7.3:
The Main Steam Isolation Valves (MSIV) and the Main Feedwater Isolation Valves (MFIV) each serve a containment isolation function which is not addressed in NUREG-1431 LCOs 3.7.2 and 3.7.3. The containment function is required by LCO 3.6.3, which leads to confusion because the Required Actions of LCO 3.6.3 are different from those specified in LCOs 3.7.2 and 3.7.3. Therefore, LCOs 3.7.2 and 3.7.3 are being revised to include

the Containment Isolation Valve (CIV) functions, Applicability, Required Actions and Surveillance Requirements. Revisions include adding MODE 4 to the Applicability, revising the Required Actions for inoperable valves to match the CIV Applicability and action changes, and revising the Completion Time for verification of closed valves for the CIV function to match the required frequency for closed CIVs. The SRs which required stroke times to be taken with automatic actuation are split to separate the two requirements into separate surveillances. Failure of a stroke time should not require a retest of the automatic actuation since they are not dependent in any way on one another. The Bases are also revised to discuss the CIV function and prevent confusion with regard to applicability and conflicts within the Required Actions of the Specifications. Since all CIV functions are adequately addressed in LCO 3.7.2 and 3.7.3, a NOTE is added to LCO 3.6.3 to exclude the MSIVs and MFIVs from the requirements of LCO 3.6.3. This eliminates inconsistent Required Actions and Completion Times for inoperable MSIVs and MFIVs.

4. NUREG-1431 LCO 3.7.2; Proposed LCO 3.7.2;
NUREG-1431 LCO 3.7.3; Proposed LCO 3.7.3:
The Completion Times for LCO 3.7.2 Required Action C.2 and Required Actions A.2 and C.2 for MSIVs and MFIVs, respectively, are revised to "Once per 31 days" to match the similar requirement for containment isolation valves. This Required Action is not in the current TS for Zion for either the MSIVs, the MFIVs, or the containment isolation valves. Since these valves are currently treated the same as containment isolation valves, they are proposed to continue to be treated the same.

5. NUREG-1431 LCO 3.7.3; Proposed LCO 3.7.3:
The Required Actions for placing the unit in a condition in which the LCO does not apply are not consistent with the Applicability statement. Both the Applicability statement and the NUREG-1431 Required Actions are simplified. As written, completion of Required Actions A.1, B.1 or C.1 would result in exiting the Applicability of the LCO and preclude the need to complete Required Actions A.2, B.2 and C.2. These changes are consistent with the NUREG Writers Guide.

6. NUREG-1431 LCO 3.7.4; Not proposed to be included:
The Atmospheric Relief Valves (ARV) are not credited in the current licensing basis as initial accident response. UFSAR 15.6.3.3 and 15.6.3.5 indicate that a concurrent SG tube rupture (SGTR) and blackout is not a credible event. The original SER, Section 15, indicated that the consequences of an SGTR event were adequately controlled by limiting the permissible primary and secondary coolant system radioactivity concentrations. In addition, there are no requirements for ARVs in the current Zion Technical Specifications.

7. NUREG-1431 LCO 3.7.5; Proposed LCO 3.7.5:
The Specification for the AFW System has been revised to reflect the plant specific design and design parameters. Each of the three pumps can provide at least 100% of the required flow and the flow is provided to all four of the steam generators through two flow paths which are

shared by the motor driven pumps and the steam driven pump. If one pump is out of service, there are still two full capacity trains. Therefore, the CTS 7 day AOT for one pump inoperable is retained as Condition A.

8. NUREG-1431 LCO 3.7.2; Proposed LCO 3.7.2:
NUREG-1431 Surveillance Requirement 3.7.2.1 (which requires an MSIV stroke time test) has a test exception Note that has been omitted from the proposed TS. The exception is not necessary at Zion Station, and is not allowed by current Technical Specifications. Furthermore, the NUREG-1431 Note is a duplication of allowances that can be detailed in accordance with the Inservice Testing Program and need not be repeated.

9. NUREG-1431 LCO 3.7.6; Proposed LCO 3.7.6:
The condensate storage tank (CST) need not be considered completely unavailable when the volume is insufficient as long as sufficient volume (12,500 gal) still remains to allow for manual realignment of the AFW source from the CST to the SW System. This alignment should not be a normal requirement, to prevent mixing lake water with the condensate quality water.

10. NUREG-1431 LCO 3.7.6; Proposed LCO 3.7.6:
The CST 7 day AOT for restoration has been reformatted due to design differences. NUREG-1431 is based on a safety related CST with a non-safety related backup source. The design at Zion is a non-safety related CST with a safety related backup. Accordingly, the required actions have been rewritten to address Zion Station's design of a non-safety related CST with manual swap over to the safety related service water system. The NUREG-1431 condition to restore the CST to operable status in 7 days has been restructured to the default condition, and a condition and a required action added to verify adequate level exists in the CST to support manual swap over to the service water system. If this minimum level is not maintained, the support components (auxiliary feed water pumps) are declared inoperable.

11. NUREG-1431 LCO 3.7.7; Proposed LCO 3.7.7:
The Component Cooling (CC) System Completion Time of 7 days for one required pump inoperable is retained. The CC system pumps feed a common header such that loss of a pump does not cause a loss of function for a "train" of the CC System, rather the impact is reduced capacity and loss of single failure capability for the unit. The 7 days is considered appropriate based on the capability of the remaining pump to supply both trains at reduced capacity, and the low probability of an event requiring the CC System during this period. Additionally, the 7 day Completion Time is consistent with the current licensing basis.

12. NUREG-1431 LCO 3.7.8; Proposed LCO 3.7.8:
The SW System is not designed as two separate trains. The two flow paths are shared by all pumps for both units, and both flow paths feed all critical components for both units. Therefore, the Notes for NUREG-1431 Required Action A.1 are not required since the loss of a single flow path or multiple pumps will not make either the diesel generator or residual heat removal loops inoperable. In addition, the

SW System Completion Time of 7 days for one required pump inoperable is retained from the CTS. The system pumps feed a common header such that loss of a pump does not cause a loss of function, but rather the impact is reduced capacity and loss of capability to accommodate certain single failures for the unit. The 7 days is considered appropriate based on the capability of the remaining pumps to supply both trains at reduced capacity, and the low probability of an event requiring the SW System during this period. Additionally, the 7 day Completion Time is consistent with the current licensing basis.

Additionally, due to the Zion specific design, a new Condition is added (Condition B) to address possible reduced System capability to accommodate a passive failure. This 30 day limitation is a new limitation (compared to the current TS), and is appropriate since sufficient capability remains for the SW System to accomplish its design function even with an additional single active failure.

13. NUREG-1431 LCO 3.7.9; Not proposed to be included:
The Ultimate Heat Sink (UHS) is Lake Michigan which has a minimum recorded level of 577.4 ft above msl and a maximum recorded temperature of 79°F at a location similar to the SW System intake location. The SW System is designed based on these extremes, with margin. For example, the design considers the UHS to be at 575 ft above msl and 80°F. Since the UHS provides margin to the design, no specification is required for routine monitoring of these parameters.

14. NUREG-1431 LCO 3.7.10; Proposed LCO 3.7.9:
NUREG-1431 LCO 3.7.12; Proposed LCO 3.7.12:
NUREG-1431 LCO 3.7.13; Proposed LCO 3.7.13:
NUREG-1431 LCO 3.7.14; Proposed LCO 3.7.11:
The Control Room Emergency Filtration System (CREFS), Pipe Tunnel Emergency Filtration System (PTEFS), Emergency Core Cooling System (ECCS) & Containment Spray (CS) Cubicle Emergency Filtration System (CEFS), and Fuel Handling Building Emergency Filtration System (FHBEFS) have only one mode of operation. This mode is the "emergency mode" or "post accident mode" and does not need to be described as such. Therefore, all references to the type of mode which seem to indicate that the system has more than one operating mode are eliminated. This is reflected in SR 3.7.9.4, SR 3.7.11.4, SR 3.7.12.3, and SR 3.7.13.5.

15. NUREG-1431 LCO 3.7.10; Proposed LCO 3.7.9:
NUREG-1431 LCO 3.7.11; Proposed LCO 3.7.10:
The CREFS and Control Room Ventilation System (CRVS) are designed and approved as single train systems. Either train of CRVS (one associated with each unit) can function to provide the ventilation requirements of both unit's control [illegible]. CRVS is not reflected in the current TS, and only requirement[illegible] filters of th[illegible]S are included in the current TS. The[illegible]eral change[illegible] proposed to the Actions to reflect the single [illegible] system [illegible] practices. These include adopting the curre[illegible] Comm[illegible] for an inoperable filter as applicable to the e[illegible] CREFS and CRVS. Furthermore, the NUREG-1431 Survei[illegible] modified to reflect acceptable

test practices, and to eliminate testing that can not be accomplished without additional design modifications and/or analyses. Specifically, a Note is added to the SR which states that auto start of the CREFS is not required if the system is in operation. If the automatic actuation signals are inoperable, ITS require the CREFS to be put in service, thus fulfilling the safety function of the system. Therefore, a failure of the automatic actuation signals, by itself, does not require CREFS to be declared inoperable.

16. NUREG-1431 LCO 3.7.10; Proposed LCO 3.7.9:
The CREFS does not include a toxic gas protection mode. The UFSAR, Sections 2.2 and 6.4, provides a discussion of the evaluation which concludes such protection is unnecessary.

17. NUREG-1431 LCO 3.7.12; Proposed LCO 3.7.12:
NUREG-1431 LCO 3.7.14; Proposed LCO 3.7.11:
The ECCS & CS CEFS and the PTEFS are single train systems that are currently not addressed in the TS except for filter testing. Therefore, several changes are proposed to the Actions to reflect the single train system and current practices. These include adopting the current 7 day Completion Time for an inoperable filter as applicable to the entire system for both ECCS & CS CEFS and the PTEFS.

18. NUREG-1431 LCO 3.7.12; Proposed LCO 3.7.12:
These changes reflect that the ECCS & CS CEFS is manually initiated along with the manual initiation of the recirculation phase of the ECCS.

19. NUREG-1431 LCO 3.7.13; Proposed LCO 3.7.13:
The FHBEFS is a single train system and is required to be "in the post accident mode of operation" under certain conditions. The SR for auto start is not required if the system is in the post accident operation.

20. NUREG-1431 LCO 3.7.13; Proposed LCO 3.7.13:
A NOTE is added to indicate LCO 3.0.3 is not applicable for this system since the APPLICABILITY does not include MODES 1, 2, 3, and 4. The Actions are also modified to reflect the APPLICABILITY.

21. NUREG-1431 LCO 3.7.16; Proposed LCO 3.7.15:
An additional Applicability is included to address the period beginning with the initial movement of fuel until the end of that movement. The NUREG-1431 Applicability could be read to begin at the end of the movement of fuel. Additionally, the applicability has been revised to limit application of this LCO to Region 2 of the storage racks. This is consistent with the analysis in that unlimited fuel storage is allowed in Region 1, and is also consistent with Required Action A.2.2, which is intended to exit the Mode of applicability for the LCO.

22. Not used.

23. NUREG-1431 LCO 3.7.16; Proposed LCO 3.7.15:
The Frequency of the Fuel Storage Pool Boron Concentration Surveillance is retained as 31 days as approved in February 1993, in Zion Amendments 142/131.

24. NUREG-1431 LCO 3.7.16; Proposed LCO 3.7.15:
The allowance to store fuel "in accordance with Specification 4.3.1.1" is omitted. Zion Station does not currently have an analysis to support special configuration loading of fuel from the Unacceptable Burnup Domain in Region 2 of the spent fuel storage pool. This item is also omitted from NUREG-1431 Specification 4.3.1.1.f.

25. NUREG-1431 LCO 3.7.5; Proposed LCO 3.7.5:
NUREG-1431 SR 3.7.5.2 - Proposed SR 3.7.5.1:
NUREG-1431 SR 3.7.5.2 is reworded to more completely reflect the actual testing required. That testing is required by and performed in accordance with the Inservice Testing Program, which encompasses testing criteria in addition to the NUREG-1431 stated developed head criteria.

In addition to the above, the NUREG-1431 requires an operability verification of each AFW pump every 31 days on a STAGGERED TEST BASIS. The MODES of Applicability are MODES 1, 2, 3, and MODE 4 when a steam generator is relied upon for heat removal. NUREG-1431 SR 3.7.5.2 is modified by a Note which allows testing of a turbine driven AFW pump to be delayed up to 24 hours after steam pressure in the steam generators is ≥ 1000 psig. The deferral is necessary to establish sufficient steam pressure to operate the turbine driven pump. For a typical plant, the required steam pressure in the steam generators can be obtained from the heat transferred from the Reactor Coolant Pumps (RCPs) to the secondary coolant by way of the reactor coolant system. However for Zion Station, without the addition of nuclear heat, there is insufficient thermal energy from the RCPs to support testing the turbine driven AFW pump without a resultant cooldown of the reactor coolant system. Therefore, the current licensing basis for Zion Station states "Whenever the reactor is taken from Mode 3 into Mode 2 without the required surveillance and testing having been performed within the required surveillance period, the surveillance and testing shall be performed within 4 hours after entering Mode 2 or within 4 hours after completing low power physics tests after a refueling outage." The Current Technical Specifications (CTS) define Mode 3, in part, as having reactivity ≤ 1% Δ k/k and fission power at zero. Mode 2 is defined, in part, as having reactivity ≥ 0% Δ k/k and fission power ≤ 2%. Thus, the 4 hour allowance to test the turbine driven AFW pump would begin when reactivity was ≥ 0% Δ k/k. In NUREG-1431 and the proposed Zion Station Improved Technical Specifications, Mode 2 is defined, in part, as having keff ≥ .99. Thus, Mode 2 is entered before a self-sustaining fission process is achieved which is needed to produce the nuclear heat necessary to support testing the turbine driven AFW pump. In a practical sense, entry into Mode 2 is declared prior to making the approach to criticality (prior to withdrawal of the control rod banks) since there is no direct measure of subcritical multiplication. Furthermore, from the time Mode 2 is declared until keff ≥ 1.0, an hour

or more could pass due to on-going plant evolutions necessary to support the plant startup. Therefore, to preserve the starting point in time when the turbine driven AFW pump must be tested, the Note contained in proposed SR 3.7.5.1 has been revised consistent with the current licensing basis.

26. NUREG-1431 LCO 3.7.5; Proposed LCO 3.7.5:
NUREG-1431 SR 3.7.5.3 is eliminated. The Zion AFW System design does not include any automatic valve actuation on system initiation other than the steam supply valve for the turbine driven AFW pump. This steam supply valve actuation is adequately addressed in the NUREG-1431 SR 3.7.5.4 (proposed SR 3.7.5.3) test, and is not necessary to be a separate surveillance.

27. Periodic valve position verification of auxiliary feedwater valves, component cooling water valves and service water valve are not part of Zion Station's CLB. A review was conducted of valve mispositioning events at Zion Station which concluded that there were not any valve mispositioning events which would have been identified or prevented by the inclusion of this surveillance requirement. The conclusion was reached that this surveillance would add little to the safety of Zion Station based on past operating experience. As such, Zion Station management has elected not to include these SRs in the proposed ITS.

28. NUREG-1431 SR 3.7.7.2 requires a verification that all Component Cooling Water (CCW) automatic valves actuate to their correct positions on an actuation signal once per 18 months. Zion Station's CCw system does not contain any automatic valves which perform safety functions that are not containment isolation valves which are tested under proposed surveillance requirement SR 3.6.3.2. Therefore this surveillance requirement is duplicative of SR 3.6.3.2 and has not been included in Zion Station's ITS submittal.

29. NUREG-1431 SR 3.7.5.5 requires an alignment check of AFW flowpath valves prior to entry into Mode 2 whenever the unit has been in Mode 5 or 6 for > 30 days. Zion Station's current Technical Specifications do not contain this surveillance requirement. The NUREG-1431 Bases for this surveillance requirement states that it is applicable to plants that do not use AFW for normal plant start up and shut down. Zion Station uses the AFW system for normal plant start up and shut downs. As such, Zion Station does not meet the criteria for inclusion of this surveillance requirement in the ITS.

30. NUREG LCO 3.7.8; Proposed LCO 3.7.8:
A new Condition and Required Action A have been added to address the inoperability of the automatic alignment capability for loop header isolation valves. This change is based on Zion Station's Service Water design. The automatic opening function of these valves is required to support the safety function of the DGs and Reactor Containment Fan Coolers (RCFC). The appropriate action for loss of this function is to place the valves in the open position. A note has been added stating that the applicable Conditions and Required Actions for systems made

inoperable (RCFCs and DGs) as a result of these valves shall be entered when the component is rendered inoperable. This note will assure that the appropriate actions are taken for affected components when Service Water flow is not available to the supported component.

31. NUREG LCO 3.7.8; Proposed LCO 3.7.8:
A new Condition and Required Action B have been added to address the inoperability of the automatic alignment capability for the turbine building branch header isolation valves. This change is based on Zion Station's Service Water design. The automatic closure function of these valves is required to isolate Service Water loads in the event of an accident or loss of offsite power, such that total system flow requirements are maintained within the limits of the available service water pumps. This function may not be required based on the number of service water pumps available and or isolation of system loads. Loss of one valve in either header represents a loss of single failure capability (i.e., single failure of a required service water pump cannot be sustained), therefore, seven days is an acceptable time frame to restore the valve to operable status or to isolate the affected flowpath. This time is based on similarity to loss of a single required pump.

32. NUREG LCO 3.7.8; Proposed LCO 3.7.8:
A new Condition and Required Action C have been added to address the inoperability of the service water back wash strainer and booster pump isolation valves. This change is based on Zion Station's Service Water design. The function of these valves is to close to isolate these Service Water loads in the event of an accident or loss of offsite power, such that total system flow requirements are maintained within the limits of the available service water pumps. This function may not be required based on the number of service water pumps available and or isolation of system loads. Loss of this function represents a loss of single failure capability (i.e., single failure of a required service water pump cannot be sustained), therefore, seven days is an acceptable time frame to restore the valve to operable status or to isolate the affected flowpath. This function is modified by a note which will allow intermittent operation of these valves. Intermittent operation of these valves is necessary to support continued unit operation. Administrative controls provide assurance that the flowpath can be isolated if required.

33. Proposed New SR 3.7.8.3:
A new surveillance has been proposed to perform channel calibrations on the required opposite unit service water low supply header pressure channels. These channels auto start the opposite unit service water pumps in the event of low header pressure. Based on Zion Station's design, at least one service water pump from the opposite unit must be shared for passive failure considerations. Additionally, based on system flow demands and alignment, pumps from the opposite unit may be required to fulfill active failure considerations as well. Based on these considerations, the supply header low pressure auto start signal is required for the opposite unit pumps. This SR and the SR for

automatic actuation testing of the opposite unit pump, have been modified by notes which exclude the requirement for low header pressure automatic start when the opposite unit pumps are in operation.

34. NUREG LCO 3.7.8; Proposed LCO 3.7.8
A new Condition and Required Action have been added to address the relationship between SW pump operability and SW valve and component alignment to provide for minimum flow requirements under DBA conditions.

If the SW system configuration is not in accordance with the requirement for the current SW pump configuration, this indicates that SW flow may not be sufficient to meet design basis assumptions for the given accident scenarios. While in the Required Action SW configuration must meet the requirements for SW operation during a DBA with a loss of single failure capability; in this instance seven days is an acceptable time frame to restore SW configuration to normal lineup. Failure to meet the requirements for SW pumps or SW valve and component lineup represents a loss of SW function, which will require an entry into LCO 3.0.3.

35. Proposed New SR 3.7.8.1
A new surveillance requirement has been proposed to perform an SW valve and component lineup verification on a weekly basis. The purpose of the valve and component lineup verification is to ensure that the SW system is aligned correctly to support the most limiting case design basis accident, and still maintain correct SW flow to SW components. Specifically, minimum Reactor Containment Fan Cooler flow of 1500 gpm is required to comply with design assumptions of the containment analysis. SW configuration to meet this requirement is provided by meeting SR 3.7.8.1.

36. The Bases for LCO 3.7.7 have been clarified to address the Component Cooling (CC) System cooling flow requirements. Potential CC flow demands may not be met by the current number of required OPERABLE CC pumps. The CC System consists of five CC pumps, three CC heat exchangers, two RHR heat exchangers per unit, and several miscellaneous safety-related loads. Three CC pumps and two CC heat exchangers are required OPERABLE with one unit in MODES 1, 2, 3, or 4, and the other unit in MODES 5 or 6. Actual flow demands on the CC System consists of two RHR heat exchangers and miscellaneous safety-related loads, which require three CC pumps to satisfy. A fourth pump and a third heat exchanger are required in order to meet the single failure criterion. With one unit defueled, only one RHR heat exchanger is required and, therefore, one less CC pump is required.

37. Two additional Conditions, with associated Required Actions and Completion Times, have been added to LCO 3.7.7. They address the situation where a CC heat exchanger is inoperable. The Completion Times depend on the MODES of both units. The reason for a specific Condition for CC heat exchangers is because CC System OPERABILITY requires three CC heat exchangers (two to handle design CC flow, a third to provide passive single failure protection). Under current TS, there is no

Condition which covers the situation where only a single CC heat exchanger is inoperable.

38. Additional information for LCO 3.7.13 concerning the acceptable operating mode of the Fuel Handling Building Exhaust Filtration System (FHBEFS) is provided. In order to meet the technical specification requirements the FHBEFS must be in the post accident mode of operation.

39. A new Surveillance Requirement has been added to LCO 3.7.13 to verify that the ventilation system is OPERABLE during the period of time the Shield Wall or Equipment Hatch is not intact. This is done by verifying that a ventilation spool piece has been installed between the Auxiliary Building and Pipe Tunnel, such that no ventilation flow path exists from the FHBEFS to the Pipe Tunnel.

3.8 ELECTRICAL POWER SYSTEMS

1. NUREG-1431 LCO 3.8.1, and Condition F - The Zion design does not have automatic sequencers for the sequencing of loads onto the offsite feed. Zion's design does have automatic sequencers for the purpose of sequencing loads onto the diesel generator (DG) in the event of a loss of offsite power. These sequencers only affect the ability of their related DG to supply power to its bus. Per the reviewer note contained in NUREG-1431, the NUREG-1431 surveillance and condition are not required if the design is such that any sequencer failure would only affect the ability of the DG to power its respective safety bus following a loss of offsite power. As such, no separate LCO or SR is necessary for Zion.

2. NUREG-1431 LCO 3.8.1, Condition A - The normal configuration is with no offsite power supplying the bus. The offsite power is available to each bus, but is not normally connected. Thus the Required Action and Completion Time are clarified as commencing from discovery of no offsite power available to the bus.

3. NUREG-1431 LCO 3.8.1, Conditions A & B - The overall Completion Time for "failure to meet the LCO" is extended to 10 days in conjunction with the extended Completion Time for the common DG. The overall Completion Time is the additive time for an inoperable DG and an inoperable offsite feed as though they occur back-to-back.

4. NUREG-1431 LCO 3.8.1, Condition B - This condition is split to accommodate the different Completion Time for the common DG. The proposed Condition B will be applicable for any inoperable DG while NUREG-1431 Required Action B.4 is split into proposed RAs C.1 (for an inoperable unit-specific DG with a Completion Time of 72 hours) and D.1 (for an inoperable common DG with a Completion Time of 7 days).

5. NUREG-1431 LCO 3.8.1, Conditions D & H - The entry conditions for Condition D are revised to include combinations of offsite feeds and a single DG inoperable that affect only one division. This could occur if

the inoperability of the offsite feeds is limited to the breakers that affect only one bus. Without the proposed change, a condition of both required offsite feeds inoperable solely due to the inability to feed a single ESF bus, concurrent with the inoperability of the associated DG, would result in entry into proposed Condition I and a shutdown pursuant to LCO 3.0.3. As proposed, the condition is limited to 12 hours if the bus continues to be powered, or 8 hours due to the Required Action Note which would require entry into Required Action A.1 of LCO 3.8.9 due to the dead bus condition. Therefore, this change prevents an unnecessary shutdown but does not allow operation significantly beyond what has already been determined to be acceptable for a dead bus condition.

6. NUREG-1431 LCO 3.8.1, Condition E - The ITS added "or more" to the entry condition since the Required Action and Completion Time are intended to be for a condition with all DGs inoperable as indicated by the Bases. Since Zion has more than two DGs, the "or more" is needed to correctly identify the intended condition.

7. NOT USED

8. NUREG-1431 SR 3.8.1.2, Note 2; SR 3.8.1.7, Note; SR 3.8.1.11, Note 1; SR 3.8.1.15, Note 2; SR 3.8.1.19, Note 1; SR 3.8.1.20, Note - This note is not included since the plant design of the DG lube oil system maintains the DG continuously prelubed and in a "warm" condition.

9. NUREG-1431 SR 3.8.1.2 and SR 3.8.1.7 have been modified by a Note which excludes starting a DG from normal standby conditions when the SR is being used to re-establish DG OPERABILITY following corrective or preventive maintenance. The purpose of this exclusion is to preclude a plant transient associated with a plant shutdown in the event a DG AOT is exceeded while waiting for the DG to cool down to normal standby conditions prior to conducting one or both of these SRs to re-establish DG OPERABILITY. The added assurance of DG OPERABILITY gained from starting from normal standby conditions does not offset the risk associated with a plant shutdown transient that could occur.

10. NUREG-1431 SR 3.8.1.2 & SR 3.8.1.3 - A new Note is added which allows the starting circuitry for the common DG to be alternated between units for the DG start testing. Consistent with Generic Letter 84-15, this note would prevent the need to start the common DG twice each month, once for each unit. The intent of the monthly test is to verify the ability of the mechanical DG to start. This monthly verification can be accomplished using either unit's start circuitry. Further, the starting circuitry is typically very reliable compared to the DG itself, and the portion common to both units will continue to be tested monthly.

11. NUREG-1431 SR 3.8.1.2; SR 3.8.1.3 Frequency; & Table 3.8.1-1 - The variable DG test Frequency requirements are not included per Generic Letter 94-01. Accelerated testing requirements under the ITS will be in accordance with plant procedures developed to implement the requirements of 10 CFR 50.65 (Maintenance Rule).

12. NUREG-1431 SR 3.8.1.2, SR 3.8.1.7, SR 3.8.1.9, SR 3.8.1.11, SR 3.8.1.15, SR 3.8.1.19 - The values of the steady state voltage and frequency limits are not included in the SRs. The voltage limits are dependent on a number of factors including bus loading and cable routing, which may be frequently revised in accordance with various design changes. However, these values are often not the same for each division, and are difficult to specify unambiguously in each SR. Similarly, frequency limits are dependent on various factors (such as the "droop" setting) specific to each test condition (parallel to the grid). Further, since neither the voltage or frequency values are specified in the current Technical Specifications, the voltage and frequency limits for the AC Sources are proposed to be identified in the Bases. Bus undervoltage setpoints specified in LCO 3.3.5 will continually bound lower voltage limits. Administrative controls have adequately assured the voltage and frequency ranges of the divisions necessary to provide their respective safety functions.

13. Since movement of irradiated fuel assemblies in the fuel handling building can occur with either or both units in MODEs 1, 2, 3, or 4, the Required Actions have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel during MODE 5 or 6 or during CORE ALTERATIONS, LCO 3.0.3 would not specify any required action. If moving irradiated fuel in the fuel handling building in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Therefore, inability to complete the Required Actions within the specified Completion Times would not be sufficient reason to require a reactor shutdown.

14. NUREG-1431 SR 3.8.1.5, SR 3.8.3.5, & SR 3.8.3.6 - The requirement to check for and remove accumulated water and sediment from the fuel oil tanks is not included in the Zion ITS. This surveillance requirement is not contained in Zion Station's current Technical Specifications. This maintenance requirement has been adequately performed under administrative control and is proposed to continue to be administratively controlled.

15. NUREG-1431 SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.16, SR 3.8.1.17, SR 3.8.1.18, SR 3.8.1.19, SR 3.8.4.6, SR 3.8.4.7 - The Mode restriction Notes have been modified to address the common DG and common station battery. Since the common DG and common battery support both unit 1 and unit 2, precluding testing in Modes 1, 2, 3, or 4 would require both units to be shutdown. Therefore, the revised Notes only requires one unit to be in shutdown while performing required testing on the common DG or common battery.

16. NOT USED

17. NUREG-1431 SR 3.8.1.8 - An additional Note is provided to limit the applicability of the SR to those conditions under which the tested components may be required to perform their required function. If the required safety buses are not being powered from the unit auxiliary transformer (UAT), there is no need for an automatic transfer capability

from the UAT. Without the note, such transfer capability is required in MODES 1, 2, 3, and 4 regardless of the source of power for the safety buses.

18. NUREG-1431 SR 3.8.1.9, SR 3.8.1.10, & SR 3.8.1.14 - Power factor information during the performance of DG testing is not included since it is not in the current TS, and the value of the operating power factor can be adequately controlled administratively. Furthermore:

    a. Testing of the DG to rated power factor when parallel to the grid provides the risk that the vendor's maximum recommended voltage may be exceeded should the DG output breaker be tripped under full load testing conditions. The DG output breaker is designed to trip on receipt of a DG emergency start signal and by the actuation of generator and engine protection devices. It does not appear conservative to establish conditions that may result in potentially exceeding the generator's voltage rating just prior to an actual DG demand.

    b. Performance of the full load rejection SR at stated power factor is not part of the Zion CLB. The licensee has opted to retain the CLB and to not adopt the NUREG-1431 requirement.

    c. DG testing at actual plant power factor will continue to be performed through performance of the DG combined SI and loss-of-power testing each outage as required by the current Technical Specifications.

19. NUREG-1431 SR 3.8.1.9 - Steady state frequency requirements were not included for performance of this DG testing since the primary purpose of the test is to assure the DG will not trip after a partial load rejection. Also, this requirement is not in the current TS reference to Regulatory Guide 1.108 which requires only to "verify that the voltage requirements are met and that the overspeed limits are not exceeded." Further, the frequency range is needed only during loading which is also tested during the loss of offsite power test and in the combined loss of offsite power/safety injection test.

20. NOT USED

21. The Completion Times for Required Actions B.3.1 and B.3.2 in Specification 3.8.1 have been modified to include "from discovery of each inoperable DG". The purpose of this change is to ensure all OPERABLE DG(s) are evaluated for common cause failure in the event another DG is found inoperable while in Condition B subsequent to the initial performance of Required Action B.3.1 or B.3.2.

22. NUREG-1431 SR 3.8.1.12 - This requirement has not been included in Zion Station's ITS. This specific Surveillance Requirement is not part of Zion Station's current licensing basis, and ComEd has concluded that it does not warrant inclusion in the ITS. The capability of the DG to start is tested on a quarterly basis as part of the ESF Logic channel

function tests. Ensuring that the DG starts and runs unloaded is not specifically addressed as an acceptance criterion, but if the DG did not perform as designed, this would prompt an operability determination. Based on this information, Zion Station has concluded that the intent of this requirement is being met through procedures.

23. NUREG-1431 SR 3.8.1.18 - The NUREG-1431 SR specifies a tolerance (± a certain percentage) about which each sequenced load block is tested. For Zion Station the tolerance has been eliminated and the SR now requires each sequenced load block interval to be within the design limit. This is because the tolerances for loads sequenced on the DGs have been evaluated on a per component basis. Development of the various tolerances considered the time for the DGs to restore voltage and frequency prior to applying the next sequenced load and that the assumptions related to ESF equipment time delays are not violated. As such, specifying a fixed tolerance in the SR may result in exceeding the analytical value determined for a given component. Therefore, the revised SR is based on not exceeding the design limit. The design limit includes both the upper and lower ranges of the calculated tolerance for a given component.

24. NUREG-1431 SR 3.8.1.11, SR 3.8.1.19, SR 3.8.1.20 - The NUREG-1431 use of "from standby conditions" is modified for plant specific design and terminology. Since the DG is expected to be able to start from both conditions, there is no need to specify "from standby conditions" in any SR except the 18 month "LOOP/LOCA" test. The standby conditions for this test have been further described as "normal" standby conditions, which are identified in the Bases, to assure the test begins from ambient conditions.

25. LCO 3.8.2, Applicability & Conditions A and B; LCO 3.8.5, Applicability and Condition A; LCO 3.8.8, Applicability and Condition A; and LCO 3.8.10, Applicability and Condition A are modified. These changes represent safety enhancements that are made to reflect the Zion Station licensing basis and avoid confusion with respect to irradiated fuel movement, CORE ALTERATIONS, and activities where the FHBEFS is required OPERABLE or in operation.

26. NUREG-1431 SR 3.8.2.1 & SR 3.8.5.1 - These SRs are revised to reflect the specific changes made to the list of referenced SRs. Additionally, SR 3.8.2.1 is revised to except NUREG-1431 SR 3.8.1.10, SR 3.8.1.18, and SR 3.8.1.19 from being applicable, since they relate to response to loss-of-power and SI signals which are not required to be OPERABLE in shutdown MODES.

27. NUREG-1431 LCO 3.8.3 - The lube oil requirements are not included in this Specification since the design does not provide for a measurable indication of the amount of lube oil available. The design provides only a sight glass which indicates "sufficient" lube oil available. When lube oil only partially fills the sight glass, lube oil is added to refill the system. The effect of omitting the lube oil requirements is that the DG would be immediately declared inoperable upon discovery of

insufficient lube oil, rather than allowing 48 hours to restore the lube oil to "sufficient" levels. Therefore, the change is more restrictive than the NUREG-1431 would provide.

28. NUREG-1431 SR 3.8.1.7, SR 3.8.1.15, and SR 3.8.1.20 - These SRs have been modified such that they only require a specific minimum voltage and frequency to be met within the required DG starting time. SR 3.8.1.15 (proposed SR 3.8.1.12) is the 18 month hot restart test and is equivalent to CTS 4.15.1.B.3.f which also requires the DGs to achieve the minimum voltage and frequency within the specified starting time. Thus for SR 3.8.1.15, this change is Zion current licensing basis with the exception that the minimum value is now specified. For SR 3.8.1.7 (proposed SR 3.8.1.6) and SR 3.8.1.20 (proposed SR 3.8.1.18), these tests are not part of Zion current licensing basis and thereby represent additional testing restrictions which have been constructed similar to SR 3.8.1.15. Specifying a minimum voltage and frequency accounts for momentary overshoot and minor oscillation of voltage and frequency which may occur as a result of starting a DG without immediate connection to a load. The SRs continue to require that DG voltage and frequency reach their steady state values; however, the Bases now stipulate that the time to reach steady state voltage and frequency be trended as a means of monitoring continued DG OPERABILITY.

29. NUREG-1431 LCO 3.8.4, Actions - The Conditions are revised to retain current actions and allowed outage times for an inoperable battery charger. One charger is sufficient to provide the necessary "float" charge to maintain the batteries for two cross tied unit divisions within limits. This condition, however, is not the preferred alignment and is allowed only for a limited time during which the inoperable charger can be restored to operable status, and the unit cross ties opened.

30. NUREG-1431 SR 3.8.4.2 & SR 3.8.4.5 - These SRs are not proposed to be adopted. These SRs are not contained within Zion Station's current Technical Specifications. NUREG-1431 SR 3.8.4.2 is omitted since visible corrosion does not necessarily mean the battery is inoperable (as indicated in the Bases for NUREG-1431 SR 3.8.4.4). Overall resistance is a direct impact on operability, however, it is indirectly determined to be acceptable through completion of the battery service and discharge tests. Therefore, the maintenance of these connections is proposed to continue to be controlled by procedures.

31. NUREG-1431 SR 3.8.4.6 - This SR is revised to maintain the current Technical Specification requirements for battery charger capability testing, which do not include a voltage requirement. Zion Station's battery chargers are not of a constant voltage design, therefore as output increases voltage decreases linearly. Therefore, based on design, Zion Station will not be adopting a minimum output voltage requirement.

32. NOT USED

33. NUREG-1431 SR 3.8.4.8 - The Frequency is revised (from that approved via change WOG-14) to retain the current requirements which are consistent with the intended fuel cycle length. A Frequency of 12 months would require an additional shutdown to perform the SR (since the test makes the battery inoperable for longer than allowed by the ACTIONS) and a Frequency of 24 months would require either an additional shutdown or performance at the normal 18 month refueling schedule. Therefore, the current Frequency which considers the capability to perform the test is retained.

34. NUREG-1431 LCO 3.8.5, Actions; LCO 3.8.8, Actions; LCO 3.8.10, Actions - A new ACTIONS Note is added to direct other applicable actions to be taken when conditions warrant. With the inclusion of LCO 3.0.6 in the ITS, inoperabilities in Low Temperature Overpressure Protection (LTOP) features which are a result solely of inoperabilities in DC sources, inverters, or distribution, would not require the LTOP Actions to be entered. The allowance of LCO 3.0.6 is based on the premise that these support systems contain appropriate Actions for the inoperability, without having to also take the supported system's Actions. However, in the case of LTOP features, rather than attempt to apply sufficient Actions in each support system, a Note requiring simultaneous entry into the LTOP Actions is being added.

    Additionally, LCO 3.8.10, "Distribution Systems-Shutdown," had a Required Action A.2.6, which addressed the additional Actions necessary if RHR heat removal systems were inoperable. This direction to enter Actions in the applicable decay heat removal Specification is rewritten for consistent presentation with the Note being added to address LTOP inoperabilities.

35. NUREG-1431 SR 3.8.6.2 Frequency - The additional Frequencies associated with a battery discharge or overcharge are not included since they are not contained within Zion Station's current Technical Specifications and have been adequately covered by administrative controls. These conditions are currently treated like any other condition which potentially impacts the operability of a required component, i.e., upon determination that an event has occurred or a condition has developed that may have rendered a component inoperable, the capability of the required equipment to perform its safety function is promptly evaluated and an operability determination is completed. A battery discharge or overcharge is currently evaluated under these administrative controls and is proposed to continue to be evaluated in this manner.

36. NUREG-1431 LCO 3.8.7 Actions Note & Required Action A.2 - The Completion Time for restoration is revised to retain the current TS allowed outage time of 14 days. This Completion Time has been previously determined to provide an adequate level of safety and no reason has been identified to significantly shorten the allowed time. The Bases discussion of the Completion Time applies equally well to this time. However, additional clarification and conservative direction is provided by the proposed Actions Note, which will direct that the Actions of an inoperable distribution system be applied if the AC instrument bus is deenergized.

37. NUREG-1431 LCO 3.8.7 Condition B - An additional entry conditional of "two or more AC instrument bus inverters inoperable" has been retained from the current TS. This added Condition prevents entry in LCO 3.0.3 and as such effectively reduces the allowed time for the required actions by 1 hour. Therefore, this is considered to be conservative.

38. NUREG-1431 LCO 3.8.9, Condition C - Proposed NUREG-1431 change No. 20 (NRC-20). C.1 is not used since more than one DC division inoperable always results in a loss of function and entry into Condition E.

39. Not used.

40. NUREG-1431 SR 3.8.4.8 - An option to perform a "modified performance discharge test" is added. This is consistent with allowances provided in IEEE-450 and proposed generic changes to NUREG-1431.

41. NUREG-1431 LCO 3.8.7, Note - The Note provides an allowance to disconnect an inverter from its associated DC bus for ≤ 24 hours to perform an equalizing charge on its associated battery. Zion Station does not require this Note since equalizing charges, which would require the inverter to be disconnected from its DC bus, are not performed in MODES 1, 2, 3, or 4. Instead, Zion Station performs a low voltage equalizing charge which does not require the inverter to be disconnected from its associated battery. This is because the voltage level of the low voltage equalizing charge will not damage the inverters.

42. NUREG-1431 SR 3.8.7.1 and SR 3.8.8.1 - The requirement to check inverter frequency every 7 days has not been included in Proposed SR 3.8.7.1 since the design of the inverters does not include installed instrumentation to monitor frequency.

43. Each of the Zion Station Class 1E AC electrical power distribution divisions is capable of being supplied by a diesel generator. LCO 3.8.10 requires the buses necessary to support required equipment to be OPERABLE in a shutdown mode. In turn, LCO 3.8.2 then requires one diesel generator capable of supplying one of the buses required by LCO 3.8.10. By design, Zion Station has shared systems which are powered from the opposite unit's buses. For some evolutions (e.g. handling of irradiated fuel in the fuel handling building) the required equipment may consist of systems and components powered from the opposite unit. In these cases, it would be appropriate for the opposite unit diesel generators to be required.

44. LCOs 3.8.1, 3.8.4, and 3.8.9 have been modified to require standby AC and DC power (diesel generators and DC) for an opposite unit service water pump when credited for an operating unit. The Service Water LCO (3.7.8) requires at least one service water pump from the opposite unit to be operable to address passive failure considerations. Further, LCO 3.7.8 may require more than one opposite unit pump based on system configuration. Current Technical Specification LCO 3.8.7 requires three service water pumps to be operable, and allows one pump from the opposite unit to be shared as long as specific provisions (i.e. cross-

tie valves, open, independent AC and DC power) are met and the pump has both standby AC and DC power available. In the current Technical Specifications this is an option, with the ultimate requirement to have three pumps operable. Based on the incorporation of passive failure considerations and recent system flow performance capability modeling, it has been determined that utilization of an opposite unit pump is no longer an option, but is required for system operability. As such, LCOs 3.8.1, 3.8.4, and 3.8.9 are modified to require AC and DC power for opposite unit service water pumps in order to maintain continuity with the ITS usage rules and definition of operability. LCOs 3.8.1, 3.8.4, and 3.8.9 require the AC and DC buses associated with required pumps and their associated diesel generators to be operable. Explicitly requiring these opposite unit systems (at least one diesel, DC source, and associated distribution systems) to be operable any time the unit is in Modes 1, 2, 3, or 4 is an added restriction on plant operation not contained in the current Technical Specifications. For LCO 3.8.1, 3.8.4, 3.8.7 and 3.8.9, the Applicable Safety Analysis discussion has been clarified to include the correct design basis assumptions for Zion, which is a LOCA on a single unit (requiring SI to be initiated to mitigate the accident), coincident with a LOOP on the affected unit.

45. The modified completion times associated with LCO 3.8.1, Conditions A, C, and D, have been specified as being applicable to the offsite feeds, common diesel generator, and unit-specific diesel generators. This change is necessary based on the proposed completion time for opposite unit diesel generators being 14 days. As such, the modified completion time cap of 10 days must be exempted from other inoperabilities so that an immediate shutdown will not result for conditions which otherwise would be supportive of a limited restoration time. Similarly, Conditions F and G have been rewritten to be applied to only the unit specific and common diesel generators. This is necessary to limit the application of short duration compensatory actions requiring restoration of equipment based on the inability to cope with a design basis event with or without offsite power.

46. Condition H is added to LCO 3.8.1 for an inoperable opposite unit diesel generator. This condition is necessary based on the need to maintain at least one opposite unit service water pump operable in order to cope with postulated active and passive failures within the service water system. Proposed LCO 3.8.9 requires the necessary portions of the AC and DC distribution systems to be operable to support this function, while proposed LCO 3.8.1 will require a diesel generator in support of each required service water pump. Inclusion of Condition H for opposite unit DGs is consistent with NUREG-1431 with respect to maintaining Conditions and Required Actions for all required equipment.

With the required opposite unit DG inoperable, it must be restored to OPERABLE status within 14 days per Required Action H.1. This time is acceptable because 1) this is a new requirement that does not exist in CTS and represents a safety enhancement, 2) the probability of a dual unit LOOP in combination with a passive failure during this period is

low, and 3) A 14-day AOT allows flexibility for conducting maintenance on opposite unit DGs in MODES 5 and 6.

47. Note 6 has been added to proposed to SR 3.8.1.3. SR 3.8.1.3 requires each diesel generator to be synchronized, loaded, and operated for at least 60 minutes on a 31 day frequency. The proposed note will exclude the need to synchronize and load a required opposite unit diesel generator when that diesel generator is the only required source of onsite emergency AC power for a shutdown unit. This note is consistent with the philosophy reflected in LCO 3.8.2 for shutdown diesel generator testing requirements.

48. Note 3 is added to SR 3.8.1.17 and states that testing requirements tied to the initiation of a safety injection signal have been excluded from opposite unit diesel generators. The SI signal is generated on a unit specific basis, such that the opposite unit diesel will not receive this signal.

3.9 REFUELING OPERATIONS

1. In LCO 3.9.1 the phrase "Reactor Coolant System, the refueling canal, and the refueling cavity" has been relocated to the Bases to be consistent with the details associated with similar LCOs. The Bases describe the refueling boron concentration as the "soluble boron concentration in the filled portions of the Reactor Coolant System (RCS), the refueling canal, and the refueling cavity that are hydraulically coupled the reactor core." Including these details in the Bases eliminates ambiguities such as, 1) when the unit initially enters MODE 6 prior to flooding the refueling cavity or refueling canal and, 2) when RCS loops are isolated.

2. LCO 3.9.2, "Unborated Water Source Isolation Valves" and its associated Bases, as presented in NUREG-1431, have not been incorporated in the Zion Station Improved Technical Specifications. Zion Station has a plant specific safety analysis for an uncontrolled boron dilution accident during refueling. The analyses establishes that operators have greater than 30 minutes to mitigate the effects of a boron dilution event in MODE 6 prior to a loss of SHUTDOWN MARGIN. As such, isolating unborated water sources in MODE 6 is not required. This LCO is not applicable to Zion Station, as it does not reflect Zion's design or licensing basis. Subsequent LCOs and Bases have been renumbered in consecutive order.

3. The 4 hour Completion Time of LCO 3.9.2, "Nuclear Instrumentation" to perform SR 3.9.1.1 when two source range neutron flux channels are inoperable has been deleted. At the point in time when two source range channels become inoperable, the refueling boron concentration is assumed to be within limit. Verification that the boron concentration is within limit had been previously demonstrated by the periodic performance of SR 3.9.1.1. Since CORE ALTERATIONS and the addition of positive reactivity have been suspended (as a result of one inoperable source range channel), core reactivity conditions will remain stable. Therefore, the

need to perform an additional verification within 4 hours is not necessary. Confirmation that core reactivity remains stable will continue to be performed once per 12 hours.

3a. A new Required Action and Completion Time has been added. The new Action requires unborated water sources to be isolated within 1 hour whenever both source range neutron flux channel are inoperable. Isolating the unborated water sources from the RCS precludes the likelihood of a boron dilution accident. As part of Zion Station's safety analysis for an uncontrolled boron dilution accident during refueling, at least one source range instrument must be operable. The Action to isolate unborated water sources in Specification 3.9.2 is consistent with the Actions in Specification 3.3.1, "RTS" when the required source range instrument is inoperable. Conforming changes have also been made to the Bases for Required Action B.

4. A new Condition, Required Action and Completion Time has been incorporated in LCO 3.9.2, "Nuclear Instrumentation" to address the loss of the audible count rate function. The audible count rate function is an initial assumption of the boron dilution during a refueling event for Zion Station. Audible count rate is provided by one of the two required OPERABLE source range neutron flux channels.

5. The allowance to have the equipment hatch removed, or both personnel air lock doors in the equipment hatch open simultaneously, during CORE ALTERATIONS or the movement of irradiated fuel in containment, has been retained in proposed LCO 3.9.3, "Containment Penetrations". This allowance was previously approved in the staff's Safety Evaluation for License Amendment Numbers 43 and 40 for Zion Station Units 1 and 2 respectively. As a condition of this allowance, the fuel handling building exhaust filter system is required to be in service. This requirement is annotated by a note in LCO 3.9.3 and is specifically addressed by proposed LCO 3.7.13, Fuel Handling Building Exhaust Filter System.

6. In LCO 3.9.3, "Containment Penetrations" item c.2, the word "isolated" has been substituted for "closed by a manual or automatic isolation valve, blind flange, or equivalent". Typically, the details associated with "how to meet a condition" in the ITS contained in the Bases. As such, the Background section of Bases 3.9.3 states "isolation may be achieved by a closed automatic isolation valve, a manual isolation valve, blind flange, or equivalent methods..."

SR 3.9.3.2 has been modified by a Note which clarifies that only unisolated containment penetrations are required to be tested. Isolated penetrations are already in their post accident position and thus, do not require testing.

7a. A new surveillance requirement has been included (SR 3.9.3.3) which verifies the isolation time of each required automatic isolation valve is within limits. In NUREG-1431, the Bases for SR 3.9.3.2 references SR 3.6.3.5 as the SR which demonstrates the isolation time of each

automatic isolation valve. The applicability of LCO 3.6.3 is MODES 1-4, therefore, SR 3.6.3.5 only has to be met in MODES 1-4. For Zion Station, the isolation time of the containment purge valves is credited in the Fuel Handling Accident analysis. Therefore, to preserve the isolation time assumed in the analysis the containment purge valves must meet their required isolation time during CORE ALTERATIONS and during movement of irradiated fuel assemblies within containment.

8. The allowance to have 22 feet of water above the top of the reactor vessel flange while in MODE 6 has previously been found acceptable by the staff in the Safety Evaluation for License Amendment Numbers 71 and 65 for Zion Station Units 1 and 2 respectively. This allowance is necessary to account for the elevation difference between the refueling cavity and the spent fuel pool (approximately 1 ft. difference).

9. The flow rate for the RHR loop in operation specified in SR 3.9.4.1 and 3.9.5.1 has been deleted. For Zion Station, the boron dilution accident is the only accident postulated to occur in MODE 6 which assumes the RHR system is in operation. The analysis only assumes there is some mixing of the borated coolant as a result of a RHR pump being in operation and does not specify a given flow rate. Therefore, there is no analytical basis for the inclusion of a flow rate in SR 3.9.4.1 or 3.9.5.1.

10. Page B 3.9-1 Clarification of the Refueling boron concentration was provided by stating that it applies to the "filled portions" of the RCS, refueling cavity and refueling canal that are "hydraulically coupled to the reactor core".

11. Page B 3.9-1 Details on how the refueling cavity is formed and subsequently flooded have been deleted. At Zion Station, the design is such that the refueling cavity exists with the reactor head bolted to the reactor flange. Therefore, the refueling cavity is not formed when the head is removed. In addition, various methods for flooding the refueling cavity are available. The details of these methods are contained in plant procedures.

12. Page B 3.9-2 This paragraph was deleted as unnecessary. The mention of the spent fuel pool also introduced confusion with respect to the requirements of the LCO. The boron concentration of the spent fuel pool is addressed in LCO 3.7.15, Fuel Storage Pool Boron Concentration.

13. Page B 3.9-2 & Page B 3.9-8 A description of Zion Station's plant specific boron dilution during a refueling accident has been provided as appropriate in the Applicable Safety Analysis.

14. Page B 3.9-3 The Applicability statement was revised to more accurately describe why this LCO is not applicable in Modes other than MODE 6.

15. Page B 3.9-3 & Page B 3.9-9 A statement was included to clarify that normal cooldown of the coolant volume for the purposes of temperature control is not considered as an addition of positive reactivity.

16. Page B 3.9-8 The Background section has been modified to recognize the use of temporary neutron detectors in place of installed instrumentation. This allowance exists in Zion Station's Current Technical Specifications. In addition, information has been provided to address the audible count rate function supplied from either of the OPERABLE source range channels.

17. Page B 3.9-9 The Applicability section was modified to clarify when one or two source range channels are required to be OPERABLE in MODES 2, 3, 4 and 5.

18. Page B 3.9-10 The details for performing a Channel Calibration of the source range neutron flux instruments have been deleted from SR 3.9.2.2. This information is appropriately contained in maintenance procedures.

19. Page B 3.9-12 A suitable description of the Zion Station Containment Ventilation system has been provided. This system contains penetrations that provide direct access from the containment atmosphere to the outside atmosphere.

20. Page B 3.9-13 Clarification was provided regarding the approval of equivalent isolation methods. NUREG-1431 simply states that equivalent isolation methods must be approved. The proposed Bases state that equivalent methods must satisfy the criteria of 10 CFR 50.59.

21. Page B 3.9-13 Reference to the Standard Review Plan has been deleted. The Zion Station fuel handling accidents (both in containment and in the fuel handling building) were analyzed using guidance provided in Regulatory Guide 1.25. The results of the analyses conclude that offsite radiation exposures from a fuel handling accident are within the values of 10 CFR Part 100. The fractional release limit of 10 CFR Part 100 has been previously approved for Zion by the NRC staff.

22. Page B 3.9-14 The actions required when the Containment Purge and Exhaust Isolation System is not capable of automatic actuation is addressed in proposed LCO 3.3.6, "Containment Ventilation Isolation Instrumentation".

22a. The sentence which states, "A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO," has been deleted. This sentence contains extraneous information which may not always be true and may cause confusion. For example, all CORE ALTERATIONS or movement of irradiated fuel assemblies within containment may be completed within a 7 day time frame. As such, only one performance of this SR would be required. Statements of this nature do not appear in the Bases of other SRs. In addition, SR 3.0.4, which precludes entry into a MODE or other specified condition in the Applicability of an LCO unless the applicable SRs have been met within their specified Frequency, provides the appropriate usage rule for the performance of SRs.

23. Page B 3.9-15 Insert "F" was edited for clarification. The CHANNEL CHECK every 12 hours and the COT every 92 days were previously approved in WOG-05, C3. Reference to the system actuation test every 18 months has been deleted since response time testing is not part of Zion Station's current licensing basis.

24. Page B 3.9-1, Page B 3.9-17 & Page B 3.9-21 Reference in the Bases section of Zion Station's Improved Technical Specifications to the General Design Criteria (GDCs) has been deleted. The general design criteria followed in the design of the Zion Station were developed as performance criteria which define or describe safety objectives and procedures. Along with these performance criteria, Zion Station was designed to comply with ComEd's understanding of the intent of the Atomic Energy Commission's (AEC) proposed General Design Criteria, as published for comment by the AEC in July 1967. The Zion construction permit, which fixed many of the safety related design criteria, was issued in December 1968. The Zion FSAR, which presents the detailed design of the plant, was filed in December 1970. Subsequent to this filing, the AEC's final General Design Criteria were published as Appendix A to 10 CFR Part 50 in July 1971.

25. Page B 3.9-17 & Page B 3.9-21 The Applicable Safety Analysis was enhanced by providing a statement that there are no explicit analysis assumptions for the decay heat removal function of the RHR system in MODE 6. There is however, an assumption in the boron dilution accident that one RHR pump is in operation circulating borated coolant.

26. Page B 3.9-18 & Page B 3.9-22 In general, this paragraph was reformatted with the exception of two items. The phrase "to minimize the possibility of criticality", as it pertains to mixing of borated coolant, was deleted. While ultimately it may be possible to achieve criticality without the presence of mixing (i.e., thermal or boron stratification), the Zion Station boron dilution analysis assumes the coolant remains a homogeneous mixture. As such, mixing is required to detect the onset of a boron dilution event from the intrusion of water with a lower boron concentration. The phrase "Indication of reactor coolant temperature" was deleted to eliminate the potential confusion if the temperature indicating device were to become inoperable. Since there are alternate ways to measure the temperature of the coolant, failure of the RHR temperature indicator would not render a RHR train inoperable.

26a. A new Note has been added to the LCO for Specification 3.9.5. The Note allows both RHR pumps to be aligned to the RWST to fill the refueling cavity or to perform the RHR full flow test. The Note is necessary since the LCO requires two RHR loops to be OPERABLE and one loop in operation. OPERABLE as described in the Bases is a flow path from the RCS hot leg, through the RHR pump and RHR heat exchanger, to the RCS cold leg. In order to fill the refueling cavity in preparation for refueling, the suction of the RHR pumps are aligned to the RWST and the water is pumped into the refueling cavity through the RCS hot legs. For Westinghouse NSSS plants with a single RCS drop line, it is not possible

to align one pump to the RWST while the other pump is aligned to the RCS. A similar condition exists during the RHR full flow test. That is, both pumps are required to take suction from the RWST and inject water into the core. While the practice of filling the refueling cavity and performing RHR full flow tests obviously occurs in Westinghouse NSSS plants, the proposed Note acknowledges that it is acceptable to have both RHR pumps in a given configuration necessary to support required testing and plant evolutions.

27. Page B 3.9-20 & Page B 3.9-23 The sentence "Closing containment penetrations that are open to the outside atmosphere ensures dose limits are not exceeded" has been modified. Zion Station does not have an analysis which ensures dose limits will not be exceeded if boiling of the coolant results in the release of radioactive gases to the containment atmosphere. Therefore, the sentence has been changed to state that closing containment penetrations ..... "limits the release of radioactive gases".

28. Page B 3.9-25 Reference to < 25% of the 10 CFR Part 100 limit in the Background section has been deleted. The results of Zion Station's fuel handling accident in containment conclude that offsite radiation exposures as a result of an accident are within the values of 10 CFR Part 100. The fractional release limit of 10 CFR Part 100 has been previously approved for Zion by the NRC staff.

29. Page B 3.9-26 Clarification has been provided that drag testing of a rod cluster control assembly is included in the latching and unlatching process of control rod shafts. Drag testing is performed to confirm the control rod shaft is latched to the assembly. This is accomplished by slightly withdrawing the latched rod cluster control assembly.

4.0 DESIGN FEATURES

1. The format of Section 4 is revised such that individual two-digit sections begin on new pages. With this format the headers can show the Specifications rather than just the major section, as in the rest of the Improved Technical Specifications.

2. The editorial change in TS 4.2.2 clarifies the only design of the control rod assembly that is approved for Zion Station. This is consistent with the current TS.

3. Plant specific design includes specially designed cells for storing failed fuel. The specific design of these cells is included in TS 4.3.1.1.e as they are in the current Technical Specifications.

4. The spent fuel storage specifications are revised to retain the "two region" plant specific rack design included in the current TS.

5. The optimum moderation for the new fuel storage racks (when storing fuel of up to 4.65% w/o U-235) is not under conditions of "fog" or "aqueous foam," but under conditions of flooded with unborated water. Since the

flooded condition is most limiting and must meet the more restrictive limit of $k_{eff} \leq 0.95$, the additional limit for aqueous foam conditions is unnecessary. This is also consistent with the current Technical Specifications.

6. The proposed wording is revised to avoid the use of the ambiguous term "regions." Revised wording is proposed (as allowed by Generic Letter 90-02, Supplement 1) to allow use of lead test assemblies (LTA) in any location where they are not the limiting assembly. The NUREG-1431 wording may be interpreted as preventing use of an LTA in any part of the core near where a limiting assembly is identified. This is an unnecessary restriction.

5.0 ADMINISTRATIVE CONTROLS

1. Where possible, plant specific management position titles in the current Technical Specifications are replaced with generic titles as provided in ANSI/ANS 3.1. Personnel who fulfill these positions are still required to meet the qualifications detailed in proposed Specification 5.3. In addition, compliance details relating to the plant specific management position titles fulfilling the duties of these generic positions will continue to be defined, established, documented and updated in a plant controlled document, such as the UFSAR or QA Manual. This approach is consistent with the intent of Generic Letter 88-06 which recommended, as a line item improvement, relocation of the corporate and unit organization charts to licensee controlled documents. The intent of the Generic Letter, and of this proposed change, is to reduce the unnecessary burden on NRC and licensee resources to process changes due solely to personnel titles changes during reorganizations. Since this change does not eliminate any of the qualifications, responsibilities or requirements for these personnel or the positions, the change is considered to be a change in presentation only and is therefore administrative. The specific replacements are identified in the Current Technical Specifications Discussions of Changes (Attachment C.2), Change No. 1, and in Discussion #1 in Section 5.0-1 of this SE.

2. Notes are added to provide for the currently allowed capability of one individual to share this responsibility for both units. This is partially due to the common control room for Units 1 and 2, and is consistent with the current TS.

3. A plant specific clarification is provided to reflect the two unit design, and that the two units share a control room for both units. Plant specific terminology is incorporated to clarify applicability of requirements on a unit specific basis.

4. The current requirements for personnel use of overtime are retained. These administrative controls have been previously determined to be sufficient to implement the intent of the NRC Policy Statement on working hours.

5. The Specification for the Shift Technical Advisor (or shift control room engineer) is revised to include the current limitation of applicability to unit operation in MODES 1, 2, 3, or 4. In addition, the statement of qualifications for this individual is retained from the current TS. These clarifications are consistent with the current TS and have been previously determined to be sufficient to implement the intent of the NRC Policy Statement on engineering expertise on shift.

6. The current requirements for unit staff qualifications are retained. These administrative controls have been previously determined to be sufficient to implement the minimum qualifications requirements.

7. The requirements for activities that require written procedures are revised to exclude specific mention of the quality assurance for effluent and environmental monitoring. These requirements are adequately covered in the ComEd Quality Assurance topical report along with other quality assurance requirements. The administrative controls for all quality assurance procedures have been previously determined to be sufficient to implement these requirements for written procedures.

8. The current requirements for post accident sampling which limit the radioactive gases to be analyzed to iodine are retained. Iodine is the gas of major concern and this sampling has been previously determined to be sufficient for effluent and atmospheric sampling in post accident conditions.

9. Previously approved provisions for implementation of 10 CFR Part 20 regulations are retained from the current technical specification. The previous justifications for deviation from the "standards" are not in the Zion current TS and the NUREG requirements are, therefore, applicable (See Amendment 152/140).

10. The requirements for Component Cyclic or Transient Limit tracking program and for a Reactor Coolant Pump Flywheel Inspection Program are not adopted. The administrative controls for these programs have been previously determined to be sufficient to implement the programs as described in UFSAR Section 5.2, Table 5.2-2, and Sections 1.8 and 5.4.1, respectively.

11. References to guidance documents or industry standards are revised to reflect plant specific conformance capabilities.

12. The approved Zion Inservice Test Program, does not include any components other than pumps and valves. Supports are not considered dynamic components, and as such, are not addressed by the IST Program. However, supports are included in the "Inservice Inspection (ISI) Program. Requirements associated with ISI are stipulated in 10 CFR 50.55a. Zion Station's ISI Program has previously been approved by the NRC.

13. The portion of NUREG-1431 Section 5.5.10, Secondary Water Chemistry, which addresses "low pressure turbine disc stress corrosion cracking" is

not included in the Zion ITS (5.5.8). Zion does not require other than normal monitoring of secondary water chemistry for inhibiting low pressure turbine disc stress corrosion cracking.

14. The requirements for Control Room Emergency Filter testing are retained as specified in the CTS. For the charcoal filters associated with the Fuel Handling Building and Auxiliary Building, the values for Efficiency, Temperature and Relative Humidity are retained as specified in the CTS. However, the flowrate value for the Fuel Handling and Auxiliary Building ventilation system has been changed to reflect a value applicable to the individual subsystems which comprise the ESF filter systems based on filter design and based on being within the 6 inches of water pressure drop when measured flow is adjusted to the maximum design flowrate. These subsystems are: "Fuel Handling Building Exhaust", "Emergency Core Cooling System and Containment Spray Cubicle Exhaust" and "Pipe Tunnel Exhaust". These administrative controls have been previously determined to be sufficient to implement the testing requirements. Since the Zion Station design does not include installed flow measuring devices for each of the individual ventilation subsystems, proposed Specification 5.5.9.a, 5.5.9.b and 5.5.9.d have been modified to include a statement that allows subsystem flowrates to be verified during system performance tests required in Specification 3.7.9, 3.7.11, 3.7.12 and 3.7.13 as applicable. Item (e) is not adopted since the systems have no heaters.

15. Editorial clarification of the Diesel Fuel Oil Testing Program is provided to avoid confusion regarding application of the requirements to new oil and stored oil. These clarifications have been previously approved on the BWR/6 conversions to the Improved Technical Specifications.

16. A reference to approved exemptions is provided to allow the current frequency for UFSAR updates to be implemented for TS Bases as well. The exemption is due to the dual unit discussions in the UFSAR. Although no specific evaluations currently exist, the staff has stated in 57 FR 39358 (Federal Register Notice for 10 CFR 50.71 dated 8/31/92) "With respect to the petitioner's concern about multiple facilities sharing common a FSAR, licensees will have maximum flexibility for scheduling updates on a case-by-case basis." Proposed specification 5.5.12.d includes the appropriate reference to preclude submittal of a future Licensing Amendment Request. This basis will also apply to the TS Bases since they also will describe both units.

17. The format of the description of the required report is revised to be consistent with the report descriptions which follow it.

18. The detailed description of the results to be included in the Annual Radiological Environmental Operating Report is omitted. The details of the information to be included in the report are provided and controlled in the ODCM. These controls have been previously determined to be sufficient based on Zion Station's current licensing basis to assure the necessary information is provided.

19. The Monthly Operating Report is proposed without the requirement for reporting of PORV and SRV challenges [bracketed info]. Reporting of PORV and SRV challenges is not included in the Zion CLB, and the licensee has not opted to adopt this NUREG-1431 requirement.

20. The DG reporting requirements related to reliability are not proposed to be included in the TS. 10 CFR 50.72 and 50.73 provide sufficient regulatory requirements for licensees to notify NRC and report individual DG failures. This change is consistent with Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Diesel Generators."

21. Previously approved provisions for implementation of high radiation area alternate controls (per 10 CFR Part 20) are retained from the current technical specification. The previous justifications for deviation from the "standards" are still applicable (see Amendment 143/132).

22. Not Used.

23. NUREG Administrative Control 5.2.2.b is not proposed to be included in the Zion Station ITS. The requirements of NUREG Specification 5.2.2.b are encompassed by the requirements of 10 CFR 50.54(m)(2)(iii) which state that a licensed operator must be present at the controls for each fueled nuclear power unit. Since a licensed operator is required at the controls, the operator will certainly be in the control room as required by Specification 5.2.2.b. The requirements for an SRO are similarly encompassed. Omission of NUREG Specification 5.2.2.b has also been previously approved on the Ginna docket during conversion to the ITS on the basis that it duplicates the regulations.

24. New Specification 5.5.14 implements the provisions of 10 CFR Part 50, Appendix J, Option B. This was incorporated into the Zion license under Amendment 175/162.

25. Specification 5.1.2 is rewritten to reflect current regulatory requirements by one individual with an SRO license assuming control room command responsibility for both units. With both units in MODES 5, 6, or defueled, an individual with either an SRO or RO license may be designated to assume the control room command function.

26. A reference to 10 CFR 50.54(m) has been added to Section 5.3, Qualifications, for clarification. New ITS 5.3.2, NRC Licensed Individual Qualifications, defines the position and duties of licensed and senior licensed operators as those individuals who perform the functions described in 10 CFR 50.54(m). This change is required in order for the station to meet the requirements of 10 CFR Part 55.

IV. STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendment. The State official had no comments.

V. ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact has been prepared and published in the Federal Register on February 16, 1996 (61 FR 6265). Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of the amendment will not have a significant impact on the quality of the human environment.

VI. CONCLUSION

The Zion Nuclear Power Station improved technical specifications provide clearer, more readily understandable requirements to ensure safe operation of the plant. The staff has concluded that the improved TS satisfy the guidance in the NRC Final Policy Statement with regard to the content of technical specifications, and conform to the model provided in NUREG-1431 with appropriate modifications for plant-specific considerations. The staff has concluded that the Zion Nuclear Power Station improved technical specifications satisfy Section 182a of the Atomic Energy Act, 10 CFR 50.36, and other applicable standards. On this basis, the staff concludes that the proposed Zion Nuclear Power Station improved technical specifications are acceptable.

The staff concludes that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: E. B. Tomlinson

Dated:

APPENDIX A

SUMMARY

OF

RELOCATED*

ZION

CURRENT TECHNICAL SPECIFICATIONS

*The term "relocated" is used in this Appendix to address all Zion CTS that are removed from TS and retained in licensee controlled documents.

CTS	Description	DOC	Relo To : Control
1.25	Off-Site Power Source Definition	1.1-16	Bases: TS 5.5.12
1.35	Protection System Definition	1.1-23	Bases: TS 5.5.12
3.2.1.C.3 3.2.1.D.1 3.2.1.H 4.2.1.A.1 4.2.1.A.2 4.2.1.B 4.2.1.D.2	Information regarding MTC negativity, rod withdrawal sequence, control rod insertion restrictions, rod bank worths, assignment of rod bank designators, and boron concentration	3.1-2	Bases: TS 5.5.12 COLR: TS 5.6.5
3.2.2.A.1.1 3.2.2.A.3 4.2.2.A.6 4.2.2.C.2	Hot Channel Factor Limits	3.2-3	Bases: TS 5.5.12 COLR: TS 5.6.5
2.1.1 Note 1	Overtemperature ΔT Reactor Trip	3.3.1-3	Bases: TS 5.5.12
Table 3.1-1	Number of Channels to Trip column	3.3.1-11	Bases: TS 5.5.12
Table 3.1-1 footnotes	References for setpoint tolerances	3.3.1-32	Bases: TS 5.5.12
Table 4.1-1	Remarks on Channel Functional Test	3.3.1-40 3.3.1-50	Bases: TS 5.5.12
Table 3.4-1	Number of Channels to Trip column	3.3.2-9	Bases: TS 5.5.12
Table 3.4-1	Setpoint footnotes ★★, ++, ★, and ##	3.3.2-51 3.3.2-50	Bases: TS 5.5.12
Table 3.8.9-1	Minimum operable channels footnote ★★★	3.3.3-14	Bases: TS 5.5.12
Tables 3.14-1 and 4.14-1	Containment Purge Isolation Monitors, Control Room Isolation Radiation Monitors, Fuel Storage Pool Area Monitors	3.3.6-2 3.3.7-1 3.3.8-1	Bases: TS 5.5.12
Table 3.14-1	Fuel Building radiation monitor operability during crane operations and movement of new fuel	3.3.8-7	UFSAR: 50.59
Table 3.14-1	Containment Ventilation Process Monitors	3.4-4	Bases: TS 5.5.12

CTS	Description	DOC	Relo To : Control
3.2.4.A and footnote #	DNB related parameter and uncertainty	3.4-4	Bases: TS 5.5.12
3.3.1.A.4	Number of reactor coolant system loops	3.4-4	Bases: TS 5.5.12
3.3.1.A.5 footnote *	Reactor coolant system natural circulation capability	3.4-4	Bases: TS 5.5.12
3.3.1.B.1	Steam generator operability definition	3.4-4	Bases: TS 5.5.12
Table 3.3.3-1 footnote a 3.3.3.A 3.3.3.B 3.3.3.F	Information regarding allowable leakage	3.4-4	Bases: TS 5.5.12
3.3.2.G.3	Secondary side temperature limit for RCS pump start	3.4-4	UFSAR: 50.59
3.3.2.A Action 1	Engineering Evaluation	3.4-4	Bases: TS 5.5.12
Table 3.3.3-1	Reactor coolant system pressure isolation valves	3.4-4	UFSAR: 50.59
4.9.1.A	Seal water header testing	3.6-4	Bases: TS 5.5.12
4.5.1.a.3	Reactor containment fan cooler cooling water return pressure	3.6-5	Bases: TS 5.5.12
4.9.3.A.2	Containment isolation signals	3.6-45	Bases: TS 5.5.12
3.9.6.A	Limitation on opening containment purge valves	3.6-54	Bases: TS 5.5.12
3.9.6.B	Restrictions on opening containment relief line	3.6-56	Bases: TS 5.5.12
3.10.2.A.1	Containment air locks operability and testing details	3.6-68	Bases: TS 5.5.12
3.10.6	Containment minimum design temperature	3.6-87	UFSAR: 50.59

CTS	Description	DOC	Relo To : Control
3.8.7.A 3.8.7.A Note * 3.8.7.B 3.8.7.B Note *	Description of service water system operability	3.7-11	Bases: TS 5.5.12
3.7.1.C 3.7.2.A 3.8.6.A 3.8.6.B 3.8.6.C 3.8.6.D 3.8.7.C 3.13.2.A.1 3.13.2.A.2 3.13.2.A Action 4.7.3.B Table 4.7-1	Details on steam line safety valves and auxiliary feedwater pumps for steam generator emergency heat removal	3.7-12	Bases: TS 5.5.12
3.13.2.A.1.b 4.13.2.B.1	Fuel building ventilation flow path	3.7-12	Bases: TS 5.5.12
3.13.11 4.13.11.A	Control rod movement in storage pool	3.7-44	UFSAR: 50.59
3.15.1.A 3.15.1.C 3.15.1.D 3.15.1.E 3.15.1.F 3.15.2.C 3.15.2.D 3.15.2.E 3.15.2.G 4.15.1.E	Description of circuits, busses, batteries, inverters, and requirement to record the amount of water added to the station batteries	3.8-4	Bases: TS 5.5.12
4.15.1.E.4.c	Battery service test duration	3.8-26	Bases: TS 5.5.12
4.15.1.E.4.d	Battery degradation definition	3.8-28	Bases: TS 5.5.12
4.15.1.E.4.e	Battery charger temperature rise criterion	3.8-29	Bases: TS 5.5.12
3.15.2.D Tables 3.15-1 and 3.15-2	Minimum complement of safety systems with inoperable 4KV bus	3.8-37	UFSAR: 50.59

CTS	Description	DOC	Relo To : Control
3.15.2.C footnote ★	Service water and component cooling water operability	3.8-40	Bases: TS 5.5.12
3.15.2.E	Use of cross tie for battery operability	3.8-43	Bases: TS 5.5.12
3.13.1.A.2	Permanent or temporary source range monitors	3.9-6	Bases: TS 5.5.12
3.13.1.A.2	Details related to source range monitor operability	3.9-7	Bases: TS 5.5.12
3.13.1.A.4 4.13.1.A.4	Detail related to operability definition	3.9-13	Bases: TS 5.5.12
5.1, 5.2, 5.3, 5.4, 5.5.1, 5.5.2, 5.6, Figure 5.5.2-1	Design features descriptive information	4-1	UFSAR: 50.59
6.1.1.B 6.1.1.C 6.14 6.2.1.i Fig 6.1-1	Organization descriptions and titles	5.0-1	QAM: 50.54(a)
6.1.7.A.1 6.1.7.B.1	Safety Limit violation followup	2.2-4	QAM: 50.54(a)
SR 3.2.1.F	Boric Acid System		UFSAR 50.59
SR. 3.2.2.C.3	NIS Detector Temperature Control		UFSAR 50.59
SR 3.3.1.C.1	Pressurizer Safety Valves		UFSAR 50.59
SR 3.3.1.G	Reactor Vessel Head Vent System		UFSAR 50.59
SR 3.3.2.C	Steam Generator Pressure/Temperature (P/T) Limits		UFSAR 50.59
SR 3.3.2.D	Pressurizer Heatup and Cooldown Limits		UFSAR 50.59
SR 3.3.4	RCS Structural Integrity		UFSAR 50.55a 50.59

CTS	Description	DOC	Relo To : Control
SR 3.3.5	RCS Chemistry		UFSAR 50.59
SR 3.8.9	Accident Monitoring Instrumentation		UFSAR 50.59
SR 3.9.2	Penetration Pressurization Systems		UFSAR 50.59
SR 3.13.1.A.5	Communications		UFSAR 50.59
SR 3.13.1.A.6	Fuel Handling SRO		UFSAR 50.59
SR 3.13.5	Refueling Equipment OPERABILITY		UFSAR 50.59
SR 3.13.7	Spent Fuel Pit Cooling Systems		UFSAR 50.59
SR 3.13.8	Fuel Inspection Program		UFSAR 50.59
SR 3.14	Plant Radiation Monitoring		UFSAR 50.59
SR 3.19	Failed Fuel Monitoring		UFSAR 50.59
SR 3.22	Shock Suppressors		UFSAR 50.59
SR 3.24	Sealed Source Contamination		UFSAR 50.59
SR 6.8	Flooding Protection		UFSAR 50.59
License Condition 2.C(7)(b)	Heavy Loads Controls		UFSAR 50.59