

Attachment 19

Westinghouse Electric Company EQ-EV-71-WBT-NP, Revision 1, "Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2," Dated February 2011



Westinghouse Non-Proprietary Class 3

Nuclear Automation Watts Bar Unit 2 NSSS Unit 2 Completion Program I&C Projects

Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2

**EQ-EV-71-WBT-NP,
Rev. 1**

February 2011

APPROVALS

Function	Name and Signature
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* Electronically approved records are authenticated in the electronic document management system.

** LTR-EQ-11-14

WESTINGHOUSE NON-PROPRIETARY CLASS 3

LIST OF CONTRIBUTORS

Revision	Name and Title
1	Jenna L. Tyger Technical Editor, Technical Communications

REVISION HISTORY

RECORD OF CHANGES

Revision	Author	Description	Completed
0-A	John J. Zotter	Original Issue (Draft)	02/11
0	John J. Zotter	Original Issue	02/11
1	John J. Zotter	Updated document to be consistent with the requirements of WNA-WI-00097-GEN.	See EDMS

DOCUMENT TRACEABILITY & COMPLIANCE

Created to Support the Following Document(s)	Document Number	Revision
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Item	Description	Status
None.		

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None.		

ACRONYMS AND TRADEMARKS

Acronyms used in the document are defined in WNA-PS-00016-GEN, “Standard Acronyms and Definitions” (Reference 16), or included below to ensure unambiguous understanding of their use within this document.

Acronym	Definition
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LPMS	Loose Parts Monitoring System
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DMIMS-DX is a trademark or registered trademark in the United States of Westinghouse Electric Company LLC, its subsidiaries and/or its affiliates. This mark may also be used and/or registered in other countries throughout the world. All rights reserved. Unauthorized use is strictly prohibited. Other names may be trademarks of their respective owners.

All other product and corporate names used in this document may be trademarks or registered trademarks of other companies, and are used only for explanation and to the owners’ benefit, without intent to infringe.

GLOSSARY OF TERMS

Standard terms used in the document are defined in WNA-PS-00016-GEN, "Standard Acronyms and Definitions" (Reference 16), or included below to ensure unambiguous understanding of their use within this document.

Term	Definition
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None.	
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REFERENCES

Following is a list of references used throughout this document.

1. WBT-D-2782, "Response to Request for Loose Parts Monitoring System Qualification Documents," December 17, 2010. (Westinghouse Proprietary)
2. Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled-Reactors," U.S. Nuclear Regulatory Commission, Revision 1, May 1981.
3. 2657C47, Rev. 4, "DMIMS Charge Pre-Amp Details," Westinghouse Electric Company LLC. (Westinghouse Proprietary)
4. 5359C29, Rev. 9, "DMIMS Softline Cable Outline and Assembly," Westinghouse Electric Company LLC. (Westinghouse Proprietary)
5. LTR-EQ-11-13, "WBT DMIMS-DX™ Preamplifier, Softline Cable, and Connector Information," Westinghouse Electric Company LLC, February 7, 2011. (Westinghouse Proprietary)
6. RTU-DP-10-9, "Westinghouse Corporate Thermal – Radiation Materials Application Data Manual," Westinghouse Electric Company LLC, November 1980.
7. SAND82-2151, "The application of Remote Electronics in a Nuclear Fuel Reprocessing Environment: Radiation Effects and Design Guidelines," Sandia National Laboratories, January 1983.
8. R.T. Johnson, et. al., "Aging of Electronics with Application to Nuclear Power Plant Instrumentation," IEEE Transactions on Nuclear Science, Vol. NS-31, No. 1, February 1984.
9. NASA-CR-143711, "Final Report Radiation and Shielding Study for the International Ultraviolet Explorer (IUE)," October 1974.
10. WCAP-8587, Revision 6-A, "Methodology for Qualifying Westinghouse WRD Supplied NSSS Safety Related Electrical Equipment," Westinghouse Electric Corporation, March 1983.
11. IEEE Transactions on Nuclear Science, Vol. NS-32, No. 6, Institute of Electrical and Electronics Engineers, Inc., December 1985.
12. EPRI NP-2129, "Radiation Effects on Organic Materials in Nuclear Power Plants," Electric Power Research Institute, November 1981.
13. 1TS2863, Rev. 1, "Test Procedure for Digital Metal Impact Monitoring System Soft Line Cable Assembly," Westinghouse Electric Company LLC. (Westinghouse Proprietary)

REFERENCES (cont.)

14. 2A10030, Rev. 2, "DMIMS DX Softline Cable RG174 Low Noise," Westinghouse Electric Company LLC. (Westinghouse Proprietary)
15. WBT-D-2663, "Response to RAI Loose Parts Monitoring System In Containment Equipment Questions," Westinghouse Electric Company LLC, November 19, 2010. (Westinghouse Proprietary)
16. WNA-PS-00016-GEN, Rev. 5, "Standard Acronyms and Definitions," Westinghouse Electric Company LLC.

SECTION 1 OBJECTIVE

The objective of this environmental evaluation is to demonstrate that the Westinghouse Digital Metal Impact Monitoring System DX™ (*DMIMS-DX*) preamplifier and softline cable identified in WBT-D-2782, "Response to Request for Loose Parts Monitoring System Qualification Documents" (Reference 1) will meet the requirements in Section C, Paragraph 1, Subparagraph G in United States (U.S.) Nuclear Regulatory Commission (NRC) Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors" (Reference 2). This evaluation will determine the normal operating radiation, temperature, and humidity environmental limits for these components.

(Last Page of Section 1)

SECTION 2 ENVIRONMENTAL EVALUATION

The Westinghouse DMIMS-DX™ preamplifier is shown on Westinghouse Drawing 2657C47, “DMIMS Charge Pre-Amp Details” (Reference 3) and the softline cable is shown on Westinghouse Drawing 5359C29, “DMIMS Softline Cable Outline and Assembly” (Reference 4). The non-metallics in the preamplifier and the softline cable and connector assembly will be reviewed to determine the environmental limits of these components.

2.1 ENVIRONMENTAL EVALUATION OF PREAMPLIFIER

2.1.1 Radiation Evaluation of the Charge Preamplifier

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The components used in the electronic circuitry were provided by the vendor and are identified in LTR-EQ-11-13, “WBT DMIMS-DX™ Preamplifier, Softline Cable, and Connector Information” (Reference 5); for convenience they are listed in Table 2.1-1. The degradation of each of these types of components was evaluated using available industry references. The evaluation shows that the bipolar transistor would be the most sensitive to degradation from radiation with a threshold for incipient changes at 1.0×10^4 rads from R.T. Johnson, et. al., “Aging of Electronics with Application to Nuclear Power Plant Instrumentation” (Reference 8). The most affected parameter in bipolar transistors is the current gain (h_{FE}), which decreases with higher radiation exposure. Data from NASA-CR-143711, “Final Report Radiation and Shielding Study for the International Ultraviolet Explorer (IUE)” on the 2N2605 transistor (which is used in the charge preamplifier) show the degradation of current gain at 25 percent for radiation levels of 1.5×10^5 rads, and 75 percent for radiation exposures of 6×10^5 rads (Reference 9). There is no requirement for operation of the Loose Parts Monitoring System (LPMS) in an abnormal or accident radiation environment. Therefore, any degradation in the charge preamplifier will be gradual from the exposure to the normal radiation levels inside containment.

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In addition to the electrical components, the preamplifier contains a BNC connector which contains an epoxy and a Halar insulator. As indicated in Figure 2 of RTU-DP-10-9, “Westinghouse Corporate Thermal – Radiation Materials Application Data Manual” (Reference 6), epoxies have radiation resistance greater than 1×10^6 rads. Halar, like other plastics, degrades in a radiation field by scission of the polymer chains and reaction of liberated radicals with the polymer chains. That being said, while its mechanical properties will degrade over time, it will still function as an insulator, and will remain in place

because it is encapsulated. A conservative radiation resistance of 1×10^6 rads was selected for this evaluation, although data from "IEEE Transactions on Nuclear Science" (Reference 11) indicates that Halar has a higher radiation threshold.

Table 2.1-1. Radiation Thresholds for Electronic Components Used in Preamplifier

Part	Description	Threshold (Mrads)	Reference
A15370	PC Board (G10 Glass Epoxy)	> 100	Reference 6 Spec TR-44165AC/AF
2N3821	N-FET	1	Reference 7
		10	Reference 8
2N2605	PNP Silicon Bipolar Transistor	.01-1	Reference 8
1N4371A	2.8V Zener Diode	1-10	Reference 7
SA105A102FAA	990 pf 1% Ceramic Capacitor	100	Reference 7
S1206CPX226M30	22 Mohm, 1/8w Thick film Resistor	1000	Reference 7
RN50C	100K Metal Film Resistor	1000	Reference 7
Epoxy	Sylgard 184	1	Reference 6
Output Connector	Halar (ECTFE) Insulator	1	Reference 11

2.1.2 Thermal Evaluation of the Charge Preamplifier

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2.1.3 Humidity Evaluation of the Charge Preamplifier

A review of the organic materials identified indicates that none will be susceptible to the humid environments. Most of the organics are not exposed to the humidity due to the construction of the preamplifier and the use of the Sylgard 184 epoxy to seal the preamplifier. The remaining components are not expected to be influenced by humidity.

2.2 ENVIRONMENTAL EVALUATION OF SOFTLINE CABLE

The components used in the softline cable are identified in Reference 5 and are listed in Table 2.2-1.

Table 2.2-1. Thermal Resistance for Softline Cable and Connectors

Part	Non-metallic Material	Temperature (°C)	Reference
Microdot Connector (PS10260H01)	Halar (ECTFE) Insulator	150°C	Reference 5
	Silicone Rubber Sealing Sleeve	70°C for 40 years	Reference 6 Spec TR-45501AD
Connector (PS10245H02)	Rexolite	80°C	Reference 5
Softline Coax Cable (2A10030H01)	Tefzel (ETFE) Insulation and jacket	150°C	Reference 14, Sheet 5
	Graphite Coated Teflon (TFE)	150°C	Reference 14, Sheet 5
Hysol Epoxy	Epoxy	149°C	Reference 5
Heat Shrink (Voltrex 2A10031H03)	Polyolefin	80°C for 40 years	Reference 6 Spec TR-44791JP
O-ring	Buna-N	30°C for 40 years	Reference 6 Spec TR-45351EA-EK

2.2.1 Radiation Evaluation of the Softline Cable

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Table 2.2-2. Radiation Thresholds for Softline Cable and Connectors

Part	Non-metallic Material	Threshold (Mrads)	Reference
Microdot Connector (PS10260H01)	Halar (ECTFE) Insulator	1	See subsection 2.2.1
	Silicone Rubber Sealing Sleeve	1	Reference 6 Spec TR-45501AD
Connector (PS10245H02)	Rexolite (Polystyrene)	20	Reference 12, Pages 4-6
Softline Coax Cable (2A10030H01)	Tefzel (ETFE)	20	Reference 5
	Graphite Coated Teflon (TFE)	0.01	Reference 6 Spec TR-44791KD-KT
Hysol Epoxy	Epoxy	165	Reference 5
Heat Shrink (Voltrex 2A10031H03)	Polyolefin	100	Reference 6 Spec TR-44791JP
O-ring	Buna-N	0.7	Reference 6 Spec TR-45351EA-EK

2.2.2 Thermal Evaluation of the Softline Cable

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2.2.3 Humidity Evaluation of the Softline Cable

A review of the organic materials identified indicates that none will be susceptible to the humid environments.

(Last Page of Section 2)

SECTION 3 OPERATING EXPERIENCE

Based on WBT-D-2663, "Response to RAI Loose Parts Monitoring System In Containment Equipment Questions" (Reference 15), Westinghouse has over 40 years experience in loose parts monitoring technologies. Since 1970, Westinghouse has installed over 40 metal impact monitoring systems worldwide, many of which use the same Westinghouse in-containment equipment that has been supplied to Watts Bar.

A review was performed of the Institute of Nuclear Power Operations (INPO) in January 2011 for the LPMS (Reference 5). Multiple searches were performed (i.e., preamplifiers, softline cable). No operation event related to the components in this evaluation was located.

(Last Page of Section 3)

SECTION 4 CONCLUSIONS

An environmental evaluation of the *DMIMS-DX* preamplifier and softline cable was performed to demonstrate its normal operating radiation, temperature, and humidity environmental limits. [

] ^a A review of the organic materials indicates that none will be susceptible to the humid environments. Most of the organics are not exposed to the humidity, and the ones that are will not be degraded due to humidity.

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(Last Page of Section 4)

Attachment 20

Westinghouse Electric Company CAW-11-3115, Application for Withholding Proprietary Information from Public Disclosure, EQ-EV-71-WBT-P, Revision 1, "Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2" (Proprietary), Dated February 18, 2011



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CAW-11-3115

February 18, 2011

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: EQ-EV-71-WBT-P, Rev. 1, "Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-11-3115 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying affidavit by Tennessee Valley Authority.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-11-3115, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. A. Gresham" followed by a stylized flourish.

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

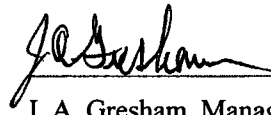
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared J. A. Gresham, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

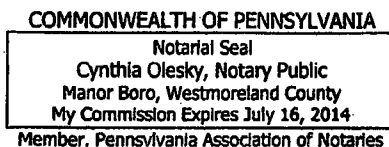


J. A. Gresham, Manager
Regulatory Compliance

Sworn to and subscribed before me
this 18th day of February 2011



Notary Public



- (1) I am Manager, Regulatory Compliance, in Nuclear Services, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

 - (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
- (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
- (f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
- (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
- (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
 - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
 - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390; it is to be received in confidence by the Commission.
- (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in EQ-EV-71-WBT-P, Rev. 1, "Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2" (Proprietary), dated February 2011, for submittal to the Commission, being transmitted by Tennessee Valley Authority letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with software requirements for the Post Accident Monitoring System (PAMS) and may be used only for that purpose.

This information is part of that which will enable Westinghouse to:

- (a) Obtain NRC review of the Westinghouse Post Accident Monitoring System.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of similar information to its customers for purpose of licensing and implementing the Westinghouse Post Accident Monitoring System.
- (b) Its use by a competitor would improve their competitive position in the design and licensing of a similar product.
- (c) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar specifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

Tennessee Valley Authority
Letter for Transmittal to the NRC

The following paragraphs should be included in your letter to the NRC:

Enclosed are:

1. ____ copies of EQ-EV-71-WBT-P, Rev. 1, "Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2" (Proprietary)
2. ____ copies of EQ-EV-71-WBT-NP, Rev. 1, "Environmental Evaluation and Operating History of the Westinghouse DMIMS-DX Preamplifier and Softline Cable Used at Watts Bar 2" (Non-Proprietary)

Also enclosed is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure CAW-11-3115, accompanying Affidavit, Proprietary Information Notice, and Copyright Notice.

As Item 1 contains information proprietary to Westinghouse Electric Company LLC, it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.390 of the Commission's regulations.

Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse affidavit should reference CAW-11-3115 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.



Watts Bar Nuclear Plant

Unit 0

Periodic Instruction

0-PI-OPS-17.0

18 Month Locked Valve Verification

Revision 0044

Quality Related

Level of Use: Continuous Use

Effective Date: 01-05-2011

Responsible Organization: OPS, Operations

Prepared By: Nicholas Armour

Approved By: Brian McInay

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 2 of 113
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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
38	03/17/08	36, 46-48, 57-58, 70, 110-111	Corrected typo errors, deleted information from Appendix L and M regarding valves deleted previously by DCN 51724. Deleted locked valves from Appendix C and M for incore locations which were returned to service after repair.
39	08/25/08	2, 11, 79	Added 2-ISV-33-675 as locked closed valve (reference DCN 52309)
40	10/07/08	2, 10, 11, 79, 80	Revised to incorporate DCN 52467-A, PIC 52838A. Temporary Construction Air Compressors will provide air to the Unit 2 Service Air System which includes the Unit 2 Turbine Bldg, Unit 2 Auxiliary Bldg, Unit 2 Reactor Bldg, Chlorination Bldg, CCW Pumping Station, and the Intake Pumping Station and the Security Backup Power Bldg. Added LC valves 2-ISV-33-509 and 2-ISV-33-543 and removed LC valve 2-ISV-33-675 from both App A and M. New valve alignment will align U2 Construction Air Compressors while preventing interaction with plant air systems.
41	10/13/09	2, 36	Revised to add Incore Detector System isolation valves as LOCKED CLOSED per WO 09-819668-000 for tube repair/plugging.
42	12/09/09	2, 46, 47	Revised Appendix G to add new valves to lock for System 82 that were identified during NA Observation 43964. (PER 148012)
43	12/21/09	2, 46, 47	Minor non-intent to correct the way position was displayed for valves added in Rev 42.
44	01/05/11	2, 27, 91, 113	Minor/editorial revision: Corrected UNID, nomenclature and location for 67-623A to match information in MEL and eSoms, which also changed ISV to THV (PER 297023). Reformatted source note.

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1.0 INTRODUCTION

1.1 Purpose

To ensure periodic confirmation of the configuration of locked valves.

1.2 Scope

This PI addresses those valves controlled by the locked Valve program.

1.3 Test Frequency/Conditions

The applicable portions of this PI are performed on an 18 month frequency and may be performed during any mode. Those valves whose location precludes access during plant operation (e.g. Mode 1, 2, 3, 4, etc) may be **N/A'd** with a note which explains the access problem (e.g. ALARA, etc.)

When valves are **N/A'd** due to access problems, the procedure may be successfully closed as long as the applicable valves are documented in a Corrective Action document in accordance with SPP-3.1. When valves are **NOT** in the position required by this procedure, the procedure may be successfully closed as long as the applicable valves are being controlled by a process (e.g. Clearance, SOI, Maintenance procedure) which returns the valve to the required position. The valve may be signed off with a reference to the appropriate controlling process.

2.0 REFERENCES

2.1 Performance References

- A. OPDP-6, Locked Valve/Breaker Program
- B. TI-31.08, Flow Balancing Valves Setpoint Positioning

2.2 Developmental References

- A. 47W800 Series prints
- B. 10 CFR-50 Appendix A, J and R
- C. FSAR Section 3.1
- D. N3-63-4001, Safety Injection System
- E. 1-SI-0-709, Containment Integrity Penetrations - 31 Days
- F. 1-SI-0-710, Containment Integrity: Penetrations

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3.0 PRECAUTIONS AND LIMITATIONS

- A. Work in a Radiological Control Area (RCA) requires the use of RWP'S, and may require additional ALARA Preplans. Failing to follow posted Rad control requirements can cause unnecessary radiation exposure. Rad Con should be notified of work having the potential to change radiological conditions.

4.0 PERFORMANCE

NOTES

- 1) CV verification should be performed for this instruction. Shift Manager, Unit Manager or Operations Superintendent or higher management level must approve single party verification. If the component being verified is **NOT** in its required position, then concurrent verification is required to place the component in its required position, and the SM/Unit SRO is to be notified immediately.
- 2) Appendix L lists valves included in the scope of this procedure. The verification requirements of the valves in Appendix L are satisfied by performance of 1-SI-0-709 and 1-SI-0-710.
- 3) Fire protection valves (i.e., System 26) are addressed in their respective FOR procedures and are **NOT** included in this PI.
- 4) Dike and Yard Area valves (i.e., System 40) are addressed in their respective ECM procedures and are **NOT** included in this PI.
- 5) Valves that are locked full open or full closed shall be verified in the proper position. This can be satisfied by positive valve indication such as valve position indicators at proper position, rising stem valves in full up or down position, scribes on valve stem at required position, etc. If valve can **NOT** be verified by visual inspection to be in the required position, then the valve must be unlocked and physically verified, then re-locked. Valves that are throttled will be verified properly secured and locked only. Positions are verified by other documents.
- 6) Credit for verifications done within the previous 92 days may be used if the Shift Manager approves. This approval should be documented identifying procedure used to verify position and date performed.
- 7) Locking methods and locked valve identification are defined in OPDP-6.
- 8) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 9) Appendix M provides background information for the locking requirement of valves in the scope of this procedure.

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Date _____

4.0 PERFORMANCE (continued)

- [1] IF single party verification are to be performed, **THEN** manager (SM or Above) shall sign below authorizing single party checks:

Signature

Title

- [2] **PERFORM** Appendix A through Appendix K **AND**
ENSURE valves listed are in the indicated position. _____

5.0 POST PERFORMANCE ACTIVITIES

None

6.0 RECORDS

6.1 QA Records

The following are QA records and handled by the DCRM program:

Completed Data Packages

6.2 Non-QA Records

None

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**Appendix A
(Page 1 of 2)**

Turbine Bldg

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

Date _____

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
1-FE-24-33 ROOT	T4B/685	LC	1-RTV-24-349A		CV
1-FE-24-33 ROOT	T4B/685	LC	1-RTV-24-350A		CV
SERVICE BLDG RSW CONN ISOL	Elect Shop el 729	LC	0-ISV-25-568		CV
RSW STORAGE TANK LEVEL CONTROL VALVE A	T7E/685	LO*	0-FCV-25-94		CV
RSW STORAGE TANK LEVEL CONTROL VALVE C	T7E/685	LO*	0-FCV-25-96		CV
RSW STORAGE TANK LEVEL CONTROL VALVE B	T7E/685	LO*	0-FCV-25-95		CV
TURBINE BLDG RSW CONN ISO	T9H/685	LC	0-SPV-25-530		CV
WET LAYUP RECIRC PUMP UNIT 1 AMMONIA SUPPLY	T9D/708	LC*	1-ISV-36-593		CV
WET LAYUP RECIRC PUMP UNIT 1 HYDRAZINE SUPPLY	T10D/708	LC*	1-ISV-36-583		CV
TURBINE BLDG RSW SUPPLY ISOL	T10D/708	LC	2-ISV-25-555		CV
SERVICE AIR SUPPLY HDR ISOL	T9K/708	LC*	2-ISV-33-509		CV
TURBINE BUILDING RSW SUPPLY ISOL	T10K/708	LC	2-ISV-25-531		CV
SERVICE AIR TURB BLDG SUPPLY HDR ISOL	T9D/708	LC*	2-ISV-33-543		CV
TURBINE BLDG RSW SUPPLY ISOL	T11D/708	LC	2-ISV-25-553		CV
CNDS DEMIN WASTE DISCH TO TB SUMP ISOL	T11D/708	LC	0-ISV-14-1008		CV
CNDS DEMIN WASTE DISCH TO CLG TWR BLDN ISOL	T12D/708	LC	0-ISV-14-151		CV
RSW STORAGE TANK SUPPLY HDR ISOL	T14Q/708	LC	0-ISV-25-535		CV

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**Appendix A
(Page 2 of 2)
Turbine Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
U1/U2 CST TO AUX FW PMP SUPPLY HDR CROSSTIE	T15N/708	LC	0-ISV-2-548		CV
STATOR COOLANT TANK H2 RELIEF U/S ISOL	SCW Skid	LO	1-ISV-35-611		CV
STATOR COOLANT TANK H2 RELIEF D/S ISOL	SCW Skid	LO	1-ISV-35-612		CV
STATOR COOLANT PUMP RECIRC THROTTLE	SCW Skid	LT(1)	1-THV-35-634		CV
1-FE-24-46 ROOT	T4D/708	LO	1-RTV-24-353A		CV
1-FE-24-46 ROOT	T4D/708	LO	1-RTV-24-354A		CV
TURBINE BUILDING RSW SUPPLY ISOL	T7K/708	LC	1-ISV-25-531		CV
AUX FEEDWATER PUMP CST A SUP HDR ISOL	T15N/718	LO	1-ISV-2-504		CV
GEN EXCITER END H2 VENT ISOL	T6E/729	LC	1-ISV-35-623		CV
HP TURBINE STEAM SEAL LEAKOFF	T3H/755 (under HP Turb)	LO	1-LOV-47-727		CV
HP TURBINE STEAM SEAL LEAKOFF	T3J/755 (north of HP Turb)	LO	1-LOV-47-728		CV
HP TURBINE STEAM SEAL LEAKOFF	T3H/755 (under HP Turb)	LO	1-LOV-47-729		CV
HP TURBINE STEAM SEAL LEAKOFF	T3J/755 (north of HP Turb)	LO	1-LOV-47-730		CV

(1) SOI-35.03 provides adjustment requirements for this valve.

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**Appendix B
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Auxiliary Bldg**

Date _____

NOTES	
1)	Valves identified on the checklists with an asterisk (*) are required locked by design output.
2)	Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
RHR PUMP 1B-B DISCHARGE ISOLATION	A6U/676 Pmp Rm	LO	1-ISV-74-521		CV
RHR PUMP 1A-A DISCHARGE ISOLATION	A6V/676 Pmp Rm	LO	1-ISV-74-520		CV
CS PUMP 1B-B OIL HX CCS OUTLET THROTTLE	A7T/676	LT (1)	1-THV-70-571B		CV
CS PUMP 1B-B OIL HX CCS INLET ISOLATION	A7T/676	LO	1-ISV-70-569B		CV
CS PUMP 1B-B OIL HX CCS OUTLET ISOLATION	A7T/676	LO	1-ISV-70-572B		CV
CS PUMP 1A-A OIL HX CCS OUTLET THROTTLE	A7U/676	LT(1)	1-THV-70-571A		CV
CS PMP RM CLR 1B-B ERCW RET THROTTLE	A7U/676	LT(1)	1-THV-67-605B		CV
CS PMP RM CLR 1A-A ERCW RET THROTTLE	A7U/676	LT (1)	1-THV-67-605A		CV
CS PUMP 1A-A OIL HX CCS OUTLET ISOLATION	A7U/676	LO	1-ISV-70-572A		CV
RHR PMP 1B-B SEAL WATER HX CCS OUTLET THROTTLE	A7V/676	LT(1)	1-THV-70-566B		CV
RHR PMP 1A-A SEAL WATER HX CCS OUTLET THROTTLE	A7V/676	LT(1)	1-THV-70-566A		CV
RHR PMP RM CLR 1B-B ERCW RET THROTTLE	A7V/676	LT(1)	1-THV-67-606B		CV
RHR PMP 1A-A SEAL WATER HEAT EXCHANGER OUT ISOL	A7V/676	LO	1-ISV-70-567A		CV

(1) TI-31.08 provides current position requirements for throttled valves.

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 11 of 113
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**Appendix B
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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
RHR PMP 1A-A SEAL WATER HX CCS INLET ISOL	A7V/676	LO	1-ISV-70-564A		CV
RHR PMP 1B-B SEAL WATER HEAT EXCHANGER OUT ISOL	A7V/676	LO	1-ISV-70-567B		CV
RHR PMP 1B-B SEAL WATER HX CCS INLET ISOL	A7V/676	LO	1-ISV-70-564B		CV
CONTROL AIR ISOL VLV TO 1-FCV-67-190	A7V/676	LC*	1-ISV-32-3022		CV
RHRP ROOM COOLER 1A-A ERCW SUP FLOW CNTL	A7V/676	LO*(2)	1-FCV-67-188		CV
RHRP ROOM COOLER 1B-B ERCW SUP FLOW CNTL	A7V/676	LO*(2)	1-FCV-67-190		CV
CONTROL AIR ISOL VLV TO 1-FCV-67-188	A7W/676	LC*	1-ISV-32-3021		CV
RHR PMP RM CLR 1A-A ERCW RET THROTTLE	A7W/676	LT (1)	1-THV-67-606A		CV
CS PUMP 1A-A OIL HX CCS INLET ISOLATION	A7U/686	LO	1-ISV-70-569A		CV
PENT ROOM COOLER 2A-A ERCW SUP FLOW CNTL	A12V/692	LO(2)	2-FCV-67-346		CV
PENT ROOM COOLER 2B-B ERCW SUP FLOW CNTL	A12V/692	LO(2)	2-FCV-67-348		CV
CONTROL AIR ISOL VLV TO 2-FCV-67-348	A12V/692	LC	2-ISV-32-2964		CV
CONTROL AIR ISOL VLV TO 2-FCV-67-346	A12V/692	LC	2-ISV-32-2963		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) FSV's associated with these valves have the power disconnected and by locking the control air isolation valve closed, we are in effect locking open the FCV.

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**Appendix B
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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
PIPE CHASE COOLER 2B-B ERCW SUP FLOW CNTL	A14U/692	LO(2)	2-FCV-67-344		CV
PIPE CHASE COOLER 2B-B ERCW RET THROTTLE	A14U/692	LT(1)	2-THV-67-611B		CV
CONTROL AIR ISOL VLV TO 2-FCV-67-342	A15U/692	LC	2-ISV-32-3804		CV
CONTROL AIR ISOL VLV TO 2-FCV-67-344	A14U/692	LC	2-ISV-32-3805		CV
PIPE CHASE ROOM CLR 2A-A ERCW RET THROTTLE	A15U/692	LT(1)	2-THV-67-611A		CV
PIPE CHASE COOLER 2A-A ERCW SUP FLOW CNTL	A15U/692	LO(2)	2-FCV-67-342		CV
PWST BYPASS ISOLATION VALVE	U1 Pipe Tunnel	LC	1-ISV-81-548		CV
TD AUX FEEDWATER PUMP RECIRC ISOL	A2T/692	LO	1-ISV-3-819		CV
TD AUX FEEDWATER PUMP SUCTION ISOL	A2T/692	LO	1-ISV-3-809		CV
LOWER CNTMT VENT CLR 1B & 1D ERCW SUP ISOL	A2U/692	LO	1-ISV-67-523B		CV
CONTROL AIR ISOL VLV TO 1-FCV-67-170	A4T/692	LC*	1-ISV-32-2936		CV
CONTROL AIR ISOL VLV TO 1-FCV-67-168	A4T/692	LC*	1-ISV-32-2935		CV
CCP ROOM COOLER 1A-A ERCW SUP FLOW CNTL	A4T/692	LO*(2)	1-FCV-67-168		CV
CCP ROOM COOLER 1B-B ERCW SUP FLOW CNTL	A4T/692	LO*(2)	1-FCV-67-170		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) FSV's associated with these valves have the power disconnected and by locking the control air isolation valve closed, we are in effect locking open the FCV.

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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CVCS CCP ROOM CLR 1B-B ERCW RET THROTTLE	A4T/692	LT (1)	1-THV-67-601B		CV
CVCS CCP ROOM CLR 1B-B ERCW RET ISOL	A4T/692	LO	1-ISV-67-602B		CV
CVCS CCP ROOM CLR 1B-B ERCW SUP ISOL	A4T/692	LO	1-ISV-67-600B		CV
CCP 1B-B MIN FLOW ISOL	A4U/692	LO	1-ISV-62-531		CV
CCP 1A-A OIL COOLERS CCS OUTLET THROTTLE	A4U/692	LT (1)	1-THV-70-554A		CV
CCP 1B-B DISCHARGE ISOL	A4U/692	LO	1-ISV-62-533		CV
CCP 1B-B SUCTION ISOL	A4U/692	LO	1-ISV-62-510		CV
CCP 1A-A SUCTION ISOL	A4U/692	LO	1-ISV-62-509		CV
CCP 1A-A DISCHARGE ISOL	A4U/692	LO	1-ISV-62-527		CV
CCP 1A-A LUBE OIL CLR CCS INLET ISOLATION	A4U/692	LO	1-ISV-70-801		CV
CCP 1A-A GEAR OIL CLR CCS INLET ISOLATION	A4U/692	LO	1-ISV-70-800		CV
CCP 1A-A OIL COOLERS CCS INLET ISOLATION	A4U/692	LO	1-ISV-70-553A		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix B
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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
PENT ROOM CLR 1B-B ERCW RET THROTTLE	A4V/692	LT (1)	1-THV-67-608B		CV
PENT ROOM CLR 1A-A ERCW RET THROTTLE	A4V/692	LT (1)	1-THV-67-608A		CV
CCP 1B-B OIL COOLERS CCS INLET ISOLATION	A5U/692	LO	1-ISV-70-553B		CV
CCP 1B-B GEAR OIL CLR CCS INLET ISOLATION	A5U/692	LO	1-ISV-70-798		CV
SI PUMP 1B-B DISCHARGE ISOLATION	A5U/692	LO	1-ISV-63-527		CV
CCP 1B-B LUBE OIL CLR CCS INLET ISOLATION	A5U/692	LO	1-ISV-70-799		CV
CCP 1B-B OIL COOLERS CCS OUTLET THROTTLE	A5U/692	LT (1)	1-THV-70-554B		CV
SI PUMP 1A-A DISCHARGE ISOLATION	A5V/692	LO	1-ISV-63-525		CV
CCP 1A-A OIL COOLERS CCS OUTLET ISOLATION	A6T/692	LO	1-ISV-70-557A		CV
CCP 1B-B OIL COOLERS CCS OUTLET ISOLATION	A6T/692	LO	1-ISV-70-557B		CV
SI PUMP 1B-B LUBE OIL CLR CCS OUTLET THROTTLE	A7U/692	LT (1)	1-THV-70-590B		CV
SI PUMP 1A-A LUBE OIL CLR CCS OUTLET THROTTLE	A7V/692	LT (1)	1-THV-70-590A		CV

- (1) TI-31.08 provides current position requirements for throttled valves.

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 15 of 113
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**Appendix B
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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
SIS PMP RM CLR 1A-A ERCW RET THROTTLE	A7V/692	LT (1)	1-THV-67-604A		CV
SI PUMP 1B-B LUBE OIL COOLER CCS OUT ISOL	A7V/692	LO	1-ISV-70-562B		CV
PENT/PIPE CHASE RM CLR ERCW SUP HDR 1A ISOL	A7V/692	LO	1-ISV-67-607A		CV
PENT/PIPE CHASE RM CLR ERCW SUP HDR 1B ISOL	A7V/692	LO	1-ISV-67-607B		CV
SI PUMP 1B-B LUBE OIL COOLER CCS INLET ISOL	A7V/692	LO	1-ISV-70-558B		CV
SI PUMP 1A-A LUBE OIL COOLER CCS OUT ISOL	A7V/692	LO	1-ISV-70-562A		CV
SIS PMP RM CLR 1B-B ERCW RET THROTTLE	A7V/692	LT (1)	1-THV-67-604B		CV
SI PUMP 1A-A LUBE OIL COOLER CCS INLET ISOL	A7V/692	LO	1-ISV-70-558A		CV
COOLING TOWER BLOWDOWN RELEASE HEADER ISOL	A7W/692	LC	0-ISV-77-660		CV
CVCS CCP ROOM CLR 1A ERCW RET THROTTLE	A4T/695	LT (1)	1-THV-67-601A		CV
CVCS CCP ROOM CLR 1A-A ERCW RET ISOL	A4T/695	LO	1-ISV-67-602A		CV
CVCS CCP ROOM CLR 1A-A ERCW SUP ISOL	A4T/695	LO	1-ISV-67-600A		CV

(1) TI-31.08 provides current position requirements for throttled valves.

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 16 of 113
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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CCP 1A-A MINIFLOW ISOL	A4U/699	LO	1-ISV-62-524		CV
PD PUMP RECIRC 1-FCV-62-275 ISOL	A5U/700	LC	1-ISV-62-725		CV
PD CHG PUMP RECIRC ISOL	A5U/700	LC*	1-FCV-62-275		CV
CS/RHR/SIS PMP 1B-B HX CCS RETURN ISOLATION	A6T/710	LO	1-ISV-70-725B		CV
CS/RHR/SIS PMP 1A-A HX CCS RETURN ISOLATION	A6T/710	LO	1-ISV-70-725A		CV
PENT ROOM COOLER 2B-B ERCW RET THROTTLE	A12V/702	LT (1)	2-THV-67-608B		CV
PENT ROOM COOLER 2A-A ERCW RET THROTTLE	A12W/702	LT (1)	2-THV-67-608A		CV
PIPE CHASE RM CLR 1A-A ERCW RET ISOL	A1U/703	LT (1)	1-THV-67-611A		CV
PIPE CHASE CLR 1B-B ERCW RET THROTTLE	A2U/703	LT (1)	1-THV-67-611B		CV
SIS/CS/RHR PMP RM CLR ERCW RET HDR 1B ISOL	A7V/703	LO	1-ISV-67-613B		CV
SIS/CS/RHR PMP RM CLR ERCW RET HDR 1A ISOL	A7V/703	LO	1-ISV-67-613A		CV
SIS/CS/RHR PMP RM CLR ERCW SUP HDR 1A ISOL	A7V/703	LO	1-ISV-67-603A		CV
SIS/CS/RHR PMP RM CLR ERCW SUP HDR 1B ISOL	A7V/703	LO	1-ISV-67-603B		CV
PENT/PIPE CHASE RM CLR ERCW RET HDR 1A ISOL	A7V/703	LO	1-ISV-67-612A		CV

(1) TI-31.08 provides current position requirements for throttled valves.

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 17 of 113
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**Appendix B
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Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
PENT/PIPE CHASE RM CLR ERCW SUP HDR 2B ISOL	A8V/703	LO	2-ISV-67-607B		CV
PENT/PIPE CHASE RM CLR ERCW RET HDR 1B ISOL	A8V/703	LO	1-ISV-67-612B		CV
PENT/PIPE CHASE RM CLR ERCW SUP HDR 2A ISOL	A8V/703	LO	2-ISV-67-607A		CV
PENT/PIPE CHASE RM CLR ERCW RET HDR 2A ISOL	A8V/703	LO	2-ISV-67-612A		CV
PENT/PIPE CHASE RM CLR ERCW RET HDR 2B ISOL	A8V/703	LO	2-ISV-67-612B		CV
AUX BLDG ERCW SUP HDR 2B ISOL	A15U/706	LO*	2-FCV-67-82		CV
AUX BLDG ERCW SUP HDR 2A ISOL	A15U/706	LO*	2-FCV-67-81		CV
AUX BLDG ERCW SUP HDR 1B ISOL	A1U/706	LO*	1-FCV-67-82		CV
AUX BLDG ERCW SUP HDR 1A ISOL	A1U/706	LO*	1-FCV-67-81		CV
1B ESF EQUIPMENT CCS RETURN HEADER	A6T/706	LO*	1-FCV-70-75		CV
2B ESF EQUIPMENT CCS RETURN HDR ISOL	A8T/706	LO*	2-FCV-70-75		CV
LOWER CNTMT VENT CLR 1A & 1C ERCW SUP ISOL	A2U/708	LO	1-ISV-67-523A		CV
HOLDUP TANK B WDS HEADER ISOL	A10S/713	LO*(2)	2-ISV-62-957		CV

- (2) If valve position is changed, 1-ISV-62-957 must be OPEN for RFV-77-758A & -758B (WCG's) relief path.

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NOTE					
Ensure valves locked with cable have any slack in the cable minimized					

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
HOLDUP TANK B VCT INLET	A10S/713	LO*(2)	2-ISV-62-953		CV
SPARE	A12R/713	LC	1-ISV-62-1059		CV
BA XFER PUMP 1A-A FLUSH	A12R/713	LC	1-FLV-62-1051A		CV
BA XFER PUMP 1B-B FLUSH	A12R/713	LC	1-FLV-62-1051B		CV
SPARE	A13Q/713	LC	0-ISV-62-1030		CV
SPARE	A13Q/713	LC	1-ISV-62-1030		CV
BA XFER PUMP 2B-B FLUSH	A13R/713	LC	2-FLV-62-1051B		CV
BA XFER PUMP 2A-A FLUSH	A13R/713	LC	2-FLV-62-1051A		CV
CONTROL AIR ISOL VLV TO 2-FCV-67-352	A13U/713	LC	2-ISV-32-3167		CV
2-PI-62-234 ROOT	A14Q/713	LC	2-RTV-62-392A		CV
PENT ROOM COOLER 2B-B ERCW RET THROTTLE	A14U/713	LT(1)	2-THV-67-609B		CV
PENT ROOM COOLER 2A-A ERCW SUP FLOW CNTL	A14V/713	LO(3)	2-FCV-67-350		CV
CONTROL AIR ISOL VLV TO 2-FCV-67-350	A14V/713	LC	2-ISV-32-3166		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) If valve position is changed, 1-ISV-62-953 must be OPEN for RFV-63-577 (BIT) relief path.
- (3) FSV's associated with these valves have the power disconnected and by locking the control air isolation valve closed, we are in effect locking open the FCV.

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NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
PENT ROOM COOLER 2B-B ERCW SUP FLOW CNTL	A14V/713	LO (2)	2-FCV-67-352		CV
PENT ROOM COOLER 2A-A ERCW RET THROTTLE	A14W/713	LT (1)	2-THV-67-609A		CV
CONDENSATE SUPPLY ISOL TO AUX FEEDWATER	A15Q/713	LO	1-ISV-3-800		CV
BA XFER/AFW PMP SPACE CLR 2A-A ERCW SUP ISOL	A15S/713	LO	2-ISV-67-648A		CV
BA XFER/AFW PMP SPACE CLR 2A-A ERCW THROTTLE	A15S/713	LT (1)	2-THV-67-673A		CV
BA XFER/AFW PMP SPACE CLR 2A-A ERCW RET ISOL	A15S/713	LO	2-ISV-67-674A		CV
BA XFER/AFW PMP SPACE CLR 2B-B ERCW THROTTLE	A15T/713	LT (1)	2-THV-67-673B		CV
BA XFER/AFW PMP SPACE CLR 2B-B ERCW SUP ISOL	A15T/713	LO	2-ISV-67-648B		CV
BA XFER/AFW PMP SPACE CLR 2B-B ERCW RET ISOL	A15T/713	LO	2-ISV-67-674B		CV
CCS PUMP C-S SUCTION ISOLATION	A2S/713	LO	0-ISV-70-503		CV
CCS PUMP 1B-B DISCHARGE ISOLATION	A2T/713	LO	1-ISV-70-505B		CV
PENT ROOM CLR 1B-B ERCW RET THROTTLE	A2U/713	LT(1)	1-THV-67-609B		CV
PENT ROOM CLR 1A-A ERCW RET THROTTLE	A2U/713	LT (1)	1-THV-67-609A		CV
CCS/AFW PMP SPACE CLR 1A-A ERCW RET THROTTLE	A3S/713	LT (1)	1-THV-67-643A		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) FSV's associated with these valves have the power disconnected and by locking the control air isolation valve closed, we are in effect locking open the FCV.

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NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
AUX FEEDWATER PMP 1A-A SUCTION ISOL	A3S/713	LO	1-ISV-3-803		CV
CCS/AFW PMP SPACE CLR 1A-A ERCW RET ISOL	A3S/713	LO	1-ISV-67-644A		CV
CCS PUMP 2A-A SUCTION ISOLATION	A2S/713	LO	2-ISV-70-503A		CV
CCS PUMP 2B-B SUCTION ISOLATION	A2T/713	LO	2-ISV-70-503B		CV
CCS PUMP 2A-A DISCHARGE ISOLATION	A2S/713	LO	2-ISV-70-505A		CV
CCS PUMP 2B-B DISCHARGE ISOLATION	A2T/713	LO	2-ISV-70-505B		CV
CCS PUMP 1A-A DISCHARGE ISOLATION	A3S/713	LO	1-ISV-70-505A		CV
CCS PUMP 1A-A SUCTION ISOLATION	A3S/713	LO	1-ISV-70-503A		CV
AUX FEEDWATER PMP 1A-A RECIRC ISOL	A3S/713	LO	1-ISV-3-816		CV
CCS/AFW PMP SPACE CLR 1A-A ERCW SUP ISOL	A3S/713	LO	1-ISV-67-642A		CV
CCS PUMP C-S DISCHARGE ISOLATION	A3S/713	LO	0-ISV-70-505		CV
CCS/AFW PMP SPACE CLR 1B-B ERCW SUP ISOL	A3T/713	LO	1-ISV-67-642B		CV
CCS PUMP 1B-B SUCTION ISOLATION	A3T/713	LO	1-ISV-70-503B		CV
CONTROL AIR BYPASS VALVE TO 1-FCV-3-355	A4S/713	LO	1-HCV-3-355		CV
CONTROL AIR BYPASS VALVE TO 1-FCV-3-359	A4S/713	LO	1-HCV-3-359		CV
AUX FEEDWATER PMP 1B-B RECIRC ISOL	A4S/713	LO	1-ISV-3-817		CV

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NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
AUX FEEDWATER PMP 1B-B SUCTION ISOL	A4S/713	LO	1-ISV-3-804		CV
ERCW HDR B A/C EQUIP RET ISOL	A4T/713	LO	1-ISV-67-554B		CV
ERCW HDR A A/C EQUIP RET ISOL	A4T/713	LO	1-ISV-67-554A		CV
CS HX 1A ERCW RET THROTTLE	A5V/713	LT (1)	1-THV-67-537A		CV
CS HX 1B ERCW RET THROTTLE	A5V/713	LT (1)	1-THV-67-537B		CV
SPARE	A5W/713	LC & CAPPED	1-ISV-63-564		CV
SI PUMP A DISCH HDR HOT LEG VENT	A5W/716	LC	1-VTV-63-421		CV
SI PUMP B DISCH HDR HOT LEG VENT	A5W/718	LC	1-VTV-63-423		CV
SI PUMP DISCH HDR COLD LEG VENT	A5W/716	LC	1-VTV-63-425		CV
SIS BORON INJ TANK INLET ISOLATION	A5W/713	LO	1-FCV-63-40		CV
SIS BORON INJ TANK INLET ISOLATION	A5W/713	LO	1-FCV-63-39		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
HOLDUP TANK A VCT INLET	A6S/713	LO*(3)	1-ISV-62-953		CV
CVCS SEAL WTR RETURN CHARGING PMP SUCTION	A6U/713	LO	1-BYV-62-653		CV
CVCS SEAL WATER HX OUTLET ISOL	A6U/713	LO	1-ISV-62-650		CV
CVCS SEAL WATER HX INLET ISOL	A6U/713	LO	1-ISV-62-647		CV
CVCS SEAL WTR RETURN VCT ISOLATION	A6U/713	LC*(4)	1-ISV-62-652		CV
HOLDUP TANK A WDS HEADER ISOL	A7S/713	LO*(2)	1-ISV-62-957		CV
RHR HEAT EXCHANGER 1B CCS OUTLET	A7T/713	LO	1-FCV-70-153		CV
RHR HEAT EXCHANGER 1B INLET ISOLATION	A7U/713 Hx Rm B	LO*	1-ISV-74-525		CV
RHR HEAT EXCHANGER 1B-B CCS THROTTLE	A7V/713	LT(1)	1-THV-70-546B		CV
RHR HEAT EXCHANGER 1B-B CCS INLET ISOLATION	A7V/713 (HX Rm el 745)	LO	1-ISV-70-545B		CV
RHR HEAT EXCHANGER 1A-A CCS THROTTLE	A7W/713	LT(1)	1-THV-70-546A		CV
RHR HEAT EXCHANGER 1A-A CCS INLET ISOLATION	A7W/760 HX Rm above top grating	LO	1-ISV-70-545A		CV
RHR HEAT EXCHANGER 1A INLET ISOLATION	A7W/713 Hx Rm A	LO	1-ISV-74-524		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) If valve position is changed, 1-ISV-62-957 must be OPEN for RFV-77-758A & -758B (WCG's) relief path.
- (3) If valve position is changed, 1-ISV-62-953 must be OPEN for RFV-63-577 (BIT) relief path.
- (4) Required by NCO92004 3018 to be in the LOCKED CLOSED position

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NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CCS HEAT EXCHANGER C INLET ISOLATION	A8S/713	LO	0-ISV-70-510		CV
CCP 1A-A/1B-B MIN FLOW	A5U/715	LO*	1-FCV-62-98		CV
CCP 1A-A/1B-B MIN FLOW	A5U/715	LO*	1-FCV-62-99		CV
CNTMT SPRAY PMP 1B-B DISCH ISOLATION	A5U/718	LO	1-ISV-72-529		CV
CNTMT SPRAY PMP 1A-A DISCH ISOLATION	A5V/718	LO	1-ISV-72-528		CV
BA XFER/AFW PMP SPACE CLR 2A-A ERCW SUP ISOL	A15S/719	LO	2-ISV-67-648A		CV
CNTMT SPRAY HDR B TEST LINE ISOLATION	A5V/719 BIT Rm	LC	1-ISV-72-504		CV
CNTMT SPRAY HDR A TEST LINE ISOLATION	A5V/719 BIT Rm	LC	1-ISV-72-503		CV
1-FCV-63-11 VENT ISOLATION LOW SIDE	A5V/714 BIT Rm	LC	1-VTV-63-17		CV
1-FCV-63-8 VENT ISOLATION HIGH SIDE & BONNET OVERPRESSURE VTV FOR 1-FCV-72-40	A5W/721 BIT Rm	LC	1-VTV-72-11		CV
BONNET OVERPRESSURE ISV FOR 1-FCV-72-41	A5V/721 BIT Rm	LC	1-ISV-72-41		CV
CCS/AFW PMP SPACE CLR 1B-B ERCW RET THROTTLE	A3T/721	LT(1)	1-THV-67-643B		CV
CCS/AFW PMP SPACE CLR 1B-B ERCW RET ISOL	A3T/721	LO	1-ISV-67-644B		CV
CCS PUMP 2A-A/2B-B SUCTION CROSSTIE	A1T/725	LC*	2-FCV-70-39		CV
CCS PUMP 2A-A/2B-B TO C-S SUCT XTIE	A1T/725	LO*	2-FCV-70-78		CV
CCS PUMP 2A-A/2B-B TO C-S DISCH XTIE	A2T/725	LO*	2-FCV-70-28		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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NOTE
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NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CCS PUMP 2A-A/2B-B DISCHARGE CROSSTIE	A2T/725	LC*	2-ISV-70-507		CV
CCS HEAT EXCHANGER B/C INLET CROSSTIE	A2T/725	LC*	2-FCV-70-14		CV
CCS PUMP 1A-A/1B-B TO C-S DISCH XTIE	A2T/725	LC*	1-FCV-70-27		CV
CCS PMP 2A-A & 2B-B TO C-S DISCH XTIE	A2T/725	LO*	2-FCV-70-29		CV
CCS HEAT EXCHANGERS A&C INLET CROSSTIE	A3S/725	LC*	1-FCV-70-13		CV
CCS HEAT EXCHANGERS A&C INLET CROSSTIE	A3S/725	LC*	1-FCV-70-23		CV
CCS HEAT EXCHANGER C INLET	A3S/725	LO*	0-FCV-70-22		CV
CCS PUMP 1A-A/1B-B TO C-S SUCTION XTIE	A3T/725	LC*	1-FCV-70-74		CV
CCS PUMP 1A-A/1B-B TO C-S SUCTION XTIE	A3T/725	LC*	1-FCV-70-64		CV
CCS PUMP 1A-A & 1B-B SUCTION CROSSTIE	A3T/725	LO*	1-FCV-70-34		CV
CCS PUMP 1A-A/1B-B TO C-S DISCH XTIE	A3T/725	LC*	1-FCV-70-26		CV
CCS HEAT EXCHANGER A INLET	A3T/725	LO*	1-FCV-70-25		CV
CCS PUMP 2A-A/2B-B TO C-S SUCTION XTIE	A3T/725	LO*	2-FCV-70-76		CV
RHR RWST RETURN	A7V/728 Hx Rm B	LC	1-HCV-74-34		CV
RHR HIGH POINT VENT	A5W/733 Hx Rm A	LC	1-VTV-74-41		CV
RHR HIGH POINT VENT	A5W/733 Hx Rm A	LC	1-VTV-74-42		CV

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NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CCS HEAT EXCHANGER B INLET	A2S/729	LO*	2-FCV-70-16		CV
CCS HEAT EXCHANGER B/C INLET CROSSTIE	A2S/729	LC*	2-FCV-70-18		CV
POST ACCIDENT SAMP CLR CCS RET HDR ISOLATION	A5W/729	LC	1-ISV-70-770		CV
POST ACCIDENT SAMP CLR CCS SUPPLY ISOL	A5W/729	LC	1-ISV-70-766		CV
PAS WASTE HOLDUP TANK OUTLET ISOL	A5X/729	LO	1-ISV-43-1586		CV
TD AFW PUMP ERCW SUP HDR ISOL	A3T/730	LO	1-ISV-67-923A		CV
LOWER CNTMT VENT CLR 1A & 1C ERCW RET ISOL	A3V/730	LO	1-ISV-67-577A		CV
MCR WTR CHLR B-B ERCW RET ISOL	A12U/731	LO	0-ISV-67-591B		CV
TD AFW PUMP ERCW SUP HDR ISOL	A12U/731	LO	1-ISV-67-924B		CV
LOWER CNTMT VENT CLR 1B & 1D ERCW RET ISOL	A3V/732	LO	1-ISV-67-577B		CV
ERCW HDR 2A A/C EQUIP RET ISOL	A12T/735	LO	2-ISV-67-554A		CV
ERCW HDR 2B A/C EQUIP RET ISOL	A12T/735	LO	2-ISV-67-554B		CV
CCS HEAT EXCHANGER A INLET ISOLATION	A8T/735	LO	1-ISV-70-510		CV
MISC EQUIPMENT HDR CCS SUPPLY	A10R/737	LO*	2-FCV-70-4		CV

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NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
2A ESF EQUIPMENT HDR CCS SUPPLY	A10R/737	LO*	2-FCV-70-2		CV
CCS HX B OUTLET ERCW FLOW CNTL BYP ISOL	A10R/737	LO	2-ISV-67-1009		CV
CCS HX C OUTLET ERCW FLOW CNTL BYP ISOL	A10S/737	LO	0-ISV-67-1009		CV
CCS HX A OUTLET ERCW FLOW CNTL BYP ISOL	A10T/737	LO	1-ISV-67-1009		CV
CCS HX A ERCW OUT ISOL	A10T/737	LO	1-ISV-67-551		CV
CCS HX B OUTLET ERCW FLOW CNTL BYP	A11S/737	(1)	2-FCV-67-143		
CCS HX C OUTLET ERCW FLOW CNTL BYP ISOL	A11S/737	LO	0-ISV-67-1010		CV
CCS HX C OUTLET ERCW FLOW CNTL ISOL	A11S/737	LO	0-ISV-67-553		CV
CCS HX B OUTLET ERCW FLOW CNTL BYP ISOL	A11S/737	LO	2-ISV-67-1010		CV
CCS HX A OUTLET ERCW FLOW CNTL BYP ISOL	A11T/737	LO	1-ISV-67-1010		CV
CCS HX C OUTLET ERCW HDR A FLOW CNTL	A12T/737	LC	0-FCV-67-151		CV
MCR WTR CHLR B-B ERCW OUT THROTTLE	A12T/737	LT(1)	0-THV-67-623B		CV
MCR WTR CHLR B-B ERCW SUP ISOL	A12T/737	LO	0-ISV-67-620B		CV
PENT ROOM COOLER 2A-A ERCW RET THROTTLE	A12U/737	LT(1)	2-THV-67-610A		CV

- (1) In Modes 1 through 4, 2-FCV-67-143 is LOCKED in the THROTTLED position specified in TI-31.08. In Modes 5, 6, or Defueled, 2-FCV-67-143 may be unlocked and adjusted by SOI-70.01. Throttle position and locking is verified by GO-1 prior to Mode 4 entry.

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NOTE
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NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
PENT ROOM COOLER 2B-B ERCW RET THROTTLE	A12V/737	LT(1)	2-THV-67-610B		CV
SD BD ROOM A/C CHLR B-B ERCW RET THROTTLE	A13R/737	LT(1)	2-THV-67-555		CV
MCR WTR CHLR A-A ERCW SUP ISOL	A3Q/737	LO	0-ISV-67-620A		CV
MCR WTR CHLR A-A ERCW OUT THROTTLE	A3R/737	LO(1)	0-THV-67-623A		CV
SD BD RM WTR CHLR A-A ERCW DISCH THROTTLE	A3R/737	LT(1)	1-THV-67-555		CV
MD AFW PUMP 1B-B SG 3 LEVEL CONTROL ISOL	A3S/737	LO	1-ISV-3-826		CV
GENERAL VENT CHILLER CW SUPPLY PRESS CNTL	A3S/737	LT* 75% OPEN	0-PCV-31-349		CV
MD AFW PUMP 1B-B SG 4 LEVEL CONTROL ISOL	A3S/737	LO	1-ISV-3-829		CV
MD AFW PUMP 1A-A SG 1 LEVEL CONTROL ISOL	A3T/737	LO	1-ISV-3-828		CV
MD AFW PUMP 1A-A SG 2 LEVEL CONTROL ISOL	A3T/737	LO	1-ISV-3-827		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
MD AFW PUMP 1B-B SG 3 LEVEL CONTROL ISOL	A3U/737	LO	1-ISV-3-834		CV
MD AFW PUMP 1A-A SG 2 LEVEL CONTROL ISOL	A3U/737	LO	1-ISV-3-835		CV
TD AFW PUMP SG3 LEVEL CONTROL ISOL	A3U/737	LO	1-ISV-3-867		CV
TD AFW PUMP SG 2 LEVEL CONTROL ISOL	A3U/737	LO	1-ISV-3-868		CV
TD AFW PUMP SG 3 LEVEL CONTROL ISOL	A3V/737	LO	1-ISV-3-875		CV
TD AFW PUMP SG 2 LEVEL CONTROL ISOL	A3V/737	LO	1-ISV-3-876		CV
PENT ROOM COOLER 1B-B ERCW RET THROTTLE	A3V/737	LT(1)	1-THV-67-610B		CV
SECONDARY CW LOOP PRESSURE CONTROL	A4S/737	LT* 50% OPEN	0-PCV-31-364		CV
CSS HX 1A INLET ERCW FLUSH	A4U/737	LC	1-FLV-67-927		CV
CSS HX 1B INLET ERCW FLUSH	A4U/737	LC	1-FLV-67-925		CV
PENT ROOM CLR 1A-A ERCW RET THROTTLE	A4V/737	LT(1)	1-THV-67-610A		CV
CCS SPARE	A4X/737	LC	1-ISV-70-777		CV
CCS SPARE	A4X/737	LC	1-THV-70-781		CV
DI WATER SPARE	A4X/737	LC	1-ISV-59-501		CV
CCS SPARE	A4X/737	LC	1-ISV-70-775		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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NOTE
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NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CCS HEAT EXCHANGER B OUTLET	A5S/737	LO*	2-FCV-70-15		CV
CCS HX C ERCW SUP ISOL	A5S/737	LO	0-ISV-67-546		CV
CCS HEAT EXCHANGER A ERCW IN ISOL	A5T/737	LO*	1-FCV-67-478		CV
SFP DEMIN WATER MAKE-UP ISOL	A5W/737	LC	0-ISV-78-514		CV
SFP/TBBP SPACE CLR 1A-A ERCW THROTTLE	A5W/737	LT(1)	1-THV-67-646A		CV
SFP/TBBP SPACE CLR 1A-A ERCW SUP ISOL	A5W/737	LO	1-ISV-67-645A		CV
SFP/TBBP SPACE CLR B-B ERCW THROTTLE	A5W/737	LT(1)	1-THV-67-646B		CV
SFP/TBBP SPACE CLR 1B-B ERCW RET ISOL	A5W/737	LO	1-ISV-67-647B		CV
SFP/TBBP SPACE CLR 1A-A ERCW RET ISOL	A5W/737	LO	1-ISV-67-647A		CV
SFP/TBBP SPACE CLR B-B ERCW SUP ISOL	A5W/737	LO	1-ISV-67-645B		CV
CCS HEAT EXCHANGER B/C OUTLET CROSSTIE	A6S/737	LC*	2-FCV-70-196		CV
CCS HEAT EXCHANGER C OUTLET	A6S/737	LO*	0-FCV-70-12		CV
CCS HEAT EXCHANGER B/C OUTLET CROSSTIE	A6S/737	LC*	2-FCV-70-195		CV
1A ESF EQUIPMENT CCS SUPPLY HEADER	A6T/737	LO*	1-FCV-70-2		CV
1B ESF EQUIPMENT CCS SUPPLY HEADER	A6T/737	LO*	1-FCV-70-3		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix B
(Page 21 of 24)
Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
MISCELLANEOUS EQUIPMENT CCS SUPPLY HEADER	A6T/737	LO*	1-FCV-70-4		CV
CCS HEAT EXCHANGER A OUTLET	A6T/737	LO*	1-FCV-70-8		CV
CCS HEAT EXCHANGERS A&C OUTLET CROSSTIE	A6T/737	LC*	1-FCV-70-9		CV
CCP 1A-A OIL COOLERS CCS INLET ISOLATION	A6T/737	LO	1-ISV-70-552A		CV
CCS HEAT EXCHANGERS A&C OUTLET CROSSTIE	A6T/737	LC*	1-FCV-70-10		CV
CCP 1B-B OIL COOLERS CCS INLET ISOLATION	A6T/737	LO	1-ISV-70-552B		CV
CCS/ERCW FLOOD MODE TBBP SUPPLY ISOLATION	A7W/737	LC	1-ISV-70-522		CV
FUEL TRANSFER CANAL DRAINLINE VENT	A6W/738.5 N Wall	LO	0-VTV-78-565		CV
SD BD RM WTR CHLR A-A ERCW SUP ISOL	A3R/742	LO	1-ISV-67-675		CV
CCS HX A OUTLET ERCW FLOW CNTL	A10T/746	LC*	1-FCV-67-146		CV
CCS HX C OUTLET ERCW FLOW CNTL ISOL	A11S/746	LO	0-ISV-67-552		CV
CCS HX B OUTLET ERCW FLOW CNTL	A12T/746	LC*	2-FCV-67-146		CV
CCS SURGE TNK A ERCW SUP HDR ISOL	A4T/746	LC	1-ISV-67-543A		CV
CCS HX B ERCW OUT ISOL	A10T/752	LO	2-ISV-67-551		CV
SD BD ROOM A/C CHLR B-B ERCW SUP ISOL	A12R/752	LO	2-ISV-67-675		CV

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**Appendix B
(Page 22 of 24)
Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
AUX BLDG AIR CLR ERCW SUP HDR 2A ISOL	A12T/752	LO*	2-FCV-67-127		CV
CCS HX C ERCW HDR 1A SUP ISOL	A3S/752	LC*	1-FCV-67-147		CV
CCS HX C ERCW HDR 2B SUPPLY ISOL	A3S/752	LO*	2-FCV-67-147		CV
AUX BLDG AIR CLR ERCW SUP HDR 1B ISOL	A4T/752	LO*	1-FCV-67-128		CV
CCS HX A HDR 1B ERCW SUP	A4T/752	LC*	1-FCV-67-458		CV
CCS HX B ERCW SUP ISOL	A5R/752	LO	2-ISV-67-546		CV
CCS HX SUPPLY ERCW HDR 2A/1B CROSSTIE	A5R/752	LO*	2-FCV-67-223		CV
CCS HX SUPPLY ERCW HDR 1B/2A CROSSTIE	A5S/752	LO*	1-FCV-67-223		CV
AUX BLDG AIR CLR ERCW SUP HDR 2B ISOL	A12T/754	LO*	2-FCV-67-128		CV
AUX BLDG AIR CLR ERCW SUP HDR 1A ISOL	A4T/754	LO*	1-FCV-67-127		CV
EGTS ROOM COOLER 2A-A ERCW RET THROTTLE	EGTS RM A12W/757	LT(1)	2-THV-67-685A		CV
EGTS ROOM COOLER 2B-B ERCW RET THROTTLE	EGTS RM A12W/757	LT(1)	2-THV-67-685B		CV
ESF CCS HEADER 1A SURGE TANK ISOL	A6T/757	LO	1-ISV-70-544A		CV
ESF CCS HEADER 1B SURGE TANK OUTLET	A6T/757	LO	1-ISV-70-544B		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix B
(Page 23 of 24)
Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
ESF CCS HEADER 1A SURGE TANK OUTLET	A6T/757	LO	1-ISV-70-544C		CV
AUX CNTL AIR COMPR A ERCW RET ISOL	A6U/757	LT (1)	1-ISV-67-683		CV
AUX CNTL AIR COMPR A ERCW SUP ISOL	A6U/757	LO	1-ISV-67-680		CV
CCS SURGE TNK A ERCW SUP HDR ISOL	A7T/757	LC	1-ISV-67-544		CV
AUX CNTL AIR COMPR A ERCW SUP ISOL	A7U/757	LO	0-ISV-67-678A		CV
AUX CNTL AIR COMPR A ERCW SUP ISOL	A7U/757	LO	0-ISV-67-678B		CV
AUX CNTL AIR COMPR A-A ERCW INLET BYPASS	A7U/757	LC	0-BYV-67-679		CV
AUX CNTL AIR COMPR B-B ERCW RET THROTTLE	A9U/757	LT (1)	2-THV-67-683		CV
AUX CNTL AIR COMPR B ERCW SUP ISOL	A9U/757	LO	0-ISV-67-681A		CV
AUX CNTL AIR COMPR B ERCW SUP ISOL	A9U/757	LO	0-ISV-67-681B		CV
AUX CNTL AIR COMPR B-B ERCW INLET BYPASS	A9U/757	LC	0-BYV-67-682		CV
AUX CNTL AIR COMPR B-B ERCW SUP ISOL	A9U/757	LO	2-ISV-67-680		CV
CCS SURGE TANK B ERCW SUP HDR ISOL	A10T/760	LC	2-ISV-67-544		CV
EGTS ROOM COOLER 2B-B ERCW SUP ISOL	EGTS RM A11W/772	LO	2-ISV-67-684B		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix B
(Page 24 of 24)
Auxiliary Bldg**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
EGTS ROOM COOLER 2A-A ERCW SUP ISOL	EGTS RM A12W/772	LO	2-ISV-67-684A		CV
CONTROL AIR ISOL TO 0-FCV-25-90	A10U/786	LC	0-ISV-32-3403		CV
CONTROL AIR ISOL TO 0-FCV-25-106	A10U/786	LC	0-ISV-32-3404		CV

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 34 of 113
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**Appendix C
(Page 1 of 1)**

Inside Containment

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Valves identified on the checklists with an asterisk (**) are required locked as interim measure by WO 09-819668-000 for fuel cycle 10.
- 3) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
LOOP 4 HOT LEG TO RHR SUCTION	706-Az 345 Inside Pol	LC*	1-FCV-74-1		CV
1-FCV-74-1 BYPASS RHR SUCTION	706-Az 345 Inside Pol	LC*	1-FCV-74-9		CV
VENT	RX CAVITY IC 749	LO	1-VTV-68-607		CV
PRESSURIZER SAFETY VLV RFV-68-564 LOOP SEAL DR	IC/776 Az 105	LO	1-DRV-68-567		CV
PRESSURIZER SAFETY VLV RFV-68-563 LOOP SEAL DR	IC/776 Az 105	LO	1-DRV-68-566		CV
PRESSURIZER SAFETY VLV RFV-68-565 LOOP SEAL DR	IC/776 Az 105	LO	1-DRV-68-568		CV
GLYCOL RETURN HEADER TEST VENT	IC/Az 302	LC & CAPPED OR FLANGED	1-TV-61-681		CV
Incore Flux Det Isol Valve (Core location R-6)	Seal Table	LC**	1-ISV-094-R006		
Incore Flux Det Isol Valve (Core location R-8)	Seal Table	LC**	1-ISV-094-R008		
Incore Flux Det Isol Valve (Core location J-1)	Seal Table	LC**	1-ISV-094-J001		
Incore Flux Det Isol Valve (Core location H-15)	Seal Table	LC**	1-ISV-094-H015		
Incore Flux Det Isol Valve (Core location H-2)	Seal Table	LC**	1-ISV-094-H002		
Incore Flux Det Isol Valve (Core location F-1)	Seal Table	LC**	1-ISV-094-F001		

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**Appendix D
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Intake Pumping Station

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
INTAKE PUMPING STATION RAW SERVICE WATER HDR ISOL	IPS/722	LC	0-ISV-25-631		CV
ERCW PMP/SCRN WASH PMP PRELUBE ISOL	IPS/722	LO (2)	1-ISV-67-930B		CV
ERCW PMP/SCRN WASH PMP PRELUBE ISOL	IPS/722	LC (2)	2-ISV-67-930B		CV
ERCW PUMP B-A DISCH ISOL	IPS/722	LO	0-ISV-67-504B		CV
ERCW PUMP C-A DISCH ISOL	IPS/722	LO	0-ISV-67-504C		CV
ERCW PUMP D-A DISCH ISOL	IPS/722	LO	0-ISV-67-504D		CV
ERCW PUMP E-B DISCH ISOL	IPS/722	LO	0-ISV-67-504E		CV
ERCW PUMP F-B DISCH ISOL	IPS/722	LO	0-ISV-67-504F		CV
ERCW PUMP G-B DISCH ISOL	IPS/722	LO	0-ISV-67-504G		CV
ERCW PUMP H-B DISCH ISOL	IPS/722	LO	0-ISV-67-504H		CV
ERCW SCRN WASH PMP B PRELUBE SUP ISOL	IPS/722	LO	0-ISV-67-508		CV

- (2) Only one prelube valve per train may be open at a time.

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**Appendix D
(Page 2 of 3)
Intake Pumping Station**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
ERCW SCR N WASH PMP A PRELUBE SUP ISOL	IPS/722	LO	0-ISV-67-512		CV
SERVICE AIR HDR ISOL TO CONTROL AIR ACCUM	IPS/722	LC*	0-ISV-33-848		CV
SERVICE AIR HDR ISOL TO CONTROL AIR ACCUM	IPS/722	LC*	0-ISV-33-849		CV
ERCW STRAINER 1A-A INLET ISOL	IPS/722	LO*	1-FCV-67-22		CV
ERCW STRAINER 1B-B INLET ISOL	IPS/722	LO*	1-FCV-67-24		CV
ERCW STRAINER 1A-A OUT ISOL	IPS/722	LO	1-ISV-67-505A		CV
ERCW PUMP A-A DISCH ISOL	IPS/722	LO	0-ISV-67-504A		CV
ERCW STRAINER 2A-A OUT ISOL	IPS/722	LO	2-ISV-67-505A		CV
ERCW STRAINER 1B-B OUT ISOL	IPS/722	LO	1-ISV-67-505B		CV
ERCW STRAINER 2B-B OUT ISOL	IPS/722	LO	2-ISV-67-505B		CV
ERCW STRAINER 2B-B INLET ISOL	IPS/722	LO*	2-FCV-67-24		CV
ERCW STRAINER 2A-A INLET ISOL	IPS/722	LO*	2-FCV-67-22		CV
ERCW SCR N WASH PMP 1A-A PRELUBE ISOL	IPS/722	LO(2)	1-ISV-67-927A		CV
ERCW PMP/SCR N WASH PMP PRELUBE ISOL	IPS/722	LC(2)	2-ISV-67-927A		CV
SCR N WASH PMP 1A-A SLC WY	IPS/741	LC	1-LOV-67-943A		CV

(2) Only one prelube valve per train may be open at a time.

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**Appendix D
(Page 3 of 3)
Intake Pumping Station**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
ERCW SCRN WASH PMP 1A-A DISCH ISOL	IPS/741	LO	1-ISV-67-942A		CV
ERCW SCRN WASH PMP 1B-B PRELUBE ISOL	IPS/741	LO	1-ISV-67-933B		CV
ERCW SCRN WASH PMP 1A-A PRELUBE ISOL	IPS/741	LO	1-ISV-67-939A		CV
ERCW SCRN WASH PMP 1B-B DISCH ISOL	IPS/741	LO	1-ISV-67-937B		CV
SCRN WASH PMP 2B-B SLC WY	IPS/741	LC	2-LOV-67-943B		CV
ERCW SCRN WASH PMP 2B-B PRELUBE ISOL	IPS/741	LO	2-ISV-67-933B		CV
ERCW SCRN WASH PMP 2B-B DISCH ISOL	IPS/741	LO	2-ISV-67-937B		CV
ERCW SCRN WASH PMP 2A-A PRELUBE ISOL	IPS/741	LO	2-ISV-67-939A		CV
ERCW SCRN WASH PMP 2A-A DISCH ISOL	IPS/741	LO	2-ISV-67-942A		CV

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 38 of 113
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**Appendix E
(Page 1 of 1)**

CO2

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
CO2 STOR TANK PRESS EQL	CO2 Vault Outside	LC	0-ISV-39-600		CV
CO2 STOR TANK FILL	CO2 Vault Outside	LC	0-ISV-39-503A		CV
PILOT VALVE SHUTOFF	CO2 Vault	LO	0-ISV-39-545		CV
CO2 STOR TANK OUT ISOL	CO2 Vault	LO	0-ISV-39-522		CV
CO2 STOR VAULT VAPORIZER SUP	CO2 Vault	LC	0-ISV-39-516		CV

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 39 of 113
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**Appendix F
(Page 1 of 1)**

Yard

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
SERVICE BLDG RSW SUPPLY ISOL	S5B/729	LC	0-ISV-25-511		CV
CCW PUMPING STATION RSW SUPPLY ISOL	Inside CCW bldg SW end	LC	0-ISV-25-515		CV
HYPO BLDG RSW CONN ISOL	H3B/729	LC	0-ISV-25-516		CV
SECUR BACKUP PWR BLDG RSW CONN ISOL	SBPB	LC	0-SPV-25-637		CV
CST A DRAIN	YARD	LC	1-DRV-2-500		CV
ERCW HDR 1A BACKWASH ISOL	YARD	LC	1-ISV-67-506A		CV
ERCW HDR 1B BACKWASH ISOL	YARD	LC	1-ISV-67-506B		CV
DG 1A-A ERCW SUP HDR ISOL	YARD	LO	1-ISV-67-507A		CV
DG 2A-A ERCW SUP HDR ISOL	YARD	LO	1-ISV-67-507B		CV
DG 1B-B ERCW SUP HDR ISOL	YARD	LO	1-ISV-67-507C		CV
DG 2B-B ERCW SUP HDR ISOL	YARD	LO	1-ISV-67-507D		CV
CST B DRAIN	YARD	LC	2-DRV-2-501		CV
ERCW HDR 2A BACKWASH ISOL	YARD	LC	2-ISV-67-506A		CV
ERCW HDR 2B BACKWASH ISOL	YARD	LC	2-ISV-67-506B		CV
DG 1B-B/2B-B ERCW SUP HDR 2A ISOL	YARD	LO	2-ISV-67-507A		CV
DG 1A-A/2A-A ERCW SUP HDR 2B ISOL	YARD	LO	2-ISV-67-507B		CV

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**Appendix G
(Page 1 of 6)**

DG Building

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
DGB CO2 STOR TANK FILL	DGB/742 Outside	LC	0-ISV-39-508		CV
DGB CO STOR TANK PRESS EQL	DGB/742 Outside	LC	0-ISV-39-505		CV
DGB CO2 STOR TANK 0-FSV-39-21A/B ISOL	DGB/742 Stor Tank	LO	0-ISV-39-585		CV
DGB CO2 STOR TANK OUT ISOL	DGB/742 Stor Tank	LO	0-ISV-39-500		CV
DG HX 1A1/1A2 ERCW DISCH HDR THROTTLE	DGB/742	LT(1)	1-THV-67-8020		CV
DG HX 1A1/1A2 ERCW DISCH HDR A ISOL	DGB/742	LO	1-ISV-67-511A		CV
DG HX 1A1/1A2 ERCW DISCH HDR B ISOL	DGB/742	LO	1-ISV-67-516B		CV
DG HX 1A1 ERCW OUT THROTTLE	DGB/742	LT(1)	1-THV-67-510A		CV
DG ENG 1A1 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	1-ISV-82-512A1		CV
DG ENG 1A1 START AIR RCVR A SUPPLY	DGB/742	LO	1-ISV-82-503A1		CV
DG ENG 1A1 START AIR RCVR B UNLOADER ISOL	DGB/742	LC	1-ISV-82-514A1		CV
DG ENG 1A1 START AIR RCVR B ALT SUPPLY	DGB/742	LC	1-ISV-82-506A1		CV
DG ENG 1A2 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	1-ISV-82-546A2		CV
DG ENG 1A2 START AIR RCVR A SUPPLY	DGB/742	LO	1-ISV-82-537A2		CV

(1) TI-31.08 provides current position requirements for throttled valves.

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 41 of 113
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**Appendix G
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DG Building**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
DG ENG 1A2 START AIR RCVR B UNLOADER ISOL	DGB/742	(2)	1-ISV-82-548A2		
DG ENG 1A2 START AIR RCVR B ALT SUPPLY	DGB/742	LC	1-ISV-82-540A2		CV
DG HX 1A1/1A2 ERCW SUP HDR 1A ISOL	DGB/742	LO	1-FCV-67-66		CV
DG HX 1A2 ERCW OUT THROTTLE	DGB/742	LT(1)	1-THV-67-515A		CV
D/G HX 2A1/2A2 ERCW DISCH HDR THROTTLE	DGB/742	LT(1)	2-THV-67-8020		CV
DG HX 2A1/2A2 ERCW DISCH HDR A ISOL	DGB/742	LO	2-ISV-67-511A		CV
DG HX 2A1/2A2 ERCW DISCH HDR B ISOL	DGB/742	LO	2-ISV-67-516B		CV
DG HX 2A1 ERCW OUT THROTTLE	DGB/742	LT(1)	2-THV-67-510A		CV
DG ENG 2A1 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	2-ISV-82-512A1		CV
DG ENG 2A1 START AIR RCVR A SUPPLY	DGB/742	LO	2-ISV-82-503A1		CV
DG ENG 2A1 START AIR RCVR B UNLOADER ISOL	DGB/742	LC	2-ISV-82-514A1		CV
DG ENG 2A1 START AIR RCVR B ALT SUPPLY	DGB/742	LC	2-ISV-82-506A1		CV
DG ENG 2A2 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	2-ISV-82-546A2		CV
DG ENG 2A2 START AIR RCVR A SUPPLY	DGB/742	LO	2-ISV-82-537A2		CV
DG ENG 2A2 START AIR RCVR B UNLOADER ISOL	DGB/742	LC	2-ISV-82-548A2		CV
DG ENG 2A2 START AIR RCVR B ALT SUPPLY	DGB/742	LC	2-ISV-82-540A2		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) DG 1A air valve 1-ISV-82-548A2 is **NOT** locked due to its positive locking design. Configuration is maintained per SOI-82.01.

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**Appendix G
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DG Building**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
DG HX 2A1/2A2 ERCW SUP HDR 1A ISOL	DGB/742	LO	2-FCV-67-66		CV
DG HX 2A2 ERCW OUT THROTTLE	DGB/742	LT(1)	2-THV-67-515A		CV
DG HX 1B1/1B2 ERCW DISCH HDR THROTTLE	DGB/742	LT(1)	1-THV-67-8021		CV
DG HX 1B1/1B2 ERCW DISCH HDR A ISOL	DGB/742	LO	1-ISV-67-516A		CV
DG HX 1B1/1B2 ERCW DISCH HDR B ISOL	DGB/742	LO	1-ISV-67-511B		CV
DG HX 1B1 ERCW OUT THROTTLE	DGB/742	LT(1)	1-THV-67-510B		CV
DG ENG 1B1 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	1-ISV-82-512B1		CV
DG ENG 1B1 START AIR RCVR A SUPPLY	DGB/742	LO	1-ISV-82-503B1		CV
DG ENG 1B1 START AIR RCVR B UNLOADER ISOL	DGB/742	LC	1-ISV-82-514B1		CV
DG ENG 1B1 START AIR RCVR B ALT SUPPLY	DGB/742	LC	1-ISV-82-506B1		CV
DG ENG 1B2 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	1-ISV-82-546B2		CV
DG ENG 1B2 START AIR RCVR A SUPPLY	DGB/742	LO	1-ISV-82-537B2		CV
DG ENG 1B2 START AIR RCVR B UNLOADER ISOL	DGB/742	LC	1-ISV-82-548B2		CV
DG ENG 1B2 START AIR RCVR B ALT SUPPLY	DGB/742	LC	1-ISV-82-540B2		CV
DG HX 1B1/1B2 ERCW SUP HDR 1B ISOL	DGB/742	LO	1-FCV-67-67		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix G
(Page 4 of 6)
DG Building**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
DG HX 1B2 ERCW OUT THROTTLE	DGB/742	LT (1)	1-THV-67-515B		CV
DG HX 2B1/2B2 ERCW DISCH HDR THROTTLE	DGB/742	LT (1)	2-THV-67-8021		CV
DG HX 2B1/2B2 ERCW DISCH HDR A ISOL	DGB/742	LO	2-ISV-67-516A		CV
DG HX 2B1/2B2 ERCW DISCH HDR B ISOL	DGB/742	LO	2-ISV-67-511B		CV
DG HX 2B1 ERCW OUT THROTTLE	DGB/742	LT (1)	2-THV-67-510B		CV
DG ENG 2B1 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	2-ISV-82-512B1		CV
DG ENG 2B1 START AIR RCVR A SUPPLY	DGB/742	LO	2-ISV-82-503B1		CV
DG ENG 2B1 START AIR RCVR B UNLOADER ISOL	DGB/742	(2)	2-ISV-82-514B1		
DG ENG 2B1 START AIR RCVR B ALT SUPPLY	DGB/742	LC	2-ISV-82-506B1		CV
DG ENG 2B2 START AIR RCVR A UNLOADER ISOL	DGB/742	LO	2-ISV-82-546B2		CV
DG ENG 2B2 START AIR RCVR A SUPPLY	DGB/742	LO	2-ISV-82-537B2		CV
DG ENG 2B2 START AIR RCVR B UNLOADER ISOL	DGB/742	LC	2-ISV-82-548B2		CV
DG ENG 2B2 START AIR RCVR B ALT SUPPLY	DGB/742	LC	2-ISV-82-540B2		CV
DG HX 2B1/2B2 ERCW SUP HDR 1B ISOL	DGB/742	LO	2-FCV-67-67		CV
DG HX 2B2 ERCW OUT THROTTLE	DGB/742	LT (1)	2-THV-67-515B		CV

- (1) TI-31.08 provides current position requirements for throttled valves.
- (2) DG 2B air valve 2-ISV-82-514B1 is **NOT** locked due to it's positive locking design. Configuration is maintained per SOI-82.04.

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**Appendix G
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DG Building**

NOTE
Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
DG ENG 1A1 START AIR RCVR A OUT ISOL	DGB/742	LO	1-ISV-82-517A1		CV
DG ENG 1A1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	1-ISV-82-520A1		CV
DG ENG 1A1 START AIR RCVR B OUT ISOL	DGB/742	LO	1-ISV-82-525A1		CV
DG ENG 1A1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	1-ISV-82-528A1		CV
DG ENG 1A2 START AIR RCVR A OUT ISOL	DGB/742	LO	1-ISV-82-551A2		CV
DG ENG 1A2 AIR START MOTOR SUP ISOL	DGB/742	LO	1-ISV-82-554A2		CV
DG ENG 1A2 START AIR RCVR B OUT ISOL	DGB/742	LO	1-ISV-82-559A2		CV
DG ENG 1A2 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	1-ISV-82-562A2		CV
DG ENG 1B1 START AIR RCVR A OUT ISOL	DGB/742	LO	1-ISV-82-517B1		CV
DG ENG 1B1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	1-ISV-82-520B1		CV
DG ENG 1B1 START AIR RCVR B OUT ISOL	DGB/742	LO	1-ISV-82-525B1		CV
DG ENG 1B1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	1-ISV-82-528B1		CV
DG ENG 1B2 START AIR RCVR A OUT ISOL	DGB/742	LO	1-ISV-82-551B2		CV
DG ENG 1B2 AIR START MOTOR SUP ISOL	DGB/742	LO	1-ISV-82-554B2		CV
DG ENG 1B2 START AIR RCVR B OUT ISOL	DGB/742	LO	1-ISV-82-559B2		CV
DG ENG 1B2 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	1-ISV-82-562B2		CV

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**Appendix G
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DG Building**

NOTE
Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
DG ENG 2A1 START AIR RCVR A OUT ISOL	DGB/742	LO	2-ISV-82-517A1		CV
DG ENG 2A1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	2-ISV-82-520A1		CV
DG ENG 2A1 START AIR RCVR B OUT ISOL	DGB/742	LO	2-ISV-82-525A1		CV
DG ENG 2A1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	2-ISV-82-528A1		CV
DG ENG 2A2 START AIR RCVR A OUT ISOL	DGB/742	LO	2-ISV-82-551A2		CV
DG ENG 2A2 AIR START MOTOR SUP ISOL	DGB/742	LO	2-ISV-82-554A2		CV
DG ENG 2A2 START AIR RCVR B OUT ISOL	DGB/742	LO	2-ISV-82-559A2		CV
DG ENG 2A2 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	2-ISV-82-562A2		CV
DG ENG 2B1 START AIR RCVR A OUT ISOL	DGB/742	LO	2-ISV-82-517B1		CV
DG ENG 2B1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	2-ISV-82-520B1		CV
DG ENG 2B1 START AIR RCVR B OUT ISOL	DGB/742	LO	2-ISV-82-525B1		CV
DG ENG 2B1 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	2-ISV-82-528B1		CV
DG ENG 2B2 START AIR RCVR A OUT ISOL	DGB/742	LO	2-ISV-82-551B2		CV
DG ENG 2B2 AIR START MOTOR SUP ISOL	DGB/742	LO	2-ISV-82-554B2		CV
DG ENG 2B2 START AIR RCVR B OUT ISOL	DGB/742	LO	2-ISV-82-559B2		CV
DG ENG 2B2 AIR START MOTOR SUPPLY ISOL	DGB/742	LO	2-ISV-82-562B2		CV

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 46 of 113
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**Appendix H
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Fan & Accumulator Rooms

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
COLD LEG 1 BORON INJ THROTTLE	IC/716 Az 43 #1 Acc Rm	LT*	1-THV-63-582		CV
COLD LEG 1 SAFETY INJ THROTTLE	IC/716 Az 40 #1 Acc Rm	LT*	1-THV-63-550		CV
HOT LEG 1 SAFETY INJ THROTTLE	IC/716 Az 40 #1 Acc Rm	LT*	1-THV-63-542		CV
LWR CNTMT VENT CLR 1D-B ERCW SUP HDR THROTTLE	IC/726 Az 353 #1 Fan Rm	LT (1)	1-THV-67-564D		CV
LWR CNTMT VENT CLR 1A-A ERCW SUP HDR THROTTLE	IC/726 Az 21 #1 Fan Rm	LT (1)	1-THV-67-564A		CV
HOT LEG 4 SAFETY INJ THROTTLE	IC/735 Az 360 #1 Fan Rm	LT*	1-THV-63-548		CV
LOWER CNTMT CLR HDR D ERCW RET ISOL	IC/726 Az 351 #1 Fan Rm	LO	1-ISV-67-1005D		CV
LOWER CNTMT CLR HDR A ERCW RET ISOL	IC/720 Az 4 #1 Fan Rm	LO	1-ISV-67-1005A		CV
LOWER CNTMT CLR HDR D ERCW SUP ISOL	IC/726 Az 353 #1 Fan Rm	LO	1-ISV-67-1004D		CV
COLD LEG 1 RHR INJ LINE VENT	IC/737 Az 17 #1 Fan Rm	LO	1-VTV-63-101		CV
SI PUMP COLD LEG INJ LINE VENT	IC/737 Az 30 #1 Fan Rm	LO	1-VTV-63-85		CV
COLD LEG 2 RHR INJ LINE VENT	IC/738 Az 145 #2 Acc Rm	LO	1-VTV-63-105		CV
LOWER CNTMT CLR HDR A ERCW SUP ISOL	IC/716 Az 7 #1 Fan Rm	LO	1-ISV-67-1004A		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix H
(Page 2 of 3)**

Fan & Accumulator Rooms

Date _____

NOTE

Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
HOT LEG 3 SAFETY INJ THROTTLE	IC/720 Az 140 #2 Acc Rm	LT*	1-THV-63-544		CV
COLD LEG 2 SAFETY INJ THROTTLE	IC/730 Az 144 #2 Acc Rm	LT*	1-THV-63-552		CV
COLD LEG 2 BORON INJ THROTTLE	IC/728 Az 143 #2 Acc Rm	LT*	1-THV-63-583		CV
LWR CNTMT VENT CLR 1B-B ERCW SUP HDR THROTTLE	IC/726 Az 173 #2 Fan Rm	LT (1)	1-THV-67-564B		CV
LOWER CNTMT CLR HDR C ERCW RET ISOL	IC/720 Az 185 #2 Fan Rm	LO	1-ISV-67-1005C		CV
LOWER CNTMT CLR HDR B ERCW RET ISOL	IC/726 Az 171 #2 Fan Rm	LO	1-ISV-67-1005B		CV
LOWER CNTMT CLR HDR C ERCW SUP ISOL	IC/720 Az 185 #2 Fan Rm	LO	1-ISV-67-1004C		CV
HOT LEG 2 SAFETY INJ THROTTLE	IC/720 Az 178 #2 Fan Rm	LT*	1-THV-63-546		CV
LOWER CNTMT CLR HDR B ERCW SUP ISOL	IC/726 Az 173 #2 Fan Rm	LO	1-ISV-67-1004B		CV
COLD LEG 3 RHR INJ LINE VENT	IC/742 Az 210 (2)	LO	1-VTV-63-113		CV
LWR CNTMT VENT CLR 1C-A ERCW SUP HDR THROTTLE	IC/726 Az 185 #2 Fan Rm	LT (1)	1-THV-67-564C		CV
COLD LEG 3 SAFETY INJ THROTTLE	IC/735 Az 212 #3 Acc Rm	LT*	1-THV-63-554		CV
COLD LEG 3 BORON INJ THROTTLE	IC/725 Az 211 #3 Acc Rm	LT*	1-THV-63-584		CV
1-FCV-74-2 BYPASS RHR SUCTION	IC/716-Az 304 #4 Acc Rm	LC*	1-FCV-74-8		CV

(1) TI-31.08 provides current position requirements for throttled valves.

(2) #2 Fan above duct at polar crane wall

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**Appendix H
(Page 3 of 3)**

Fan & Accumulator Rooms

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
LOOP 4 HOT LEG TO RHR SUCTION	IC/716-Az301 #4 Acc Rm	LC*	1-FCV-74-2		CV
COLD LEG 4 BORON INJ THROTTLE	IC/730 Az298 #4 Acc Rm	LT*	1-THV-63-585		CV
COLD LEG 4 SAFETY INJ THROTTLE	IC/730 Az323 #4 Acc Rm	LT*	1-THV-63-556		CV

- (1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix I
(Page 1 of 1)
North Valve Room**

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
MAIN STEAM LOOP 3 WARMING VALVE DRAIN	NVR/729	LC	1-DRV-1-533		CV
MAIN STEAM LOOP 2 WARMING VALVE DRAIN	NVR/729	LC	1-DRV-1-535		CV
MAIN STEAM ISOL VLV LOOP 2 BYP WARMING VLV	NVR/729	LC*(2)	1-FCV-1-148		CV
MAIN STEAM ISOL VLV LOOP 3 BYP WARMING VLV	NVR/729	LC*(2)	1-FCV-1-149		CV
MAIN STEAM LOOP 3 MSTR TRAP ISOL	NVR/729	LC	1-ISV-1-540		CV
MAIN STEAM LOOP 2 MSTR TRAP ISOL	NVR/729	LC	1-ISV-1-541		CV

- (2) See Appendix M for verification requirements.

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**Appendix J
(Page 1 of 1)
South Valve Room**

Date _____

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
TD AFW PMP SG 4 LEVEL CONTROL ISOL	S. Vlv Rm	LO	1-ISV-3-870		CV
MD AFW PUMP 1A-A SG 1 LEVEL CONTROL ISOL	S. Vlv Rm	LO	1-ISV-3-836		CV
TD AFW PUMP SG 1 LEVEL CONTROL ISOL	S. Vlv Rm	LO	1-ISV-3-869		CV
TD AFW PUMP SG 1 LEVEL CONTROL ISOL	S. Vlv Rm	LO	1-ISV-3-877		CV
TD AFW PUMP SG 4 LEVEL CONTROL ISOL	S. Vlv Rm	LO	1-ISV-3-878		CV
MD AFW PUMP 1B-B SG 4 LEVEL CONTROL ISOL	S. Vlv Rm	LO	1-ISV-3-837		CV
MAIN STEAM LOOP 1 MSTR TRAP ISOL	SVR/729	LC	1-ISV-1-542		CV
MAIN STEAM LOOP 1 WARMING VALVE DRAIN	SVR/729	LC	1-DRV-1-537		CV
MAIN STEAM LOOP 4 WARMING VALVE DRAIN	SVR/729	LC	1-DRV-1-539		CV
MAIN STEAM ISOL VLV LOOP 4 BYP WARMING VLV	SVR/729	LC*(2)	1-FCV-1-150		CV
MAIN STEAM LOOP 4 MSTR TRAP ISOL	SVR/729	LC	1-ISV-1-543		CV
MAIN STEAM ISOL VLV LOOP 1 BYP WARMING VLV	SVR/729	LC*(2)	1-FCV-1-147		CV

(2) See Appendix M for verification requirements.

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**Appendix K
(Page 1 of 2)
Control Building**

Date _____

NOTES	
1)	Valves identified on the checklists with an asterisk (*) are required locked by design output.
2)	Ensure valves locked with cable have any slack in the cable minimized.

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
ELECT BOARD ROOM AHU SUPPLY	C1P/692	LO	0-SD-31-4629		CV
ELEC BD RM A/C COND A-A ERCW SUP ISOL	C12N/694	LO	0-ISV-67-615A		CV
ELEC BD RM A/C COND A-A ERCW RET THROTTLE	C12N/696	LT (1)	0-THV-67-618A		CV
ELECT BD RM A/C COND B-B ERCW SUP ISOL	C12P/694	LO	0-ISV-67-615B		CV
ELEC BD RM A/C COND B-B ERCW RET THROTTLE	C12P/696	LT (1)	0-THV-67-618B		CV
AUX INST RMS BKDRFT	C5P/708	LO	0-BKD-31-2086		CV
ELECT BOARD ROOM AHU SUPPLY	C1P/692	LO	0-SD-31-4628		CV

(1) TI-31.08 provides current position requirements for throttled valves.

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**Appendix K
(Page 2 of 2)
Control Building**

Date _____

NOTE
Ensure valves locked with cable have any slack in the cable minimized

NOMENCLATURE	LOC	POSITION	UNID	PERF INIT	VERIF INIT
SPREADING ROOM SUPPLY FIRE ISOLATION	C4P/755	LO	0-ISD-31-4627		CV
CB EL 755 CORRIDOR EXHAUST ISOLATION	CB/755	LO	0-ISD-31-4626		CV
CB PRESSURIZATION FAN B-B INLET	C2P/755	LO (2)	0-FCO-31-2A		CV
CB PRESSURIZATION FAN B-B INLET	C2P/755	LO (1)	0-FCO-31-2		CV
CB PRESSURIZATION FAN A-A INLET	C2P/755	LO (2)	0-FCO-31-1A		CV
CB PRESSURIZATION FAN A-A INLET	C2P/755	LO (1)	0-FCO-31-1		CV
PRESS B BKDRFT	C2P/755	LO (3)	0-BKD-31-2098		CV
PRESS A BKDRFT	C2P/755	LO (3)	0-BKD-31-2097		CV
CREVS CLEANUP RETURN BACKDRAFT DAMPER	C2P/755	LO (4)	0-BKD-31-2103		CV

- (1) Immobilized by setscrew/crankarm arrangement per DCA 22223-29 & 30.
- (2) Immobilized by threaded rod through actuator mount and control ring per DCA 22223-33.
- (3) Immobilized by wire & rope wound around control bar & secured to damper frame per DCA 22223-14.
- (4) Immobilized by wire rope wound around control bar & secured to the duct grill per DCA 51393-005.

WBN Unit 0	18 Month Locked Valve Verification	0-PI-OPS-17.0 Rev. 0044 Page 53 of 113
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**Appendix L
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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

UNID	Nomenclature	Position
1-TV-61-532	GLYCOL SUPPLY HEADER TEST VENT	LC
1-TV- 61-681	GLYCOL RETURN HEADER TEST VENT	LC
1-TV-61-691	GLYCOL COOLED FLOOR SUPPLY BYPASS TEST	LC
1-TV-61-746	GLYCOL COOLED FLOOR RETURN BYPASS TEST	LC & CAPPED
1-VTV-63-171	HOT LEG 4 SAFETY INJECTION LINE VENT	LC
1-RTV-63-392A	1-FE-63-159 ROOT	LC & CAPPED
1-VTV-63-168	HOT LEG 2 SAFETY INJECTION LINE VENT	LC
1-RTV-63-387A	1-FE-63-160 ROOT	LC & CAPPED
1-VTV-70-702E	EXCESS LETDOWN HX CCS SUPPLY TEST VENT	LC & CAPPED
1-VTV-70-702F	EXCESS LETDOWN HX CCS RETURN VENT	LC & CAPPED
1-ISV-33-714	SERVICE AIR U1 RX BLDG HDR ISOL	LC
1-DRV-70-760	EXCESS LETDOWN HX CCS INLET DRAIN	LC & CAPPED
1-DRV-70-762	EXCESS LETDOWN HX CCS RET HDR DRAIN	LC & CAPPED
1-RTV-32-309	ESSENT CNTL AIR CNTMT ISOL D/S PRESS TEST	LC & CAPPED
1-TV-63-867	CONTAINMENT N2 HEADER TEST VENT	LC
1-TV-68-848	PRESSURIZER RELIEF TANK N2 SUP HDR TEST VENT	LC
1-ISV-78-560	UNIT 1 REFLG CAVITY RETURN HDR ISOL	LC
1-TV-63-636	RHR TO HOT LEG 1 & 3 INJ LINE TEST CONN	LC
1-RTV-32-299	ESSENT CNTL AIR CNTMT ISOL D/S PRESS TEST	LC

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**Appendix L
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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-ISV-52-506	PEN 96A INTEGRATEDLEAK RATE TEST INSIDE	LC
1-ISV-52-507	PEN 96B INTEGRATEDLEAK RATE TEST OUTSIDE	LC
1-ISV-52-504	PEN 26B INTEGRATEDLEAK RATE TEST INSIDE	LC
1-ISV-52-505	PEN 26A INTEGRATEDLEAK RATE TEST INSIDE	LC
1-ISV-78-558	UNIT 1 REFLG CAVITY SUP HDR ISOL	LC
1-RTV-32-289	CONTROL AIR CNTMT ISOL D/S PRESS TEST	LC & CAPPED
1-TV-70-702B	EXCESS LETDOWN HX CCS SUPPLY TEST CONN	LC & CAPPED
1-TV-70-737	RCP THERMAL BARRIER CCS RET HDR TEST CONN	LC & CAPPED
1-TV-30-562	CNTMT PURGE AIR SUPPLY TEST CONNECTION	LC
1-TV-30-563	CNTMT PURGE AIR SUPPLY TEST CONNECTION	LC
1-TV-30-557	CNTMT PURGE AIR EXHAUST TEST CONNECTION	LC
1-TV-30-558	CNTMT PURGE AIR EXHAUST TEST CONNECTION	LC
1-VTV-3-899	SG 2 AUX FEEDWATER SUPPLY VENT	LC
1-VTV-3-842	SG 3 AUX FEEDWATER SUPPLY VENT	LC
1-TV-30-561	CNTMT PURGE AIR SUPPLY TEST CONNECTION	LC
1-TV-30-555	CNTMT PURGE AIR EXHAUST TEST CONNECTION	LC
1-TV-30-554	CNTMT PURGE AIR EXHAUST TEST CONNECTION	LC
1-TV-30-560	CNTMT PURGE AIR SUPPLY TEST CONNECTION	LC

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**Appendix L
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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-TV-30-556	CNTMT PURGE AIR EXHAUST TEST CONNECTION	LC
1-BYV-32-308	ESSENTIAL CONTROL AIR 1-FCV-32-102 BYPASS	LC
1-BYV-32-298	ESSENTIAL CONTROL AIR 1-FCV-32-80 BYPASS	LC
1-BYV-32-288	CONTROL AIR 1-FCV-32-110 BYPASS	LC
1-ISV-52-500	PEN 26B INTEGRATEDLEAK RATE TEST OUTSIDE	LC
1-ISV-52-501	PEN 26A INTEGRATEDLEAK RATE TEST OUTSIDE	LC
1-ISV-52-502	PEN 96A INTEGRATEDLEAK RATE TEST OUTSIDE	LC
1-ISV-52-503	PEN 96B INTEGRATEDLEAK RATE TEST OUTSIDE	LC
1-TV-1-867	STEAM GENERATOR 1 BLOWDOWN TEST CONN	LC
1-TV-1-824	STEAM GENERATOR 1 BLOWDOWN TEST CONN	LC
1-TV-1-868	STEAM GENERATOR 2 BLOWDOWN TEST CONN	LC
1-TV-1-825	STEAM GENERATOR 2 BLOWDOWN TEST CONN	LC
1-TV-1-869	STEAM GENERATOR 3 BLOWDOWN TEST CONN	LC
1-TV-1-826	STEAM GENERATOR 3 BLOWDOWN TEST CONN	LC
1-TV-1-866	STEAM GENERATOR 4 BLOWDOWN TEST CONN	LC
1-TV-1-827	STEAM GENERATOR 4 BLOWDOWN TEST CONN	LC
1-DRV-3-890	TD AUX FEEDWATER PUMP SG 4 SUPPLY DRAIN	LC

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**Appendix L
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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-DRV-1-536	MAIN STEAM LOOP 1 WARMING VALVE DRAIN	LC
1-DRV-1-534	MAIN STEAM LOOP 2 WARMING VALVE DRAIN	LC
1-DRV-1-532	MAIN STEAM LOOP 3 WARMING VALVE DRAIN	LC
1-DRV-1-538	MAIN STEAM LOOP 4 WARMING VALVE DRAIN	LC
1-DRV-3-857	AUX FEEDWATER PMP 1A-A SG 1 SUPPLY DRAIN	LC
1-DRV-3-889	TD AUX FEEDWATER PUMP SG 1 SUPPLY DRAIN	LC
1-VTV-3-907	TD AUX FEEDWATER PUMP SG 4 SUPPLY VENT	LC
1-VTV-3-906	AUX FEEDWATER PMP 1B-B SG 4 SUPPLY VENT	LC
1-DRV-3-858	AUX FEEDWATER PMP 1B-B SG 4 SUPPLY DRAIN	LC
1-VTV-3-904	TD AUX FEEDWATER PUMP SG 1 SUPPLY VENT	LC
1-VTV-3-903	AUX FEEDWATER PMP 1A-A SG 1 SUPPLY VENT	LC
1-DRV-3-641	STEAM GENERATOR 4 MFW BYPASS LINE DRAIN	LC
1-DRV-3-642	STEAM GENERATOR 4 MFW BYPASS LINE DRAIN	LC
1-DRV-3-639	STEAM GENERATOR 4 MFW BYPASS LINE DRAIN	LC
1-DRV-3-640	STEAM GENERATOR 4 MFW BYPASS LINE DRAIN	LC
1-DRV-3-506	STEAM GENERATOR 4 MFW DRAIN	LC
1-DRV-3-507	STEAM GENERATOR 4 MFW DRAIN	LC
1-DRV-3-659	STEAM GENERATOR 1 MFW BYPASS LINE DRAIN	LC

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**Appendix L
(Page 5 of 14)**

Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-DRV-3-660	STEAM GENERATOR 1 MFW BYPASS LINE DRAIN	LC
1-DRV-3-653	STEAM GENERATOR 1 MFW BYPASS LINE DRAIN	LC
1-DRV-3-654	STEAM GENERATOR 1 MFW BYPASS LINE DRAIN	LC
1-DRV-3-504	STEAM GENERATOR 1 MFW DRAIN	LC
1-DRV-3-505	STEAM GENERATOR 1 MFW DRAIN	LC
1-DRV-3-666	STEAM GENERATOR 2 MFW BYPASS LINE DRAIN	LC
1-DRV-3-667	STEAM GENERATOR 2 MFW BYPASS LINE DRAIN	LC
1-DRV-3-502	STEAM GENERATOR 2 MFW DRAIN	LC
1-DRV-3-503	STEAM GENERATOR 2 MFW DRAIN	LC
1-DRV-3-675	STEAM GENERATOR 3 MFW BYPASS LINE DRAIN	LC
1-DRV-3-676	STEAM GENERATOR 3 MFW BYPASS LINE DRAIN	LC
1-DRV-3-500	STEAM GENERATOR 3 MFW DRAIN	LC
1-DRV-3-501	STEAM GENERATOR 3 MFW DRAIN	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-VTV-63-194	HOT LEG 2 & 4 SAFETY INJECTION LINE VENT	LC
1-RTV-63-317A	1-FE-63-159 ROOT	LC
1-RTV-63-318A	1-FE-63-159 ROOT	LC
1-VTV-63-720	SI PUMP COLD LEG INJ LINE VENT	LC & CAPPED
1-VTV-63-654	SI PUMP COLD LEG INJ LINE VENT	LC
1-VTV-63-661	COLD LEG 1 RHR INJ LINE VENT	LC
1-DRV-63-509	RHR COLD LEG 1 INJ LINE DRAIN	LC
1-DRV-63-705	RHR COLD LEG 1 INJ LINE DRAIN	LC & CAPPED
1-VTV-63-184	HOT LEG 1 & 3 SIP 1A-A INJECTION LINE VENT	LC
1-RTV-63-320A	1-FE-63-122 ROOT	LC
1-RTV-63-409A	1-FE-63-162 ROOT	LC & CAPPED
1-RTV-63-311A	1-FE-63-162 ROOT	LC
1-RTV-63-312A	1-FE-63-162 ROOT	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-RTV-63-410A	1-FE-63-162 ROOT	LC & CAPPED
1-RTV-63-319A	1-FE-63-122 ROOT	LC
1-RTV-63-391A	1-FE-63-159 ROOT	LC & CAPPED
1-RTV-63-393A	1-FE-63-122 ROOT	LC
1-RTV-63-394A	1-FE-63-122 ROOT	LC & CAPPED
1-DRV-63-658	SI PUMP HOT LEG 1 & 3 INJ LINE DRAIN	LC & FLANGED
1-RTV-63-389A	1-FE-63-161 ROOT	LC & CAPPED
1-RTV-63-390A	1-FE-63-161 ROOT	LC
1-RTV-63-315A	1-FE-63-161 ROOT	LC
1-RTV-63-316A	1-FE-63-161 ROOT	LC
1-TV-3-373A	AUX FW PMP DISC P TST	LC
1-TV-3-374A	AUX FW PMP DISC P TST	LC
1-VTV-63-142	COLD LEG 2 SAFETY INJECTION LINE VENT	LC
1-RTV-63-322A	1-FE-63-123 ROOT	LC
1-RTV-63-321A	1-FE-63-123 ROOT	LC
1-VTV-63-30	COLD LEG 2 RHR INJ LINE VENT	LC
1-RTV-63-395A	1-FE-63-123 ROOT	LC & CAPPED
1-RTV-63-396A	1-FE-63-123 ROOT	LC & CAPPED
1-RTV-63-313A	1-FE-63-160 ROOT	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-RTV-63-314A	1-FE-63-160 ROOT	LC
1-RTV-63-388A	1-FE-63-160 ROOT	LC & CAPPED
1-VTV-63-154	COLD LEG 3 SAFETY INJECTION LINE VENT	LC
1-DRV-63-656	SI PUMP COLD LEG 3 INJ LINE DRAIN	LC & FLANGED
1-RTV-63-323A	1-FE-63-124 ROOT	LC
1-RTV-63-324A	1-FE-63-124 ROOT	LC
1-RTV-63-397A	1-FE-63-124 ROOT	LC & CAPPED
1-RTV-63-398A	1-FE-63-124 ROOT	LC & CAPPED
1-VTV-63-659	COLD LEG 3 RHR INJ LINE VENT	LC & CAPPED
1-TV-3-375A	AUX FW PMP DISC P TST	LC
1-TV-3-376A	AUX FW PMP DISC P TST	LC & CAPPED
1-DRV-63-653	SI PUMP COLD LEG INJ LINE DRAIN	LC
1-DRV-63-686	SIS PUMP COLD LEG INJ LINE DRAIN	LC & CAPPED
1-TV-63-692	RHR TO HOT LEG 1 & 3 INJ LINE TEST CONN	LC & CAPPED
1-TV-74-543	RHR SUCTION HEADER TEST VENT	LC & CAPPED
1-TV-74-504	RHR SUCTION HEADER TEST VENT	LC
1-TV-62-606	CVCS CHARGING HEADER TEST	LC & CAPPED
1-TV-62-544	CVCS CHARGING HEADER TEST	LC
1-TV-63-515	BORON INJ SIS CHK VLV LEAK TEST CONN	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-TV-63-677	BORON INJ SIS CHK VLV LEAK TEST CONN	LC & CAPPED
1-VTV-63-190	HOT LEG 3 RHR INJECTION LINE VENT	LC
1-VTV-63-192	HOT LEG 1 RHR INJECTION LINE VENT	LC
1-TV-68-556	SAFETY INJ SYS RELIEF DISCH TEST CONN ISOL	LC & CAPPED
1-TV-68-560	SAFETY INJ SYS RELIEF DISCH TEST VENT	LC
1-TV-68-561	SAFETY INJ SYS RELIEF DISCH TEST CONN ISOL	LC
1-TV-68-601	SAFETY INJ SYS RELIEF DISCH TEST VENT	LC & CAPPED
1-RTV-63-326A	1-FE-63-125 ROOT	LC
1-RTV-63-325A	1-FE-63-125 ROOT	LC
1-RTV-63-399A	1-FE-63-125 ROOT	LC & CAPPED
1-RTV-63-400A	1-FE-63-125 ROOT	LC & CAPPED
1-VTV-70-759	EXCESS LETDOWN HX CCS OUTLET VENT	LC & CAPPED
1-TTIV-30-42C1	TEST VLV -1 FOR PDT-30-42	LC
1-TTIV-30-42C2	TEST VLV -2 FOR PDT-30-42	LC
1-TTIV-30-44C1	TEST VLV-1 FOR PDT-30-44	LC
1-TTIV-30-44C2	TEST VLV-2 FOR PDT-30-44	LC
1-TTIV-30-311C1	TEST VLV -1 FOR PDT-30-311	LC
1-TTIV-30-311C2	TEST VLV -2 FOR PDT-30-311	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-DRV-3-596	STEAM GENERATOR 4 MFW DRAIN	LC
1-DRV-3-595	STEAM GENERATOR 4 MFW DRAIN	LC
1-DRV-3-594	STEAM GENERATOR 1 MFW DRAIN	LC
1-DRV-3-593	STEAM GENERATOR 1 MFW DRAIN	LC
1-DRV-3-592	STEAM GENERATOR 2 MFW DRAIN	LC
1-DRV-3-591	STEAM GENERATOR 2 MFW DRAIN	LC
1-DRV-3-590	STEAM GENERATOR 3 MFW DRAIN	LC
1-DRV-3-589	STEAM GENERATOR 3 MFW DRAIN	LC & CAPPED
1-TTIV-30-310C1	TEST VLV -1 FOR PDT-30-310	LC
1-TTIV-30-310C2	TEST VLV -2 FOR PT-30-310	LC
1-TTIV-30-43C1	TEST VLV-1 FOR PT-30-43	LC
1-TTIV-30-43C2	TEST VLV-2 FOR PT-30-43	LC
1-TTIV-30-133C1	TEST VLV-1 FOR PT-30-133	LC
1-TTIV-30-133C2	TEST VLV -2 FOR PT-30-133	LC
1-TTIV-30-30CC1	TEST VLV-1 FOR PT-30-30C	LC
1-TTIV-30-30CC2	TEST VLV-2 FOR PT-30-30C	LC
1-TV-43-1472	LOCA H2 CNTMT MONITOR LEAK TEST VALVE	LC
1-TV-43-1473	LOCA H2 CNTMT MONITOR LEAK TEST VALVE	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-TV-43-1479	LOCA H2 CNTMT MONITOR LEAK TEST VALVE	LC
1-TTIV-30-45C1	TEST VLV-1 FOR PDT-30-45	LC
1-TTIV-30-45C2	TEST VLV-2 FOR PDT-30-45	LC
1-TV-43-1478	LOCA H2 CNTMT MONITOR LEAK TEST VALVE	LC
1-DRV-59-725	UNIT 1 RB DI WATER HEADER DRAIN	LC
1-TV-62-612	RCP 1 SEAL WATER INJECTION TEST	LC & CAPPED
1-TV-62-568	RCP 1 SEAL WATER INJECTION TEST	LC
1-TV-62-613	RCP 2 SEAL WATER INJECTION TEST	LC & CAPPED
1-TV-62-569	RCP 2 SEAL WATER INJECTION TEST	LC
1-TV-62-616	RCP 4 SEAL WATER INJECTION TEST	LC & CAPPED
1-TV-62-571	RCP 4 SEAL WATER INJECTION TEST	LC
1-TV-62-619	RCP 3 SEAL WATER INJECTION TEST	LC
1-TV-62-570	RCP 3 SEAL WATER INJECTION TEST	LC
1-DRV-63-650	HOT LEG 2 & 4 SAFETY INJ LINE DRAIN	LC & FLANGED

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-DRV-63-655	SI PUMP COLD LEG INJ LINE DRAIN	LC & FLANGED
1-TV-59-681	UNIT 1 RB DI WATER HEADER DRAIN	LC
1-ISV-59-698	DI WATER SERVICE CONN ISOLATION	LC
1-DRV-63-699	CONTAINMENT SUMP TO RHR PUMP 1B-B DRAIN	LC
1-DRV-63-596	CONTAINMENT SUMP TO RHR PUMP 1B-B DRAIN	LC
1-DRV-63-700	CONTAINMENT SUMP TO RHR PUMP A DRAIN	LC
1-DRV-63-597	CONTAINMENT SUMP TO RHR PUMP 1A-A DRAIN	LC
1-TV-43-251B	PAS HOT LEG 1 SAMPLE TEST CONN	LC & CAPPED
1-TV-43-310B	PAS HOT LEG 3 SAMPLE TEST CONN	LC & CAPPED
1-TV-43-288A	PAS CONTAINMENT AIR SUPPLY TEST CONN	LC & CAPPED
1-TV-43-319A	PAS CONTAINMENT AIR SUPPLY TEST CONN	LC & CAPPED
1-TV-43-883A	PAS CONTAINMENT AIR RETURN TEST CONN	LC & CAPPED
1-TV-43-884A	PAS CONTAINMENT AIR RETURN TEST CONN	LC & CAPPED
1-TV-43-839	PAS WASTE TO CNTMT SUMP TEST CONN	LC & CAPPED
1-TV-43-836	PAS WASTE TO CNTMT SUMP TEST CONN	LC & CAPPED
1-TV-67-579A	UPPER CNTMT VENT CLR 1A ERCW SUP HDR TEST CONN	LC & CAPPED
1-DRV-67-769	UPPER CNTMT VENT CLR 1A ERCW SUP HDR DRAIN	LC & CAPPED

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-DRV-67-770	UPPER CNTMT VENT CLR 1A ERCW RET HDR DRAIN	LC & CAPPED
1-TV-67-579B	UPPER CNTMT VENT CLR 1B ERCW SUP HDR TEST CONN	LC & CAPPED
1-DRV-67-765	UPPER CNTMT VENT CLR 1B ERCW SUP HDR DRAIN	LC & CAPPED
1-DRV-67-766	UPPER CNTMT VENT CLR 1B ERCW RET HDR DRAIN	LC & CAPPED
1-TV-67-579C	UPPER CNTMT VENT CLR 1C ERCW SUP HDR TEST CONN	LC & CAPPED
1-DRV-67-767	UPPER CNTMT VENT CLR 1C ERCW SUP HDR DRAIN	LC & CAPPED
1-DRV-67-768	UPPER CNTMT VENT CLR 1C ERCW RET HDR DRAIN	LC & CAPPED
1-TV-67-579D	UPPER CNTMT VENT CLR 1D ERCW SUP HDR TEST CONN	LC & CAPPED
1-DRV-67-764	UPPER CNTMT VENT CLR 1D ERCW RET HDR DRAIN	LC & CAPPED
1-DRV-67-763	UPPER CNTMT VENT CLR 1D ERCW SUP HDR DRAIN	LC & CAPPED
1-DRV-3-853	AUX FEEDWATER PMP 1A-A SG 1 SUPPLY DRAIN	LC
1-ISV-33-713	SERVICE AIR U1 RX BLDG HDR ISOL	LC
1-ISV-59-522	UNIT 1 RB DI WATER HEADER ISOLATION	LC
1-TV-62-605	CVCS LETDOWN HEADER TEST	LC
1-TV-62-707	CVCS LETDOWN HEADER TEST	LC
1-VTV-63-178	BORON INJECTION LINE VENT	LC
1-TV-78-226A	UNIT 1 REFLG CAVITY SUP HDR TEST CONN	LC

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Locked Valves Verified by Performance of 1-SI-0-709 and 1-SI-0-710

Date _____

UNID	Nomenclature	Position
1-TV-78-228A	UNIT 1 REFLG CAVITY RETURN HDR TEST CONN	LC
1-DRV-62-541	CVCS CHARGING HEADER DRAIN	LC
1-DRV-62-542	CVCS CHARGING HEADER DRAIN	LC
1-ISV-78-557	UNIT 1 REFLG CAVITY SUP HDR ISOL	LC
1-ISV-78-561	UNIT 1 REFLG CAVITY RETURN HDR ISOL	LC
1-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATION	LC
1-TV-26-1293	REACTOR COOLANT PUMP SPRINKLER HDT TEST	LC
1-TV-30-559	CNTMT PURGE AIR SUPPLY TEST CONNECTION	LC
1-TV-26-1258	REACTOR COOLANT PUMP STANDPIPE HDT TEST	LC

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Basis for Locked Valve List

NOTES

- 1) Valves identified on the checklists with an asterisk (*) are required locked by design output.
- 2) Any additions, deletions, or other changes to the locking requirements specified in this appendix must be submitted to applicable affected organizations for review due to potential impact to procedures which they own and which may manipulate the component.

UNID	POSITION	CAUSE	REMARKS
1-DRV-1-532	LC	Isolate N2 blanketing	None
1-DRV-1-533	LC	Isolate N2 blanketing	None
1-DRV-1-534	LC	Isolate N2 blanketing	None
1-DRV-1-535	LC	Isolate N2 blanketing	None
1-DRV-1-536	LC	Isolate N2 blanketing	None
1-DRV-1-537	LC	Isolate N2 blanketing	None
1-DRV-1-538	LC	Isolate N2 blanketing	None
1-DRV-1-539	LC	Isolate N2 blanketing	None
1-FCV-1-147	LC*	Prevent spurious opening of MSIV bypasses	App R Requirement (Power only Removed) Accomplished by B HS positioning..
1-FCV-1-148	LC*	Prevent spurious opening of MSIV bypasses	App R Requirement (Power only Removed) Accomplished by B HS positioning.
1-FCV-1-149	LC*	Prevent spurious opening of MSIV bypasses	App R Requirement (Power only Removed) Accomplished by B HS positioning.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-FCV-1-150	LC*	Prevent spurious opening of MSIV bypasses	App R Requirement (Power only Removed) Accomplished by B HS positioning.
1-ISV-1-540	LC	Isolate N2 blanketing	None
1-ISV-1-541	LC	Isolate N2 blanketing	None
1-ISV-1-542	LC	Isolate N2 blanketing	None
1-ISV-1-543	LC	Isolate N2 blanketing	None
1-TV-1-824	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-1-825	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-1-826	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-1-827	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-1-866	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-TV-1-867	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-1-868	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-1-869	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-2-548	LC	Isolates U1 & 2 CSTs	Cond/AFW Xtie
1-DRV-2-500	LC	Isolates 6" drain line from CST A	CST A Drain (FSAR Callout)
1-ISV-2-504	LO	Assure CST A flow to AFWPs	None (FSAR Callout)
2-DRV-2-501	LC	Isolates 6" drain line from CST B	CST B Drain (FSAR Callout)
1-DRV-3-500	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-501	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-502	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-DRV-3-503	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-504	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-505	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-506	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-507	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-589	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-590	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-591	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-592	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-593	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-DRV-3-594	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-595	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-596	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-639	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-640	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-641	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-642	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-653	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-654	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-659	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-660	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-666	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-667	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-675	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-676	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-853	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-857	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-858	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-DRV-3-889	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-3-890	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-HCV-3-355	LO	Air to 1-FCV-3-355	None
1-HCV-3-359	LO	Air to 1-FCV-3-359	None
1-ISV-3-800	LO	CST to AFW Pumps (AFWPs) (FSAR Callout)	None
1-ISV-3-803	LO	AFWP 1A-A Suction (FSAR Callout)	None
1-ISV-3-804	LO	AFWP 1B-B Suction (FSAR Callout)	None
1-ISV-3-809	LO	TD AFWP Suction (FSAR Callout)	None
1-ISV-3-816	LO	AFWP 1A-A Min flow	None
1-ISV-3-817	LO	AFWP 1B-B Min flow	None
1-ISV-3-819	LO	TD AFWP Min flow	None
1-ISV-3-826	LO	AFW to SG 3	None
1-ISV-3-827	LO	AFW to SG 2	None
1-ISV-3-828	LO	AFW to SG 1	None
1-ISV-3-829	LO	AFW to SG 4	None
1-ISV-3-834	LO	AFW to SG 3	None
1-ISV-3-835	LO	AFW to SG 2	None
1-ISV-3-836	LO	AFW to SG 1	None

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-ISV-3-837	LO	AFW to SG 4	None
1-ISV-3-867	LO	AFW to SG 3	None
1-ISV-3-868	LO	AFW to SG 2	None
1-ISV-3-869	LO	AFW to SG 1	None
1-ISV-3-870	LO	AFW to SG 4	None
1-ISV-3-875	LO	AFW to SG 3	None
1-ISV-3-876	LO	AFW to SG 2	None
1-ISV-3-877	LO	AFW to SG 1	None
1-ISV-3-878	LO	AFW to SG 4	None
1-TV-3-373A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-3-374A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-3-375A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-3-376A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-3-842	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-3-899	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-3-903	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-3-904	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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UNID	POSITION	CAUSE	REMARKS
1-VTV-3-906	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-3-907	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-14-151	LC	Limit inadvertent radioactive release from Cond DI system.	UFSAR Section 11.2.4
0-ISV-14-1008	LC	Limit inadvertent radioactive release from Cond DI system.	UFSAR Section 11.2.4
1-RTV-24-349A	LC	Valves difficult to access. Locked to reduce need to check position every time checklist is performed.	None
1-RTV-24-350A	LC	Valves difficult to access. Locked to reduce need to check position every time checklist is performed.	None
1-RTV-24-353A	LO	Valves difficult to access. Locked to reduce need to check position every time checklist is performed.	None
1-RTV-24-354A	LO	Valves difficult to access. Locked to reduce need to check position every time checklist is performed.	None
0-FCV-25-106	LO*	Use NOT allowed for U1 operation. Flowpath isolated by 0-25-535.	Disabled open by DCN M-20905-A (NOT listed in SOI).
0-FCV-25-90	LO*	Use NOT allowed for U1 operation. Flowpath isolated by 0-25-535.	Disabled open by DCN M-20905-A (NOT listed in SOI).
0-FCV-25-94	LO*	Prevent Spurious closure. Closure isolates supply header flow.	Disabled open by DCN M-20905-A (NOT listed in SOI).
0-FCV-25-95	LO*	Prevent Spurious closure. Closure isolates supply header flow.	Disabled open by DCN M-20905-A (NOT listed in SOI).
0-FCV-25-96	LO*	Prevent Spurious closure. Closure isolates supply header flow.	Disabled open by DCN M-20905-A (NOT listed in SOI).
0-ISV-25-511	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
0-ISV-25-515	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
0-ISV-25-516	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity

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UNID	POSITION	CAUSE	REMARKS
0-ISV-25-535	LC	Isolates RSW Tanks	None
0-ISV-25-568	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
0-ISV-25-631	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
0-SPV-25-530	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
0-SPV-25-637	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
1-ISV-25-531	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
2-ISV-25-531	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
2-ISV-25-553	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
2-ISV-25-555	LC	Prevent unauthorized RSW use	RSW use limits HPFP capacity
1-TTIV-30-133C1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-133C2	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TTIV-30-30CC1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-30CC2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-310C1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-310C2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-311C1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-311C2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4

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UNID	POSITION	CAUSE	REMARKS
1-TTIV-30-42C1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-42C2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-43C1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-43C2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-44C1	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-44C2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TTIV-30-45C1	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TTIV-30-45C2	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-554	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-555	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-556	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-557	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-558	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-559	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-560	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-561	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-562	LC	Containment Isolation	Required in Mode 1, 2, 3, 4
1-TV-30-563	LC	Containment Isolation	Required in Mode 1, 2, 3, 4

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
0-BKD-31-2086	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-BKD-31-2097	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-BKD-31-2103	LO	Prevent failure to open for CREVS recirculation flow	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-BKD-31-2098	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-FCO-31-1	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-FCO-31-1A	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-FCO-31-2	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-FCO-31-2A	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-ISK-31-4626	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.

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UNID	POSITION	CAUSE	REMARKS
0-ISD-31-4627	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-ISD-31-4628	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-ISD-31-4629	LO	Main flowpath for MCR Habitability Req	Dampers are NOT in SOI due to being permanently secured in place; NOT required to be periodically checked.
0-PCV-31-349	LT*	Balance flow	Controls & limit switches disconnected
0-PCV-31-364	LT*	Balance flow	Controls & limit switches disconnected
0-ISV-32-3403	LC	Use of 0-FCV-25-90 NOT allowed for Unit 1 operation (See 0-FCV-25-90)	Locking air valve locks FCV open (fail open)
0-ISV-32-3404	LC	Use of 0-FCV-25-106 NOT allowed for Unit 1 operation (See 0-FCV-25-106)	Locking air valve locks FCV open (fail open)
1-BYV-32-288	LC	Containment Isolation Bypass	Ensure closure during normal operation.
1-BYV-32-298	LC	Containment Isolation Bypass	Ensure closure during normal operation.
1-BYV-32-308	LC	Containment Isolation Bypass	Ensure closure during normal operation.
1-ISV-32-2935	LC*	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-32-2936	LC*	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-32-3021	LC*	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-32-3022	LC*	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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UNID	POSITION	CAUSE	REMARKS
1-RTV-32-289	LC	Admin Control	None
1-RTV-32-299	LC	Admin Control	None
1-RTV-32-309	LC	Admin Control	None
2-ISV-32-2963	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-32-2964	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-32-3166	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-32-3167	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-32-3804	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-32-3805	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-33-713	LC	Containment Isolation	Admin Control
1-ISV-33-714	LC	Containment Isolation	Admin Control
0-ISV-33-848	LC*	Prevent contamination of control air.	Locked CLOSED by DCN 50987 (NOT used in SOI)
0-ISV-33-849	LC*	Prevent contamination of control air	Locked CLOSED by DCN 50987 (NOT used in SOI)
1-ISV-35-611	LO	Provide H2 vent path	Stator water tank overpressurization can occur if valve is closed
1-ISV-35-612	LO	Provide H2 vent path	Stator water tank overpressurization can occur if valve is closed
2-ISV-33-509	LC*	Isolates Unit 2 construction air from Unit 1 station and control air.	Locked closed by DCN 52467

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
2-ISV-33-543	LC*	Isolates Unit 2 construction air from Unit 1 station and control air.	Locked closed by DCN 52467
1-ISV-35-623	LC	Admin Control	Prevent loss of H2
1-THV-35-634	LT	Prevent flow perturbations.	See West. drawing 1124J16
1-ISV-35-861	LO	Seal oil filter inlet	Prevent loss of seal oil flow to generator.
1-ISV-35-862	LO	Seal oil filter outlet	Prevent loss of seal oil flow to generator.
1-ISV-36-583	LC	Prevents chemical leakage	Locked CLOSED by DCN 51724
1-ISV-36-593	LC	Prevents chemical leakage	Locked CLOSED by DCN 51724
0-ISV-39-500	LO	Ensure CO2 flowpath	None
0-ISV-39-503A	LC	Fill line integrity	None
0-ISV-39-505	LC	Equalizing line integrity	None
0-ISV-39-508	LC	Fill line integrity	None
0-ISV-39-516	LC	Isolates Generator Purge System	None
0-ISV-39-522	LO	Ensure CO2 flowpath	None
0-ISV-39-545	LO	Ensure CO2 flowpath	None
0-ISV-39-585	LO	Ensure CO2 flowpath	None
0-ISV-39-600	LC	Equalizing line integrity	None
1-ISV-43-1586	LO	Valve is closed to Prevent liquid from going to Containment Sump during surveillance	None
1-TV-43-1472	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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UNID	POSITION	CAUSE	REMARKS
1-TV-43-1473	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-43-1478	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-43-1479	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-43-251B	LC	Admin Control	None
1-TV-43-288A	LC	Admin Control	None
1-TV-43-310B	LC	Admin Control	None
1-TV-43-319A	LC	Admin Control	None
1-TV-43-836	LC	Admin Control	None
1-TV-43-839	LC	Admin Control	None
1-TV-43-883A	LC	Admin Control	None
1-TV-43-884A	LC	Admin Control	None
1-LOV-47-727	LO	Maintain Turbine Throttle Valve Stem Leakoff	W OMM-045
1-LOV-47-728	LO	Maintain Turbine Throttle Valve Stem Leakoff	W OMM-045
1-LOV-47-729	LO	Maintain Turbine Throttle Valve Stem Leakoff	W OMM-045
1-LOV-47-730	LO	Maintain Turbine Throttle Valve Stem Leakoff	W OMM-045
1-ISV-52-500	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-ISV-52-501	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-ISV-52-502	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710

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UNID	POSITION	CAUSE	REMARKS
1-ISV-52-503	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-ISV-52-504	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-ISV-52-505	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-ISV-52-506	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-ISV-52-507	LC	Containment Isolation	Containment ILRT (NOT on a flow print). Verified by 1-SI-0-710
1-DRV-59-725	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-59-501	LC	Prevent Inadvertent Use	None
1-ISV-59-522	LC	Containment Isolation	None
1-ISV-59-698	LC	Containment Isolation	None
1-TV-59-681	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-61-532	LC	Admin Control	None
1-TV-61-681	LC	Admin Control	None
1-TV-61-691	LC	Admin Control	None
1-TV-61-746	LC	Admin Control	None
0-ISV-62-1030	LC	Prevent inadvertent use of line	None
1-BYV-62-653	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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UNID	POSITION	CAUSE	REMARKS
1-DRV-62-541	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-62-542	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-FCV-62-275	LC *	Prevent depressurization of low pressure piping by PD Pump discharge	None
1-FCV-62-98	LO *	Prevent spurious closure	App R Required
1-FCV-62-99	LO *	Prevent spurious closure	App R Required
1-FLV-62-1051A	LC	Prevent inadvertent suction flow to BA Pumps 1A-A & 1B-B	None
1-FLV-62-1051B	LC	Prevent inadvertent suction flow to BA Pumps 1A-A & 1B-B	None
1-ISV-62-1030	LC	Prevent inadvertent use of line	None
1-ISV-62-1059	LC	Prevent inadvertent use of line	None
1-ISV-62-509	LO	Ensure CCP 1A-A suction flowpath	None
1-ISV-62-510	LO	Ensure CCP 1B-B suction flowpath	None
1-ISV-62-524	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-62-527	LO	Ensure CCP 1A-A discharge flowpath	None
1-ISV-62-531	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-62-533	LO	Ensure CCP 1B-B discharge flowpath	None
1-ISV-62-647	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-62-650	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
1-ISV-62-652	LC	Isolates VCT from RCP seal leakoff header	Required by NCO92004 3018 to be in the LOCKED CLOSED position.
1-ISV-62-725	LC	Same as 1-FCV-62-275	None
1-ISV-62-953	LO *	Flowpath from U1 VCT to Holdup Tanks A & B	Concurrent closure of valves NOT permitted.
1-ISV-62-957	LO *	Flowpath from U1 WDS to Holdup Tanks A & B	Concurrent closure of valves is NOT permitted.
1-TV-62-544	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-62-568	LC	Admin Control	None
1-TV-62-569	LC	Admin Control	None
1-TV-62-570	LC	Admin Control	None
1-TV-62-571	LC	Admin Control	None
1-TV-62-605	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-62-606	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-62-612	LC	Admin Control	None
1-TV-62-613	LC	Admin Control	None
1-TV-62-616	LC	Admin Control	None
1-TV-62-618	LC	Admin Control	None
1-TV-62-707	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
2-FLV-62-1051A	LC	Prevent inadvertent suction flow to BA Pumps 2A-A & 2B-B	None
2-FLV-62-1051B	LC	Prevent inadvertent suction flow to BA Pumps 2A-A & 2B-B	None
2-ISV-62-953	LO *	Flowpath from U1 VCT to Holdup Tanks A & B	Concurrent closure of valves NOT permitted.
2-ISV-62-957	LO *	Flowpath from U1 WDS to Holdup Tanks A & B	Concurrent closure of valves is NOT permitted.
2-RTV-62-392A	LC	Isolates 2-PI-62-234	None
1-DRV-63-509	LC	Admin Control	None
1-DRV-63-596	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-63-597	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-63-650	LC	Admin Control	None
1-DRV-63-653	LC	Admin Control	None
1-DRV-63-655	LC	Admin Control	None
1-DRV-63-656	LC	Admin Control	None
1-DRV-63-658	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-63-686	LC	Admin Control	None
1-DRV-63-699	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-63-700	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-63-705	LC	Admin Control	None
1-FCV-63-39	LO	Prevent spurious closure	Admin Control

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
1-FCV-63-40	LO	Prevent spurious closure	Admin Control
1-ISV-63-525	LO	SI Pump A-A Discharge	None
1-ISV-63-527	LO	SI Pump B-B Discharge	None
1-ISV-63-564	LC	Isolation	Previously provided containment Isolation function
1-RTV-63-311A	LC	Admin Control	None
1-RTV-63-312A	LC	Admin Control	None
1-RTV-63-313A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-RTV-63-314A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-RTV-63-315A	LC	Admin Control	None
1-RTV-63-316A	LC	Admin Control	None
1-RTV-63-317A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-RTV-63-318A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-RTV-63-319A	LC	Admin Control	None
1-RTV-63-320A	LC	Admin Control	None
1-RTV-63-321A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-RTV-63-322A	LC	Admin Control	None
1-RTV-63-323A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-RTV-63-324A	LC	Admin Control	None

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
1-RTV-63-325A	LC	Admin Control	None
1-RTV-63-326A	LC	Admin Control	None
1-RTV-63-387A	LC	Admin Control	None
1-RTV-63-388A	LC	Admin Control	None
1-RTV-63-389A	LC	Admin Control	None
1-RTV-63-390A	LC	Admin Control	None
1-RTV-63-391A	LC	Admin Control	None
1-RTV-63-392A	LC	Admin Control	None
1-RTV-63-393A	LC	Admin Control	None
1-RTV-63-394A	LC	Admin Control	None
1-RTV-63-395A	LC	Admin Control	None
1-RTV-63-396A	LC	Admin Control	None
1-RTV-63-397A	LC	Admin Control	None
1-RTV-63-398A	LC	Admin Control	None
1-RTV-63-399A	LC	Admin Control	None
1-RTV-63-400A	LC	Admin Control	None
1-RTV-63-409A	LC	Admin Control	None
1-RTV-63-410A	LC	Admin Control	None

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-THV-63-542	LT *	Equalize & limit pump flow to avoid SI Pump A-A runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-544	LT *	Equalize & limit pump flow to avoid SI Pump A-A runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-546	LT *	Equalize & limit pump flow to avoid SI Pump B-B runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-548	LT *	Equalize & limit pump flow to avoid SI Pump B-B runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-550	LT *	Equalize flow through 4 CLs & limit total flow to avoid pump runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-552	LT *	Equalize flow through 4 CLs & limit total flow to avoid pump runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-554	LT *	Equalize flow through 4 CLs & limit total flow to avoid pump runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-556	LT *	Equalize flow through 4 CLs & limit total flow to avoid pump runout	Required in SD N3-63-4001 but NOT on drawing.
1-THV-63-582	LT *	Limit total flow from 1 pump to avoid runout and to equalize flow to the 4 RCS	Req in SD N3-63-4001 but NOT on drawing
1-THV-63-583	LT *	Limit total flow from 1 pump to avoid runout and to equalize flow to the 4 RCS	Req in SD N3-63-4001 but NOT on drawing
1-THV-63-584	LT *	Limit total flow from 1 pump to avoid runout and to equalize flow to the 4 RCS	Req in SD N3-63-4001 but NOT on drawing
1-THV-63-585	LT *	Limit total flow from 1 pump to avoid runout and to equalize flow to the 4 RCS	Req in SD N3-63-4001 but NOT on drawing
1-TV-63-515	LC	Admin Control	None
1-TV-63-636	LC	Admin Control	None
1-TV-63-677	LC	Admin Control	None
1-TV-63-692	LC	Admin Control	None
1-TV-63-867	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-63-101	LO	Admin Control	None

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-VTV-63-105	LO	Admin Control	None
1-VTV-63-113	LO	Admin Control	None
1-VTV-63-30	LC	Admin Control	None
1-VTV-63-192	LC	Admin Control	None
1-VTV-63-190	LC	Admin Control	None
1-VTV-63-194	LC	Admin Control	None
1-VTV-63-654	LC	Admin Control	None
1-VTV-63-184	LC	Admin Control	None
1-VTV-63-659	LC	Admin Control	None
1-VTV-63-661	LC	Admin Control	None
1-VTV-63-720	LC	Admin Control	None
1-VTV-63-17	LO	Admin Control	None
1-VTV-63-85	LO	Admin Control	None
1-VTV-63-178	LC	Admin Control	None
1-VTV-63-154	LC	Admin Control	None
1-VTV-63-142	LC	Admin Control	None
1-VTV-63-171	LO	Admin Control	None
1-VTV-63-168	LC	Admin Control	None

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-VTV-63-421	LC	Admin Control	None
1-VTV-63-423	LC	Admin Control	None
1-VTV-63-425	LC	Admin Control	None
0-BYV-67-679	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-BYV-67-682	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-FCV-67-151	LC	Prevent spurious opening.	App R Requirement
0-ISV-67-1009	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-67-1010	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-67-504A	LO	Admin Control	None
0-ISV-67-504B	LO	Admin Control	None
0-ISV-67-504C	LO	Admin Control	None
0-ISV-67-504D	LO	Admin Control	None
0-ISV-67-504E	LO	Admin Control	None
0-ISV-67-504F	LO	Admin Control	None
0-ISV-67-504G	LO	Admin Control	None
0-ISV-67-504H	LO	Admin Control	None
0-ISV-67-508	LO	Admin Control	None
0-ISV-67-512	LO	Admin Control	None
0-ISV-67-546	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
0-ISV-67-552	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-67-553	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-67-591B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-67-615A	LO	Admin Control	None
0-ISV-67-615B	LO	Admin Control	None
0-ISV-67-620A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-ISV-67-620B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-THV-67-623A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-ISV-67-678A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-ISV-67-678B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-ISV-67-681A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-ISV-67-681B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification
0-THV-67-618A	LT	Admin Control	None
0-THV-67-618B	LT	Admin Control	None
0-THV-67-623B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA	Permits 18 month verification in the place of monthly verification

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-DRV-67-763	LC	Admin Control	None
1-DRV-67-764	LC	Admin Control	None
1-DRV-67-765	LC	Admin Control	None
1-DRV-67-766	LC	Admin Control	None
1-DRV-67-767	LC	Admin Control	None
1-DRV-67-768	LC	Admin Control	None
1-DRV-67-769	LC	Admin Control	None
1-DRV-67-770	LC	Admin Control	None
1-FCV-67-127	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-128	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-146	LC *	Prevent spurious opening	App R Requirement
1-FCV-67-147	LC *	Isolates supply headers 1A & 2B	App R Requirement
1-FCV-67-168	LO *	Prevent spurious closure	CCP Room clrs isolate with valve closed. Control Air Valves LC.
1-FCV-67-170	LO *	Prevent spurious closure	CCP Room clrs isolate with valve closed. Control Air Valves LC.
1-FCV-67-188	LO *	Prevent spurious closure	RHRP Room clrs isolate with valve closed. Control Air Valves LC.
1-FCV-67-190	LO *	Prevent spurious closure	RHRP Room clrs isolate with valve closed. Control Air Valves LC.
1-FCV-67-22	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-223	LO *	CCS Hx A Sup form header 2A	App R Requirements

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-FCV-67-24	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-458	LC *	Isolates header 1B from supply header 2A	App R Requirements
1-FCV-67-478	LO *	Prevent spurious closure	App R Requirements
1-FCV-67-66	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-67	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-81	LO *	Prevent spurious closure	App R Requirement
1-FCV-67-82	LO *	Prevent spurious closure	App R Requirement
1-ISV-67-1004A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1004B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1004C	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1004D	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1005A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1005B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1005C	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1005D	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1009	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-1010	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-505A	LO	Admin Control	None

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-ISV-67-505B	LO	Admin Control	None
1-ISV-67-506A	LC	Prevent ERCW flow diversion	Depending on heat load, ERCW diverting through valve could reduce system heat removal
1-ISV-67-506B	LC	Prevent ERCW flow diversion	Depending on heat load, ERCW diverting through valve could reduce system heat removal
1-ISV-67-507A	LO	Assure ERCW to DG Hxs	Plant Safety
1-ISV-67-507B	LO	Assure ERCW to DG Hxs	Plant Safety
1-ISV-67-507C	LO	Assure ERCW to DG Hxs	Plant Safety
1-ISV-67-507D	LO	Assure ERCW to DG Hxs	Plant Safety
1-ISV-67-511A	LT	Limit exposure of personnel to Safety Hazards.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-511B	LT	Limit exposure of personnel to Safety Hazards.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-516A	LT	Limit exposure of personnel to Safety Hazards.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-516B	LT	Limit exposure of personnel to Safety Hazards.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-523A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-523B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-543A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-544	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-551	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-554A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-554B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-ISV-67-577A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-577B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-600A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-600B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-602A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-602B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-603A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-603B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-607A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-607B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-612A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-612B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-613A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-613B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-642A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-642B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-644A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-644B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-ISV-67-645A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-645B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-647A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-647B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-675	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-67-680	LO	Admin Control	None
1-ISV-67-683	LO	Admin Control	None
1-ISV-67-923A	LO	ERCW to TD AFWP	Plant Safety
1-ISV-67-924B	LO	ERCW to TD AFWP	Plant Safety
1-ISV-67-927A	LO	Admin Control	None
1-ISV-67-930B	LO	Admin Control	None
1-ISV-67-933B	LO	Admin Control	None
1-ISV-67-937B	LO	Admin Control	None
1-ISV-67-939A	LO	Admin Control	None
1-ISV-67-942A	LO	Admin Control	None
1-LOV-67-943A	LC	Admin Control	None
1-THV-67-510A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-510B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-THV-67-515A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-515B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-537A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-537B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-555	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-564A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-564B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-564C	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-564D	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-601A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-601B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-604A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-604B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-605A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-605B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-606A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-606B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-608A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-THV-67-608B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-609A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-609B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-610A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-610B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-611A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-611B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-643A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-643B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-646A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-646B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-8020	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-67-8021	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-67-579A	LC	Admin Control	None
1-TV-67-579B	LC	Admin Control	None
1-TV-67-579C	LC	Admin Control	None
1-TV-67-579D	LC	Admin Control	None
2-FCV-67-127	LO*	Admin Control	None

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
2-FCV-67-128	LO *	Admin Control	None
2-FCV-67-143	(1) *	Balance system flow	EQ, Ensure DBA flow to Unit 1 ECCS
2-FCV-67-146	LC *	Isolation CCS Hxs B & C discharge	EQ
2-FCV-67-147	LO *	Main supply header 2B	App R Requirement
2-FCV-67-22	LO *	Prevent spurious closure	App R Requirement
2-FCV-67-223	LO *	CCS Hx A supply from header 2A	App R Requirements
2-FCV-67-24	LO *	Prevent spurious closure	App R Requirement
2-FCV-67-342	LO	Prevent spurious closure	Tr A Penet & Pipe chase clrs isolate with valve closed. Cntl Air Valves LC.
2-FCV-67-344	LO	Prevent spurious closure	Tr A Penet & Pipe chase clrs isolate with valve closed. Cntl Air Valves LC.
2-FCV-67-346	LO	Prevent spurious closure	Tr A Penet & Pipe chase clrs isolate with valve closed. Cntl Air Valves LC.
2-FCV-67-348	LO	Prevent spurious closure	Tr A Penet & Pipe chase clrs isolate with valve closed. Cntl Air Valves LC.
2-FCV-67-350	LO	Prevent spurious closure	Tr A Penet & Pipe chase clrs isolate with valve closed. Cntl Air Valves LC.
2-FCV-67-352	LO	Prevent spurious closure	Tr A Penet & Pipe chase clrs isolate with valve closed. Cntl Air Valves LC.
2-FCV-67-66	LO *	Prevent spurious closure	App R Requirement
2-FCV-67-67	LO *	Prevent spurious closure	App R Requirement

- (1) In Modes 1 through 4, 2-FCV-67-143 is LOCKED in the THROTTLED position specified in TI-31.08. In Modes 5, 6, or Defueled, 2-FCV-67-143 may be unlocked and adjusted by SOI-70.01. Throttle position and locking is verified by GO-1 prior to Mode 4 entry.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
2-FCV-67-81	LO *	Prevent spurious closure	App R Requirement
2-FCV-67-82	LO *	Prevent spurious closure	App R Requirement
2-ISV-67-1009	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-1010	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-505A	LO	Admin Control.	None
2-ISV-67-505B	LO	Admin Control	None
2-ISV-67-506A	LC	Prevent ERCW flow diversion	Depending on heat load, ERCW diverting through valve could reduce system heat removal
2-ISV-67-506B	LC	Prevent ERCW flow diversion	Depending on heat load, ERCW diverting through valve could reduce system heat removal
2-ISV-67-507A	LO	Assure ERCW to DGs Hxs	Plant Safety
2-ISV-67-507B	LO	Assure ERCW to DGs Hxs	Plant Safety
2-ISV-67-511A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-511B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-516A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-516B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-544	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-546	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-551	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
2-ISV-67-554A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-554B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-607A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-607B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-612A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-612B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-648A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-648B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-674A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-674B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-675	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-680	LO	Admin Control	None
2-ISV-67-684A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-684B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-ISV-67-927A	LC	Admin Control	None
2-ISV-67-930B	LC	Admin Control	None
2-ISV-67-933B	LO	Admin Control	None
2-ISV-67-937B	LO	Admin Control	None

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
2-ISV-67-939A	LO	Admin Control	None
2-ISV-67-942A	LO	Admin Control	None
2-LOV-67-943B	LC	Admin Control	None
2-THV-67-510A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-510B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-515A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-515B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-555	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-608A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-608B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-609A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-609B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-610A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-610B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-611A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-611B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-673A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-673B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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UNID	POSITION	CAUSE	REMARKS
2-THV-67-683	LT	Admin Control	None
2-THV-67-685A	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-685B	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-8020	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-THV-67-8021	LT	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-68-566	LO	Drain Loop seal for Pzr protection	None
1-DRV-68-567	LO	Drain Loop seal for Pzr protection	None
1-DRV-68-568	LO	Drain Loop seal for Pzr protection	None
1-TV-68-556	LC	Admin Control	None
1-TV-68-560	LC	Admin Control	None
1-TV-68-561	LC	Admin Control	None
1-TV-68-601	LC	Admin Control	None
1-TV-68-848	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-68-607	LO	Required by T.R. 3.4.3.1	None
0-FCV-70-12	LO *	Flowpath form CCS Hx C to ESF equip & other	App R Requirements
0-FCV-70-22	LO *	Admin Control	App R Requirements
0-ISV-70-503	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-70-505	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-70-510	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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UNID	POSITION	CAUSE	REMARKS
1-DRV-70-760	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-DRV-70-762	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-FCV-70-10	LC *	Isolates CCS Hxs A from C outlets	App R Requirements
1-FCV-70-13	LC *	Discharge isolation for CCS Pumps 1AA & 1B-B form 2A-A & 2B-B	App R Requirements
1-FCV-70-153	LO	Maintain CCS from RHR Hx B	App R Requirements
1-FCV-70-2	LO *	Flowpath from Hx A to ESF equip 1A	App R Requirements
1-FCV-70-23	LC *	Discharge isolation for CCS Pumps 1AA & 1B-B form 2A-A & 2B-B	App R Requirements
1-FCV-70-25	LO *	1A-A & 1B-B CCS Pumps discharge flowpath	App R Requirements
1-FCV-70-26	LC*	Discharge header isolation between 1A-A & 1B-B pumps and C-S pump	App R Requirements
1-FCV-70-27	LC *	Header isolation between pumps 1A-A & 1B-B	App R Requirements
1-FCV-70-3	LO *	Flowpath from Hx C to ESF equip 1B & waste evap bldg	App R Requirements
1-FCV-70-34	LO *	CCS suction return from ESF header 1A	App R Requirements
1-FCV-70-4	LO *	Flowpath from Hx A to ESF equip, WG Comp, Rx Bldg, & other	App R Requirements
1-FCV-70-64	LC *	Isolates suction to 1A-A & 1B-B CCSW pumps from other CCS pumps	App R Requirements
1-FCV-70-74	LC *	Isolates suction to 1A-A & 1B-B CCSW pumps from other CCS pumps	App R Requirements
1-FCV-70-75	LO *	CCS Pump suction from ESF equip 1B	App R Requirements
1-FCV-70-8	LO *	Flowpath from Hx A to ESF equip & other equipment	App R Requirements
1-FCV-70-9	LC *	Isolates CCS Hxs A from C outlets	App R Requirements

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Date _____

UNID	POSITION	CAUSE	REMARKS
1-ISV-70-503A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-503B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-505A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-505B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-510	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-522	LC	ERCW flood mode sup to Thermal Barrier Booster Pumps 1A & 1B.	None
1-ISV-70-544A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-544B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-544C	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-545A	LO	Reduce SI monitoring frequency	1-SI-70-1
1-ISV-70-545B	LO	Reduce SI monitoring frequency	1-SI-70-1
1-ISV-70-552A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-552B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-553A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-553B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-557A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-557B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-558A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

Date _____

UNID	POSITION	CAUSE	REMARKS
1-ISV-70-558B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-562A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-562B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-564A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-564B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-567A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-567B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-569A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-569B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-572A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-572B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-725A	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-725B	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-766	LC	Prevent flow diversion to PAS coolers	Except during sampling.
1-ISV-70-770	LC	Prevent flow diversion to PAS coolers	Except during sampling.
1-ISV-70-775	LC	Prevent flow diversion	None
1-ISV-70-777	LC	Isolates Gross Failed Fuel Detector	Except during sampling
1-ISV-70-798	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
1-ISV-70-799	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-800	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-70-801	LO	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-THV-70-546A	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-546B	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-554A	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-554B	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-566A	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-566B	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-571A	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-571B	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-590A	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-590B	LT	Reduce SI monitoring frequency	1-SI-70-1
1-THV-70-781	LC	Isolates Gross Failed Fuel Detector	None
1-TV-70-702B	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-70-737	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-70-702E	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-VTV-70-702F	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.

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Basis for Locked Valve List

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UNID	POSITION	CAUSE	REMARKS
1-VTV-70-759	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
2-FCV-70-14	LC *	Discharge isolation for CCS Pumps 2AA & 2B-B from 1A-A & 1B-B	App R Requirements
2-FCV-70-15	LO *	Admin Control	None
2-FCV-70-16	LO *	Admin Control	None
2-FCV-70-18	LC *	Discharge isolation for CCS Pumps 2A-A & 2B-B from 1A-A & 1B-B	App R Requirements
2-FCV-70-195	LC *	Isolates CCS Hx B from C outlets	App R Requirements
2-FCV-70-196	LC *	Isolates CCS Hx B from C outlets	App R Requirements
2-FCV-70-2	LO *	CCS Hx B to ESF equip 2A	App R Requirements
2-FCV-70-28	LO *	Prevent spurious closure	App R Requirements
2-FCV-70-29	LO *	Prevent spurious closure	App R Requirements
2-FCV-70-39	LC *	Prevent spurious closure	App R Requirements
2-FCV-70-4	LO *	CCS Hx B to WG Comp Hx & misc U2 equip	App R Requirements
2-FCV-70-75	LO *	CCS Pump suction from ESF equip 2B	App R Requirements
2-FCV-70-76	LO *	Prevent spurious closing	App R Requirements
2-FCV-70-78	LO *	Prevent spurious closing	App R Requirements
2-ISV-70-503A	LO	Admin Control	None
2-ISV-70-503B	LO	Admin Control	None
2-ISV-70-505A	LO	Admin Control	None

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UNID	POSITION	CAUSE	REMARKS
2-ISV-70-505B	LO	Admin Control	None
2-ISV-70-507	LC *	Plant Safety	App R Requirement
1-VTV-72-11	LC	Admin Control	None
1-ISV-72-41	LC	Admin Control	None
1-ISV-72-503	LC	CS Header A-A/B-B test Isolation	None
1-ISV-72-504	LC	CS Header A-A/B-B test Isolation	None
1-ISV-72-528	LO	CS Hx A/B Inlet	None
1-ISV-72-529	LO	CS Hx A/B Inlet	None
1-FCV-74-1	LC *	RCS-RHR Isol/Containment Isolation	App R Requirements
1-FCV-74-2	LC *	RCS-RHR Isol/Containment Isolation	App R Requirements
1-FCV-74-8	LC *	RCS-RHR Isol Bypass/Cntmt Isol	App R Requirements
1-FCV-74-9	LC *	RCS-RHR Isol Bypass/Cntmt Isol	App R Requirements
1-HCV-74-34	LC	Prevent flow diversion which challenges ability to bring plant to Cold SD.	Also, RWST should be isolated during an accident.
1-VTV-74-41	LC	Admin Control	None
1-VTV-74-42	LC	Admin Control	None
1-ISV-74-520	LO	RHRP A-A/B-B discharge flowpath	None

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UNID	POSITION	CAUSE	REMARKS
1-ISV-74-521	LO	RHRP A-A/B-B discharge flowpath	None
1-ISV-74-524	LO	RHR Hx A/B Inlet	None
1-ISV-74-525	LO *	RHR Hx A/B Inlet	None
1-TV-74-504	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-74-543	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
0-ISV-77-660	LC	Isolation to Cooling Tower Blowdown	None
0-ISV-78-514	LC	SFP Demin Water Makeup. Controls overfill and dilution of SFP.	WBPER970782
0-VTV-78-565	LO	Siphon Breaker (FSAR Callout)	None
1-ISV-78-557	LC	Containment Isolation	None
1-ISV-78-558	LC	Containment Isolation	None
1-ISV-78-560	LC	Containment Isolation	None
1-ISV-78-561	LC	Containment Isolation	None
1-TV-78-226A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-TV-78-228A	LC	Limit exposure of personnel to Safety Hazards and implement ALARA.	Permits 18 month verification in the place of monthly verification.
1-ISV-81-548	LC	Locked Closed to separate Primary Water Pump 1A and 1B suction lines	DCN 51621
1-ISV-84-530	LC	Containment Isolation	None

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UNID	POSITION	CAUSE	REMARKS
1-ISV-82-512A1	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-503A1	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-514A1	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-506A1	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-546A2	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-537A2	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-548A2	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-540A2	LC	Prevent spurious opening	PER 01-007572-000
2-ISV-82-512A1	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-503A1	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-514A1	LC	Prevent spurious opening	PER 01-007572-000

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UNID	POSITION	CAUSE	REMARKS
2-ISV-82-506A1	LC	Prevent spurious opening	PER 01-007572-000
2-ISV-82-546A2	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-537A2	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-548A2	LC	Prevent spurious opening	PER 01-007572-000
2-ISV-82-540A2	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-512B1	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-503B1	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-514B1	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-506B1	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-546B2	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-537B2	LO	Prevent spurious closure	PER 01-007572-000
1-ISV-82-548B2	LC	Prevent spurious opening	PER 01-007572-000
1-ISV-82-540B2	LC	Prevent spurious opening	PER 01-007572-000
2-ISV-82-512B1	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-503B1	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-506B1	LC	Prevent spurious opening	PER 01-007572-000
2-ISV-82-546B2	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-537B2	LO	Prevent spurious closure	PER 01-007572-000
2-ISV-82-548B2	LC	Prevent spurious opening	PER 01-007572-000
2-ISV-82-540B2	LC	Prevent spurious opening	PER 01-007572-000

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**Source Notes
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Requirements Statement	Source Document	Implementing Statement
TVA response to NRC to limit weight of added device(s) to 10% of valve weight.	NCR GENNEB 8210 (CEB 830329018)	C.1

Attachment 21

**TVA Procedure 0-PI-OPS-17.0, "18 Month Locked Valve Verification," Revision 44
Dated January 5, 2011**

Attachment 22
Summary Review of Seismic Qualification for
The High Range Area RM-1000 Monitors

Qualification Summary Report 04038903-QSR:

The qualification summary report 04038903-QSR is identified as the principal document for environmental, seismic, electromagnetic compatibility, and software qualification for the radiation monitors for Watts Bar Unit 2. Supplements to this report are prepared to provide the complete qualification of the radiation monitors.

Table 1-1 (page 6) identifies the high range area monitors systems 2-RE-90-271 through 2-RE-90-274 which includes the safety related RM-1000 monitors mounted in control room panel 2-M-30 as part number 04034101-001.

Table 3-7 (page 20) identifies TVA Standard Specification CEB-SS-5.10 Rev. 3 Figure 3.1 as the SSE RRS for control room panel mounted RM-1000 monitors.

Table 5-1 (page 42) of the report identifies GA-ESI report 04038903-7SP as the qualification basis for the high range area monitors part number 04034101-001 including the safety related RM-1000 monitors.

Qualification basis for 04034101-001 Report 04038903-7SP:

This report includes the seismic qualification for the Watts Bar unit 2 high range area monitoring systems 2-RE-90-271 through 2-RE-90-274 GA-ESI part number 04034101-001.

Section 3 of this report provides the seismic qualification basis for the 04034101-001 equipment. The RRS are developed using the RRS spectra identified in report 04038903-QSR.

For the RM-1000 monitors and I-F Converters, Figure 3-3 on page 17 shows the RRS which is the same as that provided by TVA standard specification CEB-SS-5.10 Figure 3.1. Figure 3-4 (page 22) and Figure 3-5 (page 23) show a comparison of the RRS for the RM-1000 and I-F converter with the actual TRS from GA-ESI report 04508905-QR.

Table 3-7 (page 19) identifies the GA-ESI reports applicable for each component of the high range area monitoring system 04034101-001.

The Nuclear Instrumentation Module (NIM) Bin assembly (page 19) containing the RM-1000 and power supply were seismically qualified by testing per GA-ESI report 04508905-QR. The I-F Converter installed in its own enclosure was qualified by testing per report 04508905-QR.

Differences between the RM-1000 monitors for Watts Bar Unit 2 and the RM-1000 monitor tested by 04508905-QR are addressed in GA-ESI document 04508905-1SP.

Differences between the I-F Converters for Watts Bar Unit 2 and the I-F Converter tested by 04508905-QR are addressed in GA-ESI document 04508905-2SP.

The power supply (page 24) was seismically qualified attached to the back of the NIM Bin assembly in GA-ESI report 04508905-QR. The Watts Bar Unit 2 power supply is similar to the power supply tested. Calculations in Appendix A of 0438903-7SP evaluate the power supply bracket and screws attaching it to the back of the NIM Bin.

Attachment 22
Summary Review of Seismic Qualification for
The High Range Area RM-1000 Monitors

The line filter (page24) which is separate from the NIM Bin and installed in the Control Room Panel 2-M-30 is seismically qualified by analysis in GA-ESI document 04438901-QSR.

Qualification Test Report Supplement, RM-1000 Upgrades 04508905-1SP:

This report qualifies the differences between the current RM-1000 monitors and the RM-1000 monitors qualified by testing documented in GA-ESI report 04508905-QR. These differences were necessitated by the obsolescence of the original front panel display and the addition of an interface relay panel.

Report 04508905-1SP also evaluates Engineering Change Order (ECO) changes that have been implemented since the testing of the RM-1000 monitors and commercial grade dedication of various parts.

Appendix A provides a conservative analysis for mounting of the interface relay panel.

Qualification Test Report Supplement, I-F Converter Upgrades 04508905-2SP:

This report qualifies the differences between the current I-F Converter and the I-F Converter qualified by testing documented in GA-ESI report 04508905-QR.

The current I-F Converter is mounted in a NIM Bin, whereas the I-F Converter qualified by testing was mounted in a separate enclosure attached to the test fixture. The original seismic testing TRS provided in report 04508905-QR envelopes the standard RRS provided in TVA standard specification CEB-SS-5.10. Based on this mounting the I-F Converter in a NIM Bin can be seismically qualified by similarity to the testing documented in report 04508905-QR.

Qualification Test Report for RM-1000 Processor Module and Current-To-Frequency Converter 04508905-QR:

This report documents the environmental and seismic qualification of RM-1000 monitors installed in a NIM Bin assembly mounted in a typical rack mounted configuration. This report also documents the environmental and seismic qualification of an I-F Converter and its enclosure mounted to a rigid test fixture.

This is the original qualification test report for the RM-1000 monitors and I-F Converters which, for marketing purposes was prepared to satisfy the requirements of many Nuclear Plants. Appendix B provides a description of development of the original RRS. As explained on page 3-14 and page B-ii the original generic RRS were not attainable for the shake table on which the seismic tests were performed. Pages B-ii, 4-25, 4-26, 4-28, 4-29, 4-37, 4-38, 4-40 and 4-41 show the RRS that was actually used in the shake table testing. Revision A of report 04508905-QR has been issued to clarify this difference between the original RRS and the RRS used in testing.

Two seismic tests were performed as explained on page 4-16 and 4-23 because the first seismic test damaged one RM-1000 monitor as a result of a shake table malfunction which exposed the test articles to extremely high g-forces. The malfunction was corrected and the RM-1000 monitor was successfully tested in the second test.

Attachment 22

White Paper on Sorrento/GA Qualification Reports

Summary Review of Seismic Qualification for The High Range Area RM-1000 Monitors

Attachment 22
Summary Review of Seismic Qualification for
The High Range Area RM-1000 Monitors

Qualification Summary Report 04038903-QSR:

The qualification summary report 04038903-QSR is identified as the principal document for environmental, seismic, electromagnetic compatibility, and software qualification for the radiation monitors for Watts Bar Unit 2. Supplements to this report are prepared to provide the complete qualification of the radiation monitors.

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Qualification basis for 04034101-001 Report 04038903-7SP:

This report includes the seismic qualification for the Watts Bar unit 2 high range area monitoring systems 2-RE-90-271 through 2-RE-90-274 GA-ESI part number 04034101-001.

Section 3 of this report provides the seismic qualification basis for the 04034101-001 equipment. The RRS are developed using the RRS spectra identified in report 04038903-QSR.

For the RM-1000 monitors and I-F Converters, Figure 3-3 on page 17 shows the RRS which is the same as that provided by TVA standard specification CEB-SS-5.10 Figure 3.1. Figure 3-4 (page 22) and Figure 3-5 (page 23) show a comparison of the RRS for the RM-1000 and I-F converter with the actual TRS from GA-ESI report 04508905-QR.

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The Nuclear Instrumentation Module (NIM) Bin assembly (page 19) containing the RM-1000 and power supply were seismically qualified by testing per GA-ESI report 04508905-QR. The I-F Converter installed in its own enclosure was qualified by testing per report 04508905-QR.

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Differences between the I-F Converters for Watts Bar Unit 2 and the I-F Converter tested by 04508905-QR are addressed in GA-ESI document 04508905-2SP.

The power supply (page 24) was seismically qualified attached to the back of the NIM Bin assembly in GA-ESI report 04508905-QR. The Watts Bar Unit 2 power supply is similar to the power supply tested. Calculations in Appendix A of 0438903-7SP evaluate the power supply bracket and screws attaching it to the back of the NIM Bin.

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This report qualifies the differences between the current RM-1000 monitors and the RM-1000 monitors qualified by testing documented in GA-ESI report 04508905-QR. These differences were necessitated by the obsolescence of the original front panel display and the addition of an interface relay panel.

Report 04508905-1SP also evaluates Engineering Change Order (ECO) changes that have been implemented since the testing of the RM-1000 monitors and commercial grade dedication of various parts.

Appendix A provides a conservative analysis for mounting of the interface relay panel.

Qualification Test Report Supplement, I-F Converter Upgrades 04508905-2SP:

This report qualifies the differences between the current I-F Converter and the I-F Converter qualified by testing documented in GA-ESI report 04508905-QR.

The current I-F Converter is mounted in a NIM Bin, whereas the I-F Converter qualified by testing was mounted in a separate enclosure attached to the test fixture. The original seismic testing TRS provided in report 04508905-QR envelopes the standard RRS provided in TVA standard specification CEB-SS-5.10. Based on this mounting the I-F Converter in a NIM Bin can be seismically qualified by similarity to the testing documented in report 04508905-QR.

Qualification Test Report for RM-1000 Processor Module and Current-To-Frequency Converter 04508905-QR:

This report documents the environmental and seismic qualification of RM-1000 monitors installed in a NIM Bin assembly mounted in a typical rack mounted configuration. This report also documents the environmental and seismic qualification of an I-F Converter and its enclosure mounted to a rigid test fixture.

This is the original qualification test report for the RM-1000 monitors and I-F Converters which, for marketing purposes was prepared to satisfy the requirements of many Nuclear Plants. Appendix B provides a description of development of the original RRS. As explained on page 3-14 and page B-ii the original generic RRS were not attainable for the shake table on which the seismic tests were performed. Pages B-ii, 4-25, 4-26, 4-28, 4-29, 4-37, 4-38, 4-40 and 4-41 show the RRS that was actually used in the shake table testing. Revision A of report 04508905-QR has been issued to clarify this difference between the original RRS and the RRS used in testing.

Two seismic tests were performed as explained on page 4-16 and 4-23 because the first seismic test damaged one RM-1000 monitor as a result of a shake table malfunction which exposed the test articles to extremely high g-forces. The malfunction was corrected and the RM-1000 monitor was successfully tested in the second test.

Attachment 24

**TVA Procedure 0-PI-OPS-17.1, "18 Month Locked Breaker Verification," Revision 14
Dated October 4, 2009**



Watts Bar Nuclear Plant

Unit 1

Periodic Instruction

0-PI-OPS-17.1

18 month Locked Breaker Verification

Revision 0014

Quality Related

Level of Use: Continuous Use

Effective Date: 10-04-2009

Responsible Organization: OPS, Operations

Prepared By: David Askins

Approved By: David Askins

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 2 of 17
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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
2	8/13/99	2,3	Non-intent. Correct index.
3	5/31/00	2, 3, 11, 12, 15	Non-intent. Add 6.9 KV S/D Bd Maintenance Feed BKR's. Clarified Engineering requirements for DCN-50497. Editorial corrections.
4	9/16/00	2,7,12	Intent. Deleted actions associated with PD pmp components that are abandoned in place per DCN 50506
5	9/30/00	2, 3, 5	Non Intent. Added steps for surveillance task sheet (STS) start and stop times. Changed bulleted performance information to NOTES. Corrected typos in TOC.
6	11/2/00	2, 12, 13	Non Intent. Clarified design output basis for EDC-50497.
7	3/11/02	2, 5	Non-intent. Revised to allow Single-party verification if valve is in required position to be consistent with 1-SI-0-709 & 710.
8	4/28/03	2, 4, 12	Non-intent. Added dwg. 1-45W760-31-8 as basis for position of 0-BKR-031-27.
9	7/6/05	2, 10	Minor/Editorial. Added footnote 3 for 2-FCV-67-146 to indicate power physically disconnected from valve (Operator Feedback).
10	10/11/05	2, 12, 13, 15	Updated bases for EDC-51918. No actions or plant configurations are revised.
11	09/27/06	All 2, 4	This procedure has been converted from Word 95 to Word 2000 (XP) 2000 using Rev 10 by Lorie Dake Incorporated DCN 51724 on removal of Developmental Reference to Wet Layup System.
12	12/14/06	2, 6	Removed Surveillance Task Sheet (STS) requirements.
13	09/21/07	2,8,9,10	Added CLA Locked Off Breakers. PER 118805.
14	10/04/09	2, 8	DCN 52602 stage 2 changed breaker 2-BKR-235-2/29 to breaker 2-BKR-235-2/23.

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 3 of 17
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1.0 INTRODUCTION

1.1 Purpose

To ensure periodic conformation of the configuration of locked breakers.

1.2 Scope

This PI addresses those breakers controlled by the Locked Valve/Breaker program.

1.3 Test Frequency/Conditions

The applicable portions of this PI are performed on an 18 month frequency and may be performed during any mode.

When breakers are not in the position required by this procedure, the procedure may be successfully closed as long as the applicable breakers are being controlled by a process (e.g. Clearance, SOI, Maintenance procedure) which returns the breaker to the required position. The breaker may be signed off with a reference to the appropriate controlling process.

2.0 REFERENCES

2.1 Performance References

A. OPDP-6, Locked Valve/Breaker Program

2.2 Developmental References

A. TVA Drawings:

1. 1-45W760-31-8
2. 47W800 Series prints

B. SQN SSP-12.64, Locked Valve Program

C. BFN 0-GOI-300-3, General Valve Operations

D. 10 CFR-50 Appendix A, J and R

E. FSAR Section 3.1

F. SPP-9.4, 10 CFR 50.59 Evaluations of Changes, Tests, and Experiments

G. N3-63-4001, Safety Injection System

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3.0 PRECAUTIONS AND LIMITATIONS

- A. Work in a Radiological Control Area (RCA) requires the use of RWP'S, and may require additional ALARA Preplans. Failing to follow posted Rad control requirements can cause unnecessary radiation exposure. Rad Con should be notified of work having the potential to change radiological conditions.

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 6 of 17
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4.0 PERFORMANCE

NOTES

- 1) The Appendix A breaker checklists are subdivided into boards (i.e., Rx MOV Bd 1A1-A,).
- 2) Fire protection breakers (i.e., System 26) are addressed in their respective FOR procedures and are NOT included in this PI.
- 3) If any device requires removal of the locking device to determine position, then the re-installation of a locking device must be second party and documentation of the second party may be done in the remarks section at the bottom of the page.
- 4) Single party verification is allowed for the performance of this instruction, unless the component being verified is NOT in its required position, then 2nd party verification is required to place the component in its required position, and the SM/Unit SRO is to be notified immediately.
- 5) Credit for verifications done within the previous 92 days may be used if the Shift Manager approves. This approval should be documented within the remarks section at the bottom of the page.
- 6) Positions marked with a diamond (e.g. OFF ♦ & LOCKED) are required by Engineering to be in the stated position and any changes to the permanent configuration should have Engineering approval.
- 7) Locking methods and locked breaker identification are defined in OPDP-6
- 8) Appendix B provides background information for locking requirements for each breaker.

[1] **PERFORM** Appendix A, and
ENSURE components listed are in the indicated position. _____

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 7 of 17
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5.0 POST PERFORMANCE ACTIVITIES

None

6.0 RECORDS

6.1 QA Records

The following are QA records and handled by the DCRM program:

Appendix A

6.2 Non-QA Records

None

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 8 of 17
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**Appendix A
(Page 1 of 5)
Locked Breaker List**

Appendix A A Locked Breaker List					Date _____	
Nomenclature	Location Board / Compartment		Position	UNID	Perf Initial	2 nd Initial
PNL 1-R-1, PROCESS PROT SET I	120V AC Vital Instrument Power Bd 2-II	23	OFF* & Locked	2-BKR-235-2/23		
BATTERY ROOM EXHAUST FAN C-B (0-FAN-31-27)	C & A Vent Bd 2B1-B	4A	OFF* & Locked	0-BKR-031-27		
DG HX 1A1/1A2 ERCW HDR 1A ISOL (1-FCV-67-66)	Diesel Aux Bd 1A1-A	3A	OFF ⁽²⁾ & Locked	1-BKR-067-66		
DG HX 1B1/1B2 ERCW HDR 1B ISOL (1-FCV-67-67)	Diesel Aux Bd 1B1-B	3A	OFF ⁽²⁾ & Locked	1-BKR-067-67		
DG HX 2A1/2A2 ERCW HDR 1A ISOL (2-FCV-67-66)	Diesel Aux Bd 2A1-A	3A	OFF* ⁽²⁾ & Locked	2-BKR-067-66		
DG HX 2B1/2B2 ERCW HDR 1B ISOL (2-FCV-67-67)	Diesel Aux Bd 2B1-B	3A	OFF* ⁽²⁾ & Locked	2-BKR-067-67		
RWST TO RHR SUCT (1-FCV-63-1)	Rx MOV Bd 1A1-A	2E1	OFF & Locked	1-BKR-63-1A		
CCP MIN FLOW VALVE (1-FCV-62-98) (SHUNT TRIP BKR)	Rx MOV Bd 1A1-A	2F2	OFF & Locked	1-BKR-062-98A		
SIS CL ACCUM 1 OUT ISOL (1-FCV-63-118A)	Rx MOV Bd 1A1-A	3F2	OFF & Locked	1-BKR-63-118A		
LOOP 4 HOT LEG TO RHR SUCTION (1-FCV-74-1)	Rx MOV Bd 1A1-A	5B	OFF* ⁽¹⁾ & Locked	1-BKR-074-1A		
CCP MIN FLOW VALVE (1-FCV-62-98)	Rx MOV Bd 1A1-A	8A	OFF* & Locked	1-BKR-062-98B		
SIS BORON INJ TNK IN ISOL (1-FCV-63-39)	Rx MOV Bd 1A1-A	11E	OFF* & Locked	1-BKR-063-39		
SIS CL ACCUM 3 OUT ISOL (1-FCV-63-80)	Rx MOV Bd 1A1-A	17F2	OFF & Locked	1-BKR-63-80A		
CCS HX C HDR 1A SUPPLY (1-FCV-67-147)	Rx MOV Bd 1A2-A	5B	OFF* ⁽²⁾ & Locked	1-BKR-067-147A		
1-FCV-74-2 BYPASS RHR SUCTION (1-FCV-74-8)	Rx MOV Bd 1A2-A	6D	OFF* ⁽¹⁾ & Locked	1-BKR-074-8		
CCS HX SUP ERCW HDR 1B/2A XTIE (1-FCV-67-223)	Rx MOV Bd 1A2-A	6F	OFF ⁽²⁾ & Locked	1-BKR-067-223A		

(1) Use padlock in place of seals

(2) ACB may be ON to position valve, but MUST be OFF & Locked during normal operation (Appendix R).

(♦) Positions marked with an ♦ are identified/required by NE to be in stated position

Remarks: _____

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 9 of 17
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**Appendix A
(Page 2 of 5)**

Appendix A Locked Breaker List					Date _____	
Nomenclature	Location Board / Compartment		Position	UNID	Perf Initial	2 nd Initial
ERCW STRAINER 1A-A ISOL (1-FCV-67-22)	Rx MOV Bd 1A2-A	7B	OFF* & Locked	1-BKR-067-22		
AB ERCW SUP HDR 1A ISOL (1-FCV-67-81)	Rx MOV Bd 1A2-A	8A	OFF* ⁽²⁾ & Locked	1-BKR-067-81		
AB AIR CLR ERCW SUP HDR 1A ISOL (1-FCV-67-127)	Rx MOV Bd 1A2-A	10B	OFF* ⁽²⁾ & Locked	1-BKR-067-127		
CCS HX A OUT ERCW FLOW CNTL (1-FCV-67-146)	Rx MOV Bd 1A2-A	11A	OFF* ⁽²⁾ & Locked	1-BKR-067-146		
CCS HX C HDR 1A SUPPLY (1-FCV-67-147)	Rx MOV Bd 1A2-A	11B	OFF* ⁽²⁾ & Locked	1-BKR-067-147B		
CCS HX C OUT ERCW HDR A FLOW CNTL (0-FCV-67-151)	Rx MOV Bd 1A2-A	12A	OFF* & Locked	0-BKR-067-151		
CCS HX C HDR 1B SUPPLY (1-FCV-67-223)	Rx MOV Bd 1A2-A	13A	OFF* ⁽²⁾ & Locked	1-BKR-067-223B		
1A ESF EQUIP CCS SUP HDR (1-FCV-70-2)	Rx MOV Bd 1A2-A	14A	OFF* ⁽²⁾ & Locked	1-BKR-070-2		
MISC EQUIP CCS SUP HDR (1-FCV-70-4)	Rx MOV Bd 1A2-A	14B	OFF* ⁽²⁾ & Locked	1-BKR-070-4		
CCS HX A OUTLET (1-FCV-70-8)	Rx MOV Bd 1A2-A	14D	OFF* ⁽²⁾ & Locked	1-BKR-070-8		
CCS HX A/C OUTLET XTIE (1-FCV-70-10)	Rx MOV Bd 1A2-A	14E	OFF* ⁽²⁾ & Locked	1-BKR-070-10		
CCS HX A/C INLET XTIE (1-FCV-70-23)	Rx MOV Bd 1A2-A	15B	OFF* ⁽²⁾ & Locked	1-BKR-070-23		
CCS HX A INLET (1-FCV-70-25)	Rx MOV Bd 1A2-A	15D	OFF* ⁽²⁾ & Locked	1-BKR-070-25		
CCS HX A HDR 1B ERCW SUP (1-FCV-67-458)	Rx MOV Bd 1A2-A	15E	OFF* ⁽²⁾ & Locked	1-BKR-067-458		
CCP MIN FLOW VALVE (1-FCV-62-99) (SHUNT TRIP BKR)	Rx MOV Bd 1B1-B	2E2	OFF & Locked	1-BKR-062-99A		
SIP COLD LEG INJECTION (1- FCV-63-22)	Rx MOV Bd 1B1-B	2F2	OFF & Locked	1-BKR-63-22A		
SIS CL ACCUM 2 OUT ISOL (1- FCV-63-98)	Rx MOV Bd 1B1-B	3F2	OFF & Locked	1-BKR-63-98A		
LOOP 4 HOT LEG TO RHR SUCTION (1-FCV-74-2)	Rx MOV Bd 1B1-B	5B	OFF* ⁽¹⁾ & Locked	1-BKR-074-2A		
1-FCV-74-1 BYPASS RHR SUCTION (1-FCV-74-9)	Rx MOV Bd 1B1-B	5C	OFF* ⁽¹⁾ & Locked	1-BKR-074-9		

(1) Use padlock in place of seals

(2) ACB may be ON to position valve, but MUST be OFF & Locked during normal operation (Appendix R).

(♦) Positions marked with an ♦ are identified/required by NE to be in stated position.

Remarks: _____

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 10 of 17
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**Appendix A
(Page 3 of 5)**

Appendix A Locked Breaker List					Date _____	
Nomenclature	Location Board / Compartment		Position	UNID	Perf Initial	2 nd Initial
CCP MIN FLOW VALVE (1-FCV-62-99)	Rx MOV Bd 1B1-B	7B	OFF* & Locked	1-BKR-062-99		
SIS BORON INJ TNK IN ISOL (1-FCV-63-40)	Rx MOV Bd 1B1-B	12A	OFF* & Locked	1-BKR-063-40		
SIS CL ACCUM 4 OUT ISOL (1-FCV-63-67)	Rx MOV Bd 1B1-B	16F2	OFF* & Locked	1-BKR-63-67A		
ERCW STRAINER 1B-B ISOL (1-FCV-67-24)	Rx MOV Bd 1B2-B	8A	OFF* & Locked	1-BKR-067-24		
ERCW STRAINER 1B-B ISOL (1-FCV-67-24)	Rx MOV Bd 1B2-B	8A	OFF* & Locked	1-BKR-067-24		
AB ERCW SUP HDR 1B ISOL (1-FCV-67-82)	Rx MOV Bd 1B2-B	8B	OFF* ⁽²⁾ & Locked	1-BKR-067-82		
AB AIR CLR ERCW SUP HDR 1B ISOL (1-FCV-67-128)	Rx MOV Bd 1B2-B	11A	OFF* ⁽²⁾ & Locked	1-BKR-067-128		
CCS HX A ERCW INLET (1-FCV-67-478)	Rx MOV Bd 1B2-B	12B	OFF & Locked	1-BKR-067-478		
CCS HX A/C INLET XTIE (1-FCV-70-13)	Rx MOV Bd 1B2-B	13B	OFF* ⁽²⁾ & Locked	1-BKR-070-13		
CCS HX C OUTLET VLV (0-FCV-70-12)	Rx MOV Bd 1B2-B	14A	OFF* ⁽²⁾ & Locked	0-BKR-070-12		
1B ESF EQUIP CCS SUP HDR (1-FCV-70-3)	Rx MOV Bd 1B2-B	14B	OFF* ⁽²⁾ & Locked	1-BKR-070-3		
CCS PMP 1A/1B TO C-S DISCH XTIE (FCV-70-26)	Rx MOV Bd 1B2-B	14D	OFF* ⁽²⁾ & Locked	1-BKR-070-26		
CCS PMP 1A/1B SUCT XTIE (1-FCV-70-34)	Rx MOV Bd 1B2-B	14E	OFF* ⁽²⁾ & Locked	1-BKR-070-34		
1B ESF EQUIP CCS RETURN HDR (1-FCV-70-75)	Rx MOV Bd 1B2-B	15A	OFF* ⁽²⁾ & Locked	1-BKR-070-75		
CCS HX A/C OUTLET XTIE (1-FCV-70-9)	Rx MOV Bd 1B2-B	15B	OFF* ⁽²⁾ & Locked	1-BKR-070-9		
CCS PMP 1A/1B TO C-S SUCT XTIE (1-FCV-70-64)	Rx MOV Bd 1B2-B	15D	OFF* ⁽²⁾ & Locked	1-BKR-070-64		
RHR HX 1B CCS OUTLET (1-FCV-70-153)	Rx MOV Bd 1B2-B	15E	OFF* ⁽²⁾ & Locked	1-BKR-070-153		
CCS PMP 1A/1B TO C-S SUCT XTIE (1-FCV-70-74)	Rx MOV Bd 1B2-B	16A	OFF* ⁽²⁾ & Locked	1-BKR-070-74		
CCS HX C INLET VLV (0-FCV-70-22)	Rx MOV Bd 1B2-B	16E	OFF* ⁽²⁾ & Locked	0-BKR-070-22		
CCS PMP 1A/1B TO C-S DISCH XTIE (FCV-70-27)	Rx MOV Bd 1B2-B	17B	OFF* ⁽²⁾ & Locked	1-BKR-070-27		

(2) ACB may be ON to position valve, but MUST be OFF & Locked during normal operation (Appendix R)

(♦) Positions marked with an ♦ are identified/required by NE to be in stated position

Remarks: _____

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**Appendix A
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Appendix A Locked Breaker List					Date _____	
Nomenclature	Location Board / Compartment		Position	UNID	Perf Initial	2nd Initial
ERCW STRAINER 2A-A IN ISOL (2-FCV-67-22)	Rx MOV Bd 2A2-A	7B	OFF* & Locked	2-BKR-067-22		
AB ERCW SUP HDR 2A ISOL (2-FCV-67-81)	Rx MOV Bd 2A2-A	8A	OFF* & Locked	2-BKR-067-81		
AB AIR CLR ERCW SUP HDR 2A ISOL (2-FCV-67-127)	Rx MOV Bd 2A2-A	10B	OFF* & Locked	2-BKR-067-127		
CCS HX B OUT ERCW FLOW CNTL (2-FCV-67-146)	Rx MOV Bd 2A2-A	11A	OFF* ⁽³⁾ & Locked	2-BKR-067-146		
CCS HX SUP ERCW HDR 2A/1B XTIE (2-FCV-67-223)	Rx MOV Bd 2A2-A	13A	OFF* & Locked	2-BKR-067-223		
2A ESF EQUIP CCS SUP HDR (2-FCV-70-2)	Rx MOV Bd 2A2-A	14A	OFF* ⁽²⁾ & Locked	2-BKR-70-2		
MISC EQUIP CCS SUP HDR (2-FCV-70-4)	Rx MOV Bd 2A2-A	14B	OFF* ⁽²⁾ & Locked	2-BKR-70-4		
CCS HX B OUTLET (2-FCV-70-15)	Rx MOV Bd 2A2-A	14D	OFF* ⁽²⁾ & Locked	2-BKR-70-15		
CCS HX B/C OUTLET XTIE (2-FCV-70-195)	Rx MOV Bd 2A2-A	14E	OFF* ⁽²⁾ & Locked	2-BKR-70-195		
CCS HX B OUT ERCW FLOW CNTL BYP (2-FCV-67-143)	Rx MOV Bd 2A2-A	15A	OFF & Locked	2-BKR-067-143		
CCS HX B/C IN XTIE (2-FCV-70-18)	Rx MOV Bd 2A2-A	15B	OFF* ⁽²⁾ & Locked	2-BKR-70-18		
CCS HX B INLET (2-FCV-70-16)	Rx MOV Bd 2A2-A	15D	OFF* ⁽²⁾ & Locked	2-BKR-70-16		
ERCW STRAINER 2B-B IN ISOL (2-FCV-67-24)	Rx MOV Bd 2B2-B	8A	OFF* ⁽²⁾ & Locked	2-BKR-067-24		
AB ERCW SUP HDR 2B ISOL (2-FCV-67-82)	Rx MOV Bd 2B2-B	8B	OFF* ⁽²⁾ & Locked	2-BKR-067-82		
AB AIR CLR ERCW SUP HDR 2B ISOL (2-FCV-67-128)	Rx MOV Bd 2B2-B	11A	OFF* & Locked	2-BKR-067-128		
CCS HX C ERCW HDR 2B SUP ISOL (2-FCV-67-147)	Rx MOV Bd 2B2-B	13A	OFF* ⁽²⁾ & Locked	2-BKR-067-147		
CCS HX B/C IN XTIE (2-FCV-70-14)	Rx MOV Bd 2B2-B	13B	OFF* ⁽²⁾ & Locked	2-BKR-70-14		
CCS PMP 2A/2B TO C-S DISCH XTIE (2-FCV-70-28)	Rx MOV Bd 2B2-B	14D	OFF* ⁽²⁾ & Locked	2-BKR-70-28		
CCS PMP 2A/2B SUCT XTIE (2-FCV-70-39)	Rx MOV Bd 2B2-B	14E	OFF* ⁽²⁾ & Locked	2-BKR-70-39		
2B ESF EQUIP CCS RET HDR ISOL (2-FCV-70-75)	Rx MOV Bd 2B2-B	15A	OFF* ⁽²⁾ & Locked	2-BKR-70-75		

(2) ACB may be ON to position valve, but MUST be OFF & Locked during normal operation (Appendix R)

(♦) Positions marked with an ♦ are identified/required by NE to be in stated position.

(3) Wiring to the valve motor and control transformer is disconnected as shown on 45W760-67-10.

Remarks:

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**Appendix A
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Appendix A Locked Breaker List					Date _____	
Nomenclature	Location Board / Compartment		Position	UNID	Perf Initial	2 nd Initial
CCS HX B/C OUTLET XTIE (2-FCV-70-196)	Rx MOV Bd 2B2-B	15B	OFF* ⁽²⁾ & Locked	2-BKR-70-196		
CCS PMP 2A/2B TO C-S SUCT XTIE (2-FCV-70-78)	Rx MOV Bd 2B2-B	15D	OFF* ⁽²⁾ & Locked	2-BKR-70-78		
CCS PMP 2A/2B TO C-S SUCT XTIE (2-FCV-70-76)	Rx MOV Bd 2B2-B	16A	OFF* ⁽²⁾ & Locked	2-BKR-70-76		
CCS PMP 2A/2B TO C-S DISCH XTIE (2-FCV-70-29)	Rx MOV Bd 2B2-B	17B	OFF* ⁽²⁾ & Locked	2-BKR-70-29		
MAINT SUPPLY FROM 6.9KV UNIT BD 1B	6.9kV SDB 1A-A,	C11	Racked Down & Locked	1-BKR-211-1718/11		
MAINT SUPPLY FROM 6.9KV UNIT BD 1C	6.9kV SDB 1B-B,	C11	Racked Down & Locked	1-BKR-211-1726/11		
MAINT SUPPLY FROM 6.9KV UNIT BD 2B	6.9kV SDB 2A-A,	C11	Racked Down & Locked	2-BKR-211-1818/11		
MAINT SUPPLY FROM 6.9KV UNIT BD 2C	6.9kV SDB 2B-B,	C11	Racked Down & Locked	2-BKR-211-1826/11		

(2) ACB may be ON to position valve, but MUST be OFF & Locked during normal operation (Appendix R).

(♦) Positions marked with an ♦ are identified/required by NE to be in stated position

Remarks: _____

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 13 of 17
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**Appendix B
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Basis for Locked Breaker List

NOTES	
1)	POSITIONS marked with an * are identified /required by NE to be in a stated position.
2)	List does not include breakers controlled by the General Operating instructions (GOs) that are administratively controlled during plant heatup/cooldown.

BREAKER ID	POSITION	BASIS	REMARKS
Air Conditioning Sys (31)			
0-BKR-031-27	OFF *	1-45W760-31-8	None
CVCS (62)			
1-BKR-062-98A	OFF		Closed recirc vlv can damage CCP if one CCP is isolated. App R Req.
1-BKR-062-98B	OFF *	Prevent spurious closure	
1-BKR-062-99	OFF *		
1-BKR-062-99A	OFF		
Safety Injection Sys (63)			
1-BKR-063-39	OFF *	ECCS flow from CCPs to BIT	App R Req
1-BKR-063-40	OFF *		
ERCW Sys (67)			
0-BKR-067-151	OFF *	Isol CCS Hxs B & C disch	Prevent Hxs overload App R Req
1-BKR-067-22	OFF *	Prevent Spurious Closure	App R Req. If hdr 1A is aligned to cool hdr 2B, spurious closure defeats this. ERCW would terminate to dependent components
1-BKR-067-24	OFF *	Prevent Spurious Closure	App R Req. Closure isolates ERCW hdr 1B, loss to CCS Hx A and other dependent components
1-BKR-067-66	OFF *	Assure ERCW to DG Hxs	App R Req
1-BKR-067-67	OFF *	Assure ERCW to DG Hxs	App R Req
1-BKR-067-81	OFF *	Prevent Spurious Closure	App R Req
1-BKR-067-82	OFF *	Prevent Spurious Closure	App R Req.

Remarks: _____

WBN Unit 1	18 month Locked Breaker Verification	0-PI-OPS-17.1 Rev. 0014 Page 14 of 17
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**Appendix B
(Page 2 of 4)**

Basis for Locked Breaker List

BREAKER ID	POSITION	BASIS	REMARKS
ERCW Sys (67) (cont)			
1-BKR-067-127	OFF *	Prevent Spurious Closure	App R Req
1-BKR-067-128	OFF *	Prevent Spurious Closure	App R Req
1-BKR-067-146	OFF	Prevent Spurious Opening	Vlv opening could challenge sys operation. App R Req
1-BKR-067-147A	OFF *	Isol Sup hdrs 1A & 2B	
1-BKR-067-147B	OFF		
1-BKR-067-223A	OFF	CCS Hx A Sup frm Hdr 2A	App R Req
1-BKR-067-223B	OFF *		
1-BKR-067-458	OFF *	Isol Hdr 1B frm Sup Hdr 2A	App R Req
1-BKR-067-478	OFF	Prevent Spurious Closure	Spurious closure results in loss of ERCW cooling. App R Req.
2-BKR-067-22	OFF *	Prevent Spurious Closure	App R Req. Spurious closure stops heat removal frm CCS Hx B and other dependent components
2-BKR-067-24	OFF *	Prevent Spurious Closure	App R Req. Same as above but for hdr 2B and CCS Hx C
2-BKR-067-66	OFF *	Assure ERCW to DG Hxs	App R Req
2-BKR-067-67	OFF *	Assure ERCW to DG Hxs	App R Req
2-BKR-067-81	OFF *	Main supply hdr	App R Req
2-BKR-067-82	OFF *	Main supply hdr	App R Req
2-BKR-067-127	OFF *	Prevent Spurious Closure	
2-BKR-067-128	OFF *	Prevent Spurious Closure	
2-BKR-067-143	OFF	Balance system flow	Passes 6000 gpm. Pwr removed due to EQ Concerns
2-BKR-067-146	OFF *	Isol CCS Hxs B&C disch	Pwr removed due to EQ concerns
2-BKR-067-147	OFF *	Main Supply Hdr 2B	App R Req
2-BKR-067-223	OFF *	CCS Hx A Sup frm Hdr 2A	App R Req.

Remarks: _____

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**Appendix B
(Page 3 of 4)**

Basis for Locked Breaker List

BREAKER ID	POSITION	BASIS	REMARKS
Component Cooling Sys (70)			
0-BKR-070-12	OFF *	Flowpath frm CCS Hx C to ESF Equip & other dependent equip	App R Req; Spurious closure isolates CCS Hx
0-BKR-070-22	OFF *	Prevents Spurious closure	Spurious closure isol supply to CCS Hx C
1-BKR-070-2	OFF *	Flowpath frm Hx A to ESF equip 1A	
1-BKR-070-3	OFF *	Flowpath frm Hx C to ESF Equip 1B & waste evap bldg	App R Req
1-BKR-070-4	OFF *	Flowpath frm Hx A to ESF Equip, WG Compr, Rx bldg, & other equip	
1-BKR-070-8	OFF *	Flowpath frm Hx A to ESF Equip & other dependent equip	App R Req; Spurious closure isolates CCS Hx
1-BKR-070-9	OFF *	Isol CCS Hxs A frm C outlets	App R req
1-BKR-070-10	OFF *		
1-BKR-070-13	OFF *	Disch Isol for CCS Pmps 1A-A & 1B-B from 2A-A & 2B-B	App R Req
1-BKR-070-23	OFF *		
1-BKR-070-25	OFF *	1A-A & 1B-B CCS Pmps Disch flowpath	Closure isol 1A-A & 1B-B Pmps. App R req
1-BKR-070-26	OFF *	Disch hdr isol betwn 1A-A & 1B-B Pmps and C-S Pmp	App R Req
1-BKR-070-27	OFF *	Hdr disch isol betwn 1A-A & 1B-B	
1-BKR-070-34	OFF *	CCS suct return hdr flowpath frm ESF equip 1A	App R Req. Spurious closure isol 1B-B Pmp suct
1-BKR-070-64	OFF *	Isolates suct to 1A-A & 1B-B	App R Req
1-BKR-070-74	OFF *	CCSW Pmps frm other CCS Pmps	
1-BKR-070-75	OFF *	CCS Pmp suct frm ESF Equip 1B	App R Req
1-BKR-070-153	OFF *	Ensure RHR Tr B flowpath	App R Req. Loss of RHR Tr B
2-BKR-070-2	OFF *	CCS Hx B to ESF Equip 2A	App R Req (Spur closure isol CCS to ESF Equip 2A)
2-BKR-070-4	OFF *	CCS Hx B to WG Compr Hx and misc U2 equip	App R Req. Spur closure results in loss of cooling to WGC Hx.

Remarks: _____

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**Appendix B
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Basis for Locked Breaker List

BREAKER ID	POSITION	BASIS	REMARKS
Component Cooling Sys (70) (cont)			
2-BKR-070-14	OFF *	Disch Isol for CCS Pmps 2A-A & 2B-B from 1A-A & 1B-B	App R Req
2-BKR-070-15	OFF *	Flowpath frm CCS Hx B to ESF Equip & other dependent equip	Spurious closure isolates CCS Hx
2-BKR-070-16	OFF *	2A-A & 2B-B CCS Pmp Disch flowpaths	Spurious closure isol 2A-A & 2B-B Pmps
2-BKR-070-18	OFF *	Disch Isol for CCS Pmps 2A-A & 2B-B from 1A-A & 1B-B	
2-BKR-070-28	OFF *	Prevent Spurious closing	App R Req
2-BKR-070-29	OFF *	Prevent Spurious closing	
2-BKR-070-39	OFF *	Prevent Spurious opening	
2-BKR-070-75	OFF *	CCS Pmp suct frm ESF Equip 2B	
2-BKR-070-76	OFF *	Prevent Spurious closing	
2-BKR-070-78	OFF *	Prevent Spurious closing	
2-BKR-070-195	OFF *	Isol CCS Hxs B frm C outlets	
2-BKR-070-196	OFF *		
RHR Sys (74)			
1-BKR-074-1A	OFF * (1)	RCS-RHR Isol/Cntmt Isol	
1-BKR-074-2A	OFF * (1)		App R Req
1-BKR-074-8	OFF * (1)	RCS-RHR Isol Bypass/Cntmt Isol	
1-BKR-074-9	OFF * (1)	See 1-FCV-74-9 (App A)	
6.9 KV Shutdown Bd.(211)			
1-BKR-211-1718/11	Racked down	Unqualified Feeder	None
1-BKR-211-1726/11	Racked down	Unqualified Feeder	None
2-BKR-211-1818/11	Racked down	Unqualified Feeder	None
2-BKR-211-1826/11	Racked down	Unqualified Feeder	None
120V ac Vital Instr Power Sys (235)			
2-BKR-235-2/29	OFF *	App R Req	None

(1) Use padlock in place of seals

Remarks: _____

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**Source Notes
(Page 1 of 1)**

Requirements Statement	Source Document	Implementing Statement
TVA response to NRC to limit weight of added devices to 10% of device weight	NRC GENNEB 8210 (CEB830329018)	1

Attachment 25

**TVA procedure OPDP-6, "Locked Valve/Breaker Program," Revision 1,
Dated May 21, 2004**

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0	6/30/99 (COC & WBN) LATER YSO (BFN & SQN) 7/6/99 7-8-99 (BFN) YSO 8/3/99 8/6/99 (SQN)	All	Initial issue. This procedum replaces SSP-12.64 (SQN) and PAI-2.14 (WBN).
1	5/21/04	2, 4	Deleted SQN Site Specific info contained in Section 3.1.B in accordance with SQN EDC E21648.

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1.0 PURPOSE

This procedure provides instructions for the administration of the Locked Valve/Breaker Program.

2.0 SCOPE

This procedure applies to personnel manipulating locked valves/breakers. It also applies to individuals responsible for preparation of procedures which address locked valves/breakers.

3.0 INSTRUCTIONS

3.1 General

- A. Certain valves/breakers will be locked in order to prevent inadvertent operation. These may be in safety-related or nonsafety-related systems and will be for design basis or general operations needs. The use of locks by Operations should be limited to components over which special administrative control must be established to ensure that affected components are operated by authorized personnel only. The locking device should provide physical restraint to limit movement.
- B. In order to meet seismic considerations, locking devices must meet the limits of site specific procedures. When the weight of the locking device is in question, refer to site specific procedures or contact site engineering.
- C. Valves/breakers required to be locked will be specified in site specific procedures/ instructions. In the event of a disagreement between a plant drawing and the approved site procedure/instruction, the procedure/instruction will prevail.
- D. Locking devices that will be reused after removal should be attached to the valve body, attached piping, or supports as interim storage.

3.2 Responsibilities

- A. The Plant Operations Manager is responsible for the following:
 - Implementation of the Locked Valve/Breaker Program.
 - Resolving disagreements between other plant sections concerning the Locked Valve/Breaker Program.
- B. The Site Engineering Manager is responsible for identifying any design required locked valves/breakers and notifying Plant Operations Manager of changes in locked valve/breaker design configuration.

3.3 Locked Valve and Breaker Criteria

- A. Determinations as to whether a Valve/Breaker should be included in the Locked Valve/Breaker Program will be made by Nuclear Engineering (NE) using the following sources as a minimum:
 - 1. 10 CFR 50 Appendix A - General Design Criteria for Nuclear Power Plants
 - 2. 10 CFR 50 Appendix J, Primary Reactor Containment Leakage Testing For Water-Cooled Power Reactors
 - 3. 10 CFR 50 Appendix R, Section III
 - 4. NSS Supplier - Engineering Flow Diagrams and Specifications
 - 5. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code
 - 6. National Fire Protection Association Code (NFPA)
 - 7. Technical Specifications
- B. The following guidelines should be used by Operations personnel to determine if a valve/breaker should be locked:
 - 1. Main flowpath valves in safety-related systems, that have no Main Control Room indication for valve position and no other system parameter indication, which if mispositioned would prevent system function.
 - 2. Valves in safety-related systems with no Main Control Room indication which could divert substantial undetected flow such that system function would be prevented.
 - 3. Valves with no Main Control Room indication that are normally closed containment isolation valves.
 - 4. Valves or components required to be locked by Technical Specifications (TS) or locked to increase TS surveillance requirement interval.

3.4 Methods

NOTE For purposes of securing components, the use of LOCK and SEAL are synonymous except where specifically noted by TS.

- A. The locking device should be fastened in a manner that resists movement.
- B. Valves may be locked by crimp cable, chain and padlock/lock tab, wire-tie, valve cover/collar, plastic seal, wire locks, lead seals, mechanical restraining device, bolt, or similar devices depending on specific checklists. A hold order may be used in lieu of a locking device for administrative control; however, a locking device is the preferred method.
- C. Locked valves inside the Polar Crane Wall (Primary Containment at BFN) will be locked with metal wire locks, padlocks and chains, or other metal type seals.
- D. Locked dampers may have an alternate means such as dogs or bolts.
- E. Bellows covers that are "locked" will use aircraft cable and wire lock.

WBN ONLY

- F. If at WBN, for the 6.9kV breakers that are required to be locked, the acceptable method is to place a cable through the holes in the elevating mechanism and the stationary bracket and then seal the cable. This prevents pulling the racking mechanism which prevents lifting the breaker to the racked up position.

3.5 Periodic Verification

- A. Safety-related valves/breakers listed in the site specific procedure/instruction will be verified locked at least once every refueling cycle. This periodic verification consists of a single person check that required locking devices are present and intact. This requirement may be satisfied for those valves/breakers which are verified more frequently by approved plant procedures.
- B. Periodic verification may be waived for any of the following reasons:
1. Valve located within a high radiation area or a highly contaminated area.
 2. Valve located within a locked, covered, or controlled access area provided access to the area has not occurred since the last documented verification.
 3. System status control is not being maintained.

The reason for not verifying a locked valve/breakers shall be documented on the procedure/instruction in effect

3.6 Administrative Controls and Operational Restrictions

- A. SM or US permission is required to open locks under administrative control, and for repositioning of locked Valves/Breakers.
- B. Locked valves and breakers shall NOT be manipulated EXCEPT by approved procedure, clearance order, or temporary system alteration.
- C. Locked valves shall be verified in accordance with SPP-10.3, "Independent Verification Program."
- D. If a motor-operated valve is required to be locked, then it shall be locked at the valve and the breaker.

4.0 RECORDS

4.1 QA Records

None

4.2 Non-QA Records

None

5.0 DEFINITIONS

Lock/locking device - A device used to provide administrative control of a valve, breaker, or other component position. "LOCK" and "SEAL" are synonymous for purposes of this program except where specifically noted by TS. Components may be locked by crimp cable, chain and padlock/lock tab, wire-tie, valve cover/collar, plastic seal, wire locks, lead seals, dogs, bolts, or similar devices.