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United States Nuclear Regulatory Commission  
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Subject: Fire Hazards Analysis Report, Revision 12

Gentlemen:

Enclosed is the Davis-Besse Nuclear Power Station (DBNPS) Fire Hazards Analysis Report (FHAR), Revision 12. This revision of the FHAR supersedes both the the Fire Area Optimization Report (FAOR), Revision 1 and the FHAR, Revision 11. It provides in a single report documentation of Toledo Edison's review and assessment of the DBNPS design with 1) the requirements of 10 CFR Part 50 Appendix R for safe shutdown, and 2) the guidelines of BTP APCS 9.5-1 Appendix A for reducing the possibility of a serious fire and limiting the damage of a fire. The use of a single integrated document provides an improved description of the fire protection compliance program at the DBNPS and eliminates conflicts between the two documents.

Toledo Edison has compared FHAR, Revision 12 to both the FAOR and FHAR Revision 11 and has summarized the differences in enclosed Attachment 1. This comparison was reviewed with the Nuclear Regulatory Commission (NRC) staff in a meeting at NRC Headquarters on October 25, 1990.

Should you have any questions or require additional information, please contact Mr. R. W. Schrauder, Manager - Nuclear Licensing, at (419) 249-2366.

Very truly yours,

KBR/mmb

Enclosures

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cc: P. M. Byron, DB-1 NRC Senior Resident Inspector w/o FHAR Revision 12  
A. B. Davis, Regional Administrator, NRC Region III  
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Utility Radiological Safety Board

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A. Comparison of Differences Between the Fire Area Optimization Report (FAOR) Revision 1 and the Fire Hazards Analysis Report (FHAR) Revision 12

Background

This portion of the attachment describes the differences between the Fire Area Optimization Report Revision 1 and the Fire Hazards Analysis Report Revision 12. Revision 12 of the Fire Hazards Analysis Report (FHAR) contains the NRC BTP APCS 9.5-1 Appendix A analysis of fire hazards at the Davis-Besse Nuclear Power Station (DBNPS) as it previously did in Revision 11. FHAR Revision 12 now also includes the 10 CFR Part 50 Appendix R safe shutdown analysis. This revision was prepared by using the previously docketed Fire Area Optimization Report (FAOR) Revision 1 as the base document and adding several sub-sections and the BTP APCS 9.5-1 Appendix A compliance comparison table from FHAR Revision 11. In addition, some other minor editorial changes were made. Although the number and scope of changes between the FHAR and FAOR are minimal, the same format is being used in this comparison as in the comparison done between the Appendix R Compliance Assessment Report (CARP) Revision 5 and the FAOR Revision 1. That comparison was submitted to the NRC on May 10, 1990 (Toledo Edison letter Serial Number 1805).

The FAOR documented the fire area optimization process. FAOR Revision 1 (transmitted to the NRC on May 10, 1990 (letter Serial Number 1805)) superseded the CARP as Toledo Edison's documentation of compliance with Appendix R. The FAOR also superseded portions of FHAR Revision 11. This resulted in an inconvenience in using both the FHAR Revision 11 and FAOR Revision 1 simultaneously. FHAR Revision 12 has integrated both documents into one and eliminated the conflicts between the two. There has been no significant technical or other substantive changes to the Appendix R fire hazards analysis as reviewed by the NRC during the April and May, 1990 Appendix R inspection, nor does FHAR Revision 12 alter the conclusions made by the NRC in Inspection Report 90007 (DRS) dated August 22, 1990 (Toledo Edison Log Number 1-2345). The NRC staff reached this same conclusion during a meeting with Toledo Edison regarding FHAR Revision 12 on October 25, 1990.

The remaining sections of this attachment provide a discussion of the specific differences between FAOR Revision 1 and FHAR Revision 12. Unless otherwise indicated all references to these documents are to Revision 1 of the FAOR and Revision 12 of the FHAR. The general difference between the FAOR and FHAR is the addition of the information to the FAOR that is needed in a fire hazards analysis (e.g., BTP APCS 9.5-1 Appendix A response).

The FAOR to FHAR differences are described in the following sections pertaining to Format, Content, FAOR Appendix A, and FAOR Appendix C-3. Since this was a major format revision, no change bars were used in FHAR Revision 12.

### Format

A Table of Contents cross reference is provided as Table 1 to show how the information from the FAOR has been incorporated into the FHAR. The left side of the cross reference is the existing FAOR Table of Contents. Entries are shown in the right column for the FHAR. The Table of Contents cross reference specifically notes where additional sections have been added to the FHAR or where sections from the FAOR have been deleted.

### Content

The following additional information on content changes supplements the FAOR/FHAR Table of Contents cross reference.

FAOR Section 1.0: Applicable wording from FHAR Revision 11 was relocated to the FHAR Revision 12 to address the non-Appendix R issues. These include Section 1.6 "Characteristics and Behavior of Fire", 1.7 "Compliance with NRC Branch Technical Position APCS 9.5-1", 1.8 "NPPA Code Compliance", and 1.9 "Fire Area Drawings".

FAOR Section 2.0: Minor changes to applicable references were made (e.g., added Section 2.1.R. DB-1 Barrier Functional List, C-1594).

FAOR Section 3.0: Minor wording changes (e.g., added location of radio repeater in Section 3.9.2.e) were made. No changes were made in the shutdown model or the number of systems being used for shutdown.

FAOR Section 4.0: Minor changes in wording and circuit designations to correct discrepancies and provide clarification were made. Several manual actions were revised based on feedback from the Operations Department resulting from additional walkdowns of safe shutdown procedures. For example, valve MU216 was added because this new manual valve was better located for ease of operation as compared to the manual valve previously specified in the analysis. Its fire protection safe shutdown function is identical to the valve originally specified in the fire hazards analysis and does not have a negative effect on the operator action timelines. Additionally, Fire Area KK (Room 331) is now included in Fire Area II with no change in the safe shutdown model analysis since no redundant safe shutdown circuits were located in Fire Area KK.

FAOR Section 5.0: A summary of the multiple high impedance fault analysis has been added which reflects the calculations performed by TE.

FAOR Section 6.0: Minor changes were made to wording based on NRC comments from the April and May 1990 Appendix R inspection. For example, the wording changes clarified that hand held lights would not be used in the plant for actions prior to eight hours. This is consistent with the commitment documented in Section 3.C of NRC Inspection Report 90007.

FAOR Section 7.0: Section 7.0, "Oil Collection System for Reactor Coolant Pump", containing a discussion of the lube oil collection system which was extracted principally from the NRC exemption approval letter, has been added to the FHAR. This was Section 8.0 in the CARP and not contained in the FAOR.

#### FAOR Appendix A

A markup of the additions or changes to the FHAR Appendix A Safe Shutdown Component List from the FAOR is provided as Table 2. The entire list is included for completeness even though changes were not made on every page. Certain minor clarifying changes are not marked since they do not involve hardware changes nor do they affect the procedures, drawings or the fire hazards analysis reviewed by the NRC during the April and May 1990 Appendix R inspection (e.g., clarification changes to the description of the component, to the P&ID reference, to the elementary wiring diagram references, fire area designations, etc.). As an example of this type of change, an item-by-item comparison of the Safe Shutdown Component List found in the FAOR to the list in the FHAR would show a large number of apparent fire area redesignations. When the area optimization was performed in early 1990, the FAOR text was revised to reflect the new fire area designations. The need to update the fire area designations on the Appendix A Safe Shutdown Component List was overlooked at that time. This has been corrected in FHAR Revision 12. An example of a change that is indicated on the list can be found in the non-nuclear instrumentation system (Attachment 1, Table 2, pages T2-19 and T2-20) which indicates that numerous power supply changes were made. All of these changes were clarifying in nature, did not involve physical hardware modifications, and did not alter the fire hazards analysis.

The key areas of the FHAR Appendix A which affect the analysis are the columns identified as: (a) Train, (b) Component, (c) Normal Position, (d) Shutdown Position, (e) Failed Position, (f) This Component Alternate Shutdown For, (g) High/Low Spurious Boundary, and (h) Power Supply. Changes to these fields are highlighted with boxes around them.

Boxed information designated with a number one (1) in the right margin indicates that only the boxed information is new or changed. Boxed information designated with a number two (2) in the right margin indicates that all the information in the remaining columns to the right of the boxed area is new or changed to support the component addition.

Two components, bus A and panel RC3716, were deleted from the FAOR in the FHAR tables and thus are not shown on the table markups. Bus A is the 13.8KV switchgear which was originally on the list in anticipation of providing back feed capability to the bus C2. This capability was never needed or used in the safe shutdown procedures, and therefore, has been deleted. Panel RC3716 supplied power to the Pilot Operated Relief Valve (PORV). A sixth refueling outage plant modification relocated the power supply to Panel RC4606. Both panels were listed in

the fire hazards analysis, but only one is needed for fire hazards analysis purposes, thus deletion of Panel RC3716 has no effect on the fire hazard analysis.

There were fifteen components added to the analysis. Seven of the fifteen additions involve manual valves (not associated with high/low pressure interface) that do not have circuit concerns, but were added to the Appendix A list for completeness. These additions were in the procedures in effect at the time of the April and May 1990 Appendix R inspection. Two of the remaining additions involved power supplies that were previously identified in the Emergency Diesel Generator system list but not in the essential power list. This addition ensures completeness of the essential power list. Six other power supplies were added to the essential power list to distinguish between an intermediate power supply and the lowest level power supply on a previously analyzed circuit. Individual power supplies are not listed in the safe shutdown procedures. All fifteen of these changes were for completeness or clarification and did not affect any operator training programs.

#### FAOR Appendix C-3, "Associated Circuit Evaluation Summary" Changes

Appendix C-3 was added to the FEAR from the FAOR. A summary is provided below for the changes that were made.

##### Additions:

There have been a total of twenty-three circuits added to FEAR Appendix C-3. Nineteen of these are a result of thirteen cabinets being added. There were an additional four circuits added individually to existing power supplies. The equipment affected by these circuits was previously analyzed but an oversight caused the power supplies/circuits not to be listed in the FAOR. Thus, these additions do not invalidate the conclusions made by the NRC during the April and May 1990 Appendix R inspection.

##### Deletions:

There have been a total of nine circuits deleted from FEAR Appendix C-3. Five of these resulted from three power supplies being deleted. Four others were individual circuit deletions. These circuits were erroneously left in the FAOR after analysis confirmed the safe shutdown equipment did not rely on, nor was affected by, these power supplies or circuits. These circuits were not listed in safe shutdown procedures.

B. Comparison of Differences Between FHAR Revision 11 and FHAR Revision 12

Background

This portion of the attachment describes the differences between the Fire Hazards Analysis Report (FHAR) Revision 11 and the FHAR Revision 12. In general terms, FHAR Revision 12 format was modified to conform to the FAOR format since the FAOR was used as the base document for the revision. The FHAR contains most of the information it had previously, in addition to now containing the Appendix R safe shutdown analysis that had been contained in the Compliance Assessment Report (CARP).

The following information provides a discussion of changes in format and content between FHAR Revisions 11 and 12. Since most of the changes are due to Fire Area Optimization which has been discussed separately in Section A of this Attachment and Attachment 1 of Toledo Edison letter Serial Number 1805 (dated May 10, 1990), these changes will not be discussed in detail.

Format

The format of Revision 12 of the FHAR has been changed to that presented in the FAOR. The changes, which are strictly an administrative update and relocation of information from one document to another, include:

- BTP APCS 9.5-1 Appendix A Response, which was formerly in Section 4 of Revision 11, is now contained in Appendix D of Revision 12. Updates were made to reflect organizational changes, plant changes and documentation changes made since the previous revision. For example, Section A5 on inadvertent actuation has been revised to reflect the Toledo Edison position stated in a November 22, 1989 Toledo Edison letter (Serial Number 1733).
- The area-by-area summary, which was formerly in Section 5 of Revision 11, is now contained in Section 4 of Revision 12.

Content

Some of the content of Revision 11 of the FHAR is no longer included in Revision 12 of the FHAR. Changes include:

- Reduction in the number of fire areas by combining Fire Area KK into II as previously explained.
- The deletion of a detailed combustible loading table that provided a breakdown of the type of combustibles. This is no longer necessary since each fire area description contains its own combustible loading summary. The details for the types of combustibles are provided in a separate calculation listed in the Reference section. These calculations are maintained on-site and controlled by site procedures.

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- Streamlining the discussions of smoke venting and manual suppression to delete specific components used since this information is already contained in the fire pre-plans. The FHAR references the pre-fire plans which contain the detailed information.
- Deletion of the area-by-area discussion of emergency lighting and communication since a separate section is now devoted to each item (i.e., lighting is in Section 6 and communications is in Section 3.9).

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DAVIS-BESSE NUCLEAR POWER STATION

TABLE I  
FIRE AREA OPTIMIZATION REPORT AND FIRE HAZARDS ANALYSIS REPORT  
TABLE OF CONTENTS CROSS REFERENCE

FAOR REVISION 1 SECTION - - - - - VERSUS CORRESPONDING - - - - - FHAR REVISION 12

1.0	<u>INTRODUCTION</u>		1.0	<u>INTRODUCTION AND SUMMARY</u>
1.0	Introduction		1.0	Introduction
1.1	Purpose of Report		1.1	Purpose of Report
1.2	Methodology		1.2	Review Methodology
1.3	Summary of Results		1.3	Summary of Results
1.4	Alternate Shutdown Capability		1.4	Alternate Shutdown Capability
1.5	Definitions, Abbreviations, and Equipment/Cable Numbering Systems		1.5	Definitions, Abbreviations, and Equipment/ Cable Numbering Systems
Table 3	Summary of Exemptions	From FHAR Rev. 11>	1.6	Characteristics and Behavior of Fire
		From FHAR Rev. 11>	1.7	Compliance with NRC Branch Technical Position APCSE 9.5-1
		From FHAR Rev. 11>	1.8	NFPA Code Compliance
		From FHAR Rev. 11>	1.9	Fire Area Drawings
		Change Table # >	Table 1	Summary of Exemptions



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- 2.1 Drawings
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- 2.3 Reports
- 2.4 NRC Documents
- 2.5 Letters
- 2.6 Calculations
- 2.7 Requests for Assistance

- 2.0 REFERENCES
- 2.1 Drawings
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- 2.3 Reports
- 2.4 NRC Documents
- 2.5 Letters
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3.1 Introduction  
3.2 Performance Goals  
3.3 Safe Shutdown Functions  
3.4 Requirements and Assumptions  
3.5 Safe Shutdown Systems Determination  
3.6 Safe Shutdown Systems  
3.7 Safe Shutdown System Components  
3.8 Safe Shutdown System Circuits  
3.9 Plant Communications and Security  
Table 3-1 Safe Shutdown Systems

3.0 SAFE SHUTDOWN SYSTEMS, COMPONENTS AND CIRCUITS  
3.1 Introduction  
3.2 Performance Goals  
3.3 Safe Shutdown Functions  
3.4 Requirements and Assumptions  
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Table 3-1 Safe Shutdown Systems

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- 4.2 Requirements
- 4.3 Assumptions
- 4.4 Evaluation Methodology
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- 4.6 Fire Area Evaluations
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- 4.1 Introduction
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  - 4.6.BD Fire Area BD
  - 4.6.BE Fire Area BE
  - 4.6.BF Fire Area BF
  - 4.6.BG Fire Area BG
  - 4.6.BH Fire Area BH
  - 4.6.BM Fire Area BM
  - 4.6.BN Fire Area BN
  - 4.6.CC Fire Area CC
  - 4.6.D Fire Area D
  - 4.6.DD Fire Area DD
  - 4.6.DF Fire Area DF
  - 4.6.DG Fire Area DG
  - 4.6.DH Fire Area DH
  - DUCT Fire Area DUCT
  - 4.6.E Fire Area E
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  - 4.6.II Fire Area II
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4.6.MC	4.6.ME	Fire Area ME
4.6.ME	4.6.MF	Fire Area MF
4.6.MF	4.6.MG	Fire Area MG
4.6.MG	4.6.MH	Fire Area MH
4.6.MH	4.6.OF	Fire Area OF
4.6.OF	4.6.OS	Fire Area OS
4.6.OS	4.6.P	Fire Area P
4.6.P	4.6.PS	Fire Area PS
4.6.PS	4.6.Q	Fire Area Q
4.6.Q	4.6.R	Fire Area R
4.6.R	4.6.RW	Fire Area RW
4.6.RW	4.6.S	Fire Area S
4.6.S	4.6.T	Fire Area T
4.6.T	4.6.U	Fire Area U
4.6.U	4.6.UU	Fire Area UU
4.6.UU	4.6.V	Fire Area V
4.6.V	4.6.VA	Fire Area VA
4.6.VA	4.6.X	Fire Area X
4.6.X	4.6.Y	Fire Area Y
4.6.Y		

Table 4-1 Precautionary Note  
Appendix B, Section III.G Compliance  
Summary

Table 4-1 Precautionary Note  
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Summary

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Fault Analysis

- 5.0 ASSOCIATED CIRCUITS
- 5.1 Common Power Source Analysis
- 5.2 Common Enclosure Analysis
- 5.3 Summary of Multiple High Impedance  
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- 6.2 Assumptions and Basis of Evaluation
- 6.3 Emergency Lighting Evaluation

6.0 EMERGENCY LIGHTING

- 6.1 Introduction
- 6.2 Assumptions and Basis for Evaluation
- 6.3 Emergency Lighting Evaluation

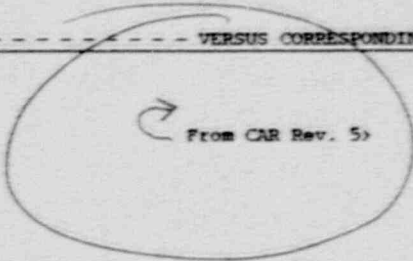
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7.0 NOT USED IN FAOR



7.0 OIL COLLECTION SYSTEM FOR REACTOR COOLANT PUMPS  
7.1 Introduction  
7.2 Issued Exemption for RCP Oil Collection System

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APPENDIX B-1: Optimized Fire Area Circuit Routing for Safe		APPENDIX B-1: Circuit/Subcomponent Location Summary
APPENDIX B-2: Optimized Fire Area Circuit Routing for Safe		APPENDIX B-2: Circuit/Subcomponent Location Summary by
Shutdown Cables		Fire Area
APPENDIX C-1: Optimized Circuit Routing for Safe Shutdown	Revised Titles >	APPENDIX C-1: Associated Circuit Location Summary by Power
APPENDIX C-2: Optimized Circuit Routing for Safe Shutdown		Source
Cable in Fire Area	Revised Titles >	APPENDIX C-2: Associated Circuit Location Summary by Fire
APPENDIX C-3: Breaker Coordination Evaluation Summary		Area
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 TABLE 2

DAVIS BRESSOR UNIT 1

FIRE HAZARDS ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - AFW

ID/ALN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSITION	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORMANCE CODES	REQUIRED FOR M/S C/S	PRELIMINARY	STATUS	REMARKS
1	AF3069	ATOP 1 DISCH TO SC2	MOV	E	Closed	Closed	AS IS		3	M/S C/S		WORK	1
1	AF3070	ATOP 2 DISCH TO SC1	MOV	E	Open	Open	AS IS		3	M/S C/S		WORK	2
2	AF3071	ATOP 2 DISCH TO SC1	MOV	E	Closed	Closed	AS IS		3	M/S C/S		WORK	1
2	AF3072	ATOP 2 DISCH TO SC2	MOV	F	Open	Open	AS IS		3	M/S C/S		WORK	2
2	AF599	ATOP 10 SC2 ISO VLV	MOV	A	Open	Open	AS IS		3	M/S C/S		WORK	2
1	AF608	ATOP 10 SC1 ISO VLV	MOV	AB	Open	Open	AS IS		3	M/S C/S		WORK	2
2	AF6451	ATOP 2 FLOW CTRL VLV	MOV	F	Open	Open/Close	FO		3	M/S C/S		WORK	4
1	AF6452	ATOP 1 FLOW CTRL VLV	MOV	E	Open	Open/Close	FO		3	M/S C/S		WORK	5
1/2	E183	WDPP SEAL W/ID COOLERS	CLR	11	Flare/Normal	Flare/Normal	N/A	ATMS TRAHN 182	3	M/S C/S		WORK	4
1/2	E184-1	WDPP SEAL W/ID COOLERS	CLR	11	Flare/Normal	Flare/Normal	N/A	ATMS TRAHN 182	3	M/S C/S		WORK	5
1/2	E184-2	WDPP SEAL W/ID COOLERS	CLR	11	Flare/Normal	Flare/Normal	N/A	ATMS TRAHN 182	3	M/S C/S		WORK	4
1	705397	WDPP STEAM TRIP VALVE	MOV	11	Open	Open/Close	AS-IS	ATMS TRAHN 2	3	M/S C/S		WORK	15
1	705398	WDPP FLOW CTRL VALVE	MOV	11	Open	Open/Close	FO	ATMS TRAHN 182	3	M/S C/S		WORK	15
2	705400	WDPP FLOW CTRL VLV	MOV	11	Open	Open/Close	FO	ATMS TRAHN 182	3	M/S C/S		WORK	210
2	705399	WDPP FLOW CTRL VLV	MOV	11	Open	Open/Close	FO	ATMS TRAHN 182	3	M/S C/S		WORK	14
2	705398A	ATPP 2 GEN CTRL VLV	MOV	F	Open	Open/Close	AS IS	ATMS TRAHN 182	3	M/S C/S		WORK	14
1	705398B	ATPP 1 GEN CTRL VLV	MOV	F	Open	Open/Close	AS IS	ATMS TRAHN 182	3	M/S C/S		WORK	14
1	85106	ATPP 1 MS IM ISO VLV	MOV	EE	Closed	Open	AS IS	MS106	3	M/S C/S		WORK	14
1	85106A	ATPP 1 MS IM R-COOL	MOV	EE	Open	Open/Close	AS IS	MS106	3	M/S C/S		WORK	14
2	85107	ATPP 2 MS IM ISO VLV	MOV	EE	Closed	Open	AS IS	MS107	3	M/S C/S		WORK	14
2	85107A	ATPP 2 MS IM R-COOL	MOV	EE	Open	Open/Close	AS IS	MS107	3	M/S C/S		WORK	14
1	855005A	ATPP 1 STEAM ADMISS VLV	MOV	E	Closed	Open	FO		3	M/S C/S		WORK	5
2	855005B	ATPP 2 STEAM ADMISS VLV	MOV	F	Closed	Open	FO		3	M/S C/S		WORK	5
1	P14-1	TO AIR FN PUMP 1	PLMP	E	OFF	ON	OFF		3	M/S C/S		WORK	5
2	P14-2	TO AIR FN PUMP 2	PLMP	F	OFF	ON	OFF		3	M/S C/S		WORK	5
1/2	P241	WTR DRIVEN FEED PUMP	PLMP	11	OFF	ON	OFF		3	M/S C/S		WORK	9
1/2	P242-1	WDPP AIR LTR OIL PUMP	PLMP	11	OFF	ON	OFF	ATMS TRAHN 182	3	M/S C/S		WORK	10
1/2	P242-2	WDPP SHIRT DRUM LO PUMP	PLMP	11	Flare/Normal	Flare/Normal	N/A	ATMS TRAHN 182	3	M/S C/S		WORK	10
1/2	T31-1	COND S10 TANK 1-1	TANK	11	Flare/Normal	Flare/Normal	N/A	ATMS TRAHN 182	3	M/S C/S		WORK	12
1/2	T31-2	COND S10 TANK 1-2	TANK	11	Flare/Normal	Flare/Normal	N/A	ATMS TRAHN 182	3	M/S C/S		WORK	16

EXPLANATION: 1. REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2. BATTERY COMPONENT 3. AS HEAVY SHUTDOWN COMPONENT 4. AS LIGHT SHUTDOWN COMPONENT 5. SHUTDOWN 6. SHUTDOWN 7. M/S C/S FOR AUTHORITY 8. M/S C/S FOR AUTHORITY 9. M/S C/S FOR AUTHORITY 10. M/S C/S FOR AUTHORITY 11. M/S C/S FOR AUTHORITY 12. M/S C/S FOR AUTHORITY 13. M/S C/S FOR AUTHORITY 14. M/S C/S FOR AUTHORITY 15. M/S C/S FOR AUTHORITY 16. M/S C/S FOR AUTHORITY

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FIRE HAZARDS ANALYSIS  
 APPENDIX A  
 SAFE SHUTDOWN COMPONENT LIST

DAVIS BESSE UNIT 1

SYSTEM - CACS

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSIT	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORMANCE GOALS	REQUIRED FOR N/S C/S	PRIORITY	PSID T-LINE	FUNCTION SPAN/ONS BOUNDARY	POWER SUPPLY	CIRCUIT SCHEME	ESSENTIAL WIRING DBM /SHT
1	C1-1	CAC FAN 1	FAN	D	ON/OFF	ON	OFF		5	N/S C/S	2	0029E		E14	17001A01A	ES00/01A B 17
2	C1-2	CAC FAN 2	FAN	G	ON/OFF	ON	OFF		5	N/S C/S	1	0029E		E14	24001A01A	ES00/01A B 17
1/2	C1-3	CAC FAN 3	FAN	D	ON/OFF	ON	OFF	C1-1, C1-2	5	N/S C/S	1	0029E		E15	11001501C	ES00/02A B 17
1	E37-1	CAC COIL 1	HR	D	ON/OFF	ON	AS IS		5		1	0029E		N/A	21001501C	ES00/03A B 17
2	E37-2	CAC COIL 2	HR	D	ON/OFF	ON	AS IS		5		1	0029E		N/A	N/A	N/A 17
1/2	E37-3	CAC COIL 3	HR	D	ON/OFF	ON	AS IS	E37-1, E37-2	5		1	0029E		N/A	N/A	N/A 17

PRIORITY - 1 - REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2 - BACKUP COMPONENT 3 - ALTERNATE SHUTDOWN COMPONENT  
 PERFORMANCE GOALS - 1 - REACTIVITY CONTROL 2 - REACTOR COOLANT MAKEUP 3 - REACTOR HEAT REMOVAL 4 - PROCESS MONITORING 5 - SUPPORT FUNCTIONS

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DAVIS-BESSE UNIT 1

FIRE HAZARD ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - CCWS

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	HAZARD POSSIB	IMPACTS TO SHUTDOWN	IMPACTS TO SAFETY	REQUIRED FOR M/S C/S	PRELIMINARY	FIELD 1-LINE	FUNCTION SYMBOLS	POWER SUPPLY	CIRCUIT SCORE	ELEMENTARY SYMBOL / SHFT	NOTES
1/2	CC1402A	CCW INLET 150 VLV FROM CBRT	MOV	D	Open	Open	AS IS			M/S C/S		MD3AC	SC	F11B	F11B	E500/10A @	26
1/2	CC1402B	CCW OUT 150 VLV FROM CBRT	MOV	A	Open	Open	AS IS			M/S C/S		MD3AC	SC	F11B	F11B	E500/10A @	26
1	CC1403	CCW TO 1ST TURB. CLR 1 IN VLV	MOV	D	Open/Close	Open/Close	AS IS			M/S C/S		MD3AC	H/T	F12A	F12A	E520/170	20
1/2	CC1404	CCW TO 1ST TURB. CLR 2 IN VLV	MOV	D	Open/Close	Open	AS IS			M/S C/S		MD3AC	H/T	F12A	F12A	E520/170	20
1/2	CC1405	CCW INLET 150 VLV TO CBRT	MOV	D	Open	Open	AS IS			M/S C/S		MD3AC	SC	F11B	F11B	E500/13A @	5
1/2	CC1410	CCW INLET 150 VLV TO CBRT	MOV	A	Open	Open	AS IS			M/S C/S		MD3AC	SC	F11B	F11B	E500/13A @	5
1/2	CC1460	CC TO RB PMP HEAT IN VLV	MOV	T	Open/Close	Open/Close	FC	IMPACTS TO SHUTDOWN		M/S C/S		MD3MA		RC3705	RC3705	E500/12A	25
1	CC1467	DRW CLR 1 OUT 150 VLV	MOV	AB	Close	Open	FO			C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/12A	25
2	CC1469	DRW CLR 2 OUT 150 VLV	MOV	AB	Close	Open	FO			C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/12A	25
1	CC1471	DC JRT CW IN 1 OUT VLV	MOV	R	Open/Close	Open	FG			M/S C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/11	18
2	CC1474	DC JRT CW IN 2 OUT VLV	MOV	I	Open/Close	Open	FG			M/S C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/11	18
1	CC1495	NON-ESSENTIAL IN 150R (SEAL RETURN)	MOV	U	Open	Open	FC			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/16	19
1	CC26-65	CC RETURN HEAT 1 VLV	MOV	C	Open/Close	Open/Close	AS IS	IMPACTS TO SHUTDOWN		M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/16	19
2	CC26-69	CC RETURN HEAT 2 VLV	MOV	C	Open/Close	Open/Close	AS IS	IMPACTS TO SHUTDOWN		M/S C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/16	19
1/2	CC27	ROBERTSON 150 VLV TO 1ST TURB	MOV	U	Open/Close	Open/Close	AS IS			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/15A	20
1/2	CC28*	ROBERTSON 150 VLV TO 2ND TURB	MOV	U	Open/Close	Open/Close	AS IS			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/15A	20
1	CC29-65	CC HEAT 1 IN 150 VLV	MOV	T	Open/Close	Open	AS IS			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/15A	20
2	CC29-66	CC HEAT 2 IN 150 VLV	MOV	T	Open/Close	Open	AS IS			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/15A	20
1	CC29-67	CCW LINE 1 RET 150 VLV	MOV	T	Open/Close	Open/Close	AS IS			M/S C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/20	21
2	CC29-68	CCW LINE 2 RET 150 VLV	MOV	T	Open/Close	Open/Close	AS IS			M/S C/S		MD3MB		CS7755(DEC)	CS7755(DEC)	E500/20	21
1	CC29-69	CCW HEAT EXCHANGER 1	MOV	T	Open/Close	Open/Close	AS IS			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/20	21
1/2	CC29-70	CCW HEAT EXCHANGER 2	MOV	T	Open/Close	Open/Close	AS IS			M/S C/S		MD3MA		CS7755(DEC)	CS7755(DEC)	E500/20	21
1	F151-013C	F100 SW TECH CCWS PUMP	PS	T	ON	OFF	OFF			M/S C/S		MD3MA		D1P	D1P	E63/10/23	30
2	F151-013D	F100 SW TECH CCWS PUMP	PS	T	ON	OFF	OFF			M/S C/S		MD3MA		D1P	D1P	E63/10/23	30
1	F151-013E	F100 SW TECH CCWS PUMP	PS	T	ON	OFF	OFF			M/S C/S		MD3MA		D1P	D1P	E63/10/23	30
2	F151-013F	F100 SW TECH CCWS PUMP	PS	T	ON	OFF	OFF			M/S C/S		MD3MA		D1P	D1P	E63/10/23	30
1	F151-013G	F100 SW TECH CCWS PUMP	PS	T	ON	OFF	OFF			M/S C/S		MD3MA		D1P	D1P	E63/10/23	30
2	F151-013H	F100 SW TECH CCWS PUMP	PS	T	ON	OFF	OFF			M/S C/S		MD3MA		D1P	D1P	E63/10/23	30
1	P43-1	CCW PUMP 1	PUMP	T	ON/OFF	ON	OFF			M/S C/S		MD3MA		RC3704 (C)	RC3704 (C)	E500/20	5
2	P43-2	CCW PUMP 2	PUMP	T	ON/OFF	ON	OFF			M/S C/S		MD3MA		RC3704 (C)	RC3704 (C)	E500/20	5
1/2	P43-3	CCW PUMP 3	PUMP	T	ON/OFF	ON	OFF			M/S C/S		MD3MA		RC3704 (C)	RC3704 (C)	E500/20	5
1/2	T-12	CCW SOURCE TANK	TANK	EE	Full/Empty	Full/Empty	N/A			M/S C/S		MD3MA		RC3705 (L)	RC3705 (L)	E500/25	5

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FIRE HAZARDS ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

DAVIS-BESSE UNIT 1

SYSTEM - CFS

TRAIN	COMPONENT	DESCRIPTION	TYPE	LDC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSIT	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORMANCE GOALS	REQUIRED FOR N/S C/S	RAJUR #TY	RAJUR 1-LINE	SHUTDOWN SPECIFIED BOUNDARY	POWER SUPPLY	CIRCUIT SCORE	ELEMENTARY EVENT CODE / SHUT	NOTES
2	CF01A	CORE FLOODED TR 2 150 MV	MOV	0	EQ00	CF0500	AS 15		N/A	C/S	1	MD34	B	CONTINUOUS	2XUCF01AA	4520/27A	31
2	CF01B	CORE FLOODED TR 1 150 MV	MOV	0	EQ00	CF0500	AS 15		1-7A	C/S	1	MD34	B	CONTINUOUS F11A CERTIFIC F11B	2P01120A 1CVC0108A 1P021162A	4520/27 4520/27A 4520/27	31 31 31

DAVIS-BESSE UNIT 1

FIRE HAZARDS ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - CREVS

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSITION	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERIOD SINCE COMES	REQUIRED FOR NYS C/S	PRELUDE CITY	PAID 1-LINE	HIGHLIGHT SUPPLIES IDENTIFY	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY SYMBOL / UNIT	NOTES
1	C21-1	CRIM EVS FAN 1	FAN	44	OFF	ON	OFF		5	NYS C/S	1	4027A		E123A	1000/01	33	
2	C21-2	CRIM EVS FAN 2	FAN	44	OFF	ON	OFF		5	NYS C/S	1	4027A		E123A	1000/01	33	
1	E106-1	CRVS COND INC COIL	N/A	44	FLUC 1 (ON)	FLUC 1 (ON)	N/A		5	NYS C/S	1	4027A		N/A	1000/01	33	
2	E106-2	CRVS COND INC COIL	N/A	44	FLUC 1 (ON)	FLUC 1 (ON)	N/A		5	NYS C/S	1	4027A		N/A	1000/01	33	
1	F22-1	CRVS FILTER BANK	FIL	44	FLUC 1 (ON)	FLUC 1 (ON)	N/A		5	NYS C/S	1	4027A		N/A	1000/01	33	
2	F22-2	CRVS FILTER BANK	FIL	44	FLUC 1 (ON)	FLUC 1 (ON)	N/A		5	NYS C/S	1	4027A		N/A	1000/01	33	
1	M00531A	A1B IN LV8 FOR 870 SW PUMP	DRUM	BD	OPEN/CLOSE	OPEN/CLOSE	OPEN		5	NYS C/S	3	4027A		13012/1410	1100/53	33	
1	M00532A	A1B IN LV8 FOR 870 SW PUMP	DRUM	BD	OPEN/CLOSE	OPEN/CLOSE	OPEN		5	NYS C/S	3	4027A		13012/1410	1100/53	33	
1	S33-1	CRIM EMBRG A/C UNIT 1	A/C	44	OFF	ON	OFF		5	NYS C/S	1	4027A		E123A	1000/01	33	
2	S33-2	CRIM EMBRG A/C UNIT 2	A/C	44	OFF	ON	OFF		5	NYS C/S	1	4027A		E123A	1000/01	33	
1	S4023A	CRVS CONDENSER UNIT 1 (S33-1) IN W V	SON	44	CLOSED	OPEN	CLOSED		5	NYS C/S	1	4027A		E123A	1000/01	33	
2	S4027A	CRVS CONDENSER UNIT 2 (S33-2) IN W V	SON	44	CLOSED	OPEN	CLOSED		5	NYS C/S	1	4027A		E123A	1000/01	33	

IDENTITY - 1. REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2. BLOCKED COMPONENT 3. ALTERNATE SHUTDOWN COMPONENT  
 PERFORMANCE GOALS - 1. REACTIVITY CONTROL 2. REACTOR COOLANT SYSTEM 3. REACTOR CORE 4. REACTOR 5. SUPPORTING SYSTEMS

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DAVIS BESSE UNIT 1

FIRE HAZARDS ANALYSIS

APPENDIX A  
 SAFE SHUTDOWN COMPONENT LIST

SYSTEM - CSS

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSSIBLE ALTERNATE SHUTDOWN FOR	PERFORMANCE CORES	REQUIRED FOR H/S C/S	NUMBER OF	FIELD	INTEGRATED SCRAMMING	POWER SUPPLY	CIRCUIT SCRAM	ELEMENTARY SCRAM /SHT	NOTES
1	CS1530	CSBT SPRAY ISD MV	SDV	AB	CLOSED	CLOSED	PS6-1	N/A	H/S C/S	1	AB34	0	011C	1P081156A	ES-20/21A B	40
2	CS1531	CSBT SPRAY ISD MV	SDV	A	CLOSED	CLOSED	PS6-2	N/A	H/S C/S	1	AB34	0	011B	2P081167A	ES-20/21A B	40
3	PS6-1	CS PUMP 1	PUMP	AB	OFF	OFF	CS1530	N/A	H/S C/S	2	AB34	0	01	1P081111A	ES-20/07A B	39
3	PS6-2	CS PUMP 2	PUMP	A	OFF	OFF	CS1531	N/A	H/S C/S	2	AB34	0	01	2P081111A	ES-20/07A B	39

PRIORITY - 1. REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2. BACKUP COMPONENT 3. ALTERNATE SHUTDOWN COMPONENT  
 PERFORMANCE CORES - 1. REACTIVITY CONTROL 2. REACTOR CORE HANDLING 3. REACTOR HEAT REMOVAL 4. PROCESS MONITORING 5. SUPPORT FUNCTIONS

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DAVIS-BESSE UNIT 1

FIRE HAZARD ANALYSIS

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 SAFE SHUTDOWN COMPONENT LIST

SYSTEM - EHRS

TIME	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSIT	THIS COMPONENT AT TERMINATE SHUTDOWN FOR	IMP/OP SOURCE COMB	REQUIRED FOR MFS C/S	PRIORITY	FIELD 1-LINE	INVENTOR SYMBOLS	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY SYMBOL CODE / PART	NOTES
2	D001A	EPI LINE 2 VLV	MOV	A	Open	Open	AS IS		2 3	C/S	1	00330	SC	F11C	2P001116A	E520/400	42
2	D001B	EPI LINE 1 VLV	MOV	AB	Open	Open	AS IS		2 3	C/S	1	00330	SC	F11A	1P001105A	E520/400	42
2	D007A	BOST 150 VLV A	MOV	AC	Open	Open	AS IS		2 3	MFS C/S	1	0033A	SC	F11B	2P001105A	E520/19A C	43
2	D007B	BOST 150 VLV B	MOV	AB	Open	Open	AS IS		2 3	MFS C/S	1	0033A	SC	F11A	2P001105A	E520/19A C	43
2	D007C	CLMT SUMP 150 VLV A	MOV	AB	Closed	Closed	AS IS		2 3	MFS C/S	1	0033C	SC	F11C	2P001105A	E520/190 C	44
2	D007D	CLMT SUMP 150 VLV B	MOV	AB	Closed	Closed	AS IS		2 3	MFS C/S	1	0033C	SC	F11C	2P001105A	E520/190 C	44
2	D007E	DH HOBM SUCT LINE VLV	MOV	D	Closed	Open/Closed	AS IS		2 3	C/S	1	00330	N/L	CD11A114M	2C001100	E520/240 B	45
1	D007F	DH HOBM SUCT LINE VLV	MOV	D	Closed	Open/Closed	AS IS		2 3	C/S	1	00330	N/L	CD11B114M	2P001100	E520/240 D	45
2	D007A	DH CLR 2 BYPASS VLV	MOV	AB	Closed	Closed	FC		2	C/S	1	0033C	SC	F11B	1P001103A	E520/240 D	45
1	D007B	DH CLR 1 BYPASS VLV	MOV	AB	Closed	Closed	FC		2	C/S	1	00330	SC	CS274AC1	2C000130C	E520/250	46
2	D007C	DH CLR 2 OUT VLV	MOV	AB	Open	Open	FO		2 3	C/S	1	0033C	SC	CS274AC1	2C000130C	E520/250	46
1	D007D	DH CLR 1 OUT VLV	MOV	AB	Open	Open	FO		2 3	C/S	1	00330	SC	CS274AC1	2C000130C	E520/250	46
1	D007E	DH HOBM SUCT LINE 1 VLV	MOV	A	Closed	Open/Closed	AS IS		3	C/S	1	00330	SC	CS274AC1	2C000130C	E520/250	46
2	D007F	DH HOBM SUCT LINE 2 VLV	MOV	A	Closed	Open/Closed	AS IS		3	C/S	1	00330	SC	CS274AC1	2C000130C	E520/250	46
2	D007G	DH PUMP 1 BOST SUCT VLV	MOV	AB	Open	Open/Closed	AS IS		2 3	C/S	1	00330	SC	F11A	2P001105A	E520/250	47
2	D007H	DH PUMP 2 BOST SUCT VLV	MOV	AB	Open	Open/Closed	AS IS		2 3	C/S	1	00330	SC	F11A	2P001105A	E520/250	47
1/2	D007I	DH AIR SPARE STOP VLV	MOV	D	Closed	Closed	AS IS		2	C/S	1	00330	SC	F11C	2P001105A	E520/250	47
1/2	D007J	DH AIR SPARE TRIP VLV	MOV	D	Closed	Closed	AS IS		2	C/S	1	00330	SC	F11C	2P001105A	E520/250	47
2	D008	EPI/HP1 CROSS-TIE VLV	MOV	A	Closed	Closed	AS IS		2 3	C/S	1	00330	SC	F11A	2P001105A	E520/250	48
1	D009	EPI/HP1 CROSS-TIE VLV	MOV	A	Closed	Closed	AS IS		2 3	C/S	1	00330	SC	F11A	2P001105A	E520/250	48
1	D00A	D005 COOLER 1-1	CLR	AB	Func Normal	Func Normal	N/A		2 3	C/S	1	00330	SC	F11E	N/A	E520/250	49
1	D00B	D005 COOLER 1-2	CLR	AB	Func Normal	Func Normal	N/A		2 3	C/S	1	00330	SC	F11E	N/A	E520/250	49
2	D00C	D005 COOLER 2-1	CLR	AB	Func Normal	Func Normal	N/A		2 3	C/S	1	00330	SC	F11E	N/A	E520/250	49
2	D00D	D005 COOLER 2-2	CLR	AB	Func Normal	Func Normal	N/A		2 3	C/S	1	00330	SC	F11E	N/A	E520/250	49
1	D00E	D007EPI PUMP 1	PUMP	AB	OFF	Open/Off	OFF		2 3	C/S	1	00330	SC	F11E	N/A	E520/250	49
1	D00F	D007EPI PUMP 2	PUMP	AB	OFF	Open/Off	OFF		2 3	C/S	1	00330	SC	F11E	N/A	E520/250	49
1/2	D00G	BOILER WATER STORAGE TANK	TANK	OS	Func Normal	Func Normal	N/A		2	MFS C/S	1	0033A	SC	F11E	N/A	E520/250	55

REVISIONS: 1. REFORMED MINIMUM COMPONENT FOR SAFETY ANALYSIS 2. SAFETY ANALYSIS 3. AS SHOWN 4. SHUTDOWN COMPONENT IDENTIFICATION 5. MFS C/S 6. FOR IDENTIFICATION 7. MFS C/S 8. FOR IDENTIFICATION 9. PROCESS IDENTIFICATION 10. SHUTDOWN COMPONENT





DAVIS-BESSE UNIT 1

FIRE HAZARD ANALYSIS  
 APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - SSPWR

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF CBWP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSIT	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORM MAKE CONTACTS	REQUIRED HV C/S	PRIORITY	PAID 1-LINE	HOLD/LOW SIGNALS	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY SYMBOLIC DRAWING	NOTES
1	1W	125VDC STATION BATTERY	BATT	Y	ON	OFF	OFF		5	M/S C/S	1	E7		N/A	1PDI31A	E007	87
1	1P	125VDC STATION BATTERY	BATT	Y	ON	OFF	OFF		5	M/S C/S	1	E7		N/A	1PDI31A	E007	87
2	2P	125VDC STATION BATTERY	BATT	X	ON	OFF	OFF		5	M/S C/S	1	E7		N/A	2PDI31A	E007	87
1/2	0615_B	115VDC STA. BATTERY	BATT	X	ON	OFF	OFF		5	M/S C/S	2	E1/1		EDC 1-1	0615B03A	E738	205
1	CT	4 18KV AC SWGR	SWGR	0	ON	ON	OFF	BACKFEED DT	5	M/S C/S	1	E1/1		EDC 1-1	1PAC101A	E648/1A	70
1	C7	4 18KV AC SWGR	SWGR	5	ON	OFF	OFF	P3-1, 2, 3	5	M/S C/S	3	E1/1		DIP	1PDI105A	E645/1A	70
1	C616	EDCI-1 PANEL LIGHTS (MODN PWR)	PNL	K	ON	ON	OFF		5	M/S C/S	1	E7		DIP	1PDI105A	E645/1A	80
2	C616	EDCI-2 PANEL LIGHTS (MODN PWR)	PNL	J	ON	OFF	OFF		5	M/S C/S	1	E7		DIP	1PDI105A	E645/1A	80
1	C617	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C618	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C619	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C620	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C621	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C622	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C623	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1	C624	DC CON - VTC CONTROL PNL	PNL	ON	ON	ON	OFF		5	M/S C/S	1	N/A		DIP	1PDI105A	E645/1A	80
1/2	C5706	AC CONT PWR (PWR) INDICATIONS	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E400/08		V4	2CV211A	E520/13	74 5
1	C5708	CHTR POWER PROCESS WDN (D1150N)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E400/08		V4	2CV211A	E520/13	74 5
1	C5709	CHTR POWER PROCESS WDN (D1150N)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E400/08		V4	2CV211A	E520/13	74 5
1	C5710	CHTR POWER PROCESS WDN (D1150N)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E400/08		V4	2CV211A	E520/13	74 5
1	C5711	CHTR POWER SV WDN LIGHTS	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E400/08		V4	2CV211A	E520/13	74 5
2	C5755C	SFAS POWERED SV CH 2	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E16/1		V1	2CV211A	E520/13	73 5
2	C5755E	CONTROL ROOM PWR, T PROT SYS PNL (CH 2)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E16/1		V1	2CV211A	E520/13	73 5
2	C5755F	POST ACCIDENT WDN BACK (CH 2)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E16/1		V1	2CV211A	E520/13	73 5
2	C5756D	SFAS LOGIC ACTIVATED OQ	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E16/1		V1	2CV211A	E520/13	73 5
2	C5759B	CH B INST PWR (RCS LOOP 2 TEMP P2R LV)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E726A/8		V1	2CV211A	E520/13	74 5
2	C5759C	INST CORR NH-X BUS	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E726A/8		V1	2CV211A	E520/13	74 5
2	C5760D	CONF CORR TO C5759B	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E726A/7		V1	2CV211A	E520/13	74 5
1/2	C5761A	CV 1 SFAS NMR & LOGIC	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E7		V1	2CV211A	E520/13	74 5
1	C5762A	CONTROL POWER TO SFAS CHS RELAYS	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E7		V1	2CV211A	E520/13	74 5
1	C5762C	SFAS POWERED SV CH 1	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E16/1		V1	2CV211A	E520/13	73 5
1	C5762D	SFAS LOGIC ACTIVATED CH 1	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E16/1		V1	2CV211A	E520/13	73 5
1	C5762E	CONTROL ROOM REACT PROT SYS PNL (CH 1)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	E761		V1	2CV211A	E520/13	74 5
1	C5763A	POST ACCIDENT WDN SYS PNL (CH 1)	PNL	FF	ON	ON	OFF		5	M/S C/S	1	N/A		V1A	1C7105A	E100A	153

UNRELIABLE - 1. UNRELIABLE MINIMUM COMPONENT FOR SHUTDOWN 2. BACKUP COMPONENT 3. AT NORMAL SHUTDOWN COMPONENT PERFORMANCE CLASS - 1. REACTIVITY CONTROL 2. REACTOR CONTROL SYSTEM 3. REACTOR CONTROL SYSTEM 4. REACTOR CONTROL SYSTEM 5. REACTOR CONTROL SYSTEM





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TOLEDO EDISON COMPANY  
 DAVIS-BESSE NUCLEAR POWER STATION  
 TABLE 2

DAVIS-BESSE UNIT 1

FIRE HAZARD ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - SSPWR

IBAM	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSITION	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PRETOR MAKE MODEL	REQUIRED FOR M/S C/S	PROBABILITY	PROBABLE FAILURE MECHANISM	POWER SUPPLY	SCHEMATIC SYMBOL	ELEMENTARY EVENT CODE	NOTES
1	XV3	CONSTANT VOLT TRANSFORMER (CVT CH 3)	TRFR	Y	ON	OFF	OFF		5	M/S C/S	1	E7	E16A	1P0E1617A	E6/5	90
2	XV4	CONSTANT VOLT TRANSFORMER (CVT CH 4)	TRFR	X	ON	OFF	OFF		5	M/S C/S	1	E7	E16B	1P0E1623A	E6/5	90
3	V1	130VAC DIST PNL	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X1	1P0V1A	E6/5	83
1	V1A	130 VAC ESS INSTR DISTR PANEL	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X1	1P0V1A	E200B	90
2	V2	120V AC DIST PNL	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X2	1P0V2A	E6/5	90
2	V2A	120VAC DIST PNL	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X2	1P0V2A	E200B	83
1	V3	120VAC DIST PNL	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X3	1P0V3A	E6/5	90
2	V3A02	CONTROL POWER (UNIT 9 & 10)	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X3	1P0V3A	E6/5	83
2	V4	120V AC DIST PNL	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	90
1	V4U	120VAC DIST PNL	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	83
2	V8U	120VAC DIST PNL	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V8	120VAC REC	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V82	240/120VAC REC	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V9	120VAC REC	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V92	240/120VAC REC	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V9F1	RECTIFIER	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V9F2	RECTIFIER	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V9F3	RECTIFIER	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V9F4	RECTIFIER	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V9I	125VDC INVERTER	INV	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V9J	125VDC INVERTER	INV	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V93	125VDC INVERTER	INV	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V94	125VDC INVERTER	INV	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	V9A	125VDC INVERTER	INV	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	V9B	125VDC INVERTER	INV	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	Z0451	ATP #2 CTRL VLV POSITION CONTROLLER	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	Z0452	ATP #3 CTRL VLV POSITION CONTROLLER	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
1	Z0453	MOFP CONTROL VLV POSITION CONTROLLER	PNL	Y	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84
2	Z0454	MOFP CTRL VLV POSITION CONTROLLER	PNL	X	ON	ON	OFF		5	M/S C/S	1	E7	X4	1P0V4A	E6/5	84

PRIORITY 1 - REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2 - BACKUP COMPONENT 3 - ALTERNATE SHUTDOWN COMPONENT  
 PREFERENCE CODES - 1 - RELIABILITY CONTROL 2 - REACTION CODE ANTI-SWEEP 3 - REACTION CODE ANTI-SWEEP 4 - PROTECTS AGAINST UNDESIRABLE SHUTDOWN

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 TABLE 2

DAVIS BESSE UNIT 1

FIRE HAZARDS ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - HPIS

IBAHN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSITION	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORMER GOALS	REQUIRED FOR M/S C/S	PRIOR -ITY	PHID 1-1HE	HIGH/LOW SPURIOUS BOUNDARY	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY WIRING DIAGRAM /SMT	NOTES
2	HP02A	HP1 2 DISCH 1SD VLV	SDV	A	Closed	Open	AS IS	HP02B	1 2	M/S C/S	1	BD33A		F11C	2P01139A	ES20/26A B	94
2	HP02B	HP1 1 DISCH 1SD VLV	SDV	A	Closed	Open	AS IS	HP02A	1 2	M/S C/S	1	BD33A		F11C	2P01141A	ES20/26A B	94
2	HP02C	HP1 1 DISCH 1SD VLV	SDV	AB	Closed	Open	AS IS	HP02D	1 2	M/S C/S	1	BD33A		F11A	1P01103A	ES20/26A B	94
2	HP31	HP1 PMP 2 RECIRC VLV	SDV	AB	Open	Open	AS IS	HP02C	1 2	M/S C/S	1	BD33A	SC	F11A	1P01105A	ES20/26A B	94
2	HP32	HP1 PMP 1 RECIRC VLV	SDV	AB	Open	Open	AS IS	HP02C	1 2	M/S C/S	1	BD33A	SC	F11A	1P01194A	ES20/26A B	94
2	HP33	HP1 PMP 1 AC LO PMP	PUMP	AB	Off	Off	Off	P197-1	1 2	M/S C/S	1	BD33A		F12E	1P01286A	ES20/65	95
2	P197-1	HP1 PMP 1 AC LO PMP	PUMP	AB	Off	Off	Off	P197-1	1 2	M/S C/S	1	BD33A		DC DC 1	1P01296A	ES20/63	95
2	P198-1	HP1 PMP 1 DC LO PMP	PUMP	AB	Off	Off	Off	P198-1	1 2	M/S C/S	2	BD33A		F12A	1P0106A	ES20/64	94
2	P198-2	HP1 PMP 2 AC LO PMP	PUMP	A	Off	Off	Off	P198-1	1 2	M/S C/S	2	BD33A		F12A	2P02314	ES20/63	95
2	P198-1	HP1 PMP 2 DC LO PMP	PUMP	AB	Off	Off	Off	P198-1	1 2	M/S C/S	2	BD33A		DC DC 2	2P0230A	ES20/64	94
2	P58-2	HP1 PUMP 2	PUMP	A	Off	Off	Off		1 2	M/S C/S	1	BD33A		C3	1PAC111A	ES20/65A	94
2														D1	2PAC111A	ES20/65C	97

PRIORITIES - 1 - REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2 BACKUP COMPONENT 3 ALTERNATE SHUTDOWN COMPONENT  
 PERFORMANCE GOALS - 1 - REACTIVITY CONTROL 2 - REACTOR CORE WATER LEVEL 3 - REACTOR COOLANT SYSTEM 4 - PRESSURE 5 - SUPPORTING SYSTEMS

DAVIS BESSE UNIT 1

FIRE HAZARDS ANALYSIS  
 APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - HVAC

TBRN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSIT	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORMANCE GOALS	REQUIRED FOR HV'S C/S	PRIORITY	PLD T-LINE	HIGH/LOW SPARIOUS IN-MEASURY	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY WIRING DRAWING / SHEET	NOTES
1	C100	TRAV SCR AREA ENH FAN (S, J SW PUMP)	FAN	BD	ON/OFF	ON/OFF	OFF		5	HVS C/S	3	MD260		E120	APR01203A	E60B/51	110
2	C133	LV SCR02 RB VENT FAN 2	FAN	EE	ON/OFF	ON	OFF		5	HVS C/S	1	MD270		E120	2P0F1203A	E60B/040	100
1	C132	EDC RB 1 VENT FAN 1	FAN	EE	ON/OFF	ON	OFF		5	HVS C/S	1	MD270		E120	1P0E1255A	E60B/072	98
3	C132	EDC RB 2 VENT FAN 2	FAN	K	ON/OFF	ON	OFF		5	HVS C/S	1	MD270		E120	1P0E1256A	E60B/072	98
2	C134	EDC RB 3 VENT FAN 3	FAN	J	ON/OFF	ON	OFF		5	HVS C/S	1	MD270		E120	2P0F1256A	E60B/072	98
1	C135	LV SCR02 RB VENT FAN 4	FAN	J	ON/OFF	ON	OFF		5	HVS C/S	1	MD270		E120	1P0E1256A	E60B/072	98
1	C135	LV SCR02 RB VENT FAN 1	FAN	Y	ON/OFF	ON	OFF		5	HVS C/S	1	MD270		E120	1P0E1217A	E60B/040	100
1	C135	ALFP RB VENT FAN 1	FAN	E	ON/OFF	ON	OFF		5	HVS C/S	1	MD26A		E120	1P0E1222A	E60B/099	101
2	C132	ALFP RB VENT FAN 3	FAN	Y	ON/OFF	ON	OFF		5	HVS C/S	1	MD26A		E120	2P0F1205A	E60B/099	101
1	C132	BATT RB VENT FAN 1	FAN	X	ON/OFF	ON	OFF		5	HVS C/S	1	MD26A		E120	1P0E1205A	E60B/22	103
1	C132	BATT RB VENT FAN 2	FAN	Y	ON/OFF	ON	OFF		5	HVS C/S	1	MD26A		E120	1P0E1205A	E60B/22	103
1	C132	SW PUMP RB COH FAN 1	FAN	BE	ON/OFF	ON	OFF		5	HVS C/S	1	MD260		E120	1P0E1212A	E60B/50A	105
1	C132	SW PUMP RB COH FAN 2	FAN	BE	ON/OFF	ON	OFF		5	HVS C/S	1	MD260		E120	1P0E1212A	E60B/50A	105
2	C132	SW PUMP RB F01 FAN 3	FAN	BE	ON/OFF	ON	OFF		5	HVS C/S	1	MD260		E120	1P0E1212A	E60B/50A	105
2	C132	SW PUMP RB F01 FAN 4	FAN	BE	ON/OFF	ON	OFF		5	HVS C/S	1	MD260		E120	2P0F1211A	E60B/040	105
1	M45305	LV SCR02 RB FAN 1 DUMPER	DMPR	Y	OPEN/CLOSE	OPEN	AS 15		5	HVS C/S	1	MD270		E120	1PVE106A	E60B/50A	106
1	M45305A	LV SCR02 RB 425 DUMPER	DMPR	Y	OPEN/CLOSE	OPEN	AS 15	1PWS305B	5	HVS C/S	1	MD270		E120	1PVE106A	E60B/25	106
1	M45305B	LV SCR02 RB 425 DUMPER	DMPR	Y	OPEN/CLOSE	OPEN	AS 15	1PWS305A	5	HVS C/S	1	MD270		E120	1PVE106A	E60B/25	106
2	M45314	LV SCR02 RB 428 DUMPER	DMPR	EL	OPEN/CLOSE	OPEN	AS 15		5	HVS C/S	1	MD270		E120	2PVE106A	E60B/26	107
2	M45314A	LV SCR02 RB 428 DUMPER	DMPR	X	OPEN/CLOSE	OPEN	AS 15		5	HVS C/S	1	MD270		E120	2PVE106A	E60B/26	107
1	M45329A	EDC RB 1 DUMPER	DMPR	K	OPEN/CLOSE	OPEN	FC		5	HVS C/S	1	MD270		E120	1PVE107A	E60B/18A	110
1	M45329B	EDC RB 1 DUMPER	DMPR	K	OPEN/CLOSE	OPEN	FD		5	HVS C/S	1	MD270		E120	1PVE107A	E60B/18A	110
1	M45329C	EDC RB 1 DUMPER	DMPR	K	OPEN/CLOSE	OPEN	FC		5	HVS C/S	1	MD270		E120	1PVE107A	E60B/18A	110
2	M45336A	EDC RB 2 DUMPER	DMPR	J	OPEN/CLOSE	OPEN	FC		5	HVS C/S	1	MD270		E120	1PVE107A	E60B/18A	110
2	M45336B	EDC RB 2 DUMPER	DMPR	J	OPEN/CLOSE	OPEN	FC		5	HVS C/S	1	MD270		E120	2PVE107A	E60B/18A	110
2	M45336C	EDC RB 2 DUMPER	DMPR	J	OPEN/CLOSE	OPEN	FC		5	HVS C/S	1	MD270		E120	2PVE107A	E60B/18A	110
2	M45336C	EDC ROOM 2 DUMPER	DMPR	J	OPEN/CLOSE	OPEN	FC		5	HVS C/S	1	MD270		E120	2PVE107A	E60B/18A	110
1	M45507	BATT RB 429C ATR DMPR	DMPR	Y	OPEN/CLOSE	OPEN	AS 15		5	HVS C/S	1	MD270		E120	1PVE107A	E60B/18A	115
2	M45507	BATT RB 429C ATR DMPR	DMPR	X	OPEN/CLOSE	OPEN	AS 15		5	HVS C/S	1	MD270		E120	1PVE107A	E60B/18A	115

PERIOD 1 - 1 - REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2 - BACKUP COMPONENT 3 - ALTERNATE SHUTDOWN COMPONENT  
 PERFORMANCE GOALS - 1 - REACTIVITY CONTROL 2 - REACTOR CODE AND MAKEUP 3 - REACTOR TRIP AT REACTOR 4 - REACTOR TRIP AT REACTOR 5 - SUPPORT FUNCTIONS







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 APPENDIX A  
 SAFE SHUTDOWN COMPONENT LIST

DAVIS BESSE UNIT 1

SYSTEM - MUPS

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSIT	THIS COMPONENT ALTERNATE SHUTDOWN FOR	PERFORMANCE GOALS	REQUIRED FOR N/S C/S	PRIORITY	PLD 1-LINE	HIGH/LOW SPIRITOUS BOUNDARY	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY W/ YMC ORB /SMI	NOTES
1/2	MB64C	RCP 1-1 SEAL INJ ISO VLV	ADV	AB	OPEN	OPEN	FC		5	N/S C/S	1	MB31B	SC	CS763C	1CV0864C	E520/10A	5 139
1/2	MB66D	RCP 1-2 SEAL INJ ISO VLV	ADV	AB	OPEN	OPEN	FC		5	N/S C/S	1	MB31B	SC	CS717 CS756D CS756C	2CV0866D 2CSF1749A 2CV0866D	E520/10A E520/51 E520/10A	5 139 5 139 5 139
1/2	MB97	SEAL RETURN TO CLEAN WASTE TK ISO VLV	MAN	C	CLOSED	OPEN	N/A		2	N/S C/S	1	MB31A		N/A	N/A	N/A	149
1	P-371B	MBP 1 MAIN LO PUMP	PUMP	AB	ON/OFF	ON	OFF	HP15 TRAIN 1	1 2	N/S C/S	1	NONE		E110	APD1191A	E490/04	120
1	P-371C	MBP 1 ALR LO PUMP	PUMP	AB	ON/OFF	ON	OFF	HP15 P-371B	1 2	N/S C/S	2	NONE		DC WCC 1	APD1175	E490/24	120
1	P-371D	MBP 1 ALR CE <sup>2</sup> LO PUMP	PUMP	AB	ON/OFF	ON	OFF	HP15 TRAIN 1	1 2	N/S C/S	1	NONE		E110	APD1192A	E490/25	120
2	P-372B	MBP 2 MAIN LO PUMP	PUMP	AB	ON/OFF	ON	OFF	HP15 TRAIN 2	1 2	N/S C/S	1	NONE		E11C	BPD1157A	E490/04	120
2	P-372C	MBP 2 ALR LO PUMP	PUMP	AB	ON/OFF	ON	OFF	HP15 P-372B	1 2	N/S C/S	2	NONE		DC WCC 2	BPD217A	E490/24	120
2	P-372D	MBP 2 ALR GEAR LO PUMP	PUMP	AB	ON/OFF	ON	OFF	HP15 TRAIN 2	1 2	N/S C/S	1	NONE		E11C	BPD1168A	E490/25	120
1	P37-1	MBP PUMP 1	PUMP	AB	ON/OFF	ON	OFF	HP15 TRAIN 1	1 2	N/S C/S	1	MB31C		E1	BPD1105A	E490/01A	127
2	P37-2	MBP PUMP 2	PUMP	AB	ON/OFF	ON	OFF	HP15 TRAIN 2	1 2	N/S C/S	1	MB31C		E1	BPD1105A	E490/01A	127
1	P371A	MBP PUMP 1 MAIN GEAR LO PMP	PUMP	AB	ON/OFF	ON	OFF	P371D	1 2	N/S C/S	1	N/A		N/A	N/A	N/A	129A
2	P372A	MBP PUMP 2 MAIN GEAR LO PMP	PUMP	AB	ON/OFF	ON	OFF	P372D	1 2	N/S C/S	1	N/A		N/A	N/A	N/A	129A
1/2	T-4	WASTE-UP TANK	TANK	C	FUNCTIONAL	FUNCTIONAL	N/A	MS1	1 2	N/S C/	1	MB31C		N/A	N/A	N/A	129A
1/2	T15-1	CLEAN WASTE RECEIVER TANK 1-1	TANK	A	FUNCTIONAL	FUNCTIONAL	N/A	T15-2	2	N/S C/	1	MB37C		N/A	N/A	N/A	156
1/2	T15-2	CLEAN WASTE RECEIVER TANK 1-2	TANK	A	FUNCTIONAL	FUNCTIONAL	N/A	T15-1	2	N/S C/	1	MB37C		N/A	N/A	N/A	148
1/2	T5-1	MIXED BED PURIF DEMINERALIZER 1-1	TANK	C	FUNCTIONAL	FUNCTIONAL	N/A	T5-2	2	N/S C/	1	MB31A		N/A	N/A	N/A	147
1/2	T5-2	MIXED BED PURIF DEMINERALIZER 1-2	TANK	C	FUNCTIONAL	FUNCTIONAL	N/A	T5-1	2	N/S C/	1	MB31A		N/A	N/A	N/A	147
1/2	T5-3	CATION BED PURIF DEMINERALIZER 1-3	TANK	G	FUNCTIONAL	FUNCTIONAL	N/A	T5-1 2	2	N/S C/	1	MB31A		N/A	N/A	N/A	147
1/2	WC119	CLEAN WASTE TANKS INLET LINE ISO VLV	MAN	A	CLOSED	OPEN	AS IS		2	N/S C/S	1	MB37C		N/A	N/A	N/A	149
1/2	WC120	CLEAN WASTE TANKS INLET LINE ISO VLV	MAN	C	CLOSED	OPEN	AS IS		2	N/S C/S	1	MB37C		N/A	N/A	N/A	149
1/2	WC1453	CLEAN WST PRI DENIN IN VLV	SOV	G	OPEN	CLOSED	FC		2	N/S C/	1	MB37C	SC	RC3715(DC)	ACV1453A	E560/07	151 5
1/2	WC1743	CLEAN WST RCVA TK IN VLV	SOV	X	OPEN	OPEN	FC		2	N/S C/	1	MB37C		RC1702(AC)	ACV1453B	E560/07	151 5
1/2	WC1747	CLEAN WST RCVR TK IN VLV	SOV	A	OPEN	OPEN	FC		2	N/S C	1	MB37C	SC	RC1702	ACV1743A	E560/11	151 5
1/2	WC3560	DEGASIFIER BYPASS VLV	SOV	G	CLOSED	OPEN	FD		2	N/S C/S	1	MB37D		RC1702(AC)	BCV1747A	E560/11	151 5
														RC1761(DC)	BCV1747A	E560/11	151 5
														CS719(AC)	ACV3560A	E560/36	151 5
														RC3715(DC)	ACV3560A	E560/36	151 5

ACTIVITY: 1 - REQUIRED; 2 - MONITOR; 3 - ALTERNATE SHUTDOWN COMPONENT; 4 - ALTERNATE SHUTDOWN COMPONENT  
 PERFORMANCE GOALS: 1 - REACTIVITY CONTROL; 2 - REACTOR COOLANT LOOP; 3 - REACTOR HEAT REMOVAL; 4 - PRESSURE MONITORING; 5 - SUPPORT FUNCTIONS

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TOLEDO EDISON COMPANY  
 DAVIS-BESSE NUCLEAR POWER STATION  
 TABLE 2

DAVIS BESSE UNIT 1

FIRE HAZARDS ANALYSIS

APPENDIX A  
 SAFE SHUTDOWN COMPONENT LIST

SYSTEM - NI

IRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSN	THIS COMPONENT ALTERNATE SHUTDOWN	PERIOD RANGE CODES	REQUIRED FOR H/S C/S	PRELIMINARY	PHYSICAL BOUNDARY	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY WIRING ORWG / SHEET	NOTES
1	NI-5874A	SOURCE RANGE IND	IND	FF	ON	OFF	OFF		4	H/S C/S	2	MB-300	C-800B	11NI5874E	E1009/73	153
1	NI-5874C	LOCAL SOURCE RANGE IND	IND	DC	ON	OFF	OFF	NI-5874A	4	H/S C/S	1	KL-300	11NI5874E	E1010	153	
2	NI-5875A	SOURCE RANGE IND	IND	FF	ON	OFF	OFF		4	H/S C/S	2	MB-300	C-800B	21NI5875E	E1009/73	153
2	NI-5875C	LOCAL SOURCE RANGE IND	IND	DC	ON	OFF	OFF	NI-5875A	4	H/S C/S	1	MB-300	21NI5875E	E1009/73	153	
1	NI-5875B	SOURCE RANGE IND	IND	FF	ON	OFF	OFF		4	H/S C/S	1	MB-300	C-800B	21NI5875E	E1009/73	153
1	NI-5875D	SOURCE RANGE IND	IND	FF	ON	OFF	OFF		4	H/S C/S	1	MB-300	C-800B	21NI5875E	E1009/73	153
2	NI-5875A	SOURCE RANGE IND	IND	FF	ON	OFF	OFF		4	H/S C/S	2	MB-300	C-800B	21NI5875E	E1009/73	153



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TOLEDO ELECTRIC COMPANY  
 DAVIS-BESSE NUCLEAR POWER STATION  
 TABLE 2

DAVIS-BESSE UNIT 1

FIRE HAZARDS ANALYSIS

APPENDIX A

SAFE SHUTDOWN COMPONENT LIST

SYSTEM - NHT

TRAIN	COMPONENT	DESCRIPTION	TYPE	LOC OF COMP	NORMAL POSITION	SHUTDOWN POSITION	FAILED POSSIB	THIS COMPONENT AS TERMINATE SHUTDOWN FOR	PERFORM MANUCE ODMIS	REQUIRED FOR M/S C/S	PRIOR -ITY	PRIO 1-1 TIME	HIGH/LW SPLIT/LS BOUNDARY	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY WIRING DIAG /SHE	NOTES
2	1E-RC3A6	RCS LOOP 2 HOT LEG TEMP (RM 427)	TE	D	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS755C	2L TRC3A6	E905A/03	104
2	1E-RC3B5	RCS LOOP 1 HOT LEG TEMP (RM 423)	TE	D	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS763A	1L TRC3B5	E905A/1	104
2	1E-RC3A2	RCS LOOP 2 COLD LEG TEMP (RM 427)	TE	D	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	0L NH1540	E720A/08	104
2	1E-RC3B3	RCS LOOP 1 COLD LEG TEMP (RM 423)	TE	D	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS760D	AL NH1833A	E720A/05	104
2	1E-RC3A4	RCS LOOP 2 HOT LEG TEMP (ASP)	HND	R	ON	OFF	OFF		4	M/S C/S	1	40.00B		CS755E	2L TRC3A4	E731A/07	161
2	1E-RC3A5	RCS LOOP 2 HOT LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS762A	1L TRC3A5C	E905A/03	161
2	1E-RC3A6	RCS LOOP 2 HOT LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759D	1CV107AA	E1010	161
2	1E-RC3B2	RCS LOOP 1 HOT LEG TEMP (ASP)	HND	R	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS757C	2L TRC3B2C	E905A/03	161
2	1E-RC3B3	RCS LOOP 1 HOT LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS761A	2CV207AA	E1009	161
2	1E-RC3B4	RCS LOOP 1 HOT LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS761A	1L TRC3B4C	E730A/07	161
2	1E-RC3B6	RCS LOOP 1 HOT LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	1L TRC3B6C	E905A/03	161
2	1E-RC3A2	RCS LOOP 2 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS760D	2L TRC3A2C	E1010	161
2	1E-RC3B3	RCS LOOP 2 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS760D	2L TRC3B3C	E1009	160
2	1E-RC3B4	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	0L NH1540	E720A/08	160
2	1E-RC3B5	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	AL NH1833A	E720A/05	160
2	1E-RC3B6	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	1CV107AA	E1010	160
2	1E-RC3A2	RCS LOOP 2 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS760D	0L NH1540	E720A/08	160
2	1E-RC3B3	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS760D	2CV207AA	E1009	160
2	1E-RC3B4	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	1CV107AA	E1010	160
2	1E-RC3B5	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	AL NH1833C	E720A/05	160
2	1E-RC3B6	RCS LOOP 1 COLD LEG TEMP	HND	FF	ON	OFF	OFF		4	M/S C/S	1	40.00A		CS759B	1CV107AA	E1010	160

PRIORITY - 1 - REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2 BACKUP COMPONENT 3 ALTERNATE SHUTDOWN COMPONENT  
 PREFERRED DUALS - 1 - PARTIAL REDUNDANCY 2 - FULL REDUNDANCY 3 - FULL REDUNDANCY WITH SHARED COMPONENT

APPENDIX A  
 SAFE SHUTDOWN COMPONENT LIST

DAVIS BESSE UNIT 1

SYSTEM

TRAIN	COMPONENT	DESCRIPTION	LOC. OF COMP.	INTERNAL POSITION	SHUTDOWN POSITION	FAILED POSITION	THIS COMPONENT ALTERNATE SHUTDOWN FIN.	SHUTDOWN NAME CODES	MEASURED FOR MFS C/S	RELIEF LTV	PAID LTV	SHUTDOWN REQUIREMENT	POWER SUPPLY	CREDIT SOURCE	INTERVENTION DUMP / SMT	NOTES
1	BC11	PDRV IN PCK VALV	D	SDPH	SDPH/C1050	AS 15			MFS C/S	1	SD30A	N/L	E140	1-4E1403A	1520/12	174
2	BC12A	RCS CODE SAFETY VALVE	D	C1050D	C1050D	C1050D			MFS C/S	1	SD30A	R	N/A	N/A	N/A	206
3	BC130	PRESSURIZER VENT HEADER CONTROL VALV	D	SDPH	SDPH/C1050	AS 15	RC200		MFS C/S	1	SD30A	R	N/A	N/A	N/A	206
1/2	BC200	P2R SUPP. CTMT VENT HDR VALV	D	C1050D	SDPH/C1050	AS 15	RC200		MFS C/S	1	SD30A	R	F12A	2P011205J	C520/11	172
2	BC210	P2R WAPCO SUPP. VALV	D	C1050D	SDPH/C1050	AS 15	RC200		MFS C/S	1	SD30A	R	F11A	2P011205A	C520/14A	172
3	BC230	P2R LIQHD SUPP. VALV	D	C1050D	SDPH/C1050	AS 15	RC200		MFS C/S	1	SD30A	R	F11A	2P011205A	C520/14	172
2	BC230B	P2R PCB	D	C1050D	SDPH/C1050	FC	RC200		MFS C/S	1	SD30A	R	F11A	2P011205A	C520/14	172
3	BC25	SG 1 HI-PT VENT VALV	D	C1050D	SDPH/C1050	FC	RC4000		MFS C/S	1	SD30A	R	F11A	2P011205A	C520/14	172
1	BC400A	SG 1 HI-PT VENT VALV	D	C1050D	SDPH/C1050	FC	RC4000		MFS C/S	1	SD30A	R	F11A	2P011205A	C520/14	172
2	BC400B	SG 2 HI-PT VENT VALV	D	C1050D	SDPH/C1050	FC	RC4000		MFS C/S	2	SD30A	R	F11A	2P011205A	C520/14	172
3	BC4010A	SG 2 HI-PT VENT VALV	D	C1050D	SDPH/C1050	FC	RC4000		MFS C/S	1	SD30A	R	F11A	2P011205A	C520/14	172
2	BC10B	SG 3 HI-PT VENT VALV	D	C1050D	SDPH/C1050	FC	RC4000		MFS C/S	3	SD30A	R	F11A	2P011205A	C520/14	172
3	BC4012	COND LIC SUPP-2 SUPP. VALV	D	C1050D	SDPH/C1050	FC	RC200		MFS C/S	3	SD30A	R	F11A	2P011205A	C520/14	172

FIGURE 1 - MINIMUM COMPONENT FOR SHUTDOWN 2 BACKUP COMPONENT 3 ALTERNATE SHUTDOWN COMPONENT  
 FIGURE 2 - MINIMUM COMPONENT FOR SHUTDOWN 2 - REACTOR CONTROL VALV  
 FIGURE 3 - MINIMUM COMPONENT FOR SHUTDOWN 2 - REACTOR CONTROL VALV





DAVIS BESSE UNIT 1

FIRE HAZARDS AREA 5515

APPENDIX A  
 SAFE SHUTDOWN COMPONENT LIST

SYSTEM - SWS

TRIP	COMPONENT	DESCRIPTION	TYPE	LINK C/S C/S	NORMAL POSITION	SHUTDOWN POSITION	FAILURE MODES	INITIAL ACTION FOR STATUS	INITIAL ACTION FOR STATUS	REQUIRED FOR MPS, C/S	POWER TYPE	FIELD LINE	INITIAL ACTION FOR STATUS	POWER SUPPLY	CIRCUIT SCHEME	ELEMENTARY EVENT NUMBER	NOTES
1/2	P150	BACKUP SW PUMP	PUMP	RD	OFF	ON	OFF	SWS TRIP IN 1B2	5	MPS C/S	3	WB11A	WPC2011A	E-002/17D	182		
1	P1-1	SW PUMP 1	PUMP	BE	ON	ON	OFF		5	MPS C/S	1	WB11A	WPC2011A	E-002/17D	179		
1	P1-2	SW PUMP 2	PUMP	BE	ON	ON	OFF		5	MPS C/S	1	WB11A	WPC2011A	E-002/17D	179		
1/2	P1-3	SW PUMP 3	PUMP	BE	ON	ON	OFF	P1-1, P1-2	5	MPS C/S	1	WB11A	WPC2011A	E-002/17D	179		
1	SWS1556	CAC 1 OUT 150 VLV	SOV	A	OPEN/CLOSE	OPEN	FO		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	179		
2	SWS1557	CAC 2 OUT 150 VLV	SOV	A	OPEN/CLOSE	OPEN	FO		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	184		
1/2	SWS1558	CAC 3 OUT 150 VLV	SOV	A	OPEN/CLOSE	OPEN	FO		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	184		
1	SWS1566	CAC 1 IN 150 VLV	M/V	A	OPEN	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	184		
2	SWS1567	CAC 2 IN 150 VLV	M/V	A	OPEN	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	184		
1/2	SWS1568	CAC 3 IN 150 VLV	M/V	A	CLOSE	CLOSE	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	184		
1	SWS1582	MEP 1 SELECT VLV FROM SW	M/V	E	CLOSE	OPEN/CLOSE	AS IS		5	C/S	1	WB11C	WPC2011A	E-002/17D	184		
2	SWS1583	APP 2 SELECT VLV FROM SW	M/V	A	CLOSE	OPEN/CLOSE	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	184		
2	SWS1585	1PCW HR HP HEADER 150 VLV	M/V	BC	OPEN/CLOSE	CLOSE	AS IS		5	MPS C/S	1	WB11A	WPC2011A	E-002/17D	186		
1	SWS1586	1PCW HR HP HEADER 150 VLV	M/V	BC	OPEN/CLOSE	CLOSE	AS IS		5	MPS C/S	1	WB11A	WPC2011A	E-002/17D	186		
1	SWS1587	SW FROM CC HR 1 150 VLV	SOV	T	OPEN/CLOSE	OPEN	FO		5	MPS C/S	1	WB11B	WPC2011A	E-002/17D	186		
1/2	SWS1588	SW FROM CC HR 3 150 VLV	SOV	T	OPEN/CLOSE	OPEN	FO		5	MPS C/S	1	WB11B	WPC2011A	E-002/17D	186		
2	SWS1533	SW FROM CC HR 2 150 VLV	SOV	T	OPEN/CLOSE	OPEN	FO		5	MPS C/S	1	WB11B	WPC2011A	E-002/17D	186		
1	SWS1537	CTRM EWS COND LINE IN VLV	M/V	HA	CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11B	WPC2011A	E-002/17D	182		
2	SWS1538	CTRM EWS COND LINE IN VLV	M/V	HA	CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11B	WPC2011A	E-002/17D	182		
1	SWS1539	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1540	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1541	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1	SWS1542	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1543	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1	SWS1544	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1545	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1	SWS1546	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1547	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1	SWS1548	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1549	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1	SWS1550	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1551	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1	SWS1552	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
2	SWS1553	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		
1/2	SWS1554	SW TO HT 150 VLV	M/V	BC	OPEN/CLOSE	OPEN	AS IS		5	MPS C/S	1	WB11C	WPC2011A	E-002/17D	182		

REVISIONS - 1. REQUIRED MINIMUM COMPONENT FOR SHUTDOWN 2. BACKUP COMPONENT 3. AT NORMAL SHUTDOWN COMPONENT  
 PERFORMANCE GOALS - 1. MAINTAIN COMPONENT 2. MAINTAIN COMPONENT 3. MAINTAIN COMPONENT 4. MAINTAIN COMPONENT