
Data Summaries of Licensee Event Reports of Valves at U.S. Commercial Nuclear Power Plants

Volume 2, Appendices A-N
January 1, 1976 to December 31, 1978

Prepared by Warren H. Hubble, Charles Miller

EG&G Idaho, Inc.

Prepared for
U. S. Nuclear Regulatory
Commission

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January 1, 1976 - December 31, 1978

Manuscript Completed: April 1980
Date Published: June 1980

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Prepared for
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Washington, D.C. 20555
NRC FIN No. A6276

ABSTRACT

This report consists of three volumes; Volume 1 contains the main report, and Volumes 2 and 3 contain the complete Appendix.

The report describes the creation of a computer-based data file from Licensee Event Reports (LERs) of valves at commercial nuclear power plants for the period January 1, 1976, to December 31, 1978. In addition to creation of the file, summaries of the data contained in the file were made to obtain data for risk and statistical purposes. Gross constant failure rates were estimated for major valve types in selected safety systems. Explanations and summary tables of the results are provided.

FOREWORD

This report is one in a series summarizing the statistics of Licensee Event Reports (LERs) as recorded by the U.S. Nuclear Regulatory Commission. The goal of the report is twofold: (a) to summarize the data for risk and statistical analyses, and (b) to obtain gross constant failure rate estimates and gross categorizations of the failures.

Because subjective judgments had to be made regarding population sizes and pertinence of recorded events, and because some component failures may not be recorded in the LERs, the component failure rates estimated in this report should be interpreted as being only tentative gross indicators of the true failure rates. The analyst himself must validate the applicability of the LER-derived failure rates for his own particular use. Furthermore, because LER reporting requirements can differ from plant to plant, comparisons of plant-to-plant failure rates should be interpreted with care; a higher failure rate may simply be because of stricter reporting requirements. As more data are collected and more analyses are performed in the future, improved failure rate estimates will be produced.

The failure rates given in the report are only one of many kinds of information presented. The tables and discussions give important information on failure classifications, according to failure modes, failure causes, and systems affected. Gross time trends are examined. Human errors are identified as are common cause failures and recurring failures. Each LER analyzed is presented in a useful, summarized form, and all evaluations are presented such that you can modify the authors' calculations or perform your own evaluations if you so desire.

William E. Vesely
Project Manager
November 16, 1979

ACKNOWLEDGMENTS

We express sincere appreciation to the following persons for their assistance in the preparation of this report:

N. D. Cox, J. P. Poloski, M. E. Stewart, and W. H. Sullivan for their assistance in the review of both the technical aspects and the contents of this report.

Q. R. Decker for his assistance in performing the necessary computer work associated with this project.

J. A. Johnston for her conscientious and timely efforts in the word processing and text composition of this report.

G. Hammer for his editing skills used in the final revision of this report.

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NOMENCLATURE

Terms and acronyms used in this report are defined herein.

Terms

1. Component - A component is the largest entity of hardware for which data are most generally collected and expected to be available (for example, pump with motor, valve with operator, amplifier, pressure transmitter). It is generally an off-the-shelf item procured by the system designer as a basic building block for his system. It would be distinguished from seals, bearings, nuts, bolts, and other piece parts from which the component is manufactured.
2. System - A system is a collection of components arranged so as to provide a desired function (for example, Containment Spray System, Residual Heat Removal System, High Pressure Coolant Injection System).
3. Fault - A fault is any undesired state of a component or system. A fault does not necessarily require failure (for example, a valve might be closed when it should be open because of some other component input or human error--a "command fault").
4. Failure - A failure is a subset of a fault and represents an irreversible state of a component such that it must be repaired in order for it to perform its design function. Failures are sometimes classified as primary or secondary failures. However, in classifying failures for this report, no distinction has been made between these two classifications:
 - a. A primary failure is the so called "random failure" found in the literature. It results from no external cause.

- b. A secondary failure results when the component is subject to conditions that exceed its design envelope (for example, excessive voltage, pressure, shock, vibration, temperature).
- 5. Common Cause Failure - Common cause failures are two or more redundant components failing together because of a single cause. The common cause events that cause multiple failures are usually secondary failures. Human errors are a special type of command fault that are considered common cause for multiple failures.
- 6. Failure Mode - The description of the manner in which a component ceases to perform its intended function.
- 7. Failure Mechanism - The identified cause that prevented the component from performing its intended function.
- 8. Demand Failure Rate - The probability (per demand) that a component will fail to operate when required to start, change state, or function.
- 9. Standby Failure Rate - The probability (per hour) of failure for those components that are normally dormant or in a stand-by state until tested or required to operate or function for a period of time.
- 10. Operating Failure Rate - The probability (per hour) of failure for those operating components required to operate or function for a period of time.

Acronyms

ADS	-	Automatic Depressurization System
AOV	-	Air-Operated Valve
BWR	-	Boiling Water Reactor
ESF	-	Engineered Safety Features
FSAR	-	Final Safety Analysis Report
HPCI	-	High Pressure Coolant Injection

LER - Licensee Event Report
LPCI - Low Pressure Coolant Injection
MOV - Motor-Operated Valve
NPRDS - Nuclear Plant Reliability Data System
NRC - Nuclear Regulatory Commission
NSSS - Nuclear Steam Supply System *
P&ID - Piping and Instrumentation Diagram
PORV - Power-Operated Relief Valve
PPS - Plant Protection System
PSAR - Preliminary Safety Analysis Report
PWR - Pressurized Water Reactor
RHR - Residual Heat Removal
SOV - Solenoid-Operated Valve

APPENDIX A

DISCUSSION OF THE CAUSES OF VARIATIONS IN LER REPORTING

APPENDIX A

DISCUSSION OF THE CAUSES OF VARIATIONS IN LER REPORTING

There are generally two criteria used by the nuclear power utilities to determine reporting requirements for failures. These are (a) technical specifications for each individual plant and (b) Regulatory Guide 1.16.^{A-1} Variation exists in the reporting requirements for individual plants. For example, generally, the technical specifications for plants licensed prior to January 1, 1976, were independently written by each specific plant without any planned uniformity between plants. All plants licensed after January 1, 1976, used standardized technical specifications, which helped create more uniform reporting. Also, there have been changes in the rules that govern Licensee Event Report (LER) reporting, to ensure greater uniformity. These changed reporting rules, and the standardized technical specifications, are expected to result in more uniform LER reporting after January 1, 1976.

The above "mechanical" causes for LER reporting variations are explainable and expected. However, there are further reporting variations caused by (a) differences in interpretation of the rules for submitting incident reports, (b) the difficulty of determining the extent of safety and non-safety systems, therefore, making it difficult to determine what failures are, or are not, required to be reported, and (c) the degree of importance assigned to the LER reports by the management of each utility. We have seen variation in both the quantity and quality of LERs between similar plants, where one would expect a more uniform reporting. We have attributed these variations to the reasons mentioned above.

The one thing that seems to have most hindered the development of uniform reporting is the lack of agreement of what is intended by an LER. Many persons feel that LERs are intended to highlight problem areas within the safety systems. Some feel that the LERs ought to be used to highlight generic problem areas. And, many of these same people do not feel that

these uses are compatible with the need to determine failure rate information.

All of these points may serve to confuse the individual responsible for reporting events. Hence the variations in the quality and quantity of LERs received by the Nuclear Regulatory Commission may be explained, in part, by these points. For further discussion of the causes of variations in LER reporting, see Reference A-2.

REFERENCES

- A-1. U.S. Nuclear Regulatory Commission, Reporting of Operating Information, Appendix A, "Technical Specifications," Regulatory Guide 1.16, Revision 4, August 1975.
- A-2. G. L. Boner and H. W. Hanners, Enhancement of On-site Emergency Diesel Generator Reliability, NUREG/CR-0660, 1979, pp. I-4, I-5, IV-5, IV-6, V-10, and V-13.

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APPENDIX B

CODING SCHEME USED TO CREATE RECORDS IN THE DATA FILE

The goal of this appendix is to show how the 18 items of interest contained in a Licensee Event Report (LER) were coded into records (one record for each report) to form the computer-based data file.

Before discussing each of the 18 items in detail, the general makeup and use of the computer-based data file should be discussed. The data file consists of 1675 records, each record corresponding to 1 report. Each of these records contains 18 fields, 1 field for each of the 18 items of interest. Our completed data file is a compressed form of data that describes valve-related problems reported to the Nuclear Regulatory Commission (NRC) in LERs from January 1, 1976, to December 31, 1978.

In an effort to tie together the coding of LERs into records and show how the records are presented in the form of computer printout, three examples are presented at the end of this appendix. Three LERs are presented as well as a discussion of the rationale used to code each of them into records. A computer printout containing the example records is also given. This printout is representative of all sorts presented in this report.

In the following discussion of the 18 data fields, the acronym used for each field is contained in parentheses following the name of the field. These acronyms appear above each column of data in the various sorts presented in this report.

NSSS VENDOR (VEN)

The VEN field was used to store the single-character code for the Nuclear Steam Supply System (NSSS) vendor of the plant submitting the LER. The following list gives the code, corresponding NSSS vendor, and reactor type; Pressurized Water Reactors (PWRs) and Boiling Water Reactors (BWRs) were the only reactor types considered in this analysis:

<u>Code</u>	<u>NSSS Vendor</u>	<u>Reactor Type</u>
B	Babcock & Wilcox	PWR
C	Combustion Engineering	PWR
G	General Electric	BWR
W	Westinghouse	PWR

The VEN field can be used as a sort key.

PLANT (PLANT)

A three-character field was used to store the code that identifies the commercial nuclear power plant submitting the LER, for example, Zion 1 is coded Z11. Refer to Appendix E for a complete list of the plant codes. The PLANT field can be used as a sort key.

CONTROL NUMBER (CONT. NO.)

The six-digit control number, assigned to each LER by the NRC, was used to uniquely identify each record in the data file. Some LERs contained more than one report, however. If an LER contained multiple reports, a unique control number had to be assigned to each coded record resulting from these reports. The control number used to identify these records was created by adding an alphabetic character to the end of the NRC control number.

Two records with identical control numbers, except for the alphabetic character, tell the reader that both of these reports came from one LER. This ensures traceability from each record back to the original LER while retaining a unique alphanumeric seven-character identification code within the data file. An example of an LER containing more than one report could be the following LER narrative: "The HPCI system failed to inject coolant into the core because a motor-operated valve failed to open. The backup system failed also when an air-operated valve closed on loss of service air." This LER contains two separate reports, requiring two different records in the data file, because two different valve types are involved. A more subtle example would involve two motor-operated valves failing to

open; one because of a faulty limit switch, the other because of a breaker supplying power to the valve being open. Two separate records are required in this case also. One event is a failure while the other event is a command fault.

A control number can also have an asterisk (*) on the end. This asterisk tells the reader that this record contains information on more than one component. To illustrate this, assume that an LER states, "Five motor-operated valves failed to open during a test due to hardened grease in their torque switches." Rather than coding five identical records (except for unique control numbers), one record is coded. Its control number would have an asterisk as the seventh character, indicating a multiple component failure. Control numbers containing asterisks will, therefore, always have a number, two or greater, in the COMP NUM field. The use of the COMP NUM field will be explained later. Although the CONT. NO. field can be used as a sort key, we have not encountered a need to use it.

EVENT DATE (EVENT DATE)

A six-digit field was used to record the date on which the event occurred or was discovered (that is, two digits each for the month, day, and year). January 3, 1976, would appear as 010376 under the EVENT DATE. If a valve is discovered in the failed state, the date of this discovery is reported as the event date even though the actual failure may have occurred on an earlier date. The month, day, and year can be used as sort keys.

SYSTEM (SYS)

A list of the system names and codes by reactor type is provided in Table B-1. The SYS field can be used as a sort key.

TABLE B-1. LIST OF SYSTEM NAMES AND CODES

Code	System (PWR)	Code	System (BWR)
A		A	Automatic Depressurization
S	Auxiliary Feed	B	
C	Containment Isolation (Incl. Penetrations)	C	Containment Isolation (Incl. Penetrations)
D		D	Low Pressure Core Spray
E	Electric Power	E	Electric Power
F	Containment Spray Injection	F	Containment Spray Injection
G	Chemical Volume Control (Make-Up)	G	Standby Liquid Control (Boron)
H	High Pressure Coolant Injection	H	High Pressure Coolant Injection
I		I	
J	Component Cooling Water	J	Component Cooling Water
K	Reactor Coolant	K	Reactor Coolant Recirc
L	Low Pressure Coolant Injection (RHR)	L	Low Pressure Coolant Injection (RHR)
M	Reactor Protection (Control Rods)	M	Control Rod Drive Hydraulic (Scram)
N	Nonsafety-Related	N	Nonsafety-Related
P	System Unknown/Not Applicable	P	System Unknown/Not Applicable
Q		Q	Reactor Core Isolation Cooling
R	Containment Fan Cooling System	R	
S	Service Water	S	Service Water
T		T	Standby Gas Treatment
U	Condensate and Feed	U	Condensate and Feed
V		V	
W	Main Steam	W	Main Steam
X	Reactor Protection (PPS)	X	Reactor Protection (PPS)
Y	Containment Air/Effluent; Purif./Sample.	Y	Containment Air/Effluent; Purif./Sample.
Z	Failed Fuel Element Detection	Z	Failed Fuel Element Detection

COMPONENT TYPE (COMP)

Using the information available in the LERs, the type of valve was classified as precisely as possible. The following is the list of the codes and valve types:

<u>Code</u>	<u>Valve Type</u>
MV	Motor-Operated Valve (Electric)
AV	Pneumatic-Operated Valve
SV	Solenoid-Operated Valve
HV	Hydraulic-Operated Valve
RM	Remote-Operated Valve
XV	Manual-Operated Valve
CV	Check Valve
RV	Relief Valve/Safety Valve
DV	Damper Valve
UV	Operator Type or Function Not Stated

The COMP field can be used as a sort key.

FAILURE CODE (FAIL CODE)

A three-character field was used to indicate both the failure mode and the failure mechanism. The first alphabetic character indicates the failure mode; the remaining two numeric characters indicate the failure mechanism. Both of these fields can be used as sort keys. Following are two lists of codes for both failure modes and failure mechanisms:

<u>Code</u>	<u>Failure Mode</u>
A	Failed to Open
B	Failed to Close
C	Internal Leakage
D	External Leakage/Rupture
E	Reverse Leakage (Check Valves)
F	Failed to Operate as Required

<u>Code</u>	<u>Failure Mode</u>
G	Plugged (Fails to Remain Open)
H	Premature Open
I	Maintenance/Replacement
T	Technical Specification Violation
V	Improper Valve Configuration

<u>Code</u>	<u>Failure Mechanism</u>
00	Unknown
01	Personnel (Operation)
02	Personnel (Maintenance)
03	Personnel (Testing)
04	Design Error
05	Fabrication/Construction/Quality Control
06	Procedural Discrepancy
07	Normal Wear
08	Excessive Wear
09	Corrosion
10	Foreign Material Contamination
11	Excessive Vibration
12	Mechanical Controls/Parts; Failed or Out of Adjustment
13	Seal/Gasket Failure/Problem
14	Packing Failure/Problem
15	Bellows/Boot Failure/Problem
16	Electrical Input Failure/Problem
17	Bearing/Bushing Failure/Problem
18	Weld Failure
19	Lack of Lubrication
20	Electric Motor Operator Failure/Problem
21	Solenoid Failure/Problem
22	Leaking/Ruptured Diaphragm
23	Torque Switch Failure/Problem
24	Failure of Component Supply System
25	Seat/Disc Failure/Problem

<u>Code</u>	<u>Failure Mechanism</u>
26	Limit Switch Failure/Problem
27	Pilot Valve Failure/Problem

TYPE OF EVENT (TYPE)

The type of event was coded into a single-character field. If an event was considered a random failure, the field was left blank. The TYPE field can be used as a sort key. The following is the list of the codes corresponding to the type of events:

<u>Code</u>	<u>Type of Event</u>
B	Recurring Common Cause
C	Common Cause
R	Recurring
S	Command Fault
T	Recurring Command Fault

EVENT CLASSIFICATION (CLASS)

If possible, events were classified as having occurred because of a Change of State, coded D, or Age, coded T. We considered personnel errors while interacting with valves as Change of State events.

In some cases, we could not specifically classify an event as either Change of State or Age; these were coded U for Unknown. The CLASS field can be used as a sort key.

NUMBER OF COMPONENTS (COMP NUM)

The COMP NUM field is a two-digit field used to store the number of components reported as experiencing a failure or a command fault in a single report. Most reports state only a single valve experienced a failure or a command fault, and the COMP NUM field was left blank, implying the Number 01.

This field is used for counting events or reports rather than sorting them.

NUMERICAL KEY WORDS (KEY)

The KEY field is a single-character alphanumeric field used to show the reader that the number in the COMP NUM field is not an explicit number, but was obtained subjectively based on key words or phrases contained in the LERs. The coded key words and their assigned numbers are listed as follows:

<u>Code</u>	<u>Key Word</u>	<u>Number Assigned</u>
V	Valves	2
A	Some	3
B	Various	3
S	Several	3
Z	Other	$\geq 2^a$

A blank field indicates the number of components was explicitly stated in the LER. By alerting the reader to possible inaccuracies in the data, it is hoped that the reader will revise the data as necessary. The KEY field can be used as a sort key.

FAILURE MODE DESCRIPTION (FAILURE MODE)

A short concise description of the LER failure mode was condensed into a 50-character alphanumeric field called FAILURE MODE. This field was not used as a sort key.

a. Number assigned varies based upon phrase contained in the LER narrative.

FAILURE MECHANISM DESCRIPTION (FAILURE MECHANISM)

A short, concise description of the LER failure mechanism (cause) was condensed into a 41-character alphanumeric field called FAILURE MECHANISM. This field was not used as a sort key.

Both the FAILURE MODE and FAILURE MECHANISM descriptions may contain more information than that appearing in the record in coded form. The number of a valve, such as MDV-121A, or a series of causes, such as valve stuck because of lack of lubrication because of procedural problems, are examples of such information.

The 14 items discussed so far are all that can be printed as a single line on a computer printout. Additional information is available, however, in the form of the remaining four data items. A computer listing containing all of the first 14 items in each record is presented in Appendix G, while a computer listing containing the last four items is presented in Appendix H.

MANUFACTURER (MFG.)

The MFG. field is a four-character alphanumeric field used to store component manufacturer data. A list of codes and manufacturers used in this report are shown in Table B-2. This list only includes those manufacturers reported in the valve LERs. The manufacturers' names and codes used in Table B-2 were obtained from Exhibit J of Reference B-1. Many LERs failed to report any manufacturer and were coded ZZZZ in the MFG. field. The MFG. field can be used as a sort key.

ACTIVITY RESULTING IN DISCOVERY (ACTIVITY)

This single-character alphanumeric field contains a code indicating the activity taking place that directly led to the discovery of the event. The codes and activities are listed as follows. The ACTIVITY field can be used as a sort key.

TABLE B-2. LIST OF MANUFACTURER NAMES AND CODES^a

Code	Manufacturer	Code	Manufacturer
A180	Allis Chalmers	C027	California Filter - CALFICO
A200	Aloyco, Inc.	C182	Center-Line Inc.
A220	American Air Filter Co., Inc.	C255	Chapman Valve & Mfg.
A285	American Machine & Foundry Company	C256	Chapman Div. of Crane Co.
A310	American Standard Industries	C295	Chemiquip Products Co., Inc.
A325	American Tel & Radio	C311	Chicago Fluid Power
A340	American Warming & Ventilating Inc.	C339	Circle Seal
A391	Anchor/Darling Valve Co. (see Vendor D020)	C470	Colt Industries, Inc.
A394	Anchor Packing Co.	C490	Combustion Engineering, Inc.
A395	Anchor Valve Co.	C502	Commonwealth Edison Company
A415	Anderson, Greenwood & Co.	C515	Conax Corp.
A485	Armstrong Mach.	C530	Conoflow Corp.
A499	ASCO	C567	Consolidated Safety Relief Valves
A507	Associated Control Equipment	C587	Continental Equip. Co.
A515	Astro Industries, Inc.	C600	Control Components
A535	Atkomatic Valve Co., Inc.	C630	Contromatics Corp.
A552	Atlas Valve	C631	Conval Inc.
A585	Atwood & Morrill Co., Inc.	C635	Copes-Vulcan, Inc.
A610	Automatic Switch Co. (ASCO)	C665	Crane Company
A613	Automatic Valve Company	C672	Crane, John Co.
A660	AVCO Corp. - Tulsa Operation	C710	Crosby Valve & Gage Co.
B015	Babcock & Wilcox Company	C715	Crosby-Ashton Gage Co.
B040	Bailey Instrument Co., Inc.	C780	CVI Corp.
B070	Barksdale Valve Company	D020	Darling Valve & Mfg. Co. (see Vendor A391)
B080	Barton Inst. Co., Division of ITT	D025	Darling/Anchor (see Vendor A393)
B130	Bechtel Corp.	D147	Dezurik
B135	Beckman Instruments, Inc.	D232	Dragon Valve, Inc.
B237	Bettis Corporation	D243	Dresser Industrial Valve & Inst. Div.
B290	Black-Sivals-Bryson	D245	Dresser Industries, Inc.
B485	Bruce GM Diesel, Inc.		

TABLE B-2 (continued)

Code	Manufacturer	Code	Manufacturer
E090	Edwards Co.	1005	I-T-E Circuit Breaker
E095	Edwards Valves Div.	1075	Ingersoll-Rand Co.
F011	Fairis Engineering	1200	Isotope Products Laboratories
F035	Farris Engineering	1206	ITT General Controls
F081	Fenwall, Inc.	1008	ITT Hammel Dahl Conoflow
F103	Fike Metal Co.	J010	James Bury Corp.
F125	Fisher Continental	J036	Jenkins Valve Corp.
F127	Fisher Flow Control Div. (Rockwell Inter.)	J073	Johnson Controls Inc.
F130	Fisher Controls Co.	J085	Johnson Manufacturing
F135	Fisher Governor	J090	Johnson Service Co.
F167	Fluid Controls Corp.	K030	Kavlico Electronics Inc.
F195	Franklin Institute Research Laboratories	K075	Kennedy Valve Mfg. Co.
F212	Frumser Heat Transfer Ltd (Canada)	K085	Kerotest Manufacturing Corp.
G080	General Electric Co.	K125	Kieley & Mueller Co.
G153	Gimbel Machine Works	K235	Kunkle Valve Co.
G167	Goddard Manufacturing Corp.	L200	Limitorque Corp.
G202	GPE Controls	L263	Lonegan, J. E., Company
G250	Greer Hydraulics, Inc.	L265	Lonegan
G255	Grinnell Corp.	L300	Lunkenheimer Co., The
G257	Grinnell Industrial Piping, Inc.	M065	Manning-Maxwell-Moore
G265	Grove Valve & Regulator Co.	M090	Marotta Scientific Controls, Inc.
H015	Hagan Controls	M095	Marotta Valve Corp.
H035	Hammel Dahl	M115	Mason & Hanger-Silas Mason Co., Inc.
H037	Hancock Co.	M120	Masoneilan International, Inc.
H195	Hills-McCanna Co.	M322	Miller Fluid Power Co.
H230	Hoke, Inc.	M358	Mission Manufacturing Co.
H343	Hydro Line Mfg. Company		

TABLE B-2 (continued)

Code	Manufacturer	Code	Manufacturer
M360	Mission Valve and Pump Co.	S075	Schutte and Koerting Co.
M430	Moore Products Company	S149	Shan-Rod Corp.
N015	National Acme Co.	S205	Singer Co., The
N030	National Electric Sign	S212	Skinner Uniflow Valves
N305	Nuclear Measurements Corp.	S413	Stockham Valve Co.
0020	Offshore Power Systems	T020	Target Rock Corporation
0034	Oilrite Corporation	T083	Teledyne Corporation
P014	Pacific Air Products	T095	Teledyne-Farris Engineering
P032	Pacific Valves Inc.	T340	Tufline
P070	Parker Hannifin Corp.	V030	Valcor Engineering Corp.
P195	Philadelphia Gear Corp.	V080	Velan Engineering Companies
P295	Porter, H. K., Co., Inc.	V085	Velan Valve Corp.
P296	Porter Peerless Motors	V095	Versa Products
P305	Powell Co., Wm., The	V105	Vickers, Inc.
P312	Powell, M. W., Co.	V135	Vogt, Henry, Machine Co.
P335	Pratt Whitney Aircraft	W030	Walworth Co.
P340	Pratt, Henry, Co.	W120	Westinghouse Electric Corporation
R082	Ramcon Corp.	W121	Westinghouse Electric Company (Elev. Div.)
R165	Reliance Electric Company	W127	Weston Hydraulics Div.
R197	Republic Mfg. Co.	W165	Whitey Co.
R290	Robertshaw Controls Co.	W185	Whittaker Corp.
R322	Robotarm	W220	Williams Products, Inc.
R340	Rockwell Manufacturing Co.	W255	WKM Valve Div.
R344	Rockwell-International	W315	Worthington Corp.
		ZZZZ	Unknown/Not Stated

a. These codes and manufacturers' names were obtained from Exhibit J of Reference B-1.

<u>Code</u>	<u>Activity</u>
D	Demand on Component ^a
M	Maintenance
N	Normal Operation
R	Records Review
T	Testing
U	Unknown

OPERATOR AND VALVE TYPE (OPERATOR) (VLV TYPE)

LERs submitted after January 1, 1978, contained specific information concerning operator or valve type. These fields contain a single- and a double-character code, respectively. The codes and corresponding operator and valve types are shown in the following two lists. Both fields can be used as a sort key.

<u>Code</u>	<u>Operator</u>
U	Unknown/Not Applicable
A	Air Operator (Cylinder, Diaphragm)
H	Hydraulic
M	Motor Operator (ac)
N	Motor Operator (dc)
S	Solenoid Operator
X	Manual

<u>Code</u>	<u>Valve Type</u>
UU	Unknown
CK	Check
BA	Ball
BU	Butterfly
DI	Diaphragm
GA	Gate

a. Only demands resulting from an emergency or accident situation are included in this classification.

<u>Code</u>	<u>Valve Type</u>
GL	Globe
NE	Needle
PL	Plug
DM	Damper
RV	Relief/Safety

EXAMPLE CASES

Three selected examples of LERs are shown in Figure B-1. From these three LERs, as with all others, 18 items of data were coded into records and stored in the computer-based data file. Selected data were then extracted from the data file to form the one-liners shown in Figures B-2 and B-3. These three examples were selected to demonstrate the process of coding the LERs into records.

Zion 1 Example

The date of initial criticality for each plant was used to determine whether an LER would be included in the data file. All LERs prior to initial criticality were left out of the file. In this case, the criticality date for Zion 1 is June 19, 1973; therefore, this LER was included.

Westinghouse is the NSSS vendor at Zion 1; therefore, a W appears in the first column of the one-liner (Figures B-2 and B-3) under VEN. Z11 refers to the plant name, Zion 1. The 020565 in the CONT. NO. column is the control number based on the original NRC assigned number. It serves to correlate the record with the LER. The 012578 represents the event date, January 25, 1978, on which the event occurred or was discovered. The C, under SYS, refers to the containment isolation system in which the valve resides. Some LERs were not clear as to what system the valve should be associated. If possible, the valve was put into the most important system, in terms of plant safety, that it could be deemed a part of.

The component type (COMP) was an air-operated valve (AV). Note that the LER identified the component as an ac solenoid. The solenoid valve

LER OUTPUT ON VALVES AND VALVE OPERATORS
 FROM 1976 THROUGH DECEMBER 31, 1978,
 OUTPUT SORTED BY FACILITY AND EVENT DATE

FACILITY/SYSTEM/ COMPONENT/COMPONENT SUBCODES/ CAUSE/CAUSE SUBCODE/ DISCOVERY/MANUFACTURER	DOCKET NO./ LER NO./ CONTROL NO.	EVENT DATE/ REPORT DATE/ REPORT TYPE	EVENT DESCRIPTION/ CAUSE DESCRIPTION
ZION-1 CNTNMNT ISOLATION SYS + CONT VALVE OPERATORS SOLENOID-AC NOT APPLICABLE COMPONENT FAILURE MECHANICAL ROUTINE TEST/INSPECTION AUTOMATIC SWITCH CO (ASCO)	05000295 78-017-03L-0 020565	012578 022478 30-DAY	DURING NORMAL TESTING, THE NON-FILTERED VENT HEADER ISOLATION VALVE, 1FCV-VN02A, FAILED TO CLOSE PLACING THE CONTAINMENT ISOL. SYSTEM IN A DEGRADED MODE. THE REDUNDANT ISOLATION VALVE, 1FCV-VN02B, WAS OPERABLE. THUS THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT JEOPARDIZED. THE PROBLEM WAS TRACED TO A STUCK SOLENOID VALVE ON THE AIR LINE TO THE VALVE OPERATOR. SIMILAR EVENTS: 76-44, 46; 77-6, 64.
			THE ASCO SERIES 8320 SOLENOID VALVE FAILED BECAUSE IT'S ACTUATING PISTON WAS STUCK FROM CRUD IN THE AIR SUPPLY. THE CRUD COMES FROM CROSSTYING THE INSTRUMENT AND SERVICE AIR SYSTEMS. THIS OVERLOADS THE AIR DRYERS. A 3RD INST. AIR COMPRESSOR IS BEING INSTALLED TO ELIMINATE THE PROBLEM.

Figure B-1. Selected examples of three NRC LERs.

LER OUTPUT ON VALVES AND VALVE OPERATORS
 FROM 1976 THROUGH DECEMBER 31, 1978,
 OUTPUT SORTED BY FACILITY AND EVENT DATE

FACILITY/SYSTEM/ COMPONENT/COMPONENT SUBCODES/ CAUSE/CAUSE SUBCODE/ DISCOVERY/MANUFACTURER	DOCKET NO./ LER NO./ CONTROL NO.	EVENT DATE/ REPORT DATE/ REPORT TYPE	EVENT DESCRIPTION/ CAUSE DESCRIPTION
SURRY-2 ULTIMATE HEAT SINK FACILITIES VALVES GATE DRAIN PERSONNEL ERROR LICENSED & SENIOR OPERATORS OPERATIONAL EVENT VOGT, HENRY MACHINE CO.	05000281 77-015/01T-1 019478	101177 120277 2-WEEK	DURING ZERO-POWER PHYSICS TESTING, VALVE PIT CONTAINING EMERGENCY SERVICE WATER VALVES MOV/203A/B/C/D WAS FOUND FLOODED. FLOODING DISABLED MOTOR OPERATORS AFFECTING THEIR ABILITY TO RESPOND TO ECCS SIGNALS. VALVE PIT WAS PUMPED DOWN & SOURCE OF FLOODING WAS CORRECTED. ADMINISTRATIVE CONTROLS WERE INSTITUTED UNTIL MOTOR OPERATORS WERE REPAIRED & RETURNED TO SERVICE IN ABOUT 12 HOURS. REPORTABLE PER T.S. 6.6.2.A(6).
			DURING REFUELING OUTAGE, EMERGENCY SERVICE WATER LINES WERE OPENED FOR INSPECTION & VALVE ADJUSTMENT. SUBSEQUENT TO 'TAG-OUT' OF SYSTEM, DRAIN VALVES WERE OPENED TO REMOVE RESIDUAL WATER. DRAIN VALVES WERE OVERLOOKED WHEN SYSTEM WAS RETURNED TO SERVICE. AFTER PIT WAS PUMPED DOWN VALVES WERE SHUT.
EDWIN I. HATCH-1 SYSTEM CODE NOT APPLICABLE VALVES NO SUBCOMPONENT PROVIDED NO VALVE SUBCODE PROVIDED COMPONENT FAILURE CAUSE SUBCODE NOT PROVIDED ROUTINE TEST/INSPECTION ITEM NOT APPLICABLE	05000321 77 01L 018189	051877 060977 30-DAY	(77-34) 20 VALVES FAILED THE LOCAL LEAK RATE TEST. 7 RHR VALVES; 4 HPCI VALVES; 3 RCIC VALVES; 2 CORE SPRAY PUMP VALVES; 2 PURGE EXHAUST; IMSIV and 1 CONDENSATE DRAIN. CAUSES WERE VARIABLE. ALL VALVES REPAIRED AND RETESTED SATISFACTORILLY.

Figure B-1. (continued)

EVENT	PLANT	CONT. NO.	EVENT DATE	SYSTEM	COMP	FAIL CODE	TYPE	CLASS	CONTR. PH.	KEY	FAILURE MODE	FAILURE MECHANISM
W	Z11	020565	012578	C	AV	B24	T	D			CONTAINMENT VALVE (1FCV-VNO2A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ACV
W	SU2	019471*	101177	S	MV	F20	C	D	04		4 MOV5 IN SERVICE H2O SYS FAILED TO OPERATE	PIT CONTAINING THEM WAS FLOODED
W	SU2	019478A	101177	S	XV	V01	S	D			TWO DRAIN VALVES LEFT OPEN AT END OF MAINTENANCE	PERSONNEL ERROR/CAUSED FLOODED PIT ABOVE
G	EN1	018189A	051877	L	UV	C25	T	07			7 RHR VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189B	051877	H	UV	C25	T	04			4 HPCI VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189C	051877	Q	UV	C25	T	03			3 RCIC VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189D	051877	D	UV	C25	T	02			2 CORE SPRAY PUMP VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189E	051877	C	RM	D13	T	02			2 PURGE EXHAUST VALVES LEAKING EXCESSIVELY	FAILED O-RING GASKET
G	EN1	018189F	051877	M	RM	C12	D				MSIV INBOARD "A" LEAKING INTERNALLY	STROKE NEEDED ADJUSTMENT
G	EN1	018189G	051877	U	RM	C23	T				1 CONDENSATE DRAIN VALVE LEAKING EXCESSIVELY	TORQUE SWITCH OUT OF ADJUSTMENT

Figure B-2. Examples of one-liners created from the three selected NRC LERs.

EVENT	PLAN I	CONT. NO.	EVENT DATE	CONTR. NO.	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	Z11	020565	012578			A610	T A UU	B24			CONTAINMENT VALVE (1FCV-VN02A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ADV
W	SU2	019478*	101177	04		V135	M U UU	F20			4 MOVES IN SERVICE H2O SYS FAILED TO OPERATE	PIT CONTAINING THEM WAS FLOODED
W	SU2	019478A	101177			V135	R U UU	V01			TWO DRAIN VALVES LEFT OPEN AT END OF MAINTENANCE	PERSONNEL ERROR/CAUSED FLOODED PIT ABOVE
G	EN1	018189A	051877	07		ZZZZ	T U UU	C25			7 RHR VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189B	051877	04		ZZZZ	T U UU	C25			4 HPCI VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189C	051877	03		ZZZZ	T U UU	C25			3 RCIC VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189D	051877	02		ZZZZ	T U UU	C25			2 CORE SPRAY PUMP VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G	EN1	018189E	051877	02		ZZZZ	T U UU	D13			2 PURGE EXHAUST VALVES LEAKING EXCESSIVELY	FAILED O-RING GASKET
G	EN1	018189F	051877			ZZZZ	T U UU	C12			MSIV INBOARD "A" LEAKING INTERNALLY	STROKE NEEDED ADJUSTMENT
G	EN1	018189G	051877			ZZZZ	T U UU	C23			1 CONDENSATE DRAIN VALVE LEAKING EXCESSIVELY	TORQUE SWITCH OUT OF ADJUSTMENT

Figure B-3. Examples of the additional one-liner information created from the three selected NRC LERs.

failure prevented the air-operated valve from closing by not supplying instrument air to the air operator; thus, the event is a command fault. The event is also recurring (note "similar events" listed in Figure B-1, EVENT DESCRIPTION) so the TYPE of Event is a recurring command fault, coded T. The event is coded as Change of State (D in the CLASS column) because it is a command fault. The event description states, "Containment valve (1FCV-VN02A) failed to close;" therefore, a B (Failed to Close) is the failure mode code. The failure mechanism code is 24 (Failure of Component Supply System); thus, B24 was coded under FAIL CODE. The blank in the COMP NUM column means that only one valve was listed in this record. A blank in the KEY column indicates that the number of valves was given explicitly in the LER. The remainder of the one-liner consisted of a narrative describing the mode and mechanism of the event under the headings of FAILURE MODE and FAILURE MECHANISM. Printer restrictions on number of characters per line forced us to put additional information concerning this LER on another computer printout entitled, "Additional Information Available in the Data File." This second printout repeats all fields except SYS, COMP, TYPE, and CLASS so that it can be cross-referenced with the first printout. The additional information for the Zion 1 example is listed as follows:

<u>Additional Information</u>	<u>Code</u>
Manufacturer [Automatic Switch Co. (ASCO)]	A610
Activity Resulting in Discovery (Testing)	T
Operator (Air Operator)	A
Valve Type (Unknown)	UU

It should be noted that the manufacturer listed is the manufacturer of the solenoid valve supplying air to the air-operated valve.

Surry 2 Example

The coding of the Surry 2 LER followed the same logic used for the Zion 1 example. The main points of interest are as follows:

1. The system code was S for Service Water instead of N for Ultimate Heat Sink Facilities.
2. Two separate reports were identifiable from the LER narrative:
 - a. Four Motor-Operated Valves (MOV) failed to operate
 - b. Two drain valves were left open.
3. The control number ending in an asterisk (019478*) is used to identify the first report. The asterisk indicates multiple events were contained in this report.
4. The second and same control number ending in A (019478A) is used to identify the second report created from this LER.
5. The four MOVs failed because of Electric Motor/Operator Failure (20) with a further "flooding" explanation contained in the failure mechanism narrative.
6. Leaving two drain valves open was a personnel error during a valve line-up; therefore, the FAIL CODE for this report is V01.
7. Both reports are common cause problems (that is, four valves flooded and two valves left open); the second report is also a command fault. (Note: all command faults of multiple components should be examined for common cause implications.)
8. Both reports were classified as Change of State. The four flooded valves failed because of shorted electrical windings in the motor operators. These failures did not occur until a demand was placed on the operators.

The second report was a command fault and all command faults are considered to be Change of State events.

9. The Activity Resulting in Discovery was coded as Normal Operations (N), as determined from the summary information.

Edwin I. Hatch 1 Example

This is an example of an LER not containing sufficient information. Fortunately, microfiche of the follow-up report provided maintenance records of what was done to repair each valve. Based on this follow-up report, we were able to infer the failure modes and mechanisms. The main deficient area was not clarified; however, that was component type. All of the valves were coded as Operator Type Not Stated (UV) except four. These were determined to be Remote-Operated Valves (RM) from the type of maintenance performed on them.

These examples should give the reader some insight into the problems encountered while encoding the reports, not only for valves but for other component types. Hopefully, enough thought has gone into the process to ensure that a wide range of readers will have the particular information they desire from this report.

REFERENCE

- B-1. Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File, NUREG-0161 (July 1977).

APPENDIX C

LER RATE ESTIMATES

APPENDIX C

LER RATE ESTIMATES

To estimate the Licensee Event Report (LER) failure rates for components, we used the following well-known statistical methods for Type-I censored data with replacement (for example, see Reference C-1).

The general methods for estimating rates on an hourly basis and on a demand basis are

$$\hat{\lambda}(\text{hourly}) = \frac{N}{T} \quad (\text{C-1})$$

$$\hat{\lambda}(\text{demand}) = \frac{N}{D} \quad (\text{C-2})$$

where

- $\hat{\lambda}$ = estimated failure rate
- N = number of reported component failures
- T = total time accrued by all components
- D = total number of demands on all components.

The general computational formulas, Equations (C-1) and (C-2), may be applied to particular situations. The failure rate for a component in a particular plant is estimated by setting

$$N = N_i$$

$$T = T_i$$

$$D = D_i$$

where

- N_i = the number of component failures in plant i
- T_i = the total accrued time of all like components in plant i
- D_i = total accrued number of demands on all like components in plant i.

In a similar manner, failure rates may be estimated for components manufactured by a particular vendor, for components in a particular plant type (for example, PWR or BWR), or for components present in all plants.

We based confidence limits for hourly failure rates on the assumption that the underlying component failure distributions are exponential, so, the resulting LER data are representable by a Poisson process. In demand evaluations, N is binomially distributed. However, when the probability of failure is small and the number of demands is large, the Poisson distribution may be used to approximate this variable. The equations for estimating 90% confidence limits on the failure rates are

$$\frac{\chi_{0.05}^2 (2N)}{2T} \leq \lambda(\text{hourly}) \leq \frac{\chi_{0.95}^2 (2N + 2)}{2T} \quad (C-3)$$

and

$$\frac{\chi_{0.05}^2 (2N)}{2D} \leq \lambda(\text{demand}) \leq \frac{\chi_{0.95}^2 (2N + 2)}{2D} \quad (C-4)$$

where

$\chi_{0.05}^2 (2N)$ = the chi-square variate at 0.05 cumulative probability with 2N degrees of freedom

$\chi_{0.95}^2 (2N + 2)$ = the chi-square variate at 0.95 cumulative probability with (2N + 2) degrees of freedom.

If D is small, then the Poisson approximation of the binomial distribution is not adequate, and 90% confidence limits for the demand failure rate are

$$\frac{N F_L}{D - N + 1 + N F_L} \leq \lambda(\text{demand}) \leq \frac{(N + 1) F_U}{D - N + (N + 1) F_U} \quad (\text{C-5})$$

where

$$F_L = F_{0.05} (2D, 2D - 2N + 2)$$

= the F variate at 0.05 cumulative probability with
2N and 2D - 2N + 2 degrees of freedom

$$F_U = F_{0.95} (2N + 2, 2D - 2N)$$

= the F variate at 0.95 cumulative probability with
2N + 2 and 2D - 2N degrees of freedom.

In this work, hourly rate confidence limits were always based on Equation (C-3). Demand rate confidence limits were based on Equation (C-4) if $D - N \geq 100$, and on Equation (C-5) otherwise.

When no failures were observed, an upper 95% confidence limit is reported instead of the point estimate 0. Equation (C-3), (C-4), or (C-5) is used with $N = 0$.

In estimating the above confidence limits, we assumed that all components in the sample had exactly the same true failure rate. No effort was made to account for possible variations arising from the mixture of populations having different true failure rates. For further discussion of the assumptions and limitations of these confidence limits, see References C-1 and C-2.

REFERENCES

- C-1. L. J. Bain, Statistical Analysis of Reliability and Life-Testing Models, New York: Marcell Dekker, Inc., 1978, p. 157.
- C-2. N. L. Johnson and S. Kotz, Discrete Distributions, New York: John Wiley & Sons, 1969, pp. 58-59 and 96.

APPENDIX D

FACILITY OPERATING LICENSES ISSUED WITH
STANDARD TECHNICAL SPECIFICATIONS

APPENDIX D

FACILITY OPERATING LICENSES ISSUED WITH
STANDARD TECHNICAL SPECIFICATIONS

<u>Facility</u>	<u>Vendor</u>	<u>Issue Date</u>
Crystal River Unit 3	B	December 3, 1976
Davis-Besse Unit 1	B	April 22, 1977
Three Mile Island Unit 2	B	February 8, 1978
Arkansas Unit 2	C	July 18, 1978
Calvert Cliffs Unit 1 (STS Conversion)	C	February 11, 1977
Calvert Cliffs Unit 2	C	August 13, 1976
Millstone Unit 2	C	August 1, 1975
St. Lucie Unit 1	C	March 1, 1976
Brunswick Unit 1	G	September 8, 1976
Brunswick Unit 2 (STS Conversion)	G	November 23, 1977
Hatch Unit 2	G	June 13, 1978
Beaver Valley Unit 1	W	January 30, 1976
D. C. Cook Unit 1	W	October 25, 1974
D. C. Cook Unit 2	W	December 23, 1977
Joseph M. Farley Unit 1	W	June 25, 1977
North Anna Unit 1	W	November 21, 1977
Salem Unit 1	W	August 13, 1976
Trojan	W	November 21, 1975
Yankee Rowe (STS Retrofit)	W	January 1, 1977

APPENDIX E
PLANT INFORMATION

PLANT INFORMATION

Babcock & Wilcox

Plant Code	Plant Name (Docket Number)	Design Electrical Rating [MW(e)]	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
AR1	Arkansas Nuclear One 1 (50-313)	850	8/6/74	12/19/74	AR	Bechtel	Bechtel
CR3	Crystal River 3 (50-302)	825	1/14/77	3/13/77	FL	Gilbert Associates	J.A. Jones Const.
DB1	Davis-Besse 1 (50-346)	906	9/10/77	11/20/77	OH	Bechtel	Bechtel
OE1	Oconee 1 (50-259)	887	4/19/73	7/15/73	SC	Duke Power Co. and Bechtel	Duke Power Co.
OE2	Oconee 2 (50-270)	887	11/11/73	9/9/74	SC	Duke Power Co. and Bechtel	Duke Power Co.
OE3	Oconee 3 (50-287)	887	9/5/74	12/16/74	SC	Duke Power Co. and Bechtel	Duke Power Co.
RS1	Rancho Seco (50-312)	918	9/16/74	4/17/75	CA	Bechtel	Bechtel
TI1	Three Mile Island 1 (50-289)	819	6/5/74	9/2/74	PA	Gilbert Associates	United Engineers & Constructors
TI2	Three Mile Island 2 (50-320)	906	3/28/78	12/30/78	PA	Burns & Roe	United Engineers & Constructors

Combustion Engineering

Plant Code	Plant Name (Docket Number)	Design Electrical Rating [MW(e)]	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
AR2	Arkansas Nuclear One 2 (50-368)	912	12/5/78	N/A ^a	AR	Bechtel	Bechtel
CC1	Calvert Cliffs 1 (50-317)	845	10/7/74	5/8/75	MD	Bechtel	Bechtel
CC2	Calvert Cliffs 2 (50-318)	845	11/30/76	4/1/77	MD	Bechtel	Bechtel
FC1	Fort Calhoun (50-285)	457	8/6/73	9/26/73	NB	Gibbs & Hill, Inc.	Gibbs & Hill, Inc. and Durham & Richardson, Inc.
MI2	Millstone 2 (50-336)	830	10/17/75	12/16/75	CT	Bechtel	Bechtel
MY1	Maine Yankee (50-309)	825	10/23/72	12/28/72	ME	Stone & Webster	Stone & Webster
PA1	Palisades (50-255)	805	5/24/71	12/31/71	MI	Bechtel	Bechtel
SL1	St. Lucie (50-335)	802	4/22/76	12/21/76	FL	Ebasco	Ebasco

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Westinghouse

Plant Code	Plant Name (Docket Number)	Design Electrical Rating [MW(e)]	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
BV1	Beaver Valley 1 (50-334)	852	5/10/76	10/1/76	PA	Stone & Webster	Stone & Webster
DC1	Donald C. Cook 1 (50-315)	1054	1/18/75	8/27/75	MI	American Electric Power Service Corporation	Indiana & Michigan Power Company
DC2	Donald C. Cook 2 (50-316)	1100	3/10/78	7/1/78	MI	American Electric Power Service Corporation	Indiana & Michigan Power Company
HN1	Haddam Neck (50-213)	575	7/24/67	1/1/68	CT	Stone & Webster	Stone & Webster
IP2	Indian Point 2 (50-247)	873	5/22/73	8/73	NY	United Engineers & Constructors	J.A. Jones/U.E.& C.
IP3	Indian Point 3 (50-286)	965	4/6/76	8/30/76	NY	United Engineers & Constructors	WEDCO
JF1	Joseph M. Farley 1 (50-348)	829	8/9/77	12/1/77	AL	Bechtel/Southern Services, Inc.	Daniel
KE1	Kewaunee (50-305)	535	3/7/74	6/74	WI	Pioneer Services & Eng. Co.	Pioneer Services & Eng. Co.
NA1	North Anna 1 (50-338)	907	4/5/78	N/A ^a	VA	Stone & Webster	Stone & Webster
PR1	Prairie Island 1 (50-282)	530	12/1/73	12/16/73	MN	Pioneer Services & Eng. Co.	Northern States Power Company
PR2	Prairie Island 2 (50-306)	530	12/17/74	12/21/74	MN	Pioneer Services & Eng. Co.	Northern States Power Company

Westinghouse (continued)

<u>Plant Code</u>	<u>Plant Name (Docket Number)</u>	<u>Design Electrical Rating [MW(e)]</u>	<u>Criticality Date</u>	<u>Date of Commercial Operation</u>	<u>Location (State)</u>	<u>Architect/Engineer</u>	<u>Constructor</u>
PT1	Point Beach 1 (50-266)	497	11/2/70	12/21/70	WI	Bechtel	Bechtel
PT2	Point Beach 2 (50-301)	497	5/30/72	10/1/72	WI	Bechtel	Bechtel
RG1	Robert E. Ginna (50-244)	490	11/8/69	7/70	NY	Gilbert	Bechtel
RO2	H. B. Robinson 2 (50-261)	700	9/20/70	3/7/71	SC	Ebasco	Ebasco
SA1	Salem 1 (50-272)	1090	12/11/76	6/30/77	NJ	PSE&G	United Engineers & Constructors
S01	San Onofre 1 (50-206)	436	6/14/67	1/1/68	CA	Bechtel	Bechtel
SU1	Surry 1 (50-280)	822	7/1/72	12/22/72	VA	Stone & Webster	Stone & Webster
SU2	Surry 2 (50-281)	822	3/7/73	5/1/73	VA	Stone & Webster	Stone & Webster
TR1	Trojan (50-344)	1130	12/15/75	5/20/76	OR	Bechtel	Various
TU3	Turkey Point 3 (50-250)	693	10/20/72	12/14/72	FL	Bechtel	Bechtel
TU4	Turkey Point 4 (50-251)	693	6/11/73	9/7/73	FL	Bechtel	Bechtel

Westinghouse (continued)

Plant Code	Plant Name (Docket Number)	Design Electrical Rating [MW(e)]	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
YR1	Yankee Rowe (50-029)	175	8/19/60	7/61	MA	Stone & Webster	Stone & Webster
ZI1	Zion 1 (50-295)	1040	6/13/73	12/31/73	IL	Sargent & Lundy	Various
ZI2	Zion 2 (50-304)	1040	12/24/73	9/17/74	IL	Sargent & Lundy	Various

General Electric

BF1	Browns Ferry 1 (50-159)	1065	8/17/73	8/1/74	AL	Tennessee Valley Authority	Tennessee Valley Authority
BF2	Browns Ferry 2 (50-260)	1065	7/20/74	3/1/75	AL	Tennessee Valley Authority	Tennessee Valley Authority
BF3	Browns Ferry 3 (50-161)	1065	8/8/76	3/1/77	AL	Tennessee Valley Authority	Tennessee Valley Authority
BP1	Big Rock Point ^b (50-155)	72	9/27/62	3/29/63	MI	Bechtel	Bechtel
BR1	Brunswick 1 (50-325)	821	10/8/76	3/18/77	NC	United Engineers & Constructors	Brown & Root
BR2	Brunswick 2 (50-324)	821	3/20/75	11/3/75	NC	United Engineers & Constructors	Brown & Root
CO1	Cooper Station (50-298)	778	2/21/74	7/1/74	NB	Burns & Roe	Burns & Roe

General Electric (continued)

Plant Code	Plant Name (Docket Number)	Design Electrical Rating [MW(e)]	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
DA1	Duane Arnold (50-331)	538	3/23/74	2/1/75	IA	Bechtel	Bechtel
DR1	Dresden 1 ^b (50-010)	200	10/15/59	7/4/60	IL	Bechtel	Bechtel
DR2	Dresden 2 (50-237)	794	1/7/70	6/9/72	IL	Sargent & Lundy	United Engineers & Constructors
DR3	Dresden 3 (50-249)	794	1/31/71	11/16/71	IL	Sargent & Lundy	United Engineers & Constructors
EN1	Edwin I. Hatch 1 (5C-321)	786	9/12/74	12/31/74	GA	Southern Services, Inc.	Georgia Power Company
EN2	Edwin I. Hatch 2 (50-366)	790	7/4/78	N/A ^a	GA	Southern Services, Inc./Bechtel	Georgia Power Company
HB3	Humboldt Bay 3 ^b (50-133)	63	2/16/63	8/63	CA	Bechtel	Bechtel
FP1	James A. Fitzpatrick (50-333)	821	11/17/74	7/28/75	NY	Stone & Webster	Stone & Webster
M11	Millstone 1 (50-245)	660	10/26/70	3/71	CT	Ebasco	Ebasco
MO1	Monticello (50-263)	545	12/10/70	6/30/71	MN	Bechtel	Bechtel
NM1	Nine Mile Point 1 (50-220)	620	9/5/69	12/69	NY	Utility	Stone & Webster

General Electric (continued)

<u>Plant Code</u>	<u>Plant Name (Docket Number)</u>	<u>Design Electrical Rating [MW(e)]</u>	<u>Criticality Date</u>	<u>Date of Commercial Operation</u>	<u>Location (State)</u>	<u>Architect/Engineer</u>	<u>Constructor</u>
OC1	Oyster Creek 1 (50-219)	650	5/3/69	12/69	NJ	Burns & Roe	J. A. Jones
PB2	Peach Bottom 2 (50-277)	1065	9/16/73	7/5/74	PA	Bechtel	Bechtel
PB3	Peach Bottom 3 (50-278)	1065	8/7/74	12/13/74	PA	Bechtel	Bechtel
PI1	Pilgrim 1 (50-293)	655	6/16/72	12/72	MA	Bechtel	Bechtel
QC1	Quad-Cities 1 (50-254)	789	10/18/71	2/18/73	IL	Sargent & Lundy	United Engineers & Constructors, Inc.
QC2	Quad-Cities 2 (50-265)	789	4/26/72	3/10/73	IL	Sargent & Lundy	United Engineers & Constructors, Inc.
VY1	Vermont Yankee (50-271)	514	3/24/72	11/30/72	VT	Ebasco	Ebasco

a. Not operational during the period covered by this report.

b. Excluded from this report.

APPENDIX F

CODES

CODES USED IN LER ONE-LINE DESCRIPTIONS

<u>CODE</u>	<u>FAILURE MODE</u> <u>DESCRIPTION</u>
A	- FAILED TO OPEN
B	- FAILED TO CLOSE
C	- INTERNAL LEAKAGE
D	- EXTERNAL LEAKAGE
E	- REVERSE LEAKAGE (CHECK VALVES)
F	- FAILED TO OPERATE AS REQUIRED
G	- PLUGGED (FAILS TO REMAIN OPEN)
H	- PREMATURE OPEN (RELIEF VALVES)
I	- MAINTENANCE/REPLACEMENT
J	- TECHNICAL SPECIFICATION VIOLATION
K	- IMPROPER VALVE CONFIGURATION

<u>CODE</u>	<u>COMPONENT</u> <u>DESCRIPTION</u>
MV	- MOTOR OPERATED VALVE (ELEC.)
AV	- PNEUMATIC OPERATED VALVE
SV	- SOLENOID OPERATED VALVE
HV	- HYDRAULIC OPERATED VALVE
RM	- REMOTE OPERATED VALVE
XV	- MANUAL OPERATED VALVE
CV	- CHECK VALVE
RV	- RELIEF VALVE
DV	- DAMPER VALVE
UV	- OPERATOR TYPE OR FUNCTION NOT STATED

<u>CODE</u>	<u>TYPE OF EVENT</u> <u>DESCRIPTION</u>
B	- RECURRING COMMON CAUSE
C	- COMMON CAUSE
R	- RECURRING
S	- COMMAND FAULT
V	- RECURRING COMMAND FAULT

<u>CODE</u>	<u>FAILURE MECHANISM</u> <u>DESCRIPTION</u>
00	- UNKNOWN
01	- PERSONNEL (OPERATION)
02	- PERSONNEL (MAINTENANCE)
03	- PERSONNEL (TESTING)
04	- DESIGN ERROR
05	- FABRICATION/CONSTRUCTION/QUALITY CONTROL
06	- PROCEDURAL DISCREPANCY
07	- NORMAL WEAR
08	- EXCESSIVE WEAR
09	- CORROSION
10	- CREATION MATERIAL CONTAMINATION
11	- EXCESSIVE VIBRATION
12	- CHECK CONTROLS/PARTS; FAILED/CUT OF ADJUST.
13	- ALGASKET FAILURE/PROBLEM
14	- PACKING FAILURE/PROBLEM
15	- O-RING FAILURE/PROBLEM
16	- GASKET FAILURE/PROBLEM
17	- CAL INPUT FAILURE/PROBLEM
18	- BUSHING FAILURE/PROBLEM
19	- FAILURE
20	- LUBRICATION
21	- ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM
22	- SOLENOID FAILURE/PROBLEM
23	- BREAKING/RUPTURED DIAPHRAGM
24	- TORQUE SWITCH FAILURE/PROBLEM
25	- FAILURE OF COMPONENT SUPPLY SYSTEM
26	- FAILURE/PROBLEM
27	- LIMIT SWITCH FAILURE/PROBLEM
28	- PILOT VALVE FAILURE/PROBLEM

<u>EVENT CLASSIFICATION</u>	
<u>CODE</u>	<u>DESCRIPTION</u>
D	- CHANGE OF STATE
T	- AGE
U	- UNKNOWN

<u>ACTIVITY RESULTING IN DISCOVERY</u>	
<u>CODE</u>	<u>DESCRIPTION</u>
D	- DEMAND ON COMPONENT
M	- MAINTENANCE
N	- NORMAL OPERATION
R	- RECORDS REVIEW
T	- TESTING
U	- UNKNOWN

<u>CODE</u>	<u>NUMERICAL KEY WORDS</u> <u>DESCRIPTION</u>
V	- VALVES
A	- SOME
3	- VARIOUS
4	- SEVERAL
2	- OTHER

<u>CODE</u>	<u>NSSS VENDOR</u> <u>DESCRIPTION</u>
B	- BABCOCK & WILCOX
C	- COMBUSTION ENGINEERING
G	- GENERAL ELECTRIC
W	- WESTINGHOUSE

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

<u>CODE</u>	<u>PWR</u>	<u>CODE</u>	<u>BWR</u>
A	-	A	-
B	-	B	-
C	-	C	-
D	-	D	-
E	-	E	-
F	-	F	-
G	-	G	-
H	-	H	-
I	-	I	-
J	-	J	-
K	-	K	-
L	-	L	-
M	-	M	-
N	-	N	-
P	-	P	-
Q	-	Q	-
R	-	R	-
S	-	S	-
T	-	T	-
U	-	U	-
V	-	V	-
W	-	W	-
X	-	X	-
Y	-	Y	-
Z	-	Z	-

A	-	A	-
B	-	B	-
C	-	C	-
D	-	D	-
E	-	E	-
F	-	F	-
G	-	G	-
H	-	H	-
I	-	I	-
J	-	J	-
K	-	K	-
L	-	L	-
M	-	M	-
N	-	N	-
P	-	P	-
Q	-	Q	-
R	-	R	-
S	-	S	-
T	-	T	-
U	-	U	-
V	-	V	-
W	-	W	-
X	-	X	-
Y	-	Y	-
Z	-	Z	-

OPERATOR AND VALVE TYPE

OPERATOR	VALVE TYPE
U	UNKNOWN
A	ACTUATOR (CYLINDER, DIAPHRAGM)
H	HYDRAULIC
N	NORMAL OPERATOR (NC)
S	SOLENOID OPERATOR
X	MANUAL
U	UNKNOWN
A	ACTUATOR (CYLINDER, DIAPHRAGM)
H	HYDRAULIC
N	NORMAL OPERATOR (NC)
S	SOLENOID OPERATOR
X	MANUAL

 MANUFACTURERS' CODES AND NAMES USED IN THIS REPORT

A180	- ALLIS CHALMERS	C715	- CROSBY-ASHTON GAGE CO.
A200	- ALLOYCO, INC.	C780	- CVI CORP.
A220	- AMERICAN AIR FILTER CO., INC.	D020	- DARLING VALVE & MFG. CO. (SEE VENDOR A391)
A235	- AMERICAN MACHINE & FOUNDRY COMPANY	D025	- DARLING-ANCHOR (SEE VENDOR A393)
A310	- AMERICAN STANDARD INDUSTRIES	D147	- DEZURIK
A330	- AMERICAN TEL & RADIO	D232	- DRAGON VALVE, INC.
A340	- AMERICAN WARMING & VENTILATING INC.	D243	- DRESSER INDUSTRIAL VALVE & INST. DIV.
A391	- ANCHOR/DARLING VLV CO. (SEE VENDOR D020)	D245	- DRESSER INDUSTRIAL VALVES, INC.
A394	- ANCHOR PACKING CO.	E090	- EDWARDS CO.
A395	- ANCHOR VALVE CO.	E095	- EDWARDS VALVES DIV.
A435	- ANDERSON, GREENWOOD & CO.	F011	- FAIRBANKS ENGINEERING
A438	- ARMSTRONG MACH.	F015	- FAIRBANKS ENGINEERING
A440	- ASCO	F018	- FAIRBANKS ENGINEERING
A507	- ASSOCIATED CONTROL EQUIPMENT	F033	- FENWALL, INC.
A515	- ASTRO INDUSTRIES, INC.	F035	- FINE METAL CO.
A535	- AUTOMATIC VALVE CO., INC.	F038	- FISHER CONTROLS
A538	- ATLAS VALVE	F040	- FISHER CONTROL DIV. (ROCKWELL INTER.)
A539	- AYWOOD & MORRILL CO., INC.	F045	- FISHER CONTROLS CO.
A610	- AUTOMATIC SWITCH CO. (ASCO)	F048	- FISHER CONTROLS
A613	- AUTOMATIC VALVE COMPANY	F049	- FISHER CONTROLS CORP.
A660	- AVCO CORP. - TULSA OPERATION	F050	- FRANKLIN INSTITUTE RESEARCH LABORATORIES
B005	- BABCOCK & WILCOX COMPANY	F212	- FRUMSEN HEAT TRANSFER LTD (CANADA)
B006	- BAILEY INSTRUMENT CO., INC.	G080	- GENERAL ELECTRIC CO.
B007	- BARKSDALE VALVE COMPANY	G085	- GAMBEL MACHINE WORKS
B008	- BARTON INST. CO., DIVISION OF ITT	G090	- GODDARD MANUFACTURING CORP.
B009	- BECHTEL CORP.	G095	- GPE CONTROLS
B010	- BECKMAN INSTRUMENTS, INC.	G096	- GREER HYDRAULICS, INC.
B011	- BETTIS CORPORATION	G097	- GRINNELL CORP.
B012	- BLACK-SIVALS-BRYSON	G098	- GRINNELL INDUSTRIAL PIPING, INC.
B013	- BRUCE GM DIESEL, INC.	G265	- GROVE VALVE & REGULATOR CO.
C027	- CALIFORNIA FILTER-CALFICO	H015	- HAGAN CONTROLS
C102	- CENTER-LINE INC.	H035	- HAMMEL DAHL
C103	- CHAPMAN VALVE & MFG.	H037	- HANCOCK CO.
C104	- CHAPMAN DIV OF CRANE CO.	H195	- HILLS-MCCANNA CO.
C206	- CHEMIQUIP PRODUCTS CO., INC.	H230	- HOKER, INC.
C311	- CHICAGO FLUID POWER	H343	- HYDRO LINE MFG. COMPANY
C330	- CIRCLE SEAL	I005	- I-T-E CIRCUIT BREAKER
C470	- COLT INDUSTRIES, INC.	I075	- INGERSOLL-RAND CO.
C490	- COMBUSTION ENGINEERING, INC.	I200	- ISOTOPE PRODUCTS LABORATORIES
C502	- COMMONWEALTH EDISON COMPANY	I206	- ITT GENERAL CONTROLS
C515	- CONAX CORP.	I208	- ITT HAMMEL DAHL CONDFLOW
C530	- CONDFLOW CORP.	J010	- JAMES BURY CORP.
C567	- CONSOLIDATED SAFETY RELIEF VALVES	J030	- JENKINS VALVE CORP.
C587	- CONTINENTAL EQUIP. CO.	J073	- JOHNSON CONTROLS INC.
C601	- CONTROL COMPONENTS	J085	- JOHNSON MANUFACTURING
C630	- CONTROMATICS CORP.	J090	- JOHNSON SERVICE CO.
C631	- CONVAL INC.	K030	- KAVLICO ELECTRONICS INC.
C635	- COPES-VULCAN, INC.	K075	- KENNEDY VALVE MFG. CO.
C665	- CRANE COMPANY	K085	- KERTEST MANUFACTURING CORP.
C672	- CRANE JOHN CO.	K135	- KIELCY & MUELLER CO.
C715	- CROSBY VALVE & GAGE CO.	K235	- KUNKLE VALVE CO.
		L200	- LIMITECUE CORP.

NOTE: THESE CODES AND MANUFACTURERS' NAMES WERE OBTAINED FROM EXHIBIT J OF REFERENCE 1.

MANUFACTURERS' CODES AND NAMES USED IN THIS REPORT (CON'T)

L263	- LONEGAN, J.E., COMPANY	W121	- WESTINGHOUSE ELECTRIC COMPANY(ELEV DIV)
L265	- LONERGAN	W122	- WESTON HYDRAULICS DIV.
L300	- LUNKENHEIMER CO., THE	W123	- WHITNEY CO.
M069	- MANNING-MAXWELL-MOORE	W124	- WHITTAKER CORP.
M090	- MAROTTA SCIENTIFIC CONTROLS, INC.	W125	- WILLIAMS PRODUCTS, INC.
M095	- MAROTTA VALVE CORP.	W126	- WKM VALVE DIV.
M115	- MASON & HANGER-SILAS MASON CO., INC.	W127	- WORTHINGTON CORP.
M120	- MASON ILAN INTERNATIONAL, INC.	W128	- UNKNOWN/NOT STATED
M122	- MILLER FLUID POWER CO.		
M358	- MISSION MANUFACTURING CO.		
M360	- MISSION VALVE AND PUMP CO.		
M430	- MOORE PRODUCTS COMPANY		
N017	- NATIONAL ACHE CO.		
N030	- NATIONAL ELECTRIC SIGN		
N309	- NUCLEAR MEASUREMENTS CORP.		
O020	- OFFSHORE POWER SYSTEMS		
O034	- OILRITE CORPORATION		
P014	- PACIFIC AIR PRODUCTS		
P032	- PACIFIC VALVES INC.		
P070	- PARKER HANNIFIN CORP.		
P195	- PHILADELPHIA GEAR CORP.		
P205	- PORTER, H. K. CO., INC.		
P206	- PORTER PEERLESS MOTORS		
P303	- POWELL CO., WM., THE		
P312	- POWELL, M. W., CO.		
P333	- PRATT WHITNEY AIRCRAFT		
P340	- PRATT, HENRY CO.		
R082	- RAMCON CORP.		
R165	- RELIANCE ELECTRIC COMPANY		
R197	- REPUBLIC MFG. CO.		
R290	- ROBERTSHAW CONTROLS CO.		
R322	- ROBOTAKM		
R340	- ROCKWELL MANUFACTURING CO.		
R344	- ROCKWELL-INTERNATIONAL		
R373	- CHUTE AND KOERTING CO.		
R374	- SHAN-ROD CORP.		
R375	- SINGER CO., THE		
R376	- SKINNER UNIFLOW VALVES		
R377	- STOCKHAM VALVE CO.		
R378	- TARGET ROCK CORPORATION		
T083	- TELEDYNE CORPORATION		
T095	- TELEDYNE-FARRIS ENGINEERING		
T340	- TUFLINE		
V030	- VALCOR ENGINEERING CORP.		
V080	- VELAN ENGINEERING COMPANIES		
V082	- VELAN VALVE CORP.		
V095	- VERSA PRODUCTS		
V105	- VICKERS, INC.		
V135	- VOGT, HENRY MACHINE CO.		
W030	- WALWORTH CO.		
W120	- WESTINGHOUSE ELECTRIC CORPORATION		

NOTE: THESE CODES AND MANUFACTURERS' NAMES WERE OBTAINED FROM EXHIBIT J OF REFERENCE 1.

APPENDIX G

ALL VALVE EVENTS IN THE DATA FILE

CODES USED IN LER ONE-LINE DESCRIPTIONS

<u>CODE</u>	<u>FAILURE MODE</u>	<u>DESCRIPTION</u>
A	FAILED TO OPEN	
B	FAILED TO CLOSE	
C	INTERNAL LEAKAGE	
D	EXTERNAL LEAKAGE /RUPTURE	
E	INTERNAL LEAKAGE (CHECK VALVES)	
F	EXTERNAL LEAKAGE (CHECK VALVES)	
G	FAILED TO OPERATE AS REQUIRED	
H	PLUGGED (FAILS TO REMAIN OPEN)	
I	PREMATURE OPEN (RELIEF VALVES)	
J	MAINTENANCE/REPLACEMENT	
K	TECHNICAL SPECIFICATION VIOLATION	
L	IMPROPER VALVE CONFIGURATION	

<u>CODE</u>	<u>COMPONENT</u>	<u>DESCRIPTION</u>
MV	MOTOR OPERATED VALVE (ELEC.)	
AV	PNEUMATIC OPERATED VALVE	
SV	SOLENOID OPERATED VALVE	
HV	HYDRAULIC OPERATED VALVE	
RM	REMOTE OPERATED VALVE	
XM	MANUAL OPERATED VALVE	
CV	CHECK VALVE	
RV	RELIEF VALVE	
DV	DAMPING VALVE	
UV	OPERATOR TYPE OR FUNCTION NOT STATED	

<u>CODE</u>	<u>TYPE OF EVENT</u>	<u>DESCRIPTION</u>
B	RECURRING COMMON CAUSE	
C	COMMON CAUSE	
R	RECURRING	
F	COMMAND FAULT	
V	RECURRING COMMAND FAULT	

<u>CODE</u>	<u>FAILURE MECHANISM</u>	<u>DESCRIPTION</u>
00	UNKNOWN	
01	PERSONNEL (OPERATION)	
02	PERSONNEL (MAINTENANCE)	
03	PERSONNEL (TESTING)	
04	DESIGN ERROR	
05	FABRICATION/CONSTRUCTION/QUALITY CONTROL	
06	PROCEDURAL DISCREPANCY	
07	NORMAL WEAR	
08	EXCESSIVE WEAR	
09	CORROSION	
10	DESIGN MATERIAL CONTAMINATION	
11	EXCESSIVE VIBRATION	
12	MISCH. CONTROLS/PACKS; FAILED/CUT OF ADJUST.	
13	GASKET FAILURE/PROBLEM	
14	PACKING FAILURE/PROBLEM	
15	WELDING/BOOT FAILURE/PROBLEM	
16	MECHANICAL INPUT FAILURE/PROBLEM	
17	WARRANTING/BUSHING FAILURE/PROBLEM	
18	WELD FAILURE	
19	LACK OF LUBRICATION	
20	ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM	
21	SOLENOID FAILURE/PROBLEM	
22	DIAPHRAGM FAILURE/PROBLEM	
23	DIAPHRAGM FAILURE/PROBLEM	
24	GROUP SWITCH FAILURE/PROBLEM	
25	FAILURE OF COMPONENT SUPPLY SYSTEM	
26	FAILURE OF COMPONENT SUPPLY SYSTEM	
27	FAILURE OF COMPONENT SUPPLY SYSTEM	
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98	FAILURE OF COMPONENT SUPPLY SYSTEM	
99	FAILURE OF COMPONENT SUPPLY SYSTEM	

<u>CODE</u>	<u>NUMERICAL KEY WORDS</u>	<u>DESCRIPTION</u>
V	VALVES	
A	SOME	
VAR	VARIOUS	
SEV	SEVERAL	
OTH	OTHER	

<u>CODE</u>	<u>EVENT CLASSIFICATION</u>	<u>DESCRIPTION</u>
D	CHANGE OF STATE	
T	AGE	
U	UNKNOWN	

<u>CODE</u>	<u>ACTIVITY RESULTING IN DISCOVERY</u>	<u>DESCRIPTION</u>
D	DEMAND ON COMPONENT	
M	MAINTENANCE	
N	NORMAL OPERATION	
R	RECORDS REVIEW	
T	TESTING	
U	UNKNOWN	

<u>CGDE</u>	<u>NSSS VENDOR</u>	<u>DESCRIPTION</u>
B	BABCOCK & WILCOX	
C	COMBUSTION ENGINEERING	
E	GENERAL ELECTRIC	
W	WESTINGHOUSE	

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

CODE

PWR

CODE

BWR

A - AUXILIARY FEED
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - ELECTRIC POWER
 D - CONTAINMENT SPRAY INJECTION
 E - CHEMICAL VOLUME CONTROL (MAKE-UP)
 F - HIGH PRESSURE COOLANT INJECTION
 G - COMPONENT COOLING WATER
 H - REACTOR COOLANT
 I - LOW PRESSURE COOLANT INJECTION (RHR)
 J - REACTOR PROTECTION (CONTROL RODS)
 K - NONSAFETY-RELATED
 L - SYSTEM UNKNOWN/NOT APPLICABLE
 M - CONTAINMENT FAN COOLING SYSTEM
 N - SERVICE WATER
 O - CONDENSATE AND FEED
 P - MAIN STEAM
 Q - REACTOR PROTECTION (PPS)
 R - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 S - FAILED FUEL ELEMENT DETECTION

A - AUTOMATIC DEPRESSURIZATION
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - LOW PRESSURE CORE SPRAY
 D - ELECTRIC POWER
 E - CONTAINMENT SPRAY INJECTION
 F - STANDBY LIQUID CONTROL (BSCRW)
 G - HIGH PRESSURE COOLANT INJECTION
 H - COMPONENT COOLING WATER
 I - REACTOR COOLANT RECIRC
 J - LOW PRESSURE COOLANT INJECTION (RHR)
 K - CONTROL ROD DRIVE HYDRAULIC (SCRAM)
 L - NONSAFETY-RELATED
 M - SYSTEM UNKNOWN/NOT APPLICABLE
 N - REACTOR CORE ISOLATION COOLING
 O - SERVICE WATER
 P - STANDBY GAS TREATMENT
 Q - CONDENSATE AND FEED
 R - MAIN STEAM
 S - REACTOR PROTECTION (PPS)
 T - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 U - FAILED FUEL ELEMENT DETECTION

ALL VALVE EVENTS IN THE DATA FILE

VE N	P L A N T	CONI.NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	E Y P E	C L A S S	C O N M U P M	K E Y	FAILURE MODE	FAILURE MECHANISM
B	AR1	014837*	051276	N	RM	F14	C	I	02		2 VLVJ DID NOT OPER. WHEN REQUIRED TO	FRICTION BETWN STEM & PACKING DUE TO AGE
B	AR1	014837A	051276	N	RM	F16	S	D			VLV DID NOT OPERATE WHEN REQUIRED TO	DIRTY RELAY CONTACT
B	AR1	014837B	051276	N	RM	F16	S	D			VLV DID NOT OPERATE WHEN REQUIRED TO	LOOSE CONNECTION AT TERMINAL PLUG
B	AR1	015013	061276	G	UV	V01	S	D			INCORRECT VALVE LINE-UP/TANK OVERFLOWED	PERSONNEL ERROR
B	AR1	015247	061276	G	XV	V06	S	D			VALVE SF-22 WAS NOT CLOSED(A SPILL RESULTED)	PROCEDURES WERE INADEQUATE
B	AR1	015243	062876	R	RM	A12		D			VALVE CV-3812 FAILED TO OPEN ON COMMAND	BINDING IN VALVE BETWEEN STEM AND BUSHING
B	AR1	016566	102176	R	SV	F10	R	T			VLV CV-6202 WOULD NOT REMAIN IN CLOSED POSITION	SOLENOID VLV ACTU. WAS NOT FUNC. PROPERLY
B	AR1	016465	112276	N	RM	F24	S	D			DELUGE VALVE INADVERTENTLY TRIPPED OPEN	SEALING PRESS TO IT LEAKED OFF(COMMAND)
B	AR1	016665	120176	N	UV	D00		U			VLV SF-11 HAD A CRACK IN THE HEAT AFFECTED ZONE	REASON FOR CRACK IS UNKNOWN
B	AR1	017303	021877	J	SV	F24	T	D			VALVE CV6202 WOULD NOT REMAIN CLOSED	TWO AIR SUPPLY BLOCK VALVES FAILED
B	AR1	017521	031077	N	RM	F16	T	D			VALVE CV-2123 WAS FOUND TO BE INOPERATIVE	CIRCUIT BREAKER OVERLOAD HEATERS FAILED
B	AR1	018854*	072677	C	RM	C10	C	T	02	V	ISOLATION VALVES LEAKED THRU DURING CNT LEAK TEST	FOREIGN MATERIAL PROBABLY CAUSED LEAKAGE
B	AK1	018901	082677	Y	XV	V01	S	D			INCORRECT SEQUENCE OF VALVE OPERATION/H2O IN FILTR	PERSONNEL ERROR
B	AR1	020607	011378	B	KY	A23		D			VALVE CV-2667 FAILED TO OPEN REMCTELY	TORQUE SWITCH DEFECTIVE
B	AR1	020883*	030878	N	DV	A24	S	D	05		DAMPERS CV2102,2111-2113,62116 FAILED TO ACTUATE	PROBABLE CAUSE, STICKY AIR SUPPLY
B	AR1	020883A	030878	N	DV	F24	S	D			DAMPER CV2101 DID NOT OPERATE PROPERLY	CV2101 AIR SUPPLY INCORRECTLY ADJUSTED
B	AR1	022339	072076	G	RM	F23		T			SODIUM THIOSULFATE BLOCK VLV CV-2411 FAIL. TO OPER	TORQUE SETTING OUT OF ADJ; DRY PACKING
B	AR1	022099	081778	N	DV	A24	S	D			DISCHARGE DAMPER CV7903 FAILED TO OPEN;SEC. FAULT	DEFEC. SCL.VLV IN AIR SUPPLY LINE(SV7807)
B	AR1	023181	112178	U	UV	V01	S	D			CONDENSATE VLV.CS-38 OPEN WHEN REQUIRED TO BE SHUT	PERSONNEL ERROR
B	CR3	017168A	020377	L	MV	A20	R	U			DECAY HEAT VLV DHV-4 WOULD NOT OPEN REMOTE ACTUATN	MTR. OPERATOR WOULDNOT OVERCOME VLV. DRAG

ALL VALVE EVENTS IN THE DATA FILE

VE N T	PL AN T	CONI.NO.	EVENT DATE	SY S	COM P	FAIL CODE	TY PE	CL AS S	CON PL PM	KEY	FAILURE MODE	FAILURE MECHANISM
B	CR3	017168B	020377	L	MV	A20	R	U			DECAY HEAT VLV DHV-41 WOULDNT OPEN REMOTE ACTUATN MTR. OPERATOR WOULDNT OVERCOME VLV. DRAG	
B	CR3	017176	020777	K	RM	B06	S	D			PER.CYCLED BSV-36 ALLOWING NAOH INTO THE RCS SYSTEM PROCEDURAL INADEQUACY	
B	CR3	017320	022577	W	RV	H00	R	U			MN.SYM.RELIEF VLV MSV-36 OPEN.BEFORE SETPOINT CAUSE OF PREMATURE OPENING NOT KNOWN	
B	CR3	017322	030777	H	RM	V01	S	D			"B" LOOP OF HPI SYS. ISOL.CONT.TO T.S.FOR MAINTENC PERSONNEL ERRCR	
B	CR3	017322A	030777	X	UV	D14		T			MUV-26 EXTERNAL LEAKAGE	PACKING FAILURE / REPLACED PACKING
B	CR3	017319	030877	W	RV	H00	R	U			MN.SYM.RELIEF VLV MSV-3 OPENED PREMATURELY	CAUSE OF FAILURE UNKNOWN
B	CR3	017653	032277	X	RM	A23		U			MAKE-UP VLV MUV-24 FAILED TO OPEN ON MAN.HPI INITI TORQUE SWITCH SETTING TOO LOW	
B	CR3	017656A	041577	C	MV	B16	S	D			MUV-258 FAILED TO CLOSE;CONTAINMENT ISOLATION VLV. INOPERABLE DUE TO DIRTY CONTROL CONTACTS	
B	CR3	017656B	041577	C	RM	B04	R	D			VLV.CAV-2 FAIL TO CLOSE;CONTAINMENT ISOLATION VLV CLOSURE SPRING NOT STRONG ENOUGH	
B	CR3	017655	041677	U	RM	B16	S	D			VALVE FWV-39640 FAILED TO CLOSE	DOC PRESS TRANSMITTER DIDNT SUPPLY SIGNAL
B	CR3	017658	042177	M	RM	V01	S	D			SUCT.VLV5 CAV-38646 FROM BORIC ACID STOR.TANK.SHUT T.S.VIG./PERSONNEL ERROR/IMP.VLV LINEUP	
B	CR3	017946	042477	R	UV	V06	T	D			VLV.SWV-151 WAS IN SHUT POSI.;GIVING CONT.TEMP.ALA PROCEDURAL INADEQUACY	
B	CR3	018559	071577	C	RM	F26		T			CONT ISOL VALVE WDV-94 FAILED TO OPERATE	DIRTY LIMIT SWITCH CONTACTS
B	CR3	018560	071577	C	RM	B16	S	D			CONT ISOL VALVE SWV-47 FAILED TO CLOSE	LOOSE WIRE/CONTROL PWR TO LIMIT SWITCH
B	CR3	018561	071577	L	MV	A23	R	T			VLV DHV-41 WOULD NOT OPEN FROM CONTROL ROOM	CAUSED BY SHIFT IN TORQUE SWITCH SETTING
B	CR3	018562	071577	L	MV	A00	R	U			DECAY HEAT VLV DHV-4 WOULD NOT OPEN FROM CONT.ROOM	CAUSE OF FAILURE UNKNOWN
B	CR3	018566	072977	X	MV	A12		D			HPI VLV MUV-25 FAILED TO OPEN AUTOMATICALLY	MECH.BINDING OF THE REVERSING INTERLOCKS
B	CR3	018843	081077	P	UV	V06	T	D			VLV SWV-151 WAS CLOSED WHEN REQUIRED TO BE OPEN	PROCEDURAL INADEQUACY
B	CR3	019010	082777	L	MV	B23		T			CORE FLOOD DR.VLV FOR B CORE FL.TK.WOULDNT CLOSE	DRIFT OF TORQUE SWITCH SETTING;VLV CFV-12
B	CR3	019013	083177	L	RM	B00		U			CORE FLOOD SAMP.ISO.VLV CFV-11 WOULDNT CLOSE	CAUSE OF FAILURE UNKNOWN

ALL VALVE EVENTS IN THE DATA FILE

V E N T	P L A N T	C L N T. N O.	E V E N T D A T E	S Y S	C O M P	F A I L C O D E	T Y P E	C L A S S	C O N M U M P M	K E Y	FAILURE MODE		FAILURE MECHANISM	
											FAILURE MODE	FAILURE MECHANISM		
B	CR3	019000*	090777	N	UV	C00	U	02	V		VLV INTER. LEAK/UNPLAN. RADIOACT. GAS RELEASE TUR. BLD	CAUSE OF VLV LEAK. NOT STATED		
B	CR3	019306	091477	C	AV	B23	T				CONF. ISO. VLV CAV-126 WOULD NOT CLOSE	SHIFT IN TORQUE SWITCH SETTING		
B	CR3	019305	091677	W	RV	H00	R	D			MN. STM. SAFETY VLV. MSV-42 RELIEVED AT PRESS. BELW SP	SETPOINT DRIFT (CAUSE OF DRIFT NOT STATED)		
B	CR3	019873	093077	N	UV	D14	T				LEAK. FROM MAKE-UP DISCH. PRESS. IND. ISO. VLV MUV-184	PACKING FAILURE/RADIOAC. GAS RELEASED		
B	CR3	020079*	100577	N	RM	C00	U	02	V		RAD. GAS FROM MKUP TK. LEAK. PAST VLVS TO COND AIR RS	CAUSE OF VLV LEAK BY NOT GIVEN		
B	CR3	019525	102877	C	AV	A24	S	D			VALVE MSV-130 WOULD NOT OPEN	FOREIGN PARTICLES IN ACTU. OF AIR SCL. VLV		
B	CR3	019800	112977	R	UV	V06	T	D			SNV-151 (IND. COOL. WTR. SUP. VLV) SHUT WHEN REQ. TO OPEN	PROCEDURAL INADEQUACY; THIRD OCCURENCE		
B	CR3	019978*	121477	C	RM	F16	S	D	03		3 VALVES, BSV-17, CFV-156, DSV-94 FAILED TO OPERATED	ONE RELAY FAILED/INSUL BETW CONTACTS (CC)		
B	CR3	020222	122877	N	MV	B04	D				RB PURGE EXHAUST VLV AHV-18 DID NOT AUTO CLOSE	DESIGN PROB/OPEN LIMIT SWITCH NOT ACTIVATE		
B	CR3	020265	011178	X	MV	V01	S	D			BRKR. FOR HPI ISO. VLV MUV-25 OPEN TAG. CONT. TO T.S.	PERSONNEL ERROR		
B	CR3	020478	020178	C	XV	V01	S	D			NITROGEN VLV NGV-81 WAS OPEN CONTRARY TO T.S.	PERSONNEL ERROR		
B	CR3	020843A	020178	N	UV	C00	R	U			NOBLE GAS FROM MAKEUP TK. LEAKED BY STP VL MUV-141F	CAUSE OF VLV LEAKAGE NOT GIVEN		
B	CR3	020843B	020178	N	CV	E00	R	U			NOBLE GAS FROM MAKEUP TK. LEAK. BY CHECK VLV MUV-140	CAUSE OF VLV LEAKAGE NOT GIVEN		
B	CR3	020266	020478	U	MV	F00	U				STROKE TIME FOR FEEDWTR ISG FwV-15 GRT. THAN T.S. L	DEFINITE CAUSE IS NOT KNOWN/BEING ANALYZD		
B	CR3	020752A	021078	C	SV	B00	R	U			VLV CAV-2 FAILED TO CLOSE; VIOLATED T.S. REQ.	CAUSE OF FAILURE NOT GIVEN		
B	CR3	020752B	021078	C	MV	B23	D				VLV CAV-1 FAILED TO CLOSE; VIOLATED T.S. REQ.	VLV HAD INCORRECT TORQUE SWITCH SETTING		
B	CR3	021166	040578	N	RM	A16	S	D			FSV-240 FAILED TO OPEN	CONTROL CKT BOARD SHORTED		
B	CR3	021775	062178	L	RM	A00	U				DECAY HEAT REMOV. VLV DHV-111 WOULD NOT OPEN REMOT.	CAUSE OF EVENT IS UNDETERMINED		
B	CR3	022361	081978	L	RM	G16	T	D			DHV-3 WENT CLOSED WHEN REQUIRED TO REMAIN OPEN	LOSS OF 120 VOLT AC VITAL BUS (INVERTER)		
B	CR3	022360*	082178	N	AV	G24	S	D	02		DAMPERS TO AHF-148 & D WENT CLOSED/VENT WAS REVERS	SOVS IN AIR SUP. HAD DEFECTIVE CNT. VLVS.		

ALL VALVE EVENTS IN THE DATA FILE

<u>EVENT</u>	<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SYS</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON</u>	<u>NUM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
B CR3	022358	090778	N DV	B12	D	CONF.COMPLEX AIR SUP.DAMPER D-1 WOULD NOT CLOSE						MECHANICAL BINDING OF AIR SUP.DAMPER D-1	
B CR3	022359	090778	C RM	B23	U	CORE FLOOD VALVE CFV-15 FAILED TO CLOSE ON TEST						FAULTY TORQUE SWITCH	
B CR3	023250	100178	Y UV	V06	S D	VALVE HDV-476 WAS LEFT OPEN AFTER SYS MODIFICATION						PROCEDURAL DISCREPANCY(PERSONNEL)	
B CR3	023095	100476	L RM	F16	S D	FLOW CONTROL VALVE DHV-110 FAILED TO CONTROL FLOW						NO SIGNAL FROM FLOW CONTROLLER	
B CR3	023095A	100478	L XV	V03	S D	ISOL VALVE TO FLOW CONTROLLER SHUT(SEE 023095)						PERSONNEL ERROR/VALVE REQUIRED TO BE OPEN	
B CR3	023237	103078	M RM	V01	S D	CONC.BORIC ACID TK+DISC.VLVs.CAV38E43 CLOSED;TS VI						PERSONNEL ERROR;IMPRPER VALVE LINEUP	
B DB1	019360	092477	K RV	B00	U	PRESSURIZER POWER RELIEF VALVE FAILED TO RESEAT						CAUSE NOT STATED	
B DB1	019377	101077	L MV	I16	S D	DECAY HEAT ISOL. VLV DH-12 MIGHT INADVERT. CLOSE						REQUIRED WIRING CHANGE TO FIX	
B DB1	019361	102077	B UV	V01	S D	BOTH AUX.FD.PMP.SUCTS.LINED UP TO DEAERATOR STR.TK						PERSONNEL ERROR;IMPRPER COOL.WTR.LINEUP	
B DB1	019530	102577	B SV	A23	D	VLV AF3872 FAILED TO STROKE WHEN GIVEN OPEN SIGNAL						OPEN TORQUE SWITCH WAS DEFECTIVE	
B DB1	019548	111777	B UV	V06	S D	AUX.FDWTR.VLVs AF3996608 CLOSED;T.S.VIOLATION						PROCEDURAL DEFICIENCY;TEST PROCEDURE REVI	
B DB1	019815	112777	N DV	B10	T	ISO.DAMPER HV-5311A WOULD NOT CLOSE COMPLETELY						DAMPER SEAL DIRTY & NEEDED LUBRICATION	
B DB1	019939	121277	J UV	V01	S D	SER.WTR.OUT.ISO.VLV,COMP.COOL.WTR.LP1-2HTXCH.CLOSE						PERSONNEL ERROR;IMP.VLV LINEUP;T.S. VIOL.	
B DB1	019984	121677	B UV	V03	S D	AUX.FDWTR VLVs AF3996608 SHUT;MS107A,AF3871&72BK.O						PERSONNEL ERROR;IMPRPER VLV LINEUP	
B DB1	020219*	122177	M RV	H00	U 04	4 MN.5TH.SAFETY VLVs LIFTED BELOW DESIGN SETPOINTS						CAUSE OF PREMATURE OPENINGS IS UNKNOWN	
B DB1	020269A	010378	Y UV	D14	T	LEAKAGE OBSERVED FROM PACKING ON VLV DH2735						PACKING WAS LOOSE ON VLV;VLV WAS REPACKED	
B DB1	020269B	010578	Y XV	D14	T	PACKING LEAK PRESS.LVL.TRANSMITTER SOURCE VLV PACK						VLV PACKING GLAND LOOSE;VLV WAS REPACKED	
B DB1	020270	010578	N DV	V00	S D	INLET BAL.DAMPERS TO EVS FANS 1-161-2 FOUND CLOSED						EXACT CAUSE UNKNOWN/PROBABLY PERSONNEL ER	
B DB1	020275	011278	S AV	F24	S D	SM-1424 NOT OPER. PROP.;SOMETIMES STUCK OPEN,SHUT						SOLENOID VLV IN CONY SYS BURNED OUT	
B DB1	020707*	021078	L AV	I02	D 02	MECH.STOPS FOR DH14A&14B INCORRECTLY SET						PERSONNEL ERROR;MAINTENANCE DONE INCORREC	

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SYSTEM	COMP	FAIL CODE	TYPE	CLASS	CON NUM	KEY	FAILURE MODE	FAILURE MECHANISM
B DB1	020762	022878	W RM	100		D				MN. STM. ISO. MS-101 HAD RAISED METAL ON 2 OF 4 SP. GD.	CAUSE OF RAIS. MET. ON SPR. GUID. TUBE. UNKNOWN
B DB1	020969*	031678	B CV	E00		U	02			CHECK VLVS AF39672 LEAKED INTERNALLY	CAUSE OF REVERSE LEAKAGE NOT GIVEN
B DB1	020969A	031678	B MV	A26		D				AUX. FDPMP. 1-1 STOP VLV AF3870 FAILED TO OPEN	LIMIT SWTCH ON VLV MTR NOT ADJUSTED PROP.
B DB1	019549	032278	H XV	V03		S	D			HI POINT VENT (HP-72) NOT VENTED AS REQUIRED	PERSONNEL ERROR (REMOVED FROM TEST LIST)
B DB1	021184	032578	U MV	B20		D				MN. FDWTR. BLOCK VLV FW-779 DID NOT CLOSE COMPLETELY	MTR. OPERATOR NEEDED ADJUSTMENTS
B DB1	021178A	040878	Y CV	A10		T				SUCT. CH. VLV ON HYD. DILUTION BLWR. WOULD NOT OPEN	VLV INTERNALS DIRTY, CAUSING STICKING
B DB1	021177	041078	B CV	D13		U				SHUT DOWN AUX. FDPMP. 1-2 DUE TO STM. LEAK ON MS-735	STM. LF. CAUSED BY BAD COVER GASKET & SURF.
B DB1	021178B	041878	Y CV	A10		T				DISC. CK. VLV ON HYD. DILUTION BLWR. WOULD NOT OPEN	VLV INTERNALS DIRTY, CAUSING STICKING
B DB1	021213	042378	Y XV	V02		S	D			DISCHARGE VALVE OF DILUTION BLOWER MISTAKENLY SHUT	PERSONNEL ERROR (WRTE 1-2 INSTEAD OF 1-1)
B DB1	021176	043078	L UV	V01		S	D			VLVS DH11612 WERE NOT OPENED WHEN REQ. DURING S/D	PERSONNEL ERROR & PROCEDURE INADEQUACY
B DB1	021583	050478	S CV	E09		T				VLV SW-82 HAD REVERSE LEAKAGE; OUTLET CHECK VALVE	TOP OF INTERNALS WERE RUSTED; PREV. OPERATN
B DB1	021579	050978	C CV	D05		D				CONT. VAC. RELIEF CV-5070 HAD EXCESSIVE LEAKAGE	DEF. INITIAL INSTAL. OF TEST CONN. PIPING
B DB1	021578	051178	C CV	D05		D				CONT. VAC. RELIEF CV-5076 HAD EXCESSIVE LEAKAGE	VLV NOT PROPERLY SEATING AGAINST VLV LINE
B DB1	021851	060578	L CV	D13		T				CCRE FLOOD LINE DISC. CK. VLV CF30 LEAKING AT BONNET	FAILURE OF BONNET GASKET
B DB1	021849*	060778	C CV	E68		T	C6			6 CONT. ISO. CK. VLVS SHOWED EXCESSIVE LEAKAGE	PART. OF DIRT OR WEAR/PITTING PREV. SEATING
B DB1	021853*	062578	C RM	F16		S	D	02		IWC CONT ISO. VALVES (CC14078 & CC14118) FAIL TO OPER	BROKEN WIRES AT CONNECTORS (CLOSURENESS)
B DB1	021958	071378	P UV	106		D				DISCOVERED 2 REQUIRED TEST NOT BEING PERFORMED/T.S	TESTS NOT INCORPORATED INTO SCHED. PROGRAM
B DB1	021957	071678	L MV	A12		D				DECAY HEAT COOL. 1-2 OUTLET VLV DH-14A WOULDNT OPEN	ACTUATOR ARM HAD BECME MISALIGNED
B DB1	022047*	071878	U RM	F03		D	02	V		POWER REMOVED FROM FEEDWATER STOP VALVES FOR TEST	PERSONNEL ERROR, FAILED TO RESTORE POWER
B DB1	022051	072478	C CV	102		D				FLOOR DRAIN FLAPPER VLV REMOVED, MODE 4 OPER; TS VIO.	PERSONNEL ERROR MAINTENANCE

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLAN	COMT.NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CON	MU	KEY	FAILURE MODE	FAILURE MECHANISM
B DB1	022366	081578	S UV	T01	D							PORT. OF SERVICE MTR. VLV. TEST NOT PERF. IN REQ. TIME	PERSONNEL ERROR/INSTRUCTIONS MISINTERPRET
B DB1	022690	091578	S XV	V01	S D							SERVICE WATER OUTLET VALVE NOT REOPENED	PERSONNEL ERROR AFTER FLOW BALANCE
B DB1	022691	091778	Y SV	F22	T							RADIATION MONITOR PMP DISCH. VLV FAILED TO OPERATE	DIAPHRAGM IN VLV WAS CRACKED/DUE TO HI TM
B DB1	023002	100578	S AV	A12	D							SER. MTR. OUTLET VLV SW-1424 FAILED TO OPEN	NUT MISSING FROM VLV ACTUATOR LINKAGE
B DB1	023006	102178	N DV	B10	T							EMER. VENT. SYS. ISO. DAMP. HV-5301A WOULD NOT CLOSE	DIRT ON SEALING SURF/NEEDED LUBRICATION
B DB1	023007	103178	E DV	A12	D							DIESEL GEN. 1-2 OUTSIDE AIR DAMPER WOULD NOT OPEN	DAMP. LINK. OUT OF ADJ. & BOUND IN A GUIDE
B DB1	023568*	121678	M RV	A06	C D 13							13 MN. STM. SAFE. RV NOT WITHIN LIMITS OF SETPOINT	PROCEDURAL DISCR. (PROC. DOESN'T ACC FOR T)
B DB1	023424	123078	S AV	F12	D							SER. MTR. OUTLET VLV SW-1424 WOULD NOT OPERATE PROP.	LINK. BETWEEN VLV. & OPERATOR OUT OF ADJUST
B DE1	014608	041378	H XV	F12	D							FLOOD TANK 1A NITROGEN ADD VLV FAILED OPEN	VAL STEM SEPERATED FROM DISK
B DE1	014609	041478	N RM	B12	D							ES VALVE PR-7 FAILED OPEN	VLV SPIND. BROKEN/LMT & TORQ SWT. INOPER.
B DE1	015530	081078	C AV	F24	T D							VALVE PR-2 FAILED IN INTERMEDIATE POSITION	RUPTURED DIAPHRAGM, AIR SUP. SYS. EXH.
B DE1	019860	010477	N MV	F16	S D							DISCHG. VLV. 1PR-19 ON PENET. RM. EXH. FAN INOPERABLE	DIRTY CONTACT CN MTR. CONT. CENTER
B DE1	017226	022577	C SV	F21	U							MPI LETDOWN ISO. VLV., 1HP-5, FAILED (CONT. ISO. VLV.)	ELECTRICAL FAILURE OF THE SCLENDID COIL
B DE1	017418	031677	U RM	B14	R T							VALVE 1FDW-108 FAILED TO CLOSE	VALVE PACKING FAILED (HARDENED)
B DE1	017497	031677	G UV	B10	I							CAUSTIC DRAIN VLV FAILED TO FULLY CLOSE	CAUSTIC DRIED CN VLV SEAT PREVENTING CLOS
B DE1	017473	032677	C AV	F24	T D							VALVE PR-2 FAILED IN INTERMEDIATE POSITION	RUPTURED DIAPHRAGM, AIR SUP. SYS. EXH.
B DE1	018295	061577	U RM	B00	R U							CONT. ISO. VLV 1FDW-108 FAILED TO CLOSE	NO DEFINITE REASON FOUND FOR FAILURE
B DE1	018292	062977	N UV	VC2	S D							MTR. TRAIN PENET. RM. VENT. SUCT. ISO. VLV. CLOSED WHEN R-	REQUIRED TO BE OPEN//PERSONNEL ERROR
B DE1	018308	070777	K MV	B20	T							VALVE RC-6 FAILED TO CLOSE	FINGER CN MOTOR CONTACTOR DIRTY
B DE1	018427	070777	N MV	F23	T							VALVE 1LPSW-18 FAILED TO OPERATE	MECHANICAL FAILURE OF TORQUE SWITCH

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>S</u> <u>S</u> <u>T</u> <u>E</u> <u>M</u>	<u>C</u> <u>O</u> <u>D</u> <u>E</u> <u>M</u> <u>P</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>Y</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>N</u> <u>O</u> <u>M</u> <u>P</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
B	OE1	019881	112977	J	RM	B19	R	T			VALVE FDW-108 FAILED TO CLOSE	VAL.STEM NEEDED LUBRICATION
B	OE1	020092	122077	K	UV	D14		T			VALVE 1RC-2 LEAKING EXTERNALY	VALVE PACKING FAILED
B	OE1	021320	031578	U	RM	B19	R	T			VALVE 1FWD-108 FAILED TO CLOSE	VAL STEM NEEDED LUBRICATION
B	OE1	022343	082978	R	MV	F12		D			VALVE LPSW-21 FAILED TO OPERATE PROPERLY	MISALIGNMENT OF GEARING BETW VAL +OPER
B	OE2	014811	011076	Y	XV	D14		T			INST-ROOT VAL ON PRESS LEV TRANS LEAKING EXTERNAL	VALVE PACKING FAILURE
B	OE2	015537	070676	X	XV	V02	S	D			HIGH PRESS TRANS ROOT VAL CLOSED ON STARTUP	MAINT.PERS-LEFT VAL WITH IMPROPER LINE UP
B	OE2	015538	070676	C	XV	V01	S	D			VALVES 2IA-90 AND 91 NOT IN PROPER LINE UP	PERSONNEL ERROR
B	OE2	015535	080976	L	UV	V01	S	D			LOW PRESS INJECT TRAIN A NOT ISO PROPERLY	PERSONNEL FAIL TO FOLLOW T.S.REQUIREMENTS
B	OE2	016210	100776	C	RM	F12		D			VALVE 2LWD-1 INOPERABLE	COMPRESSION FCOTROLL PIN BROKEN
B	OE2	016201	101476	L	MV	A16	S	D			VLV LPSW-5 COULD NOT BE OPENED REMOTELY	DIRTY ELEC.CONTACT IN MOTOR CONTROL CENTR
B	OE2	017225	011377	C	MV	A23		U			VALVE 2BS-2 FAILED TO OPEN	TORQUE & LIMIT SWITCHS OUT OF ADJUSTMENT
B	OE2	017541	040577	G	MV	B12		D			VALVE 2LP-21 FAILED TO CLOSE	LOOSE SET SCREW ON PINION GEAR OF MTR SFT
B	OE2	019666	041977	C	MV	B00		U			ISG VAL 2CS-5 WOULD NOT CYCLE FROM OPEN TO CLCSE	CAUSE UNKNOWN / REQUIRED EXC.TORQUE
B	OE2	019882*	111677	U	RM	B19	R	T	02		VALVES FDW-106 +108 FAILED TO CLOSE	LACK OF VAL STEM LUBRICATION
B	OE2	019900	120177	N	XV	D14		T			VALVE RC-16 LEAKING EXTERNALY	VALVE PACKING FAILED
B	OE2	019970	120877	F	XV	V01	S	D			ISO.VLV.TO CHAN.3 RB PRESS.TRANS.SHUT BY MISTAKE	PERSONNEL ERROR
B	OE2	021130	040778	N	UV	D14		T			VALVE 2RC-3 LEAKING EXTERNALY	VALVE PACKING FAILURE
B	OE2	021130A	040778	P	XV	D14		T			EXTERNAL LEAK ON AN INSTR. LINE ROOT VALVE	VALVE PACKING FAILURE
B	OE2	021527	042875	N	XV	V06	S	D			VLV 2LPSW-241 FOUND THROTTLED WHEN REQ. OPEN	DEFECTIVE PROCEDURES
B	OE2	023020	110578	K	XV	V01	S	D			RC LOOP A1 HPI STOP CHECK VALVE FOUND CLOSED	PERSONNEL ERROR;VALVE WAS REQUIRED OPEN

ALL VALVE EVENTS IN THE DATA FILE

<u>EVENT</u>	<u>PLAN</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SY</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CN</u>	<u>MU</u>	<u>PH</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
B DE2	023427	123078	K XV D14	U									SPRAY CONTROL BYPASS VALVE 2RC-2 LEAKING EXTERNAL	PACKING LEAK
B DE3	014927	050476	L RM B23	U									VALVE 3CS-5 WOULD NOT CLOSE REMOTELY	TORQUE SWITCH FAILURE
B DE3	C15955	082276	U AV B24	S D									VALVE 3FDW-108 FAILED TO CLOSE	SCLEN. & SPR. IN AIR SUPPLY TO V FAILED
B DE3	016143	100976	N AV V06	S D									DRAIN VALVE NOT IN PROPER LINEUP	ERRCR IN PROCEDURES
B DE3	016209	110176	H CV V01	S D									IMP. LINEUP VALS 3HP-152 + 3HP-153 CLOSED S.B. OPEN	PERSONNEL ERROR
B DE3	016900	112176	C RM F00	U									CNTNMNT FEED W-TER ISO VAL INOPERABLE	CAUSE UNKNOWN (PROBABLE INTERNAL PROBLEM)
B DE3	017061	012677	C RM B10	T									CNTNMNT ISO VAL 3RC-7 FAILED TO CLOSE	PAINT ON VLV STEM PREVENT. PROP. FNCT.
B DE3	017451	032277	C RM B14	T									FEEDWATER CNTNMNT ISO VAL 3FDW-106 FAIL TO CLOSE	HARDENING OF VALVE PACKING
B DE3	C19884	112877	X XV V02	S D									IMPROPER VLV LINEUP TO CHAN. A NARROW RANGE PRESS.-	-TRANSMITTER//PERSONNEL ERROR
B DE3	019883	120677	L XV T06	D									VALVE LP-28 OPEN BUT NOT LOCKED AS REQD	INADQAULATE PROCEDURES
B DE3	020064	010378	L AV F12	D									VALVE 3LP-14 FAILED TO CYCLE MANUALLY	MECH PARTS LOOSE+OUT OF ALIG-
B DE3	020159	010378	U RM B14	R T									VALVE FDW-108 FAILED TO CLOSE	VALVE PACKING FAILURE
B DE3	020488	020278	C MV B23	U									VALVE 3PR-9 FAILED TO CLOSE	TORQUE SWITCH FAILURE
B DE3	020592	020378	F MV A23	U									VALVE BS-3 FAILED TO OPEN	TORQUE SWITCH FAILURE
B DE3	020593	020778	F MV F12	D									VALVE BS-2 FAILED IN INTERMEDIATE POSITION	VALVE STEM FAILURE
B DE3	C20640	020878	S UV V00	S D									LPSW PUMP SUCT VAL CLSD DUR PUMP START UP	CAUSE UNKNOWN (PROBABLE PERSONNEL ERROR)
B DE3	021047	032078	H MV A16	S D									VALVE HP-24 FAILED TO OPEN	DIRT ON VAL OPER CONTACTS
B DE3	021048	032278	S XV V01	S D									VALVE 3LPSW-78 CLOSED WHEN REQ. OPEN	PERSONNEL ERROR (VLV OPENS CLOCKWISE)
B DE3	022367	082378	R SV A23	T									VALVE 3LPSW-24 INOPERABLE IN THE CLOSED POSITION	TORQUE SWITCH FAILED DUE TO CORROSION
B DE3	023312	120878	U UV D00	U									VALVE 3FDW-46 LEAKED ON RTD	REASON FOR LEAKAGE NOT STATED

ALL VALVE EVENTS IN THE DATA FILE

W E N T	P L A N T	C O N T. N O.	E V E N T D A T E	S E R V I S	C O D E	F A I L C O D E	T Y P E	C L A S S	C O N T R O L P H O N E	K E Y	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
B	DE3	023396	121678	N	RM	B26	B	T			ISOL VALVE 3FDW-106 FAILED TO CLOSE (RECURRING)	REPAIRED LIMIT SWITCH
B	RS1	014306	020776	L	MV	A00		U			RHR MOV FAILED TO OPEN DURING TESTING(HV-26106)	TIGHT PACKING /POSS STICKING SEAT
B	RS1	015612	080576	L	UV	D00		U			VENT VALVE ON DECAY HEAT COOLER EXTERNAL LEAKAGE	UNKNOWN/NIPPLE REPLACED/POSS VIBRATION
B	RS1	016558*	111176	L	MV	A23	B	T	02		TWO DECAY HEAT MOV'S FAILED TO OPEN FOR MONTH TEST	TORQUE SWITCHS NEEDED RESET/TESTED WEEKLY
B	RS1	019535*	092177	C	AV	C25	C	T	02		RB PURGE INLET & OUTLET VALVE LEAKED THRU ON LLRT	SEAT DEGRADATION ON 66 IN BUTTERFLY VALVE
B	RS1	019536	100177	L	MV	F20		D			BWS ISOL VALVE FAILED TO OPERATE (SFV-25003)	LIMITORQUE OPERATOR(SMB)FAILED(EXCESS UP)
B	RS1	019666	111177	H	MV	V04	S	D			VALVE LINE-UP INCORRECT//NEW VALVES WERE INSTALLED	--WITH OPEN/CLOSE INDICATION ATYPICAL
B	RS1	019794	111777	K	XV	D14		T			PRESSURIZER VENT VALVE LEAKING EXTERNALLY	BACKSEATING VELAN GLOBE VALVE STOPPED LEAK
B	RS1	019798	111977	H	MV	F00		U			HPI INJECTION ISOLATION VALVE FAILED TO CYCLE/TEST	UNKNOWN
B	RS1	021198	050978	M	RV	A06		D			4 MS SAFETY VALVES FOUND SET WRONG/NON-CONSERVATIV	MAIN PROCEDURE INADEQUATE/REVISED
B	RS1	021746*	061178	K	RV	C00		U	03		2 SAFETY#1 ELECTRO RV LEAKING THRU DURING TESTING	UNKNOWN/2 REPLACED#1 REBUILT
B	RS1	021746A	061178	K	RM	C00		U			A BLOCK VALVE ON ELECTRO RV LEAKED THRU/TESTING	UNKNOWN/REWORKED VALVE
B	RS1	023502	121578	L	UV	V01	S	D			INCOMPLETE VALVE LINEUP CAUSED SEVERE H2O HAMMER	PERSONNEL ERROR
B	RS1	023484	122178	X	XV	V01	S	D			FLOW TRANSMITR INADVERTANTLY VALVED OUT(RX TRIP--	CKTS EFFECTED//PERSONNEL ERROR
B	T11	013970	010276	N	AV	C24	S	D			INADVERTANT RELEASE THRU ADV-WDL-V125	PERSONNEL/OPER FAILED TO BLEED OFF AIR
B	T11	013950	010676	J	RM	A12		D			RIVER PUMP DISCHARGE VALVE (NR-V1A) FAILED TO OPEN	16 IN BUTTERFLY BINDING/OPERATOR DAMAGED
B	T11	013949	011076	Y	UV	V06	S	D			IMPROPER VLV. LINEUP TO RM-2A(COOL. LEAK DET. SYS.)	INADEQUATE PROCEDURES
B	T11	014220	022176	G	UV	V06	S	D			IMPROPER VLV LINEUP ON "A" MAKEUP AND PURIF. PUMP	PROCEDURE AND PERSONNEL ERROR
B	T11	016832	031376	N	UV	C00		U			VALVE FOR EACH TANK LEAKED THRU/1250 GALS IN 8DAYS	UNKNOWN
B	T11	014718	042775	L	UV	F12		U			VALVE FAILED TO OPERATE (DH-V1)	STEM NEEDED REPLACED

ALL VALVE EVENTS IN THE DATA FILE

VE N	PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CONTR. PH	KEY	FAILURE MODE	FAILURE MECHANISM
B	T11	016830*	051076	C	RM	CG7	T	(3	A		SOME VLVS LEAKED THRU ON CONTAINMENT LEAKRATE TEST	NCRMAL WEAR
B	T11	016830A	051076	C	RM	CO4					VALVE LEAKED THRU DURING CONTAINMENT LEAKRATE TEST	DESIGN IMPROPER
B	T11	016830B	051076	C	RM	CO5	C	D	02		2 VALVES LEAKED THRU ON CONTAINMENT LEAKRATE TEST	FAB ERROR/SEAT RINGS WELDED IMPROPERLY
B	T11	016829	052076	C	MV	B23					CONTAINMENT ISOLATION MOV FAILED TO CLOSE (WDG-V3)	TORQUE SW PROBLEM (POSS TIGHT PACKING)
B	T11	014988	052176	C	RM	B14	T				CONTAINMENT ISOLATION VALVE MU-V28 FAILED TO CLOSE	BINDING OF PACKING AND/OR STEM (ROCKWELL)
B	T11	015081	052676	N	RM	B16	S				LQUID RELEASE VLV FAILED TO CLOSE ON AUTO SIGNAL	FAILED RELAY IN INTERLOCK CIRCUIT
B	T11	015180*	062276	Y	RM	B16	S	D	02		TWO VALVES FAILED TO CLOSE GIVEN HI RADIATION SIG	COMMAND FAULT/MAINT REMOVED RELAY
B	T11	016116	092276	C	MV	B20					CONTAINMENT ISOLATION MOV (CA-V4A) FAILED TO CLOSE	LOOSE LOCKNUT ON VALVE OPERATOR
B	T11	016109	101276	N	UV	V01	S				INCORRECT VALVE LINEUP LEAD TO HI DISSOLVED SOLIDS	PERSONNEL ERROR/ >700PPM DISCHARGED RIVER
B	T11	016382	110676	L	MV	D13					EXTERNAL LEAK INCREASED WHEN MOV (DH-V1) OPENED	LEAKAGE PAST SEAL RING GASKET/SHUT VALVE
B	T11	016661	120776	N	RM	B02	R				48 INCH BUTTERFLY VALVE FAILED TO CLOSE/TESTING	PERSONNEL ERROR/INADEQUATE MAINTENANCE
B	T11	017343	030977	C	MV	B23					MO SPRAY PUMP SUCTION VALVE FAILED TO CLOSE/TEST	GREASE IN SPRING PREVENTED TORQUE SW OPER
B	T11	017610*	032477	C	UV	C07	R	T	03	S	LOCAL LEAKRATE TESTING IDENTIFIED SEVERAL VALVES--	--LEAKING THRU//NORMAL WEAR
B	T11	018256	052477	C	AV	B27	T				AO VALVE RB-V7 FAILED TO CLOSE DURING TESTING	ASCG SOLENOID PILOT VALVE FAILED/DIRT
B	T11	021381	120877	N	MV	B17					PROCESS SAMPLING MOV CA-V13 FAILED TO CLOSE	BUSHING FAILED DUE TO WEAR/POSS LUB PROC
B	T11	020294	011778	N	XV	D14	T				WHILE CLOSING MU-V74A EXCESSIVE EXTERNAL LEAKAGE	PACKING IN VALVE WAS WORN
B	T11	021954	060578	N	RM	F16	S				RB-V-7 DID NOT OPERATE (RX. BUILD. COOL. SYS. VLV.)	FAILED THYRECTOR CAUSED SHORT CIRCUIT
B	T12	021277	040478	L	AV	A27	U				RHR ADV (NS-V03B) FAILED TO OPEN DURING TEST	FAILURE OF SOLENOID OPERATED PILOT VALVE
B	T12	021274	041578	N	DV	B12					VENTILATION DAMPER VALVE (D-4098) FAILED TO CLOSE	DAMPER LINKAGE IMPROPERLY ADJUSTED
B	T12	021611	041978	C	RM	B23					CONT. ISO. VLV CA-V3 FAILED TO FULLY CLOSE ON AUTO -	--SIGNAL//INCORRECT TORQ. SWITCH SETTING

ALL VALVE EVENTS IN THE DATA FILE

<u>EVENT</u>	<u>PLANT</u>	<u>CONT.NO.</u>	<u>EVENT DATE</u>	<u>SY</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON</u>	<u>MPH</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
B TI2	(21273*	042378	M RV	B60	U G2	Y						MAIN STEAM RELIEF VALVES FAILED TO RESEAT	UNKNOWN
B TI2	022390*	082478	X UV	102	D 04	Z						CABLES TO SAFETY RELATED VALVES NOT SPICED AS REQ	PERSONNEL ERROR/CONTRACTOR PERSONNEL
B TI2	022386	090778	C MV	102	D							DISCOVERED MOV THAT DIDNT HAVE CONT GRADE SWITCHES	--AND MOTOR(WDL-V-2711)/PERSONNEL ERROR
B TI2	022385	090878	C RM	B00	U							CONTAINMENT ISOL VALVE(WDL-V1125)FAILED TO CLOSE	UNKNOWN/COULD NOT BE REPEATED
B TI2	023076*	090878	C MV	102	D 02							MOVS(MU-V24/B)FOUND WITH CONNECTIONS NOT TAPED	PERSONNEL ERROR/INSTALLED SHRINK TUBING
B TI2	022652	091378	N DV	B24	S D							AD VALVE (4092C) FAILED TO CLOSE/COMMAND FAULT	DESIGN ERROR IN AIR SUPPLY SYSTEM
B TI2	023543	120278	U RM	F06	D							MAIN FEED REG VALVE PINNED OPEN, EXCESS FLOW RESULT	DEFECTIVE PROCEDURES
B TI2	023429*	121378	C RM	B16	S D 04							FOUR CONT ISOL VALVES FAILED TO CLOSE ON TEST	RELAY FAILED TO PROVIDE LOGIC SIGNAL
C AR2	023481	122078	J MV	A16	S D							FLOW CONTROL VLV 2CV-1025-1 FAILED TO OPERATE	LOOSE MOTOR POWER CONNECTION
C AR2	023488	122778	M RV	B00	U							MAIN STM RELIEF VLV 2PSV1053 FAILED TO RESEAT	NO CAUSE FOR FAILURE GIVEN
C CC1	014122	010376	M HV	113	T							GROSS OIL LEAK CLOSING SIDE OF #11 MSIV OPERATOR	FAILED OCM-RING HI PRESS. SIDE OF VLV OPER
C CC1	014166	011976	N MV	B12	D							MOV-5463 STUCK IN THE INTERMEDIATE POSITION	LOCK DEVICE BRASS BUSH, LOOSENED; UNCUP, STM
C CC1	014465	030576	H MV	F16	S D							HPSI LP. ISO. VLV 1-MOV-616 WOULD NOT OPER. REMOTELY	BLOWN CONTROL CIRCUIT FUSE CAUSED FAILURE
C CC1	014703	033176	S RM	104	R D							BUTTERFLY VALVE TO BE REPLACED WITH GATE(1CV521G)	POOR DESIGN/PIPE ERRORED DOWNSTREAM OF VL
C CC1	014467	040576	N UV	V01	S D							#12 S/G BLOWDOWN CRO. BYPASS 1-BD-121 POSIT. INCCRR.	T.S. VID./PERSONNEL ERROR (SHUT WRONG VLV)
C CC1	014700	041976	C UV	C10	D							DRAIN LINE ISOLATION VALVE LEAKING THRU ON TESTING	FOREIGN MATERIAL/FREQ USE, DAMAGED SEAT
C CC1	017925	051976	N UV	V00	S D							BCRIC ACID STOR. TK. #11 DRAIN. BELOW MINIMUM LEVEL	CAUSE NOT DETERMINED/PROB. PERSON. ERROR
C CC1	017925A	051976	N RV	I00	U							WORK REQUIRED ON STORAGE TANK OUTLET RELIEF VALVE	FAILURE CAUSE NOT STATED
C CC1	015124	052776	G AV	A22	D							THE VCT MAKE-UP STOP FAILED TO OPEN	RUPTURE OF VLV CONTROL DIAPHRAGM
C CC1	015271A	062776	G RV	D04	C D							PIN-HOLE LEAK DISCOV. IN BONN. #11 BOR. ACID. PEP. RELIEF	SUC. REL. MADE OF CARBON STEEL; DESIGN ERROR

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT.NO.	EVENT DATE	SH-OP	COMP	FAIL CODE	TYPE	CLASS	CON	KEY	FAILURE MODE	FAILURE MECHANISM
C CC1	0152718	062776	G RV	I04	C D	#12 BORIC ACID PUMP SUC.RELIEF MADE OF WRONG WATER DESIGN ERROR						
C CC1	016406	102276	C MV	B17	D	WHILE DRAIN.CONT.SUMP,MOV-5463 WOULD NOT SHUT					STEM BUSHING INTERNAL THREADS WERE STRIP.	
C CC1	016408	110476	S XV	V01	S D	DIESEL SERVICE WTR.SYS.LINED UP IMPROPERLY					PERSONNEL ERROR;OPERATED WRONG VALVES	
C CC1	016403	111776	H MV	A23	R D	AUX.HI.PRESS.LP.ISO.VLV SI-617 FAILED TO OPEN					DEFECTIVE TORQUE SWITCH;BURNED CONTACTS	
C CC1	016740	121976	N UV	B17	D	#12 S/G BOT.BLCW.DROFFICE BYPASS VLV WOULD NOT SHUT					DAMAGED BUSHING CAUSED VLV NOT TO SHUT	
C CC1	017476	031377	L UV	V06	S D	ISO.VLV ADD.TO AUX SPRAYLN DUR-PRIOR OUT.LEFT SHUT					VLV.NOT INCLUDED IN VLV LINEUP/PROCD.ERR	
C CC1	017743	042577	J CV	A12	D	#12 SALT WTR.PMP.DISCH.CK.VLV WOULD NOT OPEN					DISC SLAMMED SHUT AND WEDGED IN THE SEAT	
C CC1	018487	071377	E XV	V01	S D	ISO.VLV TO PRESS.SWTCHS.FOR #11DSL.SHUT/T.S.VIO.					PERSONNEL ERROR/IMPROPER VLV LINEUP	
C CC1	019206	100377	S AV	F24	T D	SERVICE H2O CONT VALVE OPERATED ERRATICALLY IN AUT					PROBLEM WITH PNEUMATIC CONTROLLER TO VALV	
C CC1	019203	100477	S AV	F24	T D	SERVICE H2O CONT VALVE OPERATED ERATICALLY IN AUTO					PNEUMATIC CONTROLLER NEEDED CALIBRATION	
C CC1	019479A	101977	N DV	B19	T	SPENT FUEL PL.CHAR.ABS.BANK BYP.DMP.FAILED TO SHUT					OPER.BIND. DUE TO IMPROPER LUBRICATION	
C CC1	019479B	101977	N DV	B02	D	SPENT FUEL PL.CHAR.ABS.BANK BYP.DMP.FAILED TO SHUT					60 FB DAMPER GASKETS WERE MISSING	
C CC1	020636	121977	J RV	I09	T	#11COMP.COOL.HEAT XCHGR.SALT WTR.RV NEEDED REPAIRS					VLV'S SPRING WAS SEVERELY CORRODED	
C CC1	020163*	012278	K XV	D00	T G2	EXTERNAL LEAKAGE ON PRESS.INST.RT VLV&A SPRAY VLV					STEM PACKING LEAKS	
C CC1	020163*	012578	W HV	F00	U 02	BOTH HSIV'S FAILED TO CLOSE WITHIN REQ. TIME(3.6S)					CAUSE UNDER INVESTIGATION	
C CC1	021056*	033078	W RV	A06	R D 09	9 MN.STM.SAFE-REL.VLV SETTINGS OUT OF TOLERANCE					PRCCDUR.CHG.CAUSED RV SETPOINTS TO BE WR	
C CC1	021057	041178	G UV	D14	D	VLV CVC-397(LETDWN.ISO.VLV)HAD EXT.PACKING LEAK					VLV STM.PACKING WAS WORN	
C CC1	021536	042578	N RM	V06	S D	#4 HALON SUBSYSTEM INADVERTENTLY DISCHARGED					INADEQUATE PROCD. RESULTED IN IMP.VLV.LU	
C CC1	021700	060778	C MV	F26	D	CONT NOR SMP TSO (MOV-5463)DID NOT SHUT IN REQ TIM					OPEN LMT.SWICH.WAS OUT OF ADJ.(PROCEDURE)	
C CC1	021994	072178	W HV	F13	U	#12 HSIV DECLAR.INOP.DUE TO ACCUMULATORS DEPRESS.					HSIV ACTUATOR CAP & SEAL WERE FAILED	

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	SY	COMP	FAIL CODE	TYPE	CLASS	CONMUM	KEY	FAILURE MODE	FAILURE MECHANISM
C	CC1	022600*	092378	N	DV	C12		U	02		#116#12 SFP EXH. FAN DISCH. DR. VLV. LEAKING INTERNALLY	VLVS WERE OUT OF ADJUSTMENT
C	CC1	023381	120978	G	UV	D18		T			#11 RX. COOL. CHG. PUMP DISCHG. ISO. VLV. LEAK. EXTERNAL.	BODY TO BONNET SEAL WELD FAILURE
C	CC1	023262	121678	N	UV	VQ1	S	D			IMPROPER VLV. LINEUP ON MAKE-UP WATER DEMINERALIZ.	PERSONNEL ERROR
C	CC2	020628	010477	N	RM	A24	S	D			VLV 2-CV-5291 IN CONT. ATM. SMPL. LN. COULD NOT BE CP	SOLENOID VLV IN SUPPLY LN FAILED
C	CC2	017455	031477	W	XV	D13		T			S/G COMB. LVLEPRESS ROOT STOP VALVE LEAK. EXTERNAL.	GASKET FAILURE IN BOLTED BONNET
C	CC2	017986	032277	E	UV	C00		U			#21 DG COOL. SERV. WTR. INLET (2-CV-1587) LEAK. BY SEAT	CAUSE OF INTERNAL LEAKAGE NOT GIVEN
C	CC2	017906	051477	W	RV	H12	R	T			S/G SAFETY VLV LIFTED BELOW SETPOINT (2-RV-3993)	DRIFT IN VLV'S SPRING TENSION/ADJ. TENS.
C	CC2	018040*	061477	W	RV	H12	R	T	04		3 SAFE. VLVS #22S/G61 SAFE. VLV #21S/G LIFTED PREMAT	DRIFT IN THE VLVS' SPRING TENSION
C	CC2	018482*	071477	N	UV	C00		U	02	V	#22 CHG. PMP DISCH. PRESS. GA. DRN. VLVS LEAK. BY SEATS	CAUSE OF VLVS NOT TIGHT. SEAT. NOT GIVEN
C	CC2	018620	081977	B	AV	F01		D			#21 AUX. FDMTR. PMP. THROT. STOP VLV HANDWHEEL BROKE	A PERSON APPL. EXCESS. FORCE WITH VLV WREN.
C	CC2	018929	082077	K	AV	D14		T			PRESS. SPRAY VLV 2-CV-100E LEAKING EXTERNALLY	LEAK. DUE TO FAILED PACKING
C	CC2	018861	082577	F	RM	F16	S	D			#21 CONT. SPRAY SYS. HDR. ISO. VLV (2-SI-4150-CV) COS	VLV PLACED OUT OF SERV. DUE TO FAIL. RESIST.
C	CC2	019205	100477	G	UV	D14		T			LETDOWN CONT. VLV (2-CV-1100-IV) HAD EXT. LEAK ON PACK	PACKING FAILURE/VLV REPACKED, LEAKAGE STOP
C	CC2	019215	100777	K	CV	D13		U			EXTERNAL LEAKAGE FROM 22B SI LOOP CHECK VALVE	FAILED BONNET GASKET
C	CC2	019432	101177	C	XV	C12		D			CONT. ISO. VLV FOR PLANT SER. WTR. LEAKING BY SEAT	BENT VLV. STM. PREVENTED VLV FROM SEATING
C	CC2	019740	111577	H	MV	A26		T			MDV-627, AUX HI PRESS HDR STP LP 118, WOULDNT OPEN	OPEN LIMIT SWITCH CONTS. WERE DIRTY
C	CC2	019783	112577	S	AV	F24	T	D			SERVICE H2O CONT VALVE MALFUNCTIONED IN AUTO MODE	CONT AIR & FEEDBACK TUBING INSTAL'D WRONG
C	CC2	019982	121377	H	RV	H04		D			HI. PRESS. SI. HDR. RELIEF LIFTED AT PRESS. BELOW T.S.	DESIGN ERROR; VLV WAS SET AT TOO LOW PRESS
C	CC2	020157	010378	W	RM	G16	S	D			#21 MN. STM. ISO. VLV FAILED SHUT; VLV DECLARED INOPER	POSITIVE GROUND ON VLVS CONTROL CIRCUIT
C	CC2	020307	011178	S	UV	A12		D			#21 SER. WTR. HT. XCHG. SLT. WTR. OUT. VLV FAILED TO OPEN	DAMAGED SEAT RINGSECLAMPS JAMMED SEAT OSK

ALL VALVE EVENTS IN THE DATA FILE

V E N	P L A N T	CONT. NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O M M P	S I D E	F A I L M O D E	F A I L U R E M E C H A N I S M
C	CC2	021991	080178	S	SV	A08	D				#21 DG SER. WTR. SUPPLY VALVE FAILED TO OPEN	BADLY WORN PLUNGER SEAT CAUSED SOL. TO STK
C	CC2	022746*	090778	H	CV	E00	U	02	V		#21B6228 SI-TANK OUTLET CHECK VLVS LEAKING	CAUSE OF REVERSE LEAKAGE NOT GIVEN
C	CC2	022637*	102378	W	RV	A06	R	D	12		12 MN. STM. SAFE-REL. VLV SETTINGS OUT OF TOLERANCE	PROCEDURE CHG. CAUSED RV SETPOINTS TO BE WP
C	CC2	022742	102378	W	HV	B24	S	D			#21 MSIV FAILED TO SHUT WITH ISOLATION SIGNAL	IMPROP. ACTU. SEL. VLVS. USED IN VLV ACTUATOR
C	CC2	022915	111578	N	UV	V01	S	D			RMT LOCAL SAMPLE VLV. OPEN WHEN REQ. TO BE SHUT	PERSONNEL ERROR
C	FC1	014560*	040876	G	UV	C00	U	02	V		LEAKAGE BY ION EXCHANGER CH-8A ISOLATION VALVES	VALVES TO BE INSPECTED/NO CAUSE GIVEN
C	FC1	014561	041476	H	RM	B16	S	D			HCV-383-4 FAILED TO CLOSE ON TEST	BINDING CONTACT IN BREAKER TO VALVE
C	FC1	014569	050676	N	UV	V01	S	D			VALVE HCV-2508 WAS CLOSED, SHOULD BE OPEN	IMPROPER VALVE LINEUP / PERSONNEL ERROR
C	FC1	015209A	052876	W	RV	H00	R	U	02		RELIEF VALVES OPENED BELOW SET PRESSURE	PRESSURE SETPOINT HAD DRIFTED
C	FC1	015209B	052876	W	RV	H00	R	U	06		6 RELIEF VALVE SETPOINTS BELOW DESIRED PRESSURE	SETPOINTS HAD DRIFTED
C	FC1	015208	071076	U	MV	A20	D				VALVE MOV-A-04 FAILED TO OPEN ELECTRICALLY	FAILURE, VALVE OPERATOR, WORM+WORM GEAR
C	FC1	015367	072676	L	UV	C00	U				VALVE CH-152 LEAKING INTERNALLY	TIGHTENED VALVE
C	FC1	016025*	100176	W	RV	A00	R	U	05		5 RELIEF VALVE SETPOINTS DRIFTED FROM TECH SPEC	UNDER INVESTIGATION
C	FC1	016060*	100476	N	RM	C14	T	C2	V		CNTMNT PURGE ISO VALVES LEAK IN EXCESS OF SPEC	VALVE PACKING&SEALS OUT OF ADJUSTMENT
C	FC1	016334*	111076	K	RV	H06	R	D	02		VALVES RC-141+RC-142 LIFTING PRESS OUT OF SPEC	LIFTING PRESS SET WITH NITROGEN
C	FC1	016606	112076	N	AV	A24	T	D			RAW WATER VALVE HCV-401E WOULD NOT OPEN ON TEST	ELECTRIC TO PNEUMATIC CONVERTER FAILED
C	FC1	016958	011177	N	AV	B24	T	D			VALVE HCV-345 OPENED PARTIALLY WHEN REQ CLOSED	ELECTRIC TO PNEUMATIC CONVERTER FAILED
C	FC1	017745A	042577	G	CV	E00	R	U	02		VALVES CH-284+HG-100 LEAKING INTERNALLY	UNDER INVESTIGATION
C	FC1	017758	042577	G	RV	C00	R	U			LEAKAGE THROUGH RELIEF VALVE HG-105	UNDER INVESTIGATION
C	FC1	019461*	093077	W	RV	A00	R	U	03		3 RELIEF VALVE PRESS. SETTINGS DRIFTED OUT OF SPEC	CHANGE IN ENVIRONMENTAL CONDITIONS

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u>	<u>P</u>	<u>C</u>	<u>E</u>	<u>S</u>	<u>C</u>	<u>F</u>	<u>T</u>	<u>C</u>	<u>C</u>	<u>K</u>	<u>F</u>	<u>F</u>
<u>N</u>	<u>L</u>	<u>N</u>	<u>N</u>	<u>O</u>	<u>O</u>	<u>A</u>	<u>I</u>	<u>L</u>	<u>O</u>	<u>E</u>	<u>A</u>	<u>A</u>
<u>I</u>	<u>I</u>	<u>O</u>	<u>O</u>	<u>N</u>	<u>N</u>	<u>I</u>	<u>N</u>	<u>S</u>	<u>M</u>	<u>M</u>	<u>I</u>	<u>M</u>
<u>U</u>	<u>N</u>	<u>O</u>	<u>D</u>	<u>O</u>	<u>O</u>	<u>C</u>	<u>T</u>	<u>S</u>	<u>P</u>	<u>U</u>	<u>D</u>	<u>M</u>
<u>E</u>	<u>N</u>	<u>N</u>	<u>A</u>	<u>N</u>	<u>N</u>	<u>O</u>	<u>I</u>	<u>S</u>	<u>M</u>	<u>U</u>	<u>D</u>	<u>M</u>
<u>N</u>	<u>I</u>	<u>O</u>	<u>T</u>	<u>O</u>	<u>O</u>	<u>O</u>	<u>N</u>	<u>S</u>	<u>P</u>	<u>U</u>	<u>D</u>	<u>M</u>
<u>I</u>	<u>I</u>	<u>O</u>	<u>D</u>	<u>N</u>	<u>N</u>	<u>O</u>	<u>N</u>	<u>S</u>	<u>P</u>	<u>U</u>	<u>D</u>	<u>M</u>
<u>N</u>	<u>I</u>	<u>O</u>	<u>D</u>	<u>N</u>	<u>N</u>	<u>O</u>	<u>N</u>	<u>S</u>	<u>P</u>	<u>U</u>	<u>D</u>	<u>M</u>
<u>N</u>	<u>I</u>	<u>O</u>	<u>D</u>	<u>N</u>	<u>N</u>	<u>O</u>	<u>N</u>	<u>S</u>	<u>P</u>	<u>U</u>	<u>D</u>	<u>M</u>
C	FC1	0.7437	101177	Y	XV	C25	U				EXCESSIVE LEAKAGE THRU BYPASS VALVE AROUND VA-86	DEFECTIVE SEAT
C	FC1	019552	102077	M	CV	E12	D				VALVE HCV-1041B DISK FOUND UNFASTENED	LOCK PIN BROKE ALLOWING NUT TO LOOSEN
C	FC1	019551	102677	K	RV	A00	R	U			VALVE RC-142 RELIEF PRESSURE OUT SPEC HIGH	COULD NOT BE DETERMINED
C	FC1	019621*	112777	C	RM	C00	U	02	V		POSSIBLE INTERNAL LEAK OF CNTMNT PURGE VALVES	CAUSE OF LEAKAGE NOT GIVEN
C	FC1	020365	011778	G	RV	D11	B	T			WELD ON 1-B CHG PUMP DISCH RELIEF VALVE CRACKED	VIBRATION OF PIPING IN SERVICE
C	FC1	020585	021578	G	RV	D11	B	T			WELD ON CH-1A CHG PUMP DISCH RELIEF VALVE CRACKED	VIBRATION OF PIPING IN SERVICE
C	FC1	020818*	022278	N	RM	C00	U	02			CNTMNT ISO VALVES HCV-1388A+HCV-1388B LEAKING	CAUSE OF LEAK UNDETERMINED
C	FC1	021118	040878	G	RV	D11	B	I			WELD ON VALVE CH-219 CRACKED	VIBRATION OF PIPING IN SERVICE
C	FC1	021528	051478	C	RM	D14		T			VALVE PCV-742D LEAKING EXTERNALLY	VALVE PACKING TIGHTENED
C	FC1	022468A	090878	G	CV	E00	R	U	02		CVS CH-284 + HG-100 LEAKING INTERNALLY	CAUSE UNKNOWN
C	FC1	022468B	090878	G	RV	C00	R	U			RV HG-105 LEAKING INTERNALLY	CAUSE UNKNOWN
C	FC1	022469	092178	B	RM	A24	S	D			VAL YCV-1045 FAILED TO OPEN(AUX.FD.PMP.STM.INL.)	INSTRUMENT AIR SUPPLY TO VAL CLOSED
C	FC1	022972	110178	B	CV	E05	D				AUX FEED CHECK VALVE FOUND INSTALLED WRONG	CONSTRUCTION ERROR
C	FC1	023022*	111678	P	MV	I05	D	30			30 LIMITORQUE VALVES FOUND WITHOUT STAKED LOCKNUTS	MANUFACTURER ERROR
C	FC1	023139	112478	L	RM	F16	S	D			PC-105B WAS NOT OPERATING	VALVE CLOSING RELAY NOT REWIRED AFT MAINT
C	FC1	023140*	120578	C	RM	C25	U	02	V		CONT PURGE VALVES LEAKING THRU	MODIFICATIONS DONE DURING REFUEL OUTAGE
C	FC1	023171	122078	K	RV	V06	S	D			TWO PRESS OP RELIEF VALVES OPENED WHEN REQ CLOSED	TECH PULLED FUSES, DEFECTIVE PROCEDURES
C	M12	017891	030678	S	RM	F12	R	D			SEAWATER TEMP CONTROL VLV INOPERABLE	TENSION PIN SHEARED BETW VAL AND OPER
C	M12	014461	030978	B	RM	A16	S	D			AUX.FEEDPMP.STM.INLET VLV.CYCLED;WCULD NOT REOPEN	FAILURE OF VALVE OPERATING CIRCUIT
C	M12	015338	072478	B	MV	A12	D				INLET STEAM TRIVALVE WOULD NOT OPEN	VALVE OPERATOR SPINDLE FAILED

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<u>EVENT</u>	<u>PLANT</u>	<u>CONT.NO.</u>	<u>EVENT DATE</u>	<u>SY S</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CN</u>	<u>MU</u>	<u>PM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
C M12	015578	080476	H LV C00	R U				VALVE ON #4 SI TANK LEAKING INTERNALLY					NO CAUSE GIVEN	
C M12	016721	121976	G RM V01	S D				VLV 2-CH-514 WAS NOT RECLOSED FOLLOW. AN SIAS ACTU					PERSONNEL ERROR (VALVE NOT CLOSE PROP. TIM)	
C M12	017113	012077	G MV F12	D				VALVE 2-CH-514 WOULD NOT OPERATE					VALVE FAILED DUE TO INTERNAL BINDING	
C M12	017346	030277	S RM F12	R D				C R8CCW HX SERV WAT OUT TEMP CV FAILED TO OPERATE					SHEAR OF PIN COUPLING OPER TO STEM	
C M12	017490	031577	B XV D07	T				STM TRAP ISO VAL LEAKING EXTERNALLY					NORMAL PACKING WEAR	
C M12	017620	040777	H CV E00	R U				INT LEAK OF CV BETW INJECT TM 4 AND PRI COOLANT					CAUSE UNKNOWN	
C M12	017780	042577	W AV F00	U				A MSIV TAKES TOO LONG TO CLOSE					CAUSE UNKNOWN	
C M12	017837	051577	E XV V01	S D				BOTH D/G FUEL SUP. VLVS SHUT WHEN REQUIRED TO BE O-					-PEN//PERSONNEL ERROR	
C M12	018740	072177	H CV E00	R U				S.I. HEADER CHECK VLV. 2-SI-648 LEAKING INTERNALLY					NO CAUSE GIVEN	
C M12	018971	081677	H CV E00	R U				INT LEAK OF CV BETW INJECT TK 4 AND PRI COOLANT					CAUSE UNKNOWN	
C M12	019257	092377	G UV C04	D				BORIC ACID LEAKING THROUGH DISCHARGE VALVE					VCT PRESS L.T. HEAD PRESS	
C M12	019931	101477	C RM B16	S D				CONT. ISO. VLV 2-RC-002 FAILED TO SHUT ON COMMAND					CONDUCTORS FOR VLV OPERATOR WERE SHORTED	
C M12	019602	102877	W RM T01	D				MN. STM. LINE ISO. VLV. OPER. TEST COMPLETED LATE					TECH. SPEC. VIC. DUE TO ADMINISTRATIVE CAUSE	
C M12	021332	041478	M XV V01	S D				PRI MAKEUP VAL IN PART. OPEN POSIT. SHOULD BE CLOSED					PERSONNEL ERROR	
C M12	022134	072578	C RM V06	S D				CONTMNT PURGE VALVES OPERATED IN IMPROPER MODE					INADQUATE CNTNMNT PLRGE PROCEDURES	
C M12	023211	110778	S RM F12	D				RX BLDG COOLING WATER VALVE FAILED TO OPERATE					FAILED TENSION PIN BETWEEN VALVE OPER TOR	
C M12	023565	122778	C AV B24	S D				ISOL VALVE 2-SW-3.2A FAILED TO CLOSE					SGV IN AIR LINE TO VALVE REPLACED	
C MY1	015731	091676	C XV V02	S D				INCORRECT VLV LINEUP CNTNMNT ISO SYSTEM PV-15					PERSONNEL ERROR/FAILED TO CLOSE	
C MY1	010758	020277	H RM F16	S D				WIRES DISCONNECTED FROM VALVE SL-P-3, SIAS FUNCT.					CAUSE UNKNOWN	
C MY1	017882	060277	G AV F12	D				LETOWN PRESS. CONT. VLV LD-F-16 OSCILLATING RAPID.					BOLTS ON OPER. LOOSE / OPER. FELL OFF	

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLANT	CONT.NO.	EVENT DATE	SYST	COMP	FAIL CODE	TYPE	CLASS	CN	MP	KEY	FAILURE MODE	FAILURE MECHANISM
C	MY1	019261	102077	L	UV	V01	S	D				IMPROPER VALVE LINEUP LPS1 PUMPS	PERSONNEL ERROR
C	MY1	020475	021678	S	XV	T02		D				VALVE SW-53 CLOSED BUT NOT LOCKED	PERSONNEL ERROR
C	MY1	020761	021678	K	MV	I02	R	D				THERM.OVERLD.LINK.NOT REMOVED FROM #1 LP. COLD LE-	-G ISO.VLV.BKRR.//PERSONNEL ERROR(MAINT.)
C	MY1	020762	021678	C	RM	B10		T				VALVE DR-A-6 FAILED TO FULLY CLOSE	PARTICLE LODGED IN VALVE SEAT
C	MY1	022144	072178	C	RM	C10		T				CNTNMNT ISO VALVE PD-A-122 LEAKING INTERNALLY	PLASTIC ELECT TIE-WRAP LODGED
C	MY1	022141	081578	K	RV	A00		U				PRESSURIZER RV PR-S-13 SETPOINT OUT OF SPEC	CAUSE UNKNOWN,SETPOINT ADJUSTED
C	MY1	022401*	082478	K	MV	I01	R	D	06	Z		THERM.OVERLD.LINK.NOT REMOVED FROM RCS LOOP ISO.V-	-LVS BKRRS.AS REQUIRED//PERSONNEL ERROR
C	MY1	022398	090778	G	UV	V01	S	D				VLV.LINEUP ERROR ALLOWED RCS WTR.AT 1250 PPM BORD-	-N TO DISCH.BACK TO RWST//PERSONNEL ERROR
C	PA1	014522	032876	C	AV	C25		T				ISO VAL CV-1101 LEAKING INTERNALLY	TEFLON VALVE SEATS WORN (NORMAL WEAR)
C	PA1	016527	040876	Y	UV	V01	S	D				DRAIN LINEUP PERFORMED ON W'ENG WST.GAS DECAY TK.	PERSONNEL ERROR
C	PA1	014721*	043076	M	AV	I04		D	02			VALS CV-2113,-2115 DO NOT MEET STRESS CODE CRIT.	CHANGE OF CALCULATION TECHNIQUE / DESIGN
C	PA1	021962	052776	C	RM	A00		U				CONT.PURGE SUP. VLV (CV-1808) FAILED TO OPEN	NO APPARENT REASON FOUND FOR FAILURE
C	PA1	015438	082376	C	RM	D14		T				VALVE CV 1808 LEAKING IN EXCESS OF T.S.	VALVE PACKING FAILURE
C	PA1	017905	021977	S	CV	F12	R	T				DISCH CV,SERV WATER PUMP PC7 STUCK	CV FLAPPER STUCK,VAL LUBED AND RET TO SERV
C	PA1	017981	052677	G	RV	D02		D				RV-2255 LEAKING EXTERNAL/PART. UNSCREW.FROM COLLET	PERSONNEL ERROR/MAINTENANCE IMPROP. PERF.
C	PA1	018274	061577	H	MV	A16	S	D				MOV-3011 FAILED TO OPEN	CONTACT FOR "SEAL-IN" CKT ON RELAY FAILED
C	PA1	019406	081477	C	AV	C'5		T				PURGE AIR EXHAUST ISO VLV LEAKING INTERNALLY CV-18	WORN RUBBER VAL DISK SEAT
C	PA1	019405	091677	C	AV	I04		D				CNTNMNT PURGE ISO VLVS NEED REDUNDANT AIR SUPPLY	DESIGN ERROR IN ORIG SYST DESIGN
C	PA1	019461	092077	S	CV	A09	R	T				CV FOR SERV WATER PUMP P-7B FAILED CLOSED	CORRODED HINGE PIN
C	PA1	019546*	101877	C	AV	C25		U	02	V		CNTNMNT PURGE ISO VALVS LEAKING AFTER MODIFICATION	VALVES NOT SEATING PROPERLY

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SYM	CODE	FAIL CODE	TYPE	LOCATION	FAILURE MODE	FAILURE MECHANISM
C	PAL 020230	122377	H	MV	G16	S	D	MOV-3C11(HPCI ISO.VLV) FAILED TO REMAIN OPEN	BAD SWITCH CAUSED CLOSING CONT. TO STICK
C	PAL 020164*	010678	M	RV	A00	U	05	SETPOINTS ON 5 RVS OUTSIDE OF T.S. BANDS, STM. SYST	CAUSE EF S.P. DRIFT UNKNOWN
C	PAL 020231	010878	L	AV	A24	S	D	VALVE CV-3025 FAILED IN CLOSED POSITION	WATER IN AIR LINE TO VALVE OPERATOR
C	PAL 021322	042178	C	XV	V01	S	D	CNTMMT SERV AIR VAL OPENED IN VIOL OF T.S.	PERSONNEL ERROR
C	PAL 021326	042878	S	CV	A09	R	T	P-78 SER. MTR. PHP. DISC. CK. VLV. STUCK SHUT	CV HINGE PIN CORRCDED
C	PAL 021993	080478	C	AV	F02	D	D	THE T-RING IN CY-1806 WAS NOT PRESSURIZED	INCORRECT REASSEMBLY OF AIR SUP TO CY1806
C	PAL 022229	080778	N	UV	V01	S	D	INCORRECT HANDJACK OPER FOR CV-0437A, CV-0437B	PERSONNEL ERROR
C	PAL 022228	082878	C	RM	V02	S	D	CNTMMT PURGE & ISO. VALVES OPEN IN VIOL. OF T.S.	IMPROPER TAGOUT OF VALVES/PERSONNEL ERROR
C	PAL 022948	111078	M	XV	C00	U	U	DRAIN VALVE FROM PHOSPHATE STORAGE TK LEAKED THRU	REASON NOT GIVEN
C	PAL 023021	112878	Y	XV	V01	S	D	VCT SITEGLASS DRAIN VALVE OPEN WHEN REQ CLOSED	PERSONNEL ERROR
C	SL1 015062	052176	B	MV	A16	T	D	MO AUX FEED PUMP STEAM SUPPLY VALVE FAILED TO OPEN	MC SIGNAL TO VALVE/COMMAND FAULT/ELECT
C	SL1 015060	052476	C	MV	B02	D	D	MCV(I-MV-15-1) FAILED TO CLOSE / PREOP TESTING	PERSONNEL MAINT PROBLEM/DIRTY TOROSW CONT
C	SL1 015065	060476	Y	UV	I05	D	D	RECORDS REVIEW SHOW VALVES OF H2 SYS NOT TESTED----	----FOR AT ENVIRONMENT/REPLACED VALVES
C	SL1 015563	062876	G	RV	D13	T	T	RELIEF VALVE ON BORON ACID SYSTEM/EXTERNAL LEAKAGE	GASKET FAILED ON INLET TO VALVE
C	SL1 015504	070576	M	UV	V01	S	D	IMPROPER VLV.LINEUP TO RMT (TANK OVERFLOWED)	PERSONNEL ERROR
C	SL1 015507	070976	B	MV	A16	T	D	AUX FEED PUMP STEAM INLET VALVE FAILED TO OPEN	COMMAND/H2O IN CONTROL CIRCUIT/POOR DES
C	SL1 015511*	071876	L	RV	H02	U	R2	TWO SUCTION RELIEF VALVES OPENED PREMATURELY	UNKNOWN/FAILED TO RESET ALSO
C	SL1 016880	120876	B	MV	A16	T	D	AUX FEED PUMP STEAM INLET VALVE FAILED TO OPEN	COMMAND/H2C IN CONTROL CIRCUIT/DESIGN
C	SL1 017609*	040877	N	RM	I04	D	G2	ATMOSPHERIC STEAM DUMP VALVES DIDNT MEET FSAR CRIT	DESIGN ERROR IN SIZING THE VALVES
C	SL1 018060	052777	U	RM	B16	S	D	RAM TRAIN FEEDWATER REG.VLV FAILED OPEN	BLCWM FUSES

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT.NO.	EVENT DATE	SY S	COMP	FAIL CODE	TYPE	CL	CON	KEY	FAILURE MODE	FAILURE MECHANISM
C SL1	018271	061077	C	MV	F12	D				MOV (I-MV-15-1) FAILED TO OPERATE	FAILED ACTUATING NUT ON MOTOR DRIVE
C SL1	019564	081777	F	RM	A00	U				CONTAINMENT SPRAY VALVE FAILED TO OPEN/TESTING	UNKNOWN/ LOCKED OPEN HANDWHEEL
C SL1	019509	092577	F	RM	A00	U				CONT.SPRAY HDR.ISO.VLV FCV-07-18 NOT FULLY OPEN	UNKNOWN (CONT.SPRAY VLV.STICKING)
C SL1	020639	020978	B	MV	B20	D				AUX FEED PUMP VALVE (MV-09-11) FAILED TO CLOSE	MOV MOTOR WINDING PARTIALLY SHORTED
C SL1	021524*	042078	C	CV	E25	D	02			TWO VENT VALVES (V-25-20/FCV-25-3) LEAKED THRU	SEAT PROBLEMS/1-CUT,2-SMALL DEPRESSION
C SL1	021733	053078	U	RM	F03	D				15: FEEDWATER BYPASS CONT VLV INADVERT.OPENED FULLY	-LY//ANALYTICAL SETTINGS UNREALISTIC
C SL1	021835	061578	R	DV	F12	D				MOTOR OPERATED DAMPER VALVE FAILED TO OPERATE	OUT OF ADJUSTMENT
C SL1	022185*	072878	P	MV	I05	C	D	05	Z	VENDOR NOTIFIED PLANT OF POTENTIAL MOV FAB PROBLEM	LOCKNUTS STAKED WRONG ON SOME/REPAIR SAME
C SL1	022227	073178	C	AV	A24	S	D			ADV (FC-25-8) FAILED CLOSED/AIR TO VALVE SECURED	SCV DIAPHRAGM LEAKED/COMMAND FAULT
C SL1	022649	100278	G	RV	C00	U				1B CHARGING PMP HAD A LEAKING RELIEF VALVE	CAUSE OF LEAKAGE NOT GIVEN
C SL1	022908	110378	L	UV	V02	S	D			ISOL VALVES INADVERT OPENED BETW SPRAYSHUTDOWN	--COOLING SYSTEMS//PERSONNEL ERROR
C SL1	022909*	111178	N	SV	F01	D	04			FOUR SOVS FAILED TO OPERATE(NACH ADDITION SYS)	NO PWR TO SLENDS,FUSE FOUND REMOVED
C SL1	023141	112178	H	MV	A23	D				MOV 07-28 IN 1B ECCS TRAIN FAILED TO OPEN ON TEST	TORQUE SW FAULTY,REPLACED SWITCH
G BF1	014665	041176	Q	RM	F16	S	D			RCIC PUMP DISCHARGE VALVE FAILED TO OPERATE	TRANSFER SW(SBM-205A8774DD)BAD DESIGN
G BF1	016053	092376	D	XV	V02	S	D			VALVE FOUND CLOSED TO PRESSURE SWITCH	PERSONNEL ERROR
G BF1	016611	010377	C	AV	B12	D				DRYWELL SUP.VAC.BKR.VLV 64-28E REMAINED OPEN AF.TE	VLV.AIR ACT.CYL.PST.ROD BINDING W/ BUSHNG
G BF1	017594A	032177	L	MV	B08	D				VLV FCV 74-52 WOULD NOT GO COMPLETELY CLOSED	WORN BRNG.ASS,LOCKNUT,YOKE NUT,GASKETS
G BF1	017594B	032177	L	MV	B20	D				VLV FCV 74-52 WOULD NOT CLOSE;MTR TRIP,THERMAL O.L	MOTOR SHAFT WAS BENT
G BF1	017525	042177	M	RV	B27	R	D			MN.STM.SAFE.RELIEF VLV. FAILED TO RESEAT	SEVERE STM.CUTS ON PILOT DISC
G BF1	018126	050977	H	MV	A20	D				HPCI 1URB.STM.SUP.ISO.VLV. FCV 1-73-16 FAIL.IC OPN	BROKEN TEETH ON MTR PINION/CLUTCH GEAR

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SYSTEM	COMP	FAIL CODE	TYPE	CLASS	CON	KEY	FAILURE MODE	FAILURE MECHANISM
G BF1	019957*	090877	W AV	C00	C U	07	7	MSIV'S WERE ABOVE ALLOWABLE INDIVIDUAL LEAK RATE	CAUSE OF LEAKAGE NOT GIVEN			
G BF1	020493A	021478	W RV	I05	C D	02		LINEAR INDIC. FOUND IN 2 MN. STM. RVS, BODY CASTINGS	CAUSED BY CASTING SHRINKS OR NONMETAL. INC			
G BF1	022255A	090378	C RM	D00				VLV FCV-68-77 WAS LEAKING AT THE BONNET	NO CAUSE GIVEN FOR BONNET LEAKAGE			
G BF1	022255B	090378	C RM	D14		T		VLV FCV-69-1 WAS LEAKING AT THE PACKING INTO DRYWELL	NORMAL PACKING LEAK; ADJ. PACK. LEAK STOPPD			
G BF1	022459	091378	K MV	A12		D		FCV-68-3 WOULD NOT OPEN FULLY; DECR. FLOW RECIR. LP. A	VLV STEM SEPARATED FROM THE GATE			
G BF1	023076*	120578	W AV	C07		D 06		6 MSIVS EXCEEDED THEIR LEAKAGE LIMITS	DEGRED. OF SEAT, SURF. THRU NORMAL OPERATH			
G BF2	014104	011276	N UV	I05		D		DEMIN H2O TO DRYWELL VALVE FOUND NOT SEISMIC QUAL	PERSONNEL ERROR/PROBABLE G.C.			
G BF2	015392	061976	M XV	V02		S D		VALVES 2-85-612 AND 2-85-615 FOUND IN CLOSED POST	PERSONNEL ERROR			
G BF2	016199	100776	H XV	V03		S D		EQUALIZER VALVE ON FLOW INSTRUMENT FOUND OPEN	PERSONNEL ERROR			
G BF2	016807	111676	H MV	A23		R D		HPCI TURB. STM. SUP. VLV 2-FCV-73-16 FAILED TO OPEN	TOR. SWT. GEAR ASS. PIN FOR VLV OPER. SHEARED			
G BF2	019134	091877	M RM	B24		S D		VLV FCV 77-79B INOPERABLE IN OPEN POSITION	COMMAND / SV FSV-77-15B FAILED			
G BF2	020380	020578	W RV	B00		R U		RELIEF VALVE 2-1-41 OPENED AND FAILED TO RESEAT	CAUSE OF MALFUNCTION UNKNOWN			
G BF2	020469	021378	W RV	B00		R U		RELIEF VALVE 2-1-5 OPENED AND FAILED TO RESEAT	CAUSE OF MALFUNCTION UNKNOWN			
G BF2	020493B	021478	W RV	I05		C D 02		LINEAR INDIC. FOUND IN 2 MN. STM. RVS, BODY CASTINGS	CAUSED BY CASTING SHRINKS OR NONMETAL. INC			
G BF2	020775	031878	K UV	D14		R T		VLV FCV-68-33 LEAKING EXTERNALLY INTO DRYWELL	LEAKAGE OCCURRED FROM THE PACKING			
G BF2	021094	032578	H CV	B04		D		CHECK VLV. 2-73-603, IN HIGH-PRESS. CI. SYS, FOUND OPEN	DIMEN. ERR. IN VLV. INTERFERENCE CLEARANCE			
G BF2	021092A	042078	W AV	D25		T 02 V		MSIV'S LEAKING BY SEATING SURF. GREAT. THAN IS LIMIT	SEATING SURFS. DETERIOR. THROUGH NORM. OPER.			
G BF2	021092B	042078	C UV	D25		T 02 V		DRYWELL TO SUP. CHBK. VENT. SYS. ISO. VLV'S. LEAK. BY SEAT	SEATING SURFS. DETERIOR. THROUGH NORM. OPER.			
G BF2	021401	050478	G RV	H12		R D		RELIEF VLV. ON "B" STBY. LIQ. CONT. PUMP OPEN. BELLOW SP	CAUSE OF IMP. SET POINT SETTING NOT GIVEN			
G BF2	023352	121978	N AV	B24		S D		DRYWELL AIR COMP. SUC. VLV FCV-32-62 FAILED TO CLOSE	ELECTROPNEUMATIC CONTROL VLV FAILURE			

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CON	KEY	FAILURE MODE	FAILURE MECHANISM
G BF3	016055	082476	H CV A00	U							CHECK VALVE IN HPCI TURB. EXH. LINE WAS BINDING	CAUSE OF CHECK VLV BINDING NOT STATED
G BF3	019562	012277	G RV H08	R D							RELIEF ON 3A STBY. LIQ. CONT. PMP OPEN. BELOW SETPOINT	DISC BOUNDED IN GUIDE; VLV SEATS DAMAGED
G BF3	018634	051877	Y SV C00	R U							ASCO SOLENOID VALVE LEAKING AIR TO OXYGEN ANALYZER	UNKNOWN (ISH 97009A) FSV-76-42B
G BF3	018635	062177	G RV H08	R D							RELIEF ON 3A STBY. LIQ. CONT. PMP OPEN. BELOW SETPOINT	SCORED AREA ON PLUG GUIDE AND PLUG
G BF3	018637	070577	H MV A23	R D							HPCI TURB. STM. SUP. 3-FCV-73-16 FAILED TO OPEN	TCR. S&TH. GEAR ASS. SHEARED; CAUS. OVLDO ON MT
G BF3	018542	072577	G RV H08	R D							RELIEF ON 3A STBY. LIQ. CONT. PMP OPEN. BELOW SETPOINT	DISC GUIDE WAS GALLED WITH THE VLV DISC
G BF3	018642	073077	K UV D14	R T							VLV FCV 3-68-33 HAD EXTERNAL LEAKAGE INTO DRYWELL	PACKING LEAK; NORMAL WEAR & DETER. OF PACK.
G BF3	018945	090777	N AV A24	S D							PRI. ISO. VLV 3-FCV-24 WOULD NOT OPERATE	FAIL. OF SOL. FSV-77-3A IN AIR SUP. LINE
G BF3	020524	021378	L MV F12	R D							VLV FCV. 3-74-52 WAS FOUND INOPERABLE	UPPER BRNG. LOCKNUT STRIPPED FROM NOR. POS
G BF3	020923	041578	W RV B00	R D							RELIEF 3-1-31 FAILED TO RESEAT AT PROPER PRESSURE	CAUSE OF MALFUNCTION IS NOT KNOWN
G BF3	021245	042878	L MV F12	R D							VLV FCV 3-74-52 WAS FOUND INOPERABLE	UP. BRNG. LOCKNUT STRIPPED FROM NOR. POSITIN
G BF3	021460	051378	W HV F24	I D							MSIV 1-38 CLOSED IN 1 SEC.; EXCEED. T.S. REQUIREMNT	DASHPOT WAS LOW ON OIL
G BF3	021781	062678	W HV F24	I D							CUTBOARD MSIV FCV 3-1-78 CLOSED FASTER THAN T.S. AL	VLV'S DASHPCT ASS. WAS LOW ON FLUID
G BF3	022087	070878	Q MV F16	S D							RCICS DISCHARGE VALVE INOPERABLE	SHORT IN IND LITE ASS CAUSED FUSES TO BLC
G BF3	022126*	081778	W RV H27	R D 03							MN. STM RVS MSRV1-41, 30, 634 OPENED BELOW SETPOINTS	VLV FAILURES WERE CAUSED BY PILOT VLV. PROB
G BF3	022126A	081778	W RV B00	R D							A MAIN STM RELIEF VLV DID NOT CLOSE AFTER LIFTING	CAUSE OF FAILURE NOT GIVEN
G BF3	022125	082278	W RV H12	R D							DURING STARTUP MSRV 1-4 OPENED BELOW SETPOINT	PREMATURE OPEN. DUE TO EXCESS. 2ND. STG. LEAK
G BF3	022461*	091778	W AV C00	R U 04							FOUR MSIV'S FCV-1-14, 1-26, 1-51, 1-52 EX. T.S. LEAK LM	CAUSE OF EXCESSIVE LEAKAGE IS NOT KNOWN
G BF3	023031*	111478	P UV C07	T 35							35 ISOLATION VLV'S LEAKING ABOVE LIMIT	NORMAL WEARING OF THE SEATS
G BF3	023291	121678	G RV H00	T							RV ON DISCHG. OF STDBY. LIQ. CONT. PMP. OPENED PREMATUR	NO CAUSE GIVEN (PROB. SETPOINT DRIFT)

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	STATUS	CLASS	FAIL CODE	MODE	SYMBOL	CH	YR	FAILURE MODE	FAILURE MECHANISM
G BR1	016402	111976	L	MV	F16	S	D			RHR INJECTION VALVE(E11-F015A) FAILED TO OPERATE	UNDERSIZED BKR/DESIGN PROBLEM(ROOT)
G BR1	016861	112176	Q	MV	A20	T			E41-F001(HPCI STM.SUP.VLV) WOULD NOT OPEN	BRUSHES ON VLV MOTOR WERE STICKIN	
G BR1	016860	112576	C	MV	B16	S	D		MIN.FLOW VLV.(E41-F012)DID NOT CLOSE FULLY	VLV MTR CKT PRESS-SWITCH OUT OF CALIBRATION	
G BR1	016858	120376	Q	MV	A16	S	D		E51-F007(RCIC STEAM ISO.VLV) FAILED TO OPEN	LOOSE WIRE ON VLV MOTOR OPEN CONTACTOR	
G BR1	017081	011977	Q	MV	B20	T			HPCI STM.SUP.VLV E41-F003 WOULD NOT CLOSE	DIRTY COMMUTATOR IN VLV OPERATOR	
G BR1	017600	021077	D	MV	A16	S	D		CORE SPRAY VALVE FAILED TO OPEN AT REQUIRED PRESS	SETPOINT ON CONTROLLING INST DRIFTED HI	
G BR1	017290	030177	Q	MV	B12	D			HPCI MIN. FLOW VLV E41-F012 FAILED TO CLOSE	ANTI-ROT. KEY SET SCREW HAD UNSCREWED	
G BR1	017330	030677	L	MV	A00	U			RHR PMP 1D TORUS SUC.VLV E11-F004D WOULD NOT OPEN	CAUSE OF FAILURE UNKNOWN	
G BR1	018128	052077	Q	CV	F04	D			HPCI STM.LINE EXH.CHECK VLV E41-F049 DETER.FAILED	VLV OSCIL.CAUSED OSC HINGE FAIL;IMP.DESGN	
G BR1	018695*	071777	K	UV	D14	C	T	C3	B	VLV EXT. LEAK. ON 3 OCCAS.CAUSED INC.LEAK.INTG SUM	PACKING LEAKS FROM VARIOUS VALVES
G BR1	018864	081477	N	MV	B23	D			CONT.ISO.VLV CAC-V23 WOULD NOT CLOSE FULLY ELECT.	CLOSING TOR-SWTH FOR CAC-V23 FAILED	
G BR1	019086	091177	S	UV	D13	D			RHR SERVICE WTR.HEAT XCHGR.18 IN.VLV GASKET RUPT.	RUBBER GASK.MAT.NOT DESIGN.FOR OP.PRESS.	
G BR1	019084	091577	K	RM	F24	T	D		PRESS.CONT.VLV LD-PCV-1739 DRIFTED OPEN;MOT-GEN TR	CONTROLLER FOR VALVE REQUIRED ADJUSTMENT	
G BR1	019276	100477	Y	CV	D14	T			LEAKAGE FROM RHR CHECK VLV E11-F050B INTO DRYWELL	PACKING LEAKAGE;VLV REPACKED&RETURN TO SR	
G BR1	019390	101477	Y	UV	D14	T			EXTERNAL LEAKAGE RECIRC. PMP 1A DISCH.EQUALIZR VLV	VLV B32-F043A HAD PACKING LEAK;REPACKED	
G BR1	019390*	101477	Y	UV	D14	C	T	C6		PACKING ADJUSTED ON SIX VALVES WITH PACKING SEEPAG	PACKING ADJUSTED AS PREVENTIVE MAINTENANC
G BR1	019394	101877	Y	RM	A16	S	D		VLV NP-CV-2713,NITROGEN INLET TO LOOP A WLDN'T OPN	CIRCUIT BRKR CONT.VLV FOUND IN OFF POSITH	
G BR1	019387	102577	D	MV	C20	D			B CORE SPRAY LOOP FULL FLOW TST.VLV E21-F015B LEAK	VLV OPER. HAD STRIPPED OPERATING GEARS	
G BR1	019493	102577	K	RM	F24	T	D		PRESS.CONT.VLV LD-PCV-1739 DRIFT.OPEN;MTR-GEN TRIP	CONTROLLER FOR VALVE REQUIRED ADJUSTMENT	
G BR1	019677	110577	L	MV	A02	D			RHR VALVE E11-F004A FAILED TO OPEN(MOTOR PROBLEM)	PERSONNEL ERROR/COVER LEFT LOOSE/WATER LK	

ALL VALVE EVENTS IN THE DATA FILE

<u>VE</u>	<u>PLANT</u>	<u>CONT.NO.</u>	<u>EVENT DATE</u>	<u>SYS</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CHUM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
G BR1	019842	111077	Q XV	V01	S D						IMPROPER VLV LINEUP;ST-SUP.LN.CO.DR.POT.ISO.CLOSE.	PERSONNEL ERROR
G BR1	019680	112377	Y RM	B10	T						LIQ.NITRO.TNK.PRESS.CONT.VLV FAILED IN OPEN POSIT.	CAUSE OF VLV FAILURE/FROZEN OPEN
G BR1	019824	120277	L MV	B20	U						VALVE E11-F040 FAILED IN OPEN POSITION	MOTOR FOUND TO BE OPEN(UNDETERMINED WHY)
G BR1	019950	120977	Y RM	A26	D						VALVE NP-2713 FAILED TO OPEN	OPEN LIMIT SW CUT OF ADJUSTMENT
G BR1	023632	020578	K MV	A16	S D						VALVE B32-F031A FAILED IN CLOSED POSITION	FUSES BLOWN IN CONTROL CKT(DESIGN-ROOT)
G BR1	020774	022678	C AV	A22	D						RX.INSTR.PENE. VLV B21-X54-C FAILED CLOSED	VLV-CLOSED DUE TO SMALL LEAK IN DIAPHRAGM
G BR1	020765	022778	N RM	F00	U						PRECOAT PRESS.CONT.VLV G31/2002-V54 IMP.IN.PRESS.	CAUSE OF VLV NOT MAIN. PROP.PRESS.NOT GIV
G BR1	020771	031378	M RV	B27	D						RELIEF VLV B21-F013F FAILED TO RESEAT AT REQ.PRESS	DEFECTIVE PILOT VLV/PILOT REPLACED
G BR1	020837	031478	C RM	F16	S D						VALVE B32-F042B WOULD NOT OPERATE DURING TEST	DEFECTIVE SWITCH ON CONTROL BOARD
G BR1	020964	032378	Y CV	E00	R T						FAULTY CK.VLV IN SAM.DR.LN. ALLOWED H2O INTO MONIT	MON.CAC-AQH-1262-2 CK VLV FAIL.CAUSE UNKN
G BR1	020921	033178	Y CV	E00	R T						RAD.MON. SAMP.DR.LN. CK.VLV FOUND STUCK OPEN	CAUSE OF CK.VLV. FAILURE NOT STATED
G BR1	020919	040178	N UV	V01	S D						INCORRECT VALVE LINEUP CAUSED RESIN DAMAGE	PERSONNEL ERROR
G BR1	020920	040178	X XV	C09	T						VALVE CAC-V64 LEAKED THRU INTERNALLY	RUST FOUND IN VALVE SEAT
G BR1	021089A	041078	C MV	B26	R T						VLV E41-F003 FAILED TO ISOLATE DURING TESTING	DIRT.CONT.ON LIMIT SWT.6POOR.SEAT.MTR.BR.
G BR1	021089B	041578	C MV	B20	R D						DURING AN ACT.HI.STMLN.FLOW,VLV E41-F003 FAIL.TO.S	DIRT.CONT.ON LIMIT SWT.6POOR SEAT.MTR.BR.
G BR1	021253*	042178	P UV	D00	U 02 V						VALVES FOUND LEAKING WATER INTO PUMP SPEED CONTROL	UNKNOWN/CAUSE OF LEAKAGE NOT STATED
G BR1	021491	051578	Y SW	A21	T						SOLENOID VLV CAC-SW-1263-1 FOUND IN STUCK SHUT POS	DEFECTIVE PLUNGER IN SOLENOID
G BR1	021488	052378	C CV	A00	U						CAC VACUUM BREAKER CAC-X18-A WOULD NOT OPEN	CAUSE OF FAILURE NOT GIVEN
G BR1	021557	052778	Q MV	A04	D						RCIC COND.STOR.TK.SUC.VLV E51-F010 WOULD NOT OPEN	DESIGN/MTR.DID NOT HAVE SPACE HTR;NEED.IT
G BR1	021840	070178	Y UV	C00	U						OXY.MON.CAC-AQH-1259 DR.POT VLV MALFUNCTIONED	CAUSE OF VLV NOT SEATING FULLY NOT GIVEN

ALL VALVE EVENTS IN THE DATA FILE

V E N	P L A N T	CONT.NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O M P N	K E Y	FAILURE MODE	FAILURE MECHANISM
G BR1	022089	071678	W MV F20	R U							OUTBOARD MN.STMLN.DR.ISO.VLV B21-F019 WOULDN'T OPR	MTR.BRUSH.NOT MAKING PROP.CONT.W/COMMUTAT
G BR1	022092	072878	L MV A16	T D							VALVE F0688 FAILED TO OPEN	BLCWN FUSE
G BR1	022092A	080278	L MV A16	T D							VALVE F0688 FAILED TO OPEN	BLOWN FUSE/FOUND GRND WIRE IN LOGIC CKT
G BR1	022218	080878	H MV A00	U							HPCI FEED INJ VALVE E41-F006 FAILED TO OPEN AGTC	UNKNOWN/TESTING COULDNT DUPLICATE FAILURE
G BR1	022820	102878	W MV F20	R U							MN.STMLN.DR.ISO.VLV B21-F019 FAILED TO OPERATE	FAULTY MTR. BRUSH HOLDER
G BR1	023061	111478	H MV C00	U							STM. LEAKING PAST SEAT OF HPCI E41-F001	NO CAUSE FOR STM.LEAK. GIVEN
G BR2	014128	011976	N UV V01	S D							OFF GAS RADIAT.MON.SAMP.VLV WAS FOUND SHUT/TS VIO.	PERSONNEL ERROR
G BR2	014111	020276	N UV B00	U							Z-CRC-V49 FAILED TO FULLY CLOSE	NO CAUSE GIVEN
G BR2	014111A	020276	N UV V01	S D							Z-CAC-V50 WAS OPENED WITH A LCD EXISTING/T.S. VIO.	PERSONNEL ERROR
G BR2	014642	020376	M AV A10	T							VAR.LEG ISO.VLV Z-B21-F0468 DID NOT OPEN	VLV OPER. WAS STICKY/MOIS.IN INST.AIR LNS
G BR2	014646	020476	O CV A12	R D							RCIC TURB.DISCH.CK.VLV E51-F040 WOULD NOT OPEN	DISC STUD BROKEN/DISC BLOCKING EXH. FLOW
G BR2	014647	020576	L XV V03	S D							PRESS SW FOUND ISOLATED AFTER TELLING	PERSONNEL ERROR
G BR2	014650	020676	Q MV V02	S D							VALVE E11-F0048 FOUND LINED UP CLOSED/REQ OPEN	PERSONNEL ERROR IN VALVE LINEUP
G BR2	014390*	021076	C UV C04	C D G3							3 BUTTERFLY VALVES LEAKING THRU//DESIGN ERROR	AIR OPERATOR ADDED TO EACH VALVE
G BR2	014633	021176	N AV V02	S D							INLET VALVE TO CONT RADIATION MONITOR FOUND CLOSED	PERSONNEL ERROR AFTER FILTER CHANGE
G BR2	014645*	021476	N AV A24	S D 02							TWO VALVES FOUND CLOSED(2-CAC-PV-344163442)	INST AIR LINES TO VALVES CLOGGED W WATER
G BR2	014624	030976	C RM A16	T D							PENET VALVE X70F FAILED TO OPEN DURING TEST	REMOTE SWITCH STUCK/NO POWER TO VALVE
G BR2	014625	030976	N RM B12	T							VLV 2-CAC-PV-1260 NOT INDICATING CLOSED/NOT CL.FUL	VLV PLUG REQUIRED RESIZING/OPER.SEALS REP
G BR2	014618	031076	H RM A26	D							VALVE 2-E41-PV-1219D FAILED TO OPEN DURING TEST	LIMIT SW WAS OUT OF ADJUSTMENT
G BR2	014627	031076	K AV F24	S D							RECIRC.SYS.WTR.SAMP.VLV 2-B32-F019 CLOSED TOO SLOW	OPEN.AIR PRESS.TO VLV OPER. DRIFTED HIGH

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLANT	CONT.NO.	EVENT DATE	SYST	COMP	FAIL CODE	TYPE	CLASS	CONUM	KEY	FAILURE MODE	FAILURE MECHANISM
G BR2	016399	111176	E CV A09	T							DIESEL GEN.#2 AIR REC.CV 2-05A-V70 FAILED TO OPEN	CHECK VALVE WAS RUSTED SHUT
G BR2	017589*	021777	N SV A21	C T Q2							CONT.SAMPLE VLVS CAC-PV-344163442 FAILED TO OPEN	SOLENOIDS ON VLVS WERE STICKING
G BR2	017327	022377	Q MV A20	T							E51-F045(STM.INL.TO RCIC TURB.)WOULD NOT OPEN	MTR OPER. FAILED DUE TO MOIST.IN WINDINGS
G BR2	018193	050977	S RM F00	T							SERVICE H2O VALVE E11-F068A FAILED TO OPERATE RM	CAUSE UNKNOWN POSSIBLE DIRTY CONTACTS
G BR2	018178A	060877	G RV H12	T							STDBY.LIQ.CONT.PMP 2B REL.VLV LIFTED BELOW SETPOINT	MECHANICAL DRIFT
G BR2	018176B	060877	G RV H12	T							STDBY.LIQ.CONT.PMP 2A REL.VLV LIFTED BELOW SETPOINT	MECHANICAL DRIFT
G BR2	018176	060977	N XV	S D							DRAIN VALVE LEFT OPEN (RX WATER CLEANUP)	PERSONNEL ERROR(ROOT CAUSE)
G BR2	018697	071577	W RV B16	S D							SAFETY REL.VLV B21-F013B STUCK OPEN;AFTER MAN.OPEN	GRND. ON SOLENOID ASS. FOR REMOTE ACTUATR
G BR2	018693	072877	N RM F26	U							ISOLATION VALVE ON 2A FILTER DEMIN FAILED TO OPER	LIMIT SW PROBLEM
G BR2	019023*	090677	C MV C00	U Q2							RHR TORUS COOL.RETRN.LN.ISOS.E11-F024B&28B LEAKING	VLVS FAILED TO SEAT PROPERLY/UNKNOWN
G BR2	020205	122677	Y XV C00	R U							NEEDLE VLV ON OXY.ANALYZER LEAKING PAST SEAT	CAUSE OF LEAKAGE NOT GIVEN/VLV REMOVED
G BR2	020240	010478	H MV F26	T							CLOSING TIME ON E41-F002 EXCEED. TS LIPIT (HPCI)	LIMIT SWITCH(CPEN) OUT OF ADJUSTMENT
G BR2	020455	012678	XV C00	R U							NEEDLE VLV ON OXY.ANALYZER LEAKING PAST SEAT	CAUSE OF LEAKAGE NOT GIVEN/VLV REMOVED
G BR2	020729	030678	Q MV A23	U							RCIC VALVE E51-F045 FAILED TO OPEN	TORQUE SW FAILED
G BR2	020841	031378	C AV B12	T							RX.PENET.VLV CAC-PV-1209B DID NOT INDICATE SHUT	ACTUATOR SPRING DID NOT PROVIDE POS.SEAT.
G BR2	020969	032478	M RM C00	U							DIR.CONT.VLV 122 LEAKING BY SEAT;CAUS.ROD18-47 N.O	NO CAUSE GIVEN/ROD OUT MOTION STOP;VLV RP
G BR2	020972	032778	C RM V01	S D							RX.INSTR.PENET.VLV CAC-PV-3439 FOUND CLOSED/TS VIO	PERSONNEL ERROR/VLV SHUT BY MISTAKE
G BR2	020970	032878	Q MV A00	U							R.C.I.C. INJECTION VLV E51-F013 WOULD NOT OPEN	NO CAUSE FOR FAILURE.FOUND
G BR2	020913	040378	L MV A20	D							SHUTDOWN COOL. OUTB.SUC.VLV E11-F008 WOULDNT OPEN	ELECTRO-MECHANICAL BRAKE ON VLV.OP.FAILED
G BR2	021403	050278	Y CV A00	T							SAMP.PMP.DISCH.CV FOUND STUCK IN CLOSED POSITION	CAUSE OF CHECK VLV STICKING NOT GIVEN

ALL VALVE EVENTS IN THE DATA FILE

<u>VEN</u>	<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SYSTEMS</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON MUM PH</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
G BR2	021663	060378	L MV	A00	U	RHR VLV E11-F009 WOULD NOT OPEN FROM CONTROL ROOM					CAUSE OF VLV NOT OPENING, NOT GIVEN	
G BR2	022292	081878	K UV	D14	T	EXT. VLV LEAKAGE (PACKING) CAUSED HI. TEMP. IN DRYWELL					FAILED PACKING IN VLV CAUSED LEAKAGE	
G BR2	023033	111178	L CV	B04	D	RHR CHECK VALVE E11-F031 WILL NOT FULLY SEAT					DESIGN ERROR/VLV DOESN'T WORK ON LOW DP.	
G BR2	023034	111278	L RM	A16	S D	RHR VLV E11-F008 WOULD NOT OPEN AT REQ. SETPOINT					FAIL. OF RX. STM. DOME HIGH PRESS. SWITCH	
G CO1	014359	012476	L MV	F20	R D	VLV RHR-MO-34A WOULD NOT OPERATE BY MTR. OPERATOR					SHEARED WOODRUFF KEY. IN MTR. OPERATOR	
G CO1	014358	020776	Y DV	V01	S D	INCORRECT VALVE LINEUP ON RX BLDG VENT DAMPER					PERSONNEL ERROR	
G CO1	014936	051476	N RV	A27	D	MAIN STEAM SAFETY RELIEF VALVE MALFUNCTIONING					CRACK IN BELLOWS TO BASE WELD	
G CO1	015351	061776	C RM	F00	U	VALVE PC-238AV WOULD NOT CLOSE IN 15 SECONDS					CAUSE UNKNOWN / POSSIBLE LUB PROBLEM	
G CO1	015717	081076	D MV	F20	D	VALVE CS-MO-128 WOULD NOT OPERATE					TRIPPER PIN IN OPERATOR DISLODGED	
G CO1	015873	081376	W RV	A06	D	SETPOINT OF MS-RV-71E ADJUSTED INCORRECTLY					INCORRECT MAINTENANCE PROCEDURE	
G CO1	016008	090776	D MV	A20	D	VALVE CNS-MV-128 FAILED TO OPEN					THE REPAIR CLUTCH AND COMPONENTS FAILED	
G CO1	016004	091076	L XV	V01	S D	EQUALIZING VALVE ON DP PRESS INDICATING SW OPEN					PERSONNEL ERROR	
G CO1	016253	100976	G RM	F16	S D	A SLC INJECTION WAS FOUND INCOPERATIVE					BLOWN FUSE DUE TO IMPROPER SIZE WIRING	
G CO1	016658	102876	L RM	A16	S D	VALVE RHR MO-17 FAILED TO OPEN					BROKEN RELAY COIL KEEPER LODGED IN CONT.	
G CO1	016387	110176	N UV	V01	T D	FLUSHING VALVE OF RADWASTE MONITOR LEFT OPEN					PERSONNEL ERROR	
G CO1	016664	111276	P UV	D14	U	VALVE LEAKED EXTERNALLY/DRIPPED ON SW/PUMP STOPPED					PACKING NEEDED TIGHTENING	
G CO1	016713	111676	K XV	V03	S D	ISOLATION VALVES TO PRESS. SWITCH LEFT CLOSED					PERSONNEL ERROR AFTER SURVEILLANCE	
G CO1	016659	111776	C RM	B00	R U	VALVE PC-238 AV FAILED TO CLOSE FULLY					CAUSE UNKNOWN, BELIEVED OPERATOR RELATED	
G CO1	017071	012177	H CV	E10	U	HPCI TESTABLE CHECK VALVE LEAKING INTERNALLY					A 14 IN PROBE JAMED BETW. DISK+SEAT	
G CO1	017298	012577	C MV	B26	T	DRYWELL PURGE VALVE WOULD NOT CLOSE FROM CONT SW					CORRODED LIMIT SWITCH CONTACTS	

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	SY	COMP	FAIL CODE	TYPE	CLASS	COMM	KEY	FAILURE MODE	FAILURE MECHANISM
G	CO1	017301	021977	L	MV	B20	R	D			MOTOR OPERATED VALVE RHR-MO-34 WOULD NOT CLOSE	SHEARED KEY BETWEEN VALVE AND OPERATOR
G	CO1	018063	041777	C	AV	B24	S	D			CONTAINMENT VALVE H+V-296AV WOULD NOT CLOSE	SCLENGID VALVE LEAKING AT CYLINDER PORT
G	CO1	018063*	041777	M	UV	D14	T	C3			THREE ROCKWELL 1612-JIMMY VALVES LEAKING EXTERNALLY	DEFECTIVE VALVE STEM PACKING
G	CO1	018064	042077	D	MV	F20		D			CORE SPRAY PUMP VALVE INCOPERATIVE, MOTOR RUNS	MOTOR GEAR SET SCREW ON VAL OPER LOOSE
G	CO1	018894	072577	L	RM	T03		D			4 ISOLATION VALVES NOT LEAK TESTED	PERSONNEL ERROR
G	CO1	018900	081177	S	MV	B16	S	D			SERVICE H2O VALVE, SW-MO-89A FAILED TO CLOSE	RELAY CONTACTS SUPPLYING PWR FAILED
G	CO1	019119	081677	X	XV	V03	T	D			VALVE TO LEVEL SWITCH LEFT CLOSED AFTER TEST	PERSONNEL ERROR
G	CO1	019292	091277	S	UV	C25		T			A HEAT EXCHANGER OUTLET VALVE LEAKING THRU	PORTION OF RUBBER VALVE SEAT MISSING
G	CO1	020052	112177	D	MV	I12		D			VALVE CS-MO-12B NOISY IN OPERATION	2 TEETH MISSING ON VALVE OPERATOR GEAR
G	CO1	020054	120577	X	CV	D12		U			EXCESS FLOW CHECK VALVE LEAKING EXTERNALLY	LOOSE NUT ON VALVE BODY
G	CO1	020343	011378	L	MV	B16	S	D			RHR INJ BLOCK VALVE FAILED TO CLOSE DURING TEST	DIRTY CONTACTS ON RELAY WIRING ERROR
G	CO1	020800	011778	J	MV	A16	S	D			COOLING VALVE REC-711MV DID NOT OPEN	FAILURE OF VALVE ELECT-INTERLOCK SWITCH
G	CO1	020806	020778	H	RM	B16	T	D			HPCI VALVE FAILED TO CLOSE DURING TEST	NO SIGNAL FROM DP SWITCH
G	CO1	020806A	020778	H	XV	V03	T	D			ISOLATION VALVE TO DPIS-76 FOUND CLOSED (SEE 020806)	PERSONNEL ERROR
G	CO1	021196*	041578	T	AV	B19	B	I 02			VALVES AR-153AV+AR-154AV FAILED TO CLOSE	LACK OF VALVE PISTON+CYLINDER LUBE
G	CO1	021626	042378	C	CV	F10		T			FLV-160 EXCESS FLOW CHECK VALVE MALFUNCTIONING	CRUD BUILDUP ON POPPET ASSEMBLY
G	CO1	023649	091878	L	MV	A20		D			VALVE RHR-MO-66B FAILED TO OPEN	SET SCREW ON VALVE OPERATOR LOOSENED
G	CO1	023483	120878	S	MV	A04		D			SW CROSS CONNECT VLV SW 888 MV FAILED TO OPEN	DESIGN ERROR/IMPROPER TORQUE SWITCH USED
G	CO1	023378	121278	M	UV	V01	S	D			FLUSH. VLV. OF THE RADWASTE EFF. MONIT. IN ADV. LEFT DP-	-EN//PERSONNEL ERROR
G	CO1	023542	122778	C	AV	B04		D			DRYWELL OUTBD. VENT ISO. VLV. PC-246AV NOT SHUTTING-	-FULLY//DESIGN ERROR IN PNEUM. OPERATOR

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u>	<u>P</u>	<u>C</u>	<u>E</u>	<u>N</u>	<u>T</u>	<u>CONT.</u>	<u>NO.</u>	<u>EVENT</u>	<u>DATE</u>	<u>S</u>	<u>C</u>	<u>O</u>	<u>M</u>	<u>P</u>	<u>FAIL</u>	<u>CODE</u>	<u>Y</u>	<u>C</u>	<u>L</u>	<u>A</u>	<u>S</u>	<u>C</u>	<u>O</u>	<u>N</u>	<u>M</u>	<u>P</u>	<u>H</u>	<u>K</u>	<u>E</u>	<u>Y</u>	<u>FAILURE</u>	<u>MODE</u>	<u>FAILURE</u>	<u>MECHANISM</u>
G	DA1	014100	011476	Q	MV	F02	D	VALVE RCIC MD 2516 SEPERATED FROM OPERATOR	BOLTS SHEARED, NOT TORQUED PROPERLY																									
G	DA1	014187*	011676	C	RM	F06	D 03	PCIS CV 4300,4303,4309 NOT CLOSING IN PROPER TIME	CLOSING TIME TECH SPEC IN ERROR																									
G	DA1	014408A	021476	K	CV	B00	U	INSTRUMENT LINE CV XFY-4528 FAILED TO CLOSE	FAILURE REASON UNKNOWN																									
G	DA1	014408B	021476	K	CV	B04	D 02	INSTRUMENT LINE CV XFY-4611,4612 FAILED TO CLOSE	POOR TEST LOCATION FOR VALVE																									
G	DA1	014438*	030276	P	MV	I10	U 03 S	EXCESS OIL FOUND IN SEVERAL VALVE MOTOR OPERATORS	ACTUAL CAUSE UNKNOWN																									
G	DA1	014312*	030976	W	RM	F27	T 06	MSIV 4412,4413,4418,4419,4420,4421 LEAKING	OUT OF ROUND PILOT VALVE DISKS																									
G	DA1	014339	032376	U	CV	E02	D	FEEDWATER CHECK VALVE V-14-1 LEAKING INTERNALY	TWO CLOTH RAGS FOUND IN VALVE/PERS. ERROR																									
G	DA1	014340	032476	C	AV	F24	S D	VENT VALVE CV4301 NOT CLOSING WITHIN T.S. TIME LIM	DIRTY PILOT SCLENDID VALVE IN AIR SUPPLY																									
G	DA1	014445*	033176	W	RV	C27	T 06	SIX RELIEF VALVES LEAKING INTERNALY	EXCESS STEAM CUTTING ON PILOT VALVE SEAT																									
G	DA1	014728*	052076	W	RM	A26	T 04	MSIV VALVES 8401A,B,C,D DID NOT FULLY OPEN	LIMIT AND TORQUE SWITCHES OUT OF ADJUST																									
G	DA1	014729	052076	W	RM	F12	D	MSIV LEAKAGE CONTROL SYSTEM INLET VALVE INOPERABLE	BINDING OF MECHANICAL INTERLOCK																									
G	DA1	014730	052076	W	RM	A16	S D	MSIV 8403D FAILED TO CYCLE OPEN DURING TEST	LOGIC RELAY NOT FIRMLY SEATED IN SOCKET																									
G	DA1	014731*	052076	W	RM	F16	S D 02	MSIV 8402A & D (LEAK,CONT,SYS,IN.)INADVERT,CYCLED	LOGIC RELAY NOT FIRMLY SEATED IN SOCKET																									
G	DA1	014733	052876	C	RM	V01	S D	HPCI AND RCIC INJECTION VALVES LINED UP WRONG	PERSONNEL ERROR,LOW-LOW LEVEL RESET WRONG																									
G	DA1	014888	061476	W	RM	F12	U	MSIV 4420 CLOSING TIME OUTSIDE T.S. REQUIREMENTS	CLOSE THROTTLE OUT OF ADJUSTMENT																									
G	DA1	015080	070476	Q	MV	B00	U	RCIC MOV 2401 FAILED TO CLOSE FOR TEST	NO REASON LISTED,NOT REPRODUCIBLE																									
G	DA1	015750	082776	W	XV	V06	S D	ROOT VALVE TO LOW PRESS SW PS-1017 IN CLOSED POSIT	VALVE NOT ON PRESTARTUP CHECKLIST																									
G	DA1	015991	092876	H	XV	C00	U	HPCI TURB STM LINE HI FLC EQUALIZING VALVE LEAKS	CAUSE UNKNOWN																									
G	DA1	016071*	101576	W	MV	F06	D 03	MTR.OPER.VLVS.(MSIV-LC SUBSYS A,B,D)NOT PROP.ADJUS	LACK OF EXPER.6PROCEED. TO DETERM.OPT.SET																									
G	DA1	016675	102176	W	MV	F16	S D	MOV 8402D INCOPERABLE DUE TO TRIPPE, OVERLOAD RELAY	TRIP SETPOINT INCREASED SLIGHTLY																									

ALL VALVE EVENTS IN THE DATA FILE

V E N	P L A N T	CONT. NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O M M U N I C A T I O N	K E Y	FAILURE MODE	FAILURE MECHANISM
G	DA1	021169*	040378	H	RV	A00		U 04			SETPOINTS OUT OF SPEC ON 1 SAFTEY+3 RELIEF VALVES	CAUSE UNKNOWN
G	DA1	021123A	040678	C	MV	B16	S D				VALVE MOV 8402B FAILED TO FULLY CLOSE	MOTOR STARTER CONTACTOR COIL FAILED
G	DA1	021123B	040678	C	MV	B23	I				VALVE MOV 8402C FAILED TO FULLY CLOSE	MOTOR OPERATOR TORQUE SWITCH CONT. DIRTY
G	DA1	021862*	061778	M	RM	F16	S D 02 V				BACK UP SCRAM VALVES OPEN WHEN REQUIRED SHUT	LOOSE AUX SW SCREWS CAUSED FALSE SIGNAL
G	DA1	021864	061778	C	AV	B00	U				TORUS PURGE INLET VALVE CV4308 FAILED TO CLOSE	CAUSE UNKNOWN
G	DR2	014023	010276	X	XV	VC1	S D				RACK ISO VAL FOR PRESS SW263-518 IMPROPER LINEUP	PERSONNEL ERROR
G	DR2	014330	031376	H	RM	A16	S D				HPCI STEAM SUPPLY VALVE 2-2301-4 FAILED TO OPEN	DIRTY CONTACTS IN BREAKER SUPPLYING VALVE
G	DR2	014376	031576	C	AV	D14	T				VALVE 2-1601-56 LEAKING EXTERNALY	EXCESSIVE PACKING LEAKAGE
G	DR2	014377	031576	C	AV	CG0	U				VALVE 1601-23 LEAKING INTERNALY	CAUSE OF LEAKAGE PAST SEAT NOT GIVEN
G	DR2	014428*	032376	C	AV	D19	T 02				VALVES 2-1601-32A, 32E LEAKING EXTERNALY	DETERIORATION OF WATERLESS GREASE ON SHFT
G	DR2	014344	032476	J	MV	B06	D				CCSW VAULT DRAIN VAL 4999-74 BLOCKED OPEN MECH	FUNCTIONAL TEST REQUIRE. NOT IDENTIFIED
G	DR2	014443	032476	N	CV	E10	T				SBLC ISO CHECK VALVE 2-1101-16 LEAKING INTERNALY	CRUD ON VALVE SEAT
G	DR2	014442*	032576	U	CV	E12	T 02				CHECK VALVES 2-220-58B, -628 LEAKING INTERNALY	WORN SEAT RING & O-RING ASSEMBLIES
G	DR2	014420	032976	H	CV	E25	T				HPCI VALVE 2-2301-45 LEAKING INTERNALY	CORROSION, PITTING OF LOWER SEATING AREA
G	DR2	014542	041276	G	RV	H25	R I				SBLC RELIEF VALVE 1105-A LIFTED PREMATURELY	VALVE SEAT NEEDS LAPPING
G	DR2	014530	041376	G	RV	H25	R I				SBLC RELIEF VALVE 1105-B LIFTED PREMATURELY	VALVE SEAT NEEDS LAPPING
G	DR2	014889	051976	G	UV	V06	S D				INCORRECT VLV L/U; SBLC SYSTEM-BORON TANK	DISCREPENCY IN PROCEDURES
G	DR2	014747	052576	A	RV	B27	T				DURING BLOWDOWN TEST VALVE 203-3A REMAINED OPEN	EXCESS LEAKAGE ON PILOT STAGE OF VALVE
G	DR2	014748	052676	N	UV	V02	S D				SAMPLE VALVE ON SUCTION SIDE OF PUMP IN CLOSED POS	PERSONNEL ERROR FAILURE TO OPEN VALVE
G	DR2	015748	061076	D	RM	B19	T				VALVE MD2-1402-4B FAILED TO CLOSE AGAINST PUMP HED	INADAQUATE LUBRICATICH OF VALVE STEM

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u>	<u>P</u>	<u>C</u>	<u>E</u>	<u>S</u>	<u>C</u>	<u>F</u>	<u>T</u>	<u>C</u>	<u>C</u>	<u>K</u>	<u>F</u>	<u>F</u>
<u>N</u>	<u>L</u>	<u>O</u>	<u>D</u>	<u>S</u>	<u>O</u>	<u>A</u>	<u>E</u>	<u>L</u>	<u>O</u>	<u>E</u>	<u>A</u>	<u>A</u>
<u>EN</u>	<u>ANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SY</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
G	DR2	015378	071176	D	MV	F26	D				CORE SPRAY INJECTION VAL MO2-1402-24B FAILED	BROKEN LIMIT SWITCH CONTACT BLOCK
G	DR2	016171	100376	Y	UV	V01	S	D			STACK GAS SAMPLE PUMP LOW FLCW/IMP. VLV LINE UP	PERSONNEL ERROR
G	DR2	023335	100376	Y	XV	V01	S	D			STACK GAS PUMP FLOW LOW, VALVE LINEUP WRONG	PERSONNEL ERROR
G	DR2	016453	111376	H	MV	F12	D				HPCI INJECTION VALVE MO2-2301-8 FAILED	VALVE STEM SHEARED
G	DR2	017182	021777	L	MV	A26	U				LPCI CROSS-TIE VALVE MO2-1501-32B FAILED TO OPEN	LIMIT SWITCH OPENED BEFORE VALVE OFF SEAT
G	DR2	017514	040277	K	MV	B14	T				B RECIRC PUMP SUCTION VALVE WOULD NOT CLOSE	VALVE PACKING TOO TIGHT
G	DR2	018181	060377	L	MV	I01	C	D			LPCI VALVE 2-1501-3A, CLOSING VALVE BENT STEM	PERSONNEL ERROR
G	DR2	018568	080277	H	MV	A23	U				HPCI VALVE 2-2301-8 FAILED TO OPEN	SUSPECT PROBLEM WITH TORQUE SWITCH
G	DR2	018934	081577	L	MV	A00	U				SUCTION VALVE MO-2-1501-5A FAILED TO OPEN	CAUSE UNKNOWN
G	DR2	019156*	090877	W	UV	D14	C	U	O2	V	STEAM VALVE GLAND LEAKS CAUSED HI TEMP ISOL SIGNAL	VALVES WERE REPACKED
G	DR2	018985	091077	H	MV	A04	D				HPCI VALVE 2-2301-8 FAILED TO OPEN, VAL DAMAGED	OVER SIZED MTR OPERATORS OVERSTRESS STEM
G	DR2	019155	091277	K	RM	B02	R	D			RECIRC SUCTION VALVE 202-4B WOULD NOT CLOSE	VALVE PACKING TOO TIGHT MAINT ERROR
G	DR2	019154	091377	W	RM	D07	T				MSIV 203-2B HAS PACKING LEAK	PACKING REACHED NORMAL END OF LIFE
G	DR2	019218*	100477	U	CV	E12	R	T	U2		REACTOR FEED CV 2-220-58B, 62B, LEAKING INTERNALLY	WORN SEAT/DISK ASSY PINS, WORN SEAT RING
G	DR2	019319	102177	C	XV	C10	T				CNTNMNT AIR LOCK VENT VALVE LEAKING	VALVE SEATING SURFACES DIRTY
G	DR2	019490*	110277	C	UV	C02	D	O2			SAMPLE LINE ISOLATION VALVES 8501-1A, 1B LEAKING	IMPROPER SEAT TO DISK CLEARANCE ADJ
G	DR2	019656	110877	N	AV	C27	T				ISOLATION VALVE 9207A LEAKING INTERNALLY	PILOT VALVE SEAT LEAKAGE
G	DR2	019809	112477	C	RM	B00	U				ISOLATION VALVE MO2-1601-63 WOULD NOT CLOSE	CAUSE COULD NOT BE DETERMINED
G	DR2	019985	120977	W	RV	A00	R	U			ELECTROMATIC RELIEF VALVE 3B FAILED TO OPEN	CAUSE UNKNOWN
G	DR2	019808	121277	C	CV	F12	R	D			VACUUM BREAKER 2-1601-32B INOPERABLE	MECHANICAL BINDING OF VALVE PARTS

ALL VALVE EVENTS IN THE DATA FILE

V E N T	P L A N T	CONT.NO.	EVENT DATE	S Y S	C O M P	FALL CODE	T Y P E	C L A S S	C O N T R O L P H Y	K E Y	FAILURE MODE		FAILURE MECHANISM
G DR3	014440	032476	J RM B16	S D							DRAIN VALVE 2-4999-74 BLOCK OPEN, DISCON. ELECTRIC.	FUNCTIONAL TESTING NOT IDEN IN PROCEDURES	
G DR3	015158	050376	W RM F14	T							MSIV 3-203-1A CLOSING TIME TOO LONG	DRY VALVE PACKING	
G DR3	014750	051076	D MV B16	S D							MO 3-1402-258 TRIPPED WHILE BEING CLOSED	WRONG SIZE OVERLOAD HEATER	
G DR3	016014	091876	C RM D14	T							ISOLATION VALVE 3-1601-23 LEAKING IN EXCESS OF T.5	FAILURE OF VALVE PACKING	
G DR3	016016A	092176	U CV E10	R T							FEEDWATER CHECK VALVE 3-220-58A LEAKING INTERNALLY	DIRT IN SEATING AREA	
G DR3	016168	092176	U CV E08	R T							FEEDWATER CHECK VALVE 3-220-62A LEAKING INTERNALLY	WORN DISK ASSEMBLY PINS	
G DR3	016017	092276	W UV D13	T							VALVE 3-220-1 LEAKING BODY TO BONNET	DETERIORATED PRESSURE SEAL RING	
G DR3	016163	100776	L CV E10	T							ISOLATION CHECK VALVE 3-1501-25B LEAKING INTERNALLY	DIRT AND SMALL SCRATCHES ON VALVE SEAT	
G DR3	016164*	100776	U CV E10	T 02							FEEDWATER CHECK VALVES 3-220-58B, -62B LEAKING	DIRT IN THE SEATING AREA	
G DR3	016695	101276	L MV A16	S D							VALVE 3-1501-27A FAILED TO OPEN ELECTRICALLY	LOOSE TERMINAL IN VALVE CONTROL CIRCUIT	
G DR3	016471	102876	M CV E10	T							ISOLATION CHECK VALVE 3-0301-98 LEAKING INTERNALLY	NORMAL WEAR; LIGHT RUST ON SEAT	
G DR3	016454	110176	L CV E10	T							ISOLATION CHECK VALVE 3-205-2-7 LEAKING INTERNALLY	DIRT IN SEATING AREA & ON DISK PIVOT PIN	
G DR3	016474	111976	H MV F16	S D							HPCI LOGIC DESIGN WIRING CAUSING VALVES TO CYCLE	DESIGN ERROR	
G DR3	017652	041277	C CV A00	U							VACUUM BREAKER A03-1601-20A DID NOT OPEN	CAUSE UNKNOWN	
G DR3	017977*	060677	M RM F00	U 02							IRREGULAR OPERATION OF TWO SCRAM PILOT VALVES	CAUSE UNKNOWN	
G DR3	018378A	061177	W RV C02	R D							ELECTROMATIC RELIEF VALVE 203-3D LEAKING INTERNALLY	PILOT PIN ADJUSTED INCORRECTLY	
G DR3	018378B	061177	W RV C10	R T							ELECTROMATIC RELIEF VALVE 203-3E LEAKING INTERNALLY	DIRT UNDER VALVE SEAT	
G DR3	018377	061277	W RV C27	R D							ELECTROMATIC RELIEF VALVE 203-3D LEAKING INTERNALLY	DEFECTIVE PILOT VALVE STEM	
G DR3	018376	061377	W RV A10	R T							SOLENOID OPERATING LEVER FOR 203-3C STICKING	RUST BUILDUP ON GUIDE PINS	
G DR3	018551	072577	L RM T03	D							SURVEILLANCE TEST NOT COMPLETED ON HPCI VALVES	PERSONNEL WERE 6 DAYS LATE COMPLETING TEST	

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>S</u> <u>T</u> <u>E</u> <u>M</u>	<u>C</u> <u>O</u> <u>M</u> <u>P</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>Y</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u> <u>H</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	DR3	018936	081177	L	MV	A19	T				VALVE MO-3-1501-20B FAILED TO OPEN	VALVE STEM NOT ADEQUATELY LUBRICATED
G	DR3	019189	092477	Q	MV	F01	R	D			BREAKER FOUND OPEN TO MG-3-4102	PERSONNEL ERROR
G	DR3	019659	102677	H	RM	T03	D				SURVEILLANCE TEST NOT COMPLETED ON TIME	PERSONNEL ERROR(RECURRING PROBLEM)
G	DR3	019660	110877	Y	XV	D14	T				LPCI MANUAL ISOLATION VALVE MO-3-1501-26B LEAKING	VALVE PACKING FAILURE
G	DR3	019721	111077	N	MV	A10	T				VALVE MO3-1201-1 FAILED IN CLOSED POSITION	DRIED GREASE ON LIMIT SWITCH
G	DR3	019907	121677	Q	XV	V01	T	D			PRESS SWITCH FOUND VALVED OUT	PERSONNEL ERROR
G	DR3	019996	121677	F	MV	A00	R	U			LPCI HX DISCH VALVE MO3-1501-3A FAILED TO OPEN	CAUSE UNKNOWN
G	DR3	020602	020778	L	MV	A00	R	U			VALVE MO-3-1501-5C FAILED TO OPEN	CAUSE UNKNOWN
G	DR3	020780A	030478	C	CV	E12	T	02			FEEDWATER CHECK VALVES 3-220-58B,62B LEAKING	WORN SEAT/DISK ASSEMBLY PINS
G	DR3	020780B	030478	C	CV	E12	U				CHECK VALVE 3-1601-21 LEAKING INTERNALY	OFF-CENTER DISK IN VALVE
G	DR3	020780C	030478	C	XV	D14	T				MSIV 3-203-2C TEST CONNECTION VLV LEAKING EXTERNAL	PACKING FAILURE / VALVE REPACKED
G	DR3	021157	040378	M	CV	E10	T				CHECK VALVE 3-1101-15 LEAKING INTERNALY	CHEMICAL DEPOSITS ON VALVE SEAT SURFACES
G	DR3	021461	042478	E	RM	C10	T				FIRE PUMP TANK LEVEL CONTROL VALVE STUCK OPEN	PIECE OF METAL STUCK IN VALVE
G	DR3	021679	060578	F	MV	F23	D				VALVE MO3-1501-28B FAILED WHILE BEING CYCLED	DEFECTIVE SHAFT PIN ON TORQUE SWITCH
G	DR3	022075	072678	C	SV	B21	T				ISOLATION VALVE 3-2001-6 WOULD NOT CLOSE	DETERIORATED SEALS IN SOLENOID VALVE
G	DR3	022561	092278	L	MV	B16	S	D			LPCI VALVE 3-1501-20A FAILED TO CLOSE ON TESTING	STUCK CONTACTOR IN MCC
G	DR3	022591	092278	L	MV	F00	U				LPCI HX VALVE MO3-1501-3A FAILED TO OPERATE	CAUSE UNKNOWN
G	DR3	022772	101278	N	XV	V03	S	D			DIFF PRESS SW FOUND VALVED OUT	PERSONNEL ERROR
G	DR3	022921	110478	N	AV	F12	R	U			MSIV 3-203-2A FAILED TO CLOSE IN PROPER TIME	SPEED CONTROL OUT OF ADJUSTMENT
G	DR3	023363	113078	E	SV	A00	U				FUEL OIL TRANS PUMP OUTLET VALVE FAILED TO OPEN	SOV WAS STUCK, VALVE REPLACED

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CN	KEY	FAILURE MODE	FAILURE MECHANISM
G EN1	018189B	051877	H UV	C25	T 04	4 HPCI VALVES LEAKING EXCESSIVELY					SEATS & DISCS NOT MATING PROPERLY	
G EN1	018189C	051877	Q UV	C25	T 03	3 RCIC VALVES LEAKING EXCESSIVELY					SEATS & DISCS NOT MATING PROPERLY	
G EN1	018189D	051877	D UV	C25	T 02	2 CORE SPRAY PUMP VALVES LEAKING EXCESSIVELY					SEATS & DISCS NOT MATING PROPERLY	
G EN1	018189E	051877	C RM	D13	T 02	2 PURGE EXHAUST VALVES LEAKING EXCESSIVELY					FAILED C-RING GASKET	
G EN1	018189F	051877	W RM	C12	D	MSIV INBOARD "A" LEAKING INTERNALLY					STROKE NEEDED ADJUSTMENT	
G EN1	018189G	051877	U RM	C23	T	1 CONDENSATE DRAIN VALVE LEAKING EXCESSIVELY					TORQUE SWITCH OUT OF ADJUSTMENT	
G EN1	018191	060477	L RM	F02	D	LPCI VALVE E11-F017B CYCLE TIME OUTSIDE T.S.					VALVE STEM PACKED TOO TIGHTLY	
G EN1	018649	080977	W RV	A00	U	SAFETY RV 1C FAILED TO OPEN AT HIGH REACTOR PRESS.					CAUSE UNKNOWN	
G EN1	020032	081477	K XV	D18	T	CRACK IN WELD FOR ISOL VALVE TO LEVEL TRANSMITTER					UNKNOWN REASON, SUSPECT TOO RIGID MOUNTING	
G EN1	020029	082977	N RM	V03	S D	OPERATION OF CONT. VAL CAUSED VIOL OF CNTNMNT INTEG					TEST CONNECTION PLUG REMOV. FROM VLV/TEST	
G EN1	020028*	090977	N RM	B16	S D 02 V	RNCU PUMP SUCTION VALVES FAILED TO ISOLATE SYSTEM					JUMPER WIRE LEFT IN CONTROL PANEL	
G EN1	020019*	100677	A RV	A00	R U 04	FOUR RELIEF VALVES FAILED TO OPEN FOLLOWING SCRAM					CAUSE UNKNOWN, VALVES BEING EXAMINED	
G EN1	020191	120877	E XV	V01	S D	IMPROPER LINEUP, FUEL OIL TRANS PUMPS DISCH VALVES					PERSONNEL ERROR	
G EN1	020687	022678	M XV	V02	S D	ISO. VLVS TO SWITCHS. C11-NO13E6F IN CLOSED POSITION					PERSONNEL ERROR, UNCLEAR PROCEDURES	
G EN1	021083	040678	K XV	V01	S D	DRAIN VALVE LEFT OPEN, FOUND ON LLRT					PERSONNEL ERROR	
G EN1	021085*	041178	C RM	C07	T 03 B	VARIOUS CNTNMNT ISOLATION VALVES LEAKING					NORMAL WEAR ON VALVE COMPONENTS	
G EN1	021725	060778	K CV	T02	D	4-EXCESS FLOW CVS NOT FUNCTIONALLY TESTED AS REQ.					MAINTENANCE PERSONNEL ERROR	
G EN1	021723*	060978	A RV	A12	D 02	TWC RELIEF VALVES FAILED BENCH CHECK					PROBLEMS WITH PLUNGERS AND SPRINGS	
G EN1	021727	061678	K CV	E00	U	EXCESS FLOW CHECK VALVE B31-F040A LEAKING INTERNAL					CAUSE UNKNOWN, SUSPECT DIRT IN LINE	
G EN1	022113	070278	L MV	A16	S D	RHR MOV E11-F024A FAILED TO OPEN					DIRT IN INTERLOCK ON BREAKER CAUSED BIND	

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>S</u> <u>T</u> <u>E</u> <u>M</u>	<u>C</u> <u>O</u> <u>D</u> <u>E</u> <u>M</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>Y</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u> <u>M</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	EN1	022733	092878	W	XV	V03	S	D			VALVES ON D/P CELL WERE VALVED IN WRONG	PERSONNEL ERRCR(I RUINED D/P CELL)
G	EN1	022706	100578	S	UV	C02		D			VALVE BODY SEAT FOR P41-F313B FAILED DURING MAINT.	IMPRCPEP MAINTENANCE PROCEDURES FOLLOWED
G	EN2	022024*	071778	L	MV	F16	S	D	02	V	RHR VALVES HAD POWER LOST TO THEM	BREAKER TRIPPED DUE TO BLOWN FUSES
G	EN2	022211	081078	C	RM	V05	S	D			VAC RELEIF VALVE F31C FOUND OPEN WHEN REQ CLOSED	PERSONNEL ERRCR(INVERTED SIGNAL)
G	EN2	022212	081078	C	CV	D12		D			VACUUM BREAKER 2T48-F328A LEAKING EXTERNALLY	LOOSE MECHANICAL PARTS ON VALVE BODY
G	EN2	022207*	081778	C	RM	A16	S	D	02	V	PURIF CONTAINMENT VALVES FAILED TO OPEN	INCORRECT WIRING FROM SWITCH CONNECTIONS
G	EN2	022500*	091078	L	RM	B04		D	02		RHR VALVES 2E11-FC03A, F047A FAILED TO CLOSE	VALVE GATES SAG+BIND IN FULL OPEN POSIT
G	EN2	022496	091778	N	DV	F04		D			ELECTRICAL CABLES ROUTING INTERFERES W DAMPER VALS	DESIGN ERROR, CABLES REROUTED
G	EN2	022485	092378	C	RV	B10		T			RELIEF VALVE 2E11-RV-F212A STUCK PARTIALLY OPEN	DIRT ON VALVE SEAT
G	EN2	022486*	092678	L	RM	F12		D	02		RESTRICTED FLOW THROUGH RHR SYSTEM CONTROL VALVES	DAMAGED CAVITROL TRIPS IN VALVES
G	EN2	022736*	101778	C	CV	E12		D	03	V	DRYWELL VACUUM BREAKERS LEAKING INTERNALLY	RETAINING MAGNETS EXTENDED TOO FAR
G	EN2	022675	102778	H	MV	F20		T			HPCI VALVE 2E41-F001 FAILED TO OPERATE	FAILURE OF MOTOR SHUNT FIELD INSULATION
G	EN2	022753*	110678	H	RM	F16	S	D	02	V	HPCI CONTROL VALVES FAILED TO OPERATE	WIRE LEFT OFF BY MAINT PERSONNEL
G	EN2	023135	110978	C	RM	T01		D			VACUUM BREAKERS NOT TESTED AS REQ BY TECH SPECS	PERSONNEL ERROR
G	FP1	013958	010678	N	SV	F21		D			DRY WELL PARTICULATE SAMPLING VALVE FAILED TO OPER	ELECTRIC SOLENOID BURNED OUT
G	FP1	014658	033176	J	RV	C00		U			RELIEF VALVE 15RV-112A LEAKING	CAUSE UNKNOWN
G	FP1	015058	042076	H	MV	A20		U			HPCI TORUS SUCTION VALVE FAILED TO OPEN	SHORT IN OPERATOR MOTOR
G	FP1	014687	042476	C	SV	B21		U			CONTAINMENT ISOLATION VALVE FAILED TO CLOSE/TEST	DEFECTIVE SOLENOID
G	FP1	016136	061776	N	UV	D00		U			LEAKING PUMP DRAIN VALVE ON FEEDWATER PUMP	CAUSE UNKNOWN
G	FP1	015064	062276	N	SV	B21		U			SAMPLE STREAM E VALVE 27SOV123B FAILED TO CLOSE	BURNED OUT COIL

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	STATUS	COMP	FAIL CODE	TYPE	CLASS	COM MUM	MARK	FAILURE MODE	FAILURE MECHANISM
G	FP1	015065	062976	Y	SV	V01	S	D			SOV-139A AND B FOUND CLOSED WHEN REQUIRED OPEN	PERSONNEL ERROR (PANEL MARKED POORLY)
G	FP1	015237	070376	L	MV	A20		D			RHR VALVE 10 MOV 25A FAILED TO OPEN	SUSPECT OPEN CIRCUIT IN MOTOR WINDINGS
G	FP1	015239	071376	N	DV	B21		T			DAMPER 66 ADV 100B DID NOT FULLY CLOSE	SOLENOID NOT IN PROPER ADJUSTMENT
G	FP1	015240	071376	N	RM	B06		D			VALVE ON RHR PROCESS SAMPLE LINE FAILED TO CLOSE	INCORRECT PROCEDURES USED
G	FP1	015241	072176	A	RV	H00		U			SAFETY RELIEF VALVE OPENED PREMATURELY	CAUSE UNDER INVESTIGATION
G	FP1	015272	073076	Y	XV	V06	S	D			OFF-GAS SAMPLE VALVE FOUND CLOSED, REQUIRED OPEN	PROCEDURAL ERROR
G	FP1	017840	073076	N	SV	F21		D			VALVE IN DRYWELL MOISTURE LINE FAILED TO OPERATE	FAILURE OF VALVE SOLENOID
G	FP1	015982	100476	N	UV	B00		U			VALVE ON CONDENSER (0-1) STUCK OPEN	CAUSE NOT STATED
G	FP1	016176	101476	L	CV	E07		T			CHECK VALVE 42B LEAKING INTERNALLY	NORMAL WEAR ON VALVE SEAT
G	FP1	016269	102676	L	MV	A20		D			RHR SYSTEM VALVE 10-MOV-24A WOULD NOT OPEN	VALVE MOTOR OPERATOR BURNED OUT
G	FP1	016374	110176	Q	MV	F20		D			RCIC ISOLATION VALVE 13-MOV-16 FAILED DURING TEST	VALVE MOTOR OPERATOR BURNED OUT
G	FP1	016413	111176	W	RM	F00		U			THE INNER MSIV ON STEAM LINE D FAILED TO OPERATE	CAUSE UNKNOWN
G	FP1	016373	111976	A	RV	H00		U			RELIEF VALVE 02-RV-71F INADVERTENTLY OPENED	CAUSE UNKNOWN
G	FP1	016497	111976	H	MV	A20		D			HPCI VALVE 23-MOV-57 FAILED TO OPEN	FAILURE OF VALVE MOTOR WINDINGS
G	FP1	016415	112276	W	RV	H00		U			SAFETY/RELIEF VALVE 02-RV-71B OPENED PREMATURELY	CAUSE UNDER INVESTIGATION
G	FP1	016600	121576	E	RV	H00		U			RELIEF VALVE ON SOAK BACK PUMP LIFTING EARLY	CAUSE UNKNOWN
G	FP1	016972*	020377	W	RM	A19		T 02			MSIV 808 AND 80C FAILED TO OPEN FULLY	VALVEGUIDE RODS REQUIRED LUBRICATION
G	FP1	017659	022477	H	UV	V03	S	D			VALVES ON HPCI ROUTE FROM COND TK TO TORUS L/U IMP	OPERATOR ERROR/ TESTING PERSONNEL
G	FP1	017337	030377	C	RM	B01		D			FLOOR DRAIN ISOLATION VALVE FAILED TO CLOSE	VALVE OPERATOR IN OPEN OVERRIDE POSITION
G	FP1	017741	042577	C	RM	B00		U			FLOOR DRAIN LINE ISOLATION VALVE FAILED TO CLOSE	CAUSE UNKNOWN

ALL VALVE EVENTS IN THE DATA FILE

<u>W</u>	<u>P</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>S</u>	<u>C</u>	<u>FAIL</u>	<u>T</u>	<u>C</u>	<u>C</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
<u>V</u>	<u>L</u>			<u>S</u>	<u>O</u>	<u>CODE</u>	<u>Y</u>	<u>L</u>	<u>ON</u>			
<u>E</u>	<u>A</u>			<u>S</u>	<u>M</u>		<u>P</u>	<u>A</u>	<u>M</u>			
<u>N</u>	<u>N</u>			<u>S</u>	<u>P</u>		<u>E</u>	<u>S</u>	<u>PH</u>			
	<u>T</u>											
G	FP1	017956	061177	H	MV	A00	U				VALVE 23 MOV 58 FAILED TO OPEN ON TEST SIGNAL	CAUSE UNKNOWN
G	FP1	018477*	072877	W	RM	C25	T	12	Z		PRIMARY CNTHMNT ISOLATION VALVES LEAKING INTERNALLY	WEAR OF VALVE SEATS AND DISKS
G	FP1	019169	092877	Q	MV	A23	D				RCIC TURBINE STEAM SUPPLY MOV 131 FAILED TO OPEN	TORQUE SWITCH NEEDED RESET
G	FP1	021142	100477	L	MV	A23	D				LPCI MOV 25A FAILED TO OPEN ON TEST	LOW TORQUE SWITCH SETTING
G	FP1	019310	100877	H	MV	B23	D				HPCI STEAM ISOL VALVE FAILED TO CLOSE ELECTRICALLY	TORQUE SWITCH NEEDED ADJUSTMENT
G	FP1	019768	113077	N	UV	VG2	S	D			VALVE ON MAIN STM COLLECT SYST INADVERTENTLY OPEN	MAINTAINENCE PERSONNEL ERROR
G	FP1	020107	011378	Y	CV	A10	T				BALL FLOAT CHECK VALVE IN COND POT STUCK SHUT	DIRT ON VALVE AND SEAT
G	FP1	020517	021078	G	HV	F16	S	D			RCIC TURBINE STEAM INLET VALVE FAILED TO OPERATE	COMMAND/SUPPLY BREAKER RELAY OVERLOADED
G	FP1	020570	030278	L	CV	B00	U				A RHR PUMP CHECK VALVE STUCK OPEN	CAUSE UNKNOWN
G	FP1	020929	040478	L	MV	D14	T				VALVE 10MOV27A LEAKING EXTERNALLY	FAILURE OF VALVE PACKING
G	FP1	021022	040678	L	MV	A16	S	D			RHR ISOLATION VALVE 10MOV18 INOPERABLE (CLOSED)	CONTROLLER AUXILIARY CONTACT FAILURE
G	FP1	021023	040878	H	MV	F12	D				VALVE 23MOV14 SEPERATED FROM OPERATOR	FAILURE OF MECHANICAL FASTENERS
G	FP1	023590	042478	N	MV	A20	D				12-MOV-15 INOPERABLE(A TORQUE SW PROBLEM CAUSED--	BURNED UP MOTOR AND BRCKEN GEARS)
G	FP1	021225	042978	H	MV	A23	D				HPCI 23-MOV-15 WOULD NOT OPEN	TORQUE SWITCH WAS RESET
G	FP1	021227	050878	D	MV	F02	D				POWER REMOVED FROM CORE SPRAY VALVE MOTOR	PERSONNEL ERROR
G	FP1	021495*	061678	Q	MV	IC4	D	03			3 VALVE OPERATOR MOTORS HAVE WRONG CLASS WINDINGS	MOTORS REWOUND WITH CLASS H INSULATION
G	FP1	021712	062978	H	MV	B16	S	D			HPCI VALVE 23-MOV-15 FAILED TO CLOSE	DEFECTIVE TEMP SWITCH(ND SIGNAL TO CLOSE)
G	FP1	021924	072278	D	MV	B12	D				OUTBOARD INJECTION VALVE 14-MOV-11B FAILED TO CLOS	OPERATOR SHAFT KEY SHEARED
G	FP1	022119	080678	N	MV	F20	D				SUCTION VALVE 23-MOV-57 WOULD NOT OPERATE	VALVE MOTOR BURNED OUT
G	FP1	022223	081678	K	MV	F16	S	D			LOSS OF POWER TO BYPASS VALVE 02-MOV-54B	UNIT BLOW FUSES CAUSE UNKNOWN

ALL VALVE EVENTS IN THE DATA FILE

VE N T	P L A N T	CONT. NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O N T R O L M U N I T	K E Y	FAILURE MODE	FAILURE MECHANISM
G	FP1	022225	081778	N	AV	B24	S	D			ISOLATION VALVE 20-ADV-95 WOULD NOT CLOSE	SOLENOID AIR ADMISSION VALVE FAILED
G	FP1	022276	083078	N	XV	D02		D			BACKHOE OPERATOR BROKE FIRE LOOP ISOLATION VALVE	PERSONNEL ERROR
G	FP1	022329	090378	D	MV	A04		D			CORE SPRAY INJECTION VALVE 14-MOV-128 FAIL TO OPEN	DESIGN ERROR, NORMAL D.P.TGO SEVERE ON VAL
G	FP1	022465*	091478	C	RM	C13	C	U	E3		VAC BREAKER VALVES 27-VB-3,4,5 LEAKED EXCESSIVELY	REPLACED "C" RING SEALS
G	FP1	022537	092078	C	RV	C00		U			SAFETY RELIEF VALVE WAS LEAKING PAST SEAT	CAUSE OF LEAKAGE NOT GIVEN
C	FP1	023100*	120178	C	RM	C00		U	05	Z	CONT. ISOL VALVES LEAKING THRU	REPLACED OR REPAIRED
G	FP1	023360	122078	C	AV	F12		U			FOUND COUPLING KEY MISSING FROM 27-ADV-115	KEY REPLACED, REASON UNKNOWN FOR MISSG KEY
G	FP1	023358	122478	L	CV	B00		U			RHR LOOP CHECK VALVE FAILED TO CLOSE	NO REASON FOUND FOR STICKING, REASSEMBLED
G	M11	014179	012676	C	CV	B17		T			VACUUM BREAKER FAILED TO CLOSE FREELY	TEFLON BLSHING OUT OF ROUND
G	M11	014290	021276	U	AV	F24	S	D			1 OF 2 FEEDWTR. REG. VLVS LOCK. IN THE AS IS POSITION	FAILURE IN 3 WAY PRESSURE REGULATOR
G	M11	014477	042276	C	AV	B12		D			VALVE 1-AC-9 FAILED TO CLOSE	INTERVAL VALVE BINDING
G	M11	015154	071476	Q	MV	A12		D			VALVE 1-IC-1 WOULD NOT OPEN	YOKE NUT ADAPTOR & BEVEL GEAR HOUS FAILED
G	M11	015879	092576	L	CV	D14		T			ISOLATION VALVE 1-IC-1 LEAKING	PACKING FAILURE
G	M11	016688	121776	L	MV	B23		U			ISO COND INBOARD STM SUPVAL FAIL TO CLOSE	TORQUE SW SET INCORRECTLY
G	M11	016689	121876	L	MV	B23		U			CONDENSATE RETURN VAL 1-IC-4 FAILED TO CLOSE	TORQUE SW SET INCORRECTLY
G	M11	016690	121876	C	MV	A20		U			VALVE 1-CU-3 DID NOT OPEN	BURNED OUT MOTOR
G	M11	017021	012577	C	AV	B24	S	D			VALVE 1-AC-9 FAILED TO CLOSE	DIRT IN AIR LINE
G	M11	018157	061777	W	RV	H27	R	T			VALVE 1-MS-3D LIFTED BELOW SET PRESSURE	EXCESSIVE LEAKAGE PAST PILOT SEAT
G	M11	018156	061877	W	RV	C27		T			RV DISCH TEMP HIGH/VLV LEAKING STM INTERNALLY	COLLAPSED FILTER, STM CUTTING OF PLT SEATS
G	M11	018414	071377	U	AV	F24	S	D			"B" FEEDWTR. REG. VLV EXPERIENCED CONTROL PROBLEMS	FAILURE CAUSED BY DIA. FAIL. IN SUP. SYS. VLV

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	UNIT	COMP	FAIL CODE	TYPE	CLASS	CON NUM	KEY	FAILURE MODE	FAILURE MECHANISM
G M11	018690*	080577	C	CV	B14	T	03			3 VAC BKR VALS FAILED TO FULLY CLOSE	FAILURE OF PACKING AND BUSHINGS
G M11	018625*	080677	U	AV	F24	S	D	02	V	FEEDWTR.REG.VLVS. LOCKED UP "AS IS"	LGSS OF INSTRUMENT AIR PRESS. CAUSED FAIL.
G M11	018944	081877	D	RV	C10	T				CGRE SPRAY PUMP DISCH RV LEAKING	PARTICLES BETW VAL DISK AND GUIDE
G M11	019326	101277	F	RM	A00	U				TORUS SPRAY VLV FAILED TO OPEN ON SIGNAL	CAUSE OF OCCURRENCE IS UNKNOWN
G M11	019629	103177	Q	UV	F00	U				ISO.COND.STM.SUPPLY VLV 1-IC-1 FOUND INOPERABLE	CAUSE OF OCCURRENCE HAS NOT BEEN DETERM.
G M11	019631	111877	K	RV	H27	T				RV LIFTED BELOW SET PRESSURE	EXCESSIVE PILOT SEAT LEAKAGE
G M11	019962	112977	A	RV	H16	S	D			A TARGET ROCK SAFETY/RELIEF VLV ACTUATED PREMATURE	CABLE FAULT CAUSED ACTUATION SOL.TO ENERG
G M11	020698	031078	K	RV	C27	T				RV FAILED TO RESEAT	LEAKAGE IN PILOT VALVE / STEAM CUT
G M11	020698A	031078	K	RV	H27	T				RV LIFTED PREMATURELY DURING A SHUT DOWN	LEAKAGE IN PILOT VALVE/STEAM CUT
G M11	020722A	032078	W	RM	C00	U	02			MSIVS (1-MS-1A,1C) LEAKING IN EXCESS OF T.S. LIMIT	CAUSE OF LEAKAGE NOT GIVEN
G M11	020722B	032078	U	CV	E00	U	04			FEED WTR.CK. (1-FW-9A,9B,10A,10B) LEAK. EXCESS OF T.S.	CAUSE OF LEAKAGE NOT GIVEN
G M11	020722C	032078	N	RM	C00	U	02			ATMOS.CONT.VLVS(1-AL-5,6) LEAKING IN EXCESS OF T.S.	CAUSE OF LEAKAGE NOT GIVEN
G M11	020722D	032078	Q	UV	C00	U	03			SHUTDOWN COOL.VLVS(1-SD-2A,4A,4B) LEAK. EXCESS OF TS	CAUSE OF LEAKAGE NOT GIVEN
G M11	020722E	032078	N	UV	C00	U				CLEANUP SYS.VLV(1-CU-3) LEAKING IN EXCESS OF T.S.LM	CAUSE OF LEAKAGE NOT GIVEN
G M11	021352	042478	M	RM	F14	T				SCRAM VALVE OPERATION SLOW	VALVE PACKING TOO TIGHT
G M11	022584	091478	C	AV	B10	T				DRY WELL VENT BYPASS VAL 1-AC-9 FAILED TO CLOSE	DIRT AND SCALE IN AIR OPERATOR
G M11	022749	101978	Q	RM	F16	S	D			THE ISO.COND.ISO.VLV 1-IC-3 SPURIOUSLY OPENED	FAILURE OF SWITCHES IN LOGIC CHANNEL
G M01	014515	050476	Y	SV	C00	U				SOLENOID VALVE LEAKING (I/STR.AIR TO NITRO. SYS)	CAUSE UNKNOWN
G M01	015026	060376	C	MV	B23	T				HPCI STM LINE ISO VAL FAILED TO CLOSE	TORQUE SW SETTING DRIFTED TOO LOW
G M01	015100	061476	K	RV	A24	S	D			SAFETY RELIEF VLV 2-71A FAILED TO ACTUATE	AIR LEAK IN AIR SUPPLY SYSTEM

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CONSUM	KEY	FAILURE MODE	FAILURE MECHANISM
G	MO1	015316	072576	C	AV	800		U			VALVE AD-2381 FAILED TO CLOSE (TORUS PURGE INLET)	CAUSE UNKNOWN
G	MO1	015440	080276	Q	UV	C00		U			COOL SUP VAL TO RCIC TURB LEAKING INTERNALLY	CAUSE UNKNOWN
G	MO1	015755	082576	C	RM	F16	S	D			S/D COOL.ISO.VLV. EXPERIENCED LOSS OF POWER	FAILURE OF RELAY COIL IN CONT. CIRCUIT
G	MO1	015708	090276	F	MV	B12	R	D			VALVE MO-2008 FAILED TO OPEN	STEM CLAMP SET SCREWS SHEARED
G	MO1	017034	011877	X	XV	C02	R	D			VALVE ON ACCUM T14-19 FAILED TO HOLD PRESSURE	VALVE PACKING INSTALLED INCORRECTLY
G	MO1	017373	032177	N	UV	V01	S	D			AIR EJECT.SAMP.SYS.SUP.VLV SHUT WHEN REQ. OPEN	PERSONNEL ERROR
G	MO1	018094	053077	L	MV	A16	T	D			"B" RHR INJECTION VALVE FAILED TO OPEN (MO-2013)	CONTACTOR IN CONT.CIRCUITRY DID NOT CLOSE
G	MO1	018093	053177	C	MV	B19	R	T			ISO VALVE MO-2076 FAILED TO CLOSE	DETERIORATED GREASE,MAIN+LIM SW GEAR TRAN
G	MO1	018463	061677	C	MV	F06		D			TORQUE SW NOT ADJ PROP. OUTBRD RCIC STM ISO VLV	WRA IMPROPERLY PROCESSED
G	MO1	018465*	062377	N	RM	F05		D	02	V	SGTS TRAIN "A" ISO.VLV.CONTROLS INSTALLED IMPROPER	FABRICATION ERROR
G	MO1	018242	062777	Y	UV	V06	S	D			VAL ON AIR EJECT MONIT SYST POSITIONED IMPROPER	VAL WAS IMPROPERLY TAGGED
G	MO1	018467	070977	T	SV	F10		T			GAS FLOW CONT VAL FCV-7489A FAILED	DIRT IN VALVE SEAT AND DISK
G	MO1	018468	071177	X	XV	C01	R	D			NITROGEN CHARGING VLV FAILED TO HOLD PRESSURE	OVERTIGHTEN,VAL.HAND.CAUSED "O" RING FAIL
G	MO1	018510	071977	X	XV	C14	R	T			NITROGEN CHARGING VAL FAILED TO HOLD PRESS	PACKING AT END OF LIFE
G	MO1	018669	081077	X	XV	C14	R	T			VALVE CRD HCU 30-11 WOULD NOT HOLD PRESS	PACKING WRE
G	MO1	018955	082877	L	MV	A16	T	D			"B" RHR INJECTION VALVE FAILED TO OPEN (MO-2013)	CONTACTOR IN CONT.CIRCUITRY DID NOT CLOSE
G	MO1	019050	090977	C	MV	F04	R	D			VALVE MO 2009 FAILED TO OPERATE PROPERLY	SET CLAMP SCREWS UNDERSIZED
G	MO1	019466	091077	C	MV	C10	R	T			VALVE MO-2373 LEAKING INTERNALLY	FOREIGN MATRL ON VAL SEAT
G	MO1	019471	091077	W	AV	C25		T			MSIV A02-86A LEAKING INTERNALLY	VALVE SEAT FAILURE
G	MO1	019467*	091377	C	CV	E10	R	T	02		VALVES AD-14-13A + AD-14-13B LEAKING INTERNALLY	SCALE ACCUM ON SEATING SURFACES

ALL VALVE EVENTS IN THE DATA FILE

V E N T	P L A N T	CONT.NO.	EVENT DATE	S Y S	C O M P	F A I L C O D E	T Y P E	C L A S S	C O M M P H	K E Y		FAILURE MODE	FAILURE MECHANISM
G	MO1	019468	091677	C	CV	E10	R	T				VALVE LEAKING IN EXCESS OF T.S.	DIRT ON SEATING SURFACES
G	MO1	019158	092377	C	MV	F12		D				VALVE MD-2008 FOUND FAILED DURING MAINTENANCE	SEAT RING THREADS STRIPPED
G	MO1	019469	100477	C	CV	E12		D				RCIC-9 TURB EXT VAL LEAK IN EXCESS OF T.S.	DISK WASHER BENT
G	MO1	019470	101277	C	RM	C10		T				VALVE CV-7436 LEAKING INTERNALLY IN EXCESS OF T.S.	DIRT AND SCALE ON SEATING SURFACES
G	MO1	019465	101377	W	AV	C00	R	U				MSIV AD-2-80A LEAKING IN EXCESS OF T. S.	NO APPEARENT CAUSE
G	MO1	020395	020278	C	CV	B17	R	T				TORUS TO DRYWELL VAC.BRKR AD-2382B FAILED TO CLOSE	EXCESS FRICTION BETW VAL BUSHING + STEM
G	MO1	020700	022878	Y	AV	F10		T				VALVE BV-4 WOULD NOT FUNCTION TO ALLOW MINIMUM FLO	FOREIGN MATERIAL IN BV-4 POSITIONER
G	MO1	021243	042178	C	MV	800		U				RX.WTR.CLEANUP OUTBD.ISD.VLV(MD-2398)FAIL.TO CLOSE	CAUSE UNKNOWN
G	MO1	021755	060578	M	SV	F12	R	D				SCRAM PILOT VALVE FOR CRD 06-19 WOULD NOT FUNCTION	BUNA-N DISK IN SCRAM PILOT VALVE BROKEN
G	MO1	021985*	072878	M	SV	F12	R	D	07			SCRAM PILOT VALVES FOR CRDS WOULD NOT FUNCTION	BUNA-N DISK IN SCRAM PILOT VALVES BROKEN
G	MO1	022869	100178	C	UV	VC1	S	D				2 VLVS NOT CLOSED WHEN REQUIRED TO BE	PERSONNEL ERROR
G	MO1	022810	101478	W	AV	C12		D				OUTBOARD MSIV AD-2-86A LEAKING INTERNALLY	VALVE STEM BENT,LOWER GUIDE RIB WORN
G	MO1	022811	101478	W	AV	C25		D				D OUTBOARD MSIV AD-2-86D LEAKING INTERNALLY	SCRATCH FOUND ON MAIN VALVE SEAT
G	MO1	022868	102078	C	CV	E10	R	T				HPCI-9 TURB EXT LINE CHECK VALVE LEAKING INTERNALLY	ACCUMULATED DIRT ON SEATING SURFACES
G	MO1	022806*	102278	C	MV	C14		T	02			REACTOR CLEANUP ISD VALS MD-2397,-2398 LEAK EXTRNL	EXCESS PACKING GLAND LEAKAGE,IMP T.S.ADJ
G	MO1	023388	111478	F	RM	D09		T				PINHOLE LEAK IN CV-1729,RHR D/P CONTROL VALVE	CORROSION/ERROSION OF UPPER VALVE BODY
G	MO1	023389	112178	L	MV	F16	S	D				MD-2014 LPCI A ADMISSION VALVE INOPERABLE	BLOWN FUSE IN CONTROL POWER CIRCUIT
G	MO1	023390	112478	H	XV	C25		U				HPCI DRAIN VALVE CV-2043 LEAKING THRU INTERNALLY	INTERNAL PARTS NEED REPLACEMENT
G	MO1	023403	121878	K	MV	B20		D				MG-2-54A FAILED TO CLOSE	DECLUTCH SHAFT PROBLEM,MOTOR WONT ENGAGE
S	NM1	014980	031476	N	SV	A12		D				VLV BV202-37 IN #11 EMERG.VENT.SYS. FAILED TO OPEN	SGL.HAD CRACKED NYLON TIP ON PLUNGER

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>S</u> <u>Y</u> <u>S</u> <u>T</u> <u>E</u>	<u>C</u> <u>O</u> <u>M</u> <u>P</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>Y</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u> <u>M</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	NM1	014666	051576	L	MV	A20	U				SHUTDOWN COOL SYST ISO VALVE 38-02 FAIL TO OPEN	OPEN MOTOR WINDINGS
G	NM1	015849	090876	P	RV	TC6	D				REQD SURVEILLANCE ON RV NOT PERFORMED	PROCEDURE ERROR
G	NM1	0174C1*	030977	A	RV	A16	S	D	03		3 OUT OF 6 ADS RELIEF VLVS WOULD NOT HAVE OPERATE-	-D IF NEEDED//RESET SWITCH FAILURE
G	NM1	017849	031777	W	AV	CO2	D				MSIV NO. 111 LEAKING INTERNALLY	VALVE POPPET INCORRECTLY INSTALLED
G	NM1	017724*	041677	C	UV	COO	U	02			DRYWELL AIR VENT + FILL VALVES LEAKING	CAUSE UNKNOWN
G	NM1	017649*	042777	C	CV	E13	T	02			TWO OXY SYST CHECK VLVS LEAKING INTERNALLY	O-RING FAILURE
G	NM1	018299	063077	H	RM	F16	S	D			NO.12 INLET INSIDE IV-B(40-01)FAIL TO OPERATE	FAILURE OF ELECT CONTACTOR (CLOSING)
G	NM1	018296	071277	L	UV	F00	U				NO.11 EMER CORE COOL SYST INOPERABLE, VAL FAILURE	CAUSE UNKNOWN
G	NM1	018297A	071377	M	RM	F22	D	26			SCRAM PILOT VALVES FAILED TO OPERATE CORRECTLY	PRESS & EXH DIAPHRAGMS TORN OR CRACKED
G	NM1	018297B	071377	M	RM	I13	U	26			SCRAM PILOT VALVES HAD DEFECTIVE GASKETS	ALL VALVE BODY GASKETS REPLACED
G	NM1	019464	102677	M	UV	VO1	S	D			CHG. WTR. VLV TO SCRAM ACCUMULATOR IN IMPROPER LINE-	-UP//PERSONNEL ERROR
G	NM1	020252	012078	W	AV	B27	U				MSIV 01-03 WOULD NOT CLOSE	PILOT VALVE OPERATOR FAILED
G	NM1	020764	030778	E	CV	VO1	S	D			FOOT VALVE OPENED AT IMPROPER TIME	PERSONNEL ERROR
G	NM1	022029*	080878	G	XV	A10	T	02			DRAIN VLVS ON A&B LIQUID POISON PMPs FROZEN SHUT	BUILD-UP OF BORON CAUSED FAILURE
G	DC1	013956*	010676	C	CV	E00	U	02			VAC BKRS V-26-16, V-26-18 LEAK INT. IN EXCESS OF T.S	CAUSE UNKNOWN/REPAIRS TO BE PERFORMED
G	DC1	014413	040176	F	MV	A16	S	D			TORUS SPRAY VLV V-21-15 FAILED TO OPEN ON AUTO. SIG	MOTOR CNT. INTR. BRKR. FAILED TO OPERATE
G	DC1	016519	080576	N	RV	B00	U				RV ON REGEN HOT WTR HEATER NOT SEATED	CAUSE NOT GIVEN
G	DC1	015375	082076	F	MV	A16	S	D			VLV V-21-18 FAILED TO OPEN ON AUTO START SIGNAL	DEFECT. SWTCH IN VLV. MOTOR CONTROL
G	DC1	015974	092876	C	CV	B17	T				VAC BKR VAL V-26-11 FAILED TO CLCSE	TEFLON BLSHING FAILURE
G	DC1	015975	101276	N	RV	B00	U				RV ON REGEN HOT WATER HEATER NOT SEATED	CAUSE NOT GIVEN

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>S</u> <u>S</u> <u>T</u> <u>E</u> <u>M</u> <u>P</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>I</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	DC1	016486	111176	F RM	A00	U				VALVE V-21-5 FAILED TO OPEN/CKT BRKR TRIPPED	CAUSE UNKNOWN / VLV OPENED HARD MANUALLY
G	DC1	016479	120176	D MV	A16	S D				CORE SPRAY ISO.VLV V-20-15 FAILED TO OPEN ON SIGNAL	INTERMIT.GRND.SHRT.IN VLV.MTR.OPER.PWR.FD
G	DC1	017258	031477	N AV	F00	U				DIA.OPER.VLV FAILED(LUBE SYS FOR GAS SAMPLE PMP.)	CAUSE UNKNOWN
G	DC1	017472	032377	D MV	B16	S D				CORE SPRAY ISO.VLV V-20-15 INOPERABLE IN OPEN POS.	VLV.MTR. OPERATOR BREAKER TRIPPED
G	DC1	017543	042377	W AV	B24	S D				MSIV NS04A FAILED TO CLOSE//CONT.SYS FAILURE:	DEFORMED GASKET BLOCKED AIR VENT FOR SOL.
G	DC1	017762	042377	W AV	C25	T				MSIV NS04B LEAKING INTERNALLY	TIGHT CRACKS AROUND ENTIRE VALVE SEAT
G	DC1	018623*	072777	D MV	A16	S D 02				CORE SPRAY ISO.VLVS V-20-40 & V-20-15 FAILED TO F-	ULLY OPEN//IMP.CKT.BRKR.OVERLOAD SETTING
G	DC1	018671	080277	A RV	A12	D				ELECTROMATIC RV C FAILED TO OPEN	ACTUATOR PLATE BOUND AGAINST A RIVET
G	DC1	018453	082777	T UV	C00	U				GAS DRAIN VALVE V-7-29 FAILED TO CLOSE TIGHTLY	CAUSE UNKNOWN
G	DC1	018952	082977	C CV	B04	R D				TORUS TO DRYWELL VAC.BRKR(V-26-5) FAIL. TO RECLOSE	DESIGN ERROR / IMPROPER BUSHING USED
G	DC1	019080	090877	D MV	B16	S D				CORE SPRAY ISO.VLV. V-20-15 FAILED TO CLOSE	DEFECTIVE CKT.BRKR. TO MCTR
G	DC1	019198	092777	C CV	B04	R D				VAC BKR VAL V-26-9 FAILED TO CLOSE	DESIGN ERROR / IMPROPER BUSHING USED
G	DC1	019430A	101177	T AV	F16	S D				VAL ON STBY GAS TREAT SYST N01 FAIL TO OPER PROP	FLOW SENSING PROBE DISPL (VLV V-29-26)
G	DC1	019430B	101177	T AV	F24	S D				VAL ON STBY GAS TREAT SYST N01 FAIL TO OPER PROP	FLO CONT PLUNG ON PILOT SV DETERIORATED
G	DC1	020467	011978	N MV	F01	D				ISO COND VAL V-14-35 FAILED TO OPERATE	VALVE SEAT OVERTIGHTENED BY OPER. PERSON.
G	DC1	022576	091478	L MV	A23	T				VALVE V-14-37 WOULD NOT OPEN,BKR TRIPPED	SET SCREW ON TORQUE SW LOOSTENED,SET DRFT
G	DC1	022574*	091578	C AV	F19	T 02				VACUUM BREAKERS V-26-16,V-26-18 INOPERABLE ON TEST	LACK OF LUBRICATION,VALVE BINDING
G	DC1	022357A	091678	W AV	D18	D				MSIV NS04A LEAKING EXTERNALLY IN EXCESS OF T.S.	CRACKED STELLITE WELD IN BODY SEAT RING
G	DC1	022357B	091678	W AV	D14	T				MSIV NS04B LEAKING EXTERNALLY IN EXCESS OF T.S.	FAILURE OF STEM PACKING MATERIAL
G	DC1	022357C	091678	W AV	C25	D				MSIV NS03A LEAKING INTERNALLY IN EXCESS OF T.S.	FAILURE OF MAIN POPPET TO SEAT PROPERLY

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>M</u> <u>P</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>T</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	OC1	022970	101778	N	AV	A24	S	D			GAS SYSTEM 11 DISCHARGE VALVE FAILED TO OPEN	STUCK SOLENOID IN AIR SUPPLY TO OPERATOR
G	OC1	022851A	101878	T	UV	C25	T				OFF GAS SYSTEM ISO VALVE V-7-31 LEAKING INTERNALLY	VALVE HAS DAMAGED RUBBER SEAT
G	OC1	022851B	101878	T	UV	G10	T				DRAIN VALVE V-7-29 OBSTRUCTED BY CORK LIK MATRL	ASSUMED THAT MATRL NOT REMOVED DUR CONST
G	OC1	022483*	112078	C	XV	C25	U	06			SIX VENT VALVES LEAKING THRU ON CONT LEAKRATE TEST	SEAT PROBLEMS, REPAIRED SOME, REPLACED REST
G	OC1	023117	112978	C	RM	B16	S	D			MN STEAM DRAIN VALVE V-1-106 FAILED TO CLOSE	NO POWER TO VALVE, DEFORMED FUSE HOLDER
G	OC1	023144	120478	F	MV	A16	S	D			CONT SPRAY VALVE V-21-78 FAILED TO OPEN ON TESTING	BREAKER TO VALVE NOT RACKED IN PROPERLY
G	OC1	023299	121278	N	AV	B10	T				SGTS VALVE V-28-30 FAILED TO CLOSE DURING TEST	DIRT & CORROSION IN PISTON CYLINDER
G	PB2	013992	010776	L	MV	A20	U				MO-10-258 RHR INJECTION VLV FAILED TO OPEN	MOTOR ON VLV OVERHEATED AND DAMAGED WINDMG
G	PB2	013990	011576	L	MV	A12	D				RHR INJECTION VALVE MO-10-25A FAILED TO OPEN	MTR SHAFT TO PINION GEAR KEY SHEARED
G	PB2	014154	020676	N	RM	B16	S	D			LIQ. RADWASTE DISCH. VLV AD-20-308 FAILED TO ISO. FLW	FLOW-INDIC. XMTR. DID NOT OPERATE PROPERLY
G	PB2	014153	020976	Q	MV	FG2	R	D			RCIC O.B. STM ISO VAL MO-13-16 FAILED TO STROKE	VALVE PACKING TOO TIGHT / PERSONNEL ERROR
G	PB2	014316	022476	N	UV	F12	D				CELL DISTR. VLV ON C COOL. TOWER FAILED	FAIL OF STEM BUSH. RETAIN PLT, DIST. VALVE
G	PB2	014351	030976	Y	SV	A21	U				ISO VAL ON RET TO DRYWELL LINE CLOSED	DEFECTIVE SOLENOID COIL
G	PB2	014464*	032976	C	CV	E10	R	T	04		FEED MAT CV 28A, 28B, 96A, 96B LEAKING EXCESSIVELY	RUST SCALE ON VAL SEATING SURFACES
G	PB2	014412*	033076	W	AV	C25	T	05			MSIVS 86A, 86B, 86C, 86D, 80D LEAKING EXCESSIVELY	SLIGHT DISTORTION ON VALVE SEAT
G	PB2	014381	040376	L	UV	C00	U				RHR PUMP MIN FLOW VAL LEAKING INTERNALLY	CAUSE UNKNOWN
G	PB2	014925	051976	K	MV	B16	S	D			RECIRC PUMP DISCH VLV MO-2-02-53A WOULD NOT CLOSE	BROKEN WIRE, CLOSING CONTROL CIRCUIT
G	PB2	015142	061876	L	MV	F12	D				RHR SD COOL SUCT ISO VAL MO-2-10-18 FAIL TO STROKE	VALVE STEM BENT
G	PB2	015139	062076	W	MV	F23	D				MAIN STM LINE DRAIN ISO VAL MO-2-74 FAIL TO STROKE	TORQUE SWITCH FAILURE
G	PB2	015140	062076	C	MV	F16	S	D			ISO VAL MO-2-14-71 FAILED TO STROKE	GROUNDING WIRE AT MTR CONT CENTER

ALL VALVE EVENTS IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	SY	COMP	FAIL CODE	TYPE	CLASS	CON	MU	KEY	FAILURE MODE	FAILURE MECHANISM
G	PB2	015085	062976	Y	RV	B27	R	T				MAIN STEAM RV FAILED IN OPEN POSITION	PILOT VALVE SEAT LEAKAGE
G	PB2	015374	082076	F	RM	A12		U				CONDENSATE CONT. VLV FAILED IN CLOSED POSITION	DEFECTIVE POSITIONER ON CONTROL VALVE
G	PB2	015518	082476	N	AV	A12		D				PURGE EXHAUST VLV AQ-2507 FAILED TO FULLY OPEN	ALIGNMENT KEY BTWN. ACTU. & VLV SHEARED
G	PB2	015759	062976	Y	RV	B12		U				LIQ NITRO TK RV FAILED TO RESEAT	DEFECTIVE BLOWBACK RING
G	PB2	015711	091376	N	UV	V01	S	D				IMPROPER VAL LINEUP TO SETTLING BASIN	PERSONNEL ERROR
G	PB2	015884*	092176	D	RM	F06		D	03	Z		TRIP LEVEL FOR CORE SPRAY SET IMPROPERLY	DEFECTIVE PROCEDURES
G	PB2	016390	110976	D	MV	B12		D				CORE SPRAY VALVE MQ-26A FAILED TO CLOSE	MTR OPER GEAR TRAIN FAILED
G	PB2	016333	111476	W	RV	B10	R	T				MAIN STM RV 71F FAILED IN OPEN POSITION	DIRT UNDER PILOT DISK AND SEAT
G	PB2	016489	111876	W	RM	B12		D				MSIV AQ-22-86B FAILED TO CLOSE	GOLGED VALVE STEM
G	PB2	016568A	120176	C	AV	B00		U				ISD VALVE AQ-2-2-39 FAILED TO CLOSE	CAUSE UNKNOWN
G	PB2	016568B	120176	C	AV	B24	S	D				ISD VALVE AQ-2-2-40 FAILED TO CLOSE	STUCK SCANDIUM IN SUPPLY SYSTEM
G	PB2	016779	122876	Q	MV	A23		U				RCIC STM SUPPLY ISD VAL FAILED TO OPEN	TORQUE SWITCH FAILURE
G	PB2	016677*	010377	W	RV	I22		T	09			INSPECTION OF RELIEF VLVS SHOWED DIAPHRAGM PROBLEM	DELAMINATION AND OVERHEATING OF DIAPHRAGM
G	PB2	016676A	010677	W	RV	B27	R	T				MAIN STM RV 71E FAILED OPEN	EXCESSIVE PILOT SEAT LEAKAGE
G	PB2	016676B	010677	W	RV	I27	R	T	63			MAIN STM RVS 71D, E&K FOUND TO NEED MAINT. ON INSP	EXCESSIVE PILOT VLV SEAT LEAKAGE
G	PB2	016987	020877	H	MV	D12		U				EXTERNAL STM LEAK VAL MQ-2-23-16	VAL PACKING LUBE PLUG LEAKING
G	PB2	017262	030177	Q	AV	D14		T				VALVE AQ-2-23-42 LEAKING EXTERNALLY	PACKING FAILURE
G	PB2	017481	040777	W	HV	F00		U				MSIV 86B CLOSE TIME GREATER THAN T.S. LIMIT	CAUSE UNKNOWN
G	PB2	019097	091077	N	RM	A16	S	D				STDBY. GAS TREATMENT "A" FILTER TRAIN INCL. VLV. AQ--	-20475-1 DID NOT OPEN//CONTACT PROBLEM
G	PB2	019094	091377	H	MV	F16	S	D				HPCI TURB EXHAUST VAL MTR DAMAGED	SHORT IN VAL CONTROL CIRCUIT

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SHIFT	COMP	FAIL CODE	TYPE	CLASS	CONTR. NO.	KEY	FAILURE MODE	FAILURE MECHANISM
G PB2	019096	091477	H	AV	D14	T				VALVE AD-53 LEAKING EXTERNALY	PACKING FAILURE
G PB2	019167	092677	H	RM	D22	R U				HPCI OIL SYST CONT VAL LEAKING OIL	DIAPHRAGM LEAKING
G PB2	019492	102177	N	UV	C00	T				VALVE CONNECT OFF-GAS VIAL SAMPLER LEAKING	CAUSE UNKNOWN
G PB2	019718	111277	Q	MV	D14	T				ISO VAL MO-16 LEAKING EXTERNALY	PACKING FAILURE
G PB2	020074*	111377	N	XV	B00	U 02				2 LAVATORY FLUSH VALVES STUCK OPEN	CAUSE UNKNOWN
G PB2	019953	113077	K	MV	D14	T				VALVE MO-2-2-65 LEAKING EXTERNALY	PACKING FAILURE
G PB2	019952	120277	H	UV	D14	T				HPCI STM ISO VAL LEAKING EXTERNALY	PACKING FAILURE
G PB2	020481	020678	N	RM	B16	S D				RADWASTE DISCHARGE VALVE FAILED TO CLOSE/TESTING	COMMAND/RELAY FAILED IN CONTROL CIRCUIT
G PB2	020610	021678	C	XV	V01	S D				INLET VLV FOR THE MANOMETER WAS OPEN INSTEAD OF CL	PERSONNEL ERROR/FAILED TO FOLLOW PROCEDUR
G PB2	020667	022378	N	XV	V01	S D				DISCHG VLV ON DIESEL F.O.PMP LEFT OPEN VICE SHUT	PERSONNEL ERROR
G PB2	020724	022478	K	UV	D14	R T				EXTERNAL LEAKAGE MO-2-2-65A(RECIRC.SYS.LP.X-CONN.)	FAILED PACKING ON VLV CAUSED LEAKAGE
G PB2	020684*	030178	W	RV	105	C D 04				DURING INSPECT.; CRACKS FOUND NEAR SEATS OF 4 S.RVS	CRACKS WERE CAUSED BY PRE-EXIST. CAST. DEF.
G PB2	021193	042678	M	UV	D14	T				CRD ACCUM. CHGNG. VLV 3-13-111 LEAKING EXTERNALY	PACKING FAILURE/NORMAL AGING OF PACKING
G PB2	021554*	060978	K	XV	D14	R T 02				HEAD VENT MAN VAL, VAL MO-2-2-65B LEAKING EXTERNALY	VALVE PACKING FAILURES
G PB2	021482	061278	W	MV	B23	U				VALVE MO-2-74 FAILED TO RESPOND TO A CLOSE SIGNAL	TORQUE SWITCH ON ISO VALVE DEFECTIVE
G PB2	022463*	090478	N	UV	C10	T 02 V				BALL VALVES IN RAD WASTE MANAGE SYST LEAK INTERNAL	DIRT DEPCITS ON VALVE SEATING SURFACES
G PB2	022707	101978	W	MV	B23	R U				MAIN STM LINE DRAIN ISO VAL MO-2-74 FAIL TO CLOSE	TORQUE SWITCH ON ISO VALVE DEFECTIVE
G PB2	022916	102178	H	CV	E12	T				CHECK VALVE 2-23-131 LEAKING INTERNALY, GLAND SEAL	INTERNALS OF CHECK VALVE WORN OUT
G PB2	022619	103178	C	SV	F10	T				OXYGEN ANALYZER SYSTEM ISO VAL, SV-2671G, FAILED	VALVE SEAT DIRTY, PLUNGER STICKING
G PB3	013989	010276	W	AV	B27	T				OUTBOARD MSIV 86C FAILED TO CLOSE	VLV OPER. PILOT ASS. SEAT SURF. WAS DAMAGED

ALL VALVE EVETHE DATA FILE

<u>VEN</u>	<u>PLANT</u>	<u>CONT.NO.</u>	<u>EVENT DATE</u>	<u>SY</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON</u>	<u>MU</u>	<u>PM</u>	<u>KEY</u>	<u>FAILURE</u>	<u>MODE</u>	<u>FAILURE MECHANISM</u>
G PB3	014032	010576	D MV A16	S D	MO-3-14-128(B CORE SPR-LP.INJ.VLV) FAILED TO OPEN	PROBLEM WITH MAGNET.TRIP DEVICE MTR+ BRKR									
G PB3	014033	010776	H CV E25	T	HPCI EXHAUST LINE CHECK VLV 23-85-EXCESSIVE LEAK.	POOR MATING BETWEEN FLAPPER & SEATING SUR									
G PB3	014035	010776	H AV C25	T	HPCI EXHAUST LINE DRAIN VLV AD-5248 -EXCESS.LEAK.	POOR MATING BETWEEN PLUG & SEATING SURF.									
G PB3	014034	010976	N CV E25	R T	INST.NITRO.OUTBOARD CK+VLV 8-EXCESSIVE LEAKAGE	POOR MATING BETWEEN THE VLV FLAPPER&SEAT									
G PB3	014036	010976	C CV E10	T	FEEDWATER CHECK VLV 28A-UNACCEPTABLE LEAKAGE	RUST SCALE ON VLV SEAT AND FLAPPER									
G PB3	014116	010976	C CV E10	T	FEEDWTR OUTBOARD CHECK VLV 96B-UNACCEPTABLE LEAK.	RUST SCALE ON VALVE SEAT & FLAPPER									
G PB3	014117	010976	C CV E10	T	FEEDWTR OUTBOARD CHECK VLV 96A-UNACCEPTABLE LEAK.	RUST SCALE ON VALVE SEAT & FLAPPER									
G PB3	014118	010976	C CV E10	T	FEEDWATER CHECK VALVE 28B-UNACCEPTABLE LEAKAGE	RUST SCALE ON VALVE SEAT & FLAPPER									
G PB3	014042	011076	U LV C10	T	FEEDWATER FLUSH VALVE MO-3663-UNACCEPTABLE LEAKAGE	DAMAGE TO SEATING SURFACES CAUSED BY RUST									
G PB3	014213	011076	D UV C10	R T	CORE SPRAY ACCUM.VENT VLV SV-2224B-UNACCEP.LEAKAGE	SEAT WAS DAMAGED BY FOREIGN MATERIAL									
G PB3	014183	012676	N CV E25	T	INSTRUMENT NITRO.TD TORUS CHECK VLV-UNACCEP.TEAK.	POOR MATING BETWEEN VLV FLAPPER & SEAT									
G PB3	014475	021776	L MV A16	S D	RHR INJ. VLV.MO-10-25A FAILED TO FULLY OPEN	BROKEN WIRE TO OPENING TORQUE SWITCH									
G PB3	014266	022476	Q MV D14	T	RCIC STM.OUTBOARD ISO VLV LEAKING EXTERNALLY	PACKING LEAK DUE TO NORM.PACK.COMPRESSION									
G PB3	014265	022576	K MV F20	U	MO-53B RECIRC.PMP.DISCHG. VLV. INOPERABLE	SHRT.CKT. OF WIRING IN VLV.MTR.OPERATOR									
G PB3	014471	030176	L RM B12	R D	B RHR OUTBOARD INJECTION VLV MO-154B FAIL.TO CLOSE	VLV DISC SEPARATED FROM VLV STEM									
G PB3	014470	030276	K MV A23	U	RECIRC.PMP.DISCHG.VLV BYPASS(MO-54A)FAIL.TO OPEN	DEFECTIVE TORQUE SWITCH CAUSED FAILURE									
G PB3	014380	032176	K MV B16	T D	3B RECIRC.PMP.DISCHG.VLV(MO3-53B)FAILED TO CLOSE	2 CONT.CKT.WIRES TO VLV OPER.WERE BROKEN									
G PB3	014525	042676	N RM F12	D	MO-12-68 RWCU RETURN ISO.VLV HAD TOO SLOW CLOSING	VALVE STROKE WAS OUT OF ADJUSTMENT									
G PB3	014741	050476	K MV B16	T D	3B RECIRC.PMP.DISCHG.VLV(MO-3-2-53B)FAIL.TO CLOSE	SEVERAL BROKEN WIRES AT TERMINAL CONNECT.									
G PB3	014655	050876	K MV A16	T D	RECIRC.PMP.DISCHG.VLV MO-53B FAILED TO OPEN	GROUNDING CABLE AT MTR CSING,DUE TO VIBRAT									

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SY S	CGM P	FAIL CODE	TYPE	CLASS	CUM PH	KEY	FAILURE MODE	FAILURE MECHANISM
G PB3	015153	071276	W RV	B27	R T					71B MAIN STEAM RELIEF VALVE FAILED OPEN	FAILURE DUE TO PILOT VLV SEAT LEAKAGE
G PB3	015222	071476	W HV	F00	U					MSIV 80B VLV CLOSURE TIME GREATER THAN T.S. LIMIT	SPECIFIC CAUSE UNDETERMINED
G PB3	015228	072076	W RV	B27	R T					MAIN STEAM RELIEF VLV 71G FAILED OPEN	FAILURE DUE TO PILOT VLV SEAT LEAKAGE
G PB3	015853	090176	Y UV	G10	T					DRYWELL RAD. MONIT. SYS. PRESS. CONT. VLV HAD FLOW REST	FLOW BLOCKAGE DUE TO FOREIGN WATER. CONT.
G PB3	015852	090776	C SV	E10	R T					TORUS ATMOS. SAMP. INBD. ISO. VLV LEAKED THROUGH	VALVE SEAT NEEDED CLEANING
G PB3	015854	092176	C AV	B24	T O					ISO. VLV AD-5235 (DRYWELL TO NITRO. COMP) FAIL. TO CLOS	SOLENOID VLV IN AIR SUPPLY LINE FAILED
G PB3	015861*	092176	D RM	F06	D O3 Z					TRIP LVL. SET. FOR ECCS VLVS SET AT WRONG PRESSURE	MISUNDERSTANDING BETWEEN NSSS & LICENCE
G PB3	016215	102176	N AV	B24	S D					DRYWELL FC. DRN. INBD. ISO. (AD-3-20-82) FAIL. TO CLOSE.	SOLENOID IN AIR SUPPLY FAILED
G PB3	016369	111076	Q RM	B00	R U					RCIC INBD. STM. SUP. ISO. (MO-3-13-15) FAILED TO CLOSE	CAUSED CF FAILURE NOT GIVEN
G PB3	016476	112376	D MV	B23	D					CORE SPR. B FULL FLOW. RET. VLV FAILED TO CLOSE	TORQUE SWITCH SETTING WAS TOO LOW
G PB3	016488	113076	C AV	B24	T D					ISO. VLV AD-5235 (DRYWELL TO NITRO. COMP) FAIL. TO CLOSE	SOLENOID VLV IN AIR SUPPLY LINE FAILED
G PB3	018160	061677	Q RM	V06	S D					BOTH RCIC ISO. VLVS. FOUND CLOSED WHEN REQUIRE. OPEN	DEFECTIVE TEST PROCEDURE
G PB3	018373	071177	Q MV	B23	D					RCIC INNER ISO. VLV (MO-15) FAILED TO CLOSE MAN. CONT	MAJFUNCTION IN VLV TORQUE SWTCH. CIRCUIT
G PB3	018372	071377	Q MV	B12	R D					RCIC OUTER ISO. VLV (MO-16) FAILED TO CLOSE	OPER. HAD STRIPPED THREADS ON STEM NUT
G PB3	018473	072277	W AV	B24	S D					INBD. MSIV 80 D FAILED TO CLOSE ON REMOTE SIGNAL	FAILURE OF SOLENOID IN AIR SUPPLY LINE
G PB3	018472	072877	C RM	B26	T					DRYWELL VACUUM BREAKER FAILED TO FULLY CLOSE	LIMIT SWITCH WAS OUT OF ADJUSTMENT
G PB3	018525	080977	Q MV	F23	R D					RCIC OUTER ISO. VLV (MO-16) FOUND INCOPERABLE	BROKEN LUG ON TORQUE SWITCH TERMINAL
G PB3	018884	090277	H MV	A09	T					HPCI SYS. VLV MO-3-23-41 FAILED TO FULLY OPEN	CORRODED VLV STEM DUE TO VLV PACKING LEAK
G PB3	019091	092577	M UV	V01	S D					CHARGING BATTER VLVS. TO SCRAM SYS. IN IMPROPER LIN-	-EUP//PERSONNEL ERROR
G PB3	019556	102677	H RM	D22	R D					OIL LEAK FOUND ON HPCI OIL PRESSURE CONTROL VALVE	OIL LEAK WAS CAUSED BY A SPLIT DIAPHRAGM

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CUMULATIVE	MARK		FAILURE MODE	FAILURE MECHANISM
G P83	020273	C11378	G RM B12	D								GAS CHARG VALVE TO 3A SBLC PLMP ACCUM FAILED OPEN	FAILURE DUE TO MECH BINDING OF VAL INTERN
G P83	020492	021078	C AV B24	S D								NITROGEN COMP SUCTION VAL, AO-5235, FAILED TO CLOSE	SOLENOID VALVE STICKING IN AIR SUPPLY
G P83	020723	030578	K MV D14	R T								RECIRC PUMP DISCHARGE VALVE, MO-2-53B LEAK EXTERNAL	FAILURE OF DISCHARGE VALVE PACKING
G P83	020845	031078	T UV V02	S D								RECOMBINER-COMP INLET-SUMP DRAIN VLV IMPROPER L/U	MAINTENANCE PERSONNEL ERROR
G P83	021657	060778	A XV V03	S D								SHUT-OFF VALVE ON PS-10-1000 CLOSED, VIOL OF T.S.	VALVE CLOSED DURING INST TEST, NOT REOPEN
G P83	021716	062678	X XV V03	T D								SHUTOFF VAL ON PRESS SW PS-3-5-120 CLOSED, T.S. VIOL	TEST PERS CLOSED VLV DUR TEST, NOT REOPEN
G P83	022078	081278	W MV F20	T								MAIN STEAM LINE DRAIN ISO VAL, MO-74, INCOPERABLE	VALVE MOTOR OPERATOR CIRCUIT GROUNDED
G P83	023062	111678	L MV A20	D								RHR VALVE MO1548 FAILED TO OPEN ON TESTING	MOTOR & SEVERAL OPERATOR PARTS REPLACED
G P83	023347	121278	Q MV B14	D								RCIC ISOL VALVE MO-13-15 FAILED TO FULLY CLOSE	COCKED PACKING FOLLOWER JAMMED STEM
G P11	014476	041376	C MV 105	D								WELD ON HPCI SYSTEM VALVE MO 2301-4 CRACKING	ORIGINAL WELD FABRICATION VARIANCE
G P11	014942	052876	W RV H00	U								CROSBY RELIEF VALVE OPENING AT TOO LOW PRESSURE	CAUSE UNKNOWN
G P11	017419	031177	F XV A12	D								SSW PUMP E DISCHARGE VALVE FAILED IN CLOSED POSIT	BROKEN HINGE PIN ON BUTTERFLY VALVE
G P11	017675	041777	W HV F07	T								HSIV-AO-203-18 CLOSING TIME TOO FAST	NORMAL WEAR IN HYDRAULIC CIRCUIT
G P11	017674	051077	W RV A24	S D								RV 203-3C DID NOT OPEN FROM REMOTE CONTROL SWITCH	DETERI OF THE REMOTE AIR ACTUATOR DIAPH
G P11	018325	062077	L MV B12	R D								VALVE MO-1001-36A FAILED TO CLOSE, RHR PUMP OPERAT	KEY WHICH PREVENTS STEM ROTATION SHEARED
G P11	018497	080277	N UV V01	S D								VALVE IN TRUCK LOCK, OPENED IN VIOLATION OF T.S.	OPERATIONS PERSONNEL ERROR
G P11	019669	110477	L MV F12	T								MTR OPER FOR VAL MO-1001-188 OVERLOADED, BURNED OUT	MCRN GEARS ALLOWED MTR TO RUN AFT VLV CLS
G P11	019694*	111377	C RM C25	T 18								18 PRI CNTNMNT ISC VALVES LEAKING IN EXCESS OF T.S	NORMAL CATERICRATION OF DISK/SEATS
G P11	019736	111477	W RV A24	S D								RELIEF/SAFETY VALVE 203-3B COULD NOT BE MAN OPENED	FAIL OF 3-WAY SOLENOID VAL TO PORT PROPER
G P11	019859	111577	W RV C27	R T								RELIEF VALVE 203-3B DETERMINED TO BE LEAKING	FIRST+SECOND STAGE OF PILOT VALVE LEAKING

ALL VALVE EVENTS IN THE DATA FILE

VE N T	P L A N T	CONT. NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O N M U P H	K E Y	FAILURE MODE	FAILURE MECHANISM
G	PI1	019756	111777	W	RV	C27	R	T			RELIEF VALVE 203-30 DETERMINED TO BE LEAKING	FIRST STAGE OF PILOT VLV SEAT LEAKING
G	PI1	019668	120277	M	RM	V06	S	D			STANDBY LIQUID CONTROL VALVE 1101-23 CLSD T.S.VIOL	INADEQUATE PROCEDURES COVERING VALVE POS
G	PI1	021096	041178	W	AV	F12		D			MSIV-AC-203 DECLARED INOPERABLE	STEM SHEARED AT LCC WHERE PLT STG TAPERED
G	PI1	021639	061378	T	DV	A12		D			B DAMPER TO STDBY.OIL.FAM AT MAIN STACK FAILED SHUT	LOOSE SET SCREW IN ACTUATOR LINKAGE
G	PI1	021963*	071078	X	WM	F24	S	D	02		SCRAM VALVES FOR CRD 38-47 SLOW ACTUATING	STICKY ASCO SCLENCID VLV IN SUPLY SYS
G	PI1	022757	100978	W	RV	B27	R	T			RV-203-3C FAILED TO RESENT AT PROPER PRESSURE	EXCESSIVE PILOT SEAT LEAKAGE
G	PI1	023500	102878	N	UV	V01	S	D			BLOCK VALVE TO FCV-118 SHUT WHEN REQUIRED TO BE O-	-PEN//PERSONNEL ERROR
G	PI1	022956	111678	N	XV	D02		D			HYDRANT SHUT-OFF VALVE BLEW OFF LINE	PERSONNEL ERROR IMPRCPER INSTALLATION
G	PI1	023143	120278	M	SV	F00		U			TWO SCRAM PILOT VALVES FOR CRD 46-39 NOT BLEEDING	VALVES REPLACED FROM STOCK
G	QC1	014064	010376	W	MV	C25		U			EXCESSIVE LEAKAGE THRU MS DRAIN VALVE MD-1-220-1	SEAT-DISC PROBLEM/CRAPE 3 INCH GATE 783-U
G	QC1	014060	010476	Y	UV	C00		U			EXCESSIVE LEAKAGE THRU VALVE 1-8802-B / TESTING	UNKNOWN/*INFO LATER*/COPES-VUL 1/2 GLOBE
G	QC1	014063	010476	W	AV	D14		T			MS STOP ISOL VALVE EXCESS LEAKAGE DURING TEST	PACKING TIGHTENED AND RETINED THE VALVE
G	QC1	014059	010576	H	CV	E13		U			HPCI EXHAUST CHECK VLV. LEAKING INTERNALLY	DEFECT.GASKET BETWEEN VLV.SEAT AND BODY
G	QC1	014058*	011076	U	CV	E25	R	T	03		3 FEED WATER CV THAT FAILED EARLIER FAILED AGAIN	VITON O-RINGS(SEAT SURFACES) DETERIORATED
G	QC1	014057	011476	L	MV	C23	R	T			VALVE MD-1-1001-37A FAILED LEAKRATE TEST	TORQUE SW CUT OF ADJUSTMENT/LIMITORQUE
G	QC1	014056	012676	N	MV	C23	R	D			VALVE 1-1201-2 FAILED LEAKRATE TEST	TORQUE SW MALFUNCTION/REPLACED/LIMITORQUE
G	QC1	014538	040276	W	AV	F13		T			VALVE FAILED TO OPERATE PROPERLY DURING TESTING	NEW SEAL RING IN VALVE OPERATOR
G	QC1	015257	070176	F	MV	F12		D			LOOP SPRAY VALVE FAILED TO OPERATE(MD-1-1001-23-B)	LOOSE BOLTS HOLDING OPERATOR TO VALVE
G	QC1	015706	080976	N	MV	F16	S	D			REACTOR WTR.CLEANUP SYS.ISO.VLV.MD-1-1201-2 INCER	RELAY SHORTED & BURNED UP CONTROL TRANSF.
G	QC1	016162	090276	F	MV	B20		D			MOV FAILED TO CLOSE DURING TESTING(MD-1-1001-26-A)	EXCESS GREASE/COMPACTION/HYDRAULIC LOCK

ALL VALVE EVENTS IN THE DATA FILE

W E N	P L A N T	CONT.NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O N M U P H	K E Y	FAILURE MODE	FAILURE MECHANISM
G	QC1	016472*	110176	A	RV	A13		D	02		ELECTROMATIC RELIEF VALVES FAILED TO OPEN/TESTING	EXCESSIVE INTERNAL STEAM LEAKAGE
G	QC1	017357	011977	N	AV	V01	S	D			VALVE LINE-UP INCORRECT/RADWASTE DISCHARGE	PERSONNEL ERROR
G	QC1	C17360	012377	M	AV	F26		T			MSIV AG-1-203-1A FAILED TO OPERATE DURING TESTS	LIMIT SWITCH FAILED DUE TO EXCESS HEAT
G	QC1	017359	012577	G	RV	H10		T			RV IN STANDBY LIQ CONT SYS OPENED PREMATURELY	POSS BORN CRYSTALS IN SEATING AREA
G	QC1	017361	021177	M	AV	F27		T			MSIV FAILED TO CLOSE IN REQUIRED TIME DURING TEST	FAULTY PILOT VALVE VITRON O-RINGS
G	QC1	017468	030577	C	AV	F13		T			VALVE ACTUATOR FAILED/VALVE FAILED TO OPERATE	TEFLON O-RINGS IN AIR CYLINDER REPLACED
G	QC1	020531	032077	C	MV	C23		T			LEAKTEST SHOWED EXCESSIVE LEAKAGE THRU DRAIN VALVE	TORQUE SW OUT OF ADJUSTMENT
G	QC1	020531A	032077	C	CV	E25		T			EXCESSIVE LEAKAGE THRU CV DURING TESTS	DETERIORATED O-RINGS
G	QC1	020531B	032077	C	MV	C25		T	02	V	EXCESS LEAKAGE THRU SPRAY VALVES DURING TEST	IMPROPER SEATING OF VALVE
G	QC1	020532	032077	A	RV	A12		D			MAIN STEAM ELECTROMATIC RELIEF FAILED TO OPEN/TEST	INTERNAL PARTS FOUND LOOSE AND MISSING
G	QC1	018106	041277	F	AV	B24	S	D			DRAIN VALVE FAILED TO CLOSE/COMMAND FAULT	AIR SUPPLY SV FAILED/AIR WOULDNT VENT OFF
G	QC1	018109*	041977	C	MV	B16	S	D	02		CONT. ISO. VLVS. MD 1-1001-506 63 FAILED TO CLOSE	FAILURE OF THE 599-118 RELAY
G	QC1	018111*	042677	G	RV	A10	C	T	02	V	RELIEF VALVES LIFTED AT MUCH HIGHER THAN SETPOINT	BORN PRECIPITATED IN VALVE
G	QC1	018115	051277	M	RM	F12		D			CONTROL VALVE IN MS SYS FAILED TO OPERATE	MECH FAILURE WHICH LCST FEEDBACK SIGNAL
G	QC1	018459	061177	H	RM	G24	S	D			HPCI PUMP INLET VALVE WOULD NOT STAY OPEN/TESTING	MALFUNCTION IN LOCAL VALVE CONT STAT CIRC
G	QC1	019489	093077	D	MV	F05		D			CORE SPRAY VALVE 1-1402-25B FAILED TO OPERATE	CRACKED YOKE/PROB SINCE INSTALLATION
G	QC1	020425	111677	A	RV	A24	S	D			RELIEF VALVE 1-203-3B FAILED TO OPEN ON DEMAND	COMMAND/WIRE TIE IN ELECT CONTACTOR
G	QC1	020264	111877	H	MV	A23		D			HPCI MOV 1-2301-4 FAILED TO OPEN DURING TESTING	MOV HAD DEFECTIVE TORQUE SWITCH
G	QC1	C20174	121277	C	AV	B14		T			ADV 1-1601-33E FAILED TO CLOSE DURING TESTING	DEFECTIVE PACKING BOUND UP STEM
G	QC1	020636	020678	A	RV	A12	R	D			ELECTROMATIC RELIEF 1-203-3E FAILED TO OPEN / TEST	WORK INTERNAL PARTS/VALVE WAS REPLACED

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SERIES	COND	FAIL CODE	TYPE	CLASS	CON NUM	KEY	FAILURE MODE	FAILURE MECHANISM
G QC1	021127*	042178	H MV	I04	C D	02	V	GE NOTIFIED QC THAT RECIRC SUCTION VALVES COULD---	---	CLOSE SPURIOUSLY/DISABLED ELECTRICALLY		
G QC1	021408	042478	A RV	A18				ELECTROMATIC RV 1-203-3C FAILED TO OPERATE / TEST		WELD FAILURE BETWEEN BODY AND CAGE/VIBRAT		
G QC1	021436	050478	H MV	B23				HPCI PMP SUCTION VLV MO-1-2301-6 WOULD NOT CLOSE		VLV TORQUE SWITCH WAS WORN OUT		
G QC1	021785	052778	C AV	B14				VACUUM BREAKER FAILED TO CLOSE (1-1601-33E)		PACKING PROBLEM/SHAFT BINDING/NEW PACKING		
G QC1	021981	070778	C AV	B14				SUMP DISCHARGE VALVE FAILED TO CLOSE (1-2001-15)		PACKING REQUIRED ADJUSTMENTS		
G QC1	G22189	080278	N AV	A27				AO PURGE VALVE 1-1601-96 FAILE TO OPEN		SOLENOID PILOT VALVE DIRTY/REPLACED SOV		
G QC1	G23585*	121978	N AV	B24	S D	02		TWO VENT DAMPERS FAILED TO CLOSE (1-5741A6B) TEST		SOV SUPPLYING AIR TO OPERATOR FAILED		
G QC2	014421	031976	W AV	B10				MSIV AO-2-203-1C FAILED TO CLOSE / NORMAL SHUTDOWN		FOREIGN MATERIAL IN PILOT ASSEMBLY		
G QC2	015381	071276	C AV	B24	S D			AO 2-1601-96 FAILED TO CLOSE / COMMAND FAILURE		SOV FAILED IN AIR SUPPLY TO PURGE PILOT		
G QC2	016473*	110176	A RV	A12	B D	02		TWO ELECTROMATIC RELIEFS FAILED TO OPEN ON TESTING		INTERNAL BINDING DUE TO CORROSION PROBLEM		
G QC2	020533	032377	A RV	A12	R D			ELECTROMATIC RELIEF FAILED TO OPEN DURING TESTING		LOOSE INTERNAL PARTS BOUND/EXCESS VIBRAT		
G QC2	018121	051477	N AV	B27				ADV FAILED TO CLOSE (AD-2-1601-24)		SEAL LEAK IN SOLENOID OP PILOT VALVE		
G QC2	020300	051977	O MV	B16	S D			RCIC INBOARD STM. ISO. VLV. MO-2-1301-16 WOULDNT CL-		LOSE//FAIL. OF VLV. BRKR. AUX. CLOSING CNT.		
G QC2	018575	071977	L UV	V01	S D			VALVE FOUND CLOSED BETWEEN A & B LCCP/LOSS OF LPCI		PERSONNEL ERROR/INADVERTANT CLOSURE		
G QC2	019224	092277	W AV	F27				MSIV FAILED TO OPERATE PROPERLY		FAULTY 4-WAY PILOT/O-RING DAMAGED		
G QC2	019223	092377	A RV	A12	R D			ELECTROMATIC RELIEF FAILED TO OPEN DURING TESTING		RINGS CUT GROOVES IN DISC GUIDE/STEAM CUT		
G QC2	019450	092977	C XV	V01	S D			STOP VALVE TO TORUS LEVEL TRANSMITTER FOUND CLOSED		PERSONNEL ERRCR		
G QC2	019745	110677	W RV	B27				RELIEF VALVE 2-203-3B FAILED TO RESEAT		PILOT VALVE WAS STEAM CUT AND ERODED		
G QC2	019759	111477	D MV	A08				CORE SPRAY MOV 2-1402-24B FAILED TO OPEN / TEST		STEM AND BONNET BADLY GALLED		
G QC2	020396*	011578	W AV	C25	C T	03		3 MSIV HAD EXCESSIVE THRU LEAKAGE ON LEAKRATE TEST		SEATING SURFACES WERE LAPPED		

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CON PH	MARK	FAILURE MODE	FAILURE MECHANISM
G QC2	020544	011878	N	AV	B16	S	D			ADV AD 2-5408 FAILED TO CLOSE / COMMAND FAULT	PERSONNEL HOOKED UP ELECTRICAL WRONG
G QC2	020595*	012478	S	AV	B24	S	D 02			TWC ADV FAILED TO CLOSE/COMMAND FAULT/NO AIR	SCV SUPPLYING AIR FAILED/HI TEMP/HUMIDITY
G QC2	020582	020178	G	RV	A00	U				SBLC RELIEF 2-1105B FAILED TO OPEN/AT SET PRESSURE	UNKNOWN/SETPOINT DRIFTED HIGH/1540 VS1490
G QC2	020944	030478	G	RV	C25	T				SBLC RELIEF 2-1105A LEAKED THRU / LOW PUMP OUTPUT	MACHINED SEAT AND RESET TO 1450 PSIG
G QC2	020943	030578	L	CV	E10	T				REVERSE FLOW THRU CHECK VALVE 2-220-07A / TESTING	DIRT ACCUMULATED IN VALVE INTERNALS
G QC2	020945	030678	M	AV	B27	U				SJAE SUCTION VALVE AD2-5401A FAILED TO CLOSE	STICKING SOLENOID PILOT VALVE/REPLACED
G QC2	021129	040978	Q	MV	B23	D				RCIC INBO. STM. INLET ISO. VLV. NO-2-1401-16 WOULD NOT	-T CLOSE//FAILED TORQUE SWITCH
G QC2	021561	052178	D	RM	V01	S	D			2A CORE SPRAY SUC. VLV. NO 2-1402-3A CLOSED WHEN R-	-REQUIRED TO BE OPEN//PERSONNEL ERROR
G QC2	022815	092978	M	RV	A24	S	D			RV 2-203-3A FAILED TO OPEN(MANUAL) / COMMAND	AIRLINE TO MANUAL AIR OPERATOR BROKE
G QC2	022816	100278	M	SV	F12	D				SCRAM SOLENOID VALVE 148 MALFUNCTIONED	CORE SPRING DETACHED FROM CORE OF SV
G QC2	023383	111678	C	AV	A24	T	D			RX CONT VALVE 2-1601-20A FAILED TO OPEN ON TEST	SOV(2-1601-50A) FAILED; NO AIR TO AIR-OP VL
G QC2	023400	112578	C	AV	A24	T	D			DRYWELL VENT AD 2-1601-23 FAILED TO OPEN	SCV(ISO 2-1601-52A) FAILED TO SUPPLY AIR
G VY1	013980	011876	T	SV	F10	T				ASCO 3-WAY SOLENOID VALVE FAILED TO OPERATE	DIRT BUILDUP IN ACTUATING MECHANISM
G VY1	014230*	021776	L	MV	F01	D	02			RHR VLVS. 25A/B WOULD NOT STROKE ELECTRICALLY	PERSON. ERROR(MUST STRO. VLVS. MANUALLY 1ST)
G VY1	014297	030276	Y	AV	G27	D				ADV FAILED TO OPERATE(AS DESIGNED)/CLOSED INADVERT	SOLENOID OPERATED AIR PILOT CLOSED IN ADV.
G VY1	014544	041576	L	RV	H00	U				RELIEF VALVE (RHR-25A) LIFTED PREMATURELY / TEST	UNKNOWN/ RESET TO LIFT 100 PSI HIGHER
G VY1	014584*	051076	L	MV	A14	C	T C2			TWO 24 INCH MOV. (RHR-27A/B) FAILED TO OPEN / TEST	PACKING MAINTENANCE PROBLEM
G VY1	014739	051276	H	UV	V01	S	D			IMPROPER VLV. LINEUP ON HPCI GLAND SEAL CONDENSER	PERSONNEL ERROR
G VY1	015230*	063076	C	RM	C00	U	04			4 PRIMARY CONTAINMENT VALVES LEAKED THRU/TESTING	UNKNOWN
G VY1	015184*	070676	A	RV	A22	C	T 03			3 TARGET ROCK RVS FAILED TO OPERATE(SIGNAL/MANUAL)	DIAPHRAGM IN AIR OPERATORS FAILED/HEAT

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>C</u> <u>O</u> <u>M</u> <u>P</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>Y</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	VY1	015628	081676	Y	AV	B10	T			AIR SAMPLE ADV (FSD-109-75B-2) FAIL TO CLOSE	DIRT IN VALVE STEM
G	VY1	015623	082576	F	CV	B08	D			CHECK VALVE(SERVICE H2C PUMP OUTLET)FAIL TO CLOSE	WEAR BETWEEN DISC & DISC ARM/SHIM INSTALL
G	VY1	015855	092076	L	MV	A00	U			LPCI MDV (RHR-25B) FAILED TO OPEN DURING TESTING	UNKNOWN/WALWORTH AND LIMITORQUE INVESTIG.
G	VY1	016997	011877	L	RM	V03	S	D		"B" RHR PMP DISCH.VLVS. SHUT WHEN REQ. TO BE OPEN	PERSONNEL ERROR
G	VY1	017127	012877	N	AV	A27	D			ADV (SB-3A) FAILED TO OPEN DURING LEAKRATE TEST	ASCO SOLENOID PILOT VALVE FAILED
G	VY1	019105*	082077	C	RM	C00	U	07		SEVEN PRIMARY CONTAIN. ISOL VALVES LEAKED THRU---	--DURING TESTING//UNKNOWN(TO BE REPORTED)
G	VY1	019857	082077	T	AV	B27	D			ADV (FCV 108-W) FAILED TO CLOSE DURING TESTING	SOLENOID PILOT VALVE HAD SHORTED SOLENOID
G	VY1	018978*	082877	G	RV	H25	T	C2		TWO SBLC RELIEF VALVES LIFTED PREMATURELY	1-SEATING SURFACES LAPPED 2-RESET SETPOINT
G	VY1	019853	110177	C	RM	B09	T			VENTILATION SYSTEM VALVE (HVAC-10) FAILED TO CLOSE	CORROSION ON OPERATORS GUIDE RODS
G	VY1	019854	110177	D	XV	F08	D			MANIFOLD BYPASS VALVE FAILED TO OPERATE	GALLED THREADS/STEM SEIZED
G	VY1	020485	120977	M	AV	B27	R	T		MSIV-86C FAILED TO CLOSE DURING TESTING	PNEUMATIC SPOOL VALVE INOPERABLE/DIRT
G	VY1	020468	020478	M	AV	B27	R	D		MSIV-80A FAILED TO CLOSE DURING TESTING	PNEUMATIC SPOOL VALVE INOPERABLE
G	VY1	020910	041278	K	RV	A00	U			RV (67HH13) SET TOO HIGH	SETPOINT DRIFT/RESET TO LOWER LIFT PRESS
G	VY1	021997*	071178	C	RM	C00	U	05		FIVE CONTAINMENT ISOLATION VALVES LEAKED THRU/TEST	UNKNOWN/PROBABLE SEAT PROBLEMS
G	VY1	022130*	073178	G	RV	A06	D	02		TWO RV'S(SR-39A/B) FAILED TO OPEN AT DESIGN SETPNT	PROCEDURAL DISCREPANCY/SET W NITROGEN
G	VY1	022196*	081078	C	CV	E00	U	02		ISOLATION CHECK VLVS (V72-89B/C) LEAKED THRU/TEST	UNKNOWN/DRESSER ZIN TYPE 5580W CHECK VAL
G	VY1	022252	081478	M	XV	V01	S	D		VLVS.LINED UP IMPROPERLY TO HI.MN.STM.LN.FLOW SWT.	PERSONNEL ERROR
G	VY1	022253	081478	Y	SV	F21	U			PURGE MAKEUP VLV V16-228 CAUSED A FUSE TO BLOW IN-	-THE PCIS LOGIC//FAULTY SOLENOID OPERATOR
G	VY1	022744	101478	M	AV	F27	D			MSIV (V2-86C) CLOSED FASTER THAN DESIGN TIME	SPEED CONTROL VALVE BECAME LOOSE
H	BV1	015673	061276	C	UV	V01	T	D		VLVS HCV-CV-191,191-1 WERE OPENED IN VID. OF T.S.	OPER. ERROR,USED IT.S.WHICH VIC.ANOTH.T.S

ALL VALVE EVENTS IN THE DATA FILE

<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SYS</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON MUMPH</u>	<u>WORK</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
W BV1	015915	083076	Y	RM	B16	S	D			CONTAINMENT VALVE FAILED TO CLOSE/CONT VAC DROPPED	WIRING ERROR DURING FABRICATION
W BV1	015969	091076	F	AV	G24	S	D			COOL WATER CONT ISOLATION VALVE WENT CLOSED	AIR PRESS TO VAL DROPPED/AIR SYS(DESIGN)
W BV1	018088	091976	W	HV	B00		U			*B* MAIN STEAM TRIP VLV FAILED TO SHUT	CAUSE IS NOT KNOWN
W BV1	018089	101076	X	XV	D14		T			STM LEAK FROM RT STOP VLV, PZR, LVL, IND, READ HIGH	STEAM LEAKAGE DUE TO PACKING LEAK
W BV1	018090	101476	S	MV	A16	S	D			*B* HDR, DISC, VLV TO RIVER WTR, PMP, DID NOT OPEN	DIRTY ELEC. CONT. ON OPER. LINE STARTER
W BV1	016279	102276	H	MV	B16	S	D			VCT DISCH VALVE FAILED TO SHUT ON SI SIGNAL	NO PWR/ALLIS CHALMER LINESTARTER FAILED
W BV1	016356	102476	H	UV	C00	R	U			PRI. SYS. WTR VLV INTER. LEAKAGE DILUTED BORON INJ. TK	CAUSE OF VLV. INTER. LEAK. NOT STATED
W BV1	016356	102576	H	MV	B16	S	D			DRAIN VALVE ON ACCUMULATOR IC FAILED TO SHUT	NO PWR/THERMAL OVERLOAD OF LINESTARTER
W BV1	016705	122876	H	UV	C00	R	U			PRI. SYS. WTR VLV INTER. LEAKAGE DILUTED BORON INJ. TK	CAUSE OF VLV. INTER. LEAK. NOT STATED
W BV1	016943	011177	U	SV	B21		U			MAKE-UP TRIP VLV FAILED TO TRIP ON HIGH CONDUCTIV.	VLV SOLENOID WAS DEFECTIVE
W BV1	016746	010577	U	MV	F16	S	D			DYNAMIC INSTABILITY OF FEEDWATER REG VALVE	NEW TRIM CIRCUIT NEEDED
W BV1	017554	032877	S	AV	G22	R	U			1B RCP COOL. WTR. SUP. CONT. ISO. VLV FAILED SHUT	FAILED DIAPHRAGM IN VLV. OPERATOR
W BV1	017622	041277	Y	UV	D14		T			A HIGH LEAK RATE OF RX COOL SYS WTR WAS OBSERVED	FAILED PACKING RX COOL PMP SEAL HDR FL VL
W BV1	017697*	042077	W	AV	G24	S	D	02		1A & 1B MN STM ISO. VLVs WENT PARTIALLY CLOSED	LOW AIR PRESS TO TH MSIVS VLV POSITIONER
W BV1	017829	051077	U	MV	V02	S	D			FEEDWATER BYPASS OPENED WHEN REQ TC BE CLOSED	MAINT TECH FAILED TO DISCONT PWR SUPPLY
W BV1	018831	072277	U	RM	F12	R	D			1A FEED REGULATING VLV WAS OPERATING IMPROPERLY	VLV STEM LOCK PLATE CAME LOOSE; BOLT FAIL.
W BV1	018835	072577	N	UV	VQ1	S	D			IMP. VLV LINEUP, 6B PRI GRADE WTR STOR TANK OVERFLW.	PERSONNEL ERROR
W BV1	018725	072877	B	RM	A23		D			AUX. FEEDWATER CONT VLV WOULD NOT OPEN ELECTRIC.	BINDING TORQUE SWITCH
W BV1	018728	080177	U	RM	F02	R	D			1B FEEDWATER REG. VLV OPERATING IMPROPERLY	LOOSE LOCK PLATE DUE TO OVER TORQ. OF BOLT
W BV1	018730	080277	G	XV	B12		D			HIGH PRI. LEAK. DUE TO 1B CHG. PMP. SUCT. VLV NOT CLOSE	JAMMED REACH ROD ON THE VALVE

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u>	<u>P</u>	<u>CONT.NO.</u>	<u>EVENT</u>	<u>S</u>	<u>C</u>	<u>FAIL</u>	<u>T</u>	<u>C</u>	<u>K</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>	
<u>EN</u>	<u>LANT</u>		<u>DATE</u>	<u>YS</u>	<u>OMP</u>	<u>CODE</u>	<u>YPE</u>	<u>LA</u>	<u>ON</u>			
								<u>SS</u>	<u>MU</u>			
									<u>PM</u>			
									<u>4</u>			
W	BV1	019611	102777	K	XV	D14	R	T		20 GPM LEAK. FROM 1A LOOP FILL VLV PACKING	PACKING DEGRADATION	
W	BV1	019934	120277	X	XV	C00		U		LEAK. THRU FLOW EQUAL.VLV OF RX FLOW INSTRUMENTATI	CAUSE FOR LEAKAGE NOT GIVEN	
W	BV1	020131*	121877	L	RV	H00	C	U	02	V	RELIEF VLVS LIFTED AT SETTING LOW THAN NORMAL	NO CAUSE GIVEN FOR RV LIFTING LOW
W	BV1	020439	011478	J	AV	G22	R	U		1A RCP COOLING WATER INLET ISO. VLV FAILED SHUT	RUPTURED VLV OPER. DIAPHRAGM CAUSED FAIL.	
W	BV1	020496	012178	L	UV	V06	S	D		THE RWST WAS DRAINED TOO LOW DUE TO INCOR.VLV L/U	PROCEDURAL DISCREPENCY	
W	BV1	020757	012978	K	XV	D14	R	T		LEAKAGE IN EXC. OF 10GPM OBS.THRU B LP.FILL VLV PK	LEAKAGE DUE TO DEGRADED PACKING IN VLV.	
W	BV1	020650	020178	N	RM	F16	S	D		SUMP CAUSTIC VALVE OPENED DUE TO ERRONEOUS SIGNAL	DETECTOR FILLED WITH RESIN BEADS	
W	BV1	020796	020178	K	RM	C00		U		PRESSURIZER SPRAY VALVE LEAKED THRU	UNKNOWN	
W	BV1	020754	021778	N	DV	V01	T	D		AIR FLOW CALCUL. OF CONT. ROOM FANS OUT OF T.S.--	DAMPERS WERE POSIT.INCOR.//PERSONNL ERROR	
W	BV1	020792	022378	N	DV	V01	T	D		AIR FLOW CALCUL. OF SLCS FLTR BANKS OUT OF T.S.--	DAMPERS WERE POSIT.INCOR.//PERSONNL ERROR	
W	BV1	021044	033178	G	UV	T03		D		TECH SPEC VIOLATION, VALVE POSITION NOT VERIFIED	PERSONNEL ERROR/FAILED TO SCHEDULE TEST	
W	BV1	021298	050978	N	RM	F00	R	U		SUMP DISCH VALVE STAYED OPEN ON HI PH CONDITICH	UNKNOWN (SEE LER NO. 020650, POSS CONNECT)	
W	BV1	021644	062278	F	UV	G05		D		INFLATABLE PLUG FOUND IN RECIRC PUMP INLET VALVE	PERSONNEL ERROR DURING CONSTRUCTION PHASE	
W	BV1	022139	070978	H	AV	B24	S	D		BORON INJECTION TANK RECIRC.VLV.WOULD NOT CLOSE	WORN INTERNALS IN SOLENOID SUPPLYING AIR	
W	BV1	022135	080178	L	RM	B10		T		18 LOW HEAD SAFETY INJECTION PMP.HEAD.ISO.NOT CLOS	VLV FAIL.TO CLOSE DUE TO BORIC CRY.IN PAK	
W	BV1	023039	082678	N	RM	F00	R	U		CHEM WASTE SUMP VALVE FAILED TO OPERATE PROPERLY	UNKNOWN(SEE LERS NO.020650 AND 021298)	
W	BV1	023214	101278	C	CV	F04		D		1A RCP SEAL INJEC.SPR.LOAD.CKVL OPEN.PRESS.TO HIGH	CHECK VLV. HAD IMPROPERLY DESIGN. SPRING	
W	BV1	023216*	110878	C	UV	C00		U	12	12 VLVS FOUND LEAKING DURING CONT.PENET.LEAK TEST.	NO CAUSE FOR LEAKAGE GIVEN	
W	BV1	023318*	122078	C	RM	C12	C	D	02	V	CONT.AIREJECTOR PENET. ISO. VLVS. LEAKING	RUBBER VLV.SEAT WARPED & UNABLE TO SEAL
W	DC1	014430	042076	B	MV	T05		D		AUX FEED WATER VALVE FOUND INSTALLED BACKWARDS	CONSTRUCTION/QC ERROR/INLET-OUTLET REVERS	

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u>	<u>P</u>	<u>CONT.NO.</u>	<u>EVENT</u>	<u>S</u>	<u>C</u>	<u>FAIL</u>	<u>T</u>	<u>C</u>	<u>C</u>	<u>K</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
<u>EN</u>	<u>LANT</u>		<u>DATE</u>	<u>YS</u>	<u>OMP</u>	<u>CODE</u>	<u>YPE</u>	<u>LA</u>	<u>ON</u>	<u>EY</u>		
W	DC1	014736*	050276	C	RM	C25	C	T	03	B	VALVES LEAKED THRU DURING CONTAINMENT ISOL TESTING	SEAT PROBLEMS/DEPOSIT BUILDUP AND WEAR
W	DC1	014549*	050576	C	AV	F24	S	D	02		VALVES CCR-4606462 FAILED TO CLOSE IN REQUIRED TIME	WRONG SIZE TUBING(VENT)FROM VALVE(DESIGN)
W	DC1	015082*	061776	P	RM	F16	S	D	05	Z	ALL VALVE ON CONT CENTER 1-AZV-A WERE WITHOUT POWR	BREAKER TRIPPED(SHORT DUE TO PERSON ERROR
W	DC1	016367	110176	L	MV	F12		U			RHR VALVE FAILED TO CYCLE DURING TESTING	PACKING GLAND WAS TOO TIGHT
W	DC1	016607	120776	C	RM	B12		D			S/G SAMPLE ISOLATION VALVE FAILED TO CLOSE	LOOSE BLOCK BETWEEN STEM AND ACTUATOR
W	DC1	016648	121776	F	MV	V01	S	D			CONTAINMENT SPRAY PUMP SUCTION VALVE FOUND CLOSED	PERSONNEL LEFT VALVE SHUT AFTER A TEST
W	DC1	017245*	022277	C	CV	E10	B	T	02	V	CHECK VALVES FAILED LEAKRATE TEST	LAKE WATER DEPOSITS ON SEATING SURFACES
W	DC1	017245A	022277	C	RM	C12	B	D	03	S	SEVERAL CONTAINMENT ISOLATION VALVES LEAKING THRU	LOOSE ACTUATORS WERE PRIMARY CAUSE
W	DC1	017246	030377	N	RM	T02		D			CLOSING TIME NOT TESTED ON S/G CLOWDOWN VALVE	MAINTENANCE PERSONNEL ERROR
W	DC1	017279	030577	Y	XV	V01	S	D			DRAIN TRAPS WD-206WD-21 LEFT OPEN	PERSONNEL ERROR
W	DC1	017370*	030577	K	RM	F16	S	D	02		VALVES QCM-250 AND IMD-53 LOST PWR TO THEM	BREAKER OPENED DUE TO RELAY FAILURE
W	DC1	017794	042777	W	RM	T01		D			DISCOVERED SAMPLE VALVE NOT TIMED AFTER MAINTENANC	PERSONNEL ERROR/TECH SPEC VIOLATION
W	DC1	018266	062477	G	MV	B10		T			CHARGING HEADER MD ISOLATION VALVE FAILED TO CLOSE	BORIC ACID CRYSTALS ON STEM
W	DC1	018418	070677	B	MV	D11		T			AUX FEED WATER VALVE FOUND WITH CRACK IN BODY	WATER HAMMER AND VIBRATION
W	DC1	019309	100777	J	MV	F12		U			MD HEAT EXCHANGER OUTLET ISOLATION VALVE NOT OPER	BINDING OF INTERNALS/TORQUE INCREASED
W	DC1	019569	111877	F	UV	V01	S	D			TWO CONTAINMENT SPRAY VALVES FOUND CLOSED	PERSONNEL ERROR/CLOSED UNIT1 INSTEAD OF 2
W	DC1	020324	011078	G	UV	D14		T			EXTERNAL LEAKAGE FROM PRESSURIZER AUX SPRAY VALVE	PACKING FAILURE
W	DC1	020694	020878	B	MV	B16	S	D			AUX FEED MOV FAILED TO CLOSE	COMMAND/LOOSE ELEC CONNECTION/CONTROL
W	DC1	020520	020978	N	UV	F04		D			FIRE PUMP TEST VALVE 1-FP-241 FOUND FULL OPEN	VALVE COULD VIBRATE TO OPEN POS(LOCKED)
W	DC1	021011*	032278	H	MV	F16	S	D	03		POWER FOUND OFF TO 3 ECCS VALVES	3 BREAKERS FOUND TRIPPED ON MCC

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CONUM	KEY	FAILURE MODE	FAILURE MECHANISM
W	DC1	021220	042078	C	RM	V01	S	D			CONT PURGE SUPPLY&EXHAUST VALVES NOT CLOSED AS R--	--REQUIRED/PERSONNEL ERROR
W	DC1	022281	060278	H	UV	V01	S	D			BGRON INJECTION THROTTLE VALVES OUT OF ADJUSTMENT	PERSONNEL ERROR/INCORRECT TEST CRITERIA
W	DC1	021769*	062178	C	CV	E10	B	T	02	V	CHECK VALVES FAIL LEAKRATE TESTING	LEAKAGE PAST SEAT/PROBABLE FOREIGN MATER
W	DC1	021769A	062178	C	RM	C12	B	D	02	V	CONTAINMENT PURGE VALVES LEAKING THRU ON TESTING	ADJUSTMENT OF BUTTERFLY VALVE/DESIGN PROB
W	DC1	022332*	082878	N	RM	A02	C	D	02		TWO VALVES TO MAIN COND AIR EJECTORS FAILED CLOSED	IMPROPER REPAIRS PERFORMED ON THE VALVES
W	DC1	022837	102878	K	XV	D14		T			PZR SAFETY VALVE LOOP SEAL DRAIN VALVE/EXT LEAKAGE	PACKING FAILURE
W	DC1	023114	112878	B	MV	B16	S	D			AFW THROTTLE VLV. WOULD NOT CLOSE ELECTRICALLY	BROKEN LEAD ON MTR OPERATOR
W	DC2	020978	031878	B	CV	E00		D			AUX FEED SYS CHECK VALVE FROM S/G 1 STUCK OPEN	UNKNOWN (VALVE 2-FW138-1)ATWOOD & MORRILL
W	DC2	021080	040378	P	UV	T01		D			ALL CLASS 1,2,63 ASME VALVES NOT INSPECTED AS REQ.	PERSONNEL ERROR/MISUNDERSTOOD REQUIREMENT
W	DC2	021079	041678	L	XV	V01	S	D			HANDWHEEL CAME OFF RHR VALVE POSITIONING AT WRONG	PERSONNEL FAILED TO REPOSITION THE VALVE
W	DC2	021218	042278	J	MV	F23		T			MOV FAILED TO OPERATE DURING TESTING	TORQUE SWITCH CONTACTS NEEDED BURNISHING
W	DC2	021467	051978	K	UV	D14		T			EXTERNAL LEAKAGE FROM VALVE BETWEEN RCS & RHR	PACKING FAILURE
W	DC2	021467A	051978	Z	RV	C00		U			SAFETY VALVE ON FFED SYS LEAKING THRU	UNKNOWN/REPLACED VALVE
W	DC2	021393	052078	C	RM	V06	S	D			CONT. PURGE VALVES OPENED PRIOR TO ALLOWABLE CONDS	PROCEDURES DIFFER BETWEEN UNITS 1 & 2
W	DC2	021674	060378	N	AV	B02		D			AIR-OP PZR SPRAY VALVE FAILED TO CLOSE	GASKET INSTALLED IMPROPERLY IN POSITIONER
W	DC2	021634	061578	N	RM	V01	S	D			STARTING AIR PILOT VALVES TAGGED OUT FOR WRONG D/G	PERSONNEL ERROR
W	DC2	022009	071978	L	MV	F00		U			RHR PUMP SUCTION MOV FAILED TO CYCLE/TIME-WISE	UNKNOWN WHY CYCLE TIME EXCEEDED
W	DC2	022064	072678	N	XV	V02	S	D			TWO MANUAL VALVES WERE OPENED IN VIOLATION OF T.S.	PERSONNEL ERROR
W	DC2	022350	090378	N	UV	V01	S	D			CONDENSATE VALVE CLOSED WHEN REQ TO BE OPEN	PERSONNEL ERROR
W	DC2	022561	092278	K	RV	V01	S	D			PRESSURIZER RV OPENED WHEN REQUIRED TO BE CLOSED	PERSONNEL ERROR

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	SYSTEM	COMP	FAIL CODE	TYPE	CLASS	CON	NUM	KEY	FAILURE MODE	FAILURE MECHANISM
W	DC2	022838	101078	B	XV	V01	S	D				AUX FEED VALVE FOUND UNLOCKED & OPEN/WRONG LINE-UP	PERSONNEL ERROR
W	DC2	022838A	101078	B	AV	C00	U					PNEUMATIC TEST VALVE LEAKED THRU	UNKNOWN
W	DC2	022793	102378	P	RM	T06	D					FOUR OR MORE VALVES NOT TIMED AFTER MAINT(ITS VIOL)	PROCEDURAL PROBLEMS
W	DC2	023030*	112178	F	CV	A05	C	D	02			CHK. VLVs. CTS-127E6W TO THE LOWER CONT. SPRAY NOZZL-	-ES INSTALLED BACKWARDS//FABRICATION ERR.
W	HN1	014007A	012276	M	SV	B24	S	D				MSIV NO 2 FAILED TO CLOSE IN REQUIRED TIME	SOLENOID IN AIR OPERATOR FROZE
W	HN1	014007B	012276	M	SV	B10	T					MSIV NO 2 FAILED TO CLOSE IN REQUIRED TIME	LIMIT SW HAD INTERNAL CORROSION
W	HN1	014898	051876	B	RV	H00	U					RV ON STEAM SUPPLY TO AUX FEED PUMP LIFTED EARLY	VALVE TO BE REPAIRED/FAIL. CAUS. UNKNOWN
W	HN1	015218	070576	B	CV	E00	U					CHECK VALVE IN FEED LINE HAD REVERSE LEAKAGE	NO CAUSE GIVEN FOR REVERSE LEAKAGE
W	HN1	018778	073077	G	XV	D05	R	D				B CHARG PUMP BYPASS ISO VAL LEAKING EXTERNALY	DEFECTIVE CASTING
W	HN1	018777	080177	B	CV	E00	U					CHECK VALVE ON AUX FEED PUMP LEAKING INTERNALY	UNKNOWN
W	HN1	018779	081177	U	XV	C07	T					#2 S/G NARROW RNG. LVL. SETT. POT VENT VLV. LEAK. INTER	SEAT. SURF. STM. CUT/NORMAL WEAR
W	HN1	018967	091677	M	RM	F14	D					#1 MSIV DID NOT MOVE THE 1 1/2" REQUIRED BY TEST	BINDING OF VALVE PACKING GLAND
W	HN1	019245	100377	M	HV	F07	T					VALVE VERY SLOW TO RESPOND	COMPONENT WEAR (HYDRAULIC SERVO MOTOR
W	HN1	019899	110377	C	CV	E25	T					VALVE CC-CV-721 DID NOT SEAT PROPERLY	FAILURE OF SEATING SURFACE
W	HN1	021387	050478	G	XV	D08	R	T				PINHOLE LEAK IN B CHG PUMP DISCH VALVE	SEVERE EROSION CAUSED BY THROTTLING VAL
W	HN1	021335	050978	G	XV	D08	R	T				BODY TO BONNET LEAK B CHG. PMP BYPASS ISO VLV	EROSION FROM HI VELOCITY WTR FLOW
W	HN1	021903	060578	N	XV	D18	U					PINHOLE LEAK IN PRESS SPRAY ISO VALVE	DEFECT IN BODY TO BONNET SEAL WELD
W	HN1	021906	071178	X	XV	D07	T					NO 4 STM LIN ELBOW TAP DRAIN VAL LEAKING	NATURAL END OF LIFE
W	HN1	022167	080478	K	RM	B16	S	D				PRESS SPRAY VLV. STUCK IN INTERMEDIATE POSITION	FAILED TRANSISTOR IN WORTHINGTON SIGNAL. CH
W	HN1	023582*	122978	N	AV	G24	S	D	04			4 S/G BLOWDOWN LINE VALVES CLOSED WHEN REQ OPEN	AIR SUPPLY TO VALVES TRIPPED (COM CAUSE)

ALL VALVE EVENTS IN THE DATA FILE

<u>EVENT</u>	<u>PLANT</u>	<u>CONT.NO.</u>	<u>EVENT DATE</u>	<u>SYST</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON MUM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
W HN1	023582A	122978	N SV	B01	D						VALVE MECHANICALLY BLOCKED OPEN OVRRIDING TRIP	PERSONNEL ERROR
W IP2	014004	010376	L MV	D14	T						EXTERNAL LEAKAGE FROM VALVE MOV-731	PACKING GLAND LEAKAGE
W IP2	014269	012376	C RM	C25	T						INTERNAL LEAKAGE THROUGH VLV FCV-1171	DISK DID NOT SEAT PROPERLY
W IP2	015920	080576	H UV	V03	S D						SI PMP5 COMMON SUC.VLV(846)IN IMPROPER POSITION	PERSONNEL ERROR/DID NOT OPEN VLV AS REQR.
W IP2	015732	091276	K SV	F24	S D						INST AIR PRESS LOST BY MALFUNCT OF 4-MAY VALVE	CAUSE UNKNOWN
W IP2	016039	092776	L MV	D14	T						14-IN VAL ON RHR SYST LEAKING EXTERNALLY	EXCESSIVE PACKING GLAND LEAKAGE
W IP2	016467*	120276	C RM	I04	R D 07						ELEC.CIRC.FOR 4CONT.ISO.VLV563CONT.REL.VLV.NOT ME-	-ET SING.FAIL.CRIT(1 SOURCE PWR)//DESIGN
W IP2	017568	032877	X UV	C00	U						DRAIN VALVE ON MANIFOLD LEAKING INTERNALLY	CAUSE UNKNOWN
W IP2	018787A	050777	F UV	F12	D 02						VALVES TCV-1104 & 05 DID NOT OPERATE PROPERLY	BINDING OF VALVE INTERNALS
W IP2	018787B	050777	F RV	F23	D						VALVE 8228 DID NOT OPERATE PROPERLY	TORQUE SWITCH MALFUNCTION
W IP2	018788A	051377	K RV	A00	R U						RV PCV-468 DID NOT OPEN AT SETPOINT PRESSURE	SET POINT DRIFT
W IP2	018788B	051377	K RV	C25	T						INTERNAL LEAKAGE PAST VALVE PCV-466	EXCESSIVE VALVE SEAT WEAR
W IP2	019281*	101977	C RM	I04	R D 02 V						AIR EJECT.LINE CONT.ISO.VLV.CIRCUITRY DID NOT MEE-	-T SINGLE FAIL.CRIT(1 SOURCE PWR)//DESIGN
W IP2	021290	020978	G RV	H00	U						RV NO.264 RELIEVED BELOW DESIGN SETPOINT	CAUSE UNKNOWN
W IP2	021028	031478	K RV	H00	R U						RV PCV-468 DID NOT OPEN AT SETPOINT PRESSURE	SET POINT DRIFT
W IP2	021027*	040178	U RM	F02	D 02 V						HI.TEMP.SHUTOFF VLVS IN MN.STM.SUP.TO #22 FEED PU-	-MP WOULDNT OPER.AUTO.//PERSONNEL ERROR
W IP2	021333	050278	S SV	A00	U						SERVICE WATER VLV FCV-1276A DID NOT FULLY OPEN	CAUSE OF EVENT COULD NOT BE DETERMINED
W IP2	021653	052378	H CV	E12	D						4 IN SWING CV D.S.OF PUMP 22 LEAKING INTERNALLY	TWC HANGER BRACKET BOLTS MISSING
W IP2	021948	062678	L UV	D22	D						DIAPHRAM VALVE 1829D LEAKING EXTERNALLY, 2 IN VAL	RUPTURED DIAPHRAGM / CRACKED BONNET
W IP2	022164	072878	W RM	B14	D						MS 1 FOR LCOP 23 FAILED TO CLOSE COMPLETELY	STEM PACKING RESTRICTED VAL ACTION

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT.NO.	EVENT DATE	SY S	CUM P	FAIL CODE	TYPE	CLASS	CUM PH	KEY	FAILURE MODE	FAILURE MECHANISM
W	IP2	022163	081778	K	RV	IC4		D			DISCREP BETW SPEC + AS SUPPLY PARAMETERS FOR RV	DESIGN ERROR, 3 IN, 1500 PSI PRESS RV
W	IP3	014604	042976	F	RM	VO3	S	D			INCR.T.VLV LINUP FOR TEST,CNTMNT SPRY ACCID.TURN ON	PERSONNEL ERROR
W	IP3	015134	061476	N	RM	B12		D			VALVE 056E WOULD NOT CLOSE	VALVE STEM HAD SLIGHT BOW
W	IP3	015576	081076	N	DV	F24	S	D			CONT.ROOM DAMPER "CM" DID NOT TRANSFER ON SIGNAL	MALFUNCTIONING RELAY IN SUPPLY LINE
W	IP3	015925	093076	K	UV	VO1	S	D			INADVERTENT CLOSURE OF RHR ISO VALVE	PERSONELL ERROR
W	IP3	016635	100276	L	RV	H00		U			RV-1836 LIFTED BELOW TS PRESSURE	UNKNOWN
W	IP3	016469*	121776	W	MV	B02	R	D	02		TWO-28IN MSIVS FAILED TO CLOSE	SHAFT BINDING DUE TO IMPROP ADJ OF GLAND
W	IP3	016717	011577	N	AV	D14		T			VALVE PCV-455B LEAKING EXTERNALY	VALVE PACKING FAILED
W	IP3	020434A	020378	N	UV	D14		T			VALVE 565C LEAKING EXTERNALY	PACKING FAILURE
W	IP3	020434B	020378	N	UV	D14		T			VALVE 571C LEAKING EXTERNALY	PACKING FAILURE
W	IP3	021368	050678	W	RM	A08		D			LP STM DMP VAL NO 3 FAILED TO OPEN FULLY	PLUG AND CAGE WAS SCORED
W	IP3	021703	060878	W	RV	A00		U			NO.5 RV ON NO.34 SG. OUTSIDE OF REQD. TOLERENCE	CAUSE UNKNOWN
W	IP3	021914*	070378	N	RM	B26	C	D	04		S/G SANP.VLVS 1223A,24A,25A,626A WOULDNT CLOSE ON	-N SIGNAL//FAIL.OF SNAP LOCK LIMIT SWITCHS
W	IP3	022410	082978	E	RM	B12		U			CONTROL VALVE LCV-1209B FAILED TO CLOSE	ACTUATOR FAILURE
W	IP3	022407	090378	H	UV	C12	R	D			BYPASS VAL FOR LOOP A ACCUMULATOR LEAKING	BALL VALVE WAS TIGHTENED
W	IP3	022404*	090878	N	UV	D14		T	02		ISO VALS 561A,561B LEAKING EXTERNALY	PACKING FAILURES
W	IP3	022463	091278	X	UV	DC0		U			MANIFOLD STOP VLV 561A LEAKING 8GRATED WTR.EXTERN.	NO CAUSE FOR LEAK SE GIVEN
W	IP3	022405	091278	H	UV	C12	R	D			BYPASS VAL FOR LOOP B ACCUMULATOR LEAKING	BALL VALVE WAS TIGHTENED
W	IP3	022875	100478	N	UV	D12		U			VALVE FM-1 LEAKING EXTERNALY	VALVE BODY RUPTURED
W	JF1	019363	081877	H	UV	D14		T			1A ACCUM.NITRO.SUP/VENT ISO.VLV LEAKING EXTERNALY	PACKING LEAK

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT.NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CON	MUM	KEY		FAILURE MODE	FAILURE MECHANISM
W	JF1	019699	111377	B	UV	D13	I						VALVE HV3226 LEAKING EXTERNALLY (STM. SUP. VLV)	LOWER SEAT GASKET BLCWN
W	JF1	019845	120277	K	RM	B24	T D						PRZ.SPRAY VLV. WOULD NOT CLOSE PROPERLY	VALVE CONTROLLER WAS OUT OF ADJUSTMENT
W	JF1	020287	011778	K	RM	B24	T D						PRZ.SPRAY VLV. WOULD NOT CLOSE PROPERLY	VALVE CONTROLLER WAS OUT OF ADJUSTMENT
W	JF1	020446	012178	L	RM	I06	D						VAL HCV-603A MECH STOP NOT REPLACED AFTER MAINT	ERROR IN TECH SPEC
W	JF1	021186	032078	W	RM	D24	S D						MSIV V002 FITTING ON AIR SUPPLY LEAKING	SOLDERED CONNECTION LOOSE
W	JF1	020993	032578	B	UV	V02	S D						MDAFP & TDAFP RECIRC BYPASS ISO VLVS OPEN	PERSONELL ERROR
W	JF1	021872	052778	N	RV	B12	D						B STEAM GEN SAFETY RV FAILED TO RESEAT	BROKEN LOWER ADJ RING LOCKING PIN
W	JF1	021975	071278	M	UV	V01	S D						TWO BORIC ACID TK SUPPLY VALS IN CLOSED POSTION	PERSONNEL ERROR
W	JF1	022633*	090978	B	RM	F24	S D 03						CONTROL WAS LOST ON FLOW CONT.VLVS 3228A,B,6C	DEFECTIVE RELAY IN TDAFP CONTROL CIRCUIT.
W	JF1	023152	091478	E	CV	E00	U						1B AIR COMPRESSOR RELIEF/CHECK VALVE LEAKED	CAUSE UNKNOWN
W	JF1	022629	091878	K	RM	V06	S D						RHR PUMP SUCTION VLV 8701A CLOSED WHEN REQ. OPEN	INADEQUATE PRCEEDURES
W	JF1	022988	100978	C	RM	F22	D						INST AIR PRESSURE CONTROL VALVE FAILED OPEN	DIAPHRAGM FAILED
W	JF1	023282	120678	H	MV	T02	D						T.S. REQUIRED BREAKER TO VALVES LOCKED OPEN	PERSONNEL FAILED TO LOCK BREAKERS OPEN
W	KE1	013963	010876	H	MV	F12	D						VALVE SI-28 DID NOT OPERATE	SCREW HOLDING TRIP LEVER BACKED OUT
W	KE1	014240	022076	F	RM	A01	D						VALVE ICS-58 FAILED TO OPEN(CONT.SPRAY DISCH. VLV)	VALVE MANUALLY TORQUED DOWN TOO TIGHT
W	KE1	014387*	031276	N	DV	B24	S D 02						DAMPERS ASV-50665 FAIL TO CLCSE ON S.I. SIGNAL	STICKY SOLENOID PILOT VALVES
W	KE1	015262	071576	Y	XV	V01	T D						MANUAL ISO.VLVS TO MONITORS R-11612 SHUT WHEN REQ-	-UIRED TO BE OPEN//PERSONNEL ERROR
W	KE1	015295	081376	N	UV	V01	S D						WASTE NEUT.DRN.VLV LEFT OPEN,ALLOW.RAD.RELEASE	PERSONNEL ERROR
W	KE1	015967*	092376	U	RM	F16	S D 02 Z						FEEDWATER ISOLATION VALVES FAILED TO OPERATE	CCMMAND/FAILED BF RELAY/NO SIGNAL
W	KE1	015968	092376	N	MV	A23	D						SERV WAT VAL FOR FAN COIL UNIT DID NOT OPEN	BROKEN TORQUE SWITCH

ALL VALVE EVENTS IN THE DATA FILE

V E N	P L A N T	C O N T. N O.	E V E N T D A T E	S Y S	C O M P	F A I L C O D E	T Y P E	C L A S S	C O M M P	K E Y	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
W	KE1	016975	011777	C	RM	B14		T			VALVE BT-3A FAILED TO CLOSE (BLOWDOWN ISO VLV)	OVERTIGHT PACKING
W	KE1	016789	011977	C	RM	VC1	S	D			CNTNMNT ISO-VALS LEFT OPEN	PERSONNEL ERROR, IMP. VAL. LINEUP
W	KE1	016906*	020377	C	RM	C25		T	04		EXCESS LEAKAGE THROUGH CNTNMNT ISO VLVS (FOUR)	FAILURE OF RUBBER VALVE SEATS
W	KE1	018046A	032177	C	RM	C12		D	03		EXCESS LEAKAGE THROUGH CNTNMNT ISO VALS (THREE)	VALVE STROKE ADJUSTED
W	KE1	018046B	032177	C	RM	C25		T			EXCESS LEAKAGE (INTERNAL) CNTNMNT ISO VLV	VALVE SEAT CLEANED
W	KE1	018046C	032177	C	RM	C12		D			EXCESS INTERNAL LEAKAGE CNTNMNT ISO VLV	VAL INTERNALS OUT OF ADJ
W	KE1	017824	052277	J	UV	V01	S	D			VAL ON B PUMP DISCH IN CLOSED POSITION	PERSONNEL ERROR / IMPROPER VLV LINE UP
W	KE1	019064	071677	N	UV	V01	S	D			PART. OPEN VALS IN DISCH PATH FROM WASTE NEUTR. TK.	PERSONNEL ERROR / IMPROPER VLV LINE UP
W	KE1	018652	072977	Y	XV	V01	T	D			MANUAL ISO. VLVS TO MONITORS R-11&12 SHUT WHEN REQ-	-UIRED TO BE OPEN//PERSONNEL ERROR
W	KE1	019312	100377	F	MV	F02		D			MAINT. MAN DEENERGIZED 2 SW VLVS, WHEN ONLY ALLOW. T-	-C DEENER. 1 VLV//PERSONNEL ERROR
W	KE1	019456*	102177	E	CV	EC4	C	D	02	V	REVERSE LEAK. PAST D.G. AIR COMP. CHECK VALVES	DESIGN PROB., REPLACED CHCK. VLVS. NEW STYLE
W	KE1	020479	020178	W	RM	B14		T			BLOWDOWN LINE ISO VLV FAILED TO CLOSE FULLY	DRY HARD PACKING
W	KE1	020787	022878	J	MV	B23		T			ISO VAL ON EXCESS LETDOWN HX WOULD NOT CLOSE	DIRTY CONTACTS ON TORQUE SWITCH
W	KE1	020788	030278	H	MV	A00	R	U			CNTNMNT SUMP ISO VAL WOULD NOT FULLY OPEN	CAUSE UNKNOWN
W	KE1	021012	032978	N	UV	V01	S	D			SAMPLE VALS FOR MONITOR R-19 IN CLOSED POSITION	IMPROPER VLV LIN UP / PERSONNEL ERROR
W	KE1	021077	040478	H	MV	A14	R	T			CNTNMNT SUMP ISO VAL WOULD NOT FULLY OPEN	VAL PACKING AT END OF USEFULL LIFE
W	KE1	021365	042378	L	UV	V06	S	D			RHR VENT VLV. OPEN, WHEN IT SHOULD HAVE BEEN CLOSED	DEFECTIVE PROCEDURES
W	NA1	021148	040778	N	RM	I04		D			TV-SS112A NEEDS DESIGN MOD TO REPLAC LIM SW	DESIGN ERROR
W	NA1	021152	041278	W	RM	B16	S	D			VALV-101C FAILED TO CLOSE REMCTELY	RELAY SCLENCID FOR VLV HAD AN OPEN COIL
W	NA1	021150	042878	H	RM	B00		U			STEAM DUMP VAL 408E STUCK OPEN FOLL. TRIP	CAUSE NOT GIVEN

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	S O S P	FAIL CODE	T V A S P H	DESCRIPTION	FAILURE MODE	FAILURE MECHANISM
M NAL	021502	051078	C UV	T02	D	TV-S112A WAS NOT TIMED PRIOR TO RETURNING TO SERV	MAINTENANCE PERSONNEL ERROR	
M NAL	021506	051478	B AV	V06	S D	AUX FEEDWATER VALS PCV-E2-159A,-159B IMP.-LINEUP	CHECKOFF SHEET DOES NOT LIST NORM VAL POS	
M NAL	021540*	052978	K XV	D14	T G2	VALVES 1-RC-77,1-FC-102 LEAKING EXTERNALLY	LEAKAGE THROUGH VALVE PACKING	
M NAL	022267	081078	C XV	T01	D	INSTRUMENT AIR VALVE NOT UNDER SUKMAIL AS REQD	OPERAT:CMS PERSONNEL ERROR	
M NAL	022269	081778	L MV	A14	T	VALVE MOVY-18088 FAILED TO OPEN DURING TEST	DRY VALVE PACKING CAUSED LIM SW TO TRIP	
M NAL	022270	081876	N UV	V01	T D	IMPROPER VLV LINEUP ON UNIT #2 CHILLED WTR-CHILLER	PERSONNEL ERROR	
M NAL	022569*	092778	C AV	B24	S D	CNTNMNT ISO VALVES TV-CC-102D,102F FAILED TO CLOSE	FAILURE OF SOLENOID SUPPLY VALVES	
M NAL	022938	092778	N RM	T02	D	AFTER MAINT,VLVS TV-80100A,84D,F NOT STROKE TIMED	MAINTENANCE PERSONNEL ERROR	
M NAL	022565	100478	B UV	V01	S D	IMPROPER VALVE LINEUP,AUX FEED PUMP TO A,B,C SYMGM	OPERATING PERSONNEL ERROR	
M NAL	022766	100978	N XV	D18	T	STEAM VALVE L-MS-120 LEAKING EXTERNALLY	DEFECTIVE PIPING JOINT BETW VALVE + PIPE	
M NAL	022933	110178	N RM	C13	T	MAIN STEAM TRIP VALVE 1-TV-MS-111A LEAKING THRU	DETERIORATED INTERNAL GASKET	
M NAL	022935	110778	N MV	B23	T	MOV-QS162A FAILED TO CLOSE DURING TEST	DIRTY CONTACTS ON TORQUE SWITCH	
M NAL	023329	122678	M XV	D00	U	ROOT ISOLATION VALVE 1-MS-4 LEAKING STEAM(REF LEG)	CAUSE NOT STATED	
M PRI	013955	010976	E DV	A10	T	OUTSIDE AIR TO DIESEL ROOM DAMP FAILED TO OPEN	ICE BUILDUP ON PARTS OF DAMPER	
M PRI	014001	012176	R DV	F12	R D	DAMPER FOUND IMPROPERLY POSITIONED	BINDING SHAFT BUSHING/POSS LUBRIC PROBLEM	
M PRI	014758	051376	L MV	A23	R T	MOV FAILED TO OPEN DURING TEST (MV-32069)	TORQUE SW PROBLEM/ADJUSTED IT(LIMITTORQUE)	
M PRI	015215	062976	S RM	A12	D	PUMP DISCHARGE VALVE FOUND CLOSED AND INOPERABLE	PIN FELL OUT OF ROTATE OPERATOR LINKAGE	
M PRI	015919	091076	F XV	V02	S D	CONTAIN.-TO-ANNULUS DIFFER.PRESS.SWITCH, VLVED OUT-	-BY MISTAKE//PERSONNEL ERROR	
M PRI	016205	102476	N UV	V01	S D	INCORRECT VLV LINEUP MADE ON SPENT FUEL PIT	PERSONNEL ERROR	
M PRI	017487	031677	C RM	B22	T	VACCUUM BREAKER ISOLATION VALVE FAILED TO CLOSE	DIAPHRAGM DETERIORATED IN VALVE	

ALL VALVE EVENTS IN THE DATA FILE

VE N	PL ANT	CONT. NO.	EVENT DATE	SY S	COM P	FAIL CODE	TY PE	CL ASS	CON NUM PH	KEY	FAILURE MODE	FAILURE MECHANISM
W	PR1	017488*	032477	C	CV	E10	C	T	06	Z	LEAKRATE TEST SHOWS 3 PENETRATIONS LEAKING THRU	FOREIGN MAT ON SEATING SURFACES
W	PR1	017488A	032477	C	RM	C25	C	T	02	V	PURGE SUPPLY VALVES(BUTTERFLY)/LEAKED THRU	SEAT PROBLEM/REPLACED SEATS
W	PR1	018341	061877	B	MV	F20				D	AUX FEED PUMP DISCHARGE VALVE FAILED TO OPERATE	OPEN LEAD IN OPERATOR/LIMITORQUE SMB-000
W	PR1	019859	070177	R	DV	F12	R			D	DAMPER FAILED TO OPERATE DURING TEST/COUPLING PROB	PINS SHEARED/RAMCON ACTUATOR TO DAMPER
W	PR1	018808	072677	R	DV	F12	R			D	DAMPER FAILED TO OPERATE/ACTUATOR FAILED(RAMCON)	REPLACED BOTH ACTUATORS(BINDING DAMPER ?)
W	PR1	020123	120977	C	RM	A16	S			D	#11 CONT.VAC.DRR.ISO.VLV. FAILED TO OPEN ON DEMND	FAILURE OF BARTON DIFFER.PRESS.SWITCH
W	PR1	020735	020478	G	XV	V01	S			D	PUMP SUCTION VALVE FOUND NEARLY CLOSED	PERSONNEL/VALVE LINEUP IMPORTANCE STRESSD
W	PR1	021640	051678	R	DV	F12	R			T	DAMPER FAILED TO OPERATE AS REQUIRED	RAMCON NC.R-260 ACTUATOR FAILED/LUBRICNT?
W	PR1	021704	062278	E	XV	V01	S			D	ROOT VALVE ON D/G DIESEL OIL TANK LEVEL INST CLOSE	PERSONNEL/ LOCKWIRED OPEN FROM NOW ON
W	PR2	014463	033176	S	XV	V01	S			D	MANUAL VALVE SECURED WHICH VIOLATED LOOP AVAILABLT	PERSONNEL ERROR/TECH SPECS INCONSISTENT
W	PR2	017894	042276	S	RM	T01				D	CCOL.WTR.SYS.ISO.VLVs. TEST NOT PERF.IN REQ.TIME -	-LIMIT//PERSONNEL ERROR
W	PR2	015335	080676	C	RM	C25				T	NITROGEN SUPPLY VALVE CV-31554/EXCESSIVE LEAKAGE	NEW SEAT AND GASKETS WERE INSTALLED
W	PR2	016438*	100676	N	RM	F06	D	02		V	POST-LOCA HYDRO.CONT.SYS.VLVs.LEFT INCAPABLE OF B-	-EING CLOSED IN 1 MIN.//DEFECTIVE PRCCD.
W	PR2	016284	102576	H	MV	A23	R			D	MCV/BORIC ACID SUPPLY MV-32184 FAILED TO OPEN	TORQUE SW MALFUNCTIONED/WAS REPLACED
W	PR2	016284A	102576	H	RM	800				U	HOT LEG SAMPLE LOOP VLV CV-31807 FAILED TO CLOSE	UNKNOWN/RETEST WAS OK
W	PR2	016354*	112276	C	RM	C12	D	03			VALVES IN 3 PH SHOWED EXCESSIVE LEAKAGE/TESTING	1RFPLACE STEM/SEAT2JAMMED NUT3MALADJUSTED
W	PR2	016945	010877	H	MV	T01				D	4 SAFETY INJ VALVES NOT TAGGED AS PER TECH SPECS	PERSONNEL/HANDWRITTEN LINE-UP SHEET USED
W	PR2	016947	011177	C	RM	C25				D	CONTAINMENT ISOLATION VALVE CV-31349 LEAKING THRU	GALLED CAGE AND PLUG STEM/REPLACED SAME
W	PR2	017889	051977	B	XV	V06	S			D	PUMP INLET VALVE FOUND NEARLY SHUT/AUX FEED INLET	POSITION REQUIREMENT WILL GO ON CHECKLIST
W	PR2	019284	100477	H	MV	A00				U	SAGETY INJ PUMP SUPPLY VLV MV-32183 FAILED TO OPEN	UNKNOWN/ STEM WAS LUBRICATED/NEXT TRY CK

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	COMP	FAIL CODE	TYPE	CLASS	CON	NUM	VALV	FAILURE MODE	FAILURE MECHANISM
W PR2	019604	111377	C CV E00		U					CONTAINMENT ISOL CHECK VALVE 2VC-8-5 LEAKING THRU	UNKNOWN/VALVE WAS REPLACED
W PR2	020125	122377	B MV A16	S D						#22 TURB.DRIVEN AFM PUMP STM.SUP.VLV.FAILED TO OP-	-EN//MOTOR LEAD GROUNDED TO JUNCTION BOX
W PR2	020473	012878	R UV F12		D					DURING REPACKING VALVE STEM FOUND BROKEN(MV-32154)	PARTS FAILED FOR UNKNOWN REASON
W PR2	023221	112878	L RM D14		U					RHR HX OUTLET VALVE CV-31239 LEAKING EXTERNALLY	DETERIORATION OF PACKING
W PR2	023222*	112878	C RM C25	B U 02						CUTER CONT. EXH E SUPPLYS(25A625B) LEAKING THRU	SEATS NOT ADJUSTED PROPERLY(RECURRING)
W PT1	013945	010876	B MV F20		D					MCV-4020 AUX FEED PUMP DISCHARGE FAILED STUCK/TEST	VALVE OPERATOR RING WORN/GEAR REPLACED
W PT1	014097*	010876	C RM C12		D 09					NINE VALVE FAILURES/INTERNAL/EXTERNAL LEAK/TESTING	LOOSE BODY TO BONNET/IMPROPER SEATING
W PT1	014949	061676	S MV A23	R T						MCV-SW2869 FAILED TO OPEN ELECTRICALLY DURING TEST	TORQUE SW CORRODED FOLLOWING WETTING
W PT1	017855	022677	W AV B00		U					MAIN STEAM STOP VALVE FAILED TO CLOSE ON SIGNAL	UNKNOWN/CONSIDERED RANDOM/30 IN AIR-OP CV
W PT1	017805	043077	N DV F24	T D						CONTROL RM VENT VALVE(DAMPER) FAILED TO OPERATE	FOREIGN MATTER IN AIR REGULATOR
W PT1	017864	052877	N DV F24	T D						CONTROL RM VENT VALVE(DAMPER) FAILED TO OPERATE	FOREIGN MATTER IN AIR REGULATOR
W PT1	018192	061577	S MV B23	R T						MCV-2816 FAILED TO CLOSE DURING TEST SIGNAL	TORQUE SW READJUSTED/POSSIBLE OVER TORQUE
W PT1	019498	103177	S UV V01	S D						VALVE LINE-UP NOT PROPERLY MADE/RADWASTE DUMP MADE	PERSONNEL/OPERATOR FAILED TO CLOSE VALVE
W PT1	020062	122177	S MV A23	R T						MCV-2907 FAILED TO OPEN DURING TESTING	TORQUE SW SETPOINT WRONG/ADJUSTED
W PT1	020489	020478	N XV G10		U					GLOBE VALVE USED TO CONTROL AIR FLOW PLUGGED	BLEW WATER OUT / READJUSTED FOR AIR FLOW
W PT1	021627	061478	Y UV V01	S D						IMPROPER VALVE LINE-UP DISCOVERED/PCSS RAD RELEASE	PERSONNEL ERROR
W PT2	014158	022076	C AV C10	R T						LRT BETWEEN PURGE SUPPLY VAVES SHOWED INTERNAL LEAK	DIRT IN VALVE/CLEANING STOPPED LEAKAGE
W PT2	014389	030876	C CV E25	R T						CV 2-755A IN CCW SYSTEM FAILED LEAKRATE TEST	DIRT ON SEATING SURFACES/LAPPED SURFACES
W PT2	014348	031576	N MV A03		D					CONTAINMENT SPRAY 2MCV-8608 FAILED TO OPEN / TEST	PERSONNEL ERROR/TERMINAL SLIDER OPEN
W PT2	014491	042376	C RM C10		T					CONTAINMENT SUPPLY VALVE 2CV-3245 LEAKED / TEST	DIRT ON MATING SURFACES OF BUTTERFLY VALV

ALL VALVE EVENTS IN THE DATA FILE

<u>VEN</u>	<u>PLANT</u>	<u>CONT.NO.</u>	<u>EVENT DATE</u>	<u>SYS</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CONSUM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
M	PT2	015186	070176	B	MV	A23	R	T			MOV-2MS-2019/STEAM TO AUX FEED PUMP FAILED TO OPEN	TORQUE SW SETPOINT CAUSED TIGHT CLOSING
M	PT2	017035	012777	F	MV	F16	S	D			CONT.SPRAY PMP.DISCHG.VLV.2-860B INOPERABLE	VALVE OPERATOR BREAKER WAS OPEN
M	PT2	017404	030977	C	CV	E25	R	T			4 IN CV IN CCW SYSTEM FAILED LEAKRATE TEST	SEAT/DISC PROBLEM/PROB DUE TO NORMAL WEAR
M	PT2	017721	041977	N	RM	C10		T			CONTAINMENT ISOLATION VALVE LEAKED THRU	SLUDGE ON SEAT OF COPEX-VULCAN MCD F VALV
M	PT2	017806	042077	G	RV	C00	R	U			LEAKAGE THRU 3/4 INCH DISCHARGE RELIEF VALVE (PUMP)	UNKNOWN/DIMINISHED WITH OPERATION
M	PT2	017859	050377	G	RV	C00	R	U			LEAKAGE THRU 3/4 INCH RELIEF VALVE/PUMP DISCHARGE	UNKNOWN/VALVE WAS REPLACED
M	PT2	020355	050877	C	AV	B24	T	D			ISOL VALVE FAILED TO CLOSE/COMMAND FAILURE	3/4 SOLEN VAL FAILED DUE TO WEAK SPRING
M	PT2	018572	072877	H	MV	V04	S	D			MOV FOUND IN INTERMEDIATE POSITION/SINCE PREV TEST	PERSONNEL FAILED TO ASSURE FULLY OPEN
M	PT2	019446	101777	X	XV	V01	S	D			ISOLATION VALVE FOR PRESS TRANSMITTER FOUND SHUT	PERSONNEL/ALSO NOT ON ANY CHECK-LIST
M	PT2	021766	061678	F	MV	F23		D			CONT SPRAY VALVE(MOV) FAILED TO OPERATE FOR TEST	SMB-00 LIMITORQUE SW FAULTY/REPLACED
M	PT2	022841*	091378	G	RV	C00	C	U	02		2-CROSBY 3/4 INCH RELIEF VALVES LEAKED THRU	UNKNOWN/ VALVES WERE REPLACED WITH SPARES
M	PT2	022842	092878	K	AV	B24	S	D			PZR.SPRAY VLV. 4318 WOULD NOT SHUT FULLY	FAILURE OF ELECTRO-PNEUMATIC TRANSDUCER
M	PT2	023123	120978	X	XV	V02	S	D			LOOP A TEMP DETECTOR MANIFOLD VALVED CLT	PERSONNEL ERROR(TOP BY SAFETY CHANNELS)
M	RG1	013995*	011176	C	AV	C25	B	U	02		CV PURGE SUPPLY&EXHAUST VALVE LEAKED THRU/TESTING	RUBBER SEAT 2INLS REALIGNED/LOW TEMP PROB
M	RG1	014168	020776	C	AV	B16	S	D			SUMP A DISCHG. ADV FOR CONT.ISO.WOULD NOT CLOSE	FAILURE OF MG-6 RELAYS IN "AM SAFEGUARDS.
M	RG1	018076*	020776	C	AV	C00	B	U	02		CV PURGE EXH & SUP VALVES LEAKED THRU DURING TEST	UNKNOWN
M	RG1	018076A	020776	C	MV	C00		U	02		Two MOV (8136814) LEAKED THRU DURING LEAK TEST	UNKNOWN
M	RG1	018076B	020776	C	CV	E00		U			CHECK VALVE (1713) REVERSE LEAKAG / TESTING	UNKNOWN
M	RG1	017899	022876	C	AV	B12		D			AD BUTTERFLY VALVE FAILED TO CLOSE FULLY	SCORED PISTON SHAFT/EXCESSIVE FRICTION
M	RG1	018247	071377	H	CV	E00		U			SI PUMP 1A CHECK VALVE REVERSE FLOW TO RWST	UNKNOWN/ VELAN 3 INCH 1500 PSIG CHECK VAL

ALL VALVE EVENTS IN THE DATA FILE

W E N	P L A N T	CONT.NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O N T R O L N U M B E R	K E Y	FAILURE MODE	FAILURE MECHANISM
W	RG1	018785*	02277	N	UV	C00	U	02			LEAKAGE THRU AT LEAST TWO VALVES DILUTED NAOH	UNKNOWN
W	RG1	021334	041978	G	UV	V01	S	D			OPERATOR OPENED WRONG VALVE/DECREASE BCRON CONCENT	PERSONNEL ERROR/PROCEDURE CHANGED
W	R02	014822	012876	H	CV	E00	U				B ACCUMULATOR CHECK VALVE 875E LEAKED THRU	REASON NOT STATED
W	R02	015570	061776	B	RM	A04	R	D			VALVE V2-16A FAILED TO OPEN	LIMITORQUE OPER FAILED TO OPEN VALVE
W	R02	016936	012577	G	UV	V02	S	D			IMPROPER VLV LINEUP (BORIC ACID STORAGE TANK)	PERSONNEL ERROR
W	R02	017540	032677	B	RM	A00	U				VALVE V2-14A FAILED TO OPEN	INCREASE IN TENSION BETWEEN SEATING SURF.
W	R02	022627	042277	N	LV	V01	S	D			COMPRESSED AIR ISO VAL CLOSED,S.B.OPEN	PERSONNEL ERROR
W	R02	019343	061077	C	RM	C07	R	T			CV PURGE OUTLET INNER VALVE NOT OPERABLE	EXCESSIVE INTERNAL LEAKAGE THROUGH VALVE
W	R02	019344	061977	N	RM	F07	R	T			CV PURGE OUTLET INNER VALVE INOPERABLE	NORMAL WEAR TO RUBBER SEAT
W	R02	019350	081677	B	MV	A20	D				VALVE V2-16B FAILED TO OPEN AS REQUIRED	LIMITORQUE VALVE OPERATOR FAILED
W	R02	019351	081777	B	CV	E05	D				DISCH CK VAL FOR AUX FEED PUMP,C STM GEN FAILED	CK VAL HAS BURR ON HINGE JOINT,OPEN POSIT
W	R02	019352	081777	B	MV	A20	R	D			VALVE V2-16A FAILED TO OPEN	LIMITORQUE VALVE OPERATOR FAILED
W	R02	019867	102677	L	MV	A20	U				RHR VALVE 759B FAILED TO OPEN	MOTOR WINDINGS WERE SHORTED
W	R02	020653	120377	L	MV	A16	S	D			RHR VALVE 744B FAILED TO OPEN	CIRCUIT THERMAL OVERLOAD DEVICE TRIPPED
W	R02	022626	122177	B	MV	A12	R	T			AUX FEED PUMP DISCH VAL,V2-16A FAILED TO OPEN	EXCESS SEATING PRESS CAUSED BY OVERHEAT
W	R02	020181	122277	B	RM	C19	T				VALVE V2-14C LEAKING INTERNALLY / NOT SHUT FULLY	INSUFFICIENT VALVE STEM LUBRICATION
W	R02	020323	010478	S	MV	F23	U				VALVE V6-33C FAILED TO FUNCTION PROPERLY	TORQUE SWITCH MALFUNCTIONING
W	R02	020322	011178	L	MV	F13	T				VALVE RHR-744B FAILED TO FUNCTION PROPERLY	OIL LEAK INTO MOTOR CAUSING SHORT
W	R02	021616*	050978	L	UV	C00	R	U	02		INLET VALVES SI-867 A E B (BIT) LEAKING INTERNALLY	CAUSE NOT STATED
W	R02	021414	051178	S	MV	B16	S	D			VALVE V6-12D FAILED IN OPEN POSITION	BLOWN FUSE ON MTR OPERATOR CONTROL PWR

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SYMS	COMP	FAIL CODE	TYPE	CLASS	CON	WORK	FAILURE MODE	FAILURE MECHANISM
W RO2	021748*	061378	L UV	C00	R U	02				INLET VALVES SI-867 A & B (BIT) LEAK. INTERNALY	CAUSE NOT STATED
W RO2	022523	082578	S MV	A26	D					VALVE V6-12D FAILED TO OPEN	LIMIT SWITCH FAILURE
W RO2	022681	100378	C RM	C25	T					42IN BUTTERFLY VAL LEAKING PAST SEAT	NORM WEAR OF NORDEL RUBBER SEAT
W RO2	023053	110978	N XV	V06	S D					AIR SUPPLY VALVE FOUND OPEN WHEN REQUIRED SHUT	DEFICIENT OPERATING PROCEDURE
W RO2	023370	121778	W AV	F02	D					MSIV C STEM FAILED TO TRAVEL FULL TEST DISTANCE	PERSONNEL ERROR (MALADJUSTED PACK GLAND)
W SA1	016738	122976	W HV	A24	T D					MSIV (12MS167) FAILED TO OPEN / COMMAND	OIL LINE TO OPERATOR FRACTURED
W SA1	016939*	011077	H MV	F20	D 02					MTR. BRKRS. TO VLVS 3SJ162 TRIPPED WHEN VLVS WERE OPENED	BOTH MTR. OPERATORS HAD FAILED
W SA1	016940*	011677	W HV	F24	T D 02					TWO HYDRAULIC MSIV WOULDNT OPERATE / COMMAND FAULT	HYDRAULIC LINES TO VALVES RUPTURE / FITTING
W SA1	017125	020177	N UV	B12	D					SERVICE WATER VALVE (12 SW223) FAILED TO CLOSE	BROKEN BOLT ON ACTUATING ROD
W SA1	017199*	021077	W UV	C10	D 02					INTERNAL LEAKAGE THRU 2 MS VALVES	UNKNOWN / CAUSED SEC FAILURE 017199A
W SA1	017199A	021077	W RM	G24	S D					MSIV FAILED TO OPERATE (IT DRIFTED SHUT) COMMAND	EXCESS DIFF PRESS ON PISTON OF MSIV
W SA1	017198	021177	W AV	V02	S D					#12 S/G MSIV WAS CLOSED WHEN IT WAS REQUIRED TO REMAIN OPEN	PERSONNEL ERROR (MAINTENANCE)
W SA1	021374*	040477	Y XV	D14	T 02					13 & 14RC20 LEAKING EXTERNALLY (RTD BYPASS VALVES)	PACKING LEAKAGE
W SA1	021373*	041177	K RM	A26	R T 02					SAMPLE ISO. VLVS 1SS1C7E104 WOULD NOT OPEN	VLV. POSITION LIMIT SWITCHS. CUT OF ADJUST.
W SA1	017699*	042977	N RM	F24	S D 02					TWO VALVES FAILED TO OPERATE (IN REQUIRED TIME)	SOV BLEED-OFF UNDERSIZED / DESIGN PROBLEM
W SA1	017701	042977	C MV	A01	D					MC CONT. ISOLATION VLV (1CV68) FAILED TO OPEN	PERSONNEL / VALVE HAD BEEN JAMMED SHUT
W SA1	017787	050777	K XV	C00	U					LEAKAGE THRU EQUAL VALVE ON DP TRANSMITTER (LEVEL)	UNKNOWN
W SA1	017785	051277	N RM	C12	R D					SPRAY VALVE (1PS3) LEAKED THRU / PRESS DECREASED	VALVE OPERATOR ADJUSTMENT PROBLEM
W SA1	017788*	051977	Y XV	D14	C T 02					TWO MANUAL VALVES (1PS24 / 1PS28) / EXTERNAL LEAKAGE	LEAKS PAST PACKING / BACKSEATED TEMPORARILY
W SA1	018248	070877	K XV	D14	R T					EXTERNAL LEAKAGE ON VALVE 1CV75	LEAKAGE PAST STEM PACKING

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	SYSTEM	COMP	FAIL CODE	TYPE	CLASS	CN	KEY	FAILURE MODE	FAILURE MECHANISM
W SA1	018800*	073177	N RM	C12	R D	03				SPRAY VALVES (1PS1/2/3) LEAKED THRU	VALVE OPERATOR ADJUSTMENT PROBLEM
W SA1	019250	091277	R RM	A25		T				VALVE (11CW58) WOULD NOT OPEN DURING ROUTINE TEST	BINDING OF DISC ON RUBBER SEAT GASKET
W SA1	019606	102777	L UV	V01	S D					IMPROPER VLV LINEUP ON COMP.COOL.WTR.TC RHR PUMP	PERSONNEL ERRCR
W SA1	019888*	110277	N UV	F02	C D	10				VALVE INTERNALS LEFT OUT IMPLEMENTING ENG-PR CDF19	PERSONNEL ERRCR DURING MAINTENANCE
W SA1	019609*	110877	H UV	D14	C T	02				TWO VALVES (136145J143) (SI) LEAKED EXTERNALLY	PACKING FAILED
W SA1	021910	052378	H MV	A20		D				MOV 15J1 (HP15) FAILED TO OPEN DURING TEST	WINDING FAILED/INCORRECT MOTOR SIZE/PERSH
W SA1	022161	061578	B RM	F00		U				AUX FEED MAKE-UP VALVE (1DR6) FAILED TO OPERATE	UNKNOWN
W SA1	022425	082278	C MV	A20		U				MOV (1CC190) FAILED TO OPEN	MOTOR OPER FAILED / SERVICE H2O FLOODED
W SA1	022422	082478	B AV	A12		D				AUX FEED PUMP STEAM VLV (1SM132) FAILED TO OPEN	STEM WAS FOUND DISENGAGED FROM ACTUATOR
W SA1	022720	092478	C MV	B16	S D					MOV(1CC131) FAILED TO CLOSE / TEST/COMMAND FAULT	CONTACTS FAILED IN CONTROL POWER CIRCUIT
W SA1	022873*	110678	F RM	G16	S D	02	V			SERVICE H2O VALVES FOUND TRIPPED	INADVERTANT TRIP SIGNAL, DESIGN PROBLEM DT
W SA1	023317	121178	N SV	A21		U				SOV 15SW57 FAILED TO CONTROL SER H2O FLOW	SOLENOID COIL OPEN CIRCUIT
W S01	018009	041777	K XV	D14		T				LCCP RCP SEAL VALVE (FCV-11150) LEAKED EXTERNALLY	EXCESSIVE LEAKAGE PAST PACKING
W S01	020609	013078	F RM	B00		U				CONT SPRAY VLV (CV-517) FAILED TO CLOSE FOR TEST	UNKNOWN/POSSIBLE LUBRICATION PROBLEM
W S01	021207	041878	H MV	F12		D				MOV-850C FAILED TO OPEN IN REQUIRED TIME / TESTING	SHAFT DISTORTED/PROB DUE TO EXCESS TORQUE
W S01	022336	081878	B HV	F16	S D					VALVE OPENED ACCIDENTLY DURING CIRCUIT MAINTENANCE	SIGNAL TC VALVE/COMMAND FAULT/MAINTEN
W S01	023179	120578	N UV	V01	S D					RECIRC VALVE ON HYDRAZINE PUMP LEFT OPEN INADVERT	PERSONNEL ERRCR
W S01	014871	031876	B MV	A16	S D					AUX.FEEDWTR.PUMP DISC.VLV.MOV-FW-151A FAILED TO O-	-PEN//TIMING RELAY FAILURE
W S01	014870	032676	G UV	C22	R D					DV 1-CH-85 RUPTURES DIAPHRAM/LEAKAGE THRU VLV	GRINNEL DIAPHRAGM FAILED/NORMAL WEAR
W S01	014868	042976	G MV	B23		U				MOV (1381) FAILED TO CLOSE	TORQUE SW CONTACT PROBLEM

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT.NO.	EVENT DATE	SY S	COMP	FAIL CCODE	TYPE	CLASS	CONTR	KEY	FAILURE MODE	FAILURE MECHANISM
W	SU1	015522*	070276	H	CV	EG0	U	02			TWO CHECK VLV (1-SI-128/130) LEAKED THRU	UNKNOWN
W	SU1	015959	082376	G	UV	C22	R	D			DIAPHRAGM VALVE (1-CH-125) LEAKED THRU EXCESSIVELY	RUPTURED DIAPHRAGM/GRINNEL/NORMAL WEAR
W	SU1	015958	090976	H	UV	D00	U				EXTERNAL LEAKAGE OF NITROGEN FROM ST VALVE HCV1549	BODY TO BONNET LEAK/UNKNOWN CAUSE OF LEAK
W	SU1	016202	100576	G	MV	F20	T				CHEM ADDITION MOV (MOV-CS-102B) FAILED TO OPERATE	SHORTED MOTOR/CONTACTS CORRODED
W	SU1	017928	101876	J	MV	B16	S	D			MOV-CW-100A FAILED TO CLOSE ON AUTO SIGNAL	LOOSE TERMINAL SCREW AT BREAKER
W	SU1	016254*	102676	N	DV	B16	S	D	02		TWO CONTROL RM DAMPERS FAILED TO CLOSE DURING TEST	COMMAND/RELAY STUCK IN ENERGIZED POSIT
W	SU1	016882	111376	K	RV	A00	R	U			PRESS SAFETY VLV (SV1551B) OPENED AT HI PRESS	UNKNOWN/ "SETPPOINT DRIFT" UP
W	SU1	016882A	111376	K	RV	H00	R	U			PRESSURIZER SAFETY VLV (SV1551A) PREMATURE OPEN	UNKNOWN/ "SETPPOINT DRIFT" DOWN
W	SU1	017656*	012077	W	RV	A00	R	U	02		SV-MS-101B AND 102B FAILED TO OPEN AT SETPOINT	UNKNOWN/"SETPPOINT DRIFT"
W	SU1	017654*	012577	N	RM	B00	R	U	02		TWO SAMPLE SAVES (TV-SS-106A/106B) FAILED TO CLCSE	UNKNOWN/COLD SHUTDOWN NEEDED FOR MAINTEN
W	SU1	017052*	012677	G	UV	C22	R	D	02		TWO DIAPHRAGM VALVES (1-CH-83/95) LEAKING THRU	EXCESSIVE DIAPHRAGM WEAR/OVERTIGHTENING??
W	SU1	017217	021577	W	RV	H00	R	U			MS SAFETY VALVE (SV-MS-101A) PREMATURELY OPENED	UNKNOWN/SETPPOINT DRIFT OF TORQUE LIMITOR
W	SU1	017260	021977	G	MV	F23	D				CHEM ADDITION MOV (GS-102A) FAILED TO OPERATE	TORQUE SW FAILED TO DEENERGIZE MOTOR
W	SU1	017218	022077	G	UV	C22	R	D			DIAPHRAGM VALVE (1-CH-98) LEAKING THRU	EXCESS DIAPHRAGM WEAR/POSS OVERTIGHTENING
W	SU1	018930	082377	K	XV	D00	U				VALVE 1-RC-15(RTD BYPASS)LEAKING/LEAKAGE > 1 GPM	UNKNOWN/BACKSEATED VALVE TO CORRECT LEAK
W	SU1	020815	030578	S	UV	G09	R	T			ISOLATION VALVE ON COOLER (1-SW-E-18) PLUGGED	DISC SEPARATED FROM STEM/CORRODED STEM
W	SU1	021132	040778	G	UV	D00	U				DIAPHRAGM VALVE 1-CH-93 DEVELOPED EXTERNAL LEAK	UNKNOWN/BODY TO BONNET LEAK
W	SU1	021294	042378	S	MV	B16	S	D			CONDENSER OUTLET MOV (CW-100A) FAILED TO CLOSE	COMMAND FAULT/WIRE DISCONNECTED/PERSONEL
W	SU1	021295	042478	W	RM	B00	U				MAIN STEAM TRIP VALVE B FAILED TO CLOSE	UNKNOWN/VALVE ACTUATOR TYPE UNKNOWN ALSO
W	SU1	021732*	052878	P	UV	I06	B	D	02	V	PROCEDURAL DISCREPANCY ABOUT WHAT LUBRICANT TO USE	FOREIGN MATERIAL ON VALVE SEAT SURFACES

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	STATUS	COMP	FAIL CODE	INSTRUMENT	CONTROL ROOM	KEY	FAILURE MODE	FAILURE MECHANISM
W	SU1	021802	062278	L	MV	AG2	D			MOV-RH-100 FAILED TO OPEN	MAINT ERROR/STEM WAS NOT ENGAGED TO DISC
W	SU1	021900*	070578	W	RV	A00	R	U	02	RV'S (SV-MS-101A/105B) FAILED TO OPERATE +/- 3X	UNKNOWN/*SETPOINT DRIFT*
W	SU1	023131	072678	H	RV	H00	U			HYDRO TEST PUMP DISCHARGE RV PREMATURELY OPENED	UNKNOWN/VALVE WAS REPLACED AND CHECKED OK
W	SU1	022954	111778	N	XV	VC2	S	D		3 VALVES CLOSED WHEN REQ OPEN(CLOSED TO STOP LEAK-	-RAD MONITORING LOST)//PERSONNEL ERROR
W	SU1	023136	112978	G	XV	V01	S	D		VALVE MISALIGNMENT ON BORIC ACID TRANSFER	PERSONNEL ERROR
W	SU1	023135	120478	S	XV	G09	T			SEAL COOLER INTAKE GATE VALVE PLUGGED(GATE SEPARAT	--ED FROM STEM//CORROSION OF STEM
W	SU2	014194	020476	W	RM	B12	D			MAIN STEAM TRIP VALVE (TV-MS-201A) FAILED TO CLOSE	SHAFT MISALIGNED IN STUFF BOX/DISC BOUND
W	SU2	017920	040976	N	RM	B00	R	U		SAMPLE VALVE (TV-SS-201A) FAILED TO CLOSE	UNKNOWN/TESTED SAT BEFORE MAINT DONE
W	SU2	014843	041276	N	MV	F20	R	T		CONDENSER OUTLET MOV-CW-200A FAILED TO OPERATE	OPERATOR PROBLEM/IT CONTAINED WATER
W	SU2	014844	042276	S	KY	B23	T			SERVICE H2O MOV-SW-202B FAILED TO CLOSE / TEST	TORQUE SW CONTACTS WERE CORRODED
W	SU2	015524	060776	N	MV	A00	U			CHEMICAL ADDITION MOV-CS-202B FAILED TO OPEN /TEST	UNKNOWN
W	SU2	015525	061476	N	MV	F00	R	U		CONDENSER OUTLET MOV-CW-200B FAILED TO OPERATE	UNKNOWN
W	SU2	015526	061576	L	MV	F12	D			LPIS MOV-2062B FAILED TO OPERATE FROM CONSOLE	THERMAL OVERLOAD DUE TO VALVE PLUG BIND
W	SU2	015529*	081376	G	CV	E00	U	02		TWO CHECK VLVS (2-SI-145/147) LEAKING THRU	UNKNOWN
W	SU2	015962	082076	H	UV	V01	S	D		OUTSIDE ISOLATION VALVE FOUND OPEN/NORMALLY CLOSED	PERSONNEL/FAILED TO FOLLOW ADMIN CONTROLS
W	SU2	016884	123076	G	MV	C00	U			VALVE IN BORON SYSTEM LEAKING THRU REDUCING PPM	UNKNOWN
W	SU2	017396	030977	N	MV	B23	R	D		CIRC H2O OUTLET MOV-CW-200D FAILED TO CLOSE	TORQUE SWITCH PROBLEM/JAMMED/ADJUSTED IT
W	SU2	018876	081577	G	UV	C22	R	D		DIAPHRAGM VALVE (1-CH-144) LEAKING THRU	CRACKED DIAPHRAGM ON GRINNEL VALVE
W	SU2	019109*	091077	W	RV	A00	R	U	05	SV-MS-201A,201B,201C,202B,202C FAILED TO OPERATE	UNKNOWN/DRIFTED +/-OR- 3X FROM SETPOINTS
W	SU2	019211*	091077	N	RM	B12	R	D	02	SAMPLING VALVES (TV-SS-206A/201B) FAILED TO CLOSE	OPERATOR LINKAGE NEED ADJUSTMENTS

ALL VALVE EVENTS IN THE DATA FILE

<u>EVENT</u>	<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SYST</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON</u>	<u>MUM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
W	SU2	019212*	092077	K	RV	H00	R	U	03			3 PRESSURIZER SAFETY VALVES OPENED PREMATURELY	UNKNOWN/PROB WIDE VARYING TEMPLENVIROMNT
W	SU2	019478*	101177	F	MV	F20	C	D	04			4 MOV5 IN SERVICE H2O SYS FAILED TO OPERATE	PIT CONTAINING THEM HAS FLOODED
W	SU2	019478A	101177	S	XV	V01	S	D				TWO DRAIN VALVES LEFT OPEN AT END OF MAINTENANCE	PERSONNEL ERROR/CAUSED FLOODED PIT ABOVE
W	SU2	019565	102977	G	UV	G10		T				NO FLOW COULD BE ATTAINED THROUGH FCV-2113A	BORON CRYSTALIZATION ON VALVE SEAT
W	SU2	019566*	103177	G	MV	C00	R	U	02			MOV-2867C/D LEAKED THRU/BIT ISOLATION VALVES	UNKNOWN/RECURRING
W	SU2	019744	110877	H	CV	E00		U				CHECK VALVE 2-SI-127 LEAKING THRU	UNKNOWN
W	SU2	019743*	110977	G	MV	C00	R	U	02			MOV-2867C/D LEAKED THRU / BIT ISOLATION VLVS	UNKNOWN/RECURRING
W	SU2	019752	111477	C	RM	B04	R	D				SAMPLING VALVE TV-SS-202A FAILED TO CLOSE	DESIGN DEFICIENCY/CLOSING SPRING TOO WEAK
W	SU2	020158	010878	N	MV	B20	R	U				CIRC H2O OUTLET MOV-CS-200B FAILED TO CLOSE	MOTOR WAS GROUNDED
W	SU2	020236	012078	L	MV	D09		T				18 GPM LEAK FROM MOV-RH-2700 PACKING GLAND	CORROSION FAILED STUDS HOLDING PACKING
W	SU2	020819	030578	S	UV	G09	R	T				SEAL COOLER 2-SW-E-18 ISOLATION VLV PLUGGED	GATE SEPARATED FROM STEM DUE TO CORROSION
W	SU2	021987*	071278	F	MV	I06	B	D	02			INSPECTION OF MOV5 AFTER MAINT/EXCESS LUB ON SEATS	VALVES HAD TO BE CLEANED/PROCEDURAL PRCB
W	SU2	022240	080978	N	MV	B20		D				CIRC H2O OUTLET MOV-CW-200C FAILED TO CLOSE	KEY SLIPPED OUT OF MOTOR OPER DRIVE TRAIN
W	SU2	022543	092678	S	MV	B04		D				CIRC H2O OUTLET MOV-CW-200D FAILED TO CLOSE	DESIGN/TORQUE SW CAM WEDGED ON SCREW
W	SU2	022647	100778	S	MV	B20		D				MOV-SW-202B FAILED TO CLOSE GIVEN A TEST SIGNAL	MOTOR DAMAGED DUE TO FLOODED PIT
W	TR1	014504	022176	L	MV	G16	S	D				RHR VLV CLOSED WHEN IT WAS REQUIRED TO REMAIN OPEN	VCLT.FLUC.ON INSTRUMENT AC BUS
W	TR1	014570	022976	U	HV	B24	S	D				HYDRAULIC OPERATED FEED H2O VALVE FAILED TO CLOSE	COMMAND FAULT/AIR IN HYDRAULIC LINE
W	TR1	014568	032876	U	HV	B24	S	D				HYDRAULIC OPERATED FEED H2O VALVE FAILED TO CLOSE	COMMAND FAULT/OIL LEAKED INTO SOV
W	TR1	015172	042176	S	RM	T06		D				DISCOVERED THAT MANY VLVS WERE NOT TESTED AS REQ.	PROCDLRE INADEQUACY/REVISED PROCEDURES
W	TR1	015723	082676	R	MV	A20		D				CCW SYS MOV-3293 FAILED TO OPEN DURING TESTING	VALVE MOTOR OPERATOR CCIL SHORTED OUT

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	UN- S- M- P	C C O R R	FAIL CODE	TY P E	C L A S S	C O N T R O L	K E Y	FAILURE MODE	FAILURE MECHANISM
W TR1	016251	101676	U HV	B24	S D						FEEDWATER BYPASS VALVE (MO-2973D) FAILED TO CLOSE	COMMAND FAULT/LOCAL CONTROL VLV FAILED
W TR1	016250	102876	H MV	A16	S D						RWST SUCTION VALVE (MO-112D) FAILED TO OPEN/DEMAND	BREAKER SUPPLYING POWER FAILED/COMMAND
W TR1	016250A	102876	H MV	A23	U						RWST SUCTION VALVE (MO-112E) FAILED TO OPEN/DEMAND	TORQUE SW SET TOO LOW/VAL WOULDN'T UNSEAT
W TR1	016442	111276	U HV	B24	S D						FEEDWATER ISOLATION VLV (MO-29710) FAILED TO CLOSE	HYDRAULIC SELECTOR VALVE FAILED/RIVETT CO
W TR1	016664*	120976	C MV	F20	C D 02						CONTAINMENT VALVES (MO-5663/5671) FAILED TO OPERAT	FRICTION IN OPERATOR/INCREASED CLOSE TIME
W TR1	C13588	050277	R MV	F16	S D						AIR COOLER BYPASS VALVE FAILED TO OPERATE/TESTING	COMMAND/PERSONNEL INCORRECTLY WIRED CIR
W TR1	018587*	070677	W RV	A00	U 05						5 STEAM SAFETY VALVE FOUND TO OPERATE OUTSIDE SET-	-POINT/UNKNOWN (*SETPOINT DRIFT*)
W TR1	018589	070677	U HV	B24	S D						HYDRAULIC FEEDWATER VLV (MO-2971D) FAILED TO CLOSE	SOLENOID IMPROPERLY ASSEMBLED/MANUFACTUR
W TR1	018492	082177	U HV	B24	S D						HYDRAULIC FEEDWATER VLV (MO-2973B) FAILED TO CLOSE	SOLENOID VALVE BECAME WET/STEAM LEAK
W TR1	019580	101677	L XV	V01	S D						RHR DISCHARGE VLV (87288) FOUND LOCKED CLOSED	PERSONNEL ERROR/IMPROPER VALVE LINEUP
W TR1	020325	112777	B MV	F20	T						AUX FEED VLV (CV-300482) FAILED TO OPERATE	MOTOR OPER FAILED/WATER CAME THRU GASKET
W TR1	020516	010478	H MV	A19	T						MOV-88807A FAILED TO OPEN DURING TESTING	VALVE STEM LACKED LUBRICATION
W TR1	G20554	012878	C MV	B16	S D						CONTAINMENT ISOL MOV-5660 FAILED TO CLOSE	COMMAND/LOOSE ELECTRICAL CONNECTION
W TR1	G20901	022178	W AV	B24	S D						MAIN STEAM ISOLATION VALVE CV-2216 FAILED TO CLOSE	ACTUATING SOLENOIDS RUSTED/COMMAND FAIL
W TR1	020876	031578	W AV	B09	T						MS BYPASS VALVE CV-2279 FAILED TO CLOSE	RUST BUILDUP ON VALVE STEM/OUTSIDE VALVE
W TR1	021068*	032078	L MV	G16	S D 02 V						DEENERGIZING PROTECTION SYS CAUSED RHR VALVES TO--	--CLOSE//PROCEDURAL DEFICIENCY
W TR1	021419	042578	L UV	V01	S D						DRAIN VALVE LEFT OPEN/LEAD TO LOSS OF FLOW	PERSONNEL ERROR
W TR1	021624	051978	K UV	C13	T						LEAKAGE THRU PLUG VALVE EXCESSIVE DURING TESTING	LOWER SEAT GASKET MISSING
W TR1	021624A	051978	K UV	C25	D						TWO BUTTERFLY VALVES LEAKED THRU EXCESSIVELY/TEST	RUBBER SEATS REQUIRED RETORQUING
W TR1	022005A	070778	U UV	V01	S D						IMPROPER VLV LINEUP ON CONDENSATE STORAGE TANK	PERSONNEL ERROR

ALL VALVE EVENTS IN THE DATA FILE

EVENT	PLANT	CONT.NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CON NUM	KEY	FAILURE MODE	FAILURE MECHANISM
W	TR1	0220058	070778	U	CV	B00		U			CHECK VALVE ON CONDENSATE STORE TANK STUCK OPEN	NO CAUSE FOR FAILURE GIVEN
W	TU3	015006	061176	N	UV	C00	R	U			THRU LEAKAGE CAUSED DILUTION OF BORON INJECT TANK	UNKNOWN
W	TU3	021916	070678	M	AV	B24	S	D			MSIV-3B FAILED TO CLOSE / COMMAND FAULT	SOLENOID SUPPLYING AIR, FAILED TO OPERATE
W	TU4	015009*	061276	N	UV	C00	R	U	C2		TWICE TWO VALVES LEAKED THRU DILUTING BORON TANK	UNKNOWN/TWO VALVES 6-11-76/SAME TWO 6-12-76
W	TU4	019421	091377	L	RM	V01	S	D			TWO VALVES INADVERTANTLY OPENED/RWSI LEVEL DECREASED	PERSONNEL ERROR/POSSIBLE PROCEDURE PROBLEM
W	TU4	022585*	092078	M	AV	F24	S	D	03		3 MSIVS HAD DEFECTIVE SOLENOID COILS/PREV MAINT.	COMMAND FAULT/SOLENOIDS CONTROL AIR
W	YR1	017731	042577	Y	UV	C22		D			SYS VOL CALCULATIONS INDICATED VALVE LEAKING THRU	FAILED DIAPHRAGM IN 2 INCH GRINNEL VALVE
W	YK1	018204	061177	C	RM	B02		D			DRAIN VALVE (TV-209) FAILED TO CLOSE / TESTING	PERSONNEL MAINTENANCE/PACKING TOO TIGHT
W	YR1	018267*	062077	G	UV	C00	R	U	03		EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/VALVES REPAIRED
W	YR1	018367*	062777	G	UV	C00	R	U	03		EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/REPETITIVE EVENT/VALVES REPAIRED
W	YR1	018419*	062777	K	RV	A00		U	C2		PRESSURIZER SAFETY VALVES (181/182) FAILED TO OPEN	UNKNOWN/SETPOINT DRIFTED HIGH/DRESSER INC
W	YR1	018420*	070477	G	UV	C00	R	U	03		EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/REPETITIVE/VALVES REPAIRED-AGAIN
W	YR1	018484*	071177	G	UV	C00	R	U	03		EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/REPETITIVE/POOR PAST REPAIRS
W	YR1	018486*	071477	G	UV	C00	R	U	05		DECIDED TO REPAIR THE 3 PUR VALVES/2 OTHERS ALSO	UNKNOWN PROBLEM/PAST REPAIRS INSUFFICIENT
W	YR1	018872	081777	C	RM	C25		D			EXCESSIVE LEAKAGE THRU (TV-211) CONTAINMENT VLV	WORN SEAT AND DISC
W	YR1	018872A	081777	C	RM	C22		T			EXCESSIVE LEAKAGE THRU (TV-408) CONTAINMENT VLV	DETERIORATED DIAPHRAGM
W	YR1	019477	101977	N	MV	B16	S	D			MOV FAILED TO CLOSE / COMMAND FAULT	AN OPEN OVERLOAD HEATER IN CONTACTOR
W	YR1	019495	102477	H	RM	F00		U			REGULATOR VALVE FAILED TO OPER. (CONTROL PRESSURE)	UNKNOWN / SETPOINT DRIFT / ADJUSTED VLV
W	YR1	019641	110277	G	MV	A00		U			MOV (PU-MOV-547) FAILED TO OPEN DURING TESTING	UNKNOWN/SUSPECT DAMAGED MOTOR CABLE
W	YR1	020422	012678	H	UV	C13		D			VALVE SI-TV-604 WAS FOUND TO BE LEAKING THRU	SEAL RING FAILED

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u>	<u>P</u>	<u>C</u>	<u>E</u>	<u>S</u>	<u>F</u>	<u>C</u>	<u>C</u>	<u>X</u>	<u>F</u>	<u>F</u>
<u>EN</u>	<u>L</u>	<u>ONT</u>	<u>VENT</u>	<u>YS</u>	<u>AIL</u>	<u>LASS</u>	<u>ON</u>	<u>REP</u>	<u>ILURE</u>	<u>AILURE</u>
		<u>NO.</u>	<u>DATE</u>	<u>COMP</u>	<u>CODE</u>	<u>TYPE</u>	<u>NUM</u>	<u>KEY</u>	<u>MODE</u>	<u>MECHANISM</u>
W	YR1	020693	022178	N SV	T01	D			HYD. VENT SYS. SOL. VLVS HV-SOL-162 NOT TESTED ON TI-	--ME//PERSONNEL ERROR
W	YR1	021013	031478	Y SV	B10	T			CONTAINMENT VALVE (HV-SCV-1) FAILED TO CLOSE	DIRT AND OIL BUILD-UP IN VALVE INTERNALS
W	YR1	022739*	102178	M RV	H00	U 02			TWO SG SAFETY VALVES LIFTED PREMATURELY	UNKNOWN/READJUSTED VALVES
W	YR1	023103	112778	M MV	C25	T			CS-MOV-5A9 LEAKING THRU	GATE WAS LAPPED AND RETURNED TO SERVICE
W	YR1	023104	113078	M UV	V02	S D			VALVE CLOSED WHEN REQ OPEN TO ISOL ANOTHER VALVE--	--FOR CLEANING//PERSONNEL ERROR(MANAGEMENT)
W	YR1	023146	120578	C RM	C10	T			TRIP VALVE TV-207 (CONTAINMENT ISOLATION) LEAK THRU	SUSPECTED FOREIGN MATERIAL UNDER SEAT
W	Z11	013942	010776	C AV	B08	R D			NITROGEN GILL VLV (1S18880) FAILED TO CLOSE	GALLED VALVE INTERNALS
W	Z11	014399	010876	M RV	H24	S D			RELIEF VLV ON IA S/G OPENED PREMATURELY	STM. PRESS. XMITTER, 1PT-516 DRIFT, TO MAX OP
W	Z11	014235	020376	G UV	C22	T			BORIC ACID VALVE (1VC8446A) FOUND LEAKING THRU	DIAPHRAGM FAILED DUE TO TIME/TEMPERATURE
W	Z11	014432	031276	Y AV	C00	U			LEAKAGE THRU AD DIAPHRAGM VALVE	UNKNOWN
W	Z11	014920	051876	C AV	B08	R D			NITROGEN FILL VALVE (1S18880) FAILED TO CLOSE	GALLED VALVE INTERNALS/PROCEDURES REVISED
W	Z11	015162*	062376	H CV	E00	U 02 V			LEAKAGE THRU CHECK VALVES/ACCUMULATOR OVERFILL	UNKNOWN/DARLING 10 INCH TYPE 10-C48Z
W	Z11	015842	081176	C AV	B24	T D			VENT ISOLATION VALVE (1FCV-VN028) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/CONTROL AIR
W	Z11	015843	081176	C AV	B24	T D			CONTAINMENT ADV (1FCV-W017A) FAILED TO CLOSE/TEST	COMMAND FAULT/SOV FAILED/CONTROL AIR
W	Z11	015844	081176	C AV	B24	T D			CONTAINMENT ADV (1FCV-PR24A) FAILED TO CLOSE	COMMAND FAULT/SOV CONTROLLING AIR FAILD
W	Z11	016046	091476	N MV	A10	T			MOV-CS0005 FAILED TO OPEN DURING TESTING	BORIC ACID ON VALVE STEM
W	Z11	016047	091676	H AV	D13	T			NITROGEN FILL VALVE (1S18875B) LEAKED EXTERNALLY	BODY TO BONNET LEAK OF AD PLUG VALVE
W	Z11	016047A	091676	H AV	C25	D			NITROGEN VALVE (1HCV-S1943) LEAKED THRU	LEAKING SEAT OF AD PLUG VALVE
W	Z11	016044	092176	C AV	C25	R T			CONTAINMENT PURGE ADV-RV0002 LEAKED THRU	BULGE ON SEATING SURFACE OF BUTTERFLY VAL
W	Z11	016699*	092376	R DV	F12	B D 02			TWO VENT FAN DAMPERS FAILED TO SHIFT TO ACCID MODE	STICKY ACTUATING SHAFT&COUNTERWT PROBLEM

ALL VALVE EVENTS IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u> <u>D</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>S</u> <u>C</u> <u>O</u> <u>M</u> <u>P</u> <u>S</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>T</u> <u>P</u> <u>E</u>	<u>C</u> <u>L</u> <u>A</u> <u>S</u> <u>S</u>	<u>C</u> <u>O</u> <u>N</u> <u>M</u> <u>P</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
W	Z11	016181	093076	C AV	F24	T D				CONTAINMENT VALVE (1FCV1A01B) FAILED TO OPERATE	OIL IN AIR SUPPLY GOT ON SOLENOID PLUNGER
W	Z11	016043	100476	G UV	V01	S D				VALVE LINE-UP PROBLEM/BORON CONCENTRATION DILUTED	PERSONNEL ERROR
W	Z11	016307	100676	L RV	C00		U			RELIEF VALVE IN RHRS LEAKED THRU/GASEOUS RELEASE	UNKNOWN
W	Z11	019138*	102076	N UV	C00		U 02	V		LEAKING THRU A SERIES OF VALVES/RADIOACTIVE H2O	UNKNOWN
W	Z11	019138A	102076	N CV	E00		U			LEAKING THRU A CHECK VALVE/RAD H2O TO FIRE SUMP	UNKNOWN
W	Z11	016377*	110476	C AV	C25	B T	02			VALVES 1A0VRV0002/1A0VRV0004 LEAKED THRU	SEATS SHRUNK AWAY FROM VALVE BODY/COLD
W	Z11	016609*	112276	C AV	C25	B T	02			VALVES 2A0VR0002/2A0VR0004 LEAKED THRU	SEATS SHRUNK AWAY FROM VALVE BODY/COLD
W	Z11	016574*	112376	N RM	C00		U 02	V		CONTAINMENT ISOLATION SAMPLE VALVES LEAK THRU	UNKNOWN
W	Z11	017042*	011677	C AV	C25	B T	02			VALVES 1A0VRV0002/1A0VRV0004 LEAKED THRU	SEATS SHRUNK AWAY FROM VALVE BODY/COLD
W	Z11	017154	012177	N MV	A19		T			CONTAINMENT SPRAY 1MOV-C50002 FAILED TO OPEN	STEM STICKING DUE TO LUBRICATION PROBLEM
W	Z11	017041	012377	C SV	B10	R	T			CONTAIN INST AIR SOV (1FCV-1A01B) FAILED TO CLOSE	OIL IN AIR SUPPLY GOT ON SOLENOID PLUNGER
W	Z11	017040	012677	H MV	A16	T	D			VALVE 1MOV-S18808A FAILED TO OPEN	COMMAND/AUX CONTACTS IN CNTL CKT STUCK
W	Z11	017038	012877	G MV	B19		T			CHARGING LINE VLV(1MOV-VC8106) VLV FAILED TO CLOSE	LACK OF STEM LUBRICATION CAUSED BINDING
W	Z11	017223	012877	H MV	A16	T	D			VALVE 1MOV-S18808B FAILED TO OPEN	COMMAND/AUX CONTACTS, CONTROL CKT, STUCK
W	Z11	017251	012877	H MV	A16	T	D			VALVE 1MOV-S18808C FAILED TO OPEN/COMMAND	AUX CONTACTS IN CONTROL CIRCUIT STUCK
W	Z11	017252	020377	C AV	F00		U			PENETRATION PRESSURIZATION VALVE FAILED TO OPERATE	FAILED BOOSTER RELAY IN VALVE CONTROLLER
W	Z11	017254*	021377	C AV	C10	B T	02			VALVES 1A0V-RV0002/RV0004 LEAKED THRU	EXTRANECCUS MATERIALS CAUGHT IN THEIR SEAT
W	Z11	017255	021877	L UV	V01	S	D			IMPROPER VALVE LINEUP/UNIT-1 VAL CLOSED INSTEAD-2	PERSONNEL ERROR/NEITHER VAL TAGGED FOR ID
W	Z11	018056	032277	G UV	D12		D			SENSING LINE VALVE (1VC8157) LEAKED EXTERNALLY	BROKEN PACKING GLAND STUD
W	Z11	017727	042577	C AV	B24	T	D			SAMPLE ISOLATION VLV (1FCV-PR24A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ACV

ALL VALVE EVENTS IN THE DATA FILE

V E N	P L A N T	CONT. NO.	EVENT DATE	S Y S	C O M P	FAIL CODE	T Y P E	C L A S S	C O N M U M P M	K E Y		FAILURE MODE	FAILURE MECHANISM
W	Z11	018568	072377	C	AV	B24	T	D				BLOWDOWN SAMPLE VLV (1FCV-SS02) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ADV
W	Z11	018569	072377	C	AV	B24	T	D				S/G BLOWDOWN VLV (1FCV-BD17) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ADV
W	Z11	019175	072777	Y	DV	V01	S	D				OPERATIONS TAGGED WRONG DAMPER OUT OF SERVICE	PERSONNEL ERROR
W	Z11	019165*	090177	C	AV	C25	B	D	02			VALVES 1RV0001/1RV0003 LEAKED THRU	SEATS WERE OUT OF ADJUSTMENT
W	Z11	019410	100777	W	HV	F24	S	D				WHILE RECHARGING HYDRAULICS/MSIV OPENED PARTIALLY	COMMAND FAULT/PRESSURE*COMMANDED*IT OPN
W	Z11	019863	120377	W	HV	F27	R	U				MSIV 1B FAILED TO OPEN OR CLOSE IN REQUIRED TIME	3WAY SELECTOR(TELEDYNE)DC SOLENOID FAILED
W	Z11	020112*	120377	S	UV	F00	R	U	02	V		SERVICE WATER VALVES WERE INOPERABLE	UNKNOWN
W	Z11	020060	120877	C	AV	C25	R	T				VALVE 1ADV-RV0002 LEAKED THRU	SEAT CONTRACTION DUE TO LOW TEMPERATURE
W	Z11	020105*	120877	S	UV	F00	R	U	02	V		SERVICE WATER VALVES WERE INOPERABLE	UNKNOWN
W	Z11	020565	012578	C	AV	B24	T	D				CONTAINMENT VALVE (1FCV-VNO2A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ADV
W	Z11	021110	040178	W	HV	F27	R	T				MSIV FAILED TO OPERATE IN REQUIRED TIME	REXROTH 4WAY DIRECTIONAL CONTROL VAL FAIL
W	Z11	021107	040278	X	XV	D00		U				TRANSMITTER ISOLATION VALVE HAD STEAM LEAK	UNKNOWN
W	Z11	021138	040878	C	AV	B24	T	D				S/G BLOWDOWN VALVE 1FCV-SS02 FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ADV
W	Z11	021140	040878	C	AV	B24	T	D				CONTAINMENT VALVE (1FCV-VNO2A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ADV
W	Z11	021231	041478	C	RM	F12		D				PRESSURE CONTROL VALVE (PCV-PP04) FAILED TO OPER.	VALVE WAS OUT OF ADJUSTMENT
W	Z11	021337	042178	L	MV	A00		U				RHR 1MOV-87008 FAILED TO OPEN DURING TESTING	UNKNOWN/SOMETHING CAUSED THERMALS TO OPEN
W	Z11	021397	050378	F	MV	A19		T				CONTAINMENT SPRAY VALVE 1MOV-CS0002 FAILED TO OPEN	LACK OF LUBRICATION
W	Z11	021446	050678	W	HV	B27	R	D				MSIV 1B FAILED TO CLOSE AFTER MAINT. ON VALVE	REXROTH 4WAY DIRECTIONAL VALVE JAMMED
W	Z11	021552	051878	U	RM	B16		S	D			FEEDWATER ISOLATION VALVE FAILED TO CLOSE/TESTING	COMMAND/DIRTY CONTACTS ON CONTROL RELAY
W	Z11	021973	070778	C	AV	B24	T	D				CONTAINMENT VALVE (1FCV-PR24B) FAILED TO CLOSE	COMMAND/RECURRING SOV FAIL/OIL IN AIR

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT.NO.	EVENT DATE	SY	COMP	FAIL CODE	TYPE	CLASS	CONTR	KEY	FAILURE MODE	FAILURE MECHANISM
W Z13	021967	071778	X	XV	D14	T				ROOT VLV TO S/G 1D LVL.CHAN.937 LEAKING EXTERNALLY	PACKING LEAK CN ROOT VALVE
W Z11	022514*	083078	C	AV	B24	T	D	03		VALVES 1FCV-WD17A/-PR20A/-PR24B FAILED TO CLOSE	COMMAND/RECURRING/OIL IN AIR FAILS SOV
W Z11	022849	090478	X	XV	D04	R	D			HANCOCK CO MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
W Z11	022516	090878	X	XV	D04	R	D			HANCOCK CO MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
W Z11	022844	091478	X	XV	D04	R	D			HANCOCK CO MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
W Z11	022845	091478	R	DV	F04		D			1B RCFC ACCIDENT INLET DAMPER FAILED TO SHIFT	DESIGN PROB/DIFF PRESS FLEXED&BOUND BLADE
W Z11	022848*	091478	C	AV	B24	T	D	02		VALVES 1 FCV-PR24B/-WD17A FAILED TO CLOSE	COMMAND/RECURRING/OIL IN AIR FAILS SOV
W Z11	022847	101878	Y	XV	V01	S	D			IMPROPER VALVE LINE-UP CAUSED TRIP CF BLOWER	PERSONNEL ERROR
W Z11	022997	110678	M	XV	V01	S	D			RAD MONITOR NOT VALVED IN WHEN REQUIRED	PERSONNEL ERROR
W Z11	023125*	112078		AV	B24	T	D	02		VALVES 1FCV-PR24B&1FCV-WD17A FAILED TO CLOSE	ASCO SOV FAILED IN AIR SYS(OIL IN SYS)
W Z11	023355	121178	M	HV	B10		D			DAMPER VALVE FAILED TO CLOSE DURING TESTING	FROZEN(DUE TO COLD TEMP) CYLINDER
W Z12	014043	010576	C	AV	B19	R	T			SAMPLE VALVE (2SS9355B) FAILED TO CLOSE	MECHANICALLY BOUND/NEEDED LUBRICATION
W Z12	013943	010676	U	XV	D00		U			S/G LEVEL INSTRUMENT ROOT VALVE LEAKING EXTERNALLY	UNKNOWN/BODY-BONNET LEAK
W Z12	013951	010876	C	AV	B14	R	T			SAMPLE ISOL ADV (2SS9356A) FAILED TO CLOSE	STEM BINDING CN PACKING/LOOSENEED PACKING
W Z12	014215	012176	M	RV	A24	S	D			MAIN STEAM RV(2 MOV-MS0017) WOULD NOT OPERATE /AIR	COMMAND/RELAYS FAILED IN CONTROLLER AMP
W Z12	014219	021376	G	MV	B16	S	D			CHRG PUMP VALVE 2 MOV-VC8106 FAILED TO CLOSE/TEST	COMMAND/STUCK CONTACTS IN MCC BREAKER
W Z12	014253	021376	H	MV	A16	T	D			2B SI PMP.SUC.VLV 2MOV-S18923B FAILED TO OPEN	DIRTY CNT.ON CKT.BRKR.TO MTR.OPERATOR
W Z12	015163	031576	C	AV	C25	R	T			CONTAINMENT PURGE ISCLATION ADV LEAKED THRU	VALVE SEAT INADEQUATELY TORQUED/42" BUTFLY
W Z12	014523	041176	C	XV	V01	T	D			PRESS REGULATOR VALVE SET FOR TOO HI PRESSURE	PERSONNEL ERROR
W Z12	015142	060376	W	HV	B27	R	T			MSIV B FAILED TO CLOSE DURING TESTING	PILOT FAILURE(TELEDYNE)DC SOLENOID FAILED

ALL VALVE EVENTS IN THE DATA FILE

V E N	P L A N T	CONT.NO.	EVENT DATE	S Y M	C O M P	FAIL CODE	T Y P E	C L A S S	C O M M P H	K E Y	FAILURE MODE	FAILURE MECHANISM
W	Z12	015191	061576	G	UV	C22	R	T			BORIC ACID FILT BYPASS VLV (1MC8468) LEAKING THRU	FAILED DIAPHRAGM ON GRINNEL 2" MOD 2471
W	Z12	016342	081476	G	UV	C22	R	T			HOLDUP TANK VALVE DVC8264 LEAKING EXTERNALLY	DIAPHRAGM FOUND RUPTURED
W	Z12	015841	082176	X	XV	D00		U			PZR-LVL-CHAN.2LT-461 UPPER ROOT VLV.LEAKING EXTERN	NO CAUSE FOR LEAKAGE GIVEN
W	Z12	016535	112776	H	MV	B14		T			BIT OUTLET MOV (2MOV-SI8801B FAILED TO CLOSE/TEST	PACKING PROB/GLAND MISALIGN/LACK OF LUB.
W	Z12	017037*	012877	N	DV	F16	S	D	O2		TWO AIR COND DV(DFCV-AV42A/B) FAILED TO OPERATE	COMMAND/STICKING RELAY
W	Z12	017407	031077	C	UV	V01	S	D			VLVS. 2IWO15460155 OPEN WHEN REQ. TO BE CLOSED	PERSONNEL ERROR
W	Z12	017730*	033077	G	UV	C04	B	D	O2	V	INJECTION LINE VALVES LEAKING THRU DILUTING BORON	DESIGN PROB/UNEQUAL PRESS ACROSS SEATS
W	Z12	017729*	040177	G	UV	C04	B	D	O2	V	INJECTION LINE VALVES LEAKING THRU DILUTING BORON	DESIGN PROB/UNEQUAL PRESS ACROSS SEATS
W	Z12	017728	040577	C	AV	C25	R	T			CONTAINMENT PURGE VALVE (2ADV-RV0002) LEAKED THRU	SEATS CONTRACTED/LOW TEMP/42" BUTTERFLY
W	Z12	017678	042877	U	UV	F00		U			EXHAUST VALVE FAILED TO HOLD VACUUM	CAUSE NOT GIVEN
W	Z12	017861	051977	H	MV	A20		D			VALVE 2MOV-SI88000 FAILED TO CLOSE	LIMIT TORQUE MOTOR OPERATOR FAILURE
W	Z12	017811	052077	G	MV	B23		T			2MOV-VC8111 FAILED TO FULLY CLOSE	TORQUE SW SETTING OUT OF ADJUSTMENT
W	Z12	017862	052577	C	SV	B10	R	T			INST AIR ISOL VALVE (2FCV-IA018) FAILED TO CLOSE	SOV FAILED DUE TO IMPURITIES IN AIR SYS.
W	Z12	018212	060477	L	MV	A16	S	D			RHR VALVE(2MOV-RH8700B) FAILED TO OPEN DURING TEST	COMMAND/AUX CONTACTS STUCK IN MCC
W	Z12	018259	061977	C	SV	B10	R	T			INST AIR ISOL VLV (2FCV-IA018) FAILED TO CLOSE	SOV FAILED DUE TO IMPURITIES IN AIR SYS
W	Z12	018264*	062677	C	AV	B12		D	O2		ISOLATION VALVES (2ADV-SS9354A/B) FAILED TO CLOSE	WEAK CLOSING SPRING/STEM MISALIGNMENT
W	Z12	018392	062877	C	RM	F12		D			LOW FLOW REG VLV (2PCV-NT03) FAILED TO OPERATE	BINDING BETWEEN PLUG AND SEAT
W	Z12	018570	071677	G	UV	C00	R	U			LEAKAGE THRU AT LEAST ONE VALVE DILUTING BORON TK	UNKNOWN
W	Z12	018571	071677	G	UV	C00	R	U			LEAKAGE THRU AT LEAST ONE VALVE DILUTING BORON TK	UNKNOWN
W	Z12	018537*	072177	G	MV	C12	B	D	O2		VALVES 2MOV-SI8801A/B LEAKING THRU DILUTING BORON	DARLING 4" GATE VALVES REQUIRED ADJUSTMNT

ALL VALVE EVENTS IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	COMP	FAIL CODE	LOCATION	FAILURE MODE	FAILURE MECHANISM
W Z12	018720	081177	G MV C12	R D	VALVE 2MOV-VC88018	LEAKING THRU DILUTING BORON CON	DARLING 4" GATE VALVE REQUIRED ADJUSTMENT
W Z12	019499	081177	G UV A22	R D	DIAPHRAGM GATE VALVE (2VC8465)	FAILED TO OPEN	DIAPHRAGM FAILED (GRINNEL CCRP)
W Z12	019137	083177	H UV V01	S D	DRAIN VLV OPENED TO 2D ACCUM.	INSTEAD OF 2C ACCUM.	PERSONNEL ERROR
W Z12	019500*	101277	G MV C12	B T 02	VALVES 2MOV-S18801A/B	LEAKING THRU DILUTING BORON	DARLING 4" GATE VALVES REQUIRED ADJUSTMENT
W Z12	020262	010978	C AV C25	R T	CONTAINMENT VLV (2MOV-RV0002)	LEAKING THRU	SEAT SEPARATED FROM VALVE DISC/LOW TEMP
W Z12	020651	010978	N UV F00	U	A GATE VALVE PROVIDING FOREBAY CIRC H2C	STUCK	UNKNOWN
W Z12	023161*	020578	W HV F27	B D 02	TWO MSIVS	FAILED TO OPERATE IN TIME REQUIRED	PILOT FAILURE/2 TELEDYNE DC SOLENOID FAILED
W Z12	020718	022478	Y RM F12	D	CRANE MODEL 431	FLOW CONTROL VALVE FAILED TO OPER	VALVE NEEDED ADJUSTMENT
W Z12	021451	050978	C SV 810	R T	INST AIR ISOL VALVE 2FCV-1A01A	FAILED TO CLOSE	OIL IN AIR SYS FAILED SOV/HEAT-VARNISH
W Z12	021709*	060578	C AV F24	T D 02	TWO AIR OPERATED CONTAINMENT VALVES	FAILED TO OPER	COMMAND/OIL IN AIR SYS FAILED SOVS
W Z12	021709A	060578	C SV F10	R T	INST AIR ISOL VALVE 2FCV-1A01A	FAILED TO OPERATE	OIL IN AIR SYS FAILED SOV/VARNISH BUILDUP
W Z12	021928	070378	C SV 810	R T	INST AIR ISOL VALVE 2FCV-1A01B	FAILED TO CLOSE	OIL IN AIR SYS FAILED SOV/RECURRING)*
W Z12	022518	090578	C MV F20	D	VALVE 2MOV-VC8105	FAILED TO OPERATE DURING TEST	JAMMED MOTOR OPERATOR/LIMITORQUE SMB-00
W Z12	022519	090678	G MV A00	U	RWST OUTLET VALVE 2MOV-VC112E	FAILED TO OPEN	UNKNOWN
W Z12	022797	101578	W HV 827	R T	MSIV 2D	FAILED TO CLOSE / RECURRING EVENT	PROBLEMS WITH PILOT SOLENOID VALVES

APPENDIX H

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

CODES USED IN LER ONE-LINE DESCRIPTIONS

<u>CODE</u>	<u>FAILURE MODE</u> <u>DESCRIPTION</u>
A	FAILED TO OPEN
B	FAILED TO CLOSE
C	INTERNAL LEAKAGE
D	INTERNAL LEAKAGE/RUPTURE
E	REVERSE LEAKAGE (CHECK VALVES)
F	FAILED TO OPERATE AS REQUIRED
G	PLUGGED (FAILS TO REMAIN OPEN)
H	PREMATURE OPEN (RELIEF VALVES)
I	MAINTENANCE/REPLACEMENT
J	TECHNICAL SPECIFICATION VIOLATION
K	IMPROPER VALVE CONFIGURATION

<u>CODE</u>	<u>COMPONENT</u> <u>DESCRIPTION</u>
MV	MOTOR OPERATED VALVE (ELEC.)
AV	PNEUMATIC OPERATED VALVE
SV	SOLENOID OPERATED VALVE
HV	HYDRAULIC OPERATED VALVE
RV	REMOTE OPERATED VALVE
XV	MANUAL OPERATED VALVE
CV	CHECK VALVE
RV	RELIEF VALVE
DV	DAMPING VALVE
UV	OPERATOR TYPE OR FUNCTION NOT STATED

<u>CODE</u>	<u>TYPE OF EVENT</u> <u>DESCRIPTION</u>
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
F	COMMAND FAULT
T	RECURRING COMMAND FAULT

<u>CODE</u>	<u>FAILURE MECHANISM</u> <u>DESCRIPTION</u>
00	UNKNOWN
01	PERSONNEL (OPERATION)
02	PERSONNEL (MAINTENANCE)
03	PERSONNEL (TESTING)
04	DESIGN ERROR
05	FABRICATION/CONSTRUCTION/QUALITY CONTROL
06	PROCEDURAL DISCREPANCY
07	NORMAL WEAR
08	EXCESSIVE WEAR
09	CORROSION
10	DESIGN MATERIAL CONTAMINATION
11	EXCESSIVE VIBRATION
12	MECH. CONTROLS/PARTS: FAILED/CUT OF ADJUST.
13	SEAL/GASKET FAILURE/PROBLEM
14	PACKING FAILURE/PROBLEM
15	BEARING/BOSS/FLANGE/PROBLEM
16	ELECTRICAL INPUT FAILURE/PROBLEM
17	BEARING/BUSHING FAILURE/PROBLEM
18	WELD FAILURE
19	LACK OF LUBRICATION
20	ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM
21	ELECTRIC MOTOR FAILURE/PROBLEM
22	DIAPHRAGM FAILURE/PROBLEM
23	DIAPHRAGM RUPTURE
24	DIAPHRAGM SWITCH FAILURE/PROBLEM
25	DIAPHRAGM OF COMPONENT SUPPLY SYSTEM
26	DIAPHRAGM FAILURE/PROBLEM
27	DIAPHRAGM SWITCH FAILURE/PROBLEM
28	PILOT VALVE FAILURE/PROBLEM

<u>CODE</u>	<u>NUMERICAL KEY WORDS</u> <u>DESCRIPTION</u>
V	VALVES
A	SOME
B	VARIOUS
C	SEVERAL
D	OTHER

<u>CODE</u>	<u>EVENT CLASSIFICATION</u> <u>DESCRIPTION</u>
0	CHANGE OF STATE
1	AGE
U	UNKNOWN

<u>CODE</u>	<u>ACTIVITY RESULTING IN DISCOVERY</u> <u>DESCRIPTION</u>
D	DEMAND ON COMPONENT
M	MAINTENANCE
N	NORMAL OPERATION
R	RECORDS REVIEW
T	TESTING
U	UNKNOWN

<u>CODE</u>	<u>NSSS VENDOR</u> <u>DESCRIPTION</u>
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
G	GENERAL ELECTRIC
W	WESTINGHOUSE

OPERATOR AND VALVE TYPE

OPERATOR

U - UNKNOWN/NOT APPLICABLE
A - AIR OPERATOR (CYLINDER, DIAPHRAGM)
H - HYDRAULIC
M - MOTOR OPERATOR (AC)
N - MOTOR OPERATOR (DC)
S - SOLENOID OPERATOR
X - MANUAL

VALVE TYPE

UU - UNKNOWN
CK - CHECK
BA - BALL
BU - BUTTERFLY
DA - DIAPHRAGM
CA - GATE
GL - GLOBE
NE - NEEDLE
PL - PLUG
DM - DAMPER
RV - RELIEF/SAFETY

MANUFACTURERS' CODES AND NAMES USED IN THIS REPORT

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A180	- ALLIS CHALMERS	C715	- CROSBY-ASHTON GAGE CO.
A200	- ALDYCO, INC.	C780	- CVI CORP.
A220	- AMERICAN AIR FILTER CO., INC.	D020	- DARLING VALVE & MFG. CO. (SEE VENDOR A391)
A280	- AMERICAN MACHINE & FOUNDRY COMPANY	D025	- DARLING-ANCHOR (SEE VENDOR A393)
A310	- AMERICAN STANDARD INDUSTRIES	D147	- DEZURIK
A320	- AMERICAN TEL & RADIO	D232	- DRAGON VALVE, INC.
A340	- AMERICAN WARMING & VENTILATING INC.	D243	- DRESSER INDUSTRIAL VALVE & INST. DIV.
A391	- ANCHOR/DARLING VLV CO. (SEE VENDOR D020)	D245	- DRESSER INDUSTRIES, INC.
A394	- ANCHOR PACKING CO.	R090	- EDWARDS CC.
A395	- ANCHOR VALVE CO.	R095	- EDWARDS VALVES DIV.
A415	- ANDERSON, GREENWOOD & CO.	F011	- FARRIS ENGINEERING
A480	- ARMSTRONG MACH.	F035	- FARRIS ENGINEERING
A490	- ASCO	F081	- FENWALL, INC.
A507	- ASSOCIATED CONTROL EQUIPMENT	F103	- PIKE METAL CO.
A515	- ASTRO INDUSTRIES, INC.	F125	- FISHER CONTINENTAL
A535	- AUTOMATIC VALVE CO., INC.	F127	- FISHER FLOW CONTROL DIV. (ROCKWELL INTER.)
A552	- ATLAS VALVE	F130	- FISHER CONTROLS CO.
A585	- ATWOOD & MORRILL CO., INC.	F135	- FISHER GOVERNOR
A610	- AUTOMATIC SWITCH CO. (ASCO)	F145	- FLOID CONTROLS CORP.
A613	- AUTOMATIC VALVE COMPANY	F212	- FRANKLIN INSTITUTE RESEARCH LABORATORIES
A660	- AVCO CORP. - TULSA OPERATION	F212	- FRUMSEN HEAT TRANSFER LTD (CANADA)
B015	- BABCOCK & WILCOX COMPANY	G080	- GENERAL ELECTRIC CO.
B040	- BAILEY INSTRUMENT CO., INC.	G153	- GIMBEL MACHINE WORKS
B070	- BARKSDALE VALVE COMPANY	G167	- GODDARD MANUFACTURING CORP.
B080	- BARTON INST. CO., DIVISION OF ITT	G202	- GPE CONTROLS
B130	- BECHTEL CORP.	G250	- GREER HYDRAULICS, INC.
B135	- BECKMAN INSTRUMENTS, INC.	G255	- GRINNELL CORP.
B237	- BETTIS CORPORATION	G257	- GRINNELL INDUSTRIAL PIPING, INC.
B290	- BLACK-SIVALS-BRYSON	G265	- GROVE VALVE & REGULATOR CO.
B485	- BRUCE GM DIESEL, INC.	H015	- HAGAN CONTROLS
C027	- CALIFORNIA FILTER-CALFICO	H035	- HAMMEL DAHL
C182	- CENTER-LINE INC.	H037	- HANCOCK CO.
C255	- CHAPMAN VALVE & MFG.	H195	- HILLS-MCCANNA CO.
C256	- CHAPMAN DIV OF CRANE CO.	H230	- HOKE, INC.
C290	- CHEMQUIP PRODUCTS CO., INC.	H345	- HYDRO LINE MFG. COMPANY
C311	- CHICAGO FLUID POWER	I005	- I-T-E CIRCUIT BREAKER
C330	- CIRCLE SEAL	I075	- INGERSOLL-RAND CO.
C470	- CIP INDUSTRIES, INC.	I200	- ISOTOPE PRODUCTS LABORATORIES
C490	- COMBUSTION ENGINEERING, INC.	I205	- ITT GENERAL CONTROLS
C500	- COMMONWEALTH EDISON COMPANY	I208	- ITT HAMMEL DAHL CONDFLOW
C515	- CONAX CORP.	J010	- JAMES BURY CORP.
C530	- CONFORM CORP.	J030	- JENKINS VALVE CORP.
C560	- CONSOLIDATED SAFETY RELIEF VALVES	J075	- JOHNSON CONTROLS, INC.
C580	- CONTINENTAL EQUIP. CO.	J085	- JOHNSON MANUFACTURING
C600	- CONTROL COMPONENTS	J090	- JOHNSON SERVICE CO. INC.
C630	- CONTROMATICS CORP.	K030	- KAVLICO ELECTRONICS, INC.
C631	- CONVAL, INC.	K075	- KENNEDY VALVE MFG. CO.
C635	- COPES-VULCAN, INC.	K085	- KEROTEST MANUFACTURING CORP.
C665	- CRANE COMPANY	K125	- KIELEY & MUELLER CO.
C672	- CRANE, JOHN CO.	K235	- KUNKLE VALVE CO.
C710	- CROSBY VALVE & GAGE CO.	L200	- LIMTORQUE CORP.

NOTE: THESE CODES AND MANUFACTURERS' NAMES WERE OBTAINED FROM EXHIBIT J OF REFERENCE 1.

MANUFACTURERS' CODES AND NAMES USED IN THIS REPORT (CON'T)

L263	- LONEGAN, J.E., COMPANY	W121	- WESTINGHOUSE ELECTRIC COMPANY(ELEV DIV)
L265	- LONERGAN	W127	- WESTON HYDRAULICS DIV.
L300	- LUNKENHEIMER CO., THE	W160	- WHILEY CO.
M065	- MANNING-MARWELL-MOORE	W185	- WHITTAKER CORP.
M090	- MAROTTA SCIENTIFIC CONTROLS, INC.	W220	- WILLIAMS PRODUCTS, INC.
M095	- MAROTTA VALVE CORP.	W225	- WKM VALVE DIV.
M115	- MASON & HANGER-SILAS MASON CO., INC.	W225	- WORTHINGTON CORP.
M120	- MASON ILAN INTERNATIONAL, INC.	ZZZZ	- UNKNOWN/NOT STATED
M322	- MILLER FLUID POWER CO.		
M358	- MISSION MANUFACTURING CO.		
M360	- MISSION VALVE AND PUMP CO.		
M430	- MOORE PRODUCTS COMPANY		
N015	- NATIONAL ACME CO.		
N030	- NATIONAL ELECTRIC SIGN		
N305	- NUCLEAR MEASUREMENTS CORP.		
O020	- OFFSHORE POWER SYSTEMS		
O034	- OILRITE CORPORATION		
P014	- PACIFIC AIR PRODUCTS		
P032	- PACIFIC VALVES INC.		
P070	- PARKER HANNIFIN CORP.		
P195	- PHILADELPHIA GEAR CORP.		
P295	- PORTER, H. K. CO., INC.		
P296	- PORTER, PEERLESS MOTORS		
P305	- POWELL CO., WM., THE		
P312	- POWELL, M. W., CO.		
P335	- PRATT WHITNEY AIRCRAFT		
P340	- PRATT, HENRY CO.		
R082	- RAM-ON CORP.		
R165	- RELIANCE ELECTRIC COMPANY		
R197	- REPUBLIC MFG. CO.		
R290	- ROBERTSHAW CONTROLS CO.		
R322	- ROBOTAM		
R340	- ROCKWELL MANUFACTURING CO.		
R344	- ROCKWELL-INTERNATIONAL		
S075	- SCHULTE AND ROBERTING CO.		
S149	- SHAW-ROD CORP.		
S205	- SINGER CO., THE		
S215	- SKINNER UNIFLOW VALVES		
S415	- STOCKHAM VALVE CO.		
T020	- TARGET ROCK CORPORATION		
T083	- TELEDYNE CORPORATION		
T095	- TELEDYNE-FARRIS ENGINEERING		
T340	- TUFLINE		
V030	- VALCOR ENGINEERING CORP.		
V080	- VELAN ENGINEERING COMPANIES		
V085	- VELAN VALVE CO., P.		
V095	- VERSA PRODUCTS		
V105	- VICKERS, INC.		
V135	- VOGT, HENRY MACHINE CO.		
W030	- WALWORTH CO.		
W120	- WESTINGHOUSE ELECTRIC CORPORATION		

NOTE: THESE CODES AND MANUFACTURERS' NAMES WERE OBTAINED FROM EXHIBIT J OF REFERENCE 1.

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N T	CONT. NC.	EVENT DATE	C O N T R O L P M	K E Y	MFG.	A C T I V E O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	AR1	014837*	051276	02		ZZZZ	T U UU	F14	2	VLVS DID NOT OPER. WHEN REQUIRED TO	FRICTION BETWN STEM & PACKING DUE TO AGE
B	AR1	014837A	051276			ZZZZ	T U UU	F16	1	VLV DID NOT OPERATE WHEN REQUIRED TO	DIRTY RELAY CONTACT
B	AR1	014837B	051276			ZZZZ	T U UU	F16	1	VLV DID NOT OPERATE WHEN REQUIRED TO	LOOSE CONNECTION AT TERMINAL PLUG
B	AR1	015013	061276			ZZZZ	U U UU	V01	1	INCORRECT VALVE LINE-UP/TANK OVERFLOWED	PERSONNEL ERROR
B	AR1	015207	061276			ZZZZ	N U UU	V06	1	VALVE SF-22 WAS NOT CLOSED(A SPILL RESULTED)	PROCEDURES WERE INADEQUATE
B	AR1	015243	062876			C630	T U UU	A12	1	VALVE CV-3812 FAILED TO OPEN ON COMMAND	BINDING IN VALVE BETWEEN STEM AND BUSHING
B	AR1	016566	102176			ZZZZ	M U UU	F10	1	VLV CV-6202 WOULD NOT REMAIN IN CLOSED POSITION	SOLENOID VLV ACTU. WAS NOT FUNC. PROPERLY
B	AR1	016465	112276			ZZZZ	M U UU	F24	1	DELUGE VALVE INADVERTENTLY TRIPPED OPEN	SEALING PRESS TO IT LEAKED OFF(COMMAND)
B	AR1	016665	120176			A395	N U UU	D00	1	VLV SF-11 HAD A CRACK IN THE HEAT AFFECTED ZONE	REASON FOR CRACK IS UNKNOWN
B	AR1	017363	021877			ZZZZ	T U UU	F24	1	VALVE CV6202 WOULD NOT REMAIN CLOSED	TWO AIR SUPPLY BLOCK VALVES FAILED
B	AR1	017521	031077			ZZZZ	T U UU	F16	1	VALVE CV-2123 WAS FOUND TO BE INOPERATIVE	CIRCUIT BREAKER OVERLOAD HEATERS FAILED
B	AR1	018854*	072677	02	V	ZZZZ	T U UU	C10	1	ISOLATION VALVES LEAKED THRU DURING CONT LEAK TEST	FOREIGN MATERIAL PROBABLY CAUSED LEAKAGE
B	AR1	018901	082677			ZZZZ	T U UU	V01	1	INCORRECT SEQUENCE OF VALVE OPERATION/H2O IN FILTR	PERSONNEL ERROR
B	AK1	020607	011378			V685	T A CK	A23	1	VALVE CV-2667 FAILED TO OPEN REMOTELY	TORQUE SWITCH DEFECTIVE
B	AR1	020883*	030878	05		S149	T U DM	A24	1	DAMPERS CV2102,2111-2113,62116 FAILED TO ACTUATE	PROBABLE CAUSE, STICKY AIR SUPPLY
B	AR1	020883A	030878			S149	T U DM	F24	1	DAMPER CV2101 DID NOT OPERATE PROPERLY	CV2101 AIR SUPPLY INCORRECTLY ADJUSTED
B	AR1	022339	072078			A200	T U GA	F23	1	SODIUM THIOSULFATE BLOCK VLV CV-2411 FAIL. TO OPER	TORQUE SETTING OUT OF ADJ; DRY PACKING
B	AR1	022099	081778			C780	T U DM	A24	1	DISCHARGE DAMPER CV7903 FAILED TO OPEN;SEC. FAULT	DEFEC. SOL.VLV IN AIR SUPPLY LINE(SV7807)
B	AR1	023181	112178			ZZZZ	N U UU	V01	1	CONDENSATE VLV.CS-38 OPEN WHEN REQUIRED TO BE SHUT	PERSONNEL ERROR
B	CR3	017168A	020377			W030	D U UU	A20	1	DECAY HEAT VLV DHV-4 WOULD NOT OPEN REMOTE ACTUATN	MTR- OPERATOR WOULDNT OVERCOME VLV- DRAG

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

<u>VEN</u>	<u>PLANT</u>	<u>CONT. NC.</u>	<u>EVENT DATE</u>	<u>CON MUM</u>	<u>KEY</u>	<u>MFG.</u>	<u>ACTIVITY</u>	<u>OPERATOR</u>	<u>VLV TYPE</u>	<u>FAIL CODE</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
B	CR3	0171688	020377	A200	D	U	UU	A20	DECAY HEAT VLV DHV-41	WOULDN'T OPEN	REMOTE ACTUATH MTR. OPERATOR WOULDN'T OVERCOME VLV. DRAG	
B	CR3	017176	020777	ZZZZ	N	U	UU	V06	PER.CYCLED 8SV-36	ALLOWING NAOH INTO THE RCS SYSTEM	PROCEDURAL INADEQUACY	
B	CR3	017320	022577	D243	N	U	UU	H00	MN.STM.RELIEF VLV MSV-36	OPEN.BEFORE SETPOINT	CAUSE OF PREMATURE OPENING NOT KNOWN	
B	CR3	017322	030777	ZZZZ	M	U	UU	V01	8" LOOP OF HPI SYS. ISOL.CONT.TO T.S.FOR MAINTENANCE		PERSONNEL ERROR	
B	CR3	017322A	030777	W030	M	U	UU	D14	MUV-26	EXTERNAL LEAKAGE	PACKING FAILURE / REPLACED PACKING	
B	CR3	017319	030877	D243	N	U	UU	H00	MN.STM.RELIEF VLV MSV-3	OPENED PREMATURELY	CAUSE OF FAILURE UNKNOWN	
B	CR3	017653	032277	W030	D	U	UU	A23	MAKE-UP VLV MUV-24	FAILED TO OPEN ON MAN.HPI INITI	TORQUE SWITCH SETTING TOO LOW	
B	CR3	017656A	041577	R340	T	U	UU	B16	MUV-258	FAILED TO CLOSE;CONTAINMENT ISOLATION VLV.	INOPERABLE DUE TO DIRTY CONTROL CONTACTS	
B	CR3	017656B	041577	R340	T	U	UU	B04	VLV.CAV-2	FAIL TO CLOSE;CONTAINMENT ISOLATION VLV	CLOSURE SPRING NOT STRONG ENOUGH	
B	CR3	017655	041677	ZZZZ	N	U	UU	B16	VALVE FWV-39640	FAILED TO CLOSE	DOC PRESS TRANSMITTER DIDNT SUPPLY SIGNAL	
B	CR3	017658	042177	ZZZZ	N	U	UU	V01	SUCT.VLVs CAV-38646	FROM BORIC ACID STOR.TANK.SHUT	T.S.VIC./PERSONNEL ERROR/IMP.VLV LINEUP	
B	CR3	017946	042477	ZZZZ	N	U	UU	V06	VLV.SMV-151	WAS IN SHUT POSI.;GIVING CONT.TEMP.ALA	PROCEDURAL INADEQUACY	
B	CR3	018559	071577	V085	T	U	UU	F26	CONT ISOL VALVE MOV-94	FAILED TO OPERATE	DIRTY LIMIT SWITCH CONTACTS	
B	CR3	018560	071577	ZZZZ	T	U	UU	B16	CONT ISOL VALVE SMV-47	FAILED TO CLOSE	LOOSE WIRE/CONTROL PWR TO LIMIT SWITCH	
B	CR3	018561	071577	A200	T	U	UU	A23	VLV DHV-41	WOULD NOT OPEN FROM CONTROL ROOM	CAUSED BY SHIFT IN TORQUE SWITCH SETTING	
B	CR3	018562	071577	W030	T	U	UU	A00	DECAY HEAT VLV DHV-4	WOULD NOT OPEN FROM CONT.ROOM	CAUSE OF FAILURE UNKNOWN	
B	CR3	018566	072977	W030	T	U	UU	A12	HPI VLV MUV-25	FAILED TO OPEN AUTOMATICALLY	MECH.BINDING OF THE REVERSING INTERLOCKS	
B	CR3	018843	081077	ZZZZ	N	U	UU	V06	VLV SMV-151	WAS CLOSED WHEN REQUIRED TO BE OPEN	PROCEDURAL INADEQUACY	
B	CR3	019010	082777	R340	D	U	UU	B23	CORE FLOOD DR.VLV FOR B CORE FL.TK.	WOULDN'T CLOSE	DRIFT OF TORQUE SWITCH SETTING;VLV CFV-12	
B	CR3	019013	083177	R340	N	U	UU	B00	CORE FLOOD SAMP.ISO.VLV CFV-11	WOULDN'T CLOSE	CAUSE OF FAILURE UNKNOWN	

300

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	CON MUM	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	CR3	019000*	090777	02	V	A610	N	U	UU	C00	VLV INTER. LEAK/UNPLAN. RADIOACT. GAS RELEASE TUR. BLD	CAUSE OF VLV LEAK. NOT STATED
B	CR3	019306	091477			R340	N	U	UU	B23	CONT. ISO. VLV CAV-126 WOULD NOT CLOSE	SHIFT IN TORQUE SWITCH SETTING
B	CR3	019505	091677			D243	T	U	UU	H00	MN. STM. SAFETY VLV. MSV-42 RELIED AT PRESS. BELW SP	SETPPOINT DRIFT (CAUSE OF DRIFT NOT STATE)
B	CR3	019873	093077			V085	N	U	UU	D14	LEAK. FROM MAKE-UP DISCH. PRESS. IND. ISO. VLV MUV-184	PACKING FAILURE/RADIOACT. GAS RELEASED
B	CR3	020679*	100577	02	V	A610	N	U	UU	C00	RAD. GAS FROM MKUP TK. LEAK. PAST VLVs TO COND AIR RS	CAUSE OF VLV LEAK BY NOT GIVEN
B	CR3	019525	102877			C255	T	U	UU	A24	VALVE MSV-130 WOULD NOT OPEN	FOREIGN PARTICLES IN ACTU. OF AIR SOL. VLV
B	CR3	019800	112977			ZZZZ	N	U	UU	V06	SWV-151 (IND. COOL. WTR. SUP. VLV) SHUT WHEN REQ. TO OPEN	PROCEDURAL INADEQUACY; THIRD OCCURENCE
B	CR3	019978*	121477	03		ZZZZ	T	U	UU	F16	3 VALVES, BSV-17, CFV-156, DV-94 FAILED TO OPERATED	ONE RELAY FAILED/INSUL BETW CONTACTS (CC)
B	CR3	020222	122877			P340	D	U	UU	B04	RB PURGE EXHAUST VLV AHV-18 DID NOT AUTO CLOSE	DESIGN PROB/OPEN LIMIT SWTCH NOT ACTIVATE
B	CR3	020265	011178			W030	N	U	DT	V01	BRKR. FOR HPI ISO. VLV MUV-25 OPEN TAG. CONT. TO T.S	PERSONNEL ERROR
B	CR3	020478	020178			ZZZZ	U	U	UU	V01	NITROGEN VLV NGV-81 WAS OPEN CONTRARY TO T.S.	PERSONNEL ERROR
B	CR3	020843A	020178			A610	M	U	DI	C00	NOBLE GAS FROM MAKEUP TK. LEAKED BY STP VL MUV-141F	CAUSE OF VLV LEAKAGE NOT GIVEN
B	CR3	020843B	020178			A610	M	U	CK	E00	NOBLE GAS FROM MAKEUP TK. LEAK. BY CHECK VLV MUV-140	CAUSE OF VLV LEAKAGE NOT GIVEN
B	CR3	020266	020478			L200	T	M	UU	F00	STROKE TIME FOR FEEDWTR ISO FVW-15 GRT. THAN T.S. L	DEFINITE CAUSE IS NOT KNOWN/BEING ANALYZD
B	CR3	020752A	021078			L200	D	S	UU	B00	VLV CAV-2 FAILED TO CLOSE; VIOLATED T.S. REQ.	CAUSE OF FAILURE NOT GIVEN
B	CR3	020752B	021078			L200	D	M	UU	B23	VLV CAV-1 FAILED TO CLOSE; VIOLATED T.S. REQ.	VLV HAD INCORRECT TORQUE SWITCH SETTING
B	CR3	021166	040578			ZZZZ	U	U	UU	A16	FSV-240 FAILED TO OPEN	CONTROL CKT BOARD SHORTED
B	CR3	021775	062178			C665	D	U	GL	A00	DECAY HEAT REMOV. VLV DHV-111 WOULD NOT OPEN REMOT.	CAUSE OF EVENT IS UNDETERMINED
B	CR3	022361	081978			ZZZZ	N	U	UU	G16	DHV-3 WENT CLOSED WHEN REQUIRED TO REMAIN OPEN	LOSS OF 120 VOLT AC VITAL BUS (INVERTER)
B	CR3	022360*	082178	02		ZZZZ	N	U	UU	G24	DAMPERS TO AHF-148 & D WENT CLOSED/VENT WAS REVERS	SOVS IN AIR SUP. HAD DEFECTIVE CONT. VLVs.

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V N	C T	CONT. NC.	EVENT DATE	C M P M Y	MFG.	A C T I O N	D I S C R I M I N A T I O N	V A L V E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	CR3	022358	090778		ZZZZ	T	U	DM	B12	CONT.COMPLEX AIR SUP.DAMPER D-1 WOULD NOT CLOSE	VALVE BINDING OF AIR SUP.DAMPER D-1
B	CR3	022359	090778		ZZZZ	T	U	UU	B23	CORE FLOOD VALVE CFV-15 FAILED TO CLOSE ON TEST	VALVE TORQUE SWITCH
B	CR3	023250	100178		ZZZZ	N	U	UU	V06	VALVE MOV-476 WAS LEFT OPEN AFTER SYS MODIFICATION	PROCEDURAL DISCREPANCY(PERSONNEL)
B	CR3	023095	100478		ZZZZ	T	U	UU	F16	FLOW CONTROL VALVE DHV-110 FAILED TO CONTROL FLOW	NO SIGNAL FROM FLOW CONTROLLER
B	CR3	023095A	100478		ZZZZ	T	U	UU	V03	ISOL VALVE TO FLOW CONTROLLER SHUT(SEE 023095)	PERSONNEL ERROR/VALVE REQUIRED TO BE OPEN
B	CR3	023237	103078		ZZZZ	N	U	UU	V01	CONC.BORIC ACID TK.DISC.VLVS.CAV38643 CLOSED;TS VI	PERSONNEL ERROR;IMPROPER VALVE LINEUP
B	DB1	019380	092477		ZZZZ	U	U	UU	B00	PRESSURIZER POWER RELIEF VALVE FAILED TO RESEAT	CAUSE NOT STATED
B	DB1	019377	101077		ZZZZ	U	U	UU	I16	DECAY HEAT ISOL. VLV DH-12 MIGHT INADVERT. CLOSE	REQUIRED WIRING CHANGE TO FIX
B	DB1	019361	102077		ZZZZ	N	U	UU	V01	BOTH AUX.FD.PMP.SUCTS.LINED UP TO DEAERATOR STR.TK	PERSONNEL ERROR;IMPROPER COOL.WTR.LINEUP
B	DB1	019530	102577		L200	D	U	UU	A23	VLV AF3872 FAILED TO STROKE WHEN GIVEN OPEN SIGNAL	OPEN TORQUE SWITCH WAS DEFECTIVE
B	DB1	019548	111777		ZZZZ	N	U	UU	V06	AUX.FDWTR.VLVS AF5996608 CLOSED;T.S.VIOLATION	PROCEDURAL DEFICIENCY;TEST PROCEDURE REVI
B	DB1	019815	112777		PG14	T	U	UU	B10	ISO.DAMPER HV-5311A WOULD NOT CLOSE COMPLETELY	DAMPER SEAL DIRTY & NEEDED LUBRICATION
B	DB1	019939	121277		I208	U	U	UU	V01	SER.WTR.OUT.ISO.VLV,COMP.COOL.WTR.LP1-2HTXCH.CLOSE	PERSONNEL ERROR;IMP.VLV LINEUP;T.S. VIOL.
B	DB1	019984	121677		VC35	T	U	UU	V03	AUX.FDWTR VLVS AF5996608 SHUT;MS107A,AF3871672BK.D	PERSONNEL ERROR;IMPROPER VLV LINEUP
B	DB1	020219*	122177	04	003-	T	U	UU	H00	4 MN.STM.SAFETY VLVS LIFTED BELOW DESIGN SETPOINTS	CAUSE OF PREMATURE OPENINGS IS UNKNOWN
B	DB1	020269A	010378		V065	U	U	GA	D14	LEAKAGE OBSERVED FROM PACKING ON VLV DH2735	PACKING WAS LOOSE ON VLV;VLV WAS REPACKED
B	DB1	020269B	010578		ZZZZ	U	U	UU	D14	PACKING LEAK PRESS.LVL.TRANSMITTER SOURCE VLV PACK	VLV PACKING GLAND LOOSE;VLV WAS REPACKED
B	DB1	020270	010578		PG14	N	U	DM	V00	INLET BAL.DAMPERS TO EVS FANS 1-161-2 FOUND CLOSED	EXACT CAUSE UNKNOWN/PROBABLY PERSONNEL ER
B	DB1	020275	011278		A499	N	A	UU	F24	SW-1424 NOT OPER. PROP.;SOMETIMES STUCK OPEN,SHUT	SOLENOID VLV IN CONT SYS BURNED OUT
B	DB1	020707*	021078	02	F130	U	A	UU	I02	MECH.STOPS FOR DH14A&14B INCORRECTLY SET	PERSONNEL ERROR;MAINTENANCE DONE INCCRREC

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

M N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P H O M E	K E Y	MFG.	V A L V E Y E A R	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	DB1	020702	022878			R344	U	U	GA	I00	MN.STM.ISO.MS-101 HAD RAISED METAL ON 2 OF 4 SP.GD.	CAUSE OF RAIS.MET.ON SPR.GUID.TUBE.UNKNOW
B	DB1	020989*	031678	02		ZZZZ	T	U	CK	E00	CHECK VLVS AF39672 LEAKED INTERNALLY	CAUSE OF REVERSE LEAKAGE NOT GIVEN
B	DB1	020989A	031678			L200	T	M	UU	A26	AUX.FDPMP.1-1 STOP VLV AF3870 FAILED TO OPEN	LIMIT SWITCH ON VLV MTR NOT ADJUSTED PROP.
B	DB1	019549	032278			ZZZZ	R	U	UU	V03	HI POINT VENT(HF-72)NOT VENTED AS REQUIRED	PERSONNEL ERROR(REMOVED FROM TEST LIST)
B	DB1	021180	032578			I200	N	M	UU	B20	MN.FDMTR.BLOCK VLV FW-779 DID NOT CLCSE COMPLETELY	MTR.OPERATOR NEEDED ADJUSTMENTS
B	DB1	021178A	040878			V085	T	U	CK	A10	SUCT.CH.VLV ON HYD.DILUTION BLWR. WOULD NOT OPEN	VLV INTERNALS DIRTY,CAUSING STICKING
B	DB1	021177	041078			P365	U	U	CK	D13	SHUT DOWN AUX.FDPMP.1-2 DUE TO STM.LEAK ON MS-73 ⁵	STM.LEAK CAUSED BY BAD COVER GASKET&SURF.
B	DB1	021178B	041878			V085	N	U	CK	A10	DISC.CK.VLV ON HYD.DILUTION BLWR. WOULD NOT OPEN	VLV INTERNALS DIRTY,CAUSING STICKING
B	DB1	021213	042378			ZZZZ	M	U	UU	V02	DISCHARGE VALVE OF DILUTION BLOWER MISTAKENLY SHUT	PERSONNEL ERROR(WROTE 1-2 INSTEAD OF 1-1)
B	DB1	021176	043078			ZZZZ	U	U	DI	V01	VLVS DH11612 WERE NOT OPENED WHEN REQ.DURING S/D	PERSONNEL ERROR & PROCEDURE INADEQUACY
B	DB1	021583	050478			V085	T	U	CK	E09	VLV SW-82 HAD REVERSE LEAKAGE;OUTLET CHECK VALVE	TOP OF INTERNALS WERE RUSTED;PREV.OPERATN
B	DB1	021579	050978			F130	T	U	BU	D05	CONT.VAC.RELIEF CV-5070 HAD EXCESSIVE LEAKAGE	DEF.INITIAL INSTAL. OF TEST CONN. PIPING
B	DB1	021578	051178			F130	T	U	BU	D05	CONT.VAC.RELIEF CV-5076 HAD EXCESSIVE LEAKAGE	VLV NOT PROPERLY SEATING AGAINST VLV LINE
B	DB1	021851	060578			V085	N	U	CK	D13	CORE FLOOD LINE DISC.CV.VLV CF30 LEAKING AT BONNET	FAILURE OF BONNET GASKET
B	DB1	021849*	060778	06		V085	T	U	CK	E08	6 CONT.ISO.CK.VLVS SHOWED EXCESSIVE LEAKAGE	PART.OF DIRT OR WEAR&PITTING PREV.SEATING
B	DB1	021853*	062578	02		ZZZZ	T	U	UU	F16	TWO CONT ISOL VALVES(C014078&C014118)FAIL TO OPER	BROKEN WIRES AT CONNECTORS(CLUMSINESS)
B	DB1	021958	071378			ZZZZ	R	U	UU	T06	DISCOVERED 2 REQUIRED TEST NOT BEING PERFORMED/T.S	TESTS NOT INCORPORATED INTO SCHED.PROGRAM
B	DB1	021957	071678			F130	N	N	UU	A12	DECAY HEAT COOL.1-2 OUTLET VLV DP-14A WOLDN'T OPEN	ACTUATOR ARM HAD BECOME MISALIGNED
B	DB1	022047*	071878	02	V	ZZZZ	U	U	UU	F03	POWER REMOVED FROM FEEDWATER STOP VALVES FOR TEST	PERSONNEL ERROR,FAILED TO RESTORE POWER
B	DB1	022051	072478			ZZZZ	U	U	CK	I02	FLOOR DRAIN FLAPPER VLV REMOVED,MODE4 OPER;TS VIO.	PERSONNEL ERROR MAINTENANCE

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	PL AN T	CONT. NO.	EVENT DATE	CON MU PM	KEY	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
B	DB1	022366	081578				ZZZZ	U	U	UU	T01	PORT. OF SERVICE WTR. VLV. TEST NOT PERF. IN REQ. TIME	PERSONNEL ERROR/INSTRUCTIONS MISINTERPRET
B	DB1	022690	091578				ZZZZ	N	U	UU	V01	SERVICE WATER OUTLET VALVE NOT REOPENED	PERSONNEL ERROR AFTER FLOW BALANCE
B	CB1	022691	091778				A499	N	S	DI	F22	RADIATION MONITOR PMP DISCH. VLV FAILED TO OPERATE	DIAPHRAGM IN VLV WAS CRACKED/DUE TO HI TM
B	DB1	023002	100578				H035	D	A	UU	A12	SER. WTR. OUTLET VLV SW-1424 FAILED TO OPEN	NUT MISSING FROM VLV ACTUATOR LINKAGE
B	DB1	023006	102178				P014	T	U	DM	B10	EMER. VENT. SYS. ISO. DAMP. HV-5301A WOULD NOT CLOSE	DIRT ON SEALING SURF/NEEDED LUBRICATION
B	DB1	023007	103178				I206	T	H	DM	A12	DIESEL GEN. 1-2 OUTSIDE AIR DAMPER WOULD NOT OPEN	DAMP. LINK. OUT OF ADJ. & BOUND IN A GUIDE
B	DB1	023568*	121678	13			0243	T	J	RV	A06	13 MN. STM. SAFE. RV NOT WITHIN LIMITS OF SETPOINT	PROCEDURAL DISCR. (PRCC. DOESN'T ACC FOR T)
B	DB1	023424	123078				H035	N	A	UU	F12	SER. WTR. OUTLET VLV SW-1424 WOULD NOT OPERATE PROP.	LINK. BETWEEN VLV. & OPERATOR OUT OF ADJUST
B	DE1	014808	041376				ZZZZ	N	U	UU	F12	FLOOD TANK 1A NITROGEN ADD VLV FAILED OPEN	VAL STEM SEPERATED FROM DISK
B	DE1	014809	041476				ZZZZ	T	U	UU	B12	ES VALVE PR-7 FAILED OPEN	VLV SPIND. BROKEN/LMT & TORQ SWT. INOPER.
B	DE1	015530	081076				ZZZZ	U	U	UU	F24	VALVE PR-2 FAILED IN INTERMEDIATE POSITION	RUPTURED DIAPHRAGM, AIR SUP. SYS. EXH.
B	DE1	019860	010477				ZZZZ	T	U	UU	F16	DISCHG. VLV. 1PR-19 ON PENET. RM. EXH. FAN INOPERABLE	DIRTY CONTACT ON MTR. CONT. CENTER
B	DE1	017226	022577				B015	U	U	UU	F21	MPI LETDOWN ISO. VLV., 1HP-9, FAILED (CONT. ISO. VLV.)	ELECTRICAL FAILURE OF THE SOLENOID COIL
B	DE1	017418	031677				R340	N	U	UU	B14	VALVE 1FDW-108 FAILED TO CLOSE	VALVE PACKING FAILED (HARDED)
B	DE1	017497	031677				ZZZZ	N	U	UU	B10	CAUSTIC DRAIN VLV FAILED TO FULLY CLOSE	CAUSTIC DRIED ON VLV SEAT PRE. INTING CLOS
B	DE1	017473	032677				ZZZZ	T	U	UU	F24	VALVE PR-2 FAILED IN INTERMEDIATE POSITION	RUPTURED DIAPHRAGM, AIR SUP. SYS. EXH.
B	DE1	018295	061577				R340	D	U	UU	B00	CONT. ISO. VLV 1FDW-108 FAILED TO CLOSE	NO DEFINITE REASON FOUND FOR FAILURE
B	DE1	018292	062977				ZZZZ	M	U	UU	V02	"B" TRAIN PENET. RM. VENT. SUCT. ISC. VLV. CLOSED WHEN R-	-REQUIRED TO BE OPEN//PERSONNEL ERROR
B	DE1	018308	070777				ZZZZ	T	U	UU	B20	VALVE RC-6 FAILED TO CLOSE	FINGER ON MTR CONTACTOR DIRTY
B	DE1	018427	070777				ZZZZ	T	U	UU	F23	VALVE 1LPSW-18 FAILED TO OPERATE	MECHANICAL FAILURE OF TORQUE SWITCH

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	CON. NO. PM	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	DE1	019881	112977			R340	N	U	UU	B19	VALVE FDW-108 FAILED TO CLOSE	VAL.STEM NEEDED LUBRICATION
B	DE1	020092	122077			V085	N	U	UU	D14	VALVE IRC-2 LEAKING EXTERNALLY	VALVE PACKING FAILED
B	DE1	021320	031578			R340	N	U	GL	B19	VALVE 1FWD-108 FAILED TO CLOSE	VAL STEM NEEDED LUBRICATION
B	DE1	022343	082978			NG30	N	M	GL	F12	VALVE LPSW-21 FAILED TO OPERATE PROPERLY	MISALIGNMENT OF GEARING BETW VAL +OPER
B	DE2	014811	011076			ZZZZ	U	U	UU	D14	INST.ROOT VAL ON PRESS LEV TRANS LEAKING EXTERNAL	VALVE PACKING FAILURE
B	DE2	015537	070676			ZZZZ	N	U	UU	V02	HIGH PRESS. TRANS ROOT VAL CLOSED ON STARTUP	MAINT.PERF. LEFT VAL WITH IMPROPER LINE UP
B	DE2	015538	070676			ZZZZ	N	U	UU	V01	VALVES 21A-90 AND 91 NOT IN PROPER LINE UP	PERSONNEL ERROR
B	DE2	015535	080976			ZZZZ	N	U	UU	V01	LOW PRESS INJECT TRAIN A NOT ISC PROPERLY	PERSONNEL FAIL TO FOLLOW T.J.REQUIREMENTS
B	DE2	016210	100776			ZZZZ	N	U	UU	F12	VALVE 2LWD-1 INOPERABLE	COMPRESSION FOOTROLL PIN BROKEN
B	DE2	016201	101476			ZZZZ	T	U	UU	A16	VLV LPSW-5 COULD NOT BE OPENED REMOTELY	DIRTY ELEC.CONTACT IN MOTOR CONTROL CENTR
B	DE2	017225	011377			ZZZZ	T	U	UU	A23	VALVE 2BS-2 FAILED TO OPEN	TORQUE & LIMIT SWITCHS OUT OF ADJUSTMENT
B	DE2	017541	040577			ZZZZ	T	U	UU	B12	VALVE 2LP-21 FAILED TO CLOSE	LOOSE SET SCREW ON PINION GEAR OF MTR SFT
B	DE2	019886	041977			ZZZZ	T	U	UU	B00	ISO VAL 2CS-5 WOULD NOT CYCLE FROM OPEN TO CLOSE	CAUSE UNKNOWN / REQUIRED EXC.TORQUE
B	DE2	019882	111677	02		R340	T	U	UU	B19	VALVES FDW-106 +108 FAILED TO CLOSE	LACK OF VAL STEM LUBRICATION
B	DE2	019900	120177			V085	N	U	UU	D14	VALVE RC-16 LEAKING EXTERNALLY	VALVE PACKING FAILED
B	DC2	019970	120877			ZZZZ	N	U	UU	V01	ISO.VLV.TO CHAN.3 RB PRESS.TRANS.SHUT BY MISTAKE	PERSONNEL ERROR
B	DE2	021130	040778			R340	N	U	GL	D14	VALVE 2RC-3 LEAKING EXTERNALLY	VALVE PACKING FAILURE
B	DE2	021130A	040778			R340	N	U	GL	D14	EXTERNAL LEAK ON AN INSTR. LINE ROOT VALVE	VALVE PACKING FAILURE
B	DE2	021527	042878			ZZZZ	T	U	UU	V06	VLV 2LPSW-241 FOUND THROTTLED WHEN REQ. OPEN	DEFECTIVE PROCEDURES
B	DE2	023020	110578			ZZZZ	T	U	UU	V01	RC LOOP A1 HPI STOP CHECK VALVE FOUND CLOSED	PERSONNEL ERROR; VALVE WAS REQUIRED OPEN

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEH	PLANT	CONT. NO.	EVENT DATE	CON MUM PM	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	DE2	023427	123078			V085	T U UU	D14		D14	SPRAY CONTROL BYPASS VALVE ZRC-2 LEAKING EXTERNAL	PACKING LEAK
B	DE3	014927	050476			ZZZZ	T U UU	B23		B23	VALVE 3CS-5 WOULD NOT CLOSE REMOTELY	TORQUE SWITCH FAILURE
B	DE3	015955	082276			ZZZZ	N U UU	B24		B24	VALVE 3FDW-108 FAILED TO CLOSE	SOLENO. & SPR. IN AIR SUPPLY TO VLV FAILED
B	DE3	016143	100976			ZZZZ	N U UU	V06		V06	DRAIN VALVE NOT IN PROPER LINEUP	ERROR IN PROCEDURES
B	DE3	016209	110176			ZZZZ	M U UU	V01		V01	IMP. LINEUP VALS 3HP-152 + 3HP-153 CLOSED S.B. OPEN	PERSONNEL ERROR
B	DE3	016900	112176			ZZZZ	N U UU	F00		F00	CNTNMNT FEED WATER ISO VAL INOPERABLE	CAUSE UNKNOWN (PROBABLE INTERNAL PROBLEM)
B	DE3	017061	012677			ZZZZ	T U UU	B10		B10	CNTNMNT ISO VAL 3RC-7 FAILED TO CLOSE	PAINT ON VLV STEM PREVENT. PROP. FUNCT.
B	DE3	017451	032277			ZZZZ	N U UU	B14		B14	FEEDWATER CNTNMNT ISO VAL 3FDW-106 FAIL TO CLOSE	HARDENING OF VALVE PACKING
B	DE3	019884	112877			ZZZZ	N U UU	M02		M02	IMPROPER VLV LINEUP TO CHAN. A NARROW RANGE PRESS--	-TRANSMITTER//PERSONNEL ERROR
B	DE3	019683	120677			ZZZZ	Y U UU	T06		T06	VALVE LP-28 OPEN BUT NOT LOCKED AS REQD	INADQUATE PROCEDURES
B	DE3	020064	010378			F127	T A GA	F12		F12	VALVE 3LP-14 FAILED TO CYCLE MANUALLY	MECH PARTS LOOSE+OUT OF ALIGN
B	DE3	020159	010778			R340	N U 6L	B14		B14	VALVE FDW-108 FAILED TO CLOSE	VALVE PACKING FAILURE
B	DE3	020488	020278			L200	T M UU	B23		B23	VALVE 3PR-9 FAILED TO CLOSE	TORQUE SWITCH FAILURE
B	DE3	020592	020378			L200	T M UU	A23		A23	VALVE BS-3 FAILED TO OPEN	TORQUE SWITCH FAILURE
B	DE3	020593	020778			L200	T M UU	F12		F12	VALVE BS-2 FAILED IN INTERMEDIATE POSITION	VALVE STEM FAILURE
B	DE3	020640	020878			ZZZZ	N U UU	V00		V00	LPSW PUMP SUCT VAL, CLSD DUR PUMP START UP	CAUSE UNKNOWN (PROBABLE PERSONNEL ERROR)
B	DE3	021047	032078			L200	T M UU	A16		A16	VALVE HP-24 FAILED TO OPEN	DIRT ON VAL OPER CONTACTS
B	DE3	021048	032278			A180	T U UU	V01		V01	VALVE 3LPSW-78 CLOSED WHEN REQ. OPEN	PERSONNEL ERROR (VLV OPENS CLOCWISE)
B	DE3	022307	062378			L200	N S UU	A23		A23	VALVE 3LPSW-24 INOPERABLE IN THE CLOSED POSITION	TORQUE SWITCH FAILED DUE TO CORROSION
B	DE3	C23312	120878			ZZZZ	N U UU	D00		D00	VALVE 3FDW-46 LEAKED ON RTD	REASON FOR LEAKAGE NOT STATED

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NC.	EVENT DATE	CON NUM	KEY	MFG.	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	DE3	023296	121678			R340	U 11	GL B26		ISOL VALVE 3FDW-106 FAILED TO CLOSE (RECURRING)	REPAIRED LIMIT SWITCH
B	RS1	014306	020776			D020	T U UU	A00		RHR MOV FAILED TO OPEN DURING TESTING (HV-26106)	TIGHT PACKING / POSS STICKING SEAT
B	RS1	015612	080576			ZZZZ	N U UU	D00		VENT VALVE ON DECAY HEAT COOLER EXTERNAL LEAKAGE	UNKNOWN/NIPPLE REPLACED/POSS VIBRATION
B	RS1	016558*	111176	02		L200	T U UU	A23		TWO DECAY HEAT MOV'S FAILED TO OPEN FOR MONTH TEST	TORQUE SWITCHES NEEDED RESET/TESTED WEEKLY
B	RS1	019535	092177	02		A180	T U UU	C25		RB PURGE INLET & OUTLET VALVE LEAKED THRU ON LLRT	SEAT DEGRADATION ON 66 IN BUTTERFLY VALVE
B	RS1	019536	120177			L200	N U UU	F20		BWS ISOL VALVE FAILED TO OPERATE (SFV-25003)	LIMITORQUE OPERATOR(SMB) FAILED (EXCESS CP)
B	RS1	019666	111177			ZZZZ	T U UU	V04		VALVE LINE-UP INCORRECT//NEW VALVES WERE INSTALLED	--WITH OPEN/CLOSE INDICATION ATYPICAL
B	RS1	019794	111777			V085	T U UU	D14		PRESSURIZER VENT VALVE LEAKING EXTERNALLY	BACKSEATING VELAN GLOBE VALVE STOPPED LEAK
B	RS1	019798	111977			ZZZZ	T U UU	F00		HPI INJECTION ISOLATION VALVE FAILED TO CYCLE/TEST	UNKNOWN
B	RS1	021198	050978			D243	N U RV	A06		4 MS SAFETY VALVES FOUND SET WRONG/NON-CONSERVATIV	MAIN PROCEDURE INADEQUATE/REVISED
B	RS1	021746*	061178	03		D243	T U RV	C00		2 SAFETY, 1 ELECTRO RV LEAKING THRU DURING TESTING	UNKNOWN/2 REPLACED, 1 REBUILT
B	RS1	021746A	061178			D243	T U UU	C00		A BLOCK VALVE ON ELECTRO RV LEAKED THRU/TESTING	UNKNOWN/REWORKED VALVE
B	RS1	023502	121578			ZZZZ	N U UU	V01		INCOMPLETE VALVE LINEUP CAUSED SEVERE H2O HAMMER	PERSONNEL ERROR
B	RS1	023484	122178			ZZZZ	N U UU	V01		FLOW TRANSDUCER INADVERTANTLY VALVED OUT (RX TRIP--	CKTS EFFECTED//PERSONNEL ERROR
B	T11	G13970	010276			ZZZZ	N U UU	C24		INADVERTANT RELEASE THRU ADV-WDL-V125	PERSONNEL//OPER FAILED TO BLEED OFF AIR
B	T11	013950	010676			P340	T U UU	A12		RIVER PUMP DISCHARGE VALVE (HR-V1A) FAILED TO OPEN	16 IN BUTTERFLY BINDING/OPERATOR DAMAGED
B	T11	013949	011076			ZZZZ	U U UU	V06		IMPROPER VLV. LINEUP TO RM-2A(COOL. LEAK DET. SYS.)	INADEQUATE PROCEDURES
B	T11	G14220	022176			ZZZZ	T U UU	V06		IMPROPER VLV LINEUP ON "A" MAKEUP AND PURIF. PUMP	PROCEDURE AND PERSONNEL ERROR
B	T11	016832	031376			ZZZZ	N U UU	C00		VALVE FOR NACH TANK LEAKED THRU/1250 GALS IN 8DAYS	UNKNOWN
B	T11	014718	042776			ZZZZ	T U UU	F12		VALVE FAILED TO OPERATE (DH-V11)	STEM NEEDED REPLACED

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VEN	PLANT	CONT. NC.	EVENT DATE	CON MUM	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	T11	016830*	051076	03	A	ZZZZ	T	U	UU	C07	SOME VLVS LEAKED THRU ON CONTAINMENT LEAKRATE TEST	NORMAL WEAR
B	T11	016830A	051076			ZZZZ	T	U	UU	C04	VALVE LEAKED THRU DURING CONTAINMENT LEAKRATE TEST	DESIGN IMPROPER
B	T11	016830B	051076	02		ZZZZ	T	U	UU	C05	2 VALVES LEAKED THRU ON CONTAINMENT LEAKRATE TEST	FAB ERROR/SEAT RINGS WELDED IMPROPERLY
B	T11	016829	052076			L200	T	U	UU	B23	CONTAINMENT ISOLATION MOV FAILED TO CLOSE(MDG-V3)	TORQUE SW PROBLEM(POSS TIGHT PACKING)
B	T11	014988	052176			R340	T	U	UU	B14	CONTAINMENT ISOLATION VALVE MU-V28 FAILED TO CLOSE	BINDING OF PACKING AND/OR STEM(ROCKWELL)
B	T11	015081	052676			ZZZZ	N	U	UU	B16	LIQUID RELEASE VLV FAILED TO CLOSE ON AUTO SIGNAL	FAILED DELAY IN INTERLOCK CIRCUIT
B	T11	015180*	062276	02		ZZZZ	T	U	UU	B16	TWO VALVES FAILED TO CLOSE GIVEN HI RADIATION SIG	COMMAND FAULT/MAINT REMOVED RELAY
B	T11	016116	092276			L200	N	U	UU	B20	CONTAINMENT ISOLATION MOV (CA-V4A) FAILED TO CLOSE	LOOSE LOCKNUT ON VALVE OPERATOR
B	T11	016109	101276			ZZZZ	T	U	UU	V01	INCORRECT VALVE LINEUP LEAD TO HI DISSOLVED SOLIDS	PERSONNEL ERROR/>700PPM DISCHARGED RIVER
B	T11	016382	110676			W030	N	U	UU	D13	EXTERNAL LEAK INCREASED WHEN MOV (OH-V1) OPENED	LEAKAGE PAST SEPL RING GASKET/SHUT VALVE
B	T11	016661	120776			R322	M	U	UU	B02	48 INCH BUTTERFLY VALVE FAILED TO CLOSE/TESTING	PERSONNEL ERROR/INADEQUATE MAINTENANCE
B	T11	017343	030977			R165	T	U	UU	B23	NO SPRAY PUMP SUCTION VALVE FAILED TO CLOSE/TEST	GREASE IN SPRING PREVENTED TORQUE SW OPER
B	T11	017610*	032477	03	S	ZZZZ	T	U	UU	C07	LOCAL LEAKRATE TESTING IDENTIFIED SEVERAL VALVES--	--LEAKING THRU//NORMAL WEAR
B	T11	018256	052477			A499	T	U	UU	B27	AD VALVE RB-V7 FAILED TO CLOSE DURING TESTING	ASCO SOLENOID PILOT VALVE FAILED/DIRT
B	T11	021381	120977			L200	N	U	UU	B17	PROCESS SAMPLING MOV CA-V13 FAILED TO CLOSE	BUSHING FAILED DUE TO WEAR/POSS LUB PROB
B	T11	020294	011778			A200	M	X	BA	D14	WHILE CLOSING MU-V74A EXCESSIVE EXTERNAL LEAKAGE	PACKING IN VALVE WAS WORN
B	T11	021954	060578			ZZZZ	T	U	UU	F16	RB-V-7 DID NOT OPERATE(RX.BUILD.COOL.SYS.VLV.)	FAILED THYRECTOR CAUSED SHORT CIRCUIT
B	T12	021277	040478			A507	T	A	UU	A27	RHR ADV (NS-V83B) FAILED TO OPEN DURING TEST	FAILURE OF SOLENOID OPERATED PILOT VALVE
B	T12	021274	041578			ZZZZ	T	U	DM	B12	VENTILATION DAMPER VALVE (D-4098) FAILED TO CLOSE	DAMPER LINKAGE IMPROPERLY ADJUSTED
B	T12	021611	041978			ZZZZ	T	U	UU	B23	CONT.ISO.VLV CA-V3 FAILED TO FULLY CLOSE ON AUTO -	-SIGNAL//INCORRECT TORQ.SWTCN SETTING

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	CON. NO. PM	KEY	MFG.	A Unit Type	D Description	V LV Type	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
B	T12	021273*	042378	02	V	ZZZZ	N	U	RV	800	MAIN STEAM RELIEF VALVES FAILED TO RESEAT	UNKNOWN
B	T12	022390*	082478	04	Z	ZZZZ	R	U	UU	102	CABLES TO SAFETY RELATED VALVES NOT SPLICED AS REQ	PERSONNEL ERROR/CONTRACTOR PERSONNEL
B	T12	022386	090778			ZZZZ	R	F	UU	102	DISCOVERED MOV THAT DIONT HAVE CONT GRADE SWITCHES	--AND MOTOR(WDL-V-271)//PERSONNEL ERROR
B	T12	022385	090878			ZZZZ	T	U	UU	800	CONTAINMENT ISOL VALVE(WDL-V1125)FAILED TO CLOSE	UNKNOWN/COULD NOT BE REPEATED
B	T12	023076*	090878	02		ZZZZ	T	M	UU	102	MOVS(MU-V2A/B)FOUND WITH CONNECTIONS NOT TAPED	PERSONNEL ERROR/INSTALLED SHRINK TUBING
B	T12	022652	091378			ZZZZ	T	A	BU	824	AD VALVE (4092C) FAILED TO CLOSE/COMMAND FAULT	DESIGN ERROR IN AIR SUPPLY SYSTEM
B	T12	023543	120278			ZZZZ	N	U	GA	F06	MAIN FEED REG VALVE PINNED OPEN, EXCESS FLOW RESULT	DEFECTIVE PROCEDURES
B	T12	023429*	121378	04		ZZZZ	T	U	UU	816	FOUR CONT ISOL VALVES FAILED TO CLOSE ON TEST	RELAY FAILED TO PROVIDE LOGIC SIGNAL
C	AR2	023481	122078			W127	N	M	UU	A16	FLOW CONTROL VLV 2CV-1025-1 FAILED TO OPERATE	LOOSE MOTOR POWER CONNECTION
C	AR2	023488	122778			ZZZZ	N	U	RV	800	MAIN STM RELIEF VLV 2PSV1053 FAILED TO RESEAT	NO CAUSE FOR FAILURE GIVEN
C	CC1	014122	010376			G250	N	U	UU	I13	GROSS OIL LEAK CLOSING SIDE OF #11 MSIV OPERATOR	FAILED O-RING HI PRESS. SIDE OF VLV OPER
C	CC1	014166	011976			L200	N	U	UU	B12	MOV-5463 STUCK IN THE INTERMEDIATE POSITION	LOCK DEVICE BRASS BUSH, LOOSENED; UNCUP. STM
C	CC1	014465	030576			A325	N	U	UU	F16	HPS1 LP. ISC. VLV 1-MOV-616 WOULD NOT OPER. REMOTELY	BLOWN CONTROL CIRCUIT FUSE CAUSED FAILURE
C	CC1	014703	033176			ZZZZ	N	U	UU	I04	BUTTERFLY VALVE TO BE REPLACED WITH GATE(1CV5210)	POOR DESIGN/PIPE ERRODED DOWNSTREAM OF VL
C	CC1	014467	040576			ZZZZ	N	U	UU	V01	#12 S/G BLOWDOWN ORD. BYPASS 1-BD-121 POSIT. IN CORR.	T.S. VID./PERSONNEL ERROR(SHUT WRONG VLV)
C	CC1	014700	041976			ZZZZ	T	U	UU	C10	DRAIN LINE ISOLATION VALVE LEAKING THRU ON TESTING	FOREIGN MATERIAL&FREQ USE, DAMAGED SEAT
C	CC1	017925	051976			F035	M	U	UU	V00	BORIC ACID STOR. TK. #11 DRAIN. BELOW MINIMUM LEVEL	CAUSE NOT DETERMINED/PROB. PERSON. ERROR
C	CC1	017925A	051976			F035	U	U	UU	I00	WORK REQUIRED ON STORAGE TANK OUTLET RELIEF VALVE	FAILURE CAUSE NOT STATED
C	CC1	015124	052776			I208	N	U	UU	A22	THE VCT MAKE-UP STOP FAILED TO OPEN	RUPTURE OF VLV CONTROL DIAPHRAGM
C	CC1	015271A	062776			F035	N	U	UU	D04	PIN-HOLE LEAK DISCOV. IN BONN. #11 BOR. ACID. PHP. RELIE	SUC. REL. MADE OF CARBON STEEL; DESIGN ERROR

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V E N	P L A N	CONT. NO.	EVENT DATE	C O M M P	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
C	CC1	0152718	062776				F035	U	U	UU	I04	#12 BORIC ACID PUMP SUC.RELIEF MADE OF WRONG WATER	DESIGN ERROR
C	CC1	016406	102276				L200	N	U	UU	B17	WHILE DRAIN.CONT.SUMP,MOV-5463 WOULD NOT SHUT	STEM BUSHING INTERNAL THREADS WERE STRIP.
C	CC1	016408	110476				P340	N	U	UU	V01	DIESEL SERVICE WTR.SYS.LINED UP IMPROPERLY	PERSONNEL ERROR;OPERATED WRONG VALVES
C	CC1	016403	111776				L200	T	U	UU	A23	AUX.HI.PRESS.LP.ISC.VLV SI-617 FAILED TO OPEN	DEFECTIVE TORQUE SWITCH;BURNED CONTACTS
C	CC1	016740	121976				V135	N	U	UU	B17	#12 S/G BOT.BLOW.DROFICE BYPASS VLV WOULD NOT SHUT	DAMAGED BUSHING CAUSED VLV NOT TO SHUT
C	CC1	017476	031377				ZZZZ	N	U	UU	V06	ISO.VLV ADD.TO AUX SPRAYLN DUR.PRIOR OUT.LEFT SHUT	VLV.NCT INCLUDED IN VLV LINEUP/PROCED.ERR
C	CC1	017743	042577				C255	T	U	UL	A12	#12 SALT WTR.PMP.DISCH.CK.VLV WOULD NOT OPEN	DISC SLAMMED SHUT AND WEDGED IN THE SEAT
C	CC1	018487	071377				ZZZZ	T	U	UU	V01	ISO.VLV TO PRESS.SWTCHS.FOR #11DSL.SHT/T.S.VID.	PERSONNEL ERROR/IMPROPER VLV LINEUP
C	CC1	019206	100377				ZZZZ	T	U	UU	F24	SERVICE H2O CONT VALVE OPERATED ERRATICALLY IN AUT	PROBLEM WITH PNEUMATIC CONTROLLER TO VALV
C	CC1	019203	100477				ZZZZ	N	U	UU	F24	SERVICE H2O CONT VALVE OPERATED ERATICALLY IN AUTO	PNEUMATIC CONTROLLER NEEDED CALIBRATION
C	CC1	019479A	101977				ZZZZ	N	U	UU	B19	SPENT FUEL PL.CHAR.ABS.BANK BYP.DMP.FAILED TO SHUT	OPER.BIND. DUE TO IMPROPER LUBRICATION
C	CC1	019479B	101977				ZZZZ	T	U	UU	B02	SPENT FUEL PL.CHAR.ABS.BANK BYP.DMP.FAILED TO SHUT	60 FB DAMPER GASKETS WERE MISSING
C	CC1	020036	121977				T095	T	U	UU	I09	#11COMP.COOL.HEAT XCHGR.SALT WTR.RV NEEDED REPAIRS	VLV'S SPRING WAS SEVERELY CORRODED
C	CC1	020063*	012278	02			ZZZZ	N	U	UU	D00	EXTERNAL LEAKAGE ON PRESS.INST.RT VLVCA SPRAY VLV	STEM PACKING LEAKS
C	CC1	020163*	012578	02			G250	T	H	UU	F00	BOTH MSIV'S FAILED TO CLOSE WITHIN REQ. TIME(3.6S)	CAUSE UNDER INVESTIGATION
C	CC1	021056*	033078	09			D243	M	U	RV	A06	9 MN.STM.SAFE-REL.VLV SETTINGS OUT OF TOLERANCE	PROCEDURE.CHG.CAUSED RV SETPOINTS TO BE WR
C	CC1	021057	041178				V085	N	U	GA	D14	VLV CVC-397(LETDWN.ISO.VLV)HAD EXT.PACKING LEAK	VLV STM.PACKING WAS WORN
C	CC1	021536	042578				F081	T	U	UU	V06	#4 HALON SUBSYSTEM INADVERTENTLY DISCHARGED	INADEQUATE PROCED. RESULTED IN IMP.VLV+LU
C	CC1	021700	060778				L200	T	M	UU	F26	CONT NDR SMP TSG (MOV-5463)DID NOT SHUT IN REQ TIM	OPEN LMT.SWTC.HAS OUT OF ADJ.(PROCEDURE)
C	CC1	021994	072178				G250	N	H	UU	F13	#12 MSIV DECLAR.INOP.DUE TO ACCUMULATORS DEPRESS.	MSIV ACTUATOR CAP & SEAL WERE FAILED

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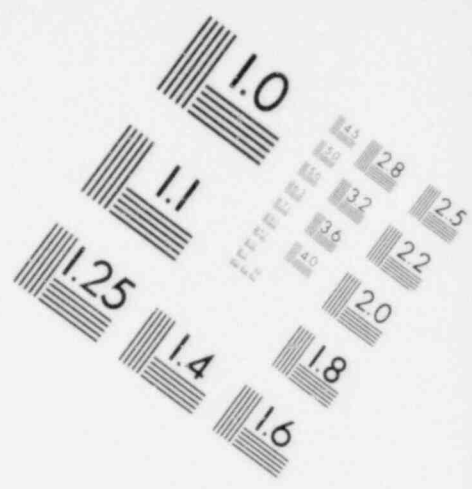
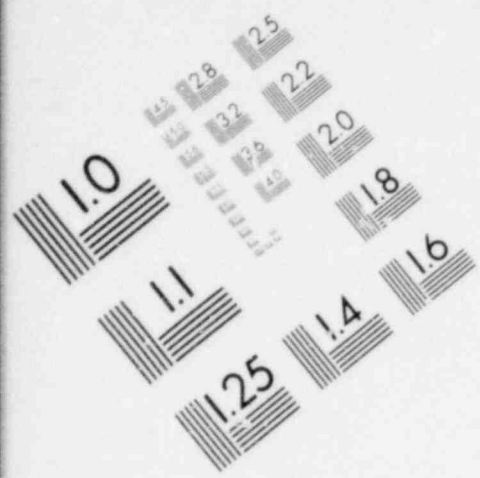
V E N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P H M K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
C	CC1	022600*	092378	02	JG90	T	U	DM	C12	#116#12 SFP EXH.FAN DISCH.DMPRS,LEAKING INTERNALLY	VLVS WERE OUT OF ADJUSTMENT
C	CC1	023381	120978		V085	N	U	GA	D18	#11 RX.COOL.CHG.PUMP DISCHG.ISO.VLV.LEAK.EXTERNAL.	BODY TO BONNET SE'L WELD FAILURE
C	CC1	023262	121678		ZZZZ	N	U	GA	V01	IMPROPER VLV. LINEUP ON MAKE-UP WATER DEMINERALIZ.	PERSONNEL ERROR
C	CC2	020628	010477		A499	T	U	UU	A24	VLV 2-CV-5291 IN CONT.ATM.SMPL.LN. COULD NOT BE OP	SOLENOID VLV IN SUPPLY LN FAILED
C	CC2	017455	031477		H037	N	U	UU	D13	S/G COMB.LVL6PRESS ROOT STOP VALVE LEAK. EXTERNAL.	GASKET FAILLRE IN BOLTED BONNET
C	CC2	017986	032277		M120	T	U	UU	C00	#21 DG COOL.SERV.WTR.INLET(2-CV-1587)LEAK.BY SEAT	CAUSE CF INTERNAL LEAKAGE NOT GIVEN
C	CC2	017906	051477		0243	T	U	UU	H12	S/G SAFETY VLV LIFTED BELOW SETPOINT (2-RV-3993)	DRIFT IN VLV'S SPRING TENSION,ADJ.TENS.
C	CC2	018640*	061477	04	0243	N	U	UU	H12	3 SAFE.VLVS #225/661 SAFE.VLV #21S/G LIFTED PREMAT	DRIFT IN THE VLVS' SPRING TENSION
C	CC2	018482*	071477	02	V	ZZZZ	N	U	C00	#22 CHG.PMP DISCH.PRESS.GA.DRN.VLVS LEAK.BY SEATS	CAUSE OF VLVS NOT TIGHT,SEAT. NOT GIVEN
C	CC2	018620	081977		P305	N	U	UU	F01	#21 AUX.FDWTR.PMP.THROT.STOP VLV HANDWHEEL BROKE	A PERSON APPL.EXCESS.FORCE WITH VLV WREN.
C	CC2	018929	082077		1208	N	U	UU	D14	PRESS.SPRAY VLV 2-CV-100E LEAKING EXTERNALLY	LEAK.DUE TO FAILED PACKING
C	CC2	018881	082577		ZZZZ	N	U	UU	F16	#21 CONT.SPRAY SYS.HDR.ISO.VLV(2-SI-4190-CV) OOS	VLV PLACE.OUT OF SERV.DUE TO FAIL.RESIST.
C	CC2	019205	100477		C600	T	U	UU	D14	LETDOWN CONT.VLV(2-CV-1100-(V)HAD EXT.LEAK ON PACK	PACKING FAILURE/VLV REPACKED,LEAKAGE STOP
C	CC2	019215	100777		ZZZZ	N	U	UU	D13	EXTERNAL LEAKAGE FROM 22B SI LOOP CHECK VALVE	FAILED BONNET GASKET
C	CC2	019432	101177		V085	T	U	UU	C12	CONT.ISO.VLV FOR PLANT SER.WTR. LEAKING BY SEAT	BENT VLV.STP. PREVENTED VLV FROM SEATING
C	CC2	019740	111577		L200	N	U	UU	A26	MOV-627,AUX HI PRESS HDR STP LP 118,WOULDN'T OPEN	OPEN LIMIT SWITCH CONTS. WERE DIRTY
C	CC2	019783	112577		ZZZZ	N	U	UU	F24	SERVICE H2O CONT VALVE MALFUNCTIONED IN AUTO MOD.	CONT AIR & FEEDBACK TUBING INSTAL'D WRONG
C	CC2	019982	121377		C710	N	U	UU	H04	H1.PRESS.SI.HDR.RELIEF LIFTED AT PRESS.BELOW T.S.	DESIGN ERROR;VLV WAS SET AT TOO LOW PRESS
C	CC2	020157	010378		R197	N	U	UU	G16	#21 MN.STM.ISO.VLV FAILED SHUT;VLV DECLARED INOPER	POSITIVE GROUND ON VLVS CONTROL CIRCUIT
C	CC2	020307	011178		P340	T	U	UU	A12	#21 SER.WTR.HT.XCHG.SLT.WTR.OUT.VLV FAILED TO OPEN	DAMAGED SEAT RINGS&CLAMPS JAMMED SEAT DSM

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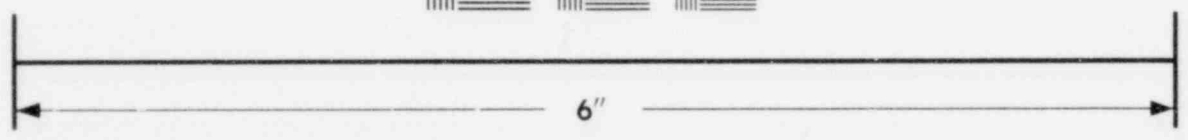
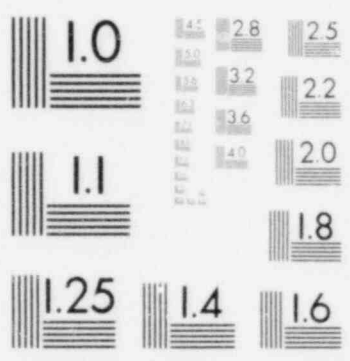
VE N	PL ANT	CONT. NG.	EVENT DATE	CN MU PP	KEY	MFG.	A C T I V E	D I S T R I B U T O R	V L V E T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
C	CC2	021991	080178			A499	T	S	UU	A08	#21 DG SER.WTR.SUPPLY VALVE FAILED TO OPEN	BADLY WORN PLUNGER SEAT CAUSED SGL.TO STK
C	CC2	022246*	090778	02	V	C490	N	U	CK	E00	#21B6228 SI.TANK OUTLET CHECK VLVS LEAKING	CAUSE OF REVERSE LEAKAGE NOT GIVEN
C	CC2	022637*	102378	12		D243	T	U	RV	A06	12 HN.STM.SAFE-REL.VLV SETTINGS OUT OF TOLERANCE	PROCEDUR.CHG.CAUSED RV SETPCINTS TO BE WR
C	CC2	022742	102378			G250	T	H	UU	B24	#21 MSIV FAILED TO SHUT WITH ISOLATION SIGNAL	IMPROP.ACTU.SOL.VLVS-USED IN VLV ACTUATOR
C	CC2	022915	111578			ZZZZ	N	U	UU	V01	RWT LOCAL SAMPLE VLV.OPEN WHEN REQ. TO BE SHUT	PERSONNEL ERROR
C	FC1	014560*	040876	02	V	C665	N	U	UU	C00	LEAKAGE BY ION EXCHANGER CH-8A ISOLATION VALVES	VALVES TO BE INSPECTED/NO CAUSE GIVEN
C	FC1	014561	041476			ZZZZ	T	U	UU	B16	HCV-383-4 FAILED TO CLOSE ON TEST	BINDING CONTACT IN BREAKER TO VALVE
C	FC1	014589	050676			M120	N	U	UU	V01	VALVE HCV-2508 WAS CLOSED, SHOULD BE OPEN	IMPROPER VALVE LINEUP / PERSONNEL ERROR
C	FC1	015209A	052876	02		D243	N	U	UU	H00	RELIEF VALVES OPENED BELOW SET PRESSURE	PRESSURE SETPOINT HAD DRIFTED
C	FC1	015209B	052876	06		D243	N	U	UU	H00	6 RELIEF VALVE SETPOINTS BELOW DESIRED PRESSURE	SETPOINTS HAD DRIFTED
C	FC1	015268	071076			L200	N	U	UU	A20	VALVE MOV-A-D4 FAILED TO OPEN ELECTRICALLY	FAILURE, VALVE OPERATOR, WORN+WORN GEAR
C	FC1	015353	072676			C665	N	U	UU	C00	VALVE CH-152 LEAKING INTERNALLY	TIGHTENED VALVE
C	FC1	016025*	100176	05		D243	M	U	UU	A00	5 RELIEF VALVE SETPOINTS DRIFTED FROM TECH SPEC	UNDER INVESTIGATION
C	FC1	016000*	100476	02	V	A180	N	U	UU	C14	CNTMNT PURGE ISO VALVES LEAK IN EXCESS OF SPEC	VALVE PACKING&SEALS OUT OF ADJUSTMENT
C	FC1	016334*	111076	02		C710	M	U	UU	H06	VALVES RC-141+RC-142 LIFTING PRESS OUT OF SPEC	LIFTING PRESS SET WITH NITROGEN
C	FC1	016606	112076			ZZZZ	T	U	UU	A24	RAW WATER VALVE HCV-401E WOULD NOT OPEN ON TEST	ELECTRIC TO PNEUMATIC CONVERTER FAILED
C	FC1	016958	011177			ZZZZ	N	U	UU	B24	VALVE HCV-345 OPENED PARTIALLY WHEN REQ CLOSED	ELECTRIC TO PNEUMATIC CONVERTER FAILED
C	FC1	017745A	042577	02		ZZZZ	N	U	UU	E00	VALVES CH-284+HG-100 LEAKING INTERNALLY	UNDER INVESTIGATION
C	FC1	017745B	042577			ZZZZ	N	U	UU	C00	LEAKAGE THROUGH RELIEF VALVE HG-105	UNDER INVESTIGATION
C	FC1	019401*	093077	03		D243	M	U	UU	A00	3 RELIEF VALVE PRESS. SETTINGS DRIFTED OUT OF SPEC	CHANGE IN ENVIRONMENTAL CONDITIONS

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

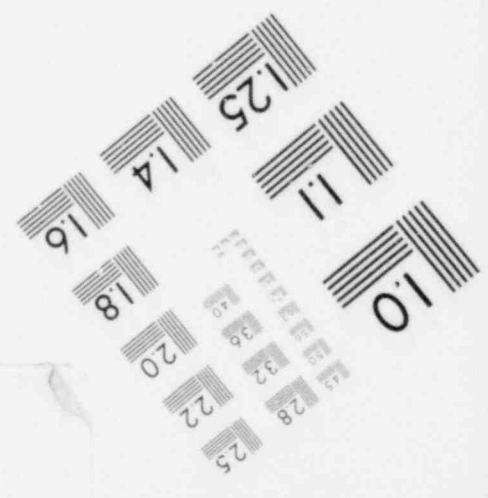
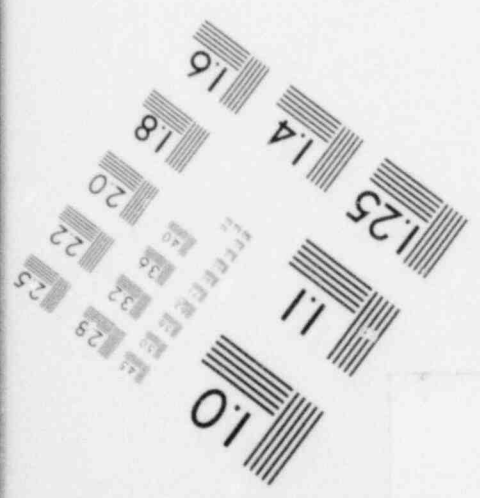
W E N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P M	K E Y	MFG.	A L T E R A T I O N S	O P E R A T I O N S	V L V E S	F A I L C O D E	FAILURE MODE	FAILURE MECHANISM
C	FC1	019437	101177			ZZZZ	T	U	UU	C25	EXCESSIVE LEAKAGE THRU BYPASS VALVE AROUND VA-66	DEFECTIVE SEAT
C	FC1	019552	102077			SQ75	M	U	UU	E12	VALVE HCV-10418 DISK FOUND UNFASTENED	LOCK PIN BROKE ALLOWING NUT TO LOOSEN
C	FC1	019551	102677			C710	M	U	UU	AG0	VALVE RC-147 RELIEF PRESSURE OUT SPEC HIGH	COULD NOT BE DETERMINED
C	FC1	019621*	112777	02	V	ZZZZ	M	U	UU	C00	POSSIBLE INTERNAL LEAK OF CNTMNT PURGE VALVES	CAUSE OF LEAKAGE NOT GIVEN
C	FC1	020365	011778			M065	N	U	RV	D11	WELD ON 1-B CHG PUMP DISCH RELIEF VALVE CRACKED	VIBRATION OF PIPING IN SERVICE
C	FC1	020585	021578			M065	N	U	RV	D11	WELD ON CH-1A CHG PUMP DISCH RELIEF VALVE CRACKED	VIBRATION OF PIPING IN SERVICE
C	FC1	020818*	022278	02		F135	T	U	GL	C00	CNTMNT ISO VALVES HCV-1388A+HCV-1388B LEAKING	CAUSE OF LEAK UNDETERMINED
C	FC1	021118	040878			M065	N	U	RV	D11	WELD ON VALVE CH-219 CRACKED	VIBRATION OF PIPING IN SERVICE
C	FC1	021528	051478			ZZZZ	T	U	UU	D14	VALVE PCV-7420 LEAKING EXTERNALLY	VALVE PACKING TIGHTENED
C	FC1	022468A	090878	02		ZZZZ	N	U	CK	E00	CVS CH-284 + HG-100 LEAKING INTERNALLY	CAUSE UNKNOWN
C	FC1	022468B	090878			ZZZZ	N	U	RV	C00	RV HG-105 LEAKING INTERNALLY	CAUSE UNKNOWN
C	FC1	022469	092178			F130	T	A	UU	A24	VAL YCV-1045 FAILED TO OPEN(AUX.FD.PMP.STM.INL.)	INSTRUMENT AIR SUPPLY TO VAL CLOSED
C	FC1	022972	110178			M358	R	U	CK	E05	AUX FEED CHECK VALVE FOUND INSTALLED WRONG	CONSTRUCTION ERROR
C	FC1	023022*	111678	30		L200	R	M	UU	I05	30 LIMITORQUE VALVES FOUND WITHOUT STAKED LOCKNUTS	MANUFACTURER ERROR
C	FC1	023139	112478			ZZZZ	T	U	UU	F16	PC-1058 WAS NOT OPERATING	VALVE CLOSING RELAY NOT REWIRED AFT MAINT
C	FC1	023140*	120578	02	V	ZZZZ	T	U	UU	C25	CONT PURGE VALVES LEAKING THRU	MODIFICATIONS DONE DURING REFUEL OUTAGE
C	FC1	023171	122078			D243	M	U	RV	V06	TWO PRESS OP RELIEF VALVES OPENED WHEN REQ CLOSED	TECH PULLED FUSES, DEFECTIVE PROCEDURES
C	M12	017891	030676			K125	T	U	UU	F12	SEAWATER TEMP CONTROL VLV INOPERABLE	TENSION PIN SHEARED BETW VAL AND OPER
C	M12	014461	030976			ZZZZ	M	U	UU	A16	AUX.FEEDPMP.STM.INLET VLV.CYCLED;WOULD NOT REOPEN	FAILURE OF VALVE OPERATING CIRCUIT
C	M12	015338	072476			G103	N	U	UU	A12	INLET STEAM TRIVALVE WOULD NOT OPEN	VALVE OPERATOR SPINDLE FAILED

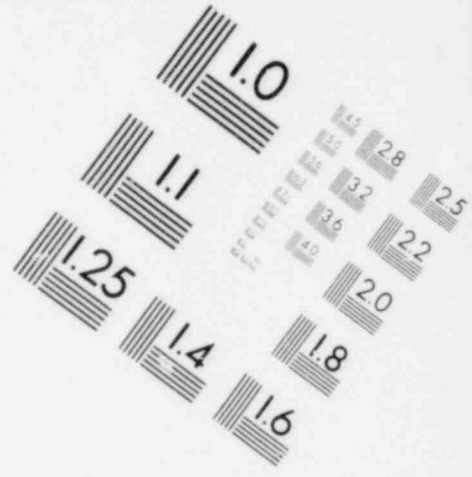
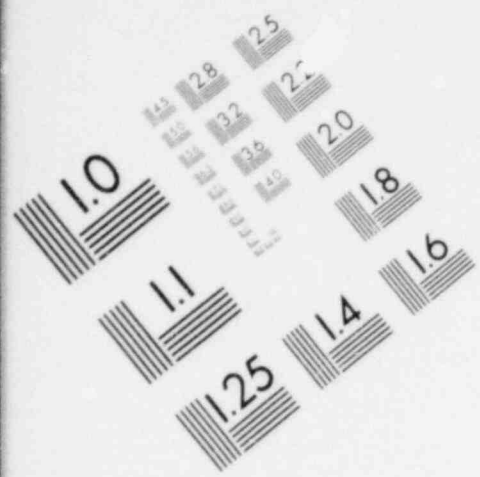


**IMAGE EVALUATION
TEST TARGET (MT-3)**

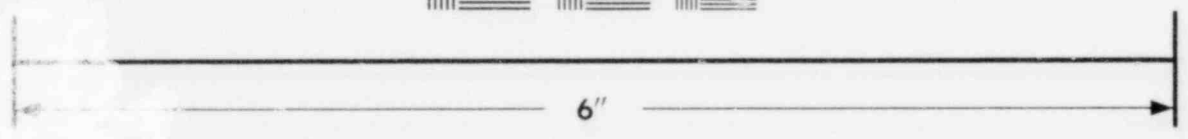
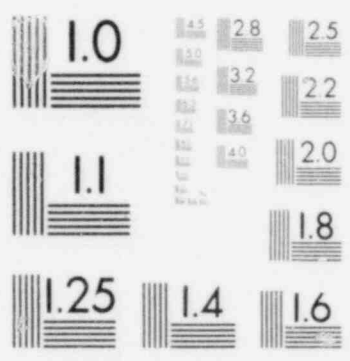


MICROCOPY RESOLUTION TEST CHART

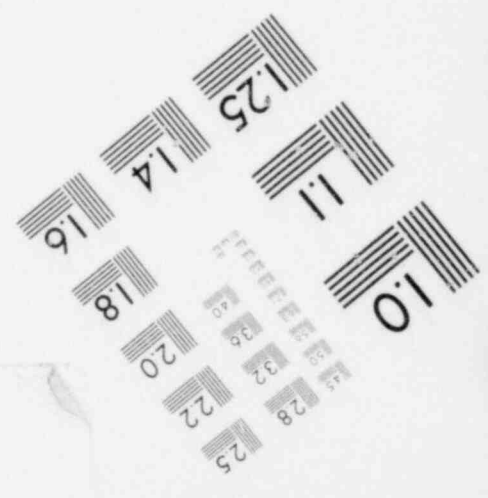
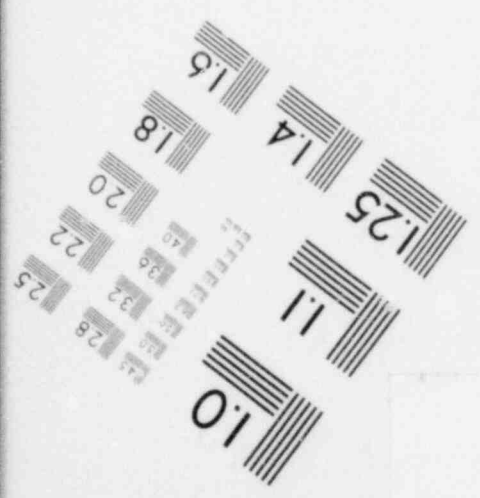




**IMAGE EVALUATION
TEST TARGET (MT-3)**



MICROCOPY RESOLUTION TEST CHART



ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N T	CONT. NC.	EVENT DATE	C O N T R O L P H	K E Y	MFG.	A C T I V I T Y	D I R E C T I O N	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM				
C	M12	015578	080476				Z	Z	N	U	UU	C00	VALVE ON #4 SI TANK LEAKING INTERNALLY	NO CAUSE GIVEN		
C	M12	016721	121976				Z	Z	N	U	UU	V01	VLV 2-CH-514 WAS NOT RECLOSED FOLLOW. AN SIAS ACTU	PERSONNEL ERROR (VALVE NOT CLOSE PROP.TIM)		
C	M12	017113	012077				V	0	D	U	UU	F12	VALVE 2-CH-514 WOULD NOT OPERATE	VALVE FAILED DUE TO INTERNAL BINDING		
C	M12	017346	030277				K	1	2	N	U	UU	F12	C RBCCW HX SERV WAT OUT TEMP CV FAILED TO OPERATE	SHEAR CF PIN COUPLING OPER TO STEM	
C	M12	017490	031577				V	1	3	N	U	UU	D07	STM TRAP ISO VAL LEAKING EXTERNALLY	NORMAL PACKING WEAR	
C	M12	017620	040777				A	5	8	N	U	UU	E00	INT LEAK OF CV BETW INJECT Tk 4 AND PRI COOLANT	CAUSE UNKNOWN	
C	M12	017780	042577				1	5	8	N	U	UU	F00	A MSIV TAKES TOO LONG TO CLOSE	CAUSE UNKNOWN	
C	M12	017837	051577				Z	Z	N	U	UU	V01	BOTH D/G FUEL SUP. VLVs SHUT WHEN REQUIRED TO BE O-	-PEN//PERSONNEL ERROR		
C	M12	018740	072177				Z	Z	N	U	UU	E00	S.I.HEADER CHECK VLV. 2-SI-648 LEAKING INTERNALLY	NO CAUSE GIVEN		
C	M12	018971	081677				A	5	8	N	U	UU	E00	INT LEAK OF CV BETW INJECT #4 AND PRI COOLANT	CAUSE UNKNOWN	
C	M12	019257	092377				Z	Z	N	U	UU	C04	BORIC ACID LEAKING THROUGH DISCHARGE VALVE	VCT PRESS L.T. HEAD PRESS		
C	M12	019931	101477				G	0	8	0	U	UU	B16	CONT.ISO.VLV 2-RC-002 FAILED TO SHUT ON COMMAND	CONDUCTORS FOR VLV OPERATOR WERE SHORTED	
C	M12	019602	102877				Z	Z	R	U	UU	T01	MN. STM. LINE ISO. VLV. OPER. TEST COMPLETED LATE	TECH. SPEC. VIO. DUE TO ADMINISTRATIVE CAUSE		
C	M12	021332	041478				V	0	8	5	M	X	GL	V01	PRI MAKEUP VAL IN PART. OPEN POSIT. SHCULD BE CLOSED	PERSONNEL ERROR
C	M12	022134	072578				F	1	3	N	U	BU	V06	CONTMNT PURGE VALVES OPERATED IN IMPROPER MODE	INADAO LATE CNTNMNT PURGE PROCEDURES	
C	M12	023211	110778				K	1	2	N	U	BU	F12	RX BLDG COOLING WATER VALVE FAILED TO OPERATE	FAILED TENSION PIN BETWEEN VALVE OPERTOR	
C	M12	023565	122778				A	4	9	T	A	UU	B24	ISOL VALVE 2-SW-3.2A FAILED TO CLOSE	SOV IN AIR LINE TO VALVE REPLACED	
C	MY1	015731	091676				Z	Z	N	U	UU	V02	INCORRECT VLV LINEUP CNTNMNT ISO SYSTEM PV-15	PERSONNEL EPROR/FAILED TO CLOSE		
C	MY1	020758	020277				1	2	0	M	U	UU	F16	WIRES DISCONNECTED FROM VALVE SL-P-3, SIAS FUNCT.	CAUSE UNKNOWN	
C	MY1	017882	060277				H	6	3	N	U	UU	F12	LETDWN PRESS. CONT. VLV LD-F-16 OSCILLATING RAPID.	BOLTS ON OPER. LOOSE / OPER. FELL OFF	

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N T	P L A N T	CONT. NO.	EVENT DATE	C O M M P M	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
C	MY1	019261	102077			A395	T	U	UU	V01	IMPROPER VALVE LINEUP LPSI PUMPS	PERSONNEL ERROR
C	MY1	020475	021678			J036	T	U	BU	T02	VALVE SW-53 CLOSED BUT NOT LOCKED	PERSONNEL ERROR
C	MY1	020761	021678			M120	N	M	UU	I02	THERM.OVERLD.LINK.NOT REMOVED FROM #1 LP. COLD LE-	-G ISO.VLV.BRKR.//PERSONNEL ERROR(MAINT.)
C	MY1	020762	021678			I208	T	U	GL	B10	VALVE DR-A-6 FAILED TO FULLY CLOSE	PARTICLE LODGED IN VALVE SEAT
C	MY1	022144	072178			M120	T	U	PL	C10	CNTNMNT ISO VALVE PD-A-122 LEAKING INTERNALLY	PLASTIC ELECT TIE-WRAP LODGED
C	MY1	022141	081578			D245	M	U	RV	A00	PRESSURIZER RV PR-S-13 SETPOINT OUT OF SPEC	CAUSE UNKNOWN, SETPOINT ADJUSTED
C	MY1	022401*	082478	06	Z	M120	T	M	UU	I01	THERM.OVERLD.LINK.NOT REMOVED FROM RCS LOOP ISO.V-	-LVS BRKRS.AS REQUIRED//PERSONNEL ERROR
C	MY1	022398	090778			ZZZZ	N	U	UU	V01	VLV.LINEUP ERROR ALLOWED RCS WTR.AT 1250 PPM BORO-	-N TO DISCH.BACK TO RWST//PERSONNEL ERROR
C	PA1	014522	032876			M120	T	U	UU	C25	ISO VAL CV-1101 LEAKING INTERNALLY	TEFLON VALVE SEATS WORN (NORMAL WEAR)
C	PA1	016527	040876			ZZZZ	N	U	UU	V01	DRAIN LINEUP PERFORMED ON WRONG WST.GAS DECAY TK.	PERSONNEL ERROR
C	PA1	014721*	043076	02		I208	R	U	UU	I04	VALS CV-2113,-2115 DO NOT MEET STRESS CODE CRIT-	CHANGE OF CALCULATION TECHNIQUE / DESIGN
C	PA1	021962	062776			F125	T	U	UU	A00	CONT.PURGE SUP. VLV (CV-1808) FAILED TO OPEN	NO APPARENT REASON FOUND FOR FAILURE
C	PA1	015438	082376			C587	T	U	UU	D14	VALVE CV 1808 LEAKING IN EXCESS OF T.S.	VALVE PACKING FAILURE
C	PA1	017905	021977			ZZZZ	N	U	UU	F12	DISCH CV,SERV WATER PUMP PC7 STUCK	CV FLAPPER STUCK,VAL LUBED AND RET TO SERH
C	PA1	017981	052677			F011	N	U	UU	D02	RV-2255 LEAKING EXTERNAL/PART. UNSCREW.FROM COLLET	PERSONNEL ERROR/MAINTENANCE IMPROP. PERF.
C	PA1	018274	061577			ZZZZ	T	U	UU	A16	MOV-3011 FAILED TO OPEN	CONTACT FOR "SEAL-IN" CKT ON RELAY FAILED
C	PA1	019406	081477			F125	T	U	UU	C25	PURGE AIR EXHAUST ISO VLV LEAKING INTERNALLY CV-18	WORN RUBBER VAL DISK SEAT
C	PA1	019405	091677			C587	U	U	UU	I04	CNTNMNT PURGE ISO VLVS NEED REDUNDANT AIR SUPPLY	DESIGN ERROR IN ORIG SYST DESIGN
C	PA1	019461	092077			C255	T	U	UU	A09	CV FOR SERV WATER PUMP P-7B FAILED CLOSED	CORRODF, HINGE PIN
C	PA1	019546*	101877	02	V	C587	N	U	UU	C25	CNTNMNT PURGE ISO VALVS LEAKING AFTER MODIFICATION	VALVES NOT SEATING PROPERLY

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEH	PLANT	CONT. NC.	EVENT DATE	CN PHN	YR/M	MFG.	ACTIVITY	DESCRIPTION	VALVE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
C	PA1	020230	122377			ZZZZ	T U UU	G16	MOV-3011(HPCI ISO.VLV)	FAILED TO REMAIN OPEN	BAD SWITCH CAUSED CLOSING CNT.TO STICK	
C	PA1	G20164*	010678	02		C710	T U RV	A00	SETPOINTS ON 5 RVS OUTSIDE OF T.S.BANDS,STM.SYST	CAUSE OF S.P. DRIFT UNKNOWN		
C	PA1	G20231	010878			H035	U A UU	A24	VALVE CV-3025 FAILED IN CLOSED POSITION	WATER IN AIR LINE TO VALVE OPERATOR		
C	PA1	G21322	042178			ZZZZ	M U UU	V01	CNTNMNT SERV AIR VAL OPENED IN VIOL OF T.S.	PERSONNEL ERROR		
C	PA1	G21326	042878			C255	D U CK	A09	P-7B SER. WTR. PMP. DISC. CK. VLV. STUCK SHUT	CV HINGE PIN CORRODED		
C	PA1	G21993	080478			C587	T U BU	F02	THE T-RING IN CY-1806 WAS NOT PRESSURIZED	INCORRECT REASSEMBLY OF AIR SUP TO CY1806		
C	PA1	G22229	080778			V135	N U GA	V01	INCORRECT HANDJACK OPER FOR CV-0437A, CV-0437B	PERSONNEL ERROR		
C	PA1	G22228	082878			C587	N U BU	V02	CNTNMNT PURGE & ISO. VALVES OPEN IN VIOL. OF T.S.	IMPROPER TAGOUT OF VALVES/PERSONNEL ERROR		
C	PA1	G22948	111078			ZZZZ	N U UU	C00	DRAIN VALVE FROM PHOSPHATE STORAGE TK LEAKED THRU	REASON NOT GIVEN		
C	PA1	G23021	112878			ZZZZ	N U UU	V01	VCT SITEGLASS DRAIN VALVE OPEN WHEN REQ CLOSED	PERSONNEL ERROR		
C	SL1	G15002	052176			L200	N U UU	A16	MO AUX FEED PUMP STEAM SUPPLY VALVE FAILED TO OPEN	NO SIGNAL ? VALVE/COMMAND FAULT/ELECT		
C	SL1	G15000	052476			L200	T U UU	B02	MOVII-MV-15-1)FAILED TO CLOSE / PREOP TESTING	PERSONNEL MAINT PROBLEM/DIRTY TORCSW CNT		
C	SL1	G15003	060476			C339	R U UU	I05	RECORDS REVIEW SHOW VALVES OF H2 SYS NOT TESTED---	---FOR A1 ENVIRONMENT/REPLACED VALVES		
C	SL1	G15503	062676			C710	N U UU	D13	RELIEF VALVE ON BORDN ACID SYSTEM/EXTERNAL LEAKAGE	GASKET FAILED ON INLET TO VALVE		
C	SL1	G15504	070576			ZZZZ	N U UU	V01	IMPROPER VLV.LINEUP TO RWT (TANK OVERFLOWED)	PERSONNEL ERROR		
C	SL1	G15507	070976			L200	T U UU	A16	AUX FEED PUMP STEAM INLET VALVE FAILED TO OPEN	COMMAND/H2O IN CONTROL CIRCUIT/POOR DES		
C	SL1	G15511*	071876	02		C710	N U UU	H00	TWO SUCTION RELIEF VALVES OPENED PREMATURELY	UNKNOWN/FAILED TO RESET ALSO		
C	SL1	G16880	120876			L200	T U UU	A16	AUX FEED PUMP STEAM INLET VALVE FAILED TO OPEN	COMMAND/H2O IN CONTROL CIRCUIT/DESIGN		
C	SL1	G17609*	040877	02		W255	T U UU	I04	ATMOSPHERIC STEAM DUMP VALVES DIDNT MEET FSAR CRIT	DESIGN ERROR IN SIZING THE VALVES		
C	SL1	G18060	052777			ZZZZ	N U UU	B16	"A" TRAIN FEEDWATER REG.VLV FAILED OPEN	BLOWN FUSES		

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	CON. NO. PM	KEY	MFG. Y	ACHIEVEMENT Y	OPERATION R	WLM TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
C	SL1	018271	061077			L200	N	U	UU	F12	MOV (I-MV-15-1) FAILED TO OPERATE	FAILED ACTUATING NUT ON MOTOR DRIVE
C	SL1	019504	081777			W255	T	U	UU	A00	CONTAINMENT SPRAY VALVE FAILED TO OPEN/TESTING	UNKNOWN/ LOCKED OPEN HANDWHEEL
C	SL1	019509	092577			ZZZZ	T	U	UU	A00	CONT.SPRAY HDR.ISO.VLV FCV-07-18 NOT FULLY OPEN	UNKNOWN (CONT.SPRAY VLV.STICKING)
C	SL1	020639	020978			L200	T	M	UU	B20	AUX FEED PUMP VALVE (MV-09-11) FAILED TO CLCSE	MOV MOTOR WINDING PARTIALLY SHORTED
C	SL1	021524*	042078	02		A415	T	U	CK	E25	TWO VENT VALVES (V-25-20/FCV-25-3) LEAKED THRU	SEAT PROBLEMS/1-CUT,2-SMALL DEPRESSION
C	SL1	021733	053078			C490	T	U	UU	F03	151 FEEDWATER BYPASS CONT VLV INADVERT.OPENED FUL-	-LY//ANALYTICAL SETTINGS UNREALISTIC
C	SL1	021835	061578			A340	N	M	UU	F12	MOTOR OPERATED DAMPER VALVE FAILED TO OPERATE	OUT OF ADJUSTMENT
C	SL1	022185*	072878	05	Z	L200	R	M	UU	I05	VENDOR NOTIFIED PLANT OF POTENTIAL MOV FAB PROBLEM	LOCKNUTS STAKED WRONG ON SOME/REPAIR SAME
C	SL1	022227	073178			A499	N	A	DI	A24	ADV (FC-25-8) FAILED CLOSED/AIR TO VALVE SECURED	SOV DIAPHRAGM LEAKED/COMMAND FAULT
C	SL1	022649	100278			ZZZZ	N	U	RV	C00	18 CHARGING PMP HAD A LEAKING RELIEF VALVE	CAUSE OF LEAKAGE NOT GIVEN
C	SL1	022908	110378			P032	M	U	GA	V02	ISOL VALVES INADVERT OPENED BETW SPRAY&SHUTDOWN --	--COOLING SYSTEMS//PERSONNEL ERROR
C	SL1	022909*	111178	04		TC20	N	S	UL	F01	FOUR SOVS FAILED TO OPERATE(INACH ADDITION SYS)	NO PWR TO SCLENCIDS,FUSE FOUND REMOVED
C	SL1	023141	112178			L200	T	M	UU	A23	MOV 07-18 IN 18 ECCS TRAIN FAILED TO OPEN ON TEST	TORQUE SW FAULTY,REPLACED SWITCH
G	BF1	014665	041178			ZZZZ	T	U	UU	F16	RCIC PUMP DISCHARGE VALVE FAILED TO OPERATE	TRANSFER SW(SBM-205A077400)BAD DESIGN
G	BF1	016053	092376			ZZZZ	U	U	UU	V02	VALVE FOUND CLOSED TO PRESSURE SWITCH	PERSONNEL ERROR
G	BF1	016811	010377			S205	T	U	UU	B12	DRYCELL SUP.VAC.BKR.VLV 64-28E REMAINED OPEN AF.TE	VLV.AIR ACT.CYL.PST.ROD BINDING WI.BUSHNG
G	BF1	017594A	032177			W030	T	U	UU	B08	VLV FCV 74-52 WOULD NOT GO COMPLETELY CLOSED	WORN BRNG.ASS,LOCKNUT,YOKENUT,GASKETS
G	BF1	017594B	032177			W030	T	U	UU	B20	VLV FCV 74-52 WOULD NOT CLOSE;MTR TRIP,THERMAL D.L	MOTOR SHAFT WAS BENT
G	BF1	017525	042177			TC20	D	U	UU	B27	MN.STM.SAFE.RELIEF VLV. FAILED TO RESEAT	SEVERE STM.CUTS ON PILOT DISC
G	BF1	018126	050977			P195	T	U	UU	A20	HPCI TURB.STM.SUP.ISO.VLV. FCV 1-73-16 FAIL.TO OPN	BROKEN TEETH ON MTR PINION&CLUTCH GEAR

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N T	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P H Y	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	F A I L C O D E	FAILURE MODE	FAILURE MECHANISM
G	BF1	019957*	090877	07		ZZZZ	T	U	UU	C00	7 MSIV'S WERE ABOVE ALLOWABLE INDIVIDUAL LEAK RATE	CAUSE OF LEAKAGE NOT GIVEN
G	BF1	020493A	021478	02		T020	T	U	RV	I05	LINEAR INDIC. FOUND IN 2 MN.STM.RVS,BODY CASTINGS	CAUSED BY CASTING SHRINKS OR NONMETAL.INC
G	BF1	022255A	090378			D020	N	U	GA	D00	VLV FCV-68-77 WAS LEAKING AT THE BONNET	NO CAUSE GIVEN FOR BONNET LEAKAGE
G	BF1	022255B	090378			VG85	N	U	GA	D14	VLV FCV-69-1 WAS LEAKING AT THE PACKING INTO DRYWEL	NORMAL PACKING LEAK;ADJ.PACK.,LEAK STOPPD
G	BF1	022459	091378			D020	N	M	GA	A12	FCV-68-3 WOULD NOT OPEN FULLY;DECR.FLOW RECIR.LP.A	VLV STEM SEPARATED FROM THE GATE
G	BF1	023070*	120578	06		A585	T	A	GL	C07	6 MSIVS EXCEEDED THEIR LEAKAGE LIMITS	DEGRED. OF SEAT.SURF. THRU NORMAL OPERATN
G	BF2	014104	011276			ZZZZ	R	U	UU	I05	DEMIN H2O TO DRYWELL VALVE FOUND NOT SEISMIC QUAL	PERSONNEL ERROR/PROBABLE D.C.
G	BF2	015392	061976			ZZZZ	U	U	UU	V02	VALVES 2-85-612 AND 2-85-615 FOUND IN CLOSED POST	PERSONNEL ERROR
G	BF2	016199	100776			ZZZZ	T	U	UU	V03	EQUALIZER VALVE ON FLOW INSTRUMENT FOUND OPEN	PERSONNEL ERROR
G	BF2	016607	111676			L200	T	U	UU	A23	HPCI TURB.STM.SUP.VLV 2-FCV-73-16 FAILED TO OPEN	TOR.SWT.GEAR ASS.PIN FOR VLV OPER.SHEARED
G	BF2	019134	091877			VG95	N	U	UU	B24	VLV FCV 77-15B INOPERABLE IN OPEN POSITION	COMMAND / SV FSV-77-15B FAILED
G	BF2	020380	020578			T020	N	U	RV	B00	RELIEF VALVE 2-1-41 OPENED AND FAILED TO RESEAT	CAUSE OF MALFUNCTION UNKNOWN
G	BF2	020469	021378			T020	N	U	RV	B00	RELIEF VALVE 2-1-5 OPENED AND FAILED TO RESEAT	CAUSE OF MALFUNCTION UNKNOWN
G	BF2	L20493B	021478	C2		T020	T	U	RV	I05	LINEAR INDIC. FOUND IN 2 MN.STM.RVS,BODY CASTINGS	CAUSED BY CASTING SHRINKS OR NONMETAL.INC
G	BF2	020775	031678			D020	N	U	GL	D14	VLV FCV-68-33 LEAKING EXTERNALLY INTO DRYWELL	LEAKAGE OCCURRED FROM THE PACKING
G	BF2	021054	032578			C256	M	U	CK	B04	CHECK VLV.2-73-603,IN HIGH-PRESS.CI+SYS,FOUND OPEN	DIMEN.ERR. IN VLV. INTERFERENCE CLEARANCE
G	BF2	C21092A	042078	02	V	ZZZZ	T	U	UU	D25	MSIV'S LEAKING BY SEATING SURF.GREAT.THAN TS LIMIT	SEATING SURFS.DETERIOR.THROUGH NORM.CPE%.
G	BF2	021092B	042078	02	V	ZZZZ	T	U	UU	D25	DRYWELL TO SUP.CHBR.VENT.SYS.ISO.VLVS.LEAK.BY SEAT	SEATING SURFS.DETERIOR.THROUGH NORM.OPER.
G	BF2	021401	050478			C710	T	U	RV	H12	RELIEF VLV.ON 8" STBY.LIQ.CONT.PUMP OPEN.BELOW SP	CAUSE OF IMP.SET POINT SETTING NOT GIVEN
G	BF2	023352	121978			ZZZZ	N	A	UU	B24	DRYWEL. AIR COMP.SUC.VLV FCV-32-62 FAILED TO CLOSE	ELECTROPNEUMATIC CONTROL VLV FAILURE

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

UNIT	PLANT	CONTR. NO.	EVENT DATE	COMM. PM	KEY	MFG.	ALARM	OPERATOR	VALVE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	BF3	016055	082476			ZZZZ	T	U	UU	A00	CHECK VALVE IN HPCI TURB. EXH. LINE WAS BINDING	CAUSE OF CHECK VLV BINDING NOT STATED
G	BF3	019562	012277			C710	T	U	UU	H08	RELIEF DN 3A STBY. LIQ. CONT. PUMP OPEN. BELOW SETPOINT	DISC BOUND IN GUIDE; VLV SEATS DAMAGED
G	BF3	018634	051877			A610	N	U	UL	C00	ASCO SOLENCID VALVE LEAKING AIR TO OXYGEN ANALYZER	UNKNOWN(SN 97009A) FSV-76-42B
G	BF3	018635	062177			C710	T	U	UU	H08	RELIEF DN 3A STBY. LIQ. CONT. PMP OPEN. BELOW SETPOINT	SCORED AREA ON PLUG GUIDE AND PLUG
G	BF3	018637	070577			L200	T	U	UU	A23	HPCI TURB. STM. SUP. 3-FCV-73-16 FAILED TO OPEN	TOR. SWTH. GEAR ASS. SHEARED; CALS. OVLD ON MT
G	BF3	018542	072577			C710	T	U	UU	H08	RELIEF DN 3A STBY. LIQ. CONT. PMP OPEN. BELOW SETPOINT	DISC GUIDE WAS GALLED WITH THE VLV DISC
G	BF3	018642	073077			D020	N	U	UU	D14	VLV FCV 3-68-33 HAD EXTERNAL LEAKAGE INTO DRYWELL	PACKING LEAK; NORMAL WEAR & DETER. OF PACK.
G	BF3	018945	090777			V095	N	U	UU	A24	PRI. ISO. VLV 3-FCV-24 WOULD NOT OPERATE	FAIL. OF SOL. FSV-77-3A IN AIR SUP. LINE
G	BF3	020524	021378			W030	T	H	GA	F12	VLV FCV. 3-74-52 WAS FOUND INOPERABLE	UPPER BRNG. LOCKNUT STRIPPED FROM NOR. POS
G	BF3	020923	041578			T020	U	U	RV	B00	RELIEF 3-1-31 FAILED TO RESEAT AT PROPER PRESSURE	CAUSE OF MALFUNCTION IF NOT KNOWN
G	BF3	021245	042878			W030	T	U	UU	F12	VLV FCV 3-74-52 WAS FOUND INOPERABLE	UP. BRNG. LOCKNUT STRIPPED FROM NOR. POSITIN
G	BF3	021400	051378			A585	T	H	GL	F24	MSIV 1-38 CLOSED IN 1 SEC.; EXCEED. T.S. REQUIREMNT	DASHPCT WAS LOW ON OIL
G	BF3	021781	062678			A585	T	H	GL	F24	OUTBOARD MSIV FCV 3-1-78 CLOSED FASTER THAN T.S. AL	VLV'S DASHPOT ASS. WAS LOW ON FLUID
G	BF3	022087	070878			ZZZZ	N	U	UU	F16	RCICS DISCHARGE VALVE INOPERABLE	SHORT IN IND LITE ASS CAUSED FUSES TO BLC
G	BF3	022126*	081778	03		T020	N	U	RV	H27	MN. STM RVS MSRV1-41, 30, 634 OPENED BELOW SETPOINTS	VLV FAILURES WERE CAUSED BY PILOT VLV. PRB
G	BF3	022126A	081778			T020	N	U	RV	B00	A MAIN STM RELIEF VLV DID NOT CLOSE AFTER LIFTING	CAUSE OF FAILURE NOT GIVEN
G	BF3	022125	082278			T020	N	U	RV	H12	DURING STARTUP MSRV 1-4 OPENED BELOW SETPOINT	PREMATURE OPEN. DUE TO EXCESS. 2ND. STG. LEAK
G	BF3	022461*	091778	04		A585	T	A	GL	C00	FOUR MSIV'S FCV-1-14, 1-26, 1-51, 1-52 EX. T.S. LEAK LM	CAUSE OF EXCESSIVE LEAKAGE IS NOT KNOWN
G	BF3	023031*	111478	35		ZZZZ	T	U	UU	C07	35 ISOLATION VLV'S LEAKING ABOVE LIMIT	NORMAL WEARING OF THE SEATS
G	BF3	023291	121678			C710	N	U	RV	H00	RV DN DISCHG. OF STBY. LIQ. CONT. PMP. OPENED PREMATUR	NO CAUSE GIVEN (PROB. SETPOINT DRIFT)

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W	P	CONT.	EVENT	C	K	MFG.	A	O	V	FAIL	FAILURE MODE	FAILURE MECHANISM
NUM	PLANT	NO.	DATE	COMM	KEY		CH	PER	LV	CODE		
				PH	Y		Y	R	T			
G	BR1	016402	111976			ZZZZ	N	U	UU	F16	RHR INJECTION VALVE(E11-F015A) FAILED TO OPERATE	UNDERSIZED BRK/DESIGN PROBLEM(ROOT)
G	BR1	016861	112176			L200	T	U	UU	A20	E41-F001(HPCI STM.SUP.VLV) WOULD NOT OPEN	BRUSHES ON VLV MOTOR WERE STICKIN
G	BR1	016860	112576			ZZZZ	T	U	UU	B16	MIN.FLOW VLV.(E41-F012)DID NOT CLCSE FULLY	VLV MTR CKT PRESS-SWTCM OUT OF CALIBRATON
G	BR1	016858	120376			L200	T	U	UU	A16	E51-F007(RCIC STEAM ISO.VLV) FAILED TO OPEN	LOOSE WIRE ON VLV MOTOR OPEN CONTACTOR
G	BR1	017681	011977			L200	T	U	UU	B20	HPCI STM.SUP.VLV E41-F003 WOULD NOT CLOSE	DIRTY COMMUTATOR IN VLV OPERATOR
G	BR1	017600	021077			ZZZZ	N	U	UU	A16	CORE SPRAY VALVE FAILED TO OPEN AT REQUIRED PRESS	SETPOINT ON CONTROLLING INST DRIFTED HI
G	BR1	017290	030177			L200	T	U	UU	B12	HPCI M'N. FLOW VLV E41-F012 FAILED TO CLOSE	ANTI-RCI. KEY SET SCREW HAD UNSCREWED
G	BR1	017330	030677			G680	T	U	UU	AG0	RHR PMP 1D TORUS SUC.VLV E11-F0040 WOULD NOT OPEN	CAUSE OF FAILURE UNKNOWN
G	BR1	018128	052077			A395	T	U	UU	F04	HPCI STM.LINE EXH.CHECK VLV E41-F049 DETER.FAILED	VLV CSCIL.CAUSED DSC HINGE FAIL;IMP.DESGN
G	BR1	018695*	071777	03	B	ZZZZ	U	U	UU	D14	VLV EXT. LEAK. ON 3 OCCAS.CAUSED INC.LEAK.INTO SUM	PACKING LEAKS FROM VARIOUS VALVES
G	BR1	018864	081477			L200	N	U	UU	B23	CONT.ISO.VLV CAC-V23 WOULD NOT CLOSE FULLY ELECT.	CLOSING TOR.SWTH FOR CAC-V23 FAILED
G	BR1	019086	091177			ZZZZ	T	U	UU	D13	RHR SERVICE WTR.HEAT XCHGR.1B IN.VLV GASKET RUPT.	RUBBER GASK.MAT.NOT DESIGN.FOR OP.PRESS.
G	BR1	019084	091577			F130	N	U	UU	F24	PRESS.CONT.VLV LD-PCV-1739 DRIFTED OPEN;MOT-GEN TR	CONTROLLER FOR VALVE REQUIRED ADJUSTMENT
G	BR1	019276	100477			ZZZZ	N	U	UU	D14	LEAKAGE FROM RHR CHECK VLV E11-F050B INTO DRYWELL	PACKING LEAKAGE;VLV REPACKEDRETURN.TO SR
G	BR1	019390	101477			ZZZZ	N	U	UU	D14	EXTERNAL LEAKAGE RECIRC. PMP 1A DISCH.EQUALIZR VLV	VLV B32-F043A HAD PACKING LEAK;REPACKED
G	BR1	019390*	101477	06		ZZZZ	N	U	UU	D14	PACKING ADJUSTED ON SIX VALVES WITH PACKING SEEPAG	PACKING ADJUSTED AS PREVENTIVE MAINTENANC
G	BR1	019394	101877			G167	T	U	UU	A16	VLV NP-CV-2713,NITROGEN INLET TO LOOP A WLDN'T OPN	CIRCUIT BRKR CONT.VLV FOUND IN OFF POSITH
G	BR1	019387	102577			L200	N	U	UU	C20	B CORE SPRAY LOOP FULL FLOW TST.VLV E21-F015B LEAK	VLV OPER. HAD STRIPPED OPERATING GEARS
G	BR1	019493	102577			F130	N	U	UU	F24	PRESS.CONT.VLV LD-PCV-1739 DRIFT.OPEN;MTR-GEN TRIP	CONTROLLER FOR VALVE REQUIRED ADJUSTMENT
G	BR1	019677	110577			L200	N	U	UU	A02	RHR VALVE E11-F004A FAILED TO OPEN(MOTOR PROBLEM)	PERSONNEL ERROR/COVER LEFT LOOSE/WATER IK

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P P M	K E Y	MFG.	A O P E R A T O R T Y P E	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	BR1	019842	111077			ZZZZ	U U	UU	V01	IMPROPER VLV LINEUP;ST.SUP.LN.CO.DR.POT.ISO.CLOSE.	PERSONNEL ERROR
G	BR1	019680	112377			ZZZZ	D U	UU	B10	LIQ.NITRO.TMK.PRESS.CCNT.VLV FAILED IN OPEN POSIT.	CAUSE OF VLV FAILURE/FROZEN OPEN
G	BR1	019824	120377			L200	U U	UU	B20	VALVE E11-F040 FAILED IN OPEN POSITION	MOTOR FOUND TO BE OPEN(UNDETERMINED WHY)
G	BR1	019950	120977			ZZZZ	U U	UU	A26	VALVE NP-2713 FAILED TO OPEN	OPEN LIMIT SW OUT OF ADJUSTMENT
G	BR1	023632	020578			ZZZZ	T U	UU	A16	VALVE B32-F031A FAILED IN CLOSED POSITION	FUSES BLOWN IN CONTROL CKT(DESIGN-ROOT)
G	BR1	020774	022678			A552	N A	UU	A22	RX.INSTR.PEME. VLV B21-X54-C FAILED CLOSED	VLV.CLOSED DUE TO SMALL LEAK IN DIAPHRAGM
G	BR1	020765	022778			D147	T U	PL	F00	PRECOAT PRESS.CCNT.VLV G31/2002-V54 IMP.IN.PRESS.	CAUSE OF VLV NOT MAIN. PROP.PRESS.NOT GIV
G	BR1	020771	031378			T020	N U	RV	B27	RELIEF VLV B21-F013F FAILED TO RESEAT AT REQ.PRESS	DEFECTIVE PILOT VLV/PILOT REPLACED
G	BR1	020837	031478			ZZZZ	T U	UU	F16	VALVE B32-F042B WOULD NOT OPERATE DURING TEST	DEFECTIVE SWITCH ON CONTROL BOARD
G	BP1	020964	032378			N305	U U	CK	E00	FAULTY CK.VLV IN SAM.DR.LN. ALLOWED H2O INTO MONIT	MON.CAC-AQH-1262-1 CK VLV FAIL.CAUSE UNKN
G	BR1	020921	033178			N305	N U	CK	E00	RAD.MON. SAMP.DR.LN. CK.VLV FOUND STUCK OPEN	CAUSE OF CK.VLV. FAILURE NOT STATED
G	BR1	020919	040178			C027	N U	UU	V01	INCORRECT VALVE LINEUP CAUSED RESIN DAMAGE	PERSONNEL ERROR
G	BR1	020920	040178			ZZZZ	N U	UU	C09	VALVE CAC-V64 LEAKED THRU INTERNALLY	RUST FOUND IN VALVE SEAT
G	BR1	021089A	041078			L200	T M	UU	B26	VLV E41-F003 FAILED TO ISOLATE DURING TESTING	DIRT.CCNT.ON LIMIT SWT.&POOR.SEAT.MTR.BR.
G	BR1	021089B	041578			L200	N M	UU	B20	DURING AN ACT.HI.STMLN.FLOW VLV E41-F003 FAIL.TO.S	DIRT.CCNT.ON LIMIT SWT.&POOR SEAT.MTR.BR.
G	BR1	021253*	042178	02	V	ZZZZ	T U	UU	D00	VALVES FOUND LEAKING WATER INTO PUMP SPEED CONTROL	UNKNOWN/CAUSE OF LEAKAGE NOT STATED
G	BR1	021491	051578			A499	N S	D1	A21	SOLENOID VLV CAC-SV-1263-1 FOUND IN STUCK SHUT POS	DEFECTIVE PLUNGER IN SOLENOID
G	BR1	021488	052378			S205	T U	CK	A00	CAC VACUUM BREAKER CAC-X18-A WOULD NOT OPEN	CAUSE OF FAILURE NOT GIVEN
G	BR1	021557	052778			P296	D N	UU	A04	RCIC COND.STCR.TK.SUC.VLV E51-F010 WOULD NOT OPEN	DESIGN/MTR.DI. NOT HAVE SPACE HTR;NEED.IT
G	BR1	021840	070178			A499	N U	PL	C00	OXY.MON.CAC-AQH-1259 DR.POT VLV MALFUNCTIONED	CAUSE OF VLV NOT SEATING FULLY NOT GIVEN

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W E N	P L A N T	CONT. NO.	EVENT DATE	C O M M U N I C A T I O N K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	BR1	022089	071678		L200	T	N	UU	F20	OUTBOARD MN.STMLN.DR.ISO.VLV B21-F019 WOULDN'T DPR	MTR-BRUSH.NCT MAKING PROP.CONT.W/COMMUTAT
G	BR1	022092	072878		ZZZZ	U	U	UU	A16	VALVE F068B FAILED TO OPEN	BLOWN FUSE
G	BR1	022092A	080278		ZZZZ	U	U	UU	A16	VALVE F068B FAILED TO OPEN	BLOWN FUSE/FOUND GRND WIRE IN LOGIC CKT
G	BR1	022218	080878		ZZZZ	N	U	UU	A00	HPCI FEED INJ VALVE E41-F006 FAILED TO OPEN AUTO	UNKNOWN/TESTING COULDN'T DUPLICATE FAILURE
G	BR1	022820	102878		L200	U	N	UU	F20	MN.STMLN.DR.ISO.VLV B21-F019 FAILED TO OPERATE	FAULTY MTR. BRUSH HOLDER
G	BR1	023061	111478		A395	T	H	GA	C00	STM. LEAKING PAST SEAT OF HPCI E41-F001	NO CAUSE FOR STM.LEAK. GIVEN
G	BR2	014128	011976		ZZZZ	N	U	UU	V01	OFF GAS RADIAT.MON.SAMP.VLV WAS FOUND SHUT/TS VIO.	PERSONNEL ERROR
G	BR2	014111	020276		ZZZZ	U	U	UU	B00	2-CRC-V49 FAILED TO FULLY CLOSE	NO CAUSE GIVEN
G	BR2	014111A	020276		ZZZZ	N	U	UU	V01	2-CAC-V50 WAS OPENED WITH A LCC EXISTING/T.S. VIO.	PERSONNEL ERROR
G	BR2	014642	020376		ZZZZ	N	U	UU	A10	VAR.LEG ISO.VLV 2-B21-F046B DID NOT OPEN	VLV OPER. WAS STICKY/MOIS.IN INST.AIR LMS
G	BR2	014646	020476		A395	D	U	UU	A12	RCIC TURB.DISCH.CK.VLV E51-F040 WOULD NOT OPEN	DISC STUC BROKEN/DISC BLOCKING EXH. FLOW
G	BR2	014647	020576		ZZZZ	N	U	UU	V03	PRESS SW FOUND ISOLATED AFTER TESTING	PERSONNEL ERROR
G	BR2	014650	020676		ZZZZ	N	U	UU	V02	VALVE E11-F004B FOUND LINED UP CLOSED/REQ OPEN	PERSONNEL ERROR IN VALVE LINEUP
G	BR2	014390*	021076	03	ZZZZ	T	U	UU	C04	3 BUTTERFLY VALVES LEAKING THRU//DESIGN ERROR	AIR OPERATOR ADDED TO EACH VALVE
G	BR2	014633	021176		ZZZZ	N	U	UU	V02	INLET VALVE TO CONT RADIATION MONITOR FOUND CLOSED	PERSONNEL ERROR AFTER FILTER CHANGE
G	BR2	014645*	021476	02	ZZZZ	N	U	UU	A24	TWO VALVES FOUND CLOSED(2-CAC-PV-3441&3442)	INST AIR LINES TO VALVES CLOGGED W WATER
G	BR2	014624	030976		ZZZZ	T	U	UU	A16	PENET VALVE X70F FAILED TO OPEN DURING TEST	REMOTE SWITCH STUCK/NO POWER TO VALVE
G	BR2	014625	030976		T340	T	U	UU	B12	VLV 2-CAC-PV-1260 NOT INDICATING CLOSED/NOT CL.FUL	VLV PLUG REQUIRED RESIZING/OPER.SEALS REP
G	BR2	014618	031076		ZZZZ	T	U	UU	A26	VALVE 2-E41-PV-1219D FAILED TO OPEN DURING TEST	LIMIT SW WAS OUT OF ADJUSTMENT
G	BR2	014627	031076		ZZZZ	T	U	UU	F24	RECIRC.SYS.WTR.SAMP.VLV 2-B32-F019 CLOSED TOO SLOW	OPEN.AIR PRESS.TO VLV OPER. DRIFTED HIGH

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	PL ANT	CONT. NO.	EVENT DATE	CON MUM PH	KEY	MFG.	OPER ATION Y	VAL VE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	BR2	014617	031176			L200	D	UU	B23	PRI.ISO.VLV 2-CAC-V22 COULD NOT BE CLOSED REMOTELY	TORQUE SWITCH INOPERABLE/REPLACED SWITCH
G	BR2	014615*	031976	02		ZZZZ	T	UU	B16	TWO RCIC VALVES(E51-F007&F008)FAILED TO CLOSE/TEST	TWO RELAYS CONTROLLING VALVES FAILED
G	BR2	014616	031976			ZZZZ	T	UU	B16	SPRAY LINE VALVE(2-E11-F022)FAILED TO SHUT/TEST	NO POWER/AUX CONTACTS FOR INTERLOCK STUCK
G	BR2	014916	052576			R340	T	UU	F24	OUTBOARD MSIV-B21-F028C STROKED TOO FAST/2.2 SECS.	NIT.PRESS.CHYDR.FL.LOW/LEAK.VENT PLUGGCKV
G	BR2	014994	053176			A610	N	UU	B21	DRYWELL NITRO-INLET VLV 2-CAC-V6 WOULD NOT CLOSE	4-WAY SOLENOID VLV LEAKING AIR
G	BR2	015400	051176			A610	T	UU	A21	AIR SUPPLY VLV 2-CAC-PV-3442 FAILED TO OPEN	BROKEN RETAIN-RING ON SOLENOID COIL
G	BR2	015408	062076			A610	U	UU	A02	CAC-PV-3441 SERIES EFFLUENT VLV WOULD NOT OPEN	SOLENOID WAS DAMAGED.DURING LAST OUTAGE
G	BR2	015409	062076			A610	N	UU	A21	CAC-PV-3442 SERIES EFFLUENT VLV WOULD NOT OPEN	VLV SOLENOID WAS STICKING/SEATS WERE LEAK
G	BR2	015416	070376			L200	T	UU	V01	RHR VLV 2-E11-F003A SHUT WHILE MTR REMOV.;GIV+ LCO	PERSONNEL ERROR/VLV COULDN'T BE OP. REMOT
G	BR2	015421	070776			T020	N	UU	H00	ADS SAFE.RELIEF VLV R-B21-F013G OPENED PREMATURELY	CAUSE NOT GIVEN
G	BR2	015423*	070976	02		ZZZZ	T	UU	A16	TWO CONT VALVES(PENETS X97D&X 2E)FAILED TO OPEN	TWO PUSHBUTTON SWITCHES STUCK ON TESTING
G	BR2	015427	071176			ZZZZ	N	UU	V02	BONNET VENT VLS 2-B32-F0468&F047B INADV.LEFT OPEN	PERSONNEL ERROR/NOT CLOSE.AFTER MAINTENAN
G	BR2	015419	071576			T020	N	UU	H27	SAFE.RELIEF 2-B21-F013K(S/N 105)LIFTED PRIOR TO SP	PILOT VLV HAD POPPET.& SEAT STEAM CUT
G	BR2	015419*	071576	03		T020	M	UU	I00	3 RVLVS (A(S/N 98),B(S/N 102),G(S/N 99) UNSATISF.	CAUSE CF RVLVS BEING UNSATTSFACT.NOT GIVN
G	BR2	015434*	073076	02		R340	N	UU	F00	MSIVS INB.B32-F022D&OUTB.B32-F028D RESTRICTED FLOW	CAUSE UNDER INVESTIGATION
G	BR2	015542	081176			B237	N	UU	B04	ISG.VLV 2-CMC-PV-1260 WOULD NOT CLOSE FULLY	DESIGN PROB./CLOSING SPRING NOT STRONG EN
G	BR2	015939	081376			ZZZZ	T	UU	A16	CONT VALVE FOR PENETRATION X76C FAILED TO OPEN	PUSHBUTTON SW FAULTY DURING TEST
G	BR2	016198	100976			ZZZZ	N	UU	G16	RCIC STM.SUP.VLV E51-F007 CLOSED ON SPURIOUS SIGNAL	FAILURE IN RCIC ISOLATION CIRCUITRY
G	BR2	016260	110276			A395	N	UU	V01	RCIC TURB.EXH.STP-CHK E51-F001 CLOSED WHEN REQ.OPN	PERSONNEL ERROR/VLV NOT OPEN.AFTER TEST
G	BR2	016398*	110576	02		A310	M	UU	F02	DRN.POT INL.SOL.VLVs ON MONITORS 1259&1263 DISCONN	PERSONNEL ERROR/NOT RECONN.AFTER MAINTENA

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>C</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>C</u> <u>O</u> <u>N</u> <u>P</u> <u>M</u>	<u>K</u> <u>E</u> <u>Y</u>	<u>M</u> <u>F</u> <u>G</u>	<u>A</u> <u>C</u> <u>T</u> <u>I</u> <u>V</u> <u>I</u> <u>T</u> <u>O</u> <u>R</u>	<u>O</u> <u>P</u> <u>E</u> <u>R</u> <u>A</u> <u>T</u> <u>O</u> <u>R</u>	<u>V</u> <u>L</u> <u>V</u> <u>T</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>U</u> <u>R</u> <u>E</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>			
G	BR2	016399	111176				Z	D	U	UU	A09	DIESEL GEN.#2 AIR REC.CV 2-05A-V70 FAILED TO OPEN	CHECK VALVE WAS RUSTED SHUT		
G	BR2	017589*	021777	02			A	D	U	UU	A21	CONT.SAMPLE VLVS CAC-PV-344183442 FAILED TO OPEN	SOLENOIDS ON VLVS WERE STICKING		
G	BR2	017327	022377				L	D	U	UU	A20	E51-F045(STM.INL.TO RCIC TURB.)WOULD NOT OPEN	MTR OPER. FAILED DUE TO MOIST.IN WINDINGS		
G	BR2	018153	050977				Z	T	U	UU	F00	SERVICE H2O VALVE E11-F068A FAILED TO OPERATE RM	CAUSE UNKNOWN POSSIBLE DIRTY CONTACTS		
G	BR2	018178A	060877				L	T	U	UU	H12	STOBY.LIQ.CONT.PMP 2B REL.VLV LIFTED BELOW SETPOINT	MECHANICAL DRIFT		
G	BR2	018178B	060877				L	T	U	UU	H12	STOBY.LIQ.CONT.PMP 2A REL.VLV LIFTED BELOW SETPOINT	MECHANICAL DRIFT		
G	BR2	018176	060977				Z	N	U	UU	V01	DRAIN VALVE LEFT OPEN (RX WATER CLEANUP)	PERSONNEL ERROR(ROOT CAUSE)		
G	BR2	018697	071577				T	O	N	U	B18	SAFETY REL.VLV B21-F0138 STUCK OPEN;AFTER MAN.OPEN	GRND. ON SOLENOID ASS. FOR REMOTE ACTUATR		
G	BR2	018693	072877				Z	U	U	UU	F26	ISOLATION VALVE ON 2A FILTER DEMIN FAILED TO OPER	LIMIT SW PROBLEM		
G	BR2	019023*	090677	02			L	N	U	UU	C00	RHR TORUS COOL.RETRN.LN.ISCS.E11-F02486288 LEAKING	VLVS FAILED TO SEAT PROPERLY/UNKNOWN		
G	BR2	020205	122677				B	1	N	U	UU	C00	NEEDLE VLV ON OXY.ANALYZER LEAKING PAST SEAT	CAUSE OF LEAKAGE NOT GIVEN/VLV REMOVED	
G	BR2	020240	010478				L	2	T	M	UU	F26	CLOSING TIME ON E41-F002 EXCEED. TS LIMIT (MPCI)	LIMIT SWITCH(OPEN) OUT OF ADJUSTMENT	
G	BR2	020455	012678				B	1	N	X	NE	C00	NEEDLE VLV ON OXY.ANALYZER LEAKING PAST SEAT	CAUSE OF LEAKAGE NOT GIVEN/VLV REMOVED	
G	BR2	020729	030678				L	2	U	U	UU	A23	RCIC VALVE E51-F045 FAILED TO OPEN	TORQUE SW FAILED	
G	BR2	020841	031378				A	5	T	A	GL	B12	RX.PENET.VLV CAC-PV-12098 DID NOT INDICATE SHUT	ACTUATOR SPRING DID NOT PROVIDE PCS.SEAT.	
G	BR2	020969	032478				G	0	N	U	GL	C00	DIR.CONT.VLV 122 LEAKING BY SEAT;CAUS.ROD18-47 N.O	NO CAUSE GIVEN/ROD OUT MOTION STOP;VLV RP	
G	BR2	020972	032778				T	3	N	U	PL	V01	RX.INSTR.PENET.VLV CAC-PV-3439 FOUND CLOSED/TS VIO	PERSONNEL ERROR/VLV SHUT BY MISTAKE	
G	BR2	020970	032878				L	2	T	M	PL	A00	R.C.I.C. INJECTION VLV E51-F013 WOULD NOT OPEN	NO CAUSE FOR FAILURE.FOUND	
G	BR2	020913	040378				L	2	D	M	UU	A20	SHUTDOWN COOL.OUTB.SUC.VLV E11-F008 WOULDNT OPEN	ELECTRC-MECHANICAL BRAKE ON VLV.OP.FAILED	
G	BR2	021463	050278				N	3	0	N	U	CK	A00	SAMP.PMP.DISCH.CV FOUND STUCK IN CLOSED POSITION	CAUSE OF CHECK VLV STICKING NOT GIVEN

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N T	CONT. NC.	EVENT DATE	C O N T R O L R O O M	K E Y	MFG.	A C T I V E	O P E R A T O R	V L V T Y P E	F A I L C O D E	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
G	BR2	021663	060378			V085	D	M	UU	A00	RHR VLV E11-F009 WOULD NOT OPEN FROM CONTROL ROOM	CAUSE OF VLV NOT OPENING, NOT GIVEN
G	BR2	022292	081878			A391	T	U	GA	D14	EXT.VLV LEAKAGE (PACKING) CAUSED HI. TEMP. IN DRYWELL	FAILED PACKING IN VLV CAUSED LEAKAGE
G	BR2	023033	111178			A395	N	U	CK	B04	RHR CHECK VALVE E11-F031 WILL NOT FULLY SEAT	DESIGN ERROR/VLV DOESN'T WORK ON LOW DP.
G	BR2	023034	111278			ZZZZ	N	U	UU	A16	RHR VLV E11-F008 WOULD NOT OPEN AT REQ. SETPOINT	FAIL. OF RX-STM-DOME HIGH PRESS. SWITCH
G	CO1	014359	012476			L200	N	U	UU	F20	VLV RHR-MO-34A WOULD NOT OPERATE BY MTR. OPERATOR	SHEARED WOODRUFF KEY. IN MTR. OPERATOR
G	CO1	014358	020776			ZZZZ	U	U	UU	V01	INCORRECT VALVE LINEUP ON RX BLDG VENT DAMPER	PERSONNEL ERROR
G	CO1	014936	051476			T020	M	U	RV	A27	MAIN STEAM SAFETY RELIEF VALVE MALFUNCTIONING	CRACK IN BELLOWS TO BASE WELD
G	CO1	015351	061776			A180	T	U	UU	F00	VALVE PC-238AV WOULD NOT CLOSE IN 15 SECONDS	CAUSE UNKNOWN / POSSIBLE LUB PROBLEM
G	CO1	015717	081076			L200	T	U	UU	F20	VALVE CS-MO-128 WOULD NOT OPERATE	TRIPPER PIN IN OPERATOR DISLODGED
G	CO1	015873	081376			T020	R	U	UU	A06	SETPOINT OF MS-RV-71E ADJUSTED INCORRECTLY	INCORRECT MAINTENANCE PROCEDURE
G	CO1	016008	090776			L200	T	U	UU	A20	VALVE CNS-MV-128 FAILED TO OPEN	THE REPAIR CLUTCH AND COMPONENTS FAILED
G	CO1	016004	091076			B080	N	U	UU	V01	EQUALIZING VALVE ON DP PRESS INDICATING SW OPEN	PERSONNEL ERROR
G	CO1	016253	100976			C515	T	U	UU	F16	A SLC INJECTION WAS FOUND INOPERATIVE	BLOWN FUSE DUE TO IMPROPER SIZE WIRING
G	CO1	016658	102876			G080	T	U	UU	A16	VALVE RHR MO-17 FAILED TO OPEN	BROKEN RELAY COIL KEPPER LODGED IN CONT.
G	CO1	016387	110176			ZZZZ	N	U	UU	V01	FLUSHING VALVE OF RADWASTE MONITOR LEFT OPEN	PERSONNEL ERROR
G	CO1	016604	111276			ZZZZ	T	U	UU	D14	VALVE LEAKED EXTERNALLY/DRIPPED ON SW/PUMP STOPPED	PACKING NEEDED TIGHTENING
G	CO1	016713	111676			ZZZZ	N	U	UU	V03	ISOLATION VALVES TO PRESS. SWITCH LEFT CLOSED	PERSONNEL ERROR AFTER SURVEILLANCE
G	CO1	016659	111776			A180	T	U	UU	B00	VALVE PC-238 AV FAILED TO CLOSE FULLY	CAUSE UNKNOWN, BELIEVED OPERATOR RELATED
G	CO1	017071	012177			A585	T	U	CK	E10	HPCI TEST BLE CHECK VALVE LEAKING INTERNALLY	A 14 IN PROBE JAMED BETW. DISK+SEAT
G	CO1	017298	012577			L200	N	U	UU	B26	DRYWELL PURGE VALVE WOULD NOT CLOSE FROM CONT SW	CORRODED LIMIT SWITCH CONTACTS

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

Y E A R	P L A N T	C O N T. N O.	E V E N T D A T E	C O N M U P P Y	M F G.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	F A I L C O D E	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
G	CO1	017301	021977		L200	N	U	UU	B20	MOTOR OPERATED VALVE RHR-MO-34 WOULD NOT CLOSE	SHEARED KEY BETWEEN VALVE AND OPERATOR
G	CO1	018003	041777		A610	T	S	UU	B24	CONTAINMENT VALVE H+V-296AV WOULD NOT CLOSE	SOLENOID VALVE LEAKING AT CYLINDER PORT
G	CO1	018005*	041777	03	R340	T	U	UU	D14	THREE ROCKWELL 1612-JIMMY VALVES LEAKING EXTERNALLY	DEFECTIVE VALVE STEM PACKING
G	CO1	018004	042077		L200	T	U	UU	F20	CORE SPRAY PUMP VALVE INOPERATIVE, MOTOR RUNS	MOTOR GEAR SET SCREW ON VAL OPER LOOSE
G	CO1	018894	072577		C665	R	U	UU	T03	4 ISOLATION VALVES NOT LEAK TESTED	PERSONNEL ERROR
G	CO1	018960	081177		ZZZZ	N	U	UU	B16	SERVICE H2O VALVE, SW-MO-89A FAILED TO CLOSE	RELAY CONTACTS SUPPLYING PWR FAILED
G	CO1	019119	081677		ZZZZ	N	U	UU	V03	VALVE TO LEVEL SWITCH LEFT CLOSED AFTER TEST	PERSONNEL ERROR
G	CO1	019292	091277		P340	N	U	BU	C25	A HEAT EXCHANGER OUTLET VALVE LEAKING THRU	PORTION OF RUBBER VALVE SEAT MISSING
G	CO1	020052	112177		L200	T	M	UU	I12	VALVE CS-MO-12B NOISY IN OPERATION	2 TEETH MISSING ON VALVE OPERATOR GEAR
G	CO1	020054	120577		M090	N	U	CK	D12	EXCESS FLOW CHECK VALVE LEAKING EXTERNALLY	LOOSE NUT ON VALVE BODY
G	CO1	020343	011378		ZZZZ	T	U	UU	B16	RHR INJ BLOCK VALVE FAILED TO CLOSE DURING TEST	DIRTY CONTACTS ON RELAY WIRING ERROR
G	CO1	020600	011778		P340	T	U	BU	A16	COOLING VALVE REC-711MV DID NOT OPEN	FAILURE OF VALVE ELECT-INTERLOCK SWITCH
G	CO1	020606	020778		ZZZZ	T	U	UU	B16	HPCI VALVE FAILED TO CLOSE DURING TEST	NO SIGNAL FROM DP SWITCH
G	CO1	020866A	020778		ZZZZ	T	U	UU	V03	ISOLATION VALVE TO DPIS-76 FOUND CLOSED(SEE020806)	PERSONNEL ERROR
G	CO1	021196*	041578	02	B237	T	A	UU	B19	VALVES AR-153AV+AR-154AV FAILED TO CLOSE	LACK OF VALVE PISTON+CYLINDER LUBE
G	CO1	021620	042378		M090	T	U	CK	F10	FLV-160 EXCESS FLOW CHECK VALVE MALFUNCTIONING	CRUD BUILDUP ON POPPET ASSEMBLY
G	CO1	023049	091878		L200	N	M	UU	A20	VALVE RHR-MO-66B FAILED TO OPEN	SET SCREW ON VALVE OPERATOR LOOSTENED
G	CO1	023483	120878		C665	N	M	UU	A04	SW CROSS CONNECT VLV SW 888 MV FAILED TO OPEN	DESIGN ERROR/IMPROPER TORQUE SWITCH USED
G	CO1	023378	121278		ZZZZ	N	U	UU	V01	FLUSH VLV OF THE RADWASTE EFF. MONIT. IN ADV. LEFT OP-	-EN//PERSONNEL ERROR
G	CO1	023542	122778		B237	N	A	UU	B04	DRYWELL OUTBD. VENT ISO. VLV. PC-246AV NOT SHUTTING-	-FULLY//DESIGN ERROR IN PNEUM. OPERATOR

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N T	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P P Y	MFG.	A C C I D E N T	O C C U R R E N C E	V L V E T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	DA1	014100	011476		A395	N	U	UL	F02	VALVE RCIC MOV 2516 SEPERATED FROM OPERATOR	BOLTS SHEARED, NOT TORQUED PROPERLY
G	DA1	014167*	011676	03	F130	T	U	UU	F06	PCIS CV 4300,4303,4309 NOT CLOSING IN PROPER TIME	CLOSING TIME TECH SPEC IN ERROR
G	DA1	014408A	021476		M090	T	U	UU	B00	INSTRUMENT LINE CV Xfv-4528 FAILED TO CLOSE	FAILURE REASON UNKNOWN
G	DA1	014408B	021476	02	M090	T	U	UU	B04	INSTRUMENT LINE CV Xfv-4611,4612 FAILED TO CLOSE	POOR TEST LOCATION FOR VALVE
G	DA1	014438*	030276	03	L200	M	U	UU	I10	EXCESS OIL FOUND IN SEVERAL VALVE MOTOR OPERATORS	ACTUAL CAUSE UNKNOWN
G	DA1	014312*	030976	06	R340	T	U	UU	F27	MSIV 4412,4413,4418,4419,4420,4421 LEAKING	OUT OF ROUND PILOT VALVE DISKS
G	DA1	014339	052376		ZZZZ	T	U	UU	E02	FEEDWATER CHECK VALVE V-14-1 LEAKING INTERNALLY	TWO CLCTH RAGS FOUND IN VALVE/PERS. ERROR
G	DA1	014340	032476		A610	T	U	UU	F24	VENT VALVE CV4301 NOT CLOSING WITHIN T.S. TIME LIM	DIRTY PILOT SOLENOID VALVE IN AIR SUPPLY
G	DA1	014445*	033176	06	D245	T	U	UU	C27	SIX RELIEF VALVES LEAKING INTERNALLY	EXCESS STEAM CUTTING PILOT VALVE SEAT
G	DA1	014728*	052076	04	L200	T	U	UU	A26	MSIV VALVES 8401A,B,C,D DID NOT FULLY OPEN	LIMIT AND TORQUE SW. IT OF ADJUST
G	DA1	014729	052076		L200	T	U	UU	F12	MSIV LEAKAGE CONTROL SYSTEM INLET VALVE INOPERABLE	BINDING OF MECHANICAL LOCK
G	DA1	014730	052076		L200	T	U	UU	A16	MSIV 8403D FAILED TO CYCLE OPEN DURING TEST	LOGIC RELAY NOT FIRMLY SEATED IN SOCKET
G	DA1	014731*	052076	02	L200	T	U	UU	F16	MSIV 8402A & D (LEAK.CONT.SYS.IN.)INADVERT.CYCLED	LOGIC RELAY NOT FIRMLY SEATED IN SOCKET
G	DA1	014733	052076		ZZZZ	N	U	UL	V01	HPCI AND RCIC INJECTION VALVES LINED UP WRONG	PERSONNEL ERROR,LOW-LOW LEVEL RESET WRONG
G	DA1	014888	061476		R340	T	U	UU	F12	MSIV 4420 CLOSING TIME OUTSIDE T.S. REQUIREMENTS	CLOSE THROTTLE OUT OF ADJUSTMENT
G	DA1	015080	070476		ZZZZ	T	U	UU	B00	RCIC MOV 2401 FAILED TO CLOSE FOR TEST	NO REASON LISTED,NOT REPRODUCIBLE
G	DA1	015750	082776		B070	N	U	UU	V06	ROOT VALVE TO LOW PRESS SW PS-1017 IN CLOSED POSIT	VALVE NOT ON PRESTARTUP CHECKLIST
G	DA1	015991	092076		D232	T	U	UU	C00	HPCI TURB STM LINE HI FLO EQUALIZING VALVE LEAKS	CAUSE UNKNOWN
G	DA1	016071*	101576	03	L200	T	U	UU	F06	MTR.OPER.VLVs.(MSIV-LC SUBSYS A&B)DID NOT PROP.ADJUS	LACK OF EXPER. PROCEED. TO DETERM.OPT.SET
G	DA1	015075	102176		ZZZZ	U	U	UU	F16	MOV 8402D INOPERABLE DUE TO TRIPPED OVERLOAD RELAY	TRIP SETPOINT INCREASED SLIGHTLY

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

NEW	PLAN	CONT.	EVENT	C	K	MFG.	A	C	M	T	FAIL	FAILURE MODE	FAILURE MECHANISM
N	T	NO.	DATE	ON	KEY		U	R	U	VALVE	CODE		
G	DA1	016529*	102176	02		ZZZZ	T	U	UU	F16		MOV-84018 AND 8403D WOULDNT OPERATE	CONTRCL RELAYS NOT MAKING ELEC CONTACT
G	DA1	016451	102976			L200	T	U	UU	A26		MSIV-LCS MOV8401A FAILED TO OPEN DURING TEST	INSUFFICIENT LIMIT SWITCH CONTACT PRESS
G	DA1	016445	110476			L200	T	U	UU	A23		MSIV LEAKAGE CONTROL VALVE MOV8401A FAILED TO OPEN	OPEN TORQUE SWITCH, TS-1, FAILED
G	DA1	016361	111276			L200	T	U	UU	A26		MSIV LEAKAGE CONTROL VALVE MOV8401B FAILED TO OPEN	LIMIT SWITCH OUT OF ADJUSTMENT
G	DA1	016450	111776			S075	M	U	UU	I11		LOOSE COMPONENTS ON RCIC VALVE MOV 2405	EXCESS VIBRATION LOOSENEED MECH. PARTS
G	DA1	016530*	112276	02		A395	T	U	UU	B00		MOV 84018 AND 8402B FAILED TO FULLY SEAL	CAUSE UNKNOWN
G	DA1	017043	021177			L200	T	U	UU	F05		CLUTCH HOUSING FOR MOV 2115 FRACTURED DUR. TEST	MATERIAL TOO BRITTLE
G	DA1	017308	021977			A610	M	U	UU	I02		INCORRECT SW REPLACED ON TORUS V.B. CV-4304	MAINTENANCE PERSONNEL ERROR
G	DA1	017312	021977			ZZZZ	N	U	UU	F03		CONTACT BLOCK FOUND INSTALLED IN VALVE CIRCUIT	PERSONNEL ERROR, FAILED TO REMOVE AFTER TS
G	DA1	017631*	032877	06		D245	T	U	UU	A27		6 MAIN STEAM RV DID NOT LIFT AT PROPER PRESSURE	FAILURE OF PILOT VALVE TO OPERATE
G	DA1	017632	040577			D245	T	U	UU	A00		SAFTEY VALVE PSV 4404 LIFTING PRESSURE OUT OF SPEC	CAUSE UNKNOWN
G	DA1	018281	052777			Z77Z	N	U	UU	V01		MANUAL FEEDH2O BLOCK VALVES NOT OPERATED PROPERLY	PERSONNEL ERROR, SCRAM DUE TO COLD H2O
G	DA1	019210	071877			L200	T	U	UU	A23		MOV 8401C FAILED TO OPEN ON TEST	TORQUE SW SETTING WRONG
G	DA1	019372	100677			L200	T	U	UU	F02		ISOLATION VALVE MOV 2740 CLOSING TIME OUT OF SPEC	MAINT. PERS. FAILED TO ADJ. LIMIT SWITCH
G	DA1	019963	112377			A395	T	U	UU	B00		HPCI INJECTION VALVE MOV 2312 FAILED TO CLOSE	CAUSE UNKNOWN
G	DA1	019967	121577			L230	N	U	UU	A12		RHR CROSS TIE VALVE FAILED TO OPEN	FRACTURED TEETH ON WORM AND WORM GEAR
G	DA1	020135	122777			A395	N	U	UU	A26		VALVE MOV 2700 FAILED TO OPEN FULLY	LIMIT SWITCHES OUT OF ADJUSTMENT
G	DA1	020147	011178			0232	T	X	BA	V03		ISO VLVS FOR PS4312C & PS4315C IN CLOSED POSITION	ERROR OF PERSONNEL PERFORM. TESTING
G	DA1	020480	012078			M430	T	A	DM	F00		ACTUATOR FOR DAMPER VALVE A07318B MALFUNCTIONING	CAUSE UNKNOWN
G	DA1	020674	030178			ZZZZ	N	U	UU	V01		COOLING TOWER BLOWDOWN DISCHARGE VALVE OPENED WITH	--OUT APPROVAL//PERSONNEL ERROR

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CLINT. NO.	EVENT DATE	CONTR. NO.	KEY	MFG.	A C O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	DA1	021169*	040378	04		T020	T U RV	A00		SETPOINTS OUT OF SPEC ON 1 SAFTEY+3 RELIEF VALVES	CAUSE UNKNOWN
G	DA1	021123A	040678			A180	T M UU	B16		VALVE MOV 8402B FAILED TO FULLY CLOSE	MOTOR STARTER CONTACTOR COIL FAILED
G	DA1	021123B	040678			L200	T M UU	B23		VALVE MOV 8402C FAILED TO FULLY CLOSE	MOTOR OPERATOR TORQUE SWITCH CONT. DIRTY
G	DA1	021862*	061778	02	V	ZZZZ	T U UU	F16		BACK UP SCRAM VALVES OPEN WHEN REQUIRED SHUT	LOOSE AUX SW SCREWS CAUSED FALSE SIGNAL
G	DA1	021864	061778			F130	N A UU	B00		TORUS PURGE INLET VALVE CV4308 FAILED TO CLOSE	CAUSE UNKNOWN
G	DR2	014023	010276			W165	N U UU	V01		RACK ISO VAL FOR PRESS SW263-51B IMPROPER LINEUP	PERSONNEL ERROR
G	DR2	014330	031376			ZZZZ	T U UU	A16		HPCI STEAM SUPPLY VALVE 2-2301-4 FAILED TO OPEN	DIRTY CONTACTS IN BREAKER SUPPLYING VALVE
G	DR2	014376	031576			P340	T U UU	D14		VALVE 2-1601-56 LEAKING EXTERNALY	EXCESSIVE PACKING LEAKAGE
G	DR2	014377	031576			P340	T U UU	C00		VALVE 1601-23 LEAKING INTERNALY	CAUSE OF LEAKAGE PAST SEAT NOT GIVEN
G	DR2	014428*	032376	02		A285	T U UU	D19		VALVES 2-1601-32A, 32E LEAKING EXTERNALY	DETERICRATICION OF WATERLESS GREASE ON SHFT
G	DR2	014344	032476			A610	T U UU	B06		CCSW VAULT DRAIN VAL 4999-74 BLOCKED OPEN MECH	FUNCTIONAL TEST REQUIRE. NOT IDENTIFIED
G	DR2	014443	032476			C665	T U UU	E10		SBLC ISO CHECK VALVE 2-1101-16 LEAKING INTERNALY	CRUD ON VALVE SEAT
G	DR2	014442*	032576	02		C665	T U UU	E12		CHECK VALVES 2-220-58B, -62B LEAKING INTERNALY	WORN SEAT RING & O-RING ASSEMBLIES
G	DR2	014420	032976			M360	T U UU	E25		HPCI VALVE 2-2301-45 LEAKING INTERNALY	CORROSION, PITTING OF LOWER SEATING AREA
G	DR2	014542	041276			C710	M U UU	H25		SBLC RELIEF VALVE 1105-A LIFTED PREMATURELY	VALVE SEAT NEEDS LAPPING
G	DR2	014530	041376			C710	M U UU	H25		SBLC RELIEF VALVE 1105-B LIFTED PREMATURELY	VALVE SEAT NEEDS LAPPING
G	DR2	014889	051976			ZZZZ	T U UU	V06		INCORRECT VLV L/U; SBLC SYSTEM-BORON TANK	DISCREPENCY IN PROCEDURES
G	DR2	014747	052576			T020	T U UU	B27		DURING BLOWDOWN TEST VALVE 203-3A REMAINED CPEN	EXCESS LEAKAGE ON PILOT STAGE OF VALVE
G	DR2	014748	052676			ZZZZ	N U UU	V02		SAMPLE VALVE ON SUCTION SIDE OF PUMP IN CLOSED PGS	PERSONNEL ERRGR FAILURE TO OPEN VALVE
G	DR2	015748	061076			P195	T U UU	B19		VALVE MO2-1402-48 FAILED TO CLOSE AGAINST PUMP HED	INADACUATE LUBRICATION OF VALVE STEM

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	LAN	CONT. NC.	EVENT DATE	CON PH	KEY	MFG.	ACTIVITY	OPERATOR	TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G DR2	015378	071176	P195	T U UU	F26	CORE SPRAY INJECTION VAL MC2-14C2-24B FAILED	BROKEN LIMIT SWITCH CONTACT BLOCK					
G DR2	016171	100376	ZZZZ	N U UU	V01	STACK GAS SAMPLE PUMP LOW FLOW/IMP. VLV LINE UP	PERSONNEL ERROR					
G DR2	023335	100376	ZZZZ	N U UU	V01	STACK GAS PUMP FLOW LOW VALVE LINEUP WRONG	PERSONNEL ERROR					
G DR2	016453	111376	C665	T U UU	F12	HPCI INJECTION VALVE M02-2301-8 FAILED	VALVE STEM SHEARED					
G DR2	017182	021777	P195	T U UU	A26	LPCI CROSS-TIE VALVE M02-1501-32B FAILED TO OPEN	LIMIT SWITCH OPENED BEFORE VALVE OFF SEAT					
G DR2	017514	040277	C665	N U UU	B14	B RECIRC PUMP SUCTION VALVE WOULD NOT CLOSE	VALVE PACKING TOO TIGHT					
G DR2	018181	060377	ZZZZ	M U UU	I01	LPCI VALVE 2-1501-3A, CLOSING VALVE BENT STEM	PERSONNEL ERROR					
G DR2	018508	080277	L200	T U UU	A23	HPCI VALVE 2-2301-8 FAILED TO OPEN	SUSPECT PROBLEM WITH TORQUE SWITCH					
G DR2	018934	081577	ZZZZ	T U UU	A00	SUCTION VALVE M0-2-1501-5A FAILED TO OPEN	CAUSE UNKNOWN					
G DR2	019156*	090877	02 V	ZZZZ	N U UU	D14	STEAM VALVE GLAND LEAKS CAUSED HI TEMP ISOL SIGNAL	VALVES WERE REPACKED				
G DR2	018985	091077	C665	T U UU	A04	HPCI VALVE 2-2301-8 FAILED TO OPEN, VAL DAMAGED	OVER SIZED MTR OPERATORS OVERSTRESS STEM					
G DR2	019155	091277	C665	N U UU	B02	RECIRC SUCTION VALVE 202-4B WOULD NOT CLOSE	VALVE PACKING TOO TIGHT MAINT ERROR					
G DR2	019154	091377	C665	T U UU	D07	MSIV 203-2B HAS PACKING LEAK	PACKING REACHED NORMAL END OF LIFE					
G DR2	019218*	100477	02	C665	T U UU	E12	REACTOR FEED CV 2-220-58B, 62B, LEAKING INTERNALLY	WORN SEAT/DISK ASSY PINS, WORN SEAT RING				
G DR2	019319	102177	J010	T U UU	C10	CNTNMNT AIR LOCK VENT VALVE LEAKING	VALVE SEATING SURFACES DIRTY					
G DR2	019490*	110277	02	S212	T U UU	C02	SAMPLE LINE ISOLATION VALVES 8501-1A, 1B LEAKING	IMPROPER SEAT TO DISK CLEARANCE ADJ				
G DR2	019656	110877	F130	T U UU	C27	ISOLATION VALVE 9207A LEAKING INTERNALLY	PILCT VALVE SEAT LEAKAGE					
G DR2	019809	112477	P340	T U UU	B00	ISOLATION VALVE A02-1601-63 WOULD NOT CLOSE	CAUSE COULD NOT BE DETERMINED					
G DR2	019985	120977	D243	T U UU	A00	ELECTROMATIC RELIEF VALVE 38 FAILED TO OPEN	CAUSE UNKNOWN					
G DR2	019808	121277	A585	N U UU	F12	VACUUM BREAKER 2-1601-32B INOPERABLE	MECHANICAL BINDING OF VALVE PARTS					

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	PL ANT	CONT. NO.	EVENT DATE	CN MU PH	KEY	MFG.	ACTI VITY	OP ERATOR	VL V TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	DR2	020170	010578			C665	N	U	GA	V01	SUCTION VALVE 2-1101-4 CLOSED CONTRARY TO T.S.	OPERATING PERSONNEL ERROR
G	DR2	020471*	021078	02		A585	T	U	CK	B10	TWO VACUUM BREAKER VALVES NOT CLOSING FREELY	EXCESS GREASE IN THE SHAFT SEALS
G	DR2	020642	022478			P340	T	A	BU	B12	TORUS VACUUM BREAKER 2-1601-208 WOULD NOT CLOSE	OPERATOR MOUNTING BOLTS SHEARED
G	DR2	020601	022578			F130	T	A	GA	B24	ISOLATION VALVE 9207B FAILED TO CLOSE	PILOT VALVE ASSY LEAKING (AIR SUPPLY)
G	DR2	020857	032178			ZZZZ	N	U	UU	F03	ISOL COND VALVE MD 1301-3 RENDERED INOPERABLE	PERSONNEL ERROR, LOSS OF POWER TO VALVE
G	DR2	020950	033078			C665	N	U	GA	D08	VALVE MD-2301-3 LEAKING EXTERNALLY	STEAM CUT OF SEAL RING
G	DR2	021158	042878			ZZZZ	N	U	GA	V01	VALVES DNA LPCI & CORE SPRAY IMPROPER LINEUP	OPERATING PERSONNEL ERROR
G	DR2	021512*	051378	02		A585	N	U	CK	F17	VACUUM BREAKERS 2-1601-33E6F FOUND INOPERABLE	SWELLING OF TEFLON SHAFT BUSHINGS
G	DR2	022940	090778			P340	D	A	UU	F24	VALVE 2-1601-24 FAILED TO OPERATE IN TIME LIMIT	FOREIGN MATTER LODGED IN AIR SUP+ SOLEN.
G	DR2	022590	092678			ZZZZ	N	U	UU	V02	VALVE TO ISOLATE FLOW SWITCH FOUND VALVED OUT	PERSONNEL ERROR
G	DR2	022778	093078			V095	N	A	UU	F24	VACUUM RELIEF VALVE AD-1601-208 FAILED OPEN	AIR OPERATOR SOLENOID VALVE SHORTED
G	DR2	022777	101278			ZZZZ	T	U	UU	V03	DIFF PRESS SW ISOLATION VALVE FOUND VALVED OUT	PERSONNEL ERROR
G	DR2	022776	101378			C665	T	U	GL	B19	THE 2-1402-48 FLOW TEST VALVE FAILED TO CLOSE	VALVE STEM NOT ADEQUATELY LUBRICATED
G	DR2	022775	101878			C665	T	U	GA	B19	LPCI SUCTION VALVE MD-1501-50 FAILED TO CLOSE	VALVE STEM NOT ADEQUATELY LUBRICATED
G	DR2	022969	110878			V095	N	A	UU	B24	AD-2-1601-24 FAILED TO CLOSE REMOTELY	AJR. OPER. SOL. VLV. STUCK IN THE OPEN POSIT.
G	DR2	022974	111578			V095	T	S	UU	A21	AD 1601-56 FAILED TO OPEN	SHORTED OUT COIL ON SOLENOID
G	DR2	023334*	112378	02		C665	T	A	GL	F12	2 MSIV FAILED TO CLOSE IN REQUIRED TIME	MINOR ADJUSTMENTS TO SPEED CONTROL VALVES
G	DR2	023338	121778			A499	N	A	UU	B24	AD 2-9207A FAILED TO CLOSE	ASCO SCV FOUND STICKING
G	DR2	023497	122078			C665	N	M	GA	B19	RECIRC PUMP DISCHARGE BYPASS FAILED TO CLOSE	SUSPECT STEM LUBRICATION PROBLEM
G	DR3	014071	010476			V105	T	U	UU	F21	NO.2 CONTROL VALVE FAILED TO OPERATE	MALFUNCTION OF FAST ACTING SOLENOID VALVE

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

Y - N	P L A N T	C O N T. N C.	E V E N T D A T E	C O M M U N I C A T I O N K E Y	M F G.	A C T I O N T Y P E	O P E R A T I O N T Y P E	V L M	F A I L C O D E	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
G	DR3	014440	032476		A610	T	U	UU	816	DRAIN VALVE 2-4999-74 BLOCK OPEN, DISCON. ELECTRIC.	FUNCTIONAL TESTING NOT IDEN IN PROCEDURES
G	DR3	015158	050376		C665	T	U	UU	F14	MSIV 3-203-1A CLOSING TIME TOO LONG	DRY VALVE PACKING
G	DR3	014750	051076		ZZZZ	T	U	UU	816	MO 3-1402-258 TRIPPED WHILE BEING CLOSED	WRONG SIZE OVERLOAD HEATER
G	DR3	016014	091876		P340	T	U	UU	D14	ISOLATION VALVE 3-1601-23 LEAKING IN EXCESS OF T.S	FAILURE OF VALVE PACKING
G	DR3	016016A	092176		C665	T	U	UU	E10	FEEDWATER CHECK VALVE 3-220-58A LEAKING INTERNALLY	DIRT IN SEATING AREA
G	DR3	016016B	092176		C665	T	U	UU	E08	FEEDWATER CHECK VALVE 3-220-62A LEAKING INTERNALLY	WORN DISK ASSEMBLY PINS
G	DR3	016017	092276		C665	T	U	UU	D13	VALVE 3-220-1 LEAKING BODY TO BONNET	DETERIORATED PRESSURE SEAL RING
G	DR3	016163	100776		A585	T	U	UU	L10	ISOLATION CHECK VALVE 3-1501-258 LEAKING INTERNALLY	DIRT AND SMALL SCRATCHES ON VALVE SEAT
G	DR3	016164*	100776	02	C665	T	U	UU	E10	FEEDWATER CHECK VALVES 3-220-58B,-62B LEAKING	DIRT IN THE SEATING AREA
G	DR3	016695	101276		C665	T	U	UU	A16	VALVE 3-1501-27A FAILED TO OPEN ELECTRICALLY	LOOSE TERMINAL IN VALVE CONTROL CIRCUIT
G	DR3	016471	102876		V139	T	U	UU	E10	ISOLATION CHECK VALVE 3-0301-98 LEAKING INTERNALLY	NORMAL WEAR; LIGHT RUST ON SEAT
G	DR3	016454	110176		M360	T	U	UU	E10	ISOLATION CHECK VALVE 3-205-2-7 LEAKING INTERNALLY	DIRT IN SEATING AREA & ON DISK PIVCT PIN
G	DR3	016474	111976		C665	U	U	UU	F16	HPCI LOGIC DESIGN WIRING CAUSING VALVES TO CYCLE	DESIGN ERROR
G	DR3	017652	041277		V095	N	U	UU	A00	VACUUM BREAKER A03-1601-20A DID NOT OPEN	CAUSE UNKNOWN
G	DR3	017977*	060677	02	ZZZZ	T	U	UU	F00	IRREGULAR OPERATION OF TWO SCRAM PILOT VALVES	CAUSE UNKNOWN
G	DR3	018378A	061177		D245	N	U	UU	C02	ELECTROMATIC RELIEF VALVE 203-3D LEAKING INTERNALLY	PILOT PIN ADJUSTED INCORRECTLY
G	DR3	018378B	061177		D245	N	U	UU	C10	ELECTROMATIC RELIEF VALVE 203-3E LEAKING INTERNALLY	DIRT UNDER VALVE SEAT
G	DR3	018377	061277		D245	T	U	UU	C27	ELECTROMATIC RELIEF VALVE 203-3D LEAKING INTERNALLY	DEFECTIVE PILOT VALVE STEM
G	DR3	018376	061377		D245	T	U	UU	A10	SOLENOID OPERATING LEVER FOR 203-3C STICKING	RUST BUILDUP ON GUIDE PINS
G	DR3	018551	072577		ZZZZ	R	U	UU	T03	SURVEILLANCE TEST NOT COMPLETED ON LPCI VALVES	PERSONNEL WERE 6 DAYS LATE COMPLETE TEST

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N T	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P O I N T	MFG.	A D J U S T M E N T	F A I L C O D E	F A I L M O D E	F A I L M E C H A N I S M
G DR3	018936	081177	ZZZZ	N U UU	A19			VALVE MO-3-1501-20B FAILED TO OPEN	VALVE STEM NOT ADEQUATELY LUBRICATED
G DR3	019189	092477	ZZZZ	N U UU	71			BREAKER FOUND OPEN TO MO-3-4102	PERSONNEL ERROR
G DR3	019659	102677	ZZZZ	R U UU	T03			SURVEILLANCE TEST NOT COMPLETED ON TIME	PERSONNEL ERROR(RECURRING PROBLEM)
G DR3	019660	110877	C665	N U UU	D14			LPCI MANUAL ISOLATION VALVE MO-3-1501-26 LEAKING	VALVE PACKING FAILURE
G DR3	019721	111077	L200	N U UU	A10			VALVE MO3-1201-1 FAILED IN CLOSED POSITION	DRIED GREASE ON LIMIT SWITCH
G DR3	019997	121677	ZZZZ	N U UU	V01			PRESS SWITCH FOUND VALVED OUT	PERSONNEL ERROR
G DR3	019996	121677	ZZZZ	N U UU	A00			LPCI HX DISCH VALVE MO3-1501-3A FAILED TO OPEN	CAUSE UNKNOWN
G DR3	020602	020778	ZZZZ	T M UU	A00			VALVE MO-3-1501-5C FAILED TO OPEN	CAUSE UNKNOWN
G DR3	020780A	030478 02	C665	T U CK	E12			FEEDWATER CHECK VALVES 3-220-588,628 LEAKING	WORN SEAT/DISK ASSEMBLY PINS
G DR3	020780B	030478	C665	T U UU	E12			CHECK VALVE 3-1601-21 LEAKING INTERNALLY	OFF-CENTER DISK IN VALVE
G DR3	020780C	030478	C665	T U UU	D14			MSIV 3-203-2C TEST CONNECTION VLV LEAKING EXTERNAL	PACKING FAILURE / VALVE REPACKED
G DR3	021157	040378	C665	T U CK	E10			CHECK VALVE 3-1101-15 LEAKING INTERNALLY	CHEMICAL DEPOSITS ON VALVE SEAT SURFACES
G DR3	021461	042478	A610	N U GA	C10			FIRE PUMP TANK LEVEL CONTROL VALVE STUCK OPEN	PIECE OF METAL STUCK IN VALVE
G DR3	021679	060678	L200	N M UU	F23			VALVE MO3-1501-288 FAILED WHILE BEING CYCLED	DEFECTIVE SHAFT PIN ON TORQUE SWITCH
G DR3	022075	072678	A499	D S UU	B21			ISOLATION VALVE 3-2001-6 WOULD NOT CLOSE	DETERIORATED SEALS IN SOLENOID VALVE
G DR3	022561	092278	ZZZZ	T U UU	B16			LPCI VALVE 3-1501-20A FAILED TO CLOSE ON TESTING	STUCK CONTACTOR IN MCC
G DR3	022591	092278	L200	N M UU	F00			LPCI HX VALVE MO3-1501-3A FAILED TO OPERATE	CAUSE UNKNOWN
G DR3	022772	101278	ZZZZ	T U UU	V03			DIFF PRESS SW FOUND VALVED OUT	PERSONNEL ERROR
G DR3	022921	110478	C665	T A GL	F12			MSIV 3-203-2A FAILED TO CLOSE IN PROPER TIME	SPEED CONTROL OUT OF ADJUSTMENT
G DR3	023363	113078	A499	T S GA	A00			FUEL OIL TRANS PUMP OUTLET VALVE FAILED TO OPEN	SOV WAS STUCK, VALVE REPLACED

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N T	P L A N T	CONT. NO.	EVENT DATE	C M M P M	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	EN1	014106	010276			ZZZZ	T	U	UU	T03	CORE SPRAY TEST NOT DONE IN REQUIRED TIME	PERSONNEL ERROR
G	EN1	014140	010976			ZZZZ	N	U	UU	V04	TWO SERVICE WATER VALVES ISOLATED WHEN REQ OPEN	FROZEN FLOW SWITCHES(HEAT TAPE NEEDED)
G	EN1	014768	020676			W220	N	U	UU	B26	RCIC PUMP SUCTION ISOLATION VALVE FAILED TO CLOSE	CORRODED CONTACTS ON TORQUE LIMIT SWITCH
G	EN1	014780	030476			ZZZZ	U	U	UL	V03	MN STEAM INST FLOW RACK NOT VALVED IN AFTER TEST	PERSONNEL ERROR
G	EN1	014786*	032776	16		ZZZZ	T	U	UU	C00	SIXTEEN VALVE BOUNDRIES LEAKING EXCESSIVELY	VARIOUS MODES OF FAILURE
G	EN1	014765	040776			W030	M	U	UU	F20	VALVE E11-F047A FAILED TO OPERATE ELECTRICALLY	A MOTOR WINDING FAILURE OCCURRED
G	EN1	014792	050176			N015	D	U	UL	A26	HPIC DISCHARGE VALVE E41-F006 FAILED TO OPEN	FAILURE OF A SNAP LOCK LIMIT SWITCH
G	EN1	014790	051076			ZZZZ	N	U	UU	V02	DISCHARGE VALVE DEMIN H2O TO RIVER LEFT OPEN	PERSONNEL ERROR
G	EN1	014798	052476			ZZZZ	N	U	UU	V01	DEMIN DRAIN VALVE LEFT OPEN(WATER DUMPED TO RIVER)	PERSONNEL ERROR
G	EN1	015555	061576			N015	N	U	UL	A00	HPIC VALVE E41-F006 DID NOT FULLY OPEN	CAUSE UNKNOWN
G	EN1	015564	072076			ZZZZ	T	U	UU	G16	RHR FLOW VALVE E11-F007B FAILED TO STAY OPEN	DEFECTIVE SWITCH SUPPLYING SIGNAL TO VALV
G	EN1	013045*	072976	07		ZZZZ	T	U	UU	H03	ALL SEVEN ADS VALVES OPENED INADVERTANTLY ON TEST	PERSONNEL ERROR(USED WRONG PROCEDURE)
G	EN1	016841	120976			T020	T	U	UL	B00	RELIEF VALVE WOULD NOT RESEAT	CAUSE UNKNOWN
G	EN1	017110	010977			T020	N	U	UU	B27	RELIEF VALVE B21-F013G OPENED AND STUCK OPEN	GROSS LEAKAGE OF PILOT+2ND STAGE ASSEMBLY
G	EN1	017096	011777			ZZZZ	U	U	UL	V03	PRESS SW FOUND VALVED OUT WHEN REQUIRED OPEN	PERSONNEL ERROR
G	EN1	017189	020177			T020	K	U	UL	B00	RELIEF VALVE B21-F013G OPENED AND STUCK OPEN	CAUSE UNKNOWN, VALVE TO BE TESTED
G	EN1	017190	020477			T020	N	U	UU	H27	RELIEF VALVE B21-F0133 OPENED PREMATURELY	LEAKAGE BY VALVES PILOT SEAT
G	EN1	018547	022677			ZZZZ	T	U	UU	A27	VACUUM BREAKER 648-F328B FAILED TO OPEN	LIMIT SW REPLACED AND A SOLENOID VALVE
G	EN1	018142	051777			H037	M	U	UU	T01	FAILED TO TEST AUTO. ISO. VLVS, RADWASTE DISCH LINE	PERSONNEL ERROR
G	EN1	018189A	051877	07		ZZZZ	T	U	UU	C25	7 RHR VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P M	K E Y	MFG.	A D D I T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
G EN1	0181898	051877	04			ZZZZ	T	U	UU	C25	4 HPCI VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G EN1	018189C	051877	03			ZZZZ	T	U	UU	C25	3 RCIC VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G EN1	018189D	051877	02			ZZZZ	T	U	UU	C25	2 CORE SPRAY PUMP VALVES LEAKING EXCESSIVELY	SEATS & DISCS NOT MATING PROPERLY
G EN1	018189E	051877	02			ZZZZ	T	U	UU	D13	2 PURGE EXHAUST VALVES LEAKING EXCESSIVELY	FAILED O-RING GASKET
G EN1	018189F	051877				ZZZZ	T	U	UU	C12	MSIV INBOARD "A" LEAKING INTERNALLY	STROKE NEEDED ADJUSTMENT
G EN1	018189G	051877				ZZZZ	T	U	UU	C23	1 CONDENSATE DRAIN VALVE LEAKING EXCESSIVELY	TORQUE SWITCH OUT OF ADJUSTMENT
G EN1	018191	060477				W220	T	U	UU	F02	LPCI VALVE E11-F017B CYCLE TIME OUTSIDE T.S.	VALVE STEM PACKED TOO TIGHTLY
G EN1	018649	080977				T020	D	U	UU	A00	SAFETY RV IC FAILED TO OPEN AT HIGH REACTOR PRESS.	CAUSE UNKNOWN
G EN1	020632	081477				ZZZZ	N	U	UU	D18	CRACK IN WELD FOR ISOL VALVE TO LEVEL TRANSMITTER	UNKNOWN REASON, SUSPECT TOO RIGID MOUNTING
G EN1	020629	082977				F130	T	U	UU	V03	OPERATION OF CONT. VAL CAUSED VIOL OF CONTNMT INTEG	TEST CONNECTION PLUG REMOV. FROM VLV/TEST
G EN1	020028*	090977	02	V		C665	D	U	UU	B16	RWCU PUMP SUCTION VALVES FAILED TO ISOLATE SYSTEM	JUMPER WIRE LEFT IN CONTROL PANEL
G EN1	020019*	100677	04			T020	D	U	UU	A00	FOUR RELIEF VALVES FAILED TO OPEN FOLLOWING SCRAM	CAUSE UNKNOWN, VALVES BEING EXAMINED
G EN1	020191	120877				0245	N	U	UU	V01	IMPROPER LINEUP, FUEL OIL TRANS PUMPS DISCH VALVES	PERSONNEL ERROR
G EN1	020687	022678				ZZZZ	T	U	GL	V02	ISO. VLV'S TO SWITCHS. C11-NO1366F IN CLOSED POSITION	PERSONNEL ERROR, UNCLEAR PROCEDURES
G EN1	021083	040678				ZZZZ	T	U	UU	V01	DRAIN VALVE LEFT OPEN, FOUND ON LLRT	PERSONNEL ERROR
G EN1	021085*	041178	03	B		ZZZZ	T	U	UU	C07	VARIOUS CONTNMT ISOLATION VALVES LEAKING	NORMAL WEAR ON VALVE COMPONENTS
G EN1	021725	060778				D232	T	U	CK	T02	4-EXCESS FLOW CVS NOT FUNCTIONALY TESTED AS REQ.	MAINTENANCE PERSONNEL ERROR
G EN1	021723*	060978	02			T020	T	U	RV	A12	TWO RELIEF VALVES FAILED BENCH CHECK	PROBLEMS WITH PLUNGERS AND SPRINGS
G EN1	021727	061678				D232	T	U	CK	E00	EXCESS FLOW CHECK VALVE B31-F040A LEAKING INTERNAL	CAUSE UNKNOWN, SUSPECT DIRT IN LINE
G EN1	022113	070278				ZZZZ	T	U	UU	A16	RHR MDV E11-F024A FAILED TO OPEN	DIRT IN INTERLOCK ON BREAKER CAUSED BIND

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V M N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P U M P	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V A L V E T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
G	FP1	015065	062976				ZZZZ	T	U	UU	V01	SOV-135A AND B FOUND CLOSED WHEN REQUIRED OPEN	PERSONNEL ERROR (PANEL MARKED POORLY)
G	FP1	015237	070376				L200	T	U	UL	A20	RHR VALVE 10 MOV 25A FAILED TO OPEN	SUSPECT OPEN CIRCUIT IN MOTOR WINDINGS
G	FP1	015239	071376				L200	T	U	UU	B21	DAMPER 66 MOV 100B DID NOT FULLY CLOSE	SOLENOID NOT IN PROPER ADJUSTMENT
G	FP1	015240	071376				A535	T	U	UU	B06	VALVE ON RHR PROCESS SAMPLE LINE FAILED TO CLOSE	INCORRECT PROCEDURES USED
G	FP1	015241	072176				T020	N	U	UU	H00	SAFETY RELIEF VALVE OPENED PREMATURELY	CAUSE UNDER INVESTIGATION
G	FP1	015272	073076				ZZZZ	N	U	UU	V06	OFF-GAS SAMPLE VALVE FOUND CLOSED, REQUIRED OPEN	PROCEDURAL ERROR
G	FP1	017840	073076				A660	N	U	UU	F21	VALVE IN DRYWELL MOISTURE LINE FAILED TO OPERATE	FAILURE OF VALVE SOLENOID
G	FP1	015982	100476				ZZZZ	N	U	UU	B00	VALVE ON CONDENSER (D-1) STUCK OPEN	CAUSE NOT STATED
G	FP1	016176	101476				P305	N	U	UU	E07	CHECK VALVE 42B LEAKING INTERNALLY	NORMAL WEAR ON VALVE SEAT
G	FP1	016269	102676				R165	T	U	UU	A20	RHR SYSTEM VALVE 10-MOV-24A WOULD NOT OPEN	VALVE MOTOR OPERATOR BURNED OUT
G	FP1	016374	110176				P295	N	U	UU	F20	RCIC ISOLATION VALVE 13-MOV-16 FAILED DURING TEST	VALVE MOTOR OPERATOR BURNED OUT
G	FP1	016413	111176				R340	N	U	UU	F00	THE INNER MSIV ON STEAM LINE D FAILED TO OPERATE	CAUSE UNKNOWN
G	FP1	016373	111976				T020	N	U	UU	H00	RELIEF VALVE 02-RV-71F INADVERTENTLY OPENED	CAUSE UNKNOWN
G	FP1	016497	111976				L200	N	U	UU	A20	HPCI VALVE 23-MOV-57 FAILED TO OPEN	FAILURE OF VALVE MOTOR WINDINGS
G	FP1	016415	112276				T020	N	U	UU	H00	SAFETY/RELIEF VALVE 02-RV-71B OPENED PREMATURELY	CAUSE UNDER INVESTIGATION
G	FP1	016600	121576				B485	T	U	UL	H00	RELIEF VALVE ON SOAK BACK PUMP LIFTING EARLY	CAUSE UNKNOWN
G	FP1	016972*	020377	C2			R340	T	U	UU	A19	MSIV 80B AND 80C FAILED TO OPEN FULLY	VALVEGUIDE RODS REQUIRED LUBRICATION
G	FP1	017659	022477				ZZZZ	N	U	UU	V03	VALVES ON HPCI ROUTE FROM COND TK TO TORUS L/U IMP	OPERATOR ERROR/ TESTING PERSONNEL
G	FP1	017337	030377				ZZZZ	T	U	UU	B01	FLOOR DRAIN ISOLATION VALVE FAILED TO CLOSE	VALVE OPERATOR IN OPEN OVERRIDE POSITION
G	FP1	017741	042577				V085	T	U	UU	B00	FLOOR DRAIN LINE ISOLATION VALVE FAILED TO CLOSE	CAUSE UNKNOWN

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N E T	P L A N T	CONT. NO.	EVENT DATE	C O M M U N I T Y	K E Y	MFG.	A C C I D E N T T Y P E	D E S C R I B E R	F A I L C O D E	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
G	FP1	017956	061177			P305	T U UU	A00		VALVE 23 MOV 58 FAILED TO OPEN ON TEST SIGNAL	CAUSE UNKNOWN
G	FP1	018477*	072877	12	Z	R340	T U UU	C25		PRIMARY CONTNMENT ISOLATION VALVES LEAKING INTERNALLY	WEAR OF VALVE SEATS AND DISKS
G	FP1	019169	092877			V085	T U UU	A23		RCIC TURBINE STEAM SUPPLY MOV 131 FAILED TO OPEN	TORQUE SWITCH NEEDED RESET
G	FP1	021142	100477			L200	T U UU	A23		LPCI MOV 25A FAILED TO OPEN ON TEST	LOW TORQUE SWITCH SETTING
G	FP1	019310	100877			L200	T U UU	B23		HPCI STEAM ISOL VALVE FAILED TO CLOSE ELECTRICALLY	TORQUE SWITCH NEEDED ADJUSTMENT
G	FP1	019768	113077			ZZZZ	M U UU	V02		VALVE ON MAIN STM COLLECT SYST INADVERTENTLY OPEN	MAINTAINENCE PERSONNEL ERROR
G	FP1	020107	011378			A485	N U CK	A10		BALL FLOAT CHECK VALVE IN COND POT STUCK SHUT	DIRT ON VALVE AND SEAT
G	FP1	020517	021078			ZZZZ	N U UU	F16		RCIC TURBINE STEAM INLET VALVE FAILED TO OPERATE	COMMAND/SUPPLY BREAKER RELAY OVERLOADED
G	FP1	020570	030278			P305	N U CK	B00		A RHR PUMP CHECK VALVE STUCK OPEN	CAUSE UNKNOWN
G	FP1	020929	040478			P305	N M UU	D14		VALVE 10MOV27A LEAKING EXTERNALLY	FAILURE OF VALVE PACKING
G	FP1	021022	040678			P305	N M GA	A16		RHR ISOLATION VALVE 10MOV18 INOPERABLE (CLOSED)	CONTROLLER AUXILIARY CONTACT FAILURE
G	FP1	021023	040878			V085	T M GA	F12		VALVE 23MOV14 SEPERATED FROM OPERATOR	FAILURE OF MECHANICAL FASTENERS
G	FP1	023590	042478			L200	N U UU	A20		12-MOV-15 INOPERABLE(A TORQUE SW PROBLEM CAUSED--	BURNED UP MOTOR AND BROKEN GEARS)
G	FP1	021225	042978			L200	N U UU	A23		HPCI 23-MOV-15 WOULD NOT OPEN	TORQUE SWITCH WAS RESET
G	FP1	021227	050878			ZZZZ	M U UU	F02		POWER REMOVED FROM CORE SPRAY VALVE MOTOR	PERSONNEL ERROR
G	FP1	021495*	061678	C3		L200	U M UU	I04		3 VALVE OPERATOR MOTORS HAVE WRONG CLASS WINDINGS	MOTORS REMOUND WITH CLASS H INSULATION
G	FP1	021712	062978			ZZZZ	T U UU	B16		HPCI VALVE 23-MOV-15 FAILED TO CLOSE	DEFECTIVE TEMP SWITCH(NO SIGNAL TO CLOSE)
G	FP1	021924	072278			L200	T M UU	B12		OUTBOARD INJECTION VALVE 14-MOV-118 FAILED TO CLDS	OPERATOR SHAFT KEY SHEARED
G	FP1	022119	080678			R165	T N UU	F20		SUCTION VALVE 23-MOV-57 WOULD NOT OPERATE	VALVE MOTOR BURNED OUT
G	FP1	022223	081678			L200	N M UU	F16		LOSS OF POWER TO BYPASS VALVE 02-MOV-54B	UNIT BLOWS FUSES CAUSE UNKNOWN

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V F N	P L A N T	CONT. NO.	EVENT DATE	C O M P H	K E Y	MFG.	A D A P T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
G	FP1	022225	081778			F167	N	A	UU	B24	ISOLATION VALVE 20-ADV-05 WOULD NOT CLOSE	SOLENCID AIR ADMISSION VALVE FAILED
G	FP1	022276	083078			ZZZZ	M	U	UU	D02	BACKHOE OPERATOR BROKE FIRE LOCP ISOLATION	PERSONNEL ERROR
G	FP1	022324	090378			L200	T	M	UU	A04	CORE SPRAY INJECTION VALVE 14-MOV-12B FAIL TO OPEN	DESIGN ERROR,NORMAL D.P.TOO SEVERE ON VAL
G	FP1	022465*	091478	C3		ZZZZ	T	U	UU	C13	VAC BREAKER VALVES 27-VB-3,4,5 LEAKED EXCESSIVELY	REPLACED "O" RING SEALS
G	FP1	022537	092078			ZZZZ	N	U	RV	C00	SAFETY RELIEF VALVE WAS LEAKING PAST SEAT	CAUSE OF LEAKAGE NOT GIVEN
G	FP1	022100*	120178	05	Z	ZZZZ	R	U	UU	C00	CONT.ISOL VALVES LEAKING THRU	REPLACED OR REPAIRED
G	FP1	023360	122078			F127	U	A	RU	F12	FOUND COUPLING KEY MISSING FROM 27-ADV-115	KEY REPLACED,REASON UNKNOWN FOR MISSING KEY
G	FP1	023358	122478			P312	N	U	CK	800	RHR LOOP CHECK VALVE FAILED TO CLOSE	NO REASON FOUND FOR STICKING,REASSEMBLED
G	M11	014179	012676			A585	N	U	UU	B17	VACUUM BREAKER FAILED TO CLOSE FREELY	TEFLON BUSHING OUT OF ROUND
G	M11	014290	021276			ZZZZ	N	U	UU	F24	1 OF 2 FEEDWTR.REG.VLVs LOCK IN THE AS IS POSITION	FAILURE IN 3 WAY PRESSURE REGULATOR
G	M11	014477	042276			D147	N	U	UU	B12	VALVE 1-AC-9 FAILED TO CLOSE	INTERVAL VALVE BINDING
G	M11	015154	071476			C665	T	U	UU	A12	VALVE 1-IC-1 WOULD NOT OPEN	YOKE NUT ADAPTOR & BEVEL GEAR HOUS FAILED
G	M11	015879	092576			ZZZZ	N	U	UU	D14	ISOLATION VALVE 1-IC-1 LEAKING	PACKING FAILURE
G	M11	016688	121776			C665	T	U	UU	B23	ISO COND INBOARD STM SUPVAL FAIL TO CLOSE	TORQUE SW SET INCORRECTLY
G	M11	016689	121876			C665	T	U	UU	B23	CONDENSATE RETURN VAL 1-IC-4 FAILED TO CLOSE	TORQUE SW SET INCORRECTLY
G	M11	016690	121876			ZZZZ	N	U	UU	A20	VALVE 1-CU-3 DID NOT OPEN	BURNED OUT MOTOR
G	M11	017001	012577			D147	D	U	UU	B24	VALVE 1-AC-9 FAILED TO CLOSE	DIRT IN AIR LINE
G	M11	018157	061777			T020	N	U	UU	H27	VALVE 1-MS-3D LIFTED BELOW SET PRESSURE	EXCESSIVE LEAKAGE PAST PILOT SEAT
G	M11	018156	061877			T020	N	U	UU	C27	RV DISCH TEMP HIGH/VLV LEAKING STM INTERNALLY	COLLAPSED FILTER,STM CUTTING OF PLT SEATS
G	M11	018414	071377			ZZZZ	U	U	UU	F24	"B" FEEDWTR.REG.VLV EXPERIENCED CONTROL PROBLEMS	FAILURE CAUSED BY DIA.FAIL.IN SUP.SYS.VLV

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	PL AN T	CONT. NC.	EVENT DATE	CON NUM PH	KEY	MFG.	A C T I V I T Y	D I R E C T I O N	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	M11	018690*	080577	03		A585	T	U	UU	B14	3 VAC BKR VALS FAILED TO FULLY CLOSE	FAILURE OF PACKING AND BUSHINGS
G	M11	018625*	080677	02	V	ZZZZ	N	U	UU	F24	FEEDWTR.REG.VLVs. LOCKED UP "AS IS"	LOSS OF INSTRUMENT AIR PRESS.CAUSED FAIL.
G	M11	018944	081877			C710	N	U	UU	C10	CORE SPRAY PUMP DISCH RV LEAKING	PARTICLES BETW VAL DISK AND GUIDE
G	M11	019326	101277			ZZZZ	N	U	UU	A00	TORUS SPRAY VLV FAILED TO OPEN ON SIGNAL	CAUSE OF OCCURRENCE IS UNKNOWN
G	M11	019629	103177			ZZZZ	N	U	UU	F00	ISO.COND.STM.SUPPLY VLV 1-IC-1 FOUND IMOPERABLE	CAUSE OF OCCURRENCE HAS NOT BEEN DETERM.
G	M11	019631	111877			T020	N	U	UU	H27	RV LIFTED BELOW SET PRESSURE	EXCESSIVE PILOT SEAT LEAKAGE
G	M11	019962	1.2977			T020	M	U	UU	H16	A TARGET ROCK SAFETY/RELIEF VLV ACTUATED PREMATURE	CABLE FAULT CAUSED ACTUATION SOL.TO ENERG
G	M11	020698	031078			T020	T	U	RV	C27	RV FAILED TO RESEAT	LEAKAGE IN PILOT VALVE / STEAM CUT
G	M11	020698A	031078			T020	N	U	RV	H27	RV LIFTED PREMATURELY DURING A SHUT DOWN	LEAKAGE IN PILOT VALVE/STEAM CUT
G	M11	020722A	032078	02		ZZZZ	T	U	UL	C00	MSIVS (1-MS-1A,1C) LEAKING IN EXCESS OF T.S. LIMIT	CAUSE OF LEAKAGE NOT GIVEN
G	M11	020722B	032078	04		ZZZZ	T	U	CK	E00	FEED WTR.CK.(1-FW-9A,9B,10A,10B)LEAK.EXCESS OF T.S	CAUSE OF LEAKAGE NOT GIVEN
G	M11	020722C	032078	07		ZZZZ	T	U	UL	C00	ATMOS.CONT.VLVs(1-AL-5,6)LEAKING IN EXCESS OF T.S.	CAUSE OF LEAKAGE NOT GIVEN
G	M11	020722D	032078	03		ZZZZ	T	U	UU	C00	SHUTDOWN COOL.VLVs(1-S0-2A,4A,4B)LEAK.EXCESS OF TS	CAUSE OF LEAKAGE NOT GIVEN
G	M11	020722E	032078			ZZZZ	T	U	UL	C00	CLEANUP SYS.VLV(1-CU-3)LEAKING IN EXCESS OF T.S.LM	CAUSE OF LEAKAGE NOT GIVEN
G	M11	021352	042478			H035	R	U	GL	F14	SCRAM VALVE OPERATION SLOW	VALVE PACKING TOO TIGHT
G	M11	022584	091478			D147	N	A	UU	B10	DRY WELL VENT BYPASS VAL 1-AC-9 FAILED TO CLOSE	DIRT AND SCALE IN AL. OPERATOR
G	M11	022749	101978			ZZZZ	U	U	UU	F16	THE ISO.COND.ISO.VLV 1-IC-3 SPURIOUSLY OPENED	FAILURE OF SWITCHES IN LOGIC CHANNEL
G	M01	014515	050476			A610	T	U	UU	C00	SOLENOID VALVE LEAKING (INSTR.AIR TO NITRO. SYS)	CAUSE UNKNOWN
G	M01	015026	060376			L200	T	U	UU	B23	HPCI STM LINE ISO VAL FAILED TO CLOSE	TORQUE SW SETTING DRIFTED TOO LOW
G	M01	015100	061476			A660	T	U	UL	A24	SAFETY RELIEF VLV 2-71A FAILED TO ACTUATE	AIR LEAK IN AIR SUPPLY SYSTEM

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W E E K	P L A N T	CONT. NO.	EVENT DATE	C O N T R I B U T O R	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	MO1	015316	072576			F130	T	U	UU	800	VALVE AQ-2381 FAILED TO CLOSE (TORUS PURGE INLET)	CAUSE UNKNOWN
G	MO1	015440	080276			A395	T	U	UU	C00	COOL SUP VAL TO RCIC TURF LEAKING INTERNALLY	CAUSE UNKNOWN
G	MO1	015755	082576			G080	N	U	UU	F16	S/D COOL-ISO.VLV. EXPERIENCED LOSS OF POWER	FAILURE OF RELAY COIL IN CONT. CIRCUIT
G	MO1	015768	090276			A395	N	U	UU	B12	VALVE MG-2008 FAILED TO OPEN	STEM CLAMP SET SCREWS SHEARED
G	MO1	017134	011877			G080	M	U	UU	C02	VALVE ON ACCUM T14-19 FAILED TO HOLD PPESSURE	VALVE PACKING INSTALLED INCORRECTLY
G	MO1	017373	032177			ZZZZ	N	U	UU	V01	AIR EJECT.SAMP.SYS.SUP.VLV SHUT WHEN REQ. OPEN	PERSONNEL ERROR
G	MO1	018094	053077			G080	T	U	UU	A16	"B" RHR INJECTION VALVE FAILED TO OPEN (MO-2013)	CONTACTOR IN CONT.CIRCUITRY DID NOT CLOSE
G	MO1	018093	053177			L200	T	U	UU	B19	ISO VALVE MO-2076 FAILED TO CLOSE	DETERICRATED GREASE,MAIN+LIM SW GEAR TRAN
G	MO1	018463	061677			L200	M	U	UU	F06	TORQUE SW NOT ADJ PREP. OUTBRD RCIC STM ISO VLV	MRA IMPROPERLY PROCESSED
G	MO1	018465*	062377	02	V	ZZZZ	T	U	UU	F05	SGTS TRAIN "A" ISO.VLV.CONTROLS INSTALLED IMPROPER	FABRICATION ERROR
G	MO1	018442	062777			G080	N	U	UU	V06	VAL ON AIR EJECT MONIT SYST POSITIONED IMPROPER	VAL WAS IMPROPERLY TAGGED
G	MO1	018467	070977			A610	N	U	UU	F10	GAS FLOW CONT VAL FCV-7489A FAILED	DIRT IN VALVE SEAT AND DISK
G	MO1	018468	071177			G080	M	U	UU	C01	NITROGEN CHARGING VLV FAILED TO HOLD PRESSURE	OVERTIGHTEN.VAL.HAND.CAUSED "O" RING FAIL
G	MO1	018510	071977			G080	M	U	UU	C14	NITROGEN CHARGING VAL FAILED TO HOLD PRESS	PACKING AT END OF LIFE
G	MO1	018669	081077			G080	N	U	UU	C14	VALVE CRD HCU 30-11 WOULD NOT HOLD PRESS	PACKING FAILURE
G	MO1	018955	082877			G080	T	U	UU	A16	"B" RHR INJECTION VALVE FAILED TO OPEN (MO-2013)	CONTACTOR IN CONT.CIRCUITRY DID NOT CLOSE
G	MO1	019050	090977			A395	N	U	UU	F04	VALVE MO 2609 FAILED TO OPERATE PROPERLY	SET CLAMP SCREWS UNDERSIZED
G	MO1	019466	091077			A395	T	U	UU	C10	VALVE MO-2373 LEAKING INTERNALLY	FOREIGN MATRL ON VAL SEAT
G	MO1	019471	091077			A585	T	U	UU	C25	MSIV AQ2-86A LEAKING INTERNALLY	VALVE SEAT FAILURE
G	MO1	019467*	091377	02		R340	T	U	UU	E10	VALVES AQ-14-13A + AQ-14-13B LEAKING INTERNALLY	SCALE ACCUM ON SEATING SURFACES

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	UNPL KEY	MFG.	ACTIVITY	OPERATOR	TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G M01	019468	091677		A395	T U	UU	E10		VALVE LEAKING IN EXCESS OF T.S.	DIRT ON SEATING SURFACES
G M01	019158	092377		A395	M U	UU	F12		VALVE MD-2008 FOUND FAILED DURING MAINTENANCE	SEAT RING THREADS STRIPPED
G M01	019469	100477		A395	T U	UU	E12		RCIC-9 TURB EXT VAL LEAK IN EXCESS OF T.S.	DISK WASHER BENT
G M01	019470	101277		M255	T U	UU	C10		VALVE CV-7436 LEAKING INTERNALLY IN EXCESS OF T.S.	DIRT AND SCALE ON SEATING SURFACES
G M01	019465	101377		A585	T U	UU	C00		MSIV AD-2-80A LEAKING IN EXCESS OF T. S.	NO APPEARENT CAUSE
G M01	020395	020278		A585	T U	CK	B17		TORUS TO DRYWELL VAC. BRKR AD-23828 FAILED TO CLOSE	EXCESS FRICTION BETW VAL BUSHING + STEM
G M01	020700	022878		M430	T A	UU	F10		VALVE BV-4 WOULD NOT FUNCTION TO ALLOW MINIMUM FLO	FOREIGN MATERIAL IN BV-4 POSITIONER
G M01	021243	042178		ZZZZ	T M	UU	B00		RX. WTR. CLEANUP OUTBD. ISO. VLV MD-2398 FAIL. TO CLOSE	CAUSE UNKNOWN
G M01	021755	060578		A610	T S	UU	F12		SCRAM PILOT VALVE FOR CRD 06-19 WOULD NOT FUNCTION	BUNA-N DISK IN SCRAM PILOT VALVE BROKEN
G M01	021985*	072878	07	A610	R S	UU	F12		SCRAM PILOT VALVES FOR CRDS WOULD NOT FUNCTION	BUNA-N DISK IN SCRAM PILOT VALVES BROKEN
G M01	022809	100178		ZZZZ	N U	UU	V01		2 VLVS NOT CLOSED WHEN REQUIRED TO BE	PERSONNEL ERROR
G M01	022810	101478		A585	Y U	GL	C12		OUTBOARD MSIV AD-2-86A LEAKING INTERNALLY	VALVE STEM BENT, LOWER GUIDE RIB WORN
G M01	022811	101478		A585	T U	GL	C25		D OUTBOARD MSIV AD-2-86D LEAKING INTERNALLY	SCRATCH FOUND ON MAIN VALVE SEAT
G M01	022808	102078		A395	T U	CK	E10		HPCI-9 TURB EXT LINE CHECK VALVE LEAKING INTERNALLY	ACCUMULATED DIRT ON SEATING SURFACES
G M01	022806*	102278	02	A395	T M	GA	C14		REACTOR CLEANUP ISO VALS MD-2397, -2398 LEAK EXTRNL	EXCESS PACKING GLAND LEAKAGE, IMP T.S., #DJ
G M01	023388	111478		B290	T U	UU	D09		PINHOLE LEAK IN CV-1729, RHR D/P CONTROL VALVE	CORROSION/ERROSION OF UPPER VALVE BODY
G M01	023389	112178		ZZZZ	N U	UU	F16		MD-2014 LPCI A ADMISSION VALVE INOPERABLE	BLOWN FUSE IN CONTROL POWER CIRCUIT
G M01	023390	112478		ZZZZ	N U	UU	C25		HPCI DRAIN VALVE CV-2043 LEAKING THRU INTERNALLY	INTERNAL PARTS NEED REPLACEMENT
G M01	023403	121878		L200	T M	LU	B20		MD-2-54A FAILED TO CLOSE	DECLUTCH SHAFT PROBLEM, MCTOR WONT ENGAGE
G NM1	014980	031476		A610	N U	UG	A12		VLV BV202-37 IN #11 EMERG. VENT. SYS. FAILED TO OPEN	SOL. HAD CRACKED NYLON TIP ON PLUNGER

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ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W	PL	CONT.	EVENT	C	MFG.	A	D	V	FAIL	FAILURE MODE	FAILURE MECHANISM
NUM	ANN	NO.	DATE	CON		CTY	REV	LV	CODE		
G	DC1	016486	111176		ZZZZ	T	U	UU	A00	VALVE V-21-5 FAILED TO OPEN/CKT BRKR TRIPPED	CAUSE UNKNOWN / VLV OPENED HARD MANUALLY
G	DC1	016479	120176		ZZZZ	T	U	UU	A16	CORE SPRAY ISO.VLV V-20-15 FAILED TO OPEN ON SIGNAL	INTERMIT.GRND.SHRT.IN VLV.MTR.OPER+PWR.FD
G	DC1	017258	031477		ZZZZ	N	U	UU	F00	DIA.OPER.VLV FAILED(LUBE SYS FOR GAS SAMPLE PMP.)	CAUSE UNKNOWN
G	DC1	017472	032377		ZZZZ	T	U	UU	B16	CORE SPRAY ISO.VLV V-20-15 INOPERABLE IN OPEN POS.	VLV.MTR. OPERATOR BREAKER TRIPPED
G	DC1	017543	042377		ZZZZ	N	U	UU	B24	MSIV NS04A FAILED TO CLOSE//CONT.SYS FAILURE	DEFORMED GASKET BLOCCKED AIR VENT FOR SOL.
G	DC1	017702	042377		A585	T	U	UU	C25	MSIV NS04B LEAKING INTERNALLY	TIGHT CRACKS AROUND ENTIRE VALVE SEAT
G	DC1	018623*	072777	02	ZZZZ	T	U	UU	A16	CORE SPRAY ISO.VLV V-20-40 & V-20-15 FAILED TO FULLY OPEN//IMP.CKT.BRKR.OVERLOAD SETTING	ACTUATOR PLATE BOUND AGAINST A RIVET
G	DC1	018671	080277		D243	T	U	UU	A12	ELECTROMATIC RV C FAILED TO OPEN	CAUSE UNKNOWN
G	DC1	018953	082777		A499	N	U	UU	C00	GAS DRAIN VALVE V-7-29 FAILED TO CLOSE TIGHTLY	DESIGN ERROR / IMPROPER BUSHING USED
G	DC1	018952	082977		A585	T	U	UU	B04	TORUS TO DRYWELL VAC.BRKR(V-26-5) FAIL. TO RECLOSE	DEFECTIVE CKT.BRKR. TO MOTOR
G	DC1	019080	090877		ZZZZ	T	U	UU	B16	CORE SPRAY ISO.VLV. V-20-15 FAILED TO CLOSE	DESIGN ERROR / IMPROPER BUSHING USED
G	DC1	019198	092777		A585	T	U	UU	B04	VAC BRK VAL V-26-9 FAILED TO CLOSE	FLOW SENSING P.UBE DISPL (VLV V-29-26)
G	DC1	019430A	101177		F212	T	U	UU	F16	VAL ON STBY GAS TREAT SYST NO1 FAIL TO OPER PROP	FLO CONT PLUNG CN PILOT SV DETERIORATED
G	DC1	019430B	101177		F212	T	U	UU	F24	VAL ON STBY GAS TREAT SYST NO1 FAIL TO OPER PROP	VALVE SEAT OVERTIGHTENED BY OPER. PERSON.
G	DC1	020467	011978		A37	D	M	GA	F01	ISO COND VAL V-14-35 FAILED TO OPERATE	SET SCREW ON TORQUE SW LOOSTENED, SET DRFT
G	DC1	022576	091478		F195	T	M	UU	A23	VALVE V-14-37 WOULD NOT OPEN, BRKR TRIPPED	LACK OF LUBRICATION, VALVE BINDING
G	DC1	022574*	09157*	vc	F130	T	A	BU	F19	VACUUM BREAKERS V-26-16, V-26-18 INOPERABLE CP TEST	CRACKED STELLITE WELD IN BODY SEAT RING
G	DC1	022357A	091678		A585	T	U	GL	D18	MSIV NS04A LEAKING EXTERNALLY IN EXCESS OF T.S.	FAILURE OF STEM PACKING MATERIAL
G	DC1	022357B	091678		A585	T	U	GL	D14	MSIV NS04B LEAKING EXTERNALLY IN EXCESS OF T.S.	FAILURE OF MAIN POPPET TO SEAT PROPERLY
G	DC1	022357C	091678		A585	T	U	GL	C25	MSIV NS03A LEAKING INTERNALLY IN EXCESS OF T.S.	

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	CORRECTIVE ACTION	MFG.	VALVE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G DC1	022970	101778	ZZZZ	T A	UU A24		GAS SYSTEM 11 DISCHARGE VALVE FAILED TO OPEN	STUCK SOL ENCID IN AIR SUPPLY TO OPERATOR
G DC1	022851A	101878	ZZZZ	M U	GA C25		OFF GAS SYSTEM ISO VALVE V-7-31 LEAKING INTERNALLY	VALVE HAS DAMAGED RUBBER SEAT
G DC1	022851B	101878	ZZZZ	M U	GA G10		DRAIN VALVE V-7-29 OBSTRUCTED BY CORK LIK MATRL	ASSUMED THAT MATRL NOT REMOVED DUE CONST
G DC1	022983*	112078	06	ZZZZ	T U	UU C25	SIX VENT VALVES LEAKING THRU ON CONT LEAKRATE TEST	SEAT PROBLEMS, REPAIRED SOME, REPLACED REST
G DC1	023117	112978	ZZZZ	T U	UU B16		MN STEAM DRAIN VALVE V-1-106 FAILED TO CLOSE	NO POWER TO VALVE, DEFORMED FUSE HOLDER
G DC1	023144	120478	ZZZZ	T U	UU A16		CONT SPRAY VALVE V-21-78 FAILED TO OPEN ON TESTING	BREAKER TO VALVE NOT RACKED IN PROPERLY
G DC1	023299	121278	C630	T A	UU B10		SGTS VALVE V-28-30 FAILED TO CLOSE DURING TEST	DIRT & CORROSION IN PISTON CYLINDER
G PB2	013992	010776	A165	T U	UU A20		MO-10-25B RHR INJECTION VLV FAILED TO OPEN	MOTOR ON VLV OVERHEATED AND DAMAGED WINDNG
G PB2	013990	011576	P195	T U	UU A12		RHR INJECTION VALVE MO-10-29A FAILED TO OPEN	MTR SHAFT TO PINION GEAR KEY SHEARED
G PB2	014154	020676	ZZZZ	T U	UU B16		LIQ. RADWASTE DISCH. VLV MO-20-308 FAILED TO ISO. FLW	FLOW-INDIC. XMTR. DID NOT OPERATE PROPERLY
G PB2	014153	020976	W030	M U	UU F02		RCIC D.B. STM ISO VAL MO-13-16 FAILED TO STROKE	VALVE PACKING TOO TIGHT / PERSONNEL ERROR
G PB2	014316	022476	ZZZZ	M U	UU F12		CELL DISTR. VLV ON C COOL. TOWER FAILED	FAIL OF STEM BUSH. RETAIN PLT, DIST. VALVE
G PB2	014351	030976	A535	N U	UU A21		ISO VAL ON RET TO DRYWELL LINE CLOSED	DEFECTIVE SOLENOID COIL
G PB2	014404*	032976	04	A585	T U	UU E10	FEED WAT CV 28A, 28B, 96A, 96B LEAKING EXCESSIVELY	RUST SCALE ON VAL SEATING SURFACES
G PB2	014412*	033076	05	A585	T U	UU C25	MS VLS 86A, 86B, 86C, 86D, 800 LEAKING EXCESSIVELY	SLIGHT DISTORTION ON VALVE SEAT
G PB2	014381	040376	ZZZZ	M U	UU C00		RHR PUMP MIN FLOW VAL LEAKING INTERNALLY	CAUSE UNKNOWN
G PB2	014925	051976	L200	N U	UU B16		RECIRC PUMP DISCH VLV MO-2-02-53A WOULD NOT CLOSE	BROKEN WIRE, CLOSING CONTROL CIRCUIT
G PB2	015142	061876	W030	T U	UU F12		RHR SD COOL SUCT ISO VAL MO-2-10-18 FAIL TO STROKE	VALVE STEM BENT
G PB2	015139	062076	L200	T U	UU F23		MAIN STM LINE DRAIN ISO VAL MO-2-74 FAIL TO STROKE	TORQUE SWITCH FAILURE
G PB2	015140	062076	ZZZZ	T U	UU F16		ISO VAL MO-2-14-71 FAILED TO STROKE	GROUNDED WIRE AT MTR CONT CENTER

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

Y E A R	P L A N T	C O N T. N O.	E V E N T D A T E	C O N T. N O.	K E Y	M F G.	A C T I O N C O D E	D E S C R I P T I O N	F A I L C O D E	F A I L U R E M O D E	F A I L U R E M E C H A N I S M	
G	PB2	015085	062976			TC20	N	U	UU	827	MAIN STEAM RV FAILED IN OPEN POSITION	PILOT VALVE SEAT LEAKAGE
G	PB2	015374	082076			B290	N	U	UU	A12	CONDENSATE CONT. VLV FAILED IN CLOSED POSITION	DEFECTIVE POSITIONER ON CONTROL VALVE
G	PB2	015518	082476			F125	N	U	UU	A12	PURGE EXHAUST VLV AD-2907 FAILED TO FULLY OPEN	ALIGNMENT KEY BTWN. ACTU. & VLV SHEARED
G	PB2	015759	082976			C710	N	U	UU	812	LIQ NITRO TK RV FAILED TO RESEAT	DEFECTIVE BLCWBACK RING
G	PB2	015711	091376			ZZZZ	N	U	UU	V01	IMPROPER VAL LINEUP TO SETTLING BASIN	PERSONNEL ERROR
G	PB2	015884*	092176	03	Z	ZZZZ	U	U	UU	F06	TRIP LEVEL FOR CORE SPRAY SET IMPROPERLY	DEFECTIVE PROCEDURES
G	PB2	016390	110			L200	T	U	UU	812	CORE SPRAY VALVE MO-26A FAILED TO CLOSE	MTR OPER GEAR TRAIN FAILED
G	PB2	016337	110			T020	N	U	UU	810	MAIN STM RV 71F FAILED IN OPEN POSITION	DIRT UNDER PILOT DISK AND SEAT
G	PB2	01648	110			MSIV	N	U	UU	812	MSIV AD-22-86B FAILED TO CLOSE	GOUGED VALVE STEM
G	PB2	016561	110			ISG	N	U	UU	960	ISG VALVE AD-2-2-39 FAILED TO CLOSE	CAUSE UNKNOWN
G	PB2	01656	110			ISG	N	U	UU	960	ISG VALVE AD-2-2-40 FAILED TO CLOSE	STUCK SOENOID IN SUPPLY SYSTEM
G	PB2	01677	110			ISG	N	U	UU	925	ISG VALVE AD-2-2-40 FAILED TO CLOSE	TORQUE SWITCH FAILURE
G	PB2	01677	110			ISG	N	U	UU	925	ISG VALVE AD-2-2-40 FAILED TO CLOSE	TORQUE SWITCH FAILURE
G	PB2	01657	110			INSPECTION	N	U	UU	909	INSPECTION OF RELIEF VLVS SHOWED DIAPHRAGM PROBLEM	DELAMINATION AND OVERHEATING OF DIAPHRAGM
G	PB2	01667	110			MAIN STM	N	U	UU	827	MAIN STM RV 71E FAILED OPEN	EXCESSIVE PILOT SEAT LEAKAGE
G	PB2	01667	110			MAIN STM	N	U	UU	827	MAIN STM RV 71E FAILED OPEN	EXCESSIVE PILOT VLV SEAT LEAKAGE
G	PB2	01698	110			EXTERNAL	N	U	UU	012	EXTERNAL STM LEAK VAL MO-2-23-16	VAL PACKING LUBE PLUG LEAKING
G	PB2	01726	110			VALVE	N	U	UU	014	VALVE AD-2-23-42 LEAKING EXTERNALLY	PACKING FAILURE
G	PB2	01748	110			ZZZZ	T	U	UU	F00	MSIV 86B CLOSE TIME GREATER THAN T.S. LIMIT	CAUSE UNKNOWN
G	PB2	01909	110			ZZZZ	T	U	UU	A16	STDBY.GAS TREATMENT "A" FILTER TRAIN INCL.VLV. AD--	-20475-1 DID NOT OPEN//CONTACT PROBLEM
G	PB2	019094	110			L200	T	U	UU	F16	HPCI TURB EXHAUST VAL MTR DAMAGED	SHORT IN VAL CONTROL CIRCUIT

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N T	C O N T. N C.	E V E N T D A T E	C O N T R O L N U M B E R	K E Y	M F G.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	F A I L C O D E	FAILURE MODE	FAILURE MECHANISM
G	PB2	C19C96	091477			B290	U	U	UU	D14	VALVE AO-53 LEAKING EXTERNALY	PACKING FAILURE
G	PB2	019187	092677			R290	T	U	UU	D22	HPCI OIL SYST CONT VAL LEAKING OIL	DIAPHRAGH LEAKING
G	PB2	019492	102177			P312	N	U	UU	C00	VALVE CONNECT OFF-GAS VIAL SAMPLER LEAKING	CAUSE UNKNOWN
G	PB2	019718	111277			W030	N	U	UU	D14	ISO VAL MD-16 LEAKING EXTERNALY	PACKING FAILURE
G	PB2	020074*	111377	02		A310	N	U	UU	B00	2 LAVATORY FLUSH VALVES STUCK OPEN	CAUSE UNKNOWN
G	PB2	019953	113077			W030	N	U	UU	D14	VALVE MD-2-2-65 LEAKING EXTERNALY	PACKING FAILURE
G	PB2	019952	120277			W030	N	U	UU	D14	HPCI STM ISO VAL LEAKING EXTERNALY	PACKING FAILURE
G	PB2	020481	020678			ZZZZ	T	U	UU	B16	RADWASTE DISCHARGE VALVE FAILED TO CLOSE/TESTING	COMMANC/RELAY FAILED IN CONTROL CIRCUIT
G	PB2	020610	021678			E095	N	U	BA	V01	INLET VLV FOR THE MANOMETER WAS OPEN INSTEAD OF CL	PERSONNEL ERROR/FAILED TO FOLLOW PROCEDUR
G	PB2	020667	022378			H037	N	X	GA	V01	DISCHG VLV ON DIESEL F.O.PMP LEFT OPEN VICE SHUT	PERSONNEL ERROR
G	PB2	020724	022478			W030	N	U	GA	D14	EXTERNAL LEAKAGE MD-2-2-65AIRCIRC.SYS.LP.X-CONN.)	FAILED PACKING ON VLV CAUSED LEAKAGE
G	PB2	020684*	030178	04		T020	T	U	RV	I05	DURING INSPECT.;CRACKS FOUND NEAR SEATS OF 4 S.RHS	CRACKS WERE CAUSED BY PRE-EXIST.CAST.DEF.
G	PB2	021193	042678			F103	N	U	UU	D14	CRD ACCUM.CHGING.VLV 3-13-111 LEAKING EXTERNALY	PACKING FAILURE/NORMAL AGING OF PACKING
G	PB2	G21554*	06C978	02		W030	N	U	GA	D14	HEAD VENT MAN VAL,VAL MD-2-2-65B LEAKING EXTERNALY	VALVE PACKING FAILURES
G	PB2	021482	061278			L200	N	M	UU	B23	VALVE MD-2-74 FAILED TO RESPOND TO A CLOSE SIGNAL	TORQUE SWITCH ON ISO VALVE DEFECTIVE
G	PB2	022463*	090478	02	V	H195	N	U	BA	C10	BALL VALVES IN RAD WASTE MANAGE SYST LEAK INTERNAL	DIRT DEPOSITS ON VALVE SEATING SURFACES
G	PB2	022707	101978			L200	N	M	UU	B23	MAIN STM LINE DRAIN ISO VAL MD-2-74 FAIL TO CLOSE	TORQUE SWITCH ON ISO VALVE DEFECTIVE
G	PB2	022916	102178			ZZZZ	N	U	CK	E12	CHECK VALVE 2-23-131 LEAKING INTERNALY, GLAND SEAL	INTERNALS OF CHECK VALVE WORN OUT
G	PB2	022819	103178			A535	T	S	GL	F10	OXYGEN ANALYZER SYSTEM ISO VAL,SV-2671G,FAILED	VALVE SEAT DIRTY,PLUNGER STICKING
G	PB3	013989	010276			ZZZZ	N	U	UU	B27	OUTBOARD MSIV 06C FAILED TO CLCSE	VLV OPER.PILOT ASS. SEAT SURF.WAS DAMAGED

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

<u>VEH</u>	<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>CNTR. PM</u>	<u>KEY</u>	<u>MFG.</u>	<u>VALVE TYPE</u>	<u>FAIL CODE</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
G PB3	014032	010576	ZZZZ	N	U	UU	A16	MO-3-14-128(B CORE SPR.LP.INJ.VLV)	FAILED TO OPEN	PROBLEM WITH MAGNET.TRIP DEVICE MTR. BRKR
G PB3	014033	010776	A585	T	U	UU	E25	HPCI EXHAUST LINE CHECK VLV 23-65-EXCESSIVE LEAK.	POOR MATING BETWEEN FLAPPER & SEATING SUR	
G PB3	014035	010776	B290	T	U	UU	C25	HPCI EXHAUST LINE DRAIN VLV AD-5248 -EXCESS. LEAK.	POOR MATING BETWEEN PLUG & SEATING SURF.	
G PB3	014034	010976	W220	T	U	UU	E25	INST.NITRO.OUTBOARD CK.VLV 8-EXCESSIVE LEAKAGE	POOR MATING BETWEEN THE VLV FLAPPER&SEAT	
G PB3	014036	010976	A585	T	U	UU	E10	FEEDWATER CHECK VLV 28A-UNACCEPTABLE LEAKAGE	RUST SCALE ON VLV SEAT AND FLAPPER	
G PB3	014116	010976	A585	T	U	UU	E10	FEEDWTR OUTBOARD CHECK VLV 96B-UNACCEPTABLE LEAK.	RUST SCALE ON VALVE SEAT & FLAPPER	
G PB3	014117	010976	A585	T	U	UU	E10	FEEDWTR OUTBOARD CHECK VLV 96A-UNACCEPTABLE LEAK.	RUST SCALE ON VALVE SEAT & FLAPPER	
G PB3	014118	010976	A585	T	U	UU	E10	FEEDWATER CHECK VALVE 28B-UNACCEPTABLE LEAKAGE	RUST SCALE ON VALVE SEAT & FLAPPER	
G PB3	014042	011076	W030	T	U	UU	C10	FEEDWATER FLUSH VALVE MO-3663-UNACCEPTABLE LEAKAGE	DAMAGE TO SEATING SURFACES CAUSED BY RUST	
G PB3	014213	011076	A613	T	U	UU	C10	CORE SPRAY ACCUM.VENT VLV SV-5224B-UNACCEP. LEAKAGE	SEAT WAS DAMAGED BY FOREIGN MATERIAL	
G PB3	014183	012676	W220	T	U	UU	E25	INSTRUMENT NITRO.TD TORUS CHECK VLV-UNACCEP. LEAK.	POOR MATING BETWEEN VLV FLAPPER & SEAT	
G PB3	014475	021776	ZZZZ	U	U	UU	A16	RHR INJ. VLV.MO-10-25A FAILED TO FULLY OPEN	BROKEN WIRE TO OPENING TORQUE SWITCH	
G PB3	014266	022476	W030	N	U	UU	D14	RCIC STM.OUTBOARD ISO VLV LEAKING EXTERNALLY	PACKING LEAK DUE TO NORM.PACK.COMPRESSION	
G PB3	014265	022576	ZZZZ	N	U	UU	F20	MO-53B RECIRC.PMP.DISCHG. VLV. INOPERABLE	SHRT.CKT. OF WIRING IN VLV.MTR.OPERATOR	
G PB3	014471	030176	W030	N	U	UU	B12	B RHR OUTBOARD INJECTION VLV MO-1548 FAIL.TO CLOSE	VLV DISC SEPARATED FROM VLV STEM	
G PB3	014470	030276	L200	N	U	UU	A2J	RECIRC.PMP.DISCHG.VLV BYPASS(MO-54A)FAIL.TO OPEN	DEFECTIVE TORQUE SWITCH CAUSED FAILURE	
G PB3	014380	032176	L200	N	U	UU	B16	3B RECIRC.PMP.DISCHG.VLV(MO3-53B)FAILED TO CLOSE	2 CONT.CKT.WIRES TO VLV OPER.WERE BROKEN	
G PB3	014525	042676	W030	T	U	UU	F12	MO-12-68 RMCU RETURN ISO.VLV HAD TOO SLOW CLOSING	VALVE STROKE WAS OUT OF ADJUSTMENT	
G PB3	014741	050476	L200	N	U	UU	B16	3B RECIRC.PMP.DISCHG.VLV(MO-3-2-53B)FAIL.TO CLOSE	SEVERAL BROKEN WIRES AT TERMINAL CONNECT.	
G PB3	014655	050876	L200	N	U	UU	A16	RECIRC.PMP.DISCHG.VLV MO-53B FAILED TO OPEN	GROUNDING CABLE AT MTR CSING,DUE TO VIBRAT	

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

EVENT	PLANT	CONT. NC.	EVENT DATE	COMMUN. KEY	MFG.	OPERATOR	VALVE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G P83	015153	071276			T020	N U UU	B27		71B MAIN STEAM RELIEF VALVE FAILED OPEN	FAILURE DUE TO PILOT VLV SEAT LEAKAGE
G P83	015222	071476			ZZZZ	T U UU	F00		MSIV 80B VLV CLOSURE TIME GREATER THAN T.S. LIMIT	SPECIFIC CAUSE UNDETERMINED
G P83	015228	072076			T020	N U UU	B27		MAIN STEAM RELIEF VLV 71G FAILED OPEN	FAILURE DUE TO PILOT VLV SEAT LEAKAGE
G P83	015853	090176			C530	N U UU	G10		DRYWELL RAD. MONIT. SYS. PRESS. CONT. VLV HAD FLOW REST	FLOW BLOCKAGE DUE TO FOREIGN WATER. CONT.
G P83	015852	090776			A535	T U UU	C10		TORUS ATMOS. SAMP. INBD. ISO. VLV LEAKED THROUGH	VALVE SEAT NEEDED CLEANING
G P83	015854	092176			A610	N U UU	B24		ISO. VLV AD-5235 (DRYWELL TO NITRO. COMP) FAIL. TO CLCS	SOLENOID VLV IN AIR SUPPLY LINE FAILED
G P83	015881*	092176	03 Z		ZZZZ	U U UU	F06		TRIP LVL. SET. FOR ECCS VLVS SET AT WRONG PRESSURE	MISUNDERSTANDING BETWEEN NSSS & LICENSE
G P83	016215	102176			A610	T U UU	B24		DRYWELL FL. DRN. INBD. ISO. (AD-3-20-82) FAIL. TO CLOSE.	SOLENOID IN AIR SUPPLY FAILED
G P83	016389	111076			ZZZZ	U U UU	B00		RCIC INBD. STM. SUP. ISO. (MO-3-13-15) FAILED TO CLOSE	CAUSED OF FAILURE NOT GIVEN
G P83	016476	112376			L200	T U UU	B23		CORE SPR. B FULL FL. TST. RET. VLV FAILED TO CLOSE	TORQUE SWITCH SETTING WAS TOO LOW
G P83	016488	113076			A610	N U UU	B24		ISO. VLV AD-5235 (DRYWL. TO NITRO. COMP) FAIL. TO CLOSE	SOLENOID VLV IN AIR SUPPLY LINE FAILED
G P83	018160	061677			ZZZZ	N U UU	V06		BOTH RCIC ISO. VLVS. FOUND CLOSED WHEN REQUIRE. OPEN	DEFECTIVE TEST PROCEDURE
G P83	018373	071177			L200	T U UU	B23		RCIC INNER ISO. VLV (MO-15) FAILED TO CLOSE MAN. CONT	MAJFUNCTION IN VLV TORQUE SWTCH. CIRCUIT
G P83	018372	071377			L200	N U UU	B12		RCIC OUTER ISO. VLV (MO-16) FAILED TO CLOSE	OPER. HAD STRIPPED THREADS ON STEM NUT
G P83	018473	072277			A613	T U UU	B24		INBORD MSIV 80 D FAILED TO CLOSE ON REMOTE SIGNAL	FAILURE OF SOLENOID IN AIR SUPPLY LINE
G P83	018472	072877			G202	N U UU	B26		DRYWELL VACUUM BREAKER FAILED TO FULLY CLOSE	LIMIT SWITCH WAS OUT OF ADJUSTMENT
G P83	018525	080977			L200	N U UU	F23		RCIC OUTER ISO. VLV (MO-16) FOUND INOPERABLE	BROKEN LUG ON TORQUE SWITCH TERMINAL
G P83	018884	090277			W030	T U UU	A09		HPCI SYS. VLV MO-3-23-41 FAILED TO FULLY OPEN	CORRODED VLV STEM DUE TO VLV PACKING LEAK
G P83	019091	092577			G080	N U UU	V01		CHARGING WATER VLVS. TO SCRAM SYS. IN IMPROPER LIN-	-EUP//PERSONNEL ERROR
G P83	019556	102677			R290	N U UU	D22		OIL LEAK FOUND ON HPCI OIL PRESSURE CONTROL VALVE	OIL LEAK WAS CAUSED BY A SPLIT DIAPHRAGM

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<u>V</u> <u>E</u> <u>N</u>	<u>P</u> <u>L</u> <u>A</u> <u>N</u> <u>T</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>N</u> <u>O</u>	<u>E</u> <u>V</u> <u>E</u> <u>N</u> <u>T</u> <u>D</u> <u>A</u> <u>T</u> <u>E</u>	<u>C</u> <u>O</u> <u>N</u> <u>T</u> <u>R</u> <u>O</u> <u>L</u> <u>L</u> <u>E</u> <u>Y</u>	<u>M</u> <u>F</u> <u>G</u>	<u>Y</u> <u>E</u> <u>A</u> <u>R</u> <u>R</u> <u>E</u> <u>T</u> <u>T</u> <u>I</u> <u>P</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>C</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>O</u> <u>D</u> <u>E</u>	<u>F</u> <u>A</u> <u>I</u> <u>L</u> <u>M</u> <u>E</u> <u>C</u> <u>H</u> <u>A</u> <u>N</u> <u>I</u> <u>S</u> <u>M</u>
G	PB3	020373	011378		250	T U UU	812	GAS CHARG VALVE TO 3A SBLC PUMP ACCUM FAILED OPEN	FAILURE DUE TO MECH BINDING OF VAL INTERN
G	PB3	020492	021078		A499	T A UU	824	NITROGEN COMP SUCTION VAL, MO-5235, FAILED TO CLOSE	SOLENOID VALVE STICKING IN AIR SUPPLY
G	PB3	020723	030578		D020	N U GA	014	RECIRC PUMP DISCHARGE VALVE, MO-2-53B LEAK EXTERNAL	FAILURE OF DISCHARGE VALVE PACKING
G	PB3	020845	031078		K085	N U GL	V02	RECOMBINER-COMP INLET-SUMP DRAIN VLV IMPROPER L/V	MAINTENANCE PERSONNEL ERROR
G	PB3	021657	060778		D232	T U BA	V03	SHUT-OFF VALVE ON PS-10-1000 CLOSED, VIOL OF T.S.	VALVE CLOSED DURING INST TEST, NOT REOPEN
G	PB3	021716	062178		E095	N U GA	V03	SHUTOFF VAL ON PRESS SW PS-3-5-120 CLOSED, T.S. VIOL	TEST PERS CLOSED VLV DUR TEST, NOT REOPEN
G	PB3	022078	081278		L200	N M UU	F20	MAIN STEAM LINE DRAIN ISO VAL, MO-74, INOPERABLE	VALVE MOTOR OPERATOR CIRCUIT GROUNDED
G	PB3	023062	111678		L200	T M UU	A20	RHR VALVE MO1348 FAILED TO OPEN ON TESTING	MOTOR & SEVERAL OPERATOR PARTS REPLACED
G	PB3	023347	121278		W030	T M GA	814	RCIC ISOL VALVE MO-13-15 FAILED TO FULLY CLOSE	COCKED PACKING FOLLOWER JAMMED STEM
G	PI1	014476	041376		G080	M U UU	I05	WELD ON HPCI SYSTEM VALVE MO 2301-4 CRACKING	ORIGINAL WELD FABRICATION VARIANCE
G	PI1	014942	052876		C710	T U UU	H00	CROSBY RELIEF VALVE OPENING AT TOO LOW PRESSURE	CAUSE UNKNOWN
G	PI1	017419	031177		P340	N U UU	A12	SSW PUMP E DISCHARGE VALVE FAILED IN CLOSED POSIT	BROKEN HINGE PIN ON BUTTERFLY VALVE
G	PI1	017675	041777		A585	T U UU	F07	MSIV-A0-203-18 CLOSING TIME TOO FAST	NORMAL WEAR IN HYDRAULIC CIRCUIT
G	PI1	017674	051077		T020	N U UU	A24	RV 203-3C DID NOT OPEN FROM REMOTE CONTROL SWITCH	DETEPI OF THE REMOTE AIR ACTUATOR DIAPH
G	PI1	018325	062077		L200	N U UU	812	VALVE MO-1001-36A FAILED TO CLOSE, RHR PUMP OPERAT	KEY WHICH PREVENTS STEM ROTATION SHEARED
G	PI1	018497	080277		T340	N U UU	V01	VALVE IN TRUCK LOCK, OPENED IN VIOLATION OF T.S.	OPERATIONS PERSONNEL ERROR
G	PI1	019669	110477		L200	N U UU	F12	MTR OPER FOR VAL MO-1001-188 OVERLOADED, BURNED OUT	WORN GEARS ALLOWED MTR TO RUN AFT VLV CLS
G	PI1	019694*	111377	18	Z222	U U UU	C25	18 PRI CNTNMNT ISO VALVES LEAKING IN EXCESS OF T.S	NORMAL DETERIORATION OF DISK/SEATS
G	PI1	019736	111477		A499	T U UU	A24	RELIEF/SAFETY VALVE 203-38 COULD NOT BE MAN OPENED	FAIL OF 3-WAY SOLENOID VAL TO PORT PROPER
G	PI1	019859	111577		T020	N U UU	C27	RELIEF VALVE 203-38 DETERMINED TO BE LEAKING	FIRST+SECOND STAGE OF PILOT VALVE LEAKING

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EVENT	PLANT	CONT. NO.	EVENT DATE	CONMUM KEY	MFG.	ACTUATOR	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G P11	019756	111777	TC20	N U UU C4						RELIEF VALVE 203-3D DETERMINED TO BE LEAKING	FIRST STAGE OF 'ILCT VLV SEAT LEAK
G P11	019668	120277	VG30	T U UU V0						STANDBY LIQUID CONTROL VALVE 11C1-23 CLSD T.S.VIOL	INADEQUATE PROCEDURES COVERING VALVE &
G P11	021096	041178	A585	N U GL 12						MSIV-AC-203 DECLARED INOPERABLE	STEM SHEARED AT LOC WHERE PLT ST. TAPERED
G P11	021639	061378	J073	N U DM A12						B DAMPER TO STDBY.DIL.FAN AT MAIN STACK FAILED SHUT	LOOSE SET SCREW IN ACTUATOR LINKAGE
G P11	021963*	071078	A499	T U UU F24	02					SCRAM VALVES FOR CRD 38-47 SLOW ACTUATING	STICKY ASCO SOLENOID VLV IN SUPPLY SYS
G P11	022757	100978	T020	N U RV B27						RV-203-3C FAILED TO RESET AT PROPER PRESSURE	EXCESSIVE PILOT SEAT LEAKAGE
G P11	023500	102878	ZZZZ	N U UU V01						BLOCK VALVE TO FCV-118 SHUT WHEN REQUIRED TO BE O-	-PEN//PERSONNEL ERROR
G P11	022956	111678	S413	M X GA D02						HYDRANT SHUT-OFF VALVE BLEW OFF LINE	PERSONNEL ERROR IMPROPER INSTALLATION
G P11	023143	120278	A610	T DI F00						TWO SCRAM PILOT VALVES FOR CRD 46-39 NOT BLEEDING	VALVES REPLACED FROM STOCK
G QC1	014064	010376	C665	T U UU C25						EXCESSIVE LEAKAGE THRU MS DRAIN VALVE MD-1-220-1	SEAT-DISC PROBLEM/CRANE 3 INCH GATE 783-U
G QC1	014060	010476	C635	T U UU C00						EXCESSIVE LEAKAGE THRU VALVE 1-8802-B / TESTING	UNKNOWN/INFD LATER//COPES-VUL 1/2 GLOBE
G QC1	014063	010476	C665	T U UU D14						MS STOP ISOL VALVE EXCESS LEAKAGE DURING TEST	PACKING TIGHTENED AND RETIMED THE VALVE
G QC1	014059	010576	C502	T U UU E13						HPCI EXHAUST CHECK VLV. LEAKING INTERNALLY	DEFECT.GASKET BETWEEN VLV.SEAT AND BODY
G QC1	014058*	011076	C665	T U UU E25	03					3 FEED WATER CV THAT FAILED EARLIER FAILED AGAIN	VITON C-RINGS(SEAT SURFACES) DETERIORATED
G QC1	014057	011476	L200	T U UU C23						VALVE MD-1-1001-37A FAILED LEAKRATE TEST	TORQUE SW OUT OF ADJUSTMENT/LIMITORQUE
G QC1	014056	012676	L200	T U UU C23						VALVE 1-1201-2 FAILED LEAKRATE TEST	TORQUE SW MALFUNCTION/REPLACED/LIMITORQUE
G QC1	014538	040276	M322	T U UU F13						VALVE FAILED TO OPERATE PROPERLY DURING TESTING	NEW SEAL RING IN VALVE OPERATOR
G QC1	015257	070176	L200	U U UD F12						LOOP SPRAY VALVE FAILED TO OPERATE(MD-1-1001-23-B)	LOOSE BOLTS HOLDING OPERATOR TO VALVE
G QC1	015706	080976	ZZZZ	U U UU F16						REACTOR WTR.CLEANUP SYS.ISD.VLV.MD-1-1201-2 INOPER	RELAY SHORTED & BURNED UP CONTROL TRANSF.
G QC1	016162	090276	L200	T U UU B20						MOV FAILED TO CLOSE DURING TESTING(MD-1-1001-26-A)	EXCESS GREASE/COMPACTION/HYDRAULIC LOCK

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V E N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P U M	K E Y	MFG.	A C T U A T O R	V A L V E T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	QC1	016472*	110176	02		0243	T U UU	A13		ELECTROMATIC RELIEF VALVES FAILED TO OPEN/TESTING	EXCESSIVE INTERNAL STEAM LEAKAGE
G	QC1	017357	011977			C665	N U UU	V01		VALVE LINE-UP INCORRECT/RADWASTE DISCHARGE	PERSONNEL ERROR
G	QC1	017360	012377			N015	T U UU	F26		MSIV AD-1-203-1A FAILED TO OPERATE DURING TESTS	LIMIT SWITCH FAILED DUE TO EXCESS HEAT
G	QC1	017359	012577			C715	T U UU	H10		RV IN STANDBY LIQ CONT SYS OPENED PREMATURELY	POSS BORON CRYSTALS IN SEATING AREA
G	QC1	017361	021177			A613	T U UU	F27		MSIV FAILED TO CLOSE IN REQUIRED TIME DURING TEST	FAULTY PILOT VALVE VITRON O-RINGS
G	QC1	017468	030577			A585	N U UU	F13		VALVE ACTUATOR FAILED/VALVE FAILED TO OPERATE	TEFLON O-RINGS IN AIR CYLINDER REPLACED
G	QC1	020531	032077			ZZZZ	T U UU	C23		LEAKTEST SHOWED EXCESSIVE LEAKAGE THRU DRAIN VALVE	TORQUE SW OUT OF ADJUSTMENT
G	QC1	020531A	032077			ZZZZ	T U UU	E25		EXCESSIVE LEAKAGE THRU CV DURING TESTS	DETERIORATED O-RINGS
G	QC1	020531B	032077	02	V	ZZZZ	T U UU	C25		EXCESS LEAKAGE THRU SPRAY VALVES DURING TEST	IMPROPER SEATING OF VALVE
G	QC1	020532	032077			0243	T U UU	A12		MAIN STEAM ELECTROMATIC RELIEF FAILED TO OPEN/TEST	INTERNAL PARTS FOUND LOOSE AND MISSING
G	QC1	018106	041277			A610	T U UU	B24		DRAIN VALVE FAILED TO CLOSE/COMMAND FAULT	AIR SUPPLY SV FAILED/AIR WOULDNT VENT OFF
G	QC1	018109*	041977	02		ZZZZ	T U UU	B16		CONT.ISD.VLV%. MD 1-1001-506 63 FAILED TO CLOSE	FAILURE OF THE 595-118 RELAY
G	QC1	018111*	042677	02	V	C715	T U UU	A10		RELIEF VALVES LIFTED AT MUCH HIGHER THAN SETPOINT	BORON PRECIPITATED IN VALVE
G	QC1	018115	051277			K030	T U UU	F12		CONTROL VALVE IN MS SYS FAILED TO OPERATE	MECH FAILURE WHICH LOST FEEDBACK SIGNAL
G	QC1	018459	061177			L200	T U UU	G24		HPCI PUMP INLET VALVE WOULD NOT STAY OPEN/TESTING	MALFUNCTION IN LOCAL VALVE CONT STAT CIR:
G	QC1	019489	093077			C665	T U UU	F05		CORE SPRAY VALVE 1-1402-298 FAILED TO OPERATE	CRACKED YOKE/PROB SINCE INSTALLATION
G	QC1	020425	111677			ZZZZ	D U UU	A24		RELIEF VALVE 1-203-38 FAILED TO OPEN ON DEMAND	COMMAND/WIRE TIE IN ELECT CONTACTOR
G	QC1	020264	111877			L200	T U UU	A23		HPCI MOV 1-2301-4 FAILED TO OPEN DURING TESTING	MOV HAD DEFECTIVE TORQUE SWITCH
G	QC1	020174	121277			A585	T U UU	B14		ADV 1-1601-33E FAILED TO CLOSE DURING TESTING	DEFECTIVE PACKING BOUND UP STEM
G	QC1	020636	02C678			0243	T U RV	A12		ELECTROMATIC RELIEF 1-203-3E FAILED TO OPEN / TEST	WORN INTERNAL PARTS/VALVE WAS REPLACED

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V E N T	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P H Y	K E Y	MFG.	A C T I V I T Y	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	QC1	021127*	042178	02	V	C256	U	M	GA	I04	GE NOTIFIED QC THAT RECIRC SUCTION VALVES COULD---	---CLOSE SPURIOUSLY/DISABLED ELECTRICALLY
G	QC1	021408	042478			D243	I	U	RV	A18	ELECTROMATIC RV 1-203-3C FAILED TO OPERATE / TEST	WELD FAILURE BETWEEN BODY AND CAGE/VIBRAT
G	QC1	021436	050478			L2G3	T	M	UU	B23	HPCI PMP SUCTION VLV MO-1-2301-6 WOULD NOT CLOSE	VLV.TORQUE SWITCH WAS WORN OUT
G	QC1	021705	052778			A585	N	A	CK	B14	VACUUM BREAKER FAILED TO CLOSE (1-1601-33E)	PACKING PROBLEM/SHAFT BINDING/NEW PACKING
G	QC1	021981	070778			C665	N	A	GA	B14	SUMP DISCHARGE VALVE FAILED TO CLOSE (1-2001-15)	PACKING REQUIRED ADJUSTMENTS
G	QC1	022189	080278			V095	N	A	BU	A27	AD PURGE VALVE 1-1601-56 FAILE TO OPEN	SOLENOID PILOT VALVE DIRTY/REPLACED SOV
G	QC1	023585*	121978	02		VC95	T	A	UU	B24	TWO VENT DAMPERS FAILED TO CLOSE(1-5741A6B) TEST	SOV SUPPLYING AIR TO OPERATOR FAILED
G	QC2	014421	031976			A613	N	U	UU	B10	MSIV AD-2-203-1C FAILED TO CLOSE / NORMAL SHUTDOWN	FOREIGN MATERIAL IN PILOT ASSEMBLY
G	QC2	015361	071276			V095	T	U	UU	B24	AD 2-1601-56 FAILED TO CLOSE / COMMAND FAILURE	SOV FAILED IN AIR SUPPLY TO PURGE PILOT
G	QC2	016473*	110176	02		D243	T	U	UU	A12	TWO ELECTROMATIC RELIEFS FAILED TO OPEN ON TESTING	INTERNAL BINDING DUE TO CORROSION PROBLEM
G	QC2	020533	032377			D243	T	U	UU	A12	ELECTROMATIC RELIEF FAILED TO OPEN DURING TESTING	LOOSE INTERNAL PARTS BOUND/EXCESS VIBRAT
G	QC2	018121	051477			V095	U	U	UU	B27	ADV FAILED TO CLOSE (AD-2-1601-24)	SEAL LEAK IN SOLENOID OP PILOT VALVE
G	QC2	020300	051977			ZZZZ	T	U	UU	B16	RCIC INBOARD STM.150.VLV.MO-2-1301-16 WOULDNT CL-	-OSE//FAIL.OF VLV.BKRR.AUX.CLOSING CONT.
G	QC2	018575	071977			C665	N	U	UU	V01	VALVE FOUND CLOSED BETWEEN A & B LOOP/LOSS OF LPCI	PERSONNEL ERROR/INADVERTANT CLOSURE
G	QC2	019224	092277			A613	N	U	UU	F27	MSIV FAILED TO OPERATE PROPERLY	FAULTY 4-WAY PILOT/O-RING DAMAGED
G	QC2	019223	092377			D243	T	U	UU	A12	ELECTROMATIC RELIEF FAILED TO OPEN DURING TESTING	RINGS CUT GROOVES IN DISC GUIDE/STEAM CUT
G	QC2	019450	092977			ZZZZ	M	U	UU	V01	STOP VALVE TO TORUS LEVEL TRANSMITTER FOUND CLOSED	PERSONNEL ERROR
G	QC2	019745	110677			D243	M	U	UU	B27	RELIEF VALVE 2-203-38 FAILED TO RESEAT	PILOT VALVE WAS STEAM CUT AND ERODED
G	QC2	019759	111477			C665	T	U	UU	A08	CORE SPRAY MOV 2-1402-248 FAILED TO OPEN / TEST	STEM AND BONNET BADLY GALLED
G	QC2	020396*	011578	03		C665	T	A	GL	C25	3 MSIV HAD EXCESSIVE THRU LEAKAGE ON LEAKRATE TEST	SEATING SURFACES WERE LAPPED

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P H Y	K E Y	MFG.	A C T I V E Y	D I S T R I B U T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	QC2	020544	011878			A610	T	A	GA	B16	ADV AD 2-5408 FAILED TO CLOSE / COMMAND FAULT	PERSONNEL HOOKED UP ELECTRICAL WRONG
G	QC2	020595*	012478	02		A610	T	A	UU	B24	TWO ADV FAILED TO CLOSE/COMMAND FAULT/NO AIR	SOV SUPPLYING AIR FAILED/HI TEMP/HUMIDITY
G	QC2	020582	020178			C715	T	U	RV	A00	SRLC RELIEF 2-1105B FAILED TO OPEN/AT SET PRESSURE	UNKNOWN/SETPOINT DRIFTED HIGH/1540 VS1490
G	QC2	020944	030478			C715	T	U	RV	C25	SRLC RELIEF 2-1105A LEAKED THRU / LOW PUMP OUTPUT	MACHINED SEAT AND RESET TO 1450 PSIG
G	QC2	020943	030578			C295	T	U	CK	E10	REVERSE FLOW THRU CHECK VALVE 2-220-67A / TESTING	DIRT ACCUMULATED IN VALVE INTERNALS
G	QC2	020945	030678			A610	T	A	UU	B27	SJAE SUCTION VALVE AG2-5401A FAILED TO CLOSE	STICKING SOLENOID PILOT VALVE/REPLACED
G	QC2	021129	040978			L200	T	M	UU	B23	RCIC INBD. STM. (INLET ISO. VLV. MO 2-1301-16 WOULD NO-	-T CLOSE//FAILED TORQUE SWITCH
G	QC2	021561	052178			ZZZZ	N	U	UU	V01	2A CORE SPRAY SUC. VLV. MO 2-1402-3A CLOSED WHEN R-	-REQUIRED TO BE OPEN//PERSONNEL ERROR
G	QC2	022815	092978			T020	T	U	RV	A24	PV 2-203-3A FAILED TO OPEN(MANUAL) / COMMAND	AIRLINE TO MANUAL AIR OPERATOR BROKE
G	QC2	022816	100278			A499	T	S	UU	F12	SCRAM SOLENOID VALVE 118 MALFUNCTIONED	CORE SPRING DETACHED FROM CORE OF SV
G	QC2	023363	111678			V095	T	A	UU	A24	RX CONT VALVE 2-1601-20A FAILED TO OPEN ON TEST	SOV(2-1601-50A) FAILED; NO AIR TO AIR-OP VL
G	QC2	023400	112578			V095	N	A	UU	A24	DRYWELL VENT AD 2-1601-23 FAILED TO OPEN	SOV(ISO 2-1601-52A) FAILED TO SUPPLY AIR
G	VY1	013980	011876			A610	N	U	UU	F10	ASCO 3-WAY SOLENOID VALVE FAILED TO OPERATE	DIRT BUILDUP IN ACTUATING MECHANISM
G	VY1	014230*	021776	02		ZZZZ	N	U	UU	F01	RHR VLVS. 29A6B WOULD NOT STROKE ELECTRICALLY	PERSON. ERROR(MUST STRO. VLVS. MANUALLY 1ST)
G	VY1	014297	030276			A535	N	U	UU	G27	ADV FAILED TO OPERATE(AS DESIGNED)/CLOSED INADVERT	SOLENOID OPERATED AIR PILOT CLOSED INADV.
G	VY1	014544	041576			ZZZZ	T	U	UU	H00	RELIEF VALVE (RHR-25A) LIFTED PREMATURELY / TEST	UNKNOWN/ RESET TO LIFT 100 PSI HIGHER
G	VY1	014584*	051076	02		R340	T	U	UU	A14	TWO 24 INCH MOV5 (RHR-27A/B) FAILED TO OPEN / TEST	PACKING MAINTENANCE PROBLEM
G	VY1	014739	051276			ZZZZ	N	U	UU	V01	IMPROPER VLV. LINEUP ON HPCI GLAND SEAL CONDENSER	PERSONNEL ERROR
G	VY1	015230*	063076	04		ZZZZ	T	U	UU	C00	4 PRIMARY CONTAINMENT VALVES LEAKED THRU/TESTING	UNKNOWN
G	VY1	015184*	070676	03		T020	T	U	UU	A22	3 TARGET ROCK RVS FAILED TO OPERATE(SIGNAL/PANUAL)	DIAPHRAGM IN AIR OPERATORS FAILED/HEAT

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N I	CONT. NO.	EVENT DATE	C O M M U N I T Y	MFG.	A D J U S T M E N T	O P E R A T O R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
G	VY1	015628	081676		A535	T	U	UU	810	AIR SAMPLE ADV (FSO-109-758-2) FAIL TO CLOSE	DIRT IN VALVE STEM
G	VY1	015623	082576		W030	T	U	UU	808	CHECK VALVE(SERVICE H2O PUMP OUTLET)FAIL TO CLOSE	WEAR BETWEEN DISC & DISC ARM/SHIM INSTALL
G	VY1	015655	092076		W030	T	U	UU	A00	LPCI MOV (RHR-258) FAILED TO OPEN DURING TESTING	UNKNOWN/WALWORTH AND LIMITORQUE INVESTIG.
G	VY1	016997	011877		ZZZZ	T	U	UU	V03	"B" RHR PMP DISCH.VLVS. SHUT WHEN REQ. TO BE OPEN	PERSONNEL ERROR
G	VY1	017127	012877		A610	T	U	UU	AZ7	ADV (S8-3A) FAILED TO OPEN DURING LEAKRATE TEST	ASCO SOLENOID PILOT VALVE FAILED
G	VY1	019165*	082077	07	ZZZZ	T	U	UU	C00	SEVEN PRIMARY CONTAIN. ISOL VALVES LEAKED THRU--	--DURING TESTING//UNKNOWN(TO BE REPORTED)
G	VY1	019857	082077		A535	T	U	UU	827	ADV (FCV 108-W) FAILED TO CLOSE DURING TESTING	SOLENOID PILOT VALVE HAD SHORTED SOLENOID
G	VY1	018978*	082877	02	C710	T	U	UU	H25	TWO SBLC RELIEF VALVES LIFTED PREMATURELY	1-SEATING SURFACES LAPPED 2-RESET SETPOINT
G	VY1	019853	110177		A180	T	U	UU	809	VENTILATION SYSTEM VALVE (HVAC-10) FAILED TO CLOSE	CORROSION ON OPERATORS GUIDE RODS
G	VY1	019854	110177		D232	T	U	UU	F08	MANIFOLD BYPASS VALVE FAILED TO OPERATE	GALLED THREADS/STEM SEIZED
G	VY1	020485	120977		R340	T	U	UU	827	MSIV-86C FAILED TO CLOSE DURING TESTING	PNEUMATIC SPOOL VALVE INOPERABLE/DIRT
G	VY1	020468	020478		R340	T	A	UU	827	MSIV-80A FAILED TO CLOSE DURING TESTING	PNEUMATIC SPOOL VALVE INOPERABLE
G	VY1	020910	041278		T020	R	U	RV	A00	RV (67HH13) SET TOO HIGH	SETPOINT DRIFT/RESET TO LOWER LIFT PRESS
G	VY1	021997*	071178	05	ZZZZ	T	U	UU	C00	FIVE CONTAINMENT ISOLATION VALVES LEAKED THRU/TEST	UNKNOWN/PROBABLE SEAT PROBLEMS
G	VY1	022130*	073178	02	C710	T	U	RV	A06	TWO RV'S(SR-39A/B) FAILED TO OPEN AT DESIGN SETPNT	PROCEDURAL DISCREPANCY/SET W NITROGEN
G	VY1	022196*	081078	02	D243	T	U	CK	E00	ISOLATION CHECK VLVS (V72-898/C) LEAKED THRU/TEST	UNKNOWN/DRESSER 2IN TYPE 550W CHECK VAL
G	VY1	022252	081478		ZZZZ	N	X	UU	V01	VLVS.LINED UP IMPROPERLY TO HI.MN.STM.LN.FLOW SWT.	PERSONNEL ERROR
G	VY1	022253	081478		ZZZZ	N	S	UU	F21	PURGE MAKEUP VLV V16-228 CAUSED A FUSE TO BLOW IN-	-THE PCIS LOGIC//FAULTY SOLENOID OPERATOR
G	VY1	022744	101478		R344	T	U	GL	F27	MSIV (V2-86C) CLOSED FASTER THAN DESIGN TIME	SPEED CONTROL VALVE BECAME LOOSE
M	BV1	015073	061276		ZZZZ	U	U	UU	V01	VLVS HCV-CV-151,151-1 WERE OPENED IN VIO. OF T.S.	OPER. ERROR,USED IT.S.WHICH VIO.ANOTH.T.S

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	C CN HU PM	KEY	MFG.	ACTIVITY	OPERATOR	V LV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM			
W	041	015915	083076				Z	Z	M	U	UU	B16	CONTAINMENT VALVE FAILED TO CLOSE/CONT VAC DROPPED	WIRING ERROR DURING FABRICATION	
W	041	015969	091076				Z	Z	N	U	UU	G24	COOL WATER CONT ISOLATION VALVE WENT CLOSED	AIR PRESS TO VAL DROPPED/AIR SYS(DESIGN) CAUSE IS NOT KNOWN	
W	041	018088	091976				S	0	7	5	D	UU	000	*B* MAIN STEAM TRIP VLV FAILED TO SHUT	STEAM LEAKAGE DUE TO PACKING LEAK
W	041	018089	101076				Z	Z	N	U	UU	D14	STM.LEAK.FROM RT.STOP VLV,PZR,LVL,IND.READ HIGH	DIRTY ELEC.CONT.ON.OPER.LINE STARTER	
W	041	018090	101476				L	2	0	0	D	UU	A16	*B*HDR.DISC.VLV TO RIVER WTR.PMP. DID NOT OPEN	NO PWR/ALLIS CHALMER LINESTARTER FAILED
W	041	016279	102276				Z	Z	U	U	UU	B16	VCT DISCH VALVE FAILED TO SHUT ON SI SIGNAL	CAUSE OF VLV.INTER.LEAK.NOT STATED	
W	041	016358	102476				Z	Z	N	U	UU	C00	PRI.SYS.WTR VLV INTER.LEAKAGE DILUTED BORON INJ.TK	NO PWR/THERMAL OVERLOAD OF LINESTARTER	
W	041	016356	102576				Z	Z	N	U	UU	B16	DRAIN VALVE ON ACCUMULATOR IC FAILED TO SHUT	CAUSE OF VLV.INTER.LEAK.NOT STATED	
W	041	016705	122876				Z	Z	N	U	UU	C00	PRI.SYS.WTR VLV INTER.LEAKAGE DILUTED BORON INJ.TK	CAUSE OF VLV.INTER.LEAK.NOT STATED	
W	041	016943	010477				Z	Z	N	U	UU	B21	MAKE-UP TRIP VLV FAILED TO TRIP ON HIGH CONDUCTIV.	VLV SOLENOID WAS DEFECTIVE	
W	041	016746	010577				Z	Z	N	U	UU	F16	DYNAMIC INSTABILITY OF FEEDWATER REG VALVE	NEW TRIM CIRCUIT NEEDED	
W	041	017554	032877				M	1	2	0	N	UU	G22	1B RCP COOL.WTR.SUP.CONT.ISO.VLV FAILED SHUT	FAILED DIAPHRAGM IN VLV. OPERATOR
W	041	017622	041277				Z	Z	N	U	UU	D14	A HIGH LEAK RATE OF RX COOL SYS WTR WAS OBSERVED	FAILED PACKING RX COOL PMP SEAL HOR FL VL	
W	041	017697*	042077	02			S	0	7	5	N	UU	G24	1A & 1B MN STM ISO. VLVs WENT PARTIALLY CLOSED	LOW AIR PRESS TO TH MSIVS VLV POSITIONER
W	041	017629	051077				Z	Z	N	U	UU	V02	FEEDWATER BYPASS OPENED WHEN REQ TO BE CLOSED	MAINT TECH FAILED TO DISCONT PWR SUPPLY	
W	041	018831	072277				C	6	3	5	N	UU	F12	1A FEED REGULATING VLV WAS OPERATING IMPROPERLY	VLV STEM LOCK PLATE CAME LOOSE;BOLT FAIL.
W	041	018835	072577				Z	Z	N	U	UU	V01	IMP.VLV LINEUP,6B PRI GRADE WTR STOR TANK OVERFLW.	PERSONNEL ERROR	
W	041	018725	072877				L	2	0	0	T	UU	A23	AUX. FEEDWATER CONT VLV WOULD NOT OPEN ELECTRIC.	BINDING TORQUE SWITCH
W	041	018728	080177				C	6	3	5	N	UU	F02	1B FEEDWATER REG. VLV.OPERATING IMPROPERLY	LOOSE LOCK PLATE DUE TO OVER TORQ.OF BELT
W	041	018730	080277				Z	Z	N	U	UU	B12	HIGH PRI.LEAK.DUE TO 1B CHG.PMP.SUCT.VLV NOT CLOSE	JAMMED REACH ROD ON THE VALVE	

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE	PLANT	CONT. NO.	EVENT DATE	COMM. PM	KEY	MFG.	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
M	BV1	019611	102777			V085	N U UU	D14		20 GPM LEAK. FROM 1A LOOP FILL VLV PACKING	PACKING DEGRADATION
M	BV1	019934	120277			ZZZZ	N U UU	C00		LEAK. THRU FLOW EQUAL. VLV OF RX FLOW INSTRUMENTATI	CAUSE FOR LEAKAGE NOT GIVEN
M	BV1	020131*	121877	02	V	ZZZZ	N U UU	H00		RELIEF VLVS LIFTED AT SETTING LOW THAN NORMAL	NO CAUSE GIVEN FOR RV LIFTING LOW
M	BV1	020439	011478			M120	N A UU	G22		1A RCP COOLING WATER INLET ISO. VLV FAILED SHUT	RUPTURED VLV OPER. DIAPHRAGM CAUSED FAIL.
M	BV1	020496	012178			ZZZZ	T U UU	V06		THE RWST WAS DRAINED TOO LOW DUE TO INCOR. VLV L/U	PROCEDURAL DISCREPENCY
M	BV1	020757	012978			ZZZZ	N X GL	D14		LEAKAGE IN EXC. OF 10GPM OBS. THRU B LP. FILL VLV PK	LEAKAGE DUE TO DEGRADED PACKING IN VLV.
M	BV1	020650	020178			ZZZZ	N U UU	F16		SUMP CAUSTIC VALVE OPENED DUE TO ERRONEOUS SIGNAL	DETECTOR FILLED WITH RESIN BEADS
M	BV1	020796	020178			ZZZZ	N U UU	C00		PRESSURIZER SPRAY VALVE LEAKED THRU	UNKNOWN
M	BV1	020754	021778			ZZZZ	T U DM	V01		AIR FLOW CALCUL. OF CONT. ROOM FANS OUT OF T.S.--	DAMPERS WERE POSIT. INCOR.//PERSONNL ERROR
M	BV1	020792	022378			ZZZZ	T U DM	V01		AIR FLOW CALCUL. OF SLCRS FLTR BANKS OUT OF T.S.--	DAMPERS WERE POSIT. INCOR.//PERSONNL ERROR
M	BV1	021044	033178			ZZZZ	R U UU	T03		TECH SPEC VIOLATION, VALVE POSITION NOT VERIFIED	PERSONNEL ERROR/FAILED TO SCHEDULE TEST
M	BV1	021298	050978			ZZZZ	N U UU	F00		SUMP DISCH VALVE STAYED OPEN ON HI PH CONDITION	UNKNOWN (SEE LER NO. 020650, POSS CONNECT)
M	BV1	021644	062278			ZZZZ	M U UU	G05		INFLATABLE PLUG FOUND IN RECIRC PUMP INLET VALVE	PERSONNEL ERROR DURING CONSTRUCTION PHASE
M	BV1	022139	070978			A499	N A UU	B24		BORON INJECTION TANK RECIRC. VLV. WOULD NOT CLOSE	WORN INTERNALS IN SOLENOID SUPPLYING AIR
M	BV1	022135	080178			C665	T U GA	B10		18 LOW HEAD SAFETY INJECTION PMP. HEAD. ISO. NOT CLCS	VLV FAIL. TO CLOSE DUE TO BORIC CRY. IN PAK
M	BV1	023039	082678			ZZZZ	N U UU	F00		CHEM WASTE SUMP VALVE FAILED TO OPERATE PROPERLY	UNKNOWN (SEE LER NO. 020650 AND 021298)
M	BV1	023214	101278			ZZZZ	T U CK	F04		1A RCP SEAL INJEC. SPR. LOAD. CKVL OPEN. PRESS. TO HIGH	CHECK VLV. HAD IMPROPERLY DESIGN. SPRING
M	BV1	023216*	110878	12		ZZZZ	T U UU	C00		12 VLVS FOUND LEAKING DURING CONT. PENET. LEAK TEST.	NO CAUSE FOR LEAKAGE GIVEN
M	BV1	023318*	122078	02	V	M120	T U BU	C12		CONT. AIR EJECTOR PENET. ISO. VLVS. LEAKING	RUBBER VLV. SEAT WARPED & UNABLE TO SEAL
M	DC1	014430	042076			L300	M U UL	I05		AUX FEED WATER VALVE FOUND INSTALLED BACKWARDS	CONSTRUCTION/QC ERROR/INLET-OUTLET REVERS

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	CON. NO.	KEY	MFG.	ACTUATOR	VALVE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W DC1	014736*	050276	03	B	ZZZZ	T U UU	C25		VALVES LEAKED THRU DURING CONTAINMENT ISOL TESTING	SEAT PROBLEMS/DEPOSIT BUILDUP AND WEAR
W DC1	014549*	050576	02		ZZZZ	T U UU	F24		VALVES CCR-4606462 FAILED TO CLOSE IN REQUIRED TIME	WRONG SIZE TUBING(VENT)FROM VALVE(DESIGN)
W DC1	015482*	061776	05	Z	ZZZZ	N U UU	F16		ALL VALVE ON CONT CENTER 1-AZV-A WERE WITHOUT POWR	BREAKER TRIPPED(SHORT DUE TO PERSON ERROR
W DC1	016367	110176			L300	T U UU	F12		RHR VALVE FAILED TO CYCLE DURING TESTING	PACKING GLAND WAS TOO TIGHT
W DC1	016607	120776			w120	N U UU	B12		S/G SAMPLE ISOLATION VALVE FAILED TO CLOSE	LOOSE BLOCK BETWEEN STEM AND ACTUATOR
W DC1	016648	121776			ZZZZ	T U UU	V01		CONTAINMENT SPRAY PUMP SUCTION VALVE FOUND CLOSED	PERSONNEL LEFT VALVE SHUT AFTER A TEST
W DC1	017245*	022277	02	V	ZZZZ	T U UU	E10		CHECK VALVES FAILED LEAKRATE TEST	LAKE WATER DEPOSITS ON SEATING SURFACES
W DC1	017245A	022277	03	S	ZZZZ	T U UU	C12		SEVERAL CONTAINMENT ISOLATION VALVES LEAKING THRU	LOOSE ACTUATORS WERE PRIMARY CAUSE
W DC1	017246	030377			ZZZZ	R U UU	T02		CLOSING TIME NOT TESTED ON S/G BLOWDOWN VALVE	MAINTENANCE PERSONNEL ERROR
W DC1	017279	030577			ZZZZ	N U UU	V01		DRAIN TRAPS WD-206WD-21 LEFT OPEN	PERSONNEL ERROR
W DC1	017370*	030577	02		ZZZZ	T U UU	F16		VALVES QCM-250 AND IMQ-53 LOST PWR TO THEM	BREAKER OPENED DUE TO RELAY FAILURE
W DC1	017794	042777			ZZZZ	R U UU	T01		DISCOVERED SAMPLE VALVE NOT TIMED AFTER MAINTENANC	PERSONNEL ERROR/TECH SPEC VIOLATION
W DC1	018266	062477			L200	T U UU	B10		CHARGING HEADER MD ISOLATION VALVE FAILED TO CLOSE	BORIC ACID CRYSTALS ON STEM
W DC1	018418	070677			L300	N U UU	D11		AUX FEED WATER VALVE FOUND WITH CRACK IN BODY	WATER HAMMER AND VIBRATION
W DC1	019369	100777			C182	T U UU	F12		MD HEAT EXCHANGER OUTLET ISOLATION VALVE NOT OPER	BINDING OF INTERNALS/TORQUE INCREASED
W DC1	019569	111677			ZZZZ	T U UU	V01		TWO CONTAINMENT SPRAY VALVES FOUND CLOSED	PERSONNEL ERROR/CLOSED UNIT1 INSTEAD OF 2
W DC1	020324	011078			C635	N U UU	D14		EXTERNAL LEAKAGE FROM PRESSURIZER AUX SPRAY VALVE	PACKING FAILURE
W DC1	020694	020878			L300	N M UU	B16		AUX FEED MOV FAILED TO CLOSE	COMMAND/LOOSE ELEC CONNECTION/CONTROL
W DC1	020526	020978			ZZZZ	T U UU	F04		FIRE PUMP TEST VALVE 1-FP-241 FOUND FULL OPEN	VALVE COULD VIBRATE TO OPEN POS(LOCKED)
W DC1	021011*	032278	03		ZZZZ	N U UU	F16		POWER FOUND OFF TO 3 ECCS VALVES	3 BREAKERS FOUND TRIPPED ON MCC

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N	P L A N T	CONT. NO.	EVENT DATE	C O M P M	K E Y	MFG.	A C C I D E N T I F I C A T I O N N U M B E R	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
M	DC1	021220	042078			ZZZZ	M U UU	V01		CONT PURGE SUPPLY&EXHAUST VALVES NOT CLOSED AS R--	--EQUIRED/PERSONNEL ERROR
M	DC1	022281	060278			W120	T U UU	V01		BORON INJECTION THROTTLE VALVES OUT OF ADJUSTMENT	PERSONNEL ERROR/INCORRECT TEST CRITERIA
M	DC1	021769*	062178	02	V	H035	T U CK	E10		CHECK VALVES FAIL LEAKRATE TESTING	LEAKAGE PAST SEAT/PROBABLE FOREIGN WATER
M	DC1	021769A	062178	02	V	H035	T U BU	C12		CONTAINMENT PURGE VALVES LEAKING THRU ON TESTING	ADJUSTMENT OF BUTTERFLY VALVE/DESIGN PROB
M	DC1	022332*	082878	02		ZZZZ	N U UU	A02		TWO VALVES TO MAIN COND AIR EJECTORS FAILED CLOSED	IMPROPER REPAIRS PERFORMED ON THE VALVES
M	DC1	022837	102878			C631	N X GL	D14		PZR SAFETY VALVE LOOP SEAL DRAIN VALVE/EXT LEAKAGE	PACKING FAILURE
M	DC1	023114	112878			L200	N M UU	B16		AFW THROTTLE VLV. WOULD NOT CLOSE ELECTRICALLY	BROKEN LEAD ON MTR OPERATOR
M	DC2	020978	031878			A585	N U CK	E00		AUX FEED SYS CHECK VALVE FROM S/R 1 STUCK OPEN	UNKNOWN (VALVE 2-FW138-1)ATWOOD & MORRILL
M	DC2	021080	040378			ZZZZ	R U UU	T01		ALL CLASS 1,2,3 ASME VALVES NOT INSPECTED AS REQ.	PERSONNEL ERROR/MISUNDERSTOOD REQUIREMENT
M	DC2	021079	041678			ZZZZ	N X UU	V01		HANDWHEEL CAME OFF RHR VALVE POSITIONING IT WRONG	PERSONNEL FAILED TO REPOSITION THE VALVE
M	DC2	021218	042278			L200	T M UU	F23		MOV FAILED TO OPERATE DURING TESTING	TORQUE SWITCH CONTACTS NEEDED BURNISHING
M	DC2	021467	051978			A515	T U GA	D14		EXTERNAL LEAKAGE FROM VALVE BETWEEN RCS & RHR	PACKING FAILURE
M	DC2	021467A	051978			ZZZZ	T U RV	C00		SAFETY VALVE ON FEED SYS LEAKING THRU	UNKNOWN/REPLACED VALVE
M	DC2	021393	052078			ZZZZ	N U UU	V06		CONT. PURGE VALVES OPENED PRIOR TO ALLOWABLE CONDS	PROCEDURES DIFFER BETWEEN UNITS 1 & 2
M	DC2	021674	060378			B040	N A UU	B02		AIR-OP PZR SPRAY VALVE FAILED TO CLOSE	GASKET INSTALLED IMPROPERLY IN POSITIONER
M	DC2	021634	061578			ZZZZ	N U UU	V01		STARTING AIR PILOT VALVES TAGGED OUT FOR WRONG D/G	PERSONNEL ERROR
M	DC2	022069	071978			ZZZZ	T M GA	F00		RHR PUMP SUCTION MOV FAILED TO CYCLE/TIME-WISE	UNKNOWN WHY CYCLE TIME EXCEEDED
M	DC2	022064	072678			ZZZZ	M U UU	V02		TWO MANUAL VALVES WERE OPENED IN VIOLATION OF T.S.	PERSONNEL ERROR
M	DC2	022350	090378			ZZZZ	N U UU	V01		CONDENSATE VALVE CLOSED WHEN REQ TO BE OPEN	PERSONNEL ERROR
M	DC2	022561	092278			ZZZZ	T U UU	V01		PRESSURIZER RV OPENED WHEN REQUIRED TO BE CLOSED	PERSONNEL ERROR

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	CON. NO.	KEY	MFG.	VALVE TYPE	OPERATOR	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W DC2	022838	101078			ZZZZ	T X UU	V01		AUX FEED VALVE FOUND UNLOCKED & OPEN/WRONG LINE-UP	PERSONNEL ERROR
W DC2	022838A	101078			ZZZZ	U A UU	C00		PNEUMATIC TEST VALVE LEAKED THRU	UNKNOWN
W DC2	022793	102378			ZZZZ	R U UU	T06		FOUR OR MORE VALVES NOT TIMED AFTER MAINT(ITS VIOL)	PROCEDURAL PROBLEMS
W DC2	023030*	112178	02		W030	N U CK	A05		CHK. VALVS. CTS-12766W TO THE LOWER CONT. SPRAY NOZZL-	-ES INSTALLED BACKWARDS//FABRICATION ERR.
W HN1	014007A	012276			S075	T U UU	B24		MSIV NO 2 FAILED TO CLOSE IN REQUIRED TIME	SOLENCIO IN AIR OPERATOR FROZE
W HN1	014007B	012276			S075	T U UU	B10		MSIV NO 2 FAILED TO CLOSE IN REQUIRED TIME	LIMIT SW HAD INTERNAL CORROSION
W HN1	014898	051876			C710	T U UU	H00		RV ON STEAM SUPPLY TO AUX FEED PUMP LIFTED EARLY	VALVE TO BE REPAIRED/FAIL. CAUS. UNKNOWN
W HN1	015216	070576			ZZZZ	N U UU	E00		CHECK VALVE IN FEED LINE HAD REVERSE LEAKAGE	NO CAUSE GIVEN FOR REVERSE LEAKAGE
W HN1	018778	073077			E095	N U UU	D05		B CHARG PUMP BYPASS ISO VAL LEAKING EXTERNALY	DEFECTIVE CASTING
W HN1	018777	080177			ZZZZ	T U UU	E00		CHECK VALVE ON AUX FEED PUMP LEAKING INTERNALY	UNKNOWN
W HN1	018779	081177			ZZZZ	N U UU	C07		#2 S/G NARROW RNG. LVL. SETT. POT VENT VLV. LEAK. INTER	SEAT. SURF. STM. CUT/NORMAL WEAR
W HN1	018967	091677			S075	T U UU	F14		#1 MSIV DID NOT MOVE THE 1 1/2" REQUIRED BY TEST	BINDING OF VALVE PACKING GLAND
W HN1	019245	100377			W120	N U UU	F07		VALVE VERY SLOW TO RESPOND	COMPONENT WEAR (HYDRAULIC SERV. MOTOR)
W HN1	019899	110377			C665	T U UU	E25		VALVE CC-CV-721 DID NOT SEAT PROPERLY	FAILURE OF SEATING SURFACE
W HN1	021367	050478			H037	N X GL	D08		PINHOLE LEAK IN B CHG PUMP DISCH VALVE	SEVERE EROSION CAUSED BY THROTTLING VAL
W HN1	021335	050978			V085	N X GL	D08		BODY TO BONNET LEAK B CHG. PMP BYPASS ISO VLV	EROSION FROM HI VELOCITY WTR FLOW
W HN1	021903	060578			R340	T X GL	D18		PINHOLE LEAK IN PRESS SPRAY ISO VALVE	DEFECT IN BODY TO BONNET SEAL WELD
W HN1	021906	071178			E090	N U GL	D07		NO 4 STM LIN ELBOW TAP DRAIN VAL LEAKING	NATURAL END OF LIFE
W HN1	022167	080478			ZZZZ	N U UU	B16		PRESS SPRAY VLV. STUCK IN INTERMEDIATE POSITION	FAILED TRANSISTOR IN WORTHINGTON SIGNAL. CH
W HN1	023582*	122978	04		ZZZZ	N U UU	G24		4 S/G BLOWDOWN LINE VALVES CLOSED WHEN REQ OPEN	AIR SUPPLY TO VALVES TRIPPED(CCM CAUSE)

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	C N U PM	KEY	MFG.	VALVE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
HN1	023582A	122978			ZZZZ	N U UU	801	VALVE MECHANICALLY BLOCKED OPEN OVRERIDING TRIP	PERSONNEL ERROR
IP2	014004	010376			C635	M U UU	D14	EXTERNAL LEAKAGE FROM VALVE MOV-731	PACKING GLAND LEAKAGE
IP2	014269	012376			F130	N U UU	C25	INTERNAL LEAKAGE THROUGH VLV FCV-1171	DISK DID NOT SEAT PROPERLY
IP2	015926	080576			ZZZZ	T U UU	V03	SI PMPs COMMON SUC.VLV(846)IN IMPROPER POSITION	PERSONNEL ERROR/DID NOT OPEN VLV AS REQR.
IP2	015732	091276			R340	N U UU	F24	INST AIR PRESS 10ST BY MALFUNCT OF 4-MAY VALVE	CAUSE UNKNOW
IP2	016039	092776			C635	N U UU	D14	14-IN VAL ON RHR SYST LEAKING EXTERNALY	EXCESSIVE PACKING GLAND LEAKAGE
IP2	016467*	120276	07		ZZZZ	M U UU	I04	ELEC.(IRC.FOR 4CONT.ISO.VLVs63CONT.REL.VLV.NOT ME-	-ET SING.FAIL.CRIT(1 SOURCE PWR)//DESIGN
IP2	017568	032877			K085	N U UU	C00	DRAIN VALVE CN MANIFOLD LEAKING INTERNALY	CAUSE UNKNOW
IP2	018787A	050777	02		ZZZZ	T U UU	F12	VALVES TCY-1104 & 05 DID NOT OPERATE PROPERLY	BINDING OF VALVE INTERNALS
IP2	018767B	050777			ZZZZ	T U UU	F23	VALVE 0228 DID NOT OPERATE PROPERLY	TORQUE SWITCH MALFUNCTION
IP2	018788A	051377			C710	T U UU	A00	RV PCV-468 DID NOT OPEN AT SETPOINT PRESSURE	SET POINT DRIFT
IP2	018788B	051377			C710	T U UU	C25	INTERNAL LEAKAGE PAST VALVE PCV-466	EXCESSIVE VALVE SEAT WEAR
IP2	019261*	101977	07	V	ZZZZ	M U UU	I04	AIR EJECT.LINE CONT.ISO.VLV.CIRCUITRY DID NOT MEE-	-T SINGLE FAIL.CRIT(1 SOURCE PWR)//DESIGN
IP2	021296	020978			C710	N U RV	H00	RV NO.264 RELIEVED BELOW DESIGN SETPCINT	CAUSE UNKNOW
IP2	021028	031478			C710	T U RV	H00	R V-468 DID NOT OPEN AT SETPOINT PRESSURE	SET POINT DRIFT
IP2	021027*	040178	02	V	ZZZZ	T U UU	F02	HI.TEMP.SHUTOFF VLVs IN MN.STM.SUP.TO #22 FEED PU-	-MP WCLDN'T OPER.AUTO.//PERSONNEL ERROR
IP2	021333	050278			A507	T S UU	A00	SERVICE WATER VLV FCV-1276A DID NOT FULLY OPEN	CAUSE CF EVENT COULD NOT BE DETERMINED
IP2	021653	052378			V085	T U CK	E12	4 IN SWING CV D.S.OF PUMP 22 LEAKING INTERNALY	TWO HANGER BRACKET BOLTS MISSING
IP2	021908	062678			G255	N U DI	D22	DIAPHRAM VALVE 1023D LEAKING EXTERNALY, 2 IN VAL	RUPTURED DIAPHRAGM / CRACKED BONNET
IP2	022164	072878			A585	M U CK	814	MS 1 FOR LOOP 23 FAILED TO CLOSE COMPLETELY	STEM PACKING RESTRICTED VAL MOTION

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W	PLANT	CGNT. NO.	EVENT DATE	CON MUM PM	YR	MFG.	A C H I V E Y	O V E R R I D E	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	IP2	022163	081778			C635	N	U	RV	104	DISCREP BETW SPEC + AS SUPPLY PARAMETERS FOR RV	DESIGN ERROR, 3 IN, 1500 PSI PRESS RV
W	IP3	014604	042976			A200	T	U	UL	V03	INCR.VLV LINUP FOR TEST, CNTMNT SPRY ACCID. TURN ON	PERSONNEL ERROR
W	IP3	015134	061476			W315	N	U	UU	B12	VALVE 956E WOULD NOT CLOSE	VALVE STEM HAD SLIGHT BOW
W	IP3	015576	081076			Z222	T	U	UU	F24	CONT. ROOM DAMPER *CM DID NOT TRANSFER ON SIGNAL	MALFUNCTIONING RELAY IN SUPPLY LINE
W	IP3	015925	093076			C635	N	U	UU	V01	INADVERTENT CLOSURE OF RHR ISO VALVE	PERSONNEL ERROR
W	IP3	016635	100276			C710	N	U	UU	H00	RV-1836 LIFTED BELOW TS PRESSURE	UNKNOWN
W	IP3	016469*	121776	02		A585	N	U	UU	B02	TWO-28IN MSIVS FAILED TO CLOSE	SHAFT BINDING DUE TO IMPROP ADJ OF GLAND
W	IP3	016717	011577			C635	N	U	UU	D14	VALVE PCV-455C LEAKING EXTERNALLY	VALVE PACKING FAILED
W	IP3	020434A	020378			R344	N	U	GL	D14	VALVE 565C LEAKING EXTERNALLY	PACKING FAILURE
W	IP3	020434B	020378			V085	N	U	GL	D14	VALVE 571C LEAKING EXTERNALLY	PACKING FAILURE
W	IP3	021388	050678			F130	T	U	PL	A08	LP STM DMP VAL NO 3 FAILED TO OPEN FULLY	PLUG AND CAGE WAS SCORED
W	IP3	021763	060878			C710	T	U	RV	A00	NO.5 RV ON NO.34 SG. OUTSIDE OF REQD. TOLRENC	CAUSE UNKNOWN
W	IP3	021914*	070378	04		Z222	T	U	UU	B26	S/G SAMP. VLVS 1223A, 24A, 25A, 626A WOULDNT CLOSE C-	-N SIGNAL//FAIL. OF SNAP LOCK LIMIT SWTCHS
W	IP3	022410	082978			I206	N	U	GL	B12	CONTROL VALVE LCV-1209B FAILED TO CLOSE	ACTUATOR FAILURE
W	IP3	022407	090378			W165	N	U	BA	C12	BYPASS VAL FOR LOOP A ACCUMULATOR LEAKING	BALL VALVE WAS TIGHTENED
W	IP3	022404*	090878	02		R340	N	U	GL	D14	ISO VALS 561A, 561B LEAKING EXTERNALLY	PACKING FAILURES
W	IP3	022403	091278			Z222	N	U	UU	D00	MANIFOLD STOP VLV 561A LEAKING BORATED WTR. EXTERN.	NO CAUSE FOR LEAKAGE GIVEN
W	IP3	022405	091278			W165	N	U	BA	C12	BYPASS VAL FOR LOOP B ACCUMULATOR LEAKING	BALL VALVE WAS TIGHTENED
W	IP3	022875	100478			K075	T	U	GA	D12	VALVE FM-1 LEAKING EXTERNALLY	VALVE BODY RUPTURED
W	JF1	019363	081877			Z222	N	U	UU	D14	1A ACCUM. NITRO. SUP/VENT ISO. VLV LEAKING EXTERNALLY	PACKING LEAK

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

EVENT	PLANT	CONTR. NO.	EVENT DATE	CONTR. NO.	KEY	MFG.	ACTIVITY	OPERATOR	VLT	TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W JF1	019699	111377	H035	M	U	UU	D13	VALVE HV3226 LEAKING EXTERNALLY (STM. SUP. VLV)	LOWER SEAT GASKET BLOWN				
W JF1	019845	120277	W120	N	U	UU	B24	PRZ. SPRAY VLV. WOULD NOT CLOSE PROPERLY	VALVE CONTROLLER WAS OUT OF ADJUSTMENT				
W JF1	020287	011778	W120	N	U	BA	B24	PRZ. SPRAY VLV. WOULD NOT CLOSE PROPERLY	VALVE CONTROLLER WAS OUT OF ADJUSTMENT				
W JF1	020446	012178	ZZZZ	N	U	BU	I06	VAL HCV-603A MECH STOP NOT REPLACED AFTER MAINT	ERROR IN TECH SPEC				
W JF1	021186	032078	A585	N	A	UU	D24	MSIV V002 FITTING ON AIR SUPPLY LEAKING	SOLDERED CONNECTION LOOSE				
W JF1	020993	032578	ZZZZ	N	M	UU	Y02	HDAFP & TDAFP RECIRC BYPASS ISO VLVS OPEN	PERSONNEL ERROR				
W JF1	021872	052778	D245	N	U	RV	B12	B STEAM GEN SAFETY RV FAILED TO RESEAT	BROKEN LOWER ADJ RING LOCKING PIN				
W JF1	021975	071278	ZZZZ	N	U	GA	V01	TWO BORIC ACID TK SUPPLY VALS IN CLOSED POSITION	PERSONNEL ERROR				
W JF1	022633*	090978	03	ZZZZ	T	U	UU	F24	CONTROL WAS LOST ON FLOW CONT. VLVS 3228A,B,C	DEFECTIVE RELAY IN TDAFP CONTROL CIRCUIT.			
W JF1	021952	091478	C470	N	U	CK	E00	1B AIR COMPRESSOR RELIEF/CHUCK VALVE LEAKED	CAUSE UNKNOWN				
W JF1	022129	091878	ZZZZ	T	U	UU	Y06	RHR PUMP SUCTION VLV 8701A CLOSED WHEN REQ. OPEN	INADEQUATE PROCEDURES				
W JF1	022988	100978	H035	N	A	DI	F22	INST AIR PRESSURE CONTROL VALVE FAILED OPEN	DIAPHRAGM FAILED				
W JF1	023282	120678	ZZZZ	R	U	UU	T02	T.S. REQUIRED BREAKER TO VALVES LOCKED OPEN	PERSONNEL FAILED TO LOCK BREAKERS OPEN				
W KE1	013963	010876	L200	T	U	UU	F12	VALVE SI-2B DID NOT OPERATE	SCREW HOLDING TRIP LEVER BACKED OUT				
W KE1	014240	022076	C665	T	U	UU	A01	VALVE ICS-5B FAILED TO OPEN (CONT. SPRAY DISCH. VLV)	VALVE MANUALLY TORQUED DOWN TOO TIGHT				
W KE1	014387*	031276	02	J085	T	U	UU	B24	DAMPERS ASV-50665 FAIL TO CLOSE ON S.I. SIGNAL	STICKY SOLENOID PILOT VALVES			
W KE1	015262	071576	W120	U	U	UU	V01	MANUAL ISO. VLVS TO MONITORS R-11612 SHUT WHEN REQ-	REQUIRED TO BE OPEN//PERSONNEL ERROR				
W KE1	015295	081376	ZZZZ	U	U	UU	V01	WASTE NEUT. DRN. VLV LEFT OPEN, ALLCW. RAD. RELEASE	PERSONNEL ERROR				
W KE1	015967*	092376	02	Z	ZZZZ	T	U	UU	F16	FEEDWATER ISOLATION VALVES FAILED TO OPERATE	COMMAND/FAILED BY RELAY/NO SIGNAL		
W KE1	015968	092376	L200	N	U	UU	A23	SERV WAT VAL FOR FAN COIL UNIT DID NOT OPEN	BROKEN TORQUE SWITCH				

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ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	COMP. NO.	MFG.	FAIL CODE	FAILURE MODE	FAILURE MECHANISM		
M	KE1 016975	011777	EC95	N	UU	814	VALVE BT-3A FAILED TO CLOSE (BLOWDOWN ISO VLV)	OVERTIGHT PACKING	
M	KE1 016789	011977	ZZZZ	R	UU	V01	CNTNMT ISO-VALS LEFT OPEN	PERSONNEL ERROR, IMP. VAL-LINEUP	
M	KE1 016986*	020377	04	P340	T	UU	C25	EXCESS LEAKAGE THROUGH CNTNMT ISO VLV (FCUR)	FAILURE OF RUBBER VALVE SEATS
M	KE1 018046A	032177	03	M115	T	UU	C12	EXCESS LEAKAGE THROUGH CNTNMT ISO VALS (THREE)	VALVE STROKE ADJUSTED
M	KE1 018046B	032177		K085	T	UU	C25	EXCESS LEAKAGE (INTERNAL) CNTNMT ISO VLV	VALVE SEAT CLEANED
M	KE1 018046C	032177		C630	T	UU	C12	EXCESS INTERNAL LEAKAGE CNTNMT ISO VLV	VAL INTERNALS OUT OF ADJ
M	KE1 017824	052277		ZZZZ	M	UU	V01	VAL ON B PUMP DISCH IN CLOSED POSITION	PERSONNEL ERROR / IMPROPER VLV LINE UP
M	KE1 019264	071677		G255	N	UU	V01	PART-OPEN VALS IN DISCH PATH FROM WASTE NEUTR. TK.	PERSONNEL ERROR / IMPROPER VLV LINE UP
M	KE1 018052	072977		M120	U	UU	V01	MANUAL ISO-VLVS TO MONITORS R-11612 SHUT WHEN REQ-	--UIRED TO BE OPEN//PERSONNEL ERROR
M	KE1 019312	100377		A220	M	UU	F02	MAINT. MAN DEENERGIZED 2 SW VLVS WHEN ONLY ALLOW. T-	--O DEENER. 1 VLV//PERSONNEL ERROR
M	KE1 019356*	102177	02	V 1075	N	UU	E04	REVERSE LEAK-PAST D.G. AIR COMP. CHECK VALVES	DESIGN PROB. REPLACED CHCA-VLVS-NEW STYLE
M	KE1 020479	020178		EC90	T	UU	GA 814	BLOWDOWN LINE ISO VLV FAILED TO CLOSE FULLY	DRY HARD PACKING
M	KE1 020787	022878		L200	T	UU	823	ISO VAL ON EXCESS LEYDCM HY WOULD NOT CLOSE	DIRTY CONTACTS ON TORQUE SWITCH
M	KE1 020786	030278		C665	T	UU	GA 400	CNTNMT SUMP ISO VAL WOULD NOT FULLY OPEN	CAUSE UNKNOWN
M	KE1 021012	032978		ZZZZ	N	UU	V01	SAMPLE VALS FOR MONITOR R-19 IN CLOSED POSITION	IMPROPER VLV LIN UP / PERSONNEL ERROR
M	KE1 021077	040478		C665	T	UU	GA 414	CNTNMT SUMP ISO VAL WOULD NOT FULLY OPEN	VAL PACKING AT END OF USEFULL LIFE
M	KE1 021365	042378		ZZZZ	N	UU	V06	RHR VENT VLV. OPEN WHEN IT SHOULD HAVE BEEN CLOSED	DEFECTIVE PROCEDURES
M	NA1 021148	040778		M120	U	UU	104	TV-S112A NEEDS DESIGN MOD TO REPLAC LIM SW	DESIGN ERROR
M	NA1 021152	041278		M120	N	UU	816	TV-HS-101C FAILED TO CLOSE REMOTELY	RELAY SOLENOID FOR VLV HAD AN OPEN COIL
M	NA1 021150	042878		ZZZZ	N	UU	800	STEAM DUMP VAL 408E STUCK OPEN FOLL. TRIP	CAUSE NOT GIVEN

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	P L A N T	CONT. NO.	EVENT DATE	CON MUM PM	MFG.	A C T I V I T Y	O P E R A T I O N S	M O D E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
M	NA1	021502	051078		M120	M	U	GL	T02	TV-55112A WAS NOT TIMED PRIOR TO RETURNING TO SERV	MAINTAINANCE PERSONNEL ERROR
M	NA1	021506	051478		F130	T	A	UU	V06	AUX FEEDWATER VALS PCV-F2-159A,-159B IMP.LINEUP	CHECKOFF SHEET DOES NOT LIST NORM VAL POS
M	NA1	021540*	052978	02	E095	T	U	GL	D14	VALVES 1-RC-77,1-RC-102 LEAKING EXTERNALY	LEAKAGE THROUGH VALVE PACKING
M	NA1	022267	081078		V085	N	X	GA	T01	INSTRUMENT AIR VALVE NOT UNDER SURVAIL AS REQD	OPERATIONS PERSONNEL ERROR
M	NA1	022269	081778		A200	T	M	GA	A14	VALVE MOV-1860B FAILED TO OPEN DURING TEST	DRY VALVE PACKING CAUSED LIM SW TO TRIP
M	NA1	022270	081878		ZZZZ	N	U	UU	V01	IMPROPER VLV LINEUP ON UNIT #2 CHILLED WTR.CHILLER	PERSONNEL ERROR
M	NA1	022569*	092778	02	A499	D	A	UU	B24	CNTNMNT ISO VALVES TV-CC-102D,102F FAILED TO CLOSE	FAILURE OF SOLENOID SUPPLY VALVES
M	NA1	022938	092778		F130	M	U	GL	T02	AFTER MAINT,VLVS TV-80100A,B,D,F NOT STROKE TIMED	MAINTAINANCE PERSONNEL ERROR
M	NA1	022565	100478		I075	N	U	GA	VC1	IMPROPER VALVE LINEUP,AUX FEED PUMP TO A,B,C STMGH	OPERATING PERSONNEL ERROR
M	NA1	022766	100978		V135	N	U	GL	D18	STEAM VALVE L-MS-120 LEAKING EXTERNALY	DEFECTIVE PIPING JCINT BETW VALVE + PIPE
M	NA1	022933	110178		F130	N	U	GL	C13	MAIN STEAM TRIP VALVE 1-TV-MS-111A LEAKING THRU	DETERIORATED INTERNAL GASKET
M	NA1	022935	110778		L200	T	M	UU	B23	MOV-9S102A FAILED TO CLOSE DURING TEST	DIRTY CONTACTS ON TORQUE SWITCH
M	NA1	023329	122678		V135	N	X	GL	D00	ROOT ISOLATION VALVE 1-MS-4 LEAKING STEAM(REF LEG)	CAUSE NOT STATED
M	PR1	013955	010976		ZZZZ	T	U	UU	A10	OUTSIDE AIR TO DIESEL ROOM DAMP FAILED TO OPEN	ICE BUILDUP ON PARTS OF DAMPER
M	PR1	014001	012176		H195	N	U	UU	F12	DAMPER FOUND IMP/OPERLY POSITIONED	BINDING SHAFT BUSHING/POSS LUBRIC PROBLEM
M	PR1	014758	051376		L200	T	U	UU	A23	MOV FAILED TO OPEN DURING TEST (MV-32065)	TORQUE SW PROBLEM/ADJUSTED IT(LIMITORQUE)
M	PR1	015215	062976		ZZZZ	U	U	UU	A12	PUMP DISCHARGE VALVE FOUND CLOSED AND INOPERABLE	PIN FELL OUT OF REMOTE OPERATOR LINKAGE
M	PR1	015919	091076		ZZZZ	U	U	UU	V02	CONTAIN.-TO-ANNULUS DIFFER.PRESS.SWTC. VLVED OUT-	-BY MISTAKE//PERSONNEL ERROR
M	PR1	016285	102476		ZZZZ	N	U	UU	V01	INCORRECT VLV LINEUP MADE ON SPENT FUEL PIT	PERSONNEL ERROR
M	PR1	017487	031677		P070	T	U	UU	B22	VACCU BREAKER ISOLATION VALVE FAILED TO CLOSE	DIAPHRAGM DETERIORATED IN VALVE

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT NAME	CN K M U E PM Y MFG.	ACTIVITY	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W PR1	017488*	032477	06 Z	ZZZZ	T U UU	E10	LEAKRATE TEST SHOWS 3 PENETRATIONS LEAKING THRU FOREIGN MAT ON SEATING SURFACES
W PR1	017488A	032477	02 V	P340	T U UU	C25	PURGE SUPPLY VALVES (BUTTERFLY)/LEAKED THRU SEAT PROBLEM/REPLACED SEATS
W PR1	016341	061877		L200	N U UU	F20	AUX FEED PUMP DISCHARGE VALVE FAILED TO OPERATE OPEN LEAD IN OPERATOR/LIMITROQUE SMB-000
W PR1	018859	070177		P014	T U UU	F12	DAMPER FAILED TO OPERATE DURING TEST/COUPLING PCB PINS SHEARED/RAMCON ACTUATOR TO DAMPER
W PR1	018808	072677		P014	T U UU	F12	DAMPER FAILED TO OPERATE/ACTUATOR FAILED (RAMCON) REPLACED BOTH ACTUATORS (BINDING DAMPER ?)
W PR1	020123	120977		ZZZZ	T U UU	A16	W11 CONT. VAC. BRKR. ISO. VLV. FAILED TO OPEN ON DEMND FAILURE OF BARYON DIFFER. PRESS. SWITCH
W PR1	020735	020478		ZZZZ	N X 01	V01	PUMP SUCTION VALVE FOUND NEARLY CLOSED PERSONNEL VALVE LINEUP IMPORTANCE STRESSO
W PR1	021640	051678		R082	N A 0M	F12	DAMPER FAILED TO OPERATE AS REQUIRED RAMCON NO. R-260 ACTUATOR FAILED/LUBRICITY
W PR1	021704	062278		ZZZZ	N X 6A	V01	ROOT VALVE ON D/G DIESEL OIL TANK LEVEL INSY CLOSE PERSONNEL/ LCCM WIRE OPEN FROM NCM ON
W PR2	014463	033176		ZZZZ	N U UU	V01	MANUAL VALVE SECURED WHICH VIOLATED LOOP AVAILABLE PERSONNEL ERROR/TECH SPECS INCONSISTENT
W PR2	017894	042276		ZZZZ	R U UU	T01	COOL. WTR. SYS. ISO. VLVs. TEST NOT PERF. IN REQ. TIME - -LIMIT//PERSONNEL ERROR
W PR2	015335	080676		C635	T U UU	C25	NITROGEN SUPPLY VALVE CV-31554/EXCESSIVE LEAKAGE NEW SEAT AND GASKETS WERE INSTALLED
W PR2	016038*	100676	02 V	ZZZZ	N U UU	F06	POST-LOCA HYDRO. CONT. SYS. VLVs. LEFT INCAPABLE OF B- -EING CLOSED IN 1 MIN. //DEFECTIVE PROCED.
W PR2	016284	102576		L200	T U UU	A23	MOV/BORIC ACID SUPPLY MV-32184 FAILED TO UPEN TORQUE SW MALFUNCTIONED/WAS REPLACED
W PR2	016284A	102576		ZZZZ	T U UU	B00	HOT LEG SAMPLE LOOP VLV CV-31907 FAILED TO CLOSE UNKNOWN/RETEST WAS OK
W PR2	016354*	112276	03	ZZZZ	T U UU	C12	VALVES IN 3 PN SHOWED EXCESSIVE LEAKAGE/TESTING 1REPLACE STEM/SEAT/2JAMMED NUT/3MALADJUSTED
W PR2	016945	010877		ZZZZ	N U UU	T01	4 SAFETY INJ VALVES NOT TAGGED AS PER TECH SPECS PERSONNEL/HANDWRITTEN LINE-UP SHEET USED
W PR2	016947	011177		C635	N U UU	C25	CONTAINMENT ISOLATION VALVE CV-31349 LEAKING THRU GALLED GAGE AND PLUG STEM/REPLACED SAME
W PR2	017889	051977		ZZZZ	U U UU	V06	PUMP INLET VALVE FOUND NEARLY SHUT/AUX FEED INLET POSITION RECORD/REPAIRMENT WILL GO ON CHECKLIST
W PR2	019284	100477		A200	T U UU	A00	SAGETY INJ PUMP SUPPLY VLV MV-22183 FAILED TO OPEN UNKNOWN/ STEM WAS LUBRICATED/NEXT TRY OK

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W E N	P L A N T	C O N T. N O.	E V E N T D A T E	C O N T R O L N U M B E R	K E Y	M F G.	A L L O C A T E D C O D E	V A L V E T Y P E	F A I L C O D E	F A I L U R E M O D E	F A I L U R E M E C H A N I S M	
W	PR2	019604	111377			R340	T	U	UU	E00	CONTAINMENT ISOL CHECK VALVE ZVC-8-5 LEAKING THRU	UNKNOWN/VALVE WAS REPLACED
W	PR2	020125	122377			ZZZZ	T	U	UU	A16	#22 TURB.DRIVEN AFW PUMP STM.SUP.VLV.FAILED TO OP-	-EN//MCTCR LEAD GROUNDED TO JUNCTION BOX
W	PR2	020473	012878			A391	M	U	GL	F12	DURING REPACKING VALVE STEM FOUND BROKEN(MV-32154)	PARTS FAILED FOR UNKNOWN REASON
W	PR2	023221	112878			P340	T	U	BU	D14	RHR HX OUTLET VALVE CV-31239 LEAKING EXTERNALLY	DETERIORATION OF PACKING
W	PR2	023222*	112878	02		P340	T	U	BU	C25	OUTER CONT. EXH 6 SUPPLYS(2946258) LEAKING THRU	SEATS NOT ADJUSTED PROPERLY(RECURRING)
W	PT1	013945	010876			ZZZZ	T	U	UU	20	MOV-4020 ALX FEED PUMP DISCHARGE FAILED STUCK/TEST	VALVE OPERATOR RING WORN/GEAR REPLACED
W	PT1	014097*	010876	09		ZZZZ	T	U	UU	C12	NINE VALVE FAILURES/INTERNAL/EXTERNAL LEAK/TESTING	LOOSE BODY TO BONNET/IMPROPER SEATING
W	PT1	014949	061676			L200	T	U	UU	A23	MOV-SW2869 FAILED TO OPEN ELECTRICALLY DURING TEST	TORQUE SW CORRODED FOLLOWING WETTING
W	PT1	017855	022677			A585	M	U	UU	B00	MAIN STEAM STOP VALVE FAILED TO CLOSE ON SIGNAL	UNKNOWN/CONSIDERED RANDOM/30 IN AIR-OP CV
W	PT1	017805	043077			J090	T	U	UU	F24	CONTROL RM VENT VALVE(DAMPER) FAILED TO OPERATE	FOREIGN MATTER IN AIR REGULATOR
W	P11	017864	052877			J090	T	U	UU	F24	CONTROL RM VENT VALVE(DAMPER) FAILED TO OPERATE	FOREIGN MATTER IN AIR REGULATOR
W	PT1	018192	061577			P305	T	U	UU	B23	MOV-2816 FAILED TO CLOSE DURING TEST SIGNAL	TORQUE SW READJUSTED/POSSIBLE OVER TORQUE
W	PT1	019498	103177			ZZZZ	N	U	UU	V01	VALVE LINE-UP NOT PROPERLY MADE/RADWASTE DUMP MADE	PERSONNEL/OPERATOR FAILED TO CLOSE VALVE
W	PT1	020062	122177			L200	T	U	UU	A23	MOV-2907 FAILED TO OPEN DURING TESTING	TORQUE SW SETPOINT WRONG/ADJUSTED
W	PT1	020489	020478			P312	M	X	GL	G10	GLOBE VALVE USED TO CONTROL AIR FLOW PLUGGED	BLEW WATER OUT / READJUSTED FOR AIR FLOW
W	PT1	021627	061478			ZZZZ	N	U	DI	V01	IMPROPER VALVE LINE-UP DISCOVERED/POSS RAD RELEASE	PERSONNEL ERROR
W	PT2	014158	022076			ZZZZ	T	U	UU	C10	LRT BETWEEN PURGE SUPPLY VAVES SHOWED INTERNL LEAK	DIRT IN VALVE/CLEANING STOPPED LEAKAGE
W	PT2	014389	030876			V085	T	U	UU	E25	CV 2-759A IN CCW SYSTEM FAILED LEAKRATE TEST	DIRT ON SEATING SURFACES/LAPPED SURFACES
W	PT2	014348	031576			L200	T	U	UU	A03	CONTAINMENT SPRAY ZMOV-8608 FAILED TO OPEN / TEST	PERSONNEL ERROR/TERMINAL SLIDER OPEN
W	PT2	014491	042376			C587	T	U	UU	C10	CONTAINMENT SUPPLY VALVE ZCV-3045 LEAKED / TEST	DIRT ON MATING SURFACES OF BUTTERFLY VALV

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NC.	EVENT DATE	CN	MU	PH	YR	MFG.	Y	R	V	TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W PT2	015186	070176					L200	T	U	UU	A23		MOV-2MS-2019/STEAM TO AUX FEED PUMP FAILED TO OPEN	TORQUE SW SETPOINT CAUSED TIGHT CLOSING
W PT2	017035	012777					ZZZZ	N	U	UU	F16		CONT. SPRAY PMP. DISCHG. VLV. 2-8608 INOPERABLE	VALVE OPERATOR BREAKER WAS OPEN
W PT2	017464	030977					V085	T	U	UU	E25		4 IN CV IN CCM SYSTEM FAILED LEAKRATE TEST	SEAT/DISC PROBLEM/PROB DUE TO NORMAL WEAR
W PT2	017721	041977					C635	T	U	UU	C10		CONTAINMENT ISOLATION VALVE LEAKED THRU	SLUDGE ON SEAT OF COPEX-VULCAN MOD F VALV
W PT2	017806	042077					C710	M	U	UU	C00		LEAKAGE THRU 3/4 INCH DISCHARGE RELIEF VALVE(PUMP)	UNKNOWN/DIMINISHED WITH OPERATION
W PT2	017859	050377					C710	U	U	UU	C00		LEAKAGE THRU 3/4 INCH RELIEF VALVE/PUMP DISCHARGE	UNKNOWN/VALVE WAS REPLACED
W PT2	020355	050877					A499	N	U	UU	B24		ISOL VALVE FAILED TO CLOSE/COMMAND FAILURE	3/4 SEL2N VAL FAILED DUE TO WEAK SPRING
W PT2	018572	072877					A200	N	U	UU	V04		MOV FOUND IN INTERMEDIATE POSITION/SINCE PREV TEST	PERSONNEL FAILED TO ASSURE FULLY OPEN
W PT2	019446	101777					ZZZZ	N	U	UU	V01		ISOLATION VALVE FOR PRESS TRANSMITTER FOUND SHUT	PERSONNEL/ALSO NOT ON ANY CHECK-LIST
W PT2	021766	061678					L200	T	M	UU	F23		CONT SPRAY VALVE(MOV) FAILED TO OPERATE FOR TEST	SMB-00 LIMITORQUE SW FAULTY/REPLACED
W PT2	022841*	091078 02					C710	N	U	RV	C00		2-CROSBY 3/4 INCH RELIEF VALVES LEAKED THRU	UNKNOWN/ VALVES WERE REPLACED WITH SPARES
W PT2	022842	092878					ZZZZ	N	A	UU	B24		PZR. SPRAY VLV. 431B WOULD NOT SHUT FULLY	FAILURE OF ELECTRO-PNEUMATIC TRANSDUCER
W PT2	023123	120978					ZZZZ	M	U	UU	V02		LOOP A TEMP DETECTOR MANIFOLD VALVED OUT	PERSONNEL ERROR(TOOK OUT SAFETY CHANNELS)
W RG1	013995*	011176 02					P340	T	U	UU	C25		CV PURGE SUPPLY/EXHAUST VALVE LEAKED THRU/TESTING	RUBBER SEAT SHOES REALIGNED/LOW TEMP PROB
W RG1	014168	020776					ZZZZ	N	U	UU	B16		SUMP A DISCHG. ADV FOR CONT. ISO. WOULD NOT CLOSE	FAILURE OF MG-6 RELAYS IN "A" SAFEGUARDS.
W RG1	018076*	020776 02					ZZZZ	T	U	UU	C00		CV PURGE EXH & SUP VALVES LEAKED THRU DURING TEST	UNKNOWN
W RG1	018076A	020776 02					ZZZZ	T	U	UU	C00		TWO MOV (813681) LEAKED THRU DURING LEAK TEST	UNKNOWN
W RG1	018076B	020776					ZZZZ	T	U	UU	E00		CHECK VALVE (1713) REVERSE LEAKAG / TESTING	UNKNOWN
W RG1	017899	022876					P340	T	U	UU	B12		AD BUTTERFLY VALVE FAILED TO CLOSE FULLY	SCORED PISTON SHAFT/EXCESSIVE FRICTION
W RG1	018247	071377					V085	N	U	UU	E00		SI PUMP 1A CHECK VALVE REVERSE FLOW TO RWST	UNKNOWN/ VELAN 3 INCH 1500 PSIG CHECK VAL

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	CONTR. NO.	KEY	MFG.	OPERATOR	VALV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W RG1	018785*	082277	02		ZZZZ	T U UU	C00		LEAKAGE THRU AT LEAST TWO VALVES DILUTED NACH	UNKNOWN
W RG1	021334	041978			ZZZZ	N U DI	V01		OPERATOR OPENED WRONG VALVE/DECREASE BORON CONCENT	PERSONNEL ERROR/PROCEDURE CHANGED
W RO2	014022	012876			ZZZZ	N U UU	E00		B ACCUMULATOR CHECK VALVE 875E LEAKED THRU	REASON NOT STATED
W RO2	015570	081776			L200	T U UU	A04		VALVE V2-16A FAILED TO OPEN	LIMITCRQUE CPER FAILED TO OPEN VALVE
W RO2	016936	012577			G257	M U UU	V02		IMPROPER VLV LINEUP (BORIC ACID STORAGE TANK)	PERSONNEL ERROR
W RO2	017540	032677			C665	N U UU	A00		VALVE V2-14A FAILED TO OPEN	INCREASE IN TENSION BETWEEN SEATING SURF.
W RO2	022627	042277			VC85	N U UU	V01		COMPRESSED AIR ISO VAL CLOSED, S.B. OPEN	PERSONNEL ERROR
W RO2	019343	061077			A180	N U UU	C07		CV PURGE OUTLET INNER VALVE NOT OPERABLE	EXCESSIVE INTERNAL LEAKAGE THROUGH VALVE
W RO2	019344	061977			A180	N U UU	F07		CV PURGE OUTLET INNER VALVE INOPERABLE	NORMAL WEAR TO RUBBER SEAT
W RO2	019350	081677			L200	N U UU	A20		VALVE V2-16B FAILED TO OPEN AS REQUIRED	LIMITCRQUE VALVE OPERATOR FAILED
W RO2	019351	081777			C255	T U UU	E05		DISCH CK VAL FOR AUX FEED PUMP, C STM GEN FAILED	CK VAL HAS BURR ON HINGE JOINT, OPEN POSIT
W RO2	019352	081777			L200	N U UU	A20		VALVE V2-16A FAILED TO OPEN	LIMITCRQUE VALVE OPERATOR FAILED
W RO2	019667	102677			L200	N U UU	A20		RHR VALVE 7598 FAILED TO OPEN	MOTOR WINDINGS WERE SHORTED
W RO2	020653	120377			L200	T U UU	A16		RHR VALVE 7448 FAILED TO OPEN	CIRCUIT THERMAL OVERLOAD DEVICE TRIPPED
W RO2	022626	122177			L200	T U UU	A12		AUX FEED PUMP DISCH VAL, V2-16A FAILED TO OPEN	EXCESS SEATING PRESS CAUSED BY OVERHEAT
W RO2	020181	122277			C665	N U UU	C19		VALVE V2-14C LEAKING INTERNALLY / NOT SHUT FULLY	INSUFFICIENT VALVE STEM LUBRICATION
W RO2	020323	010478			L200	T M UU	F23		VALVE V6-33C FAILED TO FUNCTION PROPERLY	TORQUE SWITCH MALFUNCTIONING
W RO2	020322	011178			R165	T M UU	F13		VALVE RHR-7448 FAILED TO FUNCTION PROPERLY	OIL LEAK INTO MOTOR CAUSING SHORT
W RO2	021616*	050978	02		0020	T U GL	C00		INLET VALVES S1-867 A & B (BIT) LEAKING INTERNALLY	CAUSE NOT STATED
W RO2	021414	051178			W120	N M UU	B16		VALVE V6-120 FAILED IN OPEN POSITION	BLOWN FUSE ON MTR OPERATOR CONTROL PWR

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	CNTR. PH	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	RO2	021746*	061378	02		0020	T U	GL	C00		INLET VALVES SI-867 A & B (BIT) LEAK. INTERNALLY	CAUSE NOT STATED
W	RO2	022523	082578			L200	N M	UU	A26		VALVE V6-120 FAILED TO OPEN	LIMIT SWITCH FAILURE
W	RO2	022681	100378			A180	N U	BU	C25		42IN BUTTERFLY VAL LEAKING PAST SEAT	NORM WEAR OF NORDEL RUBBER SEAT
W	RO2	023053	110978			ZZZZ	N U	UU	V06		AIR SUPPLY VALVE FOUND OPEN WHEN REQUIRED SHUT	DEFICIENT OPERATING PROCEDURE
W	RO2	023370	121778			S075	T U	UU	F02		MSIV C STEM FAILED TO TRAVEL FULL TEST DISTANCE	PERSONNEL ERROR(MALADJUSTED PACK GLAND)
W	SA1	016738	122976			A585	N U	UU	A24		MSIV (12MS167) FAILED TO OPEN / COMMAND	OIL LINE TO OPERATOR FRACTURED
W	SA1	016939*	011077	02		L200	N U	UU	F20		MTR.BRKRS.TO VLVS 15J162 TRIPPED WHEN VLVS WERE OPENED	OPERATED//BOTH MTR.OPERATORS HAD FAILED
W	SA1	016940*	011677	02		A585	N U	UU	F24		TWO HYDRAULIC MSIV WOULDNT OPERATE/COMMAND FAULT	HYDRAULIC LINES TO VALVES RUPTURED//FITTING
W	SA1	017125	020177			M120	N U	UU	B12		SERVICE WATER VALVE (12 SW223) FAILED TO CLOSE	BROKEN BOLT ON ACTUATING ROD
W	SA1	017199*	021077	02		F130	N U	UU	C00		INTERNAL LEAKAGE THRU 2 MS VALVES	UNKNOWN/CAUSED SEC FAILURE 017199A
W	SA1	017199A	021077			F130	N U	UU	G24		MSIV FAILED TO OPERATE(IT DRIFTED SHUT)COMMAND	EXCESS DIFF PRESS ON PISTON OF MSIV
W	SA1	017198	021177			ZZZZ	N U	UU	V02		#12 S/G MSIV WAS CLOSED WHEN IT WAS REQUIRED TO OPEN	-EMAIN OPEN//PERSONNEL ERROR(MAINTENANCE)
W	SA1	021374*	040477	02		ZZZZ	N U	UU	D14		13 & 14RC20 LEAKING EXTERNALLY (RTD BYPASS VALVES)	PACKING LEAKAGE
W	SA1	021373*	041177	02		ZZZZ	N U	UU	A26		SAMPLE ISO.VLVS 1551076104 WOULD NOT OPEN	VLV.POSITION LIMIT SWTCHS.OUT OF ADJUST.
W	SA1	017699*	042977	02		A499	T U	UU	F24		TWO VALVES FAILED TO OPERATE(IN REQUIRED TIME)	SOV BLEED-OFF UNDERSIZED/DESIGN PROBLEM
W	SA1	017701	042977			L200	N U	UU	A01		MO CONT. ISOLATION VLV (1CV68) FAILED TO OPEN	PERSONNEL/VALVE HAD BEEN JAMMED SHUT
W	SA1	017787	050777			ZZZZ	N U	UU	C00		LEAKAGE THRU EQUAL VALVE ON DP TRANSMITTER(LEVEL)	UNKNOWN
W	SA1	017785	051277			C635	N U	UU	C12		SPRAY VALVE(1PS3) LEAKED THRU/PRESS DECREASED	VALVE OPERATOR ADJUSTMENT PROBLEM
W	SA1	017788*	051977	02		ZZZZ	N U	UU	D14		TWO MANUAL VALVES (1PS24/1PS28)/EXTERNAL LEAKAGE	LEAKS PAST PACKING/BACKSEATED TEMPORARILY
W	SA1	018248	070877			ZZZZ	N U	UU	D14		EXTERNAL LEAKAGE ON VALVE 1CV75	LEAKAGE PAST STEM PACKING

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

V E N T	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L P H Y	MFG.	A C T I O N T Y P E	V L V T Y P E	F A I L C O D E	FAILURE MODE	FAILURE MECHANISM		
W	SA1	018800*	073177	03	C635	N	U	UU	C12	SPRAY VALVES (1PS1/2/3) LEAKED THRU	VALVE OPERATOR ADJUSTMENT PROBLEM	
W	SA1	019250	091277		M120	T	U	UU	A25	VALVE (11SW58) WOULD NOT OPEN DURING ROUTINE TEST	BINDING OF DISC ON RUBBER SEAT GASKET	
W	SA1	019606	102777		ZZZZ	T	U	UU	V01	IMPROPER VLV LINEUP ON COMP.COOL.WTR.TO RHR PUMP	PERSONNEL ERROR	
W	SA1	019888*	110277	10	M095	R	U	UU	F02	VALVE INTERNALS LEFT OUT IMPLEMENTING ENG-PR COF19	PERSONNEL ERROR DURING MAINTENANCE	
W	SA1	019609*	110877	02	A394	N	U	UU	D14	TWO VALVES (136145J143) (SI) LEAKED EXTERNALLY	PACKING FAILED	
W	SA1	021910	052378		L200	T	M	UU	A20	MOV 15J1 (HPIS) FAILED TO OPEN DURING TEST	WINDING FAILED/INCORRECT MOTOR SIZE/PERSN	
W	SA1	022161	061578		ZZZZ	N	U	UU	F00	AUX FEED MAKE-UP VALVE (1DR6) FAILED TO OPERATE	UNKNOWN	
W	SA1	022425	082278		L200	N	M	UU	A20	MOV (1CC190) FAILED TO OPEN	MOTOR OPER FAILED / SERVICE H2O FLOODED	
W	SA1	022422	082478		M120	T	A	UU	A12	AUX FEED PUMP STEAM VLV (1SM132) FAILED TO OPEN	STEM WAS FOUND DISENGAGED FROM ACTUATOR	
W	SA1	022720	092478		G080	T	M	UU	B16	MOV(1CC131) FAILED TO CLOSE / TEST/COMMAND FAULT	CONTACTS FAILED IN CONTROL POWER CIRCUIT	
W	SA1	022873*	110678	02	V	ZZZZ	N	U	UU	G16	SERVICE H2O VALVES FOUND TRIPPED	INADVERTANT TRIP SIGNAL,DESIGN PROBLEM DT
W	SA1	023317	121178		A499	N	S	UU	A21	SOV 15SW57 FAILED TO CONTROL SER H2O FLOW	SOLENOID COIL OPEN CIRCUIT	
W	SO1	018009	041777		B290	N	U	UU	D14	LOOP RCP SEAL VALVE (FCV-1119D) LEAKED EXTERNALLY	EXCESSIVE LEAKAGE PAST PACKING	
W	SO1	020609	013078		ZZZZ	T	U	BA	B00	CONT SPRAY VLV (CV-517) FAILED TO CLOSE FOR TEST	UNKNOWN/POSSIBLE LUBRICATION PROBLEM	
W	SO1	021207	041878		C665	T	M	GA	F12	MOV-850C FAILED TO OPEN IN REQUIRED TIME / TESTING	SHAFT DISTORTED/PROB DUE TO EXCESS TORQUE	
W	SO1	02233*	081878		ZZZZ	M	H	UU	F16	VALVE OPENED ACCIDENTLY DURING CIRCUIT MAINTENANCE	SIGNAL TO VALVE/COMMAND FAULT/MAINTEN	
W	SO1	023179	120578		K085	N	U	GL	V01	RECIRC VALVE ON HYDRAZINE PUMP LEFT OPEN INADVERT	PERSONNEL ERROR	
W	SU1	014871	031876		ZZZZ	N	U	UU	A16	AUX.FEEDWTR.PUMP DISC.VLV.MOV-FW-151A FAILED TO O-	-PEN//TIMING RELAY FAILURE	
W	SU1	014870	032676		G255	N	U	UU	C22	DV 1-CH-85 RUPTURES DIAPHRAGM/LEAKAGE THRU VLV	GRINNEL DIAPHRAGM FAILED/NORMAL WEAR	
W	SU1	014668	042976		L200	N	U	UU	B23	MOV (1381) FAILED TO CLOSE	TORQUE SW CONTACT PROBLEM	

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

EVENT	PLANT	CONT. NO.	EVENT DATE	CONTR. NO.	KEY	MFG.	A	C	V	V	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	SU1	015522*	070276	02		0020	T	U	UU	E00		TWO CHECK VLV (1-SI-128/130) LEAKED THRU	UNKNOWN
W	SU1	015559	082376			G255	T	U	UU	C22		DIAPHRAGM VALVE (1-CH-125) LEAKED THRU EXCESSIVELY	RUPTURED DIAPHRAGM/GRINNEL/NORMAL WEAR
W	SU1	015958	090976			C635	N	U	UU	D00		EXTERNAL LEAKAGE OF NITROGEN FROM ST VALVE HCV1549	BODY TO BONNET LEAK/UNKNOWN CAUSE OF LEAK
W	SU1	016202	100576			L200	T	U	UU	F20		CHEM ADDITION MOV (MOV-CS-102B) FAILED TO OPERATE	SHORTED MOTOR/CONTACTS CORRODED
W	SU1	017928	101876			Z222	T	U	UU	B16		MOV-CW-100A FAILED TO CLOSE ON AUTO SIGNAL	LOOSE TERMINAL SCREW AT BREAKER
W	SU1	016254*	102676	02		Z222	T	U	UU	B16		TWO CONTROL RM DAMPERS FAILED TO CLCSE DURING TEST	COMMAND/RELAY STUCK IN ENERGIZED POSIT
W	SU1	016882	111376			C710	T	U	UU	A00		PRESS SAFETY VLV (SV15518) OPENED AT HI PRESS	UNKNOWN/ "SETPOINT DRIFT" UP
W	SU1	016882A	111376			C710	T	U	UU	H00		PRESSURIZER SAFETY VLV (SV1551A) PREMATURE OPEN	UNKNOWN/ "SETPOINT DRIFT" DOWN
W	SU1	017056*	012077	02		D243	T	U	UU	A00		SV-MS-101B AND 102B FAILED TO OPEN AT SETPOINT	UNKNOWN/"SETPOINT DRIFT"
W	SU1	017054*	012577	02		H230	N	U	UU	B00		TWO SAMPLE SAVES (TV-SS-106A/106B) FAILED TO CLOSE	UNKNOWN/COLD SHUTDOWN NEEDED FOR MAINTEN
W	SU1	017152*	012677	02		G255	T	U	UU	C22		TWO DIAPHRAGM VALVES (1-CH-83/95) LEAKING THRU	EXCESSIVE DIAPHRAGM WEAR/OVERTIGHTENING
W	SU1	017217	021577			D245	N	U	UL	H00		MS SAFETY VALVE (SV-MS-101A) PREMATURELY OPENED	UNKNOWN/SETPOINT DRIFT OF TORQUE LIMITER
W	SU1	017260	021977			L200	N	U	UU	F23		CHEM ADDITION MOV (GS-102A) FAILED TO OPERATE	TORQUE SW FAILED TO DEENERGIZE MOTOR
W	SU1	017218	022077			G255	N	U	UL	C22		DIAPHRAGM VALVE (1-CH-98) LEAKING THRU	EXCESS DIAPHRAGM WEAR/POSS OVERTIGHTENING
W	SU1	018930	082377			P340	T	U	UU	D00		VALVE 1-RC-95(RTD BYPASS)LEAKING/LEAKAGE > 1 GPM	UNKNOWN/BACKSEATED VALVE TO CORRECT LEAK
W	SU1	020815	030578			W030	N	U	GA	G09		ISOLATION VALVE ON COOLER (1-SW-E-18) PLUGGED	DISC SEPARATED FROM STEM/CORRODED STEM
W	SU1	021132	040776			G255	N	U	DI	D00		DIAPHRAGM VALVE 1-CH-93 DEVELOPED EXTERNAL LEAK	UNKNOWN/BODY TO BONNET LEAK
W	SU1	021294	042378			P335	T	M	UU	B16		CONDENSER OUTLET MOV (CW-100A) FAILED TO CLCSE	COMMAND FAULT/WIRE DISCONNECTED/PERSONEL
W	SU1	021295	042478			S075	T	U	CK	B00		MAIN STEAM TRIP VALVE B FAILED TO CLOSE	UNKNOWN/VALVE ACTUATOR TYPE UNKNOWN ALSO
W	SU1	021732*	052878	02	V	A200	N	U	GA	I06		PROCEDURAL DISCREPANCY ABOUT WHAT LUBRICANT TO USE	FOREIGN MATERIAL ON VALVE SEAT SURFACES

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

TIME	PLANT	CONT. NO.	EVENT DATE	CONMUMPH	KEY	MFG.	ACTIVITY	OPERATOR	VALVE TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	SU1	021802	062278			A200	T M GA	A02	MOV-RH-100	A02	FAILED TO OPEN	
W	SU1	021900*	070578	02		C567	T U RV	ACO	RV'S (SV-MS-101A/105B)	ACO	FAILED TO OPERATE +/- 3X	MAINT ERROR/STEM WAS NOT ENGAGED TO DISC UNKNOWN/SETPOINT DRIFT
W	SU1	023131	072678			C710	N U RV	H00	HYDRO TEST PUMP DISCHARGE RV	H00	PREMATURELY OPENED	UNKNOWN/VALVE WAS REPLACED AND CHECKED OK
W	SU1	022954	111778			ZZZZ	M X UU	V02	3 VALVES CLOSED WHEN REQ OPEN	V02	(CLOSED TO STOP LEAK-	-RAD MONITORING LOST//PERSONNEL ERROR
W	SU1	023136	112978			G255	N U DI	V01	VALVE MISALIGNMENT ON BORIC ACID TRANSFER	V01		PERSONNEL ERROR
W	SU1	023135	120478			W030	N U GA	G09	SEAL COOLER INTAKE GATE VALVE PLUGGED	G09	GATE SEPARAT	--ED FROM STEM//CORROSION OF STEM
W	SU2	014194	020476			S075	N U UU	B12	MAIN STEAM TRIP VALVE (TV-MS-201A)	B12	FAILED TO CLOSE	SHAFT MISALIGNED IN, STUFF BOX/DISC BOUND
W	SU2	017920	040976			H230	N U UU	B00	SAMPLE VALVE (TV-SS-201A)	B00	FAILED TO CLOSE	UNKNOWN/TESTED SAT BEFORE MAINT DONE
W	SU2	014843	041276			P340	N U UU	F20	CONDENSER OUTLET MOV-CW-200A	F20	FAILED TO OPERATE	OPERATOR PROBLEM/IT CONTAINED WATER
W	SU2	014844	042276			P340	T U UU	B23	SERVICE H2O MOV-SW-202B	B23	FAILED TO CLOSE / TEST	TORQUE SW CONTACTS WERE CORRODED
W	SU2	015524	060776			L200	T U UU	A00	CHEMICAL ADDITION MOV-CS-202B	A00	FAILED TO OPEN / TEST	UNKNOWN
W	SU2	015525	061476			L200	N U UU	F00	CONDENSER OUTLET MOV-CW-200B	F00	FAILED TO OPERATE	UNKNOWN
W	SU2	015526	061576			L200	T U UU	F12	LPIS MOV-2062B	F12	FAILED TO OPERATE FROM CONSOLE	THERMAL OVERLOAD DUE TO VALVE PLUG BIND
W	SU2	015529*	081376	02		0020	T U UU	E00	TWO CHECK VLVS (2-SI-145/147)	E00	LEAKING THRU	UNKNOWN
W	SU2	015962	082076			R340	T U UU	V01	OUTSIDE ISOLATION VALVE FOUND OPEN	V01	/NORMALLY CLOSED	PERSONNEL/FAILED TO FOLLOW ADMIN CONTROLS
W	SU2	016884	123076			0020	T U UU	C00	VALVE IN BORDON SYSTEM LEAKING THRU	C00	REDUCING PPM	UNKNOWN
W	SU2	017396	030977			L200	N U UU	B23	CIRC H2O OUTLET MOV-CW-200D	B23	FAILED TO CLOSE	TORQUE SWITCH PROBLEM/JAMMED/ADJUSTED IT
W	SU2	018876	081577			G255	T U UU	C22	DIAPHRAGM VALVE (1-CH-144)	C22	LEAKING THRU	CRACKED DIAPHRAGM ON GRINNEL VALVE
W	SU2	019109*	091077	05		C567	T U UU	A00	SV-MS-201A, 201B, 201C, 202B, 202C	A00	FAILED TO OPERATE	UNKNOWN/DRIFTED >+CR- 3X FROM SETPOINTS
W	SU2	019211*	091077	02		H230	T U UU	B12	SAMPLING VALVES (TV-SS-206A/201B)	B12	FAILED TO CLOSE	OPERATOR LINKAGE NEED ADJUSTMENTS

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NC.	EVENT DATE	CON MUMPH KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	SU2	019212*	092077	03	C710	T U	UU	H00		3 PRESSURIZER SAFETY VALVES OPENED PREMATURELY	UNKNOWN/PROB WIDE VARYING TEMPEENVIRCHMNT
W	SU2	019478*	101177	04	V135	N U	UU	F20		4 MOV5 IN SERVICE H2O SYS FAILED TO OPERATE	PIT CONTAINING THEM WAS FLOODED
W	SU2	019478A	101177		V135	R U	UU	V01		TWO DRAIN VALVES LEFT OPEN AT END OF MAINTENANCE	PERSONNEL ERROR/CAUSED FLOODED PIT ABOVE
W	SU2	019565	102977		ZZZZ	N U	UU	G10		NO FLOW COULD BE ATTAINED THROUGH FCV-2113A	BORON CRYSTALLIZATION ON VALVE SEAT
W	SU2	019566*	103177	02	D025	N U	UU	C00		MOV-2867C/D LEAKED THRU/BIT ISOLATION VALVES	UNKNOWN/RECURRING
W	SU2	019744	110877		D020	N U	UU	E00		CHECK VALVE 2-SI-127 LEAKING THRU	UNKNOWN
W	SU2	019743*	110977	02	D020	N U	UU	C00		MOV-2867C/D LEAKED THRU / BIT ISOLATION VLVS	UNKNOWN/RECURRING
W	SU2	019752	111477		H230	N U	UU	B04		SAMPLING VALVE TV-SS-202A FAILED TO CLOSE	DESIGN DEFICIENCY/CLOSING SPRING TOO WEAK
W	SU2	020158	010878		L200	N M	UU	B20		CIRC H2O OUTLET MOV-CS-200B FAILED TO CLOSE	MOTOR WAS GROUNDED
W	SU2	020236	012078		C635	W M	GA	D09		18 GPM LEAK FROM MOV-RH-2700 PACKING GLAND	CORROSION FAILED STUDS HOLDING PACKING
W	SU2	020819	030578		W030	N U	GA	G09		SEAL COOLER 2-SW-E-18 ISOLATION VLV PLUGGED	GATE SEPARATED FROM STEM DUE TO CORROSION
W	SU2	021987*	071278	02	A200	T M	GA	I06		INSPECTION OF MOV5 AFTER MAINT/EXCESS LUB ON SEATS	VALVES HAD TO BE CLEANED/PROCEDURAL PROB
W	SU2	022240	080978		L200	N M	UU	B20		CIRC H2O OUTLET MOV-CW-200C FAILED TO CLOSE	KEY SLIPPED OUT OF MOTOR OPER DRIVE TRAIN
W	SU2	022543	092678		L200	N M	UU	B04		CIRC H2O OUTLET MOV-CW-200D FAILED TO CLOSE	DESIGN/TORQUE SW CAM WEDGED ON SCREW
W	SU2	022647	100778		R165	T M	UU	B20		MOV-SW-202B FAILED TO CLOSE GIVEN A TEST SIGNAL	MOTOR DAMAGED DUE TO FLOODED PIT
W	TR1	014504	022176		ZZZZ	N U	UU	G16		RHR VLV CLOSED WHEN IT WAS REQUIRED TO REMAIN OPEN	VCLT.FLUC.ON INSTRUMENT AC BUS
W	TR1	014570	022976		W185	N U	UU	B24		HYDRAULIC OPERATED FEED H2O VALVE FAILED TO CLOSE	COMMAND FAULT/AIR IN HYDRAULIC LINE
W	TR1	014568	032876		W185	N U	UU	B24		HYDRAULIC OPERATED FEED H2O VALVE FAILED TO CLOSE	COMMAND FAULT/OIL LEAKED INTO SOV
W	TR1	015172	042176		ZZZZ	R U	UU	T06		DISCOVERED THAT MANY VLVS WERE NOT TESTED AS REQ.	PROCEDURE INADEQUACY/REVISED PROCEDURES
W	TR1	015723	082676		I005	T U	UU	A20		CCW SYS MOV-3293 FAILED TO OPEN DURING TESTING	VALVE MOTOR OPERATOR COIL SHORTED OUT

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	P L A N T	CONT. NO.	EVENT DATE	C O N T R O L M O D E	K E Y	MFG.	A L U M I N I U M	D R A I N	V L V	F A I L C O D E	FAILURE MODE	FAILURE MECHANISM
W	TR1	016251	101676			W185	M	U	UU	B24	FEEDWATER BYPASS VALVE (MO-2973D) FAILED TO CLOSE	COMMAND FAULT/LOCAL CONTROL VLV FAILED
W	TR1	016250	102876			1005	N	U	UU	A16	RWST SUCTION VALVE (MO-112D) FAILED TO OPEN/DEMAND	BREAKER SUPPLYING POWER FAILED/COMMAND
W	TR1	016250A	102876			ZZZZ	N	U	UU	A23	RWST SUCTION VALVE(MO-112E)FAILED TO OPEN/DEMAND	TORQUE SW SET TOO LOW/VAL WOULDNT UNSEAT
W	TR1	016442	11.1.76			W185	N	U	UU	B24	FEEDWATER ISOLATION VLV (MO-29710) FAILED TO CLOSE	HYDRAULIC SELECTOR VALVE FAILED/RIVETT CO
W	TR1	016664*	120976	02		L200	T	U	UU	F20	CONTAINMENT VALVES (MO-5663/5671) FAILED TO OPERAT	FRICTION IN OPERATOR/INCREASED CLOSE TIME
W	TR1	018588	050277			L200	T	U	UU	F16	AIR COOLER BYPASS VALVE FAILED TO OPERATE/TESTING	COMMAND/PERSONNEL INCORRECTLY WIRED CIR
W	TR1	018587*	070677	05		C710	T	U	UU	A00	5 STEAM SAFETY VALVE FOUND TO OPERATE OUTSIDE SET-	-POINT/UNKNOWN (*SETPOINT DRIFT*)
W	TR1	018589	070677			W185	N	U	UU	B24	HYDRAULIC FEEDWATER VLV (MO-2971D) FAILED TO CLOSE	SOLENOID IMPROPERLY ASSEMBLED/MANUFACTUR
W	TR1	018992	082177			W185	N	U	UU	B24	HYDRAULIC FEEDWATER VLV (MO-2973B) FAILED TO CLOSE	SOLENOID VALVE BECAME WET/STEAM LEAK
W	TR1	019580	101677			ZZZZ	N	U	UU	V01	RHR DISCHARGE VLV (8728B) FOUND LOCKED CLOSED	PERSONNEL ERROR/IMPROPER VALVE LINEUP
W	TR1	020325	112777			F130	N	U	UU	F20	AUX FEED VLV (CV-3004B2) FAILED TO OPERATE	MOTOR OPER FAILED/WATER CAME THRU GASKET
W	TR1	020516	010478			C635	T	M	UU	A19	MOV-88807A FAILED TO OPEN DURING TESTING	VALVE STEM LACKED LUBRICATION
W	TR1	020554	012878			L200	N	M	UU	B16	CONTAINMENT ISOL MOV-5660 FAILED TO CLOSE	COMMAND/LOOSE ELECTRICAL CONNECTION
W	TR1	020901	022178			B130	T	U	UU	B24	MAIN STEAM ISOLATION VALVE CV-2216 FAILED TO CLOSE	ACTUATING SOLENOIDS RUSTED/COMMAND FAIL
W	TR1	020876	031578			B130	N	U	UU	B09	MS BYPASS VALVE CV-2279 FAILED TO CLOSE	RUST BUILDUP ON VALVE STEM/OUTSIDE VALVE
W	TR1	021068*	032078	02	V	W120	T	U	GA	G16	DEENERGIZING PROTECTION SYS CAUSED RHR VALVES TO--	--CLOSE//PRCCEDURAL DEFICIENCY
W	TR1	021419	042578			K085	N	U	GL	V01	DRAIN VALVE LEFT OPEN/LEAD TO LOSS OF FLOW	PERSONNEL ERROR
W	TR1	021624	051978			ZZZZ	T		PL	C13	LEAKAGE THRU PLUG VALVE EXCESSIVE DURING TESTING	LOWER SEAT GASKET MISSING
W	TR1	021624A	051978			ZZZZ	T	U	BU	C25	TWO BUTTERFLY VALVES LEAKED THRU EXCESSIVELY/TEST	RUBBER SEATS REQUIRED RETORQUING
W	TR1	022005A	070778			ZZZZ	U	U	UU	V01	IMPROPER VLV LINEUP ON CONDENSATE STORAGE TANK	PERSONNEL ERROR

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

EVENT	PLANT	COUNT NO.	EVENT DATE	CNTRM	KEY	MFG.	A C T I V I T Y	O P E R A T I O N T Y P E	V L V T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W TR1	022005B	070778				ZZZZ	U	U	CK	B00	CHECK VALVE ON CONDENSATE STORE TANK STUCK OPEN	NO CAUSE FOR FAILURE GIVEN
W TU3	015006	061176				D025	T	U	UU	C00	THRU LEAKAGE CAUSED DILUTION OF BORON INJECT TANK	UNKNOWN
W TU3	021916	070678				A499	M	A	UU	B24	MSIV-38 FAILED TO CLOSE / COMMAND FAULT	SOLENOID SUPPLYING AIR, FAILED TO OPERATE
W TU4	015009*	061276	02			D025	T	U	UU	C00	TWICE, TWO VALVES LEAKED THRU DILUTING BORON TANK	UNKNOWN/TWO VALVES 6-11-76/SAME TWO 6-12-76
W TU4	019421	091377				ZZZZ	T	U	UU	V01	TWO VALVES INADVERTANTLY OPENED/RWST LEVEL DECREASED	PERSONNEL ERROR/POSSIBLE PROCEDURE PROBLEM
W TU4	022585*	092078	03			A499	M	A	UU	F24	3 MSIVS HAD DEFECTIVE SOLENOID COILS/PREV MAINT.	COMMAND FAULT/SOLENOIDS CONTROL AIR
W YR1	017731	042577				G255	T	U	UU	C22	SYS VOL CALCULATIONS INDICATED VALVE LEAKING THRU	FAILED DIAPHRAGM IN 2 INCH GRINNEL VALVE
W YR1	018204	061177				F135	T	U	UU	B02	DRAIN VALVE (TV-209) FAILED TO CLOSE / TESTING	PERSONNEL MAINTENANCE/PACKING TOO TIGHT
W YR1	018267*	062077	03			P032	T	U	UU	C00	EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/VALVES REPAIRED
W YR1	018367*	062777	03			P032	T	U	UU	C00	EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/REPETITIVE EVENT/VALVES REPAIRED
W YR1	018419*	062777	02			D245	T	U	UU	A00	PRESSURIZER SAFETY VALVES (181/182) FAILED TO OPEN	UNKNOWN/SETPOINT DRIFTED HIGH/DRESSER INC
W YR1	018420*	070477	03			P032	T	U	UU	C00	EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/REPETITIVE/VALVES REPAIRED-AGAIN
W YR1	018484*	071177	03			P032	T	U	UU	C00	EXCESSIVE LEAKAGE THRU THREE PURIFICATION VALVES	UNKNOWN/REPETITIVE/POOR PAST REPAIRS
W YR1	018480*	071477	05			P032	M	U	UU	C00	DECIDED TO REPAIR THE 3 PUR VALVES/2 OTHERS ALSO	UNKNOWN PROBLEM/PAST REPAIRS INSUFFICIENT
W YR1	018872	081777				M120	T	U	UU	C25	EXCESSIVE LEAKAGE THRU (TV-211) CONTAINMENT VLV	WORN SEAT AND DISC
W YR1	018872A	081777				M120	T	U	UU	C22	EXCESSIVE LEAKAGE THRU (TV-408) CONTAINMENT VLV	DETERIORATED DIAPHRAGM
W YR1	019477	101977				W121	T	U	UU	B16	MOV FAILED TO CLOSE / COMMAND FAULT	AM OPEN OVERLOAD HEATER IN CONTACTOR
W YR1	019495	102477				G265	N	U	UU	F00	REGULATOR VALVE FAILED TO OPER. (CONTROL PRESSURE)	UNKNOWN / SETPOINT DRIFT / ADJUSTED VLV
W YR1	019641	110277				W120	T	U	UU	A00	MOV (PU-MOV-547) FAILED TO OPEN DURING TESTING	UNKNOWN/SUSPECT DAMAGED MOTOR CABLE
W YR1	020422	012678				C631	N	U	UU	C13	VALVE SI-TV-604 WAS FOUND TO BE LEAKING THRU	SEAL RING FAILED

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VE N	PL ANT	CONF. NO.	EVENT DATE	C N M U P M	KEY	MFG.	A C T I V I T Y	O P E R A T O R	V L V E T Y P E	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
W	YR1	020693	022178				ZZZZ	U	S	UU	T01	HYD.VENT SYS.SOL.VLVS HV-SOL-162 NOT TESTED ON TI-	-ME//PERSONNEL ERROR
W	YR1	021013	031478			A535	N	S	GL	R10		CONTAINMENT VALVE (HV-SOV-1) FAILED TO CLOSE	DIRT AND OIL BUILD-UP IN VALVE INTERNALS
W	YR1	022739*	102178	02		C710	T	U	RV	H00		TWO SG SAFETY VALVES LIFTED PREMATURELY	UNKNOWN/READJUSTED VALVES
W	YR1	023103	112778			ZZZZ	U	M	GA	C25		CS-MOV-540 LEAKING THRU	GATE WAS LAPPED AND RETURNED TO SERVICE
W	YR1	023104	113078			ZZZZ	T	U	UU	Y02		VALVE CLOSED WHEN REQ OPEN(TO ISOL ANOTHER VALVE--	--FOR CLEANING//PERSONNEL ERROR(MANAGEMENT)
W	YR1	023146	120578			M120	T	U	GL	C30		TRIP VALVE TV-207 (CONTAINMENT ISOLATION)LEAK THRU	SUSPECTED FOREIGN MATERIAL UNDER SEAT
W	Z11	013942	010776			C635	N	U	UU	B08		NITROGEN GILL VLV (1S18880) FAILED TO CLOSE	GALLED VALVE INTERNALS
W	Z11	014399	010876			ZZZZ	U	U	UU	H24		RELIEF VLV ON 1A S/G OPENED PREMATURELY	STM.PRESS.XMITTER,1PT-516 DRIFT TO MAX OP
W	Z11	014235	020376			G255	T	U	UU	C22		BORIC ACID VALVE (1VC8446A) FOUND LEAKING THRU	DIAPHRAGM FAILED DUE TO TIME/TEMPERATURE
W	Z11	014432	031276			G255	N	U	UU	C00		LEAKAGE THRU AD DIAPHRAGM VALVE	UNKNOWN
W	Z11	014920	051876			C635	N	U	UU	B08		NITROGEN FILL VALVE(1S18880) FAILED TO CLOSE	GALLED VALVE INTERNALS/PROCEDURES REVISED
W	Z11	015162*	062376	02	V	D020	N	U	UU	E00		LEAKAGE THRU CHECK VALVES/ACCUMULATOR OVERFILL	UNKNOWN/DARLING 10 INCH TYPE 10-C48Z
W	Z11	015842	081176			A610	T	U	UU	B24		VENT ISOLATION VALVE (1FCV-VN028) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/CONTROL AIR
W	Z11	015843	081176			A610	T	U	UU	B24		CONTAINMENT ADV (1FCV-W017A) FAILED TO CLOSE/TEST	COMMAND FAULT/SOV FAILED/CONTROL AIR
W	Z11	015844	081176			A610	T	U	UU	B24		CONTAINMENT ADV (1FCV-PR24A) FAILED TO CLOSE	COMMAND FAULT/SOV CONTROLLING AIR FAILD
W	Z11	016046	091476			D020	T	U	UU	A10		MOV-CS0005 FAILED TO OPEN DURING TESTING	BORIC ACID ON VALVE STEM
W	Z11	016047	091676			C635	N	U	UU	D13		NITROGEN FILL VALVE (1S188758) LEAKED EXTERNALLY	BODY TO BONNET LEAK OF AD PLUG VALVE
W	Z11	016047A	091676			C635	N	U	UU	C25		NITROGEN VALVE (1HCV-S1943) LEAKED THRU	LEAKING SEAT OF AD PLUG VALVE
W	Z11	016044	092176			P340	N	U	UU	C25		CONTAINMENT PURGE ADV-RV0002 LEAKED THRU	BULGE ON SEATING SURFACE OF BUTTERFLY VAL
W	Z11	016699*	092376	02		A340	T	U	UU	F12		TWO VENT FAN DAMPERS FAILED TO SHIFT TO ACCID MODE	STICKY ACTUATING SHAFT&COUNTERWT PROBLEM

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLAN T	CONT. NC.	EVENT DATE	CON MUM PH	KEY	MFG.	A CTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	Z11	016181	093076			A610	T U UU	F24			CONTAINMENT VALVE (1FCVIA018) FAILED TO OPERATE	OIL IN AIR SUPPLY GOT ON SOLENOID PLUNGER
W	Z11	016043	100476			ZZZZ	N U UU	V01			VALVE LINE-UP PROBLEM/BORON CONCENTRATION DILUTED	PERSONNEL ERROR
W	Z11	016307	100676			ZZZZ	N U UU	C00			RELIEF VALVE IN RHRS LEAKED THRU/GASEOUS RELEASE	UNKNOWN
W	Z11	019138*	102676	02	V	ZZZZ	T U UU	C00			LEAKING THRU A SERIES OF VALVES/RADIOACTIVE H2O	UNKNOWN
W	Z11	019138A	102076			ZZZZ	T U UU	E00			LEAKING THRU A CHECK VALVE/RAD H2O TO FIRE SUMP	UNKNOWN
W	Z11	016377*	110476	02		P340	N U UU	C25			VALVES 1A0VRV0002/1A0VRV0004 LEAKED THRU	SEATS SHRUNK AWAY FROM VALVE BODY/COLD
W	Z11	016649*	112276	02		P340	N U UU	C25			VALVES 2A0VR0002/2A0VR0004 LEAKED THRU	SEATS SHRUNK AWAY FROM VALVE BODY/COLD
W	Z11	016574*	112376	02	V	M120	N U UU	C00			CONTAINMENT ISOLATION SAMPLE VALVES LEAK THRU	UNKNOWN
W	Z11	017042*	011677	02		P340	N U UU	C25			VALVES 1A0VRV0002/1A0VRV0004 LEAKED THRU	SEATS SHRUNK AWAY FROM VALVE BODY/COLD
W	Z11	017154	012177			ZZZZ	T U UU	A19			CONTAINMENT SPRAY 1MOV-C50002 FAILED TO OPEN	STEM STICKING DUE TO LUBRICATION PROBLEM
W	Z11	017041	012377			A610	T U UU	B10			CONTAIN INST AIR SOV (1FCV-IA018) FAILED TO CLOSE	OIL IN AIR SUPPLY GOT ON SOLENOID PLUNGER
W	Z11	017040	012677			V080	T U UU	A16			VALVE 1MOV-S18808A FAILED TO OPEN	COMMAND/AUX CONTACTS IN CONTRL CKT STUCK
W	Z11	017038	012877			V035	T U UU	B19			CHARGING LINE VLV(1MOV-VC8106) VLV FAILED TO CLOSE	LACK OF STEM LUBRICATION CAUSED BINDING
W	Z11	017223	012877			V080	T U UU	A16			VALVE 1MOV-S18808B FAILED TO OPEN	COMMAND/AUX CONTACTS, CONTROL CKT, STUCK
W	Z11	017251	012877			V080	T U UU	A16			VALVE 1MOV-S18900C FAILED TO OPEN/COMMAND	AUX CONTACTS IN CONTROL CIRCUIT STUCK
W	Z11	017252	020377			M120	N U UU	F00			PERMEATION PRESSURIZATION VALVE FAILED TO OPERATE	FAILED BOOSTER RELAY IN VALVE CONTROLLER
W	Z11	017254*	021377	02		P340	N U UU	C10			VALVES 1A0V-RV0002/RV0004 LEAKED THRU	EXTRANEUS MATERIALS CAUGHT IN THEIR SEAT
W	Z11	017255	021877			ZZZZ	N U UU	V01			IMPROPER VALVE LINEUP/UNIT-1 VAL CLOSED INSTEAD-2	PERSONNEL ERROR/NEITHER VAL TAGGED FOR ID
W	Z11	018056	032277			H037	T U UU	D12			SENSING LINE VALVE (1VC8197) LEAKED EXTERNALLY	BROKEN PACKING GLAND STUD
W	Z11	017727	042577			A610	T U UU	B24			SAMPLE ISOLATION VLV (1FCV-PR24A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ACV

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

W E N	P L A N T	CONT. NL.	EVENT DATE	C O M M U N I C A T I O N	K E Y	MFG.	A C T I O N T Y P E	Q U A N T I T Y	V L V	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	Z11	018568	072377			A610	T U	UU	B24		BLOWDOWN SAMPLE VLV (1FCV-SS02) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ACV
W	Z11	018569	072377			A610	T U	UU	B24		S/G BLOWDOWN VLV (1FCV-BD17) FAILED TO CLOSE	COMMAND FAULT/SCV FAILED/NO AIR TO ACV
W	Z11	019175	072777			ZZZZ	N U	UU	V01		OPERATIONS TAGGED WRONG DAMPER OUT OF SERVICE	PERSONNEL ERROR
W	Z11	019165*	090177	02		P340	T U	UU	C25		VALVES 1RV0001/1RV0003 LEAKED THRU	SEATS WERE OUT OF ADJUSTMENT
W	Z11	019410	100777			C311	M U	UU	F24		WHILE RECHARGING HYDRAULICS/MSIV OPENED PARTIALLY	COMMAND FAULT/PRESSURE*COMMAND*IT OPN
W	Z11	019863	120377			T083	N U	UU	F27		MSIV 1B FAILED TO OPEN OR CLOSE IN REQUIRED TIME	3WAY SELECTOR(TELEDYNE)DC SOLENOID FAILED
W	Z11	020112*	120377	02	V	ZZZZ	T U	UU	F00		SERVICE WATER VALVES WERE INOPERABLE	UNKNOWN
W	Z11	020000	120877			P340	N U	UU	C25		VALVE 1ADV-RV0002 LEAKED THRU	SEAT CONTRACTION DUE TO LOW TEMPERATURE
W	Z11	020105*	120877	02	V	ZZZZ	T U	UU	F00		SERVICE WATER VALVES WERE INOPERABLE	UNKNOWN
W	Z11	020565	012378			A610	T A	UU	B24		CONTAINMENT VALVE (1FCV-VN02A) FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ACV
W	Z11	021110	040178			ZZZZ	M H	UU	F27		MSIV FAILED TO OPERATE IN REQUIRED TIME	REXRCTH 4WAY DIRECTIONAL CONTROL VAL FAIL
W	Z11	021107	040278			K085	M X	DZ	D00		TRANSMITTER ISOLATION VALVE HAD STEAM LEAK	UNKNOWN
W	Z11	021138	040878			A610	T S	UU	B24		S/G BLOWDOWN VALVE 1FCV-SS02 FAILED TO CLOSE	COMMAND FAULT/SOV FAILED/NO AIR TO ACV
W	Z11	021140	040878			A610	T S	UU	B24		CONTAINMENT VALVE (1FCV-VN02A) FAILED TO CLOSE	COMMAND FAULT/SCV FAILED/NO AIR TO ACV
W	Z11	021231	041478			M120	N A	UU	F12		PRESSURE CONTROL VALVE (PCV-PPC4) FAILED TO OPER.	VALVE WAS OUT OF ADJUSTMENT
W	Z11	021337	042178			L200	T M	UU	A00		RHR 1MOV-8700B FAILED TO OPEN DURING TESTING	UNKNOWN/SOMETHING CAUSED THERMALS TO OPEN
W	Z11	021397	050378			D020	T M	GA	A19		CONTAINMENT SPRAY VALVE 1MCV-CS0002 FAILED TO OPEN	LACK OF LUBRICATION
W	Z11	021446	050678			ZZZZ	M U	UU	B27		MSIV 1B FAILED TO CLOSE AFTER MAINT. ON VALVE	REXRCTH 4WAY DIRECTIONAL VALVE JAMMED
W	Z11	021552	051878			ZZZZ	T U	UU	B16		FEEDWATER ISOLATION VALVE FAILED TO CLOSE/TESTING	COMMAND/DIRTY CONTACTS ON CONTROL RELAY
W	Z11	021973	070778			A610	T S	UU	B24		CONTAINMENT VALVE (1FCV-PR24B) FAILED TO CLOSE	COMMAND/RECLRRING SOV FAIL/OIL IN AIR

ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

TIME	PLANT	CONT. NO.	EVENT DATE	CONTR. NO.	KEY	MFG.	A C Y	D R	V L V	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
M	Z11	021967	071778			ZZZZ	N	X	UU	014	ROOT VLV TO S/G 1D LVL.CHAM.537 LEAKING EXTERNALLY	PACKING LEAK ON ROOT VALVE
M	Z11	022514*	083078	03		A610	T	S	UU	824	VALVES 1FCV-WD17A/-PR20A/-PR24B FAILED TO CLOSE	COMMAND/RECURRING/CIL IN AIR FAILS SOV
M	Z11	022849	090478			H037	N	X	GL	D04	HANCOCK CD MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
M	Z11	022516	090878			H037	N	X	GL	D04	HANCOCK CD MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
M	Z11	022844	091478			H037	N	X	GL	D04	HANCOCK CD MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
M	Z11	022845	091478			A340	N	U	DM	F04	1B RCFC ACCIDENT INLET DAMPER FAILED TO SHIFT	DESIGN PROB/DIFF PRESS FLEXED&BOUND BLADE
M	Z11	022848*	091478	02		A610	N	S	UU	824	VALVES 1 FCV-PR24B/-WD17A FAILED TO CLOSE	COMMAND/RECURRING/CIL IN AIR FAILS SOV
M	Z11	022897	101878			M120	N	U	GA	V01	IMPROPER VALVE LINE-UP CAUSED TRIP OF BLOWER	PERSONNEL ERROR
M	Z11	022997	110678			ZZZZ	N	U	BA	V01	RAD MONITOR NOT VALVED IN WHEN REQUIRED	PERSONNEL ERROR
M	Z11	023125*	112078	02		A610	N	A	UU	824	VALVES 1FCV-PR24B&1FCV-WD17A FAILED TO CLOSE	ASCO SOV FAILED IN AIR SYS.;CIL IN SYS)
M	Z11	023355	121178			M322	T	H	UU	B10	DAMPER VALVE FAILED TO CLOSE DURING TESTING	FROZEN(DUE TO COLD TEMP) CYLINDER
M	Z12	014043	010576			M120	N	U	UU	B19	SAMPLE VALVE (2SS9355B) FAILED TO CLCSE	MECHANICALLY BOUND/NEEDED LUBRICATION
M	Z12	013943	010676			ZZZZ	N	U	UU	D00	S/G LEVEL INSTRUMENT ROOT VALVE LEAKING EXTERNALLY	UNKNOWN/BODY-BONNET LEAK
M	Z12	013951	010876			M120	T	U	UU	B14	SAMPLE ISOL ADV (2SS9356A) FAILED TO CLOSE	STEM BINDING ON PACKING/LOOSENEED PACKING
M	Z12	014215	012176			H015	T	U	UU	A24	MAIN STEAM RV(2 MOV-M30037) WOULD NOT OPERATE /AIR	COMMAND/RELAYS FAILED IN CONTROLLER AMP
M	Z12	014219	021376			L200	T	U	UU	B16	CHRG PUMP VALVE 2 MOV-VC8106 FAILED TO CLOSE/TEST	COMMAND/STUCK CONTACTS IN MCC BREAKER
M	Z12	014253	021376			ZZZZ	T	U	UU	A16	2B SI PMP.SUC.VLV 2MOV-SI89238 FAILED TO OPEN	DIRTY CONT-CN CKT.BRKR.TO MTR.OPERATOR
M	Z12	015163	031576			P340	N	U	UU	C25	CONTAINMENT PURGE ISOLATION ADV LEAKED THRU	VALVE SEAT INADEQUATELY TORQUED/42" BUTFLY
M	Z12	014523	041176			B290	N	U	UU	V01	PRESS REGULATOR VALVE SET FOR TOO HI PRESSURE	PERSONNEL ERROR
M	Z12	015192	060376			TC83	T	U	UU	B27	MSIV B FAILED TO CLOSE DURING TESTING	PILOT FAILURE(TELEDYNE)DC SOLENOID FAILED

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

PLANT	CONT. NO.	EVENT DATE	CONMUMPH	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W Z12	015191	061576			G255	N	U	UU	C22	BORIC ACID FILT BYPASS VLV (1VC046B) LEAKING THRU	FAILED DIAPHRAGM ON GRINNEL 2" MOD 2471
W Z12	016342	081476			G255	N	U	UU	C22	HOLDUP TANK VALVE DVC0264 LEAKING EXTERNALLY	DIAPHRAGM FOUND RUPTURED
W Z12	015841	082176			ZZZZ	N	U	UL	D00	PZR.LVL.CHAN.ZLT-461 UPPER ROOT VLV.LEAKING EXTERN	NO CAUSE FOR LEAKAGE GIVEN
W Z12	016535	112776			DC20	T	U	UU	B14	BIT OUTLET MOV (2MOV-SI88018 FAILED TO CLOSE/TEST	PACKING PROB/GLAND MISALIGN/LACK OF LUB.
W Z12	017037*	012877	02		ZZZZ	T	U	UU	F16	TWO AIR COND DV(DFCV-AV42A/B) FAILED TO OPERATE	COMMAND/STICKING RELAY
W Z12	017407	031077			ZZZZ	N	U	UU	V01	VLVS. 2IWO15460155 OPEN WHEN REQ. TO BE CLOSED	PERSONNEL ERROR
W Z12	017730*	033077	02	V	ZZZZ	T	U	UU	C04	INJECTION LINE VALVES LEAKING THRU DILUTING BCRON	DESIGN PROB/UNEQUAL PRESS ACROSS SEATS
W Z12	017729*	040177	02	V	ZZZZ	T	U	UU	L04	INJECTION LINE VALVES LEAKING THRU DILUTING BCRON	DESIGN PROB/UNEQUAL PRESS ACROSS SEATS
W Z12	017728	040577			P340	N	U	UU	C25	CONTAINMENT PURGE VALVE (2MOV-PV002) LEAKED THRU	SEATS CONTRACTED/LOW TEMP/42" BUTTERFLY
W Z12	017678	042877			ZZZZ	N	U	UU	F00	EXHAUST VALVE FAILED TO HOLD VACUUM	CAUSE NOT GIVEN
W Z12	017861	051977			L200	N	U	UU	A20	VALVE 2MOV-SI88000 FAILED TO CLOSE	LIMITORQUE MOTOR OPERATOR FAILURE
W Z12	017811	052077			L200	N	U	UU	B23	2MOV-VC8111 FAILED TO FULLY CLOSE	TORQUE SW SETTING OUT OF ADJUSTMENT
W Z12	017862	052577			A610	T	U	UU	B10	INST AIR ISOL VALVE (2FCV-IA018) FAILED TO CLOSE	SOV FAILED DUE TO IMPURITIES IN AIR SYS.
W Z12	018212	060477			0020	T	U	UU	A16	RHR VALVE(2MOV-RH8700B) FAILED TO OPEN DURING TEST	COMMAND/AUX CONTACTS STUCK IN MCC
W Z12	018259	061577			A610	T	U	UU	B10	INST AIR ISOL VLV (2FCV-IA018) FAILED TO CLOSE	SOV FAILED DUE TO IMPURITIES IN AIR SYS
W Z12	018264*	062677	02		M120	T	U	UU	B12	ISOLATION VALVES (2MOV-SS9354A/B) FAILED TO CLOSE	WEAK CLOSING SPRING/STEM MISALIGNMENT
W Z12	018352	062877			M120	N	U	UU	F12	LOW FLOW REG VLV (2PCV-NT03) FAILED TO OPERATE	BINDING BETWEEN PLUG AND SEAT
W Z12	018570	071677			E090	T	U	UU	C00	LEAKAGE THRU AT LEAST ONE VALVE DILUTING BCRON TK	UNKNOWN
W Z12	018571	071677			E090	T	U	UU	C00	LEAKAGE THRU AT LEAST ONE VALVE DILUTING BCRON TK	UNKNOWN
W Z12	018537*	072177	02		DC20	T	U	UU	C12	VALVES 2MOV-SI8801A/9 LEAKING THRU DILUTING BCRON	DARLING 4" GATE VALVES REQUIRED ADJUSTMNT

 ADDITIONAL INFORMATION AVAILABLE IN THE DATA FILE

VEN	PLANT	CONT. NO.	EVENT DATE	CN ML PM	KEY	MFG.	ACTIVITY	OPERATOR	VLV TYPE	FAIL CODE	FAILURE MODE	FAILURE MECHANISM
W	Z12	018720	081177			D020	T U	UU	C12		VALVE 2MOV-VC88018 LEAKING THRU DILUTING BORON CON	DARLING 4" GATE VALVE REQUIRED ADJUSTMENT
W	Z12	019499	081177			G255	T U	UU	A22		DIAPHRAGM GATE VALVE (2VC8465) FAILED TO OPEN	DIAPHRAGM FAILED(GRINNEL CORP)
W	Z12	019137	083177			ZZZ	N U	UU	V01		DRAIN VLV OPENED TO 2D ACCUM. INSTEAD OF 2C ACCUM.	PERSONNEL ERROR
W	Z12	019566*	101277	02		D020	T U	UU	C12		VALVES 2MOV-S18801A/B LEAKING THRU DILUTING BORON	DARLING 4" GATE VALVES REQUIRED ADJUSTMENT
W	Z12	020262	010978			P340	N A	BU	C25		CONTAINMENT VLV (2ADV-RV0002) LEAKING THRU	SEAT SEPARATED FROM VALVE DISC/LOW TEMP
W	Z12	020651	010978			ZZZ	N U	UU	F00		A GATE VALVE PROVIDING FOREBAY CIRC H2O STUCK	UNKNOWN
W	Z12	023161*	020578	02		T083	T H	UU	F27		TWO MSIVS FAILED TO OPERATE IN TIME REQUIRED	PILOT FAILURE/2 TELEDYNE DC SOLEN FAILED
W	Z12	020718	022478			C672	N U	GL	F12		CRANE MODEL 431 FLOW CONTROL VALVE FAILED TO OPER	VALVE NEEDED ADJUSTMENT
W	Z12	021451	050978			A610	T S	UU	B10		INST AIR ISOL VALVE 2FCV-1A01A FAILED TO CLOSE	OIL IN AIR SYS FAILED SOV/HEAT-VARNISH
W	Z12	021709*	060578	02		A610	T A	UU	F24		TWO AIR OPERATED CONTAINMENT VALVES FAILED TO OPER	COMMAND/OIL IN AIR SYS FAILED SOVS
W	Z12	021709A	060578			A610	T S	UU	F10		INST AIR ISOL VALVE 2FCV-1A01A FAILED TO OPERATE	OIL IN AIR SYS FAILED SOV/VARNISH BUILDUP
W	Z12	021928	070378			A610	T S	UU	B10		INST AIR ISOL VALVE 2FCV-1A01B FAILED TO CLOSE	OIL IN AIR SYS FAILED SOV/*RECURRING*
W	Z12	022518	090578			L200	T M	UU	F20		VALVE 2MOV-VC8105 FAILED TO OPERATE DURING TEST	JAMMED MOTOR OPERATOR/LIMITORQUE 5MB-00
W	Z12	022519	090678			L200	T M	UU	A0C		RWST OUTLET VALVE 2MOV-VC112E FAILED TO OPEN	UNKNOWN
W	Z12	022797	101578			T083	N H	UU	B27		MSIV 2D FAILED TO CLOSE / RECURRING EVENT	PROBLEMS WITH PILOT SOLENOID VALVES

APPENDIX I

VALVE REPORTS SHOWING NUMBER OF IMPROPER VALVE CONFIGURATION EVENTS

CODES USED IN LER ONE-LINE DESCRIPTIONS

FAILURE MODE
 CODE DESCRIPTION
 A - FAILED TO OPEN
 B - FAILED TO CLSSE
 C - INTERNAL LEAKAGE
 D - EXTERNAL LEAKAGE /RUPTURE
 E - REVERSE LEAKAGE (CHECK VALVES)
 F - FAILED TO OPERATE AS REQUIRED
 G - PLUGGED (FAILS TO REMAIN OPEN)
 H - PREMATURE OPEN (RELIEF VALVES)
 I - MAINTENANCE/REPLACEMENT
 J - TECHNICAL SPECIFICATION VIOLATION
 K - IMPROPER VALVE CONFIGURATION

COMPONENT

CODE DESCRIPTION
 MV - MOTOR OPERATED VALVE (ELEC.)
 AV - PNEUMATIC OPERATED VALVE
 SV - SOLENOID OPERATED VALVE
 HV - HYDRAULIC OPERATED VALVE
 RV - REMOTE OPERATED VALVE
 XV - MANUAL OPERATED VALVE
 CV - CHECK VALVE
 RL - RELIEF VALVE
 DV - DAMPER VALVE
 UV - OPERATOR TYPE OR FUNCTION NOT STATED

TYPE OF EVENT

CODE DESCRIPTION
 B - RECURRING COMMON CAUSE
 C - COMMON CAUSE
 R - RECURRING
 S - COMMAND FAULT
 Y - RECURRING COMMAND FAULT

FAILURE MECHANISM

CODE DESCRIPTION
 00 - UNKNOWN
 01 - PERSONNEL (OPERATION)
 02 - PERSONNEL (MAINTENANCE)
 03 - PERSONNEL (TESTING)
 04 - DESIGN ERROR
 05 - FABRICATION/CONSTRUCTION/QUALITY CONTROL
 06 - PROCEDURAL DISCREPANCY
 07 - NORMAL WEAR
 08 - EXCESSIVE WEAR
 09 - CORROSION
 10 - FOREIGN MATERIAL CONTAMINATION
 11 - EXCESSIVE VIBRATION
 12 - MECH. CONTROLS/PARTS; FAILED/CUT OF ADJUST.
 13 - SEAL/GASKET FAILURE/PROBLEM
 14 - PACKING FAILURE/PROBLEM
 15 - BELLOWS/BOOT FAILURE/PROBLEM
 16 - ELECTRICAL INPUT FAILURE/PROBLEM
 17 - BEARING/BUSHING FAILURE/PROBLEM
 18 - WELD FAILURE
 19 - LACK OF LUBRICATION
 20 - ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM
 21 - SOLENOID FAILURE/PROBLEM
 22 - LEAKING/RUPTURED DIAPHRAGM
 23 - TORQUE SWITCH FAILURE/PROBLEM
 24 - FAILURE OF COMPONENT SUPPLY SYSTEM
 25 - GEAR/DRIVE FAILURE/PROBLEM
 26 - LIMIT SWITCH FAILURE/PROBLEM
 27 - PILOT VALVE FAILURE/PROBLEM

EVENT CLASSIFICATION

CODE DESCRIPTION
 D - CHANGE OF STATE
 Y - AGE
 U - UNKNOWN

ACTIVITY RESULTING IN DISCOVERY

CODE DESCRIPTION
 D - DEMAND ON COMPONENT
 M - MAINTENANCE
 N - NORMAL OPERATION
 R - RECORDS REVIEW
 Y - TESTING
 U - UNKNOWN

NUMERICAL KEY WORDS

CODE DESCRIPTION
 V - VALVES
 A - SOME
 S - SEVERAL
 Z - OTHER

NSSS VENDOR

CODE DESCRIPTION
 B - BABCOCK & WILCOX
 C - COMBUSTION ENGINEERING
 G - GENERAL ELECTRIC
 W - WESTINGHOUSE

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

<u>CODE</u>	<u>PNR</u>	<u>CODE</u>	<u>ENR</u>
A	-	A	-
B	-	B	-
C	-	C	-
D	-	D	-
E	-	E	-
F	-	F	-
G	-	G	-
H	-	H	-
I	-	I	-
J	-	J	-
K	-	K	-
L	-	L	-
M	-	M	-
N	-	N	-
P	-	P	-
Q	-	Q	-
R	-	R	-
S	-	S	-
T	-	T	-
U	-	U	-
V	-	V	-
W	-	W	-
X	-	X	-
Y	-	Y	-
Z	-	Z	-

A -- AUXILIARY FEED
 B -- CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C -- ELECTRIC POWER
 D -- CONTAINMENT SPRAY INJECTION
 E -- CHEMICAL VOLUME CONTROL (MAKE-UP)
 F -- HIGH PRESSURE COOLANT INJECTION
 G -- COMPONENT COOLING WATER
 H -- REACTOR COOLANT
 I -- LOW PRESSURE COOLANT INJECTION (RHR)
 J -- REACTOR PROTECTION (CONTROL RODS)
 K -- NONSAFETY-RELATED
 L -- SYSTEM UNKNOWN/NOT APPLICABLE
 M -- CONTAINMENT FAN COOLING SYSTEM
 N -- SERVICE WATER
 P -- CONDENSATE AND FEED
 Q -- MAIN STEAM
 R -- REACTOR PROTECTION (PPS)
 S -- CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 T -- FAILED FUEL ELEMENT DETECTION

A -- AUTOMATIC DEPRESSURIZATION
 B -- CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C -- LOW PRESSURE CORE SPRAY
 D -- ELECTRIC POWER
 E -- CONTAINMENT SPRAY INJECTION
 F -- STANDBY LIQUID CONTROL (BLCRN)
 G -- HIGH PRESSURE COOLANT INJECTION
 H -- COMPONENT COOLING WATER
 I -- REACTOR COOLANT RECIRC
 J -- LOW PRESSURE COOLANT INJECTION (RHR)
 K -- CONTROL ROD DRIVE HYDRAULIC (SCRAM)
 L -- NONSAFETY-RELATED
 M -- SYSTEM UNKNOWN/NOT APPLICABLE
 N -- REACTOR CORE ISOLATION COOLING
 O -- SERVICE WATER
 P -- STANDBY GAS TREATMENT
 Q -- CONDENSATE AND FEED
 R -- MAIN STEAM
 S -- REACTOR PROTECTION (PPS)
 T -- CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 U -- FAILED FUEL ELEMENT DETECTION

LINE-LINES SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

LINE	EVENT DATE	CONTR. NO.	SYMBOL	FAIL CODE	EVENT DATE	SYMBOL	FAIL CODE	FAILURE MODE	FAILURE MECHANISM	
6	AF1 015C13	0412	G LV	V01	S	D	G2	L	INCORRECT VALVE LINE-UP/TANK OVERFLOWED	PERSONNEL ERROR
8	AF1 015207	0412	G XV	V06	S	D			VALVE SF-22 WAS NOT CLOSED(A SPILL RESULTED)	PROCEDURES WERE INADEQUATE
9	ARI 016501	02677	Y XV	V01	S	D	G2	L	INCORRECT SEQUENCE OF VALVE OPERATION/H2O IN FILTR	PERSONNEL ERROR
6	ARI 023181	112178	U UV	V01	S	D			CONDENSATE VLV-CS-38 OPEN WHEN REQUIRED TO BE SHUT	PERSONNEL ERROR
8	CR3 017176	026777	K RM	V06	S	D			PER-CYCLED 85V-36 ALLOWING MACH INTO THE RCS SYSTEM	PROCEDURAL INADEQUACY
8	CF3 017222	030777	F RM	V01	S	D	G2	L	88M LOOP OF HPI SYS. 150L-COOL-TC T.S. FOR MAINTENANCE	PERSONNEL ERROR
8	CF3 017658	042177	M RM	V01	S	D	G2	G2	SUCT VLVCS CAV-38646 FROM BORIC ACID STRG. TANK. SHUT T.S.VIC./PERSONNEL ERROR/IMP.VLV LINEUP	
8	CF3 017546	042477	R UV	V06	T	D			VLV-SAV-151 WAS IN SHUT POSITION-GIVING COUNT.TEMP.ALW	PROCEDURAL INADEQUACY
8	CK3 018043	061077	R UV	V06	T	D			VLV-SAV-151 WAS CLOSED WHEN REQUIRED TO BE OPEN	PROCEDURAL INADEQUACY
8	CR3 019866	112977	R UV	V06	T	D			SAV-151(INC-COOL-WTR-SUP.VLV)SHUT WHEN REQ.TO OPEN	PROCEDURAL INADEQUACY
8	CR3 020465	011178	X MV	V01	S	D			88KR.FOR HPI ISO.VLV MOV-25 OPEN/15G. CONT. TO T.S	PERSONNEL ERROR
8	CF3 020478	020178	C XV	V01	S	D			NITROGEN VLV MGV-81 WAS OPEN CONTRARY TO T.S.	PERSONNEL ERROR
8	CF3 023250	100178	Y UV	V06	S	D			VALVE MOV-475 WAS LEFT OPEN AFTER SYS MODIFICATION	PROCEDURAL DISCREPANCY(PERSONNEL)
8	CR3 023029A	106478	L XV	V03	S	D			ISCL VALVE TO FLOW CONTROLLER SHUT(SEE 023095)	PERSONNEL ERROR/VALVE REQUIRED TO BE OPEN
8	CK3 023237	103078	M RM	V01	S	D	G2	G2	CCMC.BORIC ACID TR.DISC.VLVCS.CAV38643 CLOSED;TS VI	PERSONNEL ERROR;IMPROPER VALVE LINEUP
8	DB1 019381	102077	B UV	V01	S	D	G2	G2	80TH AUX.FD.RMP.SUCTS.LINED UP TO GENERATOR STR.TK	PERSONNEL ERROR;IMPROPER COOL-WTR.LINEUP
8	DB1 019548	111777	B UV	V06	S	D	G2	G2	ALX.FD.WTR.VLVCS AF5998608 CLOSED;T.S.VIOLATION	PROCEDURAL DEFICIENCY;TEST PROCEDURE REVI
8	DB1 019539	121277	J UV	V01	S	D			SER.WTR.OUT.15C.VLV,COMP.COOL-WTR.LPI-2HTXCH.CLOSE	PERSONNEL ERROR;IMP.VLV LINEUP;T.S. VIOL.
8	DB1 019584	121677	B UV	V03	S	D	G5	G5	ALX.FD.WTR VLVCS AF5998608 SHUT;MS107A,AF38716728K.C	PERSONNEL ERROR;IMPROPER VLV LINEUP
8	DB1 020270	010578	K DV	V00	S	D	G2	G2	INLET BAL.DAMPERS TO EVS FANS 1-161-2 FOUND CLOSED	EXACT CAUSE UNKNOWN/PROBABLY PERSONNEL ER

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THE LINEUP. IF THE NUMBER OF VALVES WAS NOT REPORTED IN THE LINEUP, AN "X" WAS CODED FOLLOWING THE NUMBER TO INDICATE THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

ONE-LINERS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

LINE	EVENT DATE	CONT. NO.	S P	FAIL CODE	T Y A	FAILURE CODE	FAILURE MECHANISM
D 01	032278	H XV V03	S D			F1 POINT VENTIMP-72 NOT VENTED AS REQUIRED	PERSONNEL ERROR (REMOVED FROM TEST LIST)
F 01	042376	Y XV V02	S D			DISCHARGE VALVE OF DILUTION BLOWER MISTAKENLY SHUT	PERSONNEL ERROR (WRITE 1-2 INSTEAD OF 1-1)
D 02	043078	L UV V01	S D	02		VLVS 0411612 WERE NOT OPENED WHEN REQ. DURING S/D	PERSONNEL ERROR & PROCEDURE INADEQUACY
D 01	043276	S XV V01	S D			SERVICE WATER OUTLET VALVE NOT REOPENED	PERSONNEL ERROR AFTER FLOW BALANCE
F 01	062977	N UV V02	S D			WBTRAIN PENET. RM. VENT. SUCT. ISC. VLV. CLOSED WHEN R-	EQUIRED TO BE OPEN//PERSONNEL ERROR
D 02	070676	X XV V02	S D			HIGH PRESS TRANS ROOT VAL CLOSED ON STARTUP	MAINT. PERS. LEFT VAL WITH IMPROPER LINE UP
D 02	070676	C XV V01	S D	02		VALVES 21A-9C AND 91 NOT IN PROPER LINE UP	PERSONNEL ERROR
D 02	080976	L UV V01	S D	02		LCW PRESS INJECT TRAIN A NOT ISO PROPERLY	PERSONNEL FAIL TO FOLLOW T.S. REQUIREMENTS
D 02	080976	F XV V01	S D			ISC. VLV. TO CHAM. 3 RB PRESS. TRANS. SHUT BY MISTAKE	PERSONNEL ERROR
F 02	082878	N XV V06	S D			VLV 2LPSW-241 FOUND THROTTLED WHEN REQ. OPEN	DEFECTIVE PROCEDURES
D 02	082878	K XV V01	S D			RC LOOP A1 HPI STOP CHECK VALVE FOUND CLOSED	PERSONNEL ERROR (VALVE WAS REQUIRED OPEN
D 02	082878	N XV V06	S D			CRAM VALVE NOT IN PROPER LINEUP	ERROR IN PROCEDURES
F 02	082878	H CV V01	S D	02		IMP. LINEUP VALS 3FP-152 + 3HP-193 CLOSED 3-8. OPEN	PERSONNEL ERROR
D 02	082878	X XV V02	S D	02		IMPROPER VLV LINEUP TO CHAM. A NARROW RANGE PRESS. -	TRANSMITTER//PERSONNEL ERROR
D 02	082878	S UV V00	S D			LPSW PUMP SUCT VAL, CLSD DUR PUMP START UP	CAUSE UNKNOWN (PROBABLE PERSONNEL ERROR)
D 02	082878	S XV V01	S D			VALVE 3LPSW-78 CLOSED WHEN REQ. OPEN	PERSONNEL ERROR (VALVE OPENS COUNTERWISE)
D 02	082878	F MV V04	S D	02		VALVE LINE-UP INCORRECT//NEW VALVES WERE INSTALLED	WITH CFEN/CLOSE INDICATION ATYPICAL
D 02	082878	L UV V01	S D	02		INCOMPLETE VALVE LINEUP CAUSED SEVERE PZO HAMPER	PERSONNEL ERROR
D 02	082878	X XV V01	S D	02		FLW TRANSMITR INADVERTANTLY VALVED OUTTRX TRIP--	CNTS EFFECTED//PERSONNEL ERROR
D 02	082878	Y UV V06	S D	02		IMPROPER VLV. LINEUP TO RM-2A(COOL. LEAK DET. SYS.)	INADEQUATE PROCEDURES

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THE FAILURE. THE NUMBER OF VALVES WAS NOT REPORTED IN THE CASE OF AN "X" WHICH WAS CODED FOLLOWING THE NUMBER TO INDICATE THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

ONE-LINES SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

PLANT	UNIT	CONF. NO.	EVENT DATE	Y M D	C O S P	VALVE	FAIL CODE	EVENTS	FAILURE MODE	FAILURE MECHANISM			
P	T-1	014220	022176	6	0	UV	V06	5	0	C2	L	IMPROPER VLV LINEUP ON W/M MAKEUP AND PURIF. PUMP	PROCEDURE AND PERSONNEL ERROR
B	T11	016109	101276	N	0	UV	V01	5	0	02	L	INCORRECT VALVE LINEUP LEAD TO HI DISSOLVED SOLIDS	PERSONNEL ERROR/700PP DISCHARGED RIVER
C	CC1	014467	040576	N	0	UV	V01	5	0	02	L	012 S.G BLOWDOWN ORO BYPASS 1-80-121 PSII-INCORR.	T.S.VIO./PERSONNEL ERROR(SHUT WRONG VLV)
C	CC1	017925	051976	N	0	UV	V00	5	0	02	L	08RIC ACID STOR-TK-011 DRAIN,BELCH MINIMUM LEVEL	CAUSE NOT DETERMINED/PROB. PERSON. ERROR
C	CC1	016408	110476	S	0	UV	V01	5	0	02	L	DIESEL SERVICE WTR-SYS.LINED UP IMPROPERLY	PERSONNEL ERROR/OPERATED WRONG VALVES
C	CC1	017476	031377	L	0	UV	V06	5	0	02	L	ISC.VLV ADD.TO AUX SPRAYLN DUR.PRIOP OUT.LEFT SHUT	VLV-NOT INCLUDED IN VLV LINEUP/PROCD.-ERR
C	CC1	018487	071377	E	0	UV	V01	5	0	02	L	15G.VLV TO PRESS.SWITCHS.FOR #110SL-SHUT/T.S.VIO.	PERSONNEL ERROR/IMPORPER VLV LINEUP
C	CC1	021536	042576	N	0	RM	V06	5	0	02	L	04 HALCN SUBSYSTEM INADVERTENTLY DISCHARGED	INADEQUATE PROCD. RESULTED IN IMP.VLV.LL
C	CC1	023662	121678	N	0	UV	V01	5	0	02	L	IMPROPER VLV. LINEUP ON MAKE-UP WATER DEMINERALIZ.	PERSONNEL ERROR
C	CC2	022519	111578	N	0	UV	V01	5	0	02	L	RMT LOCAL SAMPLE VLV-OPEN WHEN REQ. TO BE SHUT	PERSONNEL ERROR
C	FC1	014569	050676	N	0	LV	V01	5	0	02	L	VALVE HCV-2508 WAS CLOSED,SHOULD BE OPEN	IMPROPER VALVE LINEUP / PERSONNEL ERROR
C	FC1	023171	122078	M	0	UV	V06	5	0	02	L	TMC PRESS OP RELIEF VALVES OPENED WHEN REQ CLOSED	TECH PULLED FUSES,DEFECTIVE PROCEDURES
C	M12	016321	121976	G	0	RM	V01	5	0	02	L	VLV 2-CH-514 WAS NOT RECLOSED FOLLOW. AN STAS ACTU	PERSONNEL ERROR(VALVE NOT CLOSE PROP-TIM)
L	M12	017837	051577	E	0	UV	V01	5	0	02	L	BLTH D/G FUEL SUP.VLV5 SHUT WHEN REQUIRED TO BE O-	-PEN//PERSONNEL ERROR
C	M12	021332	041478	M	0	UV	V01	5	0	02	L	PRI MAKEUP VAL IN PART.OPEN POSIT,SHOULD BE CLOSED	PERSONNEL ERROR
C	M12	022134	072578	C	0	RM	V06	5	0	02	L	CONTMNT PURGE VALVES OPERATED IN IMPROPER MODE	INADAGLATE CNTMNT PLRGE PROCEDURES
C	M12	015731	091676	C	0	UV	V02	5	0	02	L	INCORRECT VLV LINEUP CNTMNT ISO SYSTEM PV-15	PERSONNEL ERROR/FAILED TO CLOSE
C	M12	019261	102077	L	0	UV	V01	5	0	02	L	APPACPER VALVE LINEUP LPSI PLUMPS	PERSONNEL ERROR
C	M12	022598	050778	G	0	UV	V01	5	0	02	L	VLV-LINEUP ERROR ALLOWED RCS WTR.AT 1250 PPM BORO-	-M TO DISCH-BACK TO RWST//PERSONNEL ERROR
C	PA1	016527	040876	Y	0	LV	V01	5	0	02	L	DRAIN LINEUP PERFORMED ON WRONG WST.GAS DECAY TK.	PERSONNEL ERROR

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THE LINE. IF THE NUMBER OF VALVES WAS NOT REPORTED IN THE LINE, AN "L" WAS USED FOLLOWING THE NUMBER TO INDICATE THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

---CME-LINERS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT---

LINE NO.	EVENT NAME	SY	SM	FAIL CODE	TYPE	FAILURE MODE	FAILURE MECHANISM
C PA1 021222	142178 C XV V01 S U	CNTNMT SERV AIR VAL OPENED IN VIOL OF T.S.				PERSONNEL ERROR	
C PA1 022229	010778 N UV V01 S D 02	INCORRECT HANDJACK OPER FOR CV-0437A/CV-0437B				PERSONNEL ERROR	
C PA1 022228	012878 C RM V02 S D 03	CNTNMT PURGE E ISO. VALVES OPEN IN VIOL. OF T.S.				IMPROPER TAGOUT OF VALVES/PERSONNEL ERROR	
C PA1 023021	111878 Y XV V01 S D	VCT SITEGLASS DRAIN VALVE OPEN WHEN REG CLOSED				PERSONNEL ERROR	
L SL1 015504	070576 M UV V01 S D 02 L	IMPROPER VLV-LINEUP TO RMT (TANK OVERFLOWED)				PERSONNEL ERROR	
C SL1 022008	110178 L LV V02 S D 02 L	ISGL VALVES INADVERT OPENED BETN SPRAYSHUTDOWN --				--COOLING SYSTEMS//PERSONNEL ERROR	
G BF1 016053	092314 C XV V02 S D	VALVE FOUND CLOSED TO PRESSURE SWITCH				PERSONNEL ERROR	
G BF2 015192	061976 M XV V02 S D 02	VALVES 2-85-612 AND 2-85-615 FOUND IN CLOSED POST				PERSONNEL ERROR	
G BF2 016199	160776 F XV V03 S D	EQUALIZER VALVE ON FLOW INSTRUMENT FOUND OPEN				PERSONNEL ERROR	
G BP1 019042	111077 C XV V01 S D	IMPROPER VLV LINEUP1ST.SLP.LN.CD.DR.POT.ISC.CLOSE.				PERSONNEL ERROR	
G BA1 020519	040178 M UV V01 S D 02 L	INCORRECT VALVE LINEUP CAUSED RESIN DRAINAGE				PERSONNEL ERROR	
G BA2 014128	011976 M UV V01 S D	OFF GAS RADIAT.MON-SAMP.VLV WAS FOUND SHUT/T.S. VIOL.				PERSONNEL ERROR	
C PA2 014111A	020276 M UV V01 S D	2-CAC-V50 WAS OPENED WITH A LCC EXISTING/T.S. VIOL.				PERSONNEL ERROR	
C BA2 014047	020576 L XV V03 S D	PRESS SW FOUND ISOLATED AFTER TESTING				PERSONNEL ERROR	
G BA2 014050	020676 Q MV V02 S D	VALVE E11-F004B FOUND LINED UP CLOSED/REG OPEN				PERSONNEL ERROR IN VALVE LINEUP	
G BA2 014033	021176 N XV V02 S D	INLET VALVE TO CONT RADIATION MONITOR FOUND CLOSED				PERSONNEL ERROR AFTER FILTER CHANGE	
G BR2 015416	070376 C MV V01 S D	MHR VLV 2-E11-F003A SHUT WHILE MTR REMOV.1GLY. LCC				PERSONNEL ERROR/VALV COULDN'T BE UP. REPORT	
G BR2 015427	071176 K UV V02 S D 02	BCRNET VENT VLS 2-B32-F04686F047B INADVY.LEFT OPEN				PERSONNEL ERROR/VALV CLCSE.AFTER MAINTENAN	
G BR2 016200	110276 C CV V01 S D	RCIC TURB-EXH-STEP-CHK E91-F001 CLOSED WHEN REG-DPM				PERSONNEL ERROR/VALV NOT OPEN.AFTER TEST	
G BR2 018176	040977 M XV V01 S D	DRAIN VALVE LEFT OPEN (RX WATER CLEANUP)				PERSONNEL ERROR(ROOT CAUSE)	

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE RECORDED LINED UP IMPROPERLY IN THE LINEUP. IF THE NUMBER OF VALVES WAS NOT REPORTED IN THE LINEUP, AN "X" HAS BEEN PLACED FOLLOWING THE NUMBER TO INDICATE THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

ONE-LINERS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

Y	N	CCNT.NO.	EVENT DATE	SO	CM	VAL	FAIL	MODE	MECHANISM	
				S	P	P	P			
				S	P	P	P			
G	BR2	G20572	02778	C	RM	V01	S	U	RA,INSTA.PENET.VLV CAC-PV-3439 FOUND CLOSED/TS VIG PERSONNEL ERROR/MLV SHUT BY MISTAKE	
G	CC1	G14358	02776	Y	OV	V01	S	O2	L INCORRECT VALVE LINEUP ON RX BLOC VENT DAMPER PERSONNEL ERROR	
G	CC1	G16004	041076	L	XV	V01	S	D	EQUALIZING VALVE CN DP PRESS INDICATING SW OPEN PERSONNEL ERROR	
G	CC1	G16387	110176	N	UV	V01	T	D	FLUSHING VALVE OF RADWASTE MONITOR LEFT OPEN PERSONNEL ERROR	
G	CC1	G16733	111676	K	XV	V03	S	O2	L ISOLATION VALVES TO PRESS. SWITCH LEFT CLOSED PERSONNEL ERROR AFTER SURVEILLANCE	
G	CC1	G19119	0F1677	X	XV	V03	T	D	VALVE TO LEVEL SWITCH LEFT CLOSED AFTER TEST PERSONNEL ERROR	
G	CC1	G2066A	020778	H	XV	V03	T	D	ISOLATION VALVE TO DPIS-76 FOUND CLOSED(SEE020800) PERSONNEL ERROR	
G	CC1	G23378	121278	N	UV	V01	S	D	FLUSH.VLV.OF THE RADWASTE EFF.MONIT.IMDV.LEFT UP-- -EN//PERSONNEL ERROR	
G	DA1	G14733	052876	C	RM	V01	S	O2	L RPCI AND RCI INJECTION VALVES LINE UP WRONG PERSONNEL ERROR,LCM-LOW LEVEL RESET WRONG	
G	DA1	G15750	082776	N	XV	V06	S	D	RUCT VALVE TO LOW PRESS SW PS-1017 IN CLOSED POSIT VALVE NOT ON PRESTARTUP CHECKLIST	
G	DA1	G18281	02777	L	XV	V01	S	O2	L MANUAL FEEDH2O BLOCK VALVES NOT OPERATED PROPERLY PERSONNEL ERROR,SCRAP DUE TO CCLO H2C	
G	DA1	G20347	011178	X	XV	V03	S	O2	ISC VLVS FOR PS4312C & PS4315C IN CLOSED POSITION ERROR OF PERSONNEL PERFORM. TESTING	
G	DA1	G20674	030178	N	UV	V01	S	D	COOLING TOWER BLOWDOWN DISCHARGE VALVE CLOSED WITH --OIL APPROVAL//PERSONNEL ERROR	
G	DR2	G14623	010276	X	XV	V01	S	D	RACK 1SD VAL FOR PRESS SW263-518 IMPROPER LINEUP PERSONNEL ERROR	
G	DR2	G14689	051976	G	UV	V06	J	D	O2	L INCORRECT VLV L/U:88LC SYSTEM-BORON TANK DISCREPENCY IN PROCEEDURES
G	DR2	G14748	052676	N	UV	V02	S	D	SAMPLE VALVE ON SUCTION SIDE OF PUMP IN CLOSED POS PERSONNEL ERROR FAILURE TO OPEN VALVE	
G	DR2	G16171	100376	Y	UV	V01	S	O2	L STACK GAS SAMPLE PUMP LOW FLOW/IMP. VLV LINE UP PERSONNEL ERROR	
G	DR2	G23325	100376	Y	XV	V01	S	O2	L STACK GAS PUMP FLOW LOW/VALVE LINEUP WRONG PERSONNEL ERROR	
G	DR2	G20176	010578	G	UV	V01	S	D	SUCTION VALVE 2-1101-4 CLOSED CONTRARY TO T-5. OPERATING PERSONNEL ERROR	
G	DR2	G21158	042078	L	XV	V01	S	O2	L VALVES ONA LPCI & CORE SPRAY IMPROPER LINEUP OPERATING PERSONNEL ERROR	

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THE EVENT. IF THE NUMBER OF VALVES WAS NOT REPORTED IN THE LEFT COLUMN, THIS CODE FOLLOWING THE NUMBER INDICATES THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

ONE-LINESS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

EVENT NO	DATE	TIME	DESCRIPTION	FAILURE CODE	FAILURE MECHANISM
G 002	022590	092678	N XV V02 S 0	VALVE TO ISOLATE FLOW SWITCH FOUND VALVED OUT	PERSONNEL ERROR
G 002	022777	101278	N XV V03 S 0	DIFF PRESS SW ISOLATION VALVE FOUND VALVED OUT	PERSONNEL ERROR
G 003	019987	121677	Q XV V01 T 0	PRESS SWITCH FOUND VALVED OUT	PERSONNEL ERROR
G 003	022772	101278	N XV V03 S 0	DIFF PRESS SW FOUND VALVED OUT	PERSONNEL ERROR
G 001	014140	010976	S RM V04 S 0 02	TWO SERVICE WATER VALVES ISOLATED WHEN REQ OPEN	FROZEN FLOW SWITCHES(HEAT TAPE NEEDED)
G 001	014780	030476	N XV V03 S 0 02	L MN STEAM INST FLOW RACK NOT VALVED IN AFTER TEST	PERSONNEL ERROR
G 001	014790	051076	N XV V02 T 0	DISCHARGE VALVE DEMIN H2C TO RIVER LEFT OPEN	PERSONNEL ERROR
G 001	014798	052476	N XV V01 T 0	DEMIN DRAIN VALVE LEFT OPEN(WATER DUMPED TO RIVER)	PERSONNEL ERROR
G 001	017056	011777	I XV V03 S 0	PRESS SW FOUND VALVED OUT WHEN REQUIRED OPEN	PERSONNEL ERROR
G 001	020029	062577	N RM V03 S 0	OPERATION OF CONT.VAL CAUSED VIOL OF CONTMNT INTEG TEST CONNECTION PLUG REMOV. FROM VLV/TEST	PERSONNEL ERROR
G 001	020151	120877	E XV V01 S 0 02	L IMPROPER LINEUP,FUEL OIL TRANS PUMPS DISCH VALVES	PERSONNEL ERROR
G 001	020687	022678	N XV V02 S 0 02	ISOL VALS TO SWITCHES-C11-N013EEF IN CLOSED POSITION	PERSONNEL ERROR,UNCLEAR PROCEEDURES
G 001	021003	040678	K XV V01 S 0	DRAIN VALVE LEFT OPEN,FOUND ON LLRT	PERSONNEL ERROR
G 001	022733	052878	N XV V03 S 0 02	VALVES ON D/P CELL WERE VALVED IN WRONG	PERSONNEL ERROR(UNLINED D/P CELL)
G 002	022211	081078	C RM V05 S 0	VAC RELIEF VALVE F31C FOUND OPEN WHEN REQ CLOSED	PERSONNEL ERROR(INVERTED SIGNAL)
G 001	015065	062576	Y SV V01 S 0 02	SCV-135A AND B FOUND CLOSED WHEN REQUIRED OPEN	PERSONNEL ERROR(PANEL MARKED POORLY)
G 001	015272	073076	Y XV V06 S 0	OFF-GAS SAMPLE VALVE FOUND CLOSED,REQUIRED OPEN	PROCEDURAL ERROR
G 001	017659	022477	H UV V03 S 0 02	L VALVES ON HPCI ROUTE FROM COND TN TO TCRUS L/L IMP OPERATOR ERROR/ TESTING PERSONNEL	PERSONNEL ERROR
G 001	019768	113077	N UV V02 S 0	VALVE ON MAIN STM COLLECT SYST INADVERTENTLY OPEN	MAINTENANCE PERSONNEL ERROR
G 001	017273	032177	N UV V01 S 0	AIR EJECT,SAMP-SYS-SUP,VLV SHUT WHEN REQ. OPEN	PERSONNEL ERROR

** - THE COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY. THE NUMBER OF VALVES WHICH WERE NOT REPORTED IN THE COLUMN WAS CLOSER TO THE NUMBER OF VALVES WHICH THIS NUMBER WAS OBTAINED SUBJECTIVELY.

ONE-LINERS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

NEW	P L A N T	L C M T. N O.	E V E N T D A T E	S Y S	C O M P	F A I L C O D E	T Y P E	C L A S S (**)	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
G	MC1	018242	062777	Y	UV	V06	S	D	VAL ON AIR EJECT MONIT SYST POSITIONED IMPROPER	VAL WAS IMPROPERLY TAGGED
G	MC1	022609	100178	C	UV	V01	S	D 02	2 VLVS NOT CLOSED WHEN REQUIRED TO BE	PERSONNEL ERROR
G	NP1	019404	102677	M	UV	V01	S	D	CHG.WTR.VLV TO SCRAM ACCUMULATOR IN IMPROPER LINE-	-UP//PERSONNEL ERROR
G	NP1	020764	030778	E	CV	V01	S	D	FOCT VALVE OPENED AT IMPROPER TIME	PERSONNEL ERROR
G	PB2	015711	091376	N	UV	V01	S	D 02 L	IMPROPER VAL LINEUP TO SETTLING BASIN	PERSONNEL ERROR
G	PB2	020610	021678	C	XV	V01	S	D	INLET VLV FOR THE MANOMETER WAS OPEN INSTEAD OF CL	PERSONNEL ERROR/FAILED TO FOLLOW PROCDUR
G	PB2	020667	022378	N	XV	V01	S	D	DISCHG VLV ON DYESEL F.G.PMP LEFT OPEN VICE SHLT	PERSONNEL ERROR
G	PB3	018160	061677	C	RM	V06	S	D 02	BOTH RCIC ISO. VLS. FOUND CLOSED WHEN REQUIRE OPEN	DEFECTIVE TEST PROCEDURE
G	PB3	019491	092577	M	UV	V01	S	D 02 L	CHARGING WATER VLVS. TO SCRAM SYS.IN IMPROPER LIN-	-EUP//PERSONNEL ERROR
G	PB3	020845	031078	T	UV	V02	S	D	RECOMBINER-COMP INLET-SUMP DRAIN VLV IMPROPER L/U	MAINTENANCE PERSONNEL ERROR
G	PB3	021657	060778	X	XV	V03	S	D	SHUT-OFF VALVE ON PS-10-1000 CLOSED,VICL OF T.S.	VALVE CLOSED DURING INST TEST,NOT REOPEN
G	PB3	021746	062678	X	XV	V03	T	D	SHUTOFF VAL ON PRESS SW PS-3-5-120 CLOSED,T.S.VICL	TEST PERS CLOSED VLV DUR TEST,NOT REOPEN
G	F11	018497	080277	N	UV	V01	S	D	VALVE IN TRUCK LOCK, OPENED IN VIOLATION OF T.S.	OPERATIONS PERSONNEL ERROR
G	F11	019668	120277	F	RM	V06	S	D	STANDBY LIQUID CONTROL VALVE 1101-23 CLSD T.S.VIOL	INADEQUATE PROCEDURES COVERING VALVE POS
G	P11	024500	102878	N	UV	V01	S	D	BLOCK VALVE TO FCV-118 SHUT WHEN REQUIRED TO BE D-	-PEN//PERSONNEL ERROR
G	QC1	017357	011977	N	AV	V01	S	D 02 L	VALVE LINE-UP INCORRECT/RADWASTE DISCHARGE	PERSONNEL ERROR
G	QC2	018575	071977	L	UV	V01	S	D	VALVE FOUND CLOSED BETWEEN A & B LOOP/LOSS OF LPC1	PERSONNEL ERROR/INADVERTANT CLOSURE
G	QC2	019450	092977	C	XV	V01	S	D	STOP VALVE TO TURLS LEVEL TRANSMITTER FOUND CLOSED	PERSONNEL ERROR
G	QC2	021561	052178	E	RM	V01	S	D	2A CORE SPRAY SUC.VLV. MD 2-1402-3A CLOSED WHEN R-	-ECLREQ TO BE OPEN//PERSONNEL ERROR
G	VY1	014739	071276	F	UV	V01	S	D 02 L	IMPROPER VLV.LINEUP ON HPCI GLANC SEAL CONDENSER	PERSONNEL ERROR

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THE LER. IF THE NUMBER OF VALVES WAS NOT REPORTED IN THE LER, AN "LM" WAS CODED FOLLOWING THE NUMBER TO INDICATE THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

CONTAINERS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

EVENT NUMBER	CONTAINER	EVENT DATE	SYM	SP	SO	FAIL CODE	PS	ES	FAILURE MODE	FAILURE MECHANISM
PR1	021704	062278	E	XV	V01	S	0		ROOT VALVE ON D/G DIESEL OIL TANK LEVEL INST CLOSE PERSONNEL/ LOCKWIRE OPEN FROM NOW ON	
PR2	014463	033176	S	XV	V01	S	0		MANUAL VALVE SECURED WHICH VIOLATED LCCP AVAILABLE PERSONNEL ERROR/TECH SPECS INCONSISTENT	
PR2	017689	051977	B	XV	V06	S	0		PUPP INLET VALVE FOUND NEARLY SHUT/AUX FEED INLET POSITION REQUIREMENT WILL GO ON CHECKLIST	
PT1	019498	103177	S	UV	V01	S	0	02	L VALVE LINE-UP NOT PROPERLY MADE/RADWASTE CLMP MADE PERSONNEL/OPERATOR FABLED TO CLOSE VALVE	
PT1	021627	061478	Y	UV	V01	S	0	02	L IMPROPER VALVE LINE-UP DISCOVERED/POSS MAD RELEASE PERSONNEL ERROR	
PT2	018572	072877	F	MV	V04	S	0		MOV FOUND IN INTERMEDIATE POSITION/SINCE PREV TEST PERSONNEL FAILED TO ASSURE FULLY OPEN	
PT2	010446	101777	X	XV	V01	S	0		ISOLATION VALVE FOR PRESS TRANSMITTER FOUND SHUT PERSONNEL/ALSC NOT ON ANY CHECK-LIST	
PT2	023123	120978	X	XV	V02	S	0	02	L LCCP A YARP DETECTOR MANIFOLD VALVED OUT PERSONNEL ERROR/CORR OUT SAFETY CHANNELS	
RG1	021334	041978	G	UV	V01	S	0		OPERATOR OPENED WRONG VALVE/DECREASE BORON CONCENT PERSONNEL ERROR/PROCEDURE CHANGED	
RC2	016536	012577	G	UV	V02	S	0	02	L IMPROPER VLV LINEUP (BORIC ACID STORAGE TANK) PERSONNEL ERROR	
RD2	022627	042277	M	UV	V01	S	0		COMPRESSED AIR ISO VAL CLOSED/S.B.OPEN PERSONNEL ERROR	
RU2	023052	110978	N	XV	V06	S	0		AIR SUPPLY VALVE FOUND OPEN WHEN REQUIRED SHUT DEFICIENT OPERATING PROCEDURE	
SA1	017158	021177	W	AV	V02	S	0		012 SV6 MSIV WAS CLOSED WHEN IT WAS REQUIRED TO R--EMAIN OPEN//PERSONNEL ERROR(MAINTENANCE)	
SA1	019666	102777	L	UV	V01	S	0	02	L IMPROPER VLV LINEUP ON COMP.COCL.WTR.TC RHR PUMP PERSONNEL ERROR	
SC1	023175	120578	N	UV	V01	S	0		RECIRC VALVE ON HYDRAZINE PUPP LEFT OPEN INALERT PERSONNEL ERROR	
SU1	022954	111778	N	XV	V02	S	0	03	3 VALVES CLOSED WHEN REC OPEN/CLOSED TO STOP LEAK--RAD MONITORING LCST//PERSONNEL ERROR	
SU1	023136	112978	G	XV	V01	S	0		VALVE MISALIGNMENT ON BORIC ACID TRANSFER PERSONNEL ERROR	
SL2	015962	082076	H	UV	V01	S	0		CUTSIDE ISOLATION VALVE FOUND OPEN/NORMALLY CLOSED PERSONNEL/FAILED TO FOLLOW ADMIN CONTROLS	
SU2	019478A	101177	S	XV	V01	S	0	02	TWC DRAIN VALVES LEFT OPEN AT END OF MAINTENANCE PERSONNEL ERROR/CAUSED FLOODED PIT ABOVE	
TI1	01958C	101677	L	XV	V01	S	0		RHR DISCHARGE VLV (07288) FOUND LOCKED CLOSED PERSONNEL ERROR/IMPROPER VALVE LINEUP	

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THE EVENT. IF THE NUMBER OF VALVES WAS NOT REPORTED IN THE COLUMN "N" WAS CODED FOLLOWING THE NUMBER TO INDICATE THAT THIS NUMBER WAS OBTAINED SUBJECTIVELY.

ONE-LINERS SHOWING NUMBER OF VALVES LINED UP IMPROPERLY IN EACH IMPROPER VALVE CONFIGURATION EVENT

LINE NO.	CONT. NO.	EVENT DATE	YR S P	VALV	FAIL CODE	TIME	FAILURE MODE	FAILURE MECHANISM
M	TR1 021419	042578	L UV V01 S D				DRAIN VALVE LEFT OPEN/LEAD TO LOSS OF FLOW	PERSONNEL ERROR
M	TH1 022002A	070778	U UV V01 S D G2 L				IMPROPER VLV LIMEUP ON CONDENSATE STORAGE TANK	PERSONNEL ERROR
M	TU4 019421	091377	L RM V01 S D G2				TWO VALVES INADVERTANTLY OPENED/MUST LEVEL DECREASES	PERSONNEL ERROR/POSSIBLE PROCEDURE PROBLEM
M	TR1 023104	113078	M UV V02 S U				VALVE CLOSED WHEN REQ OPEN(TC ISCL ANOTHER VALVE---	--FOR CLEANING//PERSONNEL ERROR(MANAGEMENT)
M	Z11 016043	100476	G UV V01 S D G2 L				VALVE LINE-UP PROBLEM/BURON CONCENTRATION DILUTED	PERSONNEL ERROR
M	Z11 017255	021877	L UV V01 S D				IMPROPER VALVE LINEUP/UNIT-1 VAL CLOSED INSTEAD-2	PERSONNEL ERROR/NEITHER VAL TAGGED FOR ID
M	Z11 019175	072777	Y UV V01 S D				OPERATIONS TAGGED WRONG DAMPER CUT OF SERVICE	PERSONNEL ERROR
M	Z11 022897	101878	Y XV V01 S D G2 L				IMPROPER VALVE LINE-UP CAUSED TRIP OF BLOWER	PERSONNEL ERROR
M	Z11 022957	110678	M XV V01 S D G2 L				RAD MONITOR NOT VALVED IN WHEN REQUIRED	PERSONNEL ERROR
M	Z12 014523	041176	C XV V01 T D				PRESS REGULATOR VALVE SET FOR TOL HI PRESSURE	PERSONNEL ERROR
M	Z12 017407	031077	C UV V01 S D G2				VLVS. 21401540155 OPEN WHEN REQ. TC BE CLOSED	PERSONNEL ERROR
M	Z12 019137	083177	F UV V01 S D				DRAIN VLV OPENED TO 20 ACCUM. INSTEAD OF 2C ACCUM.	PERSONNEL ERROR

** - THIS COLUMN REPRESENTS THE NUMBER OF VALVES WHICH WERE REPORTED LINED UP IMPROPERLY IN THIS COLUMN. THE NUMBER OF VALVES WHICH WERE REPORTED IMPROPERLY IN THIS COLUMN IS NOT NECESSARILY THE SAME AS THE NUMBER OF VALVES WHICH WERE REPORTED IMPROPERLY IN THIS COLUMN SUBJECTIVELY.

APPENDIX J

VALVE REPORTS CLASSIFIED AS TECHNICAL SPECIFICATION VIOLATIONS

CODES USED IN LER ONE-LINE DESCRIPTIONS

FAILURE MODE
CODE DESCRIPTION
A - FAILED TO OPEN
B - FAILED TO CLCSE
C - INTERNAL LEAKAGE
D - EXTERNAL LEAKAGE/RUPTURE
E - REVERSE LEAKAGE (CHECK VALVES)
F - FAILED TO OPERATE AS REQUIRED
G - PLUGGED (FAILS TO REMAIN OPEN)
H - PREMATURE OPEN (RELIEF VALVES)
I - MAINTENANCE/REPLACEMENT
J - TECHNICAL SPECIFICATION VIOLATION
K - IMPROPER VALVE CONFIGURATION

COMPONENT
CODE DESCRIPTION
MV - MOTOR OPERATED VALVE (ELEC.)
AV - PNEUMATIC OPERATED VALVE
SV - SOLENOID OPERATED VALVE
HV - HYDRAULIC OPERATED VALVE
RV - REMOTE OPERATED VALVE
XV - MANUAL OPERATED VALVE
CV - CHECK VALVE
RV - RELIEF VALVE
DV - DAMPER VALVE
UV - OPERATOR TYPE OR FUNCTION NOT STATED

TYPE OF EVENT
CODE DESCRIPTION
B - RECURRING COMMON CAUSE
C - COMMON CAUSE
R - RECURRING
S - COMMAND FAULT
T - RECURRING COMMAND FAULT

FAILURE MECHANISM
CODE DESCRIPTION
00 - UNKNOWN
001 - PERSONNEL (OPERATION)
002 - PERSONNEL (MAINTENANCE)
003 - PERSONNEL (TESTING)
004 - OPERATOR ERROR
005 - FABRICATION/CONSTRUCTION/QUALITY CONTROL
006 - PROCEDURAL DISCREPANCY
007 - NORMAL WEAR
008 - EXCESSIVE WEAR
009 - CORROSION
100 - FOREIGN MATERIAL CONTAMINATION
101 - EXCESSIVE VIBRATION
102 - MECH. CONTROLS/PARTS; FAILED/CUT OF ADJUST.
103 - SEAL/GASKET FAILURE/PROBLEM
104 - PACKING FAILURE/PROBLEM
105 - BELLOWS/BOOT FAILURE/PROBLEM
106 - ELECTRICAL INPUT FAILURE/PROBLEM
107 - BEARING/BUSHING FAILURE/PROBLEM
108 - WELD FAILURE
109 - LACK OF LUBRICATION
200 - ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM
201 - SOLENOID FAILURE/PROBLEM
202 - LEAKING/RUPTURE DIAPHRAGM
203 - TORQUE SWITCH FAILURE/PROBLEM
204 - FAILURE OF COMPONENT SUPPLY SYSTEM
205 - SEAT/DISC FAILURE/PROBLEM
206 - LIMIT SWITCH FAILURE/PROBLEM
207 - PILOT VALVE FAILURE/PROBLEM

EVENT CLASSIFICATION
CODE DESCRIPTION
D - CHANGE OF STATE
T - AGE
U - UNKNOWN

ACTIVITY RESULTING IN DISCOVERY
CODE DESCRIPTION
D - DEMAND ON COMPONENT
M - MAINTENANCE
N - NORMAL OPERATION
R - RECORDS REVIEW
T - TESTING
U - UNKNOWN

NUMERICAL KEY WORDS
CODE DESCRIPTION
V - VALVES
A - SOME
R - VARIOUS
S - SEVERAL
Z - OTHER

HSSS VENDOR
CODE DESCRIPTION
B - BABCOCK & WILCOX
C - COMBUSTION ENGINEERING
G - GENERAL ELECTRIC
W - WESTINGHOUSE

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

CODE

PWR

CODE

BWR

- AUXILIARY FEED
 - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 - ELECTRIC POWER
 - CONTAINMENT SPRAY INJECTION
 - CHEMICAL VOLUME CONTROL (MAKE-UP)
 - HIGH PRESSURE COOLANT INJECTION
 - COMPONENT COOLING WATER
 - REACTOR COOLANT
 - LOW PRESSURE COOLANT INJECTION (RHR)
 - REACTOR PROTECTION (CONTROL RCD)
 - NONSAFETY-RELATED
 - SYSTEM UNKNOWN/NOT APPLICABLE
 - CONTAINMENT FAN COOLING SYSTEM
 - SERVICE WATER
 - CONDENSATE AND FEED
 - MAIN STEAM
 - REACTOR PROTECTION (PPS)
 - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 - FAILED FUEL ELEMENT DETECTION

A - AUTOMATIC DEPRESSURIZATION
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - LOW PRESSURE CORE SPRAY
 D - ELECTRIC POWER
 E - CONTAINMENT SPRAY INJECTION
 F - STANDBY LIQUID CONTROL (SCRN)
 G - HIGH PRESSURE COOLANT INJECTION
 H - COMPONENT COOLING WATER
 I - REACTOR COOLANT RECIRC
 J - LOW PRESSURE COOLANT INJECTION (RHR)
 K - CONTROL ROD DRIVE HYDRAULIC (SCRAM)
 L - NONSAFETY-RELATED
 M - SYSTEM UNKNOWN/NOT APPLICABLE
 N - REACTOR CORE ISOLATION CCLING
 O - SERVICE WATER
 P - STANDBY GAS TREATMENT
 Q - CONDENSATE AND FEED
 R - MAIN STEAM
 S - REACTOR PROTECTION (PPS)
 T - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 Z - FAILED FUEL ELEMENT DETECTION

TECHNICAL SPECIFICATION VIOLATION

PLANT	CONT.NO.	EVENT DATE	SYST	COMP	FAIL CODE	TYPE	CLASS	CONC	MARK	FAILURE MODE	FAILURE MECHANISM
B DB1	021958	071378	P UV	T06		D				DISCOVERED 2 REQUIRED TEST NOT BEING PERFORMED/T.S	TESTS NOT INCORPORATED INTO SCHED.PROGRAM
B DB1	022366	081578	S UV	T01		D				PORT.OF SERVICE WTR.VLV.TEST NOT PERF.IN REQ.TIME	PERSONNEL ERROR/INSTRUCTIONS MISINTERPRET
B DE3	019863	120677	L XV	T06		D				VALVE LP-29 OPEN BUT NOT LOCKED AS REQ	INADAQUATE PROCEDURES
C M12	019662	102877	W RM	T01		D				MH.STM.LINE ISO.VLV.OPER.TEST COMPLETED LATE	TECH.SPEC.VIO,DUE TO ADMINISTRATIVE CAUSE
C MY1	020475	021678	S XV	T02		D				VALVE SW-53 CLOSED BUT NOT LOCKED	PERSONNEL ERROR
G CO1	018894	072577	L RM	T03		D				4 ISOLATION VALVES NOT LEAK TESTED	PERSONNEL ERROR
G DR3	018551	072577	L RM	T03		D				SURVEILLANCE TEST NOT COMPLETED ON LPCI VALVES	PERSONNEL WERE 6 DAYS LATE COMPLETING TEST
G DR3	019659	102677	H RM	T03		D				SURVEILLANCE TEST NOT COMPLETED ON TIME	PERSONNEL ERROR(RECURRING PROBLEM)
G EN1	014106	010276	D RM	T03		D				CORE SPRAY TEST NOT DONE IN REQUIRED TIME	PERSONNEL ERROR
G EN1	018142	051777	N RM	T01		D				FAILED TO TEST AUTO.ISO.VLVs,RADWASTE DISCH LINE	PERSONNEL ERROR
G EN1	021725	060778	K CV	T02		D				4-EXCESS FLOW CVS NOT FUNCTIONALLY TESTED AS REQ.	MAINTENANCE PERSONNEL ERROR
G EN2	023035	110978	C RM	T01		D				VACUUM BREAKERS NOT TESTED AS REQ BY TECH SPECS	PERSONNEL ERROR
G NM1	015849	090876	P RV	T06		D				REQD SURVEILLANCE ON RV NOT PERFORMED	PROCEDURE ERROR
W BY1	021644	033178	G UV	T03		D				TECH SPEC VIOLATION,VALVE POSITION NOT VERIFIED	PERSONNEL ERROR/FAILED TO SCHEDULE TEST
W DC1	017246	030377	N RM	T02		D				CLOSING TIME NOT TESTED ON S/G BLOWDOWN VALVE	MAINTENANCE PERSONNEL ERROR
W DC1	017794	042777	W RM	T01		D				DISCOVERED SAMPLE VALVE NOT TIMED AFTER MAINTENANC	PERSONNEL ERROR/TECH SPEC VIOLATION
W DC1	011080	040378	P UV	T01		D				ALL CLASS 1,2,3 ASME VALVES NOT INSPECTED AS REQ.	PERSONNEL ERROR/MISUNDERSTOOD REQUIREMENT
W DC2	022793	102378	P RM	T06		D				FOUR OR MORE VALVES NOT TIMED AFTER MAINT(TS VIOL)	PROCEDURAL PROBLEMS
W JF1	023282	120678	H MV	T02		D				T.S. REQUIRED BREAKER TO VALVES LOCKED OPEN	PERSONNEL FAILED TO LOCK BREAKERS OPEN
W NA1	021502	051078	C UV	T02		D				TV-SS112A WAS NOT TIMED PRIOR TO RETURNING TO SERV	MAINTAINANCE PERSONNEL ERROR
W NA1	022267	081078	C XV	T01		D				INSTRUMENT AIR VALVE NOT UNDER SURVAIL AS REQ	OPERATIONS PERSONNEL ERROR
W NA1	022938	092778	N RM	T02		D				AFTER MAINT,VLVS TV-80100A,B,D,F NOT STROKE TIMED	MAINTENANCE PERSONNEL ERROR
W PR2	017894	042276	S RM	T01		D				COOL.WTR.SYS.ISO.VLVs. TEST NOT PERF.IN REQ.TIME -	-LIMIT//PERSONNEL ERROR
W PR2	016945	010877	H MV	T01		D				4 SAFETY INJ VALVES NOT TAGGED AS PER TECH SPECS	PERSONNEL/HANDWRITTEN LINE-UP SHEET USED
W TR1	015172	042176	S RM	T06		D				DISCOVERED THAT MANY VLVS WERE NOT TESTED AS REQ.	PROCEDURE INADEQUACY/REVISED PROCEDURES
W YR1	020693	022178	N SV	T01		D				HYD.VENT SYS.SOL.VLVs HV-SOL-162 NOT TESTED ON TI-	-ME//PERSONNEL ERROR

APPENDIX K

VALVE REPORTS CLASSIFIED AS HUMAN ERROR

CONTENTS

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 CODES USED IN LEW ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

CODE

PWR

A - AUXILIARY FEED
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - ELECTRIC POWER
 D - CONTAINMENT SPRAY INJECTION
 E - CHEMICAL VOLUME CONTROL (MAKE-UP)
 F - HIGH PRESSURE COOLANT INJECTION
 G - COMPONENT COOLING WATER
 H - REACTOR COOLANT
 I - LOW PRESSURE COOLANT INJECTION (RHR)
 J - REACTOR PROTECTION (CONTROL RGCS)
 K - NONSAFETY-RELATED
 L - SYSTEM UNKNOWN/NOT APPLICABLE
 M - CONTAINMENT FAN COOLING SYSTEM
 N - SERVICE WATER
 O - CONDENSATE AND FEED
 P - MAIN STEAM
 Q - REACTOR PROTECTION (PPS)
 R - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 S - FAILED FUEL ELEMENT DETECTION

CODE

GWR

A - AUTOMATIC DEPRESSURIZATION
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - LOW PRESSURE CORE SPRAY
 D - ELECTRIC POWER
 E - CONTAINMENT SPRAY INJECTION
 F - STANDBY LIQUID CONTROL (BCRCS)
 G - HIGH PRESSURE COOLANT INJECTION
 H - COMPONENT COOLING WATER
 I - REACTOR COOLANT RECIRC
 J - LOW PRESSURE COOLANT INJECTION (RHR)
 K - CONTROL ROD DRIVE HYDRAULIC (SCRAM)
 L - NONSAFETY-RELATED
 M - SYSTEM UNKNOWN/NOT APPLICABLE
 N - REACTOR CORE ISOLATION COOLING
 O - SERVICE WATER
 P - STANDBY GAS TREATMENT
 Q - CONDENSATE AND FEED
 R - MAIN STEAM
 S - REACTOR PROTECTION (PPS)
 T - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 U - FAILED FUEL ELEMENT DETECTION

PERSONNEL (OPERATION)

<u>PLANNING</u>	<u>EVENT NO.</u>	<u>EVENT DATE</u>	<u>SYST</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>ENH</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
B AR1	015013	061276	G UV	V01	S D					INCORRECT VALVE LINE-UP/TANK OVERFLOWED	PERSONNEL ERROR
B AR1	018901	082677	Y XV	V01	S D					INCORRECT SEQUENCE OF VALVE OPERATION/H2O IN FILTR	PERSONNEL ERROR
B AR1	023181	112178	U UV	V01	S D					CONDENSATE VLV.CS-38 OPEN WHEN REQUIRED TO BE SHUT	PERSONNEL ERROR
B CR3	017322	030777	H RM	V01	S D					"B" LOOP OF HPI SYS. ISOL.CONT.TC T.S.FOR MAINTENC	PERSONNEL ERROR
B CR3	017658	042177	M RM	V01	S D					SUCT.VLV.S CAV-38646 FROM BORIC ACID STOR.TANK.SHUT	T.S.VIOL./PERSONNEL ERROR/IMP.VLV LINEUP
B CR3	020265	011178	X MV	V01	S D					BRKR.FOR HPI ISO.VLV MUV-25 CPENGTAG. CONT. TC T.S	PERSONNEL ERROR
B CK3	020478	020178	C XV	V01	S D					NITROGEN VLV NGV-81 WAS OPEN CONTRARY TO T.S.	PERSONNEL ERROR
B CR3	023237	103078	M RM	V01	S D					CONC.BORIC ACID TK.DISC.VLV.S CAV38643 CLOSED;TS VI	PERSONNEL ERROR;IMPRCER VALVE LINEUP
B DB1	019381	102077	B UV	V01	S D					BOTH AUX.FD.PMP.SUCTS.LINED UP TO DEAERATOR STR.TK	PERSONNEL ERROR;IMPRCER COOL.WTR.LINEUP
B DB1	019939	121277	J UV	V01	S D					SER.WTR.OUT.ISO.VLV,COMP.COOL.WTR.LP1-2HTXCH.CLOSE	PERSONNEL ERROR;IMP.VLV LINEUP;T.S. VIOL.
B DB1	021176	043078	L UV	V01	S D					VLVS DH11612 WERE NOT OPENED WHEN REQ.DURING S/D	PERSONNEL ERROR & PROCEDURE INADEQUACY
B DB1	022366	081578	S UV	T01	D					PORT.OF SERVICE WTR.VLV.TEST NOT PERF.IN REQ.TIME	PERSONNEL ERROR/INSTRUCTIONS MISINTERPRET
B DB1	022690	091578	S XV	V01	S D					SERVICE WATER OUTLET VALVE NOT REOPENED	PERSONNEL ERROR AFTER FLOW BALANCE
B DE2	015538	070676	C XV	V01	S D					VALVES 21A-40 AND 91 NOT IN PROPER LINE UP	PERSONNEL ERROR
B DE2	015535	080976	L UV	V01	S D					LOW PRESS INJECT TRAIN A NOT ISG PROPERLY	PERSONNEL FAIL TO FOLLOW T.S.REQUIREMENTS
B DE2	019970	120877	F XV	V01	S D					ISO.VLV.TO CHAN.3 RB PRESS.TRANS.SHUT BY MISTAKE	PERSONNEL ERROR
B DE2	023020	110578	K XV	V01	S D					RC LOOP A1 HPI STOP CHECK VALVE FOUND CLOSED	PERSONNEL ERROR;VALVE WAS REQUIRED OPEN
B DE3	016209	110176	H CV	V01	S D					IMP.LINEUP VALS 3HP-152 + 3HP-153 CLOSED S.B.OPEN	PERSONNEL ERROR
B DE3	021048	032278	S XV	V01	S D					VALVE 3LPSW-78 CLOSED WHEN REQ.OPEN	PERSONNEL ERROR(VLV OPENS CLOCKWISE)
B RS1	023562	121578	L UV	V01	S D					INCOMPLETE VALVE LINEUP CAUSED SEVERE H2O HAMMER	PERSONNEL ERROR

PERSONNEL (OPERATION)

PLANT	CONT. NO.	EVENT DATE	SYM	SO	FAIL CODE	TYPE	CLASS	DESCRIPTION	FAILURE MODE	FAILURE MECHANISM
B RSI	023484	122178	X	XV	V01	S	0	FLOW TRANSMITR INADVERTANTLY VALVED OUTTRX TRIP--	CKTS EFFECTEC//PERSONNEL ERROR	
B FI1	016109	101276	N	UV	V01	S	0	INCORRECT VALVE LINEUP LEAD TO KI DISSOLVED SOLIDS	PERSONNEL ERROR/700PPM DISCHARGED RIVER	
C CC1	014467	040576	N	UV	V01	S	0	#12 S/G BLOWDOWN DRG. BYPASS 1-80-121 POSIT. INCORR.	T.S.VIO./PERSONNEL ERROR(SHUT WRONG VLV)	
C CC1	016408	110475	S	XV	V01	S	0	DIESEL SERVICE WTR. SYS. LINED UP IMPROPERLY	PERSONNEL ERROR/OPERATED WRONG VALVES	
C CC1	018487	071377	E	XV	V01	S	0	ISO. VLV TO PRESS. SWITCHS. FOR #110SL. SHUT/T.S.VIO.	PERSONNEL ERROR/IMPRCPR VLV LINEUP	
C CC1	023262	121678	N	UV	V01	S	0	IMPROPER VLV. LINEUP ON MAKE-UP WATER DEMINERALIZ.	PERSONNEL ERROR	
C CC2	018620	081977	B	XV	F01	D		#21 AUX. FDMTR. PMP. THROT. STOP VLV HANDWHEEL BROKE	A PERSON APPL. EXCESS. FORCE WITH VLV WHEN.	
C CC2	022915	111378	N	UV	V01	S	0	RWT LOCAL SAMPLE VLV. OPEN WHEN REQ. TO BE SHUT	PERSONNEL ERROR	
C FC1	014589	050676	N	UV	V01	S	0	VALVE HCV-2508 WAS CLOSED, SHOULD BE OPEN	IMPROPER VALVE LINEUP / PERSONNEL ERROR	
C MI2	016721	121976	G	RM	V01	S	0	VLV 2--CH-514 WAS NOT RECLOSED FOLLOW. AN SIAS ACTU	PERSONNEL ERROR/VALVE NOT CLOSE PROP. TIM)	
C MI2	017837	021577	E	XV	V01	S	0	BOTH D/G FUEL SUP. VLV'S SHUT WHEN REQUIRED TO BE O-	-PEN//PERSONNEL ERROR	
C MI2	019672	102877	M	RM	T01	D		MM. SYN. LINE ISO. VLV. OPER. TEST COMPLETED LATE	TECH. SPEC. VIO. DUE TO ADMINISTRATIVE CAUSE	
C MI2	021332	041478	M	XV	V01	S	0	PRI MAKEUP VAL IN PART. OPEN POSIT. SHOULD BE CLOSED	PERSONNEL ERROR	
C MY1	019261	102077	L	UV	V01	S	0	IMPROPER VALVE LINEUP LCSI PUMPS	PERSONNEL ERROR	
C MY1	022401*	082478	K	XV	I01	R	06	Z THERM. OVERLD. LINK. NOT REMOVED FROM RCS LOOP ISO. V-	-LV5 BRKRS. AS REQUIRED//PERSONNEL ERROR	
C MY1	022398	090778	G	UV	V01	S	0	VLV. LINEUP ERROR ALLOWED RCS WTR. AT 1250 PPM 80RO-	-M TO DISCH. BACK TO RWST//PERSONNEL ERROR	
C PA1	016527	040876	Y	UV	V01	S	0	DRAIN LINEUP PERFORMED ON WRONG WST. GAS DECAY TK.	PERSONNEL ERROR	
C PA1	021322	042178	C	XV	V01	S	0	CNTMNT SERV AIR VAL OPENED IN VIOL OF T.S.	PERSONNEL ERROR	
C PA1	022229	080778	N	UV	V01	S	0	INCORRECT HANDJACK OPER FOR CV-0437A/CV-04373	PERSONNEL ERROR	
C PA1	023021	112878	Y	XV	V01	S	0	VCT SITEGLASS DRAIN VALVE OPEN WHEN REQ CLOSED	PERSONNEL ERROR	

PERSONNEL (OPERATION)

<u>V E N T</u>	<u>P L A N T</u>	<u>CONI. NO.</u>	<u>EVENT DATE</u>	<u>S Y S</u>	<u>C O M P</u>	<u>FAIL CODE</u>	<u>T Y P E</u>	<u>C L A S S</u>	<u>C O N T R O L</u>	<u>K E Y</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
C	SL1	015504	070576	M	UV	VO1	S	D			IMPROPER VLV. LINEUP TO RWT (TANK OVERFLOWED)	PERSONNEL ERROR
C	SL1	022909*	111178	N	SV	FO1	D	04			FOUR SOVS FAILED TO OPERATE (NAOH ADDITION SYS)	NO PWR TO SOLENOIDS, FUSE FOUND REMOVED
G	BR1	019842	111077	Q	XV	VO1	S	D			IMPROPER VLV LINEUP; ST. SUP. LN. CO. DR. POT. ISO. CLOSE.	PERSONNEL ERROR
G	BR1	020919	040178	M	UV	VO1	S	D			INCORRECT VALVE LINEUP CAUSED RESIN DAMAGE	PERSONNEL ERROR
G	BR2	014128	011976	N	UV	VO1	S	D			OFF GAS RADIAT. MON. SAMP. VLV WAS FOUND SHUT/T.S. VIO.	PERSONNEL ERROR
G	BR2	014111A	020276	N	UV	VO1	S	D			Z-CAC-050 WAS OPENED WITH A LCO EXISTING/T.S. VIO.	PERSONNEL ERROR
G	BR2	015416	070376	Q	MV	VO1	S	D			RHR VLV Z-E11-FO03A SHUT WHILE MTR REMOV. IGV. LCO	PERSONNEL ERROR/VLV COULDN'T BE OP. REMOT
G	BR2	016260	110276	Q	CV	VO1	S	D			RCIC TURB. EXH. STP-CHK E51-FO01 CLOSED WHEN REQ. OPH	PERSONNEL ERROR/VLV NOT OPEN. AFTER TEST
G	BR2	018176	060977	N	XV	VO1	S	D			DRAIN VALVE LEFT OPEN (RX WATER CLEANUP)	PERSONNEL ERROR (ROOT CAUSE)
G	BR2	020972	032778	C	RM	VO1	S	D			RX. INSTR. PENET. VLV CAC-PV-3439 FOUND CLOSED/T.S. VIO	PERSONNEL ERROR/VLV SHUT BY MISTAKE
G	CO1	014358	020776	Y	DV	VO1	S	D			INCORRECT VALVE LINEUP ON RX BLDG VENT DAMPER	PERSONNEL ERROR
G	CO1	016004	091076	L	XV	VO1	S	D			EQUALIZING VALVE ON DP PRESS INDICATING SW OPEN	PERSONNEL ERROR
G	CO1	016367	110176	N	UV	VO1	T	D			FLUSHING VALVE OF RADWASTE MONITOR LEFT OPEN	PERSONNEL ERROR
G	CO1	023378	121278	N	UV	VO1	S	D			FLUSH. VLV. OF THE RADWASTE EFF. MONIT. INADV. LEFT OP-	EN//PERSONNEL ERROR
G	DA1	014733	052876	C	RM	VO1	S	D			HPCI AND RCIC INJECTION VALVES LINED UP WRONG	PERSONNEL ERROR, LOW-LOW LEVEL RESET WRONG
G	DA1	018281	052777	U	XV	VO1	S	D			MANUAL FEED H2O BLOCK VALVES NOT OPERATED PROPERLY	PERSONNEL ERROR, SCRAM DUE TO COLD H2O
G	DA1	020674	030178	N	UV	VO1	S	D			COOLING TOWER BLOWDOWN DISCHARGE VALVE OPENED WITH	--OUT APPROVAL//PERSONNEL ERROR
G	DR2	014023	010276	X	XV	VO1	S	D			RACK ISO VAL FOR PRESS SW263-518 IMPROPER LINEUP	PERSONNEL ERROR
G	DR2	016171	100376	Y	UV	VO1	S	D			STACK GAS SAMPLE PUMP LOW FLOW/IMP. VLV LINE UP	PERSONNEL ERROR
G	DR2	023335	100376	Y	XV	VO1	S	D			STACK GAS PUMP FLOW LOW, VALVE LINEUP WRONG	PERSONNEL ERROR

PERSONNEL (OPERATION)

VEN	PLANT	CONT.NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CUM PH	KEY	FAILURE MODE	FAILURE MECHANISM
G DR2	G18181	060377	L MV 101	C D	LPCI VALVE 2-1501-3A, CLOSING VALVE BENT STEM	PERSONNEL ERROR						
G DR2	020170	010578	G UV V01	S D	SUCTION VALVE 2-1101-4 CLOSED CONTRARY TO T.S.	OPERATING PERSONNEL ERROR						
G DR2	021150	042878	L XV V01	S D	VALVES ONA LPCI & CORE SPRAY IMPROPER LINEUP	OPERATING PERSONNEL ERROR						
G DR3	019189	092477	Q MV F01	R D	BREAKER FOUND OPEN TO MD-3-4102	PERSONNEL ERROR						
G DR3	019987	121677	Q XV V01	T D	PRESS SWITCH FOUND VALVED OUT	PERSONNEL ERROR						
G EN1	014798	052476	N XV V01	T D	DEMIN DRAIN VALVE LEFT OPEN(WATER DUMPED TO RIVER)	PERSONNEL ERROR						
G EN1	018142	091777	H RM TC1	D	FAILED TO TEST AUTO. ISO.VLVs,RADWASTE DISCH LINE	PERSONNEL ERROR						
G EN1	020191	120877	E XV V01	S D	IMPROPER LINEUP,FUEL OIL TRANS PUMPS DISCH VALVES	PERSONNEL ERROR						
G EN1	021083	040678	K XV V01	S D	DRAIN VALVE LEFT OPEN,FOUND ON LLRT	PERSONNEL ERROR						
G EN2	023035	110978	C RM 101	D	VACUUM BREAKERS NOT TESTED AS REC BY TECH PECS	PERSONNEL ERROR						
G FP1	015065	062976	Y SV V01	S D	SGV-135A AND B FOUND CLOSED WHEN REQUIRED OPEN	PERSONNEL ERROR(PANEL MARKED POORLY)						
G FP1	017337	030377	C RM 801	D	FLOOR DRAIN ISOLATION VALVE FAILED TO CLOSE	VALVE OPERATOR IN OPEN OVERRIDE POSITION						
G MO1	017373	032177	N UV V01	S D	AIR EJECT.SAMP.SYS.SUP.VLV SHUT WHEN REQ. OPEN	PERSONNEL ERROR						
G MO1	018469	071177	X XV C01	R D	NITROGEN CHARGING VLV FAILED TO HOLD PRESSURE	OVERTIGHTEN.VAL.HAND.CAUSED "O" RING FAIL						
G MO1	022809	100178	C UV V01	S D	2 VLVs NOT CLOSED WHEN REQUIRED TO BE	PERSONNEL ERROR						
G NM1	019404	102677	M UV V01	S D	CHG.WTR.VLV TO SCRAM ACCUMULATOR IN IMPROPER LINE-	-UP//PERSONNEL ERROR						
G NM1	020764	030778	E CV V01	S D	FOOT VALVE OPENED AT IMPROPER TIME	PERSONNEL ERROR						
G DC1	020467	011978	N MV F01	D	ISO COND VAL V-14-35 FAILED TO OPERATE	VALVE SEAT OVERTIGHTENED BY OPER. PERSON.						
G PB2	015711	091376	N UV V01	S D	IMPROPER VAL LINEUP TO SETTLING BASIN	PERSONNEL ERROR						
G PB2	020610	021678	C XV V01	S D	INLET VLV FOR THE MANOMETER WAS OPEN INSTEAD OF CL	PERSONNEL ERROR/FAILED TO FOLLOW PROCEDURE						

PERSONNEL (OPERATION)

<u>VEN</u>	<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SY</u>	<u>CUM P</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON NUM</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
G PB2	020667	022378	N XV	V01	S D						DISCHG VLV ON DIESEL F.O.PMP LEFT OPEN VICE SHUT	PERSONNEL ERROR
G PB3	019691	092577	M UV	V01	S D						CHARGING WATER VLVS. TO SCRAM SYS. IN IMPROPER LIN-	-EUP//PERSONNEL ERROR
G PI1	018497	080277	N UV	V01	S D						VALVE IN TRUCK LOCK, OPENED IN VIOLATION OF T.S.	OPERATIONS PERSONNEL ERROR
G PI1	023500	102878	N UV	V01	S D						BLOCK VALVE TO FCV-118 SHUT WHEN REQUIRED TO BE O-	-PEN//PERSONNEL ERROR
G QC1	017357	011977	N AV	V01	S D						VALVE LINE-UP INCORRECT/RADWASTE DISCHARGE	PERSONNEL ERROR
G QC2	018575	071977	L UV	V01	S D						VALVE FOUND CLOSED BETWEEN A & B LCCP/LOSS OF LPCI	PERSONNEL ERROR/INADVERTANT CLOSURE
G QC2	019450	092977	C XV	V01	S D						STOP VALVE TO TORUS LEVEL TRANSMITTER FOUND CLOSED	PERSONNEL ERROR
G QC2	021561	092178	D RM	V01	S D						2A CORE SPRAY SUC. VLV. MO 2-1402-3A CLOSED WHEN R-	-EQUIRED TO BE OPEN//PERSONNEL ERROR
G YY1	014230*	021776	L MV	F01	D 02						RHR VLVS. 25A&B WOULD NOT STROKE ELECTRICALLY	PERSON. ERROR (MUST STRO. VLVS. MANUALLY 1ST)
G YY1	014739	051276	H UV	V01	S D						IMPROPER VLV. LINEUP ON HPCI GLAND SEAL CONDENSER	PERSONNEL ERROR
G YY1	022252	081478	M XV	V01	S D						VLVS. LINED UP IMPROPERLY TO HI. MN. STM. LN. FLOW SWT.	PERSONNEL ERROR
M BV1	015073	061276	C UV	V01	T D						VLVS HCV-CV-151, 151-1 WERE OPENED IN VID. OF T.S.	OPER. ERROR. USED 1T.S. WHICH VID. ANOTH. T.S
M BV1	018835	072577	N UV	V01	S D						IMP. VLV LINEUP, 68 PRI GRADE WTR STGR TANK OVERFLW.	PERSONNEL ERROR
M BV1	020754	021778	N DV	V01	T D						AIR FLOW CALCUL. OF CONT. RUCH FANS OUT OF T.S.--	DAMPERS WERE POSIT. INCOR.//PERSONNL ERROR
M BV1	020792	022378	N DV	V01	T D						AIR FLOW CALCUL. OF SLCRS FLTR BANKS OUT OF T.S.--	DAMPERS WERE POSIT. INCCP.//PERSONNL ERROR
M DC1	016648	121776	F MV	V01	S D						CONTAINMENT SPRAY PUMP SUCTION VALVE FOUND CLOSED	PERSONNEL LEFT VALVE SHUT AFTER A TEST
M DC1	017279	030577	Y XV	V01	S D						DRAIN TRAPS WD-20&WD-21 LEFT OPEN	PERSONNEL ERROR
M DC1	017794	042777	M RM	T01	D						DISCOVERED SAMPLE VALVE NOT TIMED AFTER MAINTENANC	PERSONNEL ERROR/TECH SPEC VIOLATION
M DC1	019569	111877	F UV	V01	S D						TWO CONTAINMENT SPRAY VALVES FOUND CLOSED	PERSONNEL ERROR/CLOSED UNIT1 INSTEAD OF 2
M DC1	021220	042078	C RM	V01	S D						CONT PURGE SUPPLY&EXHAUST VALVES NOT CLOSED AS R--	--EQUIRED/PERSONNEL ERROR

PERSONNEL (OPERATION)

P L A N Y	CONT.NO.	EVENT DATE	S Y M B O L	C O D E	F A I L C O D E	C L A S S	D E S C R I P T I O N	F A I L U R E M O D E	F A I L U R E M E C H A N I S M
W	DC1 022281	060278	H	UV	V01	S	0	BACK INJECTION THROTTLE VALVES OUT OF ADJUSTMENT	PERSONNEL ERROR/INCORRECT TEST CRITERIA
W	DC2 021080	040378	P	UV	T01	G	0	ALL CLASS 1,2,3 ASME VALVES NOT INSPECTED AS REQ.	PERSONNEL ERROR/MISUNDERSTOOD REQUIREMENT
W	DC2 021079	041678	L	XV	V01	S	0	HANDWHEEL CAME OFF RHR VALVE POSITIONING IT WRONG	PERSONNEL FAILED TO REPOSITION THE VALVE
W	DC2 021634	061578	N	RM	V01	S	0	STARTING AIR PILOT VALVES TAGGED OUT FOR WRONG D/G	PERSONNEL ERROR
W	DC2 022350	090378	N	UV	V01	S	0	CONDENSATE VALVE CLOSED WHEN REQ TO BE OPEN	PERSONNEL ERROR
W	DC2 022581	092278	K	RV	V01	S	0	PRESSURIZER RV OPENED WHEN REQUIRED TO BE CLOSED	PERSONNEL ERROR
W	DC2 022838	101078	B	XV	V01	S	0	AUX FEED VALVE FOUND UNLOCKED & OPEN/WRONG LINE-UP	PERSONNEL ERROR
W	HN1 023582A	122978	N	SV	801	D	0	VALVE MECHANICALLY BLOCKED OPEN OVERRIDING TRIP	PERSONNEL ERROR
W	IP3 015925	093076	K	UV	V01	S	0	INADVERTENT CLOSURE OF RHR ISO VALVE	PERSONNEL ERROR
W	JF1 021975	071278	M	UV	V01	S	0	TWO BORIC ACID TK SUPPLY VALS IN CLOSED POSITION	PERSONNEL ERROR
W	KE1 014240	022076	F	RM	A01	D	0	VALVE ICS-58 FAILED TO OPEN/CONT-SPRAY DISCH. VLV	VALVE MANUALLY TORQUED DOWN TOO TIGHT
W	KE1 015262	071576	Y	XV	V01	T	0	MANUAL ISO.VLVS TO MONITORS R-11&12 SHUT WHEN REQ-	--WIRED TO BE OPEN//PERSONNEL ERROR
W	KE1 015295	081376	N	UV	V01	S	0	WASTE NEUT.DPN.VLV LEFT OPEN,ALLOW.RAD.RELEASE	PERSONNEL ERROR
W	KE1 016789	011977	C	RM	V01	S	0	CNTNMT ISO-VALS LEFT OPEN	PERSONNEL ERROR,IMP.VAL.LINEUP
W	KE1 017824	052277	J	UV	V01	S	0	VAL ON B PUMP DISCH IN CLOSED POSITION	PERSONNEL ERROR / IMPROPER VLV LINE UP
W	KE1 019064	071677	N	UV	V01	S	0	PART.OPEN VALS IN DISCH PATH FROM WASTE NEUTR. TK.	PERSONNEL ERROR / IMPROPER VLV LINE UP
W	KE1 018652	072977	Y	XV	V01	T	0	MANUAL ISO.VLVS TO MONITORS R-11&12 SHUT WHEN REQ-	--WIRED TO BE OPEN//PERSONNEL ERROR
W	KE1 021012	032978	N	UV	V01	S	0	SAMPLE VALS FOR MONITOR R-19 IN CLOSED POSITION	IMPROPER VLV LIM UP / PERSONNEL ERROR
W	NAL 022267	081078	C	XV	T01	D	0	INSTRUMENT AIR VALVE NOT UNDER SURVAIL AS REQ	OPERATIONS PERSONNEL ERROR
W	NAL 022270	081878	N	UV	V01	I	0	IMPROPER VLV LINEUP ON UNIT #2 CHILLED WTR-CHILLER	PERSONNEL ERROR

PERSONNEL (OPERATIONS)

P L A N I T	CONT. NO.	EVENT DATE	S Y S	C O O L	FAIL COOL	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	FAILURE MODE	FAILURE MECHANISM
M NA1	022565	100478	B	UV	V01	5	0	IMPROPER VALVE LINEUP, AUX FEED PUMP TO A,B,C STAGN OPERATING PERSONNEL ERROR	PERSONNEL ERROR
M PR1	016285	102476	N	UV	V01	5	0	INCORRECT VLV LINEUP ON SPENT FUEL PIT	PERSONNEL ERROR
M PR1	020735	020478	G	XV	V01	5	0	PUMP SUCTION VALVE 1 NEARLY CLOSED	PERSONNEL/VALVE LINEUP IMPORTANCE STRESSO
M PR1	021704	062278	E	XV	V01	5	0	ROOT VALVE ON D/G DIESEL OIL TANK LEVEL INST CLOSE	PERSONNEL/ LOCKWIRED OPEN FROM NCM CM
M PR2	014463	033176	S	XV	V01	5	0	MANUAL VALVE SECURED BY TECH VIOLATED LOOP AVAILABLE	PERSONNEL ERROR/TECH SPECS INCONSISTENT
M PR2	017894	042276	S	RM	T01	0	0	COOL. WTR. SYS. ISO. VLV. YES NOT PERF. IN REQ. TIME -	--LIMIT//PERSONNEL ERROR
M PR2	016945	010877	H	MV	T01	0	0	4 SAFETY INJ VALVES NOT TAGGED AS PER TECH SPECS	PERSONNEL/HANDWRITTEN LINE-UP SHEET USED
M PT1	019498	103177	S	UV	V01	5	0	VALVE LINE-UP NOT PROPERLY MADE/ADWASTE DUMP MADE	PERSONNEL/OPERATOR FAILED TO CLOSE VALVE
M PT1	021627	061478	Y	UV	V01	5	0	IMPROPER VALVE LINE-UP DISCOVERED/POSS RAD RELEASE	PERSONNEL ERROR
M PT2	019446	101777	X	XV	V01	5	0	ISOLATION VALVE FOR PRESS TRANSMITTER FOUND SHUT	PERSONNEL/ALSO NOT ON ANY CHECK-LIST
M R01	021334	041978	G	UV	V01	5	0	OPERATOR OPENED LONG VALVE/DECREASE BROM CONCENT	PERSONNEL ERROR/PROCEDURE CHANGED
M R02	022627	042277	N	UV	V01	5	0	COMPRESSED AIR ISC VAL CLOSED/S.B. OPEN	PERSONNEL ERROR
M SAI	017701	042977	C	MV	A01	0	0	MC CONT. ISOLATION VLV (1CVL8) FAILED TO OPEN	PERSONNEL/VALVE HAD BEEN JAMMED SHUT
M SAI	019606	102777	L	UV	V01	5	0	IMPROPER VLV LINEUP ON COMP. COOL. WTR. TO RHR PUMP	PERSONNEL ERROR
M S01	023179	120578	N	UV	V01	5	0	RECIRC VALVE ON HYDRAZINE PUMP LEFT OPEN INADVERT	PERSONNEL ERROR
M SUI	023136	112978	G	XV	V01	5	0	VALVE MISALIGNMENT ON BORIC ACID TRANSFER	PERSONNEL ERROR
M SU2	015962	082076	H	UV	V01	5	0	OUTSIDE ISOLATION VALVE FOUND OPEN/NORMALLY CLOSED	PERSONNEL/FAILED TO FOLLOW ADMIN CONTRCLS
M SU2	019478A	101177	S	XV	V01	5	0	TWO DRAIN VALVES LEFT OPEN AT END OF MAINTENANCE	PERSONNEL ERROR/CAUSED FLOODED PIT ABOVE
M YR1	019560	101677	L	XV	V01	5	0	RHR DISCHARGE VLV (07288) FOUND LOCKED CLOSED	PERSONNEL ERROR/IMPROPER VALVE LINEUP
M YR1	021419	042578	L	UV	V01	5	0	DRAIN VALVE LEFT OPEN/LEAD TO LOSS OF FLOW	PERSONNEL ERROR

PERSONNEL (OPERATION)

<u>VEH</u>	<u>PLAN</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SYS</u>	<u>COMP</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CONTR</u>	<u>KEY</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
W	TR1	022005A	070778	U	UV	V01	S	D			IMPROPER VLV. LINEUP ON CONDENSATE STORAGE TANK	PERSONNEL ERROR
W	TU4	019421	091377	L	RM	V01	S	D			TWO VALVES INADVERTANTLY OPENED/RWST LEVEL DECREASED	PERSONNEL ERROR/POSSIBLE PROCEDURE PROBLEM
W	YR1	020693	022178	N	SV	T01		D			HYD. VENT SYS. SOL. VLV. MV-SOL-162 NOT TESTED ON T1- -ME//'	PERSONNEL ERROR
W	Z11	016043	100476	G	UV	V01	S	D			VALVE LINE-UP PROBLEM/BORON CONCENTRATION DILUTED	PERSONNEL ERROR
W	Z11	017255	021877	L	UV	V01	S	D			IMPROPER VALVE LINEUP/UNIT-1 VAL CLOSED INSTEAD-2	PERSONNEL ERROR/NEITHER VAL TAGGED FOR ID
W	Z11	019175	072777	Y	DV	V01	S	D			OPERATIONS TAGGED WRONG DAMPER OUT OF SERVICE	PERSONNEL ERROR
W	Z11	022697	101878	Y	XV	V01	S	D			IMPROPER VALVE LINE-UP CAUSED TRIP OF BLOWER	PERSONNEL ERROR
W	Z11	022997	110678	N	XV	V01	S	D			RAD MONITOR NO. VALVED IN WHEN REQUIRED	PERSONNEL ERROR
W	Z12	014523	041176	C	XV	V01	T	D			PRESS REGULAT(R VALVE SET FOR TOO HI PRESSURE	PERSONNEL ERROR
W	Z12	017407	031077	C	UV	V01	S	D			VLVS. 2IWO15440155 OPEN WHEN REQ. TO BE CLOSED	PERSONNEL ERROR
W	Z12	019137	083177	H	UV	V01	S	D			DRAIN VLV OPEPED TO 2D ACCUM. INSTEAD OF 2C ACCUM.	PERSONNEL ERROR

PERSONNEL (MAINTENANCE)

VEH	PLANT	CONT. NO.	EVENT DATE	SYST	COMP	FAIL CODE	TYPE	CLASS	CMU PH	CMK	FAILURE MODE	FAILURE MECHANISM
B	DB1	020707*	021078	L	AV	102	D	02			MECH. STOPS FOR DH146148 INCORRECTLY SET	PERSONNEL ERROR/MAINTENANCE DONE INCORRECT
B	DB1	021213	042378	Y	XV	VC2	S	D			DISCHARGE VALVE OF DILUTION BLENDER MISTAKENLY SHUT	PERSONNEL ERROR(WROTE 1-2 INSTEAD OF 1-1)
B	DB1	022051	072478	C	CV	102	D				FLOOR DRAIN FLAPPER VLV REMOVED, MODE 4 OPER. 1/3 ISO.	PERSONNEL ERROR MAINTENANCE
B	DE1	018292	062977	N	UV	V02	S	D			*B* TRAIN PENET. RM. VENT. SUCT. ISO. VLV. CLOSED WHEN R-	-REQUIRED TO BE OPEN//PERSONNEL ERROR
B	DE2	015537	070676	X	XV	V02	S	D			HIGH PRESS TRANS ROOT VAL CLOSED ON STARTUP	MAINT. PERS. LEFT VAL WITH IMPROPER LINE UP
B	DE3	019884	112877	X	XV	V02	S	D			IMPROPER VLV LINEUP TO CHAN. A NARROW RANGE PRESS.-	-TRANSMITTER//PERSONNEL ERROR
B	TI1	016661	120776	N	RM	B02	R	D			48 INCH BUTTERFLY VALVE FAILED TO CLOSE/TESTING	PERSONNEL ERROR/INADEQUATE MAINTENANCE
B	TI2	022390*	082478	X	UV	102	D	04	Z		CABLES TO SAFETY RELATED VALVES NOT SPICED AS REQ	PERSONNEL ERROR/CONTRACTOR PERSONNEL
B	TI2	022386	090778	C	MV	102	D				DISCOVERED MOV THAT DIDNT HAVE CONT GRADE SWITCHES	--AND MCTOR(MDL-V-271)//PERSONNEL ERROR
B	TI2	023076*	090878	C	MV	102	D	02			MOV(S(MU-V2A/B)) FOUND WITH CONNECTIONS NOT TAPED	PERSONNEL ERROR/INSTALLED SHRINK TUBING
C	CC1	019479B	101977	N	DV	B02	D				SPENT FUEL PL. CHAR. ABS. BANK BYP. DMP. FAILED TO SHUT	60 FB DAMPER GASKETS WERE MISSING
C	MY1	015731	091676	C	XV	V02	S	D			INCORRECT VLV LINEUP CNTNMNT ISO SYSTEM PV-15	PERSONNEL ERROR/FAILED TO CLOSE
C	MY1	020475	021678	S	XV	T02	D				VALVE SW-53 CLOSED BUT NOT LOCKED	PERSONNEL ERROR
C	MY1	020761	021678	K	MV	102	R	D			THERM. OVERLD. LINK. NOT REMOVED FROM #1 LP. COLD LE-	-G ISO. VLV. BRKR.//PERSONNEL ERROR(MAINT.)
C	PA1	017981	052677	G	RV	D02	D				RV-2255 LEAKING EXTERNAL/PART. UNSCREW. FROM COLLET	PERSONNEL ERROR/MAINTENANCE IMPROP. PERFF.
C	PA1	021993	080478	C	AV	F02	D				THE T-RING IN CY-1806 WAS NOT PRESSURIZED	INCORRECT REASSEMBLY OF AIR SUP TO CY1806
C	PA1	022228	082878	C	RM	V02	S	D			CNTNMNT PURGE & ISO. VALVES OPEN IN VIOL. OF T.S.	IMPROPER TAGOUT OF VALVES/PERSONNEL ERROR
C	SL1	015000	052476	C	MV	B02	D				MOV(I-MV-15-1) FAILED TO CLOSE / PREOP TESTING	PERSONNEL MAINT PROBLEM/DIRTY TORQ SW CNT
C	SL1	022908	110378	L	UV	V02	S	D			ISOL VALVES INADVERT OPENED BETW SPRAY SHUTDOWN --	--COOLING SYSTEMS//PERSONNEL ERROR
G	BF1	016053	092376	D	XV	V02	S	D			VALVE FOUND CLOSED TO PRESSURE SWITCH	PERSONNEL ERROR

PERSONNEL (MAINTENANCE)

U E N I	P L A V I	CONT.NO.	EVENT DATE	S C M P	FAIL CODE	U J K L M N O P Q R S T V	CON DU CT OR	FAILURE MODE	FAILURE MECHANISM	
G	8R2	01532	061976	M	XV	V02	S	0	VALVES 2-85-612 AND 2-85-615 FOUND IN CLOSED POS	PERSONNEL ERROR
G	8R1	019677	110577	L	MV	A02	0	0	PHR VALVE E11-F00A FAILED TO OPEN (OTOR PROBLEM)	PERSONNEL ERROR/COVER LEFT LOOSE/WATER LK
G	8R2	014650	020676	Q	MV	V02	S	0	VALVE E11-F004B FOUND LINED UP CLOSE/REG OPEN	PERSONNEL ERROR IN VALVE LINEUP
G	8R2	014633	021176	N	AV	V02	S	0	INLET VALVE TO CONT RADIATION MONITOR FOUND CLOSED	PERSONNEL ERROR AFTER FILTER CHANGE
G	8R2	015408	062076	N	SV	A02	0	0	CAC-PV-3441 SERIES EFFLUENT VLV WOULD NOT OPEN	SOLFMOID WAS DAMAGED, DURING LAST OUTAGE
G	8R2	015427	071176	K	UV	V02	S	0	BONNET VENT VLS 2-832-F04686F047B IN DV, LEFT OPEN	PERSONNEL ERROR/NOT CLCE, AFTER MAINTENAN
G	8R2	016398*	110576	N	SV	F02	0	02	ORN, POT INL, SOL, VLV\$ ON MONITORS 125961263 DISCONN	PERSONNEL ERROR/NOT RECONN, AFTER MAINTENMA
G	0A1	014100	011476	Q	MV	F02	0	0	VALVE RCIC MD 2516 SEPERATED FROM OPERATOR	BOLTS SHEARED, NOT TORQUED PROPERLY
G	0A1	014339	032376	U	CV	E02	0	0	FEEDWATER CHECK VALVE V-14-1 LEAKING INTERNALLY	TWO CLOTH BAGS FOUND IN VALVE/PERS, ERROR
G	0A1	017368	021977	N	AV	I02	0	0	INCORRECT SV REPLACED ON TORUS V.8, CV-4304	MAINTENANCE PERSONNEL ERROR
G	0A1	019372	100677	N	MV	F02	0	0	ISOLATION VALVE MOV 2740 CLOSING TIME CUT OF SPEC	MAINT, PERS, FAILED TO ADJ, LIMIT SWITCH
G	0R2	014748	052676	N	UV	V02	S	0	SAMPLE VALVE ON SUCTION SIDE OF PUMP IN CLOSED POS	PERSONNEL ERROR FAILURE TO OPEN VALVE
G	0R2	019135	091277	K	RM	B02	R	0	RECIRC SUCTION VALVE 202-48 WOULD NOT CLCE	VALVE PACKING TOO TIGHT MAINT ERROR
G	0R2	019490*	110277	C	UV	C02	0	02	SAMPLE LINE ISOLATION VALVES 8501-1A, 1B LEAKING	IMPROPER SEAT TO DISK CLEARANCE ADJ
G	0R2	022590	092676	M	XV	V02	S	0	VALVE TO ISOLATE FLOW SWITCH FOUND VALVED OUT	PERSONNEL ERROR
G	0R3	018378A	061177	M	RV	C02	R	0	ELECTROMATIC RELIEF VALVE 203-3D LEAKING INTERNALLY	PILOT PIN ADJUSTED INCORRECTLY
G	EN1	014790	051076	N	XV	V02	T	0	DISCHARGE VALVE DEMIN H2O TO RIVER LEFT OPEN	PERSONNEL ERROR
G	EN1	018191	060477	L	RM	F02	0	0	LPCI VALVE E11-F078 CYCLE TIME OUTSIDE T.S.	VALVE STEM PACKED TOO TIGHTLY
G	EN1	020687	022678	M	XV	V02	S	0	150, VLV\$ TO SWITCH\$ C11-M01366F IN CLOSE POSITION	PERSONNEL ERROR, UNCLEAR PROCEDURES
G	EN1	021725	060778	K	CV	I02	0	0	4-EXCESS FLOW CVS NOT FUNCTIONALLY TESTED AS REQ.	MAINTENANCE PERSONNEL ERROR

PERSONNEL (MAINTENANCE)

V E N	P L A N T	CONT.NO.	EVENT DATE	S U S	C O M P	FAIL CODE	T Y P E	C L A S S	C O N T R O L S U M P	K E Y	FAILURE MODE		FAILURE MECHANISM
G	EN1	022706	100578	S	UV	C02		D			VALVE BODY SEAT FOR P41-F3138 FAILED DURING MAINT.	IMPROPER MAINTENANCE PROCEDURES FOLLOWED	
G	FP1	019768	113077	N	UV	V02	S	D			VALVE ON MAIN STM COLLECT SYST INADVERTENTLY OPEN	MAINTAINENCE PERSONNEL ERROR	
G	FP1	021227	050878	D	MV	F02		D			POWER REMOVED FROM CORE SPRAY VALVE MOTOR	PERSONNEL ERROR	
G	FP1	022276	083078	N	XV	002		D			BACKHOE OPERATOR BROKE FIRE LOOP ISOLATION VALVE	PERSONNEL ERROR	
G	MO1	017034	011877	X	XV	C02		R	D		VALVE ON ACCUM T14-19 FAILED TO HOLD PRESSURE	VALVE PACKING INSTALLED INCORRECTLY	
G	NM1	017849	031777	W	AV	C02		D			MSIV NO. 111 LEAKING INTERNALLY	VALVE POPPET INCORRECTLY INSTALLED	
G	PB2	014153	020976	Q	MV	F02		R	D		RCIC O.B. STM ISO VAL MO-13-16 FAILED TO STROKE	VALVE PACKING TOO TIGHT / PERSONNEL ERROR	
G	PB3	020845	031078	T	UV	V02		S	D		RECOMBINER-COMP INLET-SUMP DRAIN VLV IMPROPER L/U	MAINTENANCE PERSONNEL ERROR	
G	PI1	020956	111678	N	XV	D02		D			HYDRANT SHUT-OFF VALVE BLEW OFF LINE	PERSONNEL ERROR IMPROPER INSTALLATION	
W	BV1	017829	051077	U	MV	V02		S	D		FEEDWATER BYPASS OPENED WHEN REQ TO BE CLOSED	MAINT TECH FAILED TO DISCONT PWR SUPPLY	
W	BV1	018728	080177	U	RM	F02		R	D		1B FEEDWATER REG. VLV. OPERATING IMPROPERLY	LOOSE LOCK PLATE DUE TO OVER TORQ. OF BOLT	
W	DC1	017246	030377	N	RM	T02		D			CLOSING TIME NOT TESTED ON S/G BLOWDOWN VALVE	MAINTENANCE PERSONNEL ERROR	
W	DC1	022332*	062878	N	RM	A02		C	D	O2	TWO VALVES TO MAIN COND AIR EJECTORS FAILED CLOSED	IMPROPER REPAIRS PERFORMED ON THE VALVES	
W	DC2	021674	060378	N	AV	B02		D			AIR-OP PZR SPRAY VALVE FAILED TO CLOSE	GASKET INSTALLED IMPROPERLY IN POSITIONER	
W	DC2	022064	072678	N	XV	V02		S	D		TWO MANUAL VALVES WERE OPENED IN VIOLATION OF T.S.	PERSONNEL ERROR	
W	IP2	021027*	040178	U	RM	F02		D	O2	V	HIGH TEMP. SHUTOFF VLVS IN MN. STM. SUP. TO #22 FEED PU-	-MP WOULDN'T OPER. AUTO. // PERSONNEL ERROR	
W	IP3	016469*	121776	W	MV	B02		R	D	02	TWC-28IN MSIVS FAILED TO CLOSE	SHAFT BINDING DUE TO IMPROP ADJ OF GLAND	
W	JF1	020993	032578	B	UV	V02		S	D		MDAFP & TDAFP RECIRC BYPASS ISO VLVS OPEN	PERSONELL ERROR	
W	JF1	023282	120678	H	MV	T02		D			T.S. REQUIRED BREAKER TO VALVES LOCKED OPEN	PERSONNEL FAILED TO LOCK BREAKERS OPEN	
W	KE1	019312	100377	F	MV	F02		D			MAINT. MAN DEENERGIZED 2 SW VLVS, WHEN ONLY ALLOW. T-	-O DEENER. 1 VLV // PERSONNEL ERROR	

PERSONNEL (MAINTENANCE)

PLANT	CONT. NO.	EVENT DATE	SUMMARY	FAIL CODE	TYPE	CLASS	FAILURE MODE	FAILURE MECHANISM
M NA1	02102	051078	C UV T02	D	D	TV-SS1124 WAS NOT TIMED PRIOR TO RETURNING TO SERV MAINTAINANCE PERSONNEL ERROR		
M NA1	022938	092776	M RM T02	D	D	AFTER MAINT, VLVS TV-80100A, B, D, F NOT STROKE TIMED MAINTENANCE PERSONNEL ERROR		
M PR1	015919	091076	F XV V02	S	D	CONTAIN.-TO-ANNULUS DIFFER. PRESS. SWITCH, VLVED OUT-- -BY MISTAKE//PERSONNEL ERROR		
M PT2	023123	120978	X XV V02	S	D	LOOP A TEMP DETECTOR MANIFOLD VALVED OUT		PERSONNEL ERROR(TOOK OUT SAFETY CHANNELS)
M R02	016936	012577	G UV V02	S	D	INPROPER VLV LINEUP (BORIC AC10 STORAGE TANK)		PERSONNEL ERROR
M R02	023370	121778	M AV F02	D	D	MSIV C STEM FAILED TO TRAVEL FULL TEST DISTANCE		PERSONNEL ERROR(MALADJUSTED PACK GLAND)
M SA1	017198	021177	M AV V02	S	D	#12 S/G MSIV WAS CLOSED WHEN IT WAS REQUIRED TO R-		-EMAIN CPEN//PERSONNEL ERROR(MAINTENANCE)
M SA1	019888*	110277	M UV F02	C	D	VALVE INTERNALS LEFT OUT IMPLEMENTING ENG-PA CDF19		PERSONNEL ERROR DURING MAINTENANCE
M S01	02162	062278	L MV A02	Q		MOV-RH-100 FAILED TO OPEN		MAINT ERROR/STEM WAS NOT ENGAGED TO DISC
M S01	022954	111778	M XV V02	S	D	3 VALVES CLOSED WHEN REQ OPEN/CLOSED TO STOP LEAK--		-RAD MONITORING LCST//PERSONNEL ERROR
M YR1	016204	061177	C RM 802	U		DRAIN VALVE (TV-209) FAILED TO CLOSE / TESTING		PERSONNEL MAINTENANCE/PACKING TOO TIGHT
M YR1	023104	113078	M UV V02	S	D	VALVE CLOSED WHEN REQ OPEN(IG ISOL ANOTHER VALVE--		--FOR CLEANING//PERSONNEL ERROR(MANAGEMENT)

PERSONNEL (TESTING)

PERSON	COMT. NO.	EVENT DATE	S P	C	FAIL CODE	T	L	A	ON	K	FAILURE MODE	FAILURE MECHANISM
B CR3	023095A	100478	L	XV	V03	S	D				ISCL VALVE TO FLOW CONTROLLER SHUT(SEE 023095)	PERSONNEL ERROR/VALVE REQUIRED TO BE OPEN
B DB1	019984	121677	B	UV	V03	S	D				AUX.FOWTR VLVS AF599608 SHUT;MS107A,AF38716728K.D	PERSONNEL ERROR;IMPCPER VLV LINEUP
B DB1	019949	032278	H	XV	V03	S	D				HI POINT VENT(HP-72)NOT VENTED AS REQUIRED	PERSONNEL ERROR(REMOVED FROM TEST LIST)
B DB1	022047*	071878	U	RM	F03	D	D				02 V POWER REMOVED FROM FEEDWATER STOP VALVES FOR TEST	PERSONNEL ERROR,FAILED TO RESTORE POWER
C S11	021733	052078	U	RM	F03	D	D				15: FEEDWATER BYPASS CONT VLV INADVERT.OPENED FULLY	ANALYTICAL SETTINGS UNREALISTIC
G Bf2	016199	100776	H	XV	V03	S	D				EQUALIZER VALVE ON FLOW INSTRUMENT FOUND OPEN	PERSONNEL ERROR
G Bp2	014647	020576	L	XV	V03	S	D				PRESS SW FOUND ISOLATED AFTER TESTING	PERSONNEL ERROR
G C01	016713	111676	K	XV	V03	S	D				ISOLATION VALVES TO PRESS. SWITCH LEFT CLOSED	PERSONNEL ERROR AFTER SURVEILLANCE
G C01	018594	072577	L	RM	T03	D	D				4 ISOLATION VALVES NOT LEAK TESTED	PERSONNEL ERROR
G C01	019119	081677	X	XV	V03	T	D				VALVE TO LEVEL SWITCH LEFT CLOSED AFTER TEST	PERSONNEL ERROR
G C01	020806A	020778	H	XV	V03	T	D				ISOLATION VALVE TO OPIS-76 FOUND CLOSED(SEE020806)	PERSONNEL ERROR
G D01	017312	021977	H	RM	F03	D	D				CONTACT BLOCK FOUND INSTALLED IN VALVE CIRCUIT	PERSONNEL ERROR,FAILED TO REMOVE AFTER TS
G D01	020147	011178	X	XV	V03	S	D				ISO VLVS FOR PS4312C & PS4315C IN CLOSED POSITION	ERROR OF PERSONNEL PERFORM. TESTING
G Dp2	020457	032178	Q	MV	F03	D	D				ISGL COND VALVE MD 1301-3 RENDERED INOPERABLE	PERSONNEL ERROR,LOSS OF POWER TO VALVE
G Dp2	022777	101278	N	XV	V03	S	D				DIFF PRESS SW ISOLATION VALVE FOUND VALVED OUT	PERSONNEL ERROR
G D+3	018551	072577	L	RM	T03	D	D				SURVEILLANCE TEST NOT COMPLETED ON LPCI VALVES	PERSONNEL WERE 6 DAYS LATE COMPLETING TEST
G Dp3	019659	102677	H	RM	T03	D	D				SURVEILLANCE TEST NOT COMPLETED ON TIME	PERSONNEL ERROR(RECURRING PROBLEM)
G Dp3	022772	101278	N	XV	V03	S	D				DIFF PRESS SW FOUND VALVED OUT	PERSONNEL ERROR
G EN1	014106	010276	D	RM	T03	D	D				CORE SPRAY TEST NOT DONE IN REQUIRED TIME	PERSONNEL ERROR
G EN1	014780	030476	M	XV	V03	S	D				MN STEAM INST FLOW RACK NOT VALVED IN AFTER TEST	PERSONNEL ERROR
G EN1	013045*	072976	A	RV	H03	D	D				ALL SEVEN ADS VALVES OPENED INADVERTANTLY ON TEST	PERSONNEL ERROR(USED WRONG PROCEDURE)
G EN1	017096	011777	L	XV	V03	S	D				PRESS SW FOUND VALVED OUT WHEN REQUIRED OPEN	PERSONNEL ERROR
G EN1	020029	082977	M	RM	V03	S	D				OPERATION OF CONT.VAL CAUSED VIOL OF CNTMNT INTEG TEST CONNECTION PLUG REMOV. FROM VLV/TEST	PERSONNEL ERROR(RUINED D/P CELL)
G EN1	022733	092878	M	XV	V03	S	D				VALVES ON D/P CELL WERE VALVED IN WRONG	PERSONNEL ERROR/ TESTING PERSONNEL
G Fp1	017059	022477	H	UV	V03	S	D				VALVES ON HPCI ROUTE FROM COND TK TO TORUS L/U IMP OPERATOR ERROR/ TESTING PERSONNEL	
G P83	021057	060778	A	XV	V03	S	D				SHUT-OFF VALVE ON PS-10-1000 CLOSED,VIOL OF T.S.	VALVE CLOSED DURING INST TEST,NOT REOPEN
G P83	021716	062678	X	XV	V03	T	D				SHUTOFF VAL ON PRESS SW PS-3-5-120 CLOSED,T.S.VIOL	TEST PERS CLOSED VLV DUR TEST,NOT REPEND
G V11	016597	011877	L	RM	V03	S	D				8 RHR PMP DISCH.VLVS. SHUT WHEN REQ. TO BE OPEN	PERSONNEL ERROR
M Bv1	021044	033178	6	UV	T03	D	D				TECH SPEC VIOLATION,VALVE POSITION NOT VERIFIED	PERSONNEL ERROR/FAILED TO SCHEDULE TEST
M Ip2	015020	060576	H	UV	V03	S	D				SI PMPs COMMON SUC.VLV(1846)IN IMPROPER POSITION	PERSONNEL ERROR/DID NOT OPEN VLV AS REQR.
M Ip3	014604	042976	F	RM	V03	S	D				INCR.T.VLV LINUP FOR TEST,CNTMNT SPRY ACCID.TURN ON	PERSONNEL ERROR
M Pt2	014348	031576	N	MV	A03	D	D				CONTAINMENT SPRAY 2MOV-8608 FAILED TO OPEN / TEST	PERSONNEL ERROR/TERMINAL SLIDER OPEN

APPENDIX L

VALVE REPORTS CLASSIFIED AS DESIGN ERROR

CODES USED IN LER ONE-LINE DESCRIPTIONS

FAILURE MODE

CODE DESCRIPTION

A - FAILED TO OPEN
 B - FAILED TO CLOSE
 C - INTERNAL LEAKAGE
 D - EXTERNAL LEAKAGE (RUPTURE VALVES)
 E - REVERSE LEAKAGE (CHECK VALVES)
 F - FAILED TO OPERATE AS REQUIRED
 G - PLUGGED & FAILS TO REMAIN OPEN
 H - PREMAJURE OPEN (RELIEF VALVES)
 I - MAINTENANCE/REPLACEMENT
 J - TECHNICAL SPECIFICATION VIOLATION
 K - IMPROPER VALVE CONFIGURATION

COMPONENT

CODE DESCRIPTION

MV - MOTOR OPERATED VALVE (ELEC.)
 AV - PNEUMATIC OPERATED VALVE
 SV - SOLENOID OPERATED VALVE
 HV - HYDRAULIC OPERATED VALVE
 RM - REMOTE OPERATED VALVE
 XV - MANUAL OPERATED VALVE
 CV - CHECK VALVE
 RV - RELIEF VALVE
 DV - DAMPER VALVE
 UV - OPERATOR TYPE OR FUNCTION NOT STATED

TYPE OF EVENT

CODE DESCRIPTION

B - RECURRING COMMON CAUSE
 C - COMMON CAUSE
 R - RECURRING
 F - COMMAND FAULT
 Y - RECURRING COMMAND FAULT

FAILURE MECHANISM

CODE DESCRIPTION

00 - UNKNOWN
 01 - PERSONNEL (OPERATION)
 02 - PERSONNEL (MAINTENANCE)
 03 - PERSONNEL (TESTING)
 04 - DESIGN ERROR
 05 - FABRICATION/CONSTRUCTION/QUALITY CONTROL
 06 - PROCEDURAL DISCREPANCY
 07 - NORMAL WEAR
 08 - EXCESSIVE WEAR
 09 - CORROSION
 10 - FOREIGN MATERIAL CONTAMINATION
 11 - EXCESSIVE VIBRATION
 12 - MECH. CONTROLS/PARTS FAILED/CUT OF ADJUST.
 13 - SEAL/GASKET FAILURE/PROBLEM
 14 - PACKING FAILURE/PROBLEM
 15 - BELLOWS/BOOT FAILURE/PROBLEM
 16 - ELECTRICAL INPUT FAILURE/PROBLEM
 17 - BEARING/BUSHING FAILURE/PROBLEM
 18 - WELD FAILURE
 19 - LACK OF LUBRICATION
 20 - ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM
 21 - LEAKING/RUPTURED DIAPHRAGM
 22 - TORQUE SWITCH FAILURE/PROBLEM
 23 - FAILURE OF COMPONENT SUPPLY SYSTEM
 24 - AIR DRYER FAILURE/PROBLEM
 25 - RELIEF SWITCH FAILURE/PROBLEM
 26 - PILOT VALVE FAILURE/PROBLEM

EVENT CLASSIFICATION

CODE DESCRIPTION

D - CHANGE OF STATE
 Y - AGE
 U - UNKNOWN

ACTIVITY RESULTING IN DISCOVERY

CODE DESCRIPTION

D - DEMAND ON COMPONENT
 M - MAINTENANCE
 N - NORMAL OPERATION
 R - RECORDS REVIEW
 T - TESTING
 U - UNKNOWN

NUMERICAL KEY WORDS

CODE DESCRIPTION

V - VALVES
 A - SOME
 S - VARIOUS
 F - SEVERAL
 . - OTHER

NSSS VENDOR

CODE DESCRIPTION

B - BABCOCK & WILCOX
 C - COMBUSTION ENGINEERING
 G - GENERAL ELECTRIC
 W - WESTINGHOUSE

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

<u>CODE</u>	<u>PWR</u>	<u>CODE</u>	<u>BWR</u>
A	-	A	-
B	-	B	-
C	-	C	-
D	-	D	-
E	-	E	-
F	-	F	-
G	-	G	-
H	-	H	-
I	-	I	-
J	-	J	-
K	-	K	-
L	-	L	-
M	-	M	-
N	-	N	-
O	-	O	-
P	-	P	-
Q	-	Q	-
R	-	R	-
S	-	S	-
T	-	T	-
U	-	U	-
V	-	V	-
W	-	W	-
X	-	X	-
Y	-	Y	-
Z	-	Z	-

-	AUXILIARY FEED	-	AUTOMATIC DEPRESSURIZATION
-	CONTAINMENT ISOLATION (INCL PENETRATIONS)	-	CONTAINMENT ISOLATION (INCL PENETRATIONS)
-	ELECTRIC POWER	-	LOW PRESSURE CORE SPRAY
-	CONTAINMENT SPRAY INJECTION	-	ELECTRIC POWER
-	CHEMICAL VOLUME CONTROL (MAKE-UP)	-	CONTAINMENT SPRAY INJECTION
-	HIGH PRESSURE COOLANT INJECTION	-	STANDBY LIQUID CONTROL (BSCRN)
-	COMPONENT COOLING WATER	-	HIGH PRESSURE COOLANT INJECTION
-	REACTOR COOLANT	-	COMPONENT COOLING WATER
-	LOW PRESSURE COOLANT INJECTION (RHR)	-	REACTOR COOLANT RECIRC
-	REACTOR PROTECTION (CONTROL RCCS)	-	LOW PRESSURE COOLANT INJECTION (RHR)
-	NONSAFETY-RELATED	-	CONTROL ROD DRIVE HYDRAULIC (SCRAM)
-	SYSTEM UNKNOWN/NOT APPLICABLE	-	NONSAFETY-RELATED
-	CONTAINMENT FAN COOLING SYSTEM	-	SYSTEM UNKNOWN/NOT APPLICABLE
-	SERVICE WATER	-	REACTOR CORE ISOLATION COOLING
-	CONDENSATE AND FEED	-	SERVICE WATER
-	MAIN STEAM	-	STANDBY GAS TREATMENT
-	REACTOR PROTECTION (PPS)	-	CONDENSATE AND FEED
-	CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.	-	MAIN STEAM
-	FAILED FUEL ELEMENT DETECTION	-	REACTOR PROTECTION (PPS)
		-	CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
		-	FAILED FUEL ELEMENT DETECTION

DESIGN ERROR

PLANT	CONT.NO.	EVENT DATE	SYST	COMP	FAIL CODE	TYPE	CLASS	CONTR	KEY	FAILURE MODE	FAILURE MECHANISM
B CR3	0176568	041577	C	RM	B04	R	D			VLV.CAV-2 FAIL TO CLOSE;CONTAINMENT ISOLATION VLV CLOSURE SPRING NOT STRONG ENOUGH	
B CR3	020222	122877	N	MV	B04		D			RB PURGE EXHAUST VLV AHV-18 DID NOT AUTO CLOSE DESIGN PROB/OPEN LIMIT SWITCH NOT ACTIVATE	
B RS1	019666	111177	H	MV	V04	S	D			VALVE LINE-UP INCORRECT//NEW VALVES WERE INSTALLED --WITH OPEN/CLOSE INDICATION ATYPICAL	
B T11	016830A	051076	C	RM	C04		D			VALVE LEAKED THRU DURING CONTAINMENT LEAKRATE TEST DESIGN IMPROPER	
C CC1	014703	033176	S	RM	I04	R	D			BUTTERFLY VALVE TO BE REPLACED WITH GATE(1CV5210) POOR DESIGN/PIPE ERRODED DOWNSTREAM OF VL	
C CC1	015271A	062776	G	RV	D04	C	D			PIN-HOLE LEAK DISCOV.IN BONN.#11 BOR.ACD.PMP.RELIEF SUC.REL.MADE OF CARBON STEEL;DESIGN ERROR	
C CC1	015271B	062776	G	RV	I04	C	D			#12 BORIC ACID PUMP SUC.RELIEF MADE OF WRONG WATER DESIGN ERRO	
C CC2	019982	121377	H	RV	H04		D			HI.PRESS.SI.MDR.RELIEF LIFTED AT PRESS.BELOW T.S. DESIGN ERROR;VLV WAS SET AT TOO LOW PRESS	
C MI2	019257	092377	G	UV	C04		D			BORIC ACID LEAKING THROUGH DISCHARGE VALVE VCT PRESS L.T. HEAD PRESS	
C PA1	014721*	043076	M	AV	I04		D	C2		VALS CV-2113,-2115 DO NOT MEET STRESS CODE CRIT. CHANGE OF CALCULATION TECHNIQUE / DESIGN	
C PA1	019405	091677	C	AV	I04		D			CONTMNT PURGE ISO VLVS NEED REDUNDANT AIR SUPPLY DESIGN ERROR JM ORIG SYST DESIGN	
C SL1	017609*	040877	H	RM	I04		D	02		ATMOSPHERIC STEAM DUMP VALVES DIDNT MEET FSAR CRIT DESIGN ERROR IN SIZING THE VALVES	
G BF2	021094	032578	H	CV	B04		D			CHECK VLV.2-73-603,IN HIGH-PRESS.CI.SYS,FOUND OPEN DIMEN.ERR. IN VLV. INTERFERENCE CLEARANCE	
G BR1	018128	052077	Q	CV	F04		D			HPCI STM.LINE EXH.CHECK VLV E41-F049 DETER.FAILED VLV OSCIL.CAUSED OSC HINGE FAIL;IMP.DESGN	
G BR1	021557	052778	Q	MV	A04		D			RCIC COND.STOR.TK.SUC.VLV E51-F010 WOULD NOT OPEN DESIGN/MTR.DID NOT HAVE SPACE MTR;NEED.IT	
G BR2	014390*	021076	C	UV	C04	C	D	03		3 BUTTERFLY VALVES LEAKING THRU//DESIGN ERROR AIR OPERATOR ADDED TO EACH VALVE	
G BR2	015542	081176	N	AV	B04	B	D			ISO.VLV 2-CMC-PV-1260 WOULD NOT CLOSE FULLY DESIGN PROB./CLOSING SPRING NOT STRONG EN	
G BR2	023033	111178	L	CV	B04		D			RHR CHECK VALVE E11-F031 WILL NOT FULLY SEAT DESIGN ERROR/VLV.DOESNT WORK ON LOW DP	
G C01	023483	120878	S	MV	A04		D			SM CROSS CONNECT VLV SW 808 MV FAILED TO OPEN DESIGN ERROR/IMPRCER TORQUE SWITCH USED	
G C01	023542	122778	C	AV	B04		D			DRYWELL OUTBD+ VENT ISO.VLV.PC-246AV NOT SHUTTING--FULLY//DESIGN ERROR IN PNEUM.OPERATOR	
G DA1	014468B	021476	K	CV	B04		D	02		INSTRUMENT LINE CV XFY-4611,4612 FAILED TO CLOSE POOR TEST LOCATION FOR VALVE	
G DR2	018985	091077	H	MV	A04		D			HPCI VALVE 2-2301-8 FAILED TO OPEN,VAL DAMAGED OVER SIZED MTR OPERATORS OVERSTRESS STEH	
G EN1	014140	010976	S	RM	V04	S	D			TWO SERVICE WATER VALVES ISOLATED WHEN REQ OPEN FROZEN FLOW SWITCHES(HEAT TAPE NEEDED)	
G EN2	022560*	091078	L	RM	B04		D	02		RHR VALVES 2E11-F003A,F047A FAILED TO CLOSE VALVE GATES SA+G+BI IN FULL OPEN POSIT	
G EN2	022496	091778	N	DV	F04		D			ELECTRICAL CABLES ROUTING INTERFERES W DAMPER VALS DESIGN ERROR, CABLES REROUTED	
G FP1	021495*	061678	Q	MV	I04		D	03		3 VALVE OPERATOR MOTORS HAVE WRONG CLASS WINDINGS MOTORS REWOUND WITH CLASS H INSULATION	
G FP1	022329	090378	D	MV	A04		D			CORE SPRAY INJECTION VALVE 14-MOV-128 FAIL TO OPEN DESIGN ERROR,NCRML D.P.TOO SEVERE ON VAL	
G MD1	019050	090977	C	MV	F04	R	D			VALVE MD 2009 FAILED TO OPERATE PROPERLY SET CLAMP SCREENS UNDERSIZED	
G DC1	018952	082977	C	CV	B04	R	D			TORUS TO DRYWELL VAC.BRK(V-26-5) FAIL. TO RECLOSE DESIGN ERROR / IMPROPER BUSHING USED	
G DC1	019198	092777	C	CV	B04	R	D			VAC BKR VAL V-26-9 FAILED TO CLOSE DESIGN ERROR / IMPROPER BUSHING USED	
G QC1	021127*	042178	H	MV	I04	C	D	02	V	GE NOTIFIED QC THAT RECIRC SUCTION VALVES COULD--- ---CLOSE SPURIOUSLY/DISABLED ELECTRICALLY	
M BV1	023214	101278	C	CV	F04		D			1A RCP SEAL INJEC.SPR.LOAD.CKVL OPEN.PRESS.TO HIGH CHECK VLV. HAD IMPROPERLY DESIGN. SPRING	

DESIGN ERROR

<u>PLANT</u>	<u>CONT. NO.</u>	<u>EVENT DATE</u>	<u>SMS</u>	<u>COM</u>	<u>FAIL CODE</u>	<u>TYPE</u>	<u>CLASS</u>	<u>CON</u>	<u>MUM</u>	<u>PK</u>	<u>FAILURE MODE</u>	<u>FAILURE MECHANISM</u>
W DC1	020520	020978	N	UV	F04		D				FIRE PUMP TEST VALVE 1-FP-241 FOUND FULL OPEN	VALVE COULD VIBRATE TO OPEN POS(LOCKED)
W IP2	016467*	120276	C	RM	104	R	D 07				ELEC.CIRC.FOR 4CONT.ISO.VLV563CONT.REL.VLV.NCT ME-	-ET SING.FAIL.CRIT(1 SOURCE PWR)//DESIGN
W IP2	019281*	101977	C	RM	104	R	D 02	V			AIR EJECT.LINE CONT.ISO.VLV.CIRCUITRY DID NOT MEE-	-T SINGLE FAIL.CRIT(1 SOURCE PWR)//DESIGN
W IP2	022163	081778	K	RV	104		D				DISCREP BETW SPEC + AS SUPPLY PARAMETERS FOR RV	DESIGN ERROR, 3 IN, 1500 PSI PRESS RV
W KE1	019456*	102177	E	CY	E04	C	D 02	V			REVERSE LEAK.PAST D.G.AIR COMP. CHECK VALVES	DESIGN PROB., REPLACED CHCK.VLV5, NEW STYLE
W NA1	021140	040778	N	RM	104		D				TV-SS112A NEEDS DESIGN MOD TO REPLAC LIM SW	DESIGN ERROR
W PT2	018572	072877	H	MV	V04	S	D				MO: FOUND IN INTERMEDIATE POSITION/SINCE PREV TEST	PERSONNEL FAILED TO ASSURE FULLY OPER
W RO2	015570	081776	B	RM	A04	R	D				VALVE V2-16A FAILED TO OPEN	LIMITORQUE OPER FAILED TO OPEN VALVE
W T12	019752	111477	C	RM	B04	R	D				SAMPLING VALVE TV-SS-202A FAILED TO CLOSE	DESIGN DEFICIENCY/CLOSING SPRING TOO WEAK
W SU2	022543	092678	S	MV	B04		D				CIRC H2O OUTLET MOV-CM-2000 FAILED TO CLOSE	DESIGN/TORQUE SW CAM WEDGED ON SCREW
W Z11	022849	090478	X	XV	D04	R	D				HANCOCK CO MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
W Z11	022516	090878	X	XV	D04	R	D				HANCOCK CO MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
W Z11	022844	091478	X	XV	D04	R	D				HANCOCK CO MANUAL ROOT VALVE LEAKING STEAM	DESIGN PROBLEM/VALVES PRESS RATING TO LOW
W Z11	022845	091478	R	DV	F04		D				1B RCFC ACCIDENT INLET DAMPER FAILED TO SHIFT	DESIGN PROB/DIFF PRESS FLEXED&BOUND BLADE
W Z12	017730*	033077	G	UV	C04	B	D 02	V			INJECTION LINE VALVES LEAKING THRU DILUTING BORON	DESIGN PROB/UNEQUAL PRESS ACROSS SEATS
W Z12	017729*	040177	G	UV	C04	B	D 02	V			INJECTION LINE VALVES LEAKING THRU DILUTING BORON	DESIGN PROB/UNEQUAL PRESS ACROSS SEATS

APPENDIX M

VALVE REPORTS CLASSIFIED AS FABRICATION, CONSTRUCTION,
OR QUALITY CONTROL ERROR

CODES USED IN LER ONE-LINE DESCRIPTIONS

<u>CODE</u>	<u>FAILURE MODE</u> <u>DESCRIPTION</u>
A	FAILED TO OPEN
B	FAILED TO CLOSE
C	INTERNAL LEAKAGE
D	EXTERNAL LEAKAGE /RUPTURE
E	REVERSE LEAKAGE (CHECK VALVES)
F	FAILED TO OPERATE AS REQUIRED
G	PLUGGED (FAILS TO REMAIN OPEN)
H	PREMATURE OPEN (RELIEF VALVES)
I	MAINTENANCE/REPLACEMENT
J	TECHNICAL SPECIFICATION VIOLATION
K	IMPROPER VALVE CONFIGURATION

<u>CODE</u>	<u>COMPONENT</u> <u>DESCRIPTION</u>
MV	MOTOR OPERATED VALVE (ELEC.)
AV	PNEUMATIC OPERATED VALVE
SV	SOLENOID OPERATED VALVE
HV	HYDRAULIC OPERATED VALVE
RM	REMOTE OPERATED VALVE
XV	MANUAL OPERATED VALVE
CV	CHECK VALVE
RV	RELIEF VALVE
DV	DAMPER VALVE
JV	OPERATOR TYPE OR FUNCTION NOT STATED

<u>CODE</u>	<u>TYPE OF EVENT</u> <u>DESCRIPTION</u>
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
F	COMMAND FAULT
T	RECURRING COMMAND FAULT

<u>CODE</u>	<u>FAILURE MECHANISM</u> <u>DESCRIPTION</u>
00	UNKNOWN
01	PERSONNEL (OPERATION)
02	PERSONNEL (MAINTENANCE)
03	PERSONNEL (TESTING)
04	DESIGN ERROR
05	FABRICATION/CONSTRUCTION/QUALITY CONTROL
06	PROCEDURAL DISCREPANCY
07	NORMAL WEAR
08	EXCESSIVE WEAR
09	CORROSION
10	FOREIGN MATERIAL CONTAMINATION
11	EXCESSIVE VIBRATION
12	MECH. CONTROLS/PARTS; FAILED/CUT OF ADJUST.
13	SEAL/GASKET FAILURE/PROBLEM
14	PACKING FAILURE/PROBLEM
15	GELING/BOODY FAILURE/PROBLEM
16	CLYTRICAL INPUT FAILURE/PROBLEM
17	BEARING/BOUSHING FAILURE/PROBLEM
18	WEAR FAILURE
19	LACK OF LUBRICATION
20	ELECTRIC MOTOR OPERATOR FAILURE/PROBLEM
21	SOLENOID FAILURE/PROBLEM
22	LEAKING/RUPTURED DIAPHRAGM
23	TORQUE SWITCH FAILURE/PROBLEM
24	FAILURE OF COMPONENT SUPPLY SYSTEM
25	START/STOP FAILURE/PROBLEM
26	PILOT SWITCH FAILURE/PROBLEM
27	PILOT VALVE FAILURE/PROBLEM

<u>CODE</u>	<u>EVENT CLASSIFICATION</u> <u>DESCRIPTION</u>
D	CHANGE OF STATE
Y	AGE
U	UNKNOWN

<u>CODE</u>	<u>ACTIVITY RESULTING IN DISCOVERY</u>
D	DEMAND ON COMPONENT
M	MAINTENANCE
N	NORMAL OPERATION
R	RECORDS REVIEW
T	TESTING
U	UNKNOWN

<u>CODE</u>	<u>NUMERICAL KEY WORDS</u> <u>DESCRIPTION</u>
V	VALVES
A	SOME
VAR	VARIOUS
SEV	SEVERAL
Z	OTHER

<u>CODE</u>	<u>NSSS VENDOR</u> <u>DESCRIPTION</u>
B	BARCOCK & WILCOX
C	COMBUSTION ENGINEERING
G	GENERAL ELECTRIC
M	WESTINGHOUSE

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

<u>CODE</u>	<u>PWR</u>	<u>CODE</u>	<u>BWR</u>
---	---	---	---
A	- AUXILIARY FEED	A	- AUTOMATIC DEPRESSURIZATION
B	- CONTAINMENT ISOLATION (INCL PENETRATIONS)	BB	- CONTAINMENT ISOLATION (INCL PENETRATIONS)
C	- ELECTRIC POWER	C	- LOW PRESSURE CORE SPRAY
D	- CONTAINMENT SPRAY INJECTION	CC	- ELECTRIC POWER
E	- CHEMICAL VOLUME CONTROL (MAKE-UP)	D	- CONTAINMENT SPRAY INJECTION
F	- HIGH PRESSURE COOLANT INJECTION	E	- STANDBY LIQUID CONTROL (BERGN)
G	- COMPONENT COOLING WATER	F	- HIGH PRESSURE COOLANT INJECTION
H	- REACTOR COOLANT	G	- COMPONENT COOLING WATER
I	- LOW PRESSURE COOLANT INJECTION (RHR)	H	- REACTOR COOLANT RECIRC
J	- REACTOR PROTECTION (CONTROL RCCS)	I	- LOW PRESSURE COOLANT INJECTION (RHR)
K	- NONSAFETY-RELATED	J	- CONTROL ROD DRIVE HYDRAULIC (SCRAM)
L	- SYSTEM UNKNOWN/NOT APPLICABLE	K	- NONSAFETY-RELATED
M	- CONTAINMENT FAN COOLING SYSTEM	L	- SYSTEM UNKNOWN/NOT APPLICABLE
N	- SERVICE WATER	M	- REACTOR CORE ISOLATION COOLING
O	- CONDENSATE AND FEED	N	- SERVICE WATER
P	- MAIN STEAM	O	- STANDBY GAS TREATMENT
Q	- REACTOR PROTECTION (PPS)	P	- CONDENSATE AND FEED
R	- CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.	Q	- MAIN STEAM
S	- FAILED FUEL ELEMENT DETECTION	R	- REACTOR PROTECTION (PPS)
T		S	- CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
U		T	- FAILED FUEL ELEMENT DETECTION
V		U	
W		V	
X		W	
Y		X	
Z		Y	
		Z	

FABRICATION/CONSTRUCTION/QUALITY CONTROL

VEN	PLAN I	CONT.NO.	EVENT DATE	SYS	COMP	FAIL CODE	TYPE	CLASS	CUM PM	KEY		FAILURE MODE	FAILURE MECHANISM
B	DB1	021579	050978	C	CV	D05	D					CONT.VAC.RELIEF CV-5070 HAD EXCESSIVE LEAKAGE	DEF.INITIAL INSTAL. OF TEST CONN. PIPING
B	DB1	021578	051178	C	CV	D05	D					CONT.VAC.RELIEF CV-5076 HAD EXCESSIVE LEAKAGE	VLV NOT PROPERLY SEATING AGAINST VLV LINE
B	T11	016836B	051076	C	RM	C05	C	D	02			2 VALVES LEAKED THRU ON CONTAINMENT LEAKRATE TEST	FAB ERROR/SEAT RINGS WELDED IMPROPERLY
C	FC1	022972	110178	B	CV	E05	D					AUX FEED CHECK VALVE FOUND INSTALLED WRONG	CONSTRUCTION ERROR
C	FC1	023022*	111678	P	MV	I05	D	30				30 LIMITORQUE VALVES FOUND WITHOUT STAKED LOCKNUTS	MANUFACTURER ERROR
C	SL1	015005	060476	Y	UV	I05	D					RECORDS REVIEW SHOW VALVES OF H2 SYS NOT TESTED---	---FOR A1 ENVIRONMENT/REPLACED VALVES
C	SL1	022185*	072878	P	MV	I05	C	D	05	Z		VENDOR NOTIFIED PLANT OF POTENTIAL MOV FAB PROBLEM	LOCKNUTS STAKED WRONG ON SCHE/REPAIR SAME
G	BF1	020493A	021478	W	RV	I05	C	D	02			LINEAR INDIC. FOUND IN 2 MN.STM.RVS,BODY CASTINGS	CAUSED BY CASTING SHRINKS OR NONMETAL.INC
G	BF2	014104	011278	N	UV	I05	D					DEMIN H2O TO DRYWELL VALVE FOUND NOT SEISMIC QUAL	PERSONNEL ERROR/PROBABLE Q.C.
G	BF2	020493B	021478	W	RV	I05	C	D	02			LINEAR INDIC. FOUND IN 2 MN.STM.RVS,BODY CASTINGS	CAUSED BY CASTING SHRINKS OR NONMETAL.INC
G	DA1	017043	021177	D	MV	F05	D					CLUTCH HOUSING FOR MOV 2115 FRACTURED DUR. TEST	MATERIAL TOO BRITTLE
G	EN2	022211	081078	C	RM	V05	S	D				VAC RELEIF VALVE F310 FOUND OPEN WHEN REQ CLOSED	PERSONNEL ERROR(INVERTED SIGNAL)
G	MD1	018465*	062377	N	RM	F05	D	02	V			SGTS TRAIN "A" ISC.VLV.CONTROLS INSTALLED IMPROPER	FABRICATION ERROR
G	P82	020664*	030178	W	RV	I05	C	D	04			DURING INSPECT.;CRACKS FOUND NEAR SEATS OF 4 S.RVS	CRACKS WERE CAUSED BY PRE-EXIST.CAST.DEF.
G	PI1	014476	041376	C	MV	I05	D					WELD ON HPCI SYSTEM VALVE MO 2301-4 CRACKING	ORIGINAL WELD FABRICATION VARIANCE
G	QC1	019489	093077	D	MV	F05	D					CORE SPRAY VALVE 1-1402-25B FAILED TO OPERATE	CRACKED YOKE/PROB SINCE INSTALLATION
W	BV1	021644	062278	F	UV	G05	D					INFLATABLE PLUG FOUND IN RECIRC PUMP INLET VALVE	PERSONNEL ERROR DURING CONSTRUCTION PHASE
W	DC1	014430	042076	B	MV	I05	D					AUX FEED WATER VALVE FOUND INSTALLED BACKWARDS	CONSTRUCTION/QC ERROR/INLET-OUTLET REVERS
W	DC2	023630*	112178	F	CV	A05	C	D	02			CHK.VLV.S.C7S-127E6W TO THE LOWER CONT.SPRAY NOZZL-	ES INSTALLED BACKWARDS//FABRICATION ERR.
W	HN1	018778	073077	G	XV	D05	R	D				B CHARG PUMP BYPASS ISC VAL LEAKING EXTERNALLY	DEFECTIVE CASTING
W	RQ2	019351	081777	B	CV	E05	D					DISCH CK VAL FOR AUX FEED PUMP,C STM GEN FAILED	CK VAL HAS BURR ON HINGE JOINT,OPEN POSIT

APPENDIX N

VALVE REPORTS CLASSIFIED AS PROCEDURAL DISCREPANCIES

CODES USED IN LER ONE-LINE DESCRIPTIONS (CONTINUED)

SYSTEMS

CODE

PWR

CODE

BWR

A - AUXILIARY FEED
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 D - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 E - ELECTRIC POWER
 F - CONTAINMENT SPRAY INJECTION
 G - CHEMICAL VOLUME CONTROL (MAKE-UP)
 H - HIGH PRESSURE COOLANT INJECTION
 I - HIGH PRESSURE COOLANT INJECTION
 J - COMPONENT COOLING WATER
 K - REACTOR COOLANT
 L - LOW PRESSURE COOLANT INJECTION (RHR)
 M - REACTOR PROTECTION (CONTROL RODS)
 N - NONSAFETY-RELATED
 P - SYSTEM UNKNOWN/NOT APPLICABLE
 Q - SYSTEM UNKNOWN/NOT APPLICABLE
 R - CONTAINMENT FAN COOLING SYSTEM
 S - SERVICE WATER
 T - SERVICE WATER
 U - CONDENSATE AND FEED
 V - CONDENSATE AND FEED
 W - MAIN STEAM
 X - REACTOR PROTECTION (PPS)
 Y - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 Z - FAILED FUEL ELEMENT DETECTION

A - AUTOMATIC DEPRESSURIZATION
 B - CONTAINMENT ISOLATION (INCL PENETRATIONS)
 C - LOW PRESSURE CORE SPRAY
 D - ELECTRIC POWER
 E - ELECTRIC POWER
 F - CONTAINMENT SPRAY INJECTION
 G - STANDBY LIQUID CONTROL (BRCN)
 H - HIGH PRESSURE COOLANT INJECTION
 I - HIGH PRESSURE COOLANT INJECTION
 J - COMPONENT COOLING WATER
 K - REACTOR COOLANT RECIRC
 L - LOW PRESSURE COOLANT INJECTION (RHR)
 M - CONTROL ROD DRIVE HYDRAULIC (SCRAM)
 N - NONSAFETY-RELATED
 P - SYSTEM UNKNOWN/NOT APPLICABLE
 Q - REACTOR CORE ISOLATION COOLING
 R - REACTOR CORE ISOLATION COOLING
 S - SERVICE WATER
 T - STANDBY GAS TREATMENT
 U - CONDENSATE AND FEED
 V - CONDENSATE AND FEED
 W - MAIN STEAM
 X - REACTOR PROTECTION (PPS)
 Y - CONTAINMENT AIR/EFFLUENT; PURIF./SAMPLE.
 Z - FAILED FUEL ELEMENT DETECTION

PROCEDURAL DISCREPANCY

VEN	PLANT	CONT.NO.	EVENT DATE	SY	COMP	FAIL CODE	TYPE	CLASS	COM NUM	KEY	FAILURE MODE	FAILURE MECHANISM
B	AR1	015207	061276	G	XV	V06	S	D			VALVE SF-22 WAS NOT CLOSED(A SPILL RESULTED)	PROCEDURES WERE INADEQUATE
B	CR3	017176	020777	K	RM	V06	S	D			PER. CYCLED BSV-36 ALLOWING NADH INTO THE RCS SYSTEM	PROCEDURAL INADEQUACY
B	CR3	017946	042477	R	UV	V06	T	L			VLV. SWV-151 WAS IN SHUT POSI.; GIVING CONT. TEMP. ALA	PROCEDURAL INADEQUACY
B	CR3	018843	081077	R	UV	V06	T	D			VLV SWV-151 WAS CLOSED WHEN REQUIRED TO BE OPEN	PROCEDURAL INADEQUACY
B	CR3	019800	112977	P	UV	V06	T	D			SWV-151 (IND. COOL. WTR. SUP. VLV) SHUT WHEN REQ. TO OPEN	PROCEDURAL INADEQUACY; THIRD OCCURENCE
B	CR3	023250	100178	Y	UV	V06	S	D			VALVE MDV-476 WAS LEFT OPEN AFTER SYS MODIFICATION	PROCEDURAL DISCREPANCY (PERSONNEL)
B	DB1	019548	111777	B	UV	V06	S	D			AUX. FDMTR. VLVS AF5096608 CLOSED; T.S. VIOLATION	PROCEDURAL DEFICIENCY; TEST PROCEDURE REVI
B	DB1	021958	071378	P	UV	T06		D			DISCOVERED 2 REQUIRED TEST NOT BEING PERFORMED/T.S	TESTS NOT INCORPORATED INTO SCHED. PROGRAM
B	DB1	023568*	121678	W	RV	A06	C	D	13		13 MN. STM. SAFE. RV NOT WITHIN LIMITS OF SETPOINT	PROCEDURAL DISCR. (PROC. DOESN'T ACC FOR T)
B	DE2	021527	042878	N	XV	V06	S	D			VLV 2LPSW-241 FOUND THROTTLED WHEN REQ. OPEN	DEFECTIVE PROCEDURES
B	DE3	016143	100976	N	AV	V06	S	D			DRAIN VALVE NOT IN PROPER LINEUP	ERROR IN PROCEDURES
B	DE3	019883	120677	L	XV	T06		D			VALVE LP-28 OPEN BUT NOT LOCKED AS REQD	INADQUATE PROCEDURES
B	RS1	021198	050978	W	PV	A06		D			4 MS SAFETY VALVES FOUND SET WRONG/NON-CONSERVATIV	MAIN PROCEDURE INADEQUATE/REVISED
B	TI1	013949	011076	Y	UV	V06	S	D			IMPROPER VLV. LINEUP TO RM-2A(COOL. LEAK DET. SYS.)	INADEQUATE PROCEDURES
B	TI1	014220	022176	G	UV	V06	S	D			IMPROPER VLV LINEUP ON "A" MAKEUP AND PURIF. PUMP	PROCEDURE AND PERSONNEL ERROR
B	TI2	023543	120278	L	RM	F06		D			MAIN FEED REG VALVE PINNED OPEN, EXCESS FLOW RESULT	DEFECTIVE PROCEDURES
C	CC1	017476	031377	L	UV	V06	S	D			ISO. VLV ADD. TO AUX SPRAYLN DLK. PRIOR OUT. LEFT SHUT	VLV. NOT INCLUDED IN VLV LINEUP/PROCED. ERR
C	CC1	021056*	033078	W	RV	A06	R	D	09		9 MN. STM. SAFE-REL. VLV SETTINGS OUT OF TOLERANCE	PROCEDUR. CHG. CAUSED RV SETPOINTS TO BE WR
C	CC1	021536	042578	N	RM	V06	S	D			#4 HALON SUBSYSTEM INADVERTENTLY DISCHARGED	INADEQUATE PROCED. RESULTED IN IMP. VLV. LU
C	CC2	022637*	102378	W	RV	A06	R	D	12		12 MN. STM. SAFE-REL. VLV SETTINGS OUT OF TOLERANCE	PROCEDUR. CHG. CAUSED RV SETPOINTS TO BE WR
C	FC1	016334*	111076	K	RV	H06	R	D	02		VALVES RC-141+RC-142 LIFTING PRESS OUT OF SPEC	LIFTING PRESS SET WITH NITROGEN
C	FC1	023171	122078	K	RV	V06	S	D			TWO PRESS OP RELIEF VALVES OPENED WHEN REQ CLOSED	TECH PULLED FUSES, DEFECTIVE PROCEDURES
C	MI2	022134	072578	C	RM	V06	S	D			CONTMNT PURGE VALVES OPERATED IN IMPROPER MODE	INADQUATE CONTMNT PURGE PROCEDRES
G	CO1	015873	081376	W	RV	A06		D			SETPOINT OF MS-RV-71E ADJUSTED INCORRECTLY	INCORRECT MAINTENANCE PROCEDURE
G	DA1	014187*	011676	C	RM	F06		D	03		PCIS CV 4300, 4303, 4309 NOT CLOSING IN PROPER TIME	CLOSING TIME TECH SPEC IN ERROR
G	DA1	015750	082776	W	XV	V06	S	D			ROOT VALVE TO LOW PRESS SW PS-1017 IN CLOSED POSIT	VALVE NOT ON PRESTARTUP CHECKLIST
G	DA1	016071*	101576	W	MV	F06		D	03		MTR. OPER. VLVS. (MSIV-LC SUBSYS A, B, D) NOT PROP. ADJUS	LACK OF EXPER. & PROCEED. TO DETERM. OPT. SET
G	DR2	014344	032476	J	MV	B06		D			CCSW VAULT DRAIN VAL 4999-74 BLOCKED OPEN MECH	FUNCTIONAL TEST REQUIRE. NOT IDENTIFIED
G	DR2	014889	051976	G	UV	V06	S	D			INCORRECT VLV L/U; SBLC SYSTEM-BORON TANK	DISCREPANCY IN PROCEDURES
G	FP1	015240	071376	K	RM	B06		D			VALVE ON RHR PROCESS SAMPLE LINE FAILED TO CLOSE	INCORRECT PROCEDURES USED

PROCEDURAL DISCREPANCY

PLANT	CONT. NO.	EVENT DATE	UNIT	CODE	FAIL CODE	TEST	CLASS	ON PH	TYPE	FAILURE MODE	FAILURE MECHANISM
G FP1	015272	073076	Y XV	V06	S D					OFF-GAS SAMPLE VALVE FOUND CLOSED, REQUIRED OPEN	PROCEDURAL ERROR
G MU1	018463	061677	C MV	F06	D					TORQUE SW NOT ADJ PROP. OUTBRD RCIC STM ISO VLV	WRA IMPROPERLY PROCESSED
G MD1	018242	062777	Y UV	V06	S D					VAL ON AIR EJECT MONIT SYST POSITIONED IMPROPER	VAL WAS IMPROPERLY TAGGED
G NM1	015849	090876	P RV	T06	D					REQD SURVEILLANCE ON RV NOT PERFORMED	PROCEDURE ERROR
G PB2	015884*	092176	D RM	F01	D 03 Z					TRIP LEVEL FOR CORE SPRAY SET IMPROPERLY	DEFECTIVE PROCEDURES
G PB3	015881*	092176	D RM	F01	D 03 Z					TRIP LVL. SET FOR ECCS VLVS SET AT WRONG PRESSURE	MISUNDERSTANDING BETWEEN NSSS & LICENSE
G PB3	018160	061677	D RM	V06	S D					BOTH RCIC ISO. VLVS. FOUND CLOSED WHEN REQUIRE. OPEN	DEFECTIVE TEST PROCEDURE
G PI1	019668	120277	M RM	V06	S D					STANDBY LIQUID CONTROL VALVE 1101-23 CLOS T.S. VIOL	INADEQUATE PROCEDURES COVERING VALVE POS
G VY1	022130*	0731	G RV	A06	D 02					TWO RV'S (SR-39A/B) FAILED TO OPEN AT DESIGN SETPNT	PROCEDURAL DISCREPANCY/SET W NITROGEN
W BV1	020496	0121	L UV	V06	S D					THE RMST WAS DRAINED TOO LOW DUE TO INCOR. VLV L/U	PROCEDURAL DISCREPANCY
W DC2	021393	052078	C RM	V06	S D					CONT. PURGE VALVES OPENED PRIOR TO ALLOWABLE CONDS	PROCEDURES DIFFER BETWEEN UNITS 1 & 2
W DC2	022793	102378	P RM	T06	D					FOUR OR MORE VALVES NOT TIMED AFTER MAINT (TS VIOL)	PROCEDURAL PROBLEMS
W JF1	020446	012178	L RM	I06	D					VAL HCV-603A MECH STOP NOT REPLACED AFTER MAINT	ERROR IN TECH SPEC
W JF1	022629	091878	K RM	V06	S D					RHR PUMP SUCTION VLV 8701A CLOSED WHEN REQ. OPEN	INADEQUATE PROCEDURES
W KE1	021365	042378	L UV	V06	S D					RHR VENT VLV. OPEN WHEN IT SHOULD HAVE BEEN CLOSED	DEFECTIVE PROCEDURES
W NA1	021506	051478	B AV	V06	S D					AUX FEEDWATER VALS PCV-F2-159A, -159B IMP. LINEUP	CHECKOFF SHEET DOES NOT LIST NORM VAL POS
W PR2	016038*	100676	N RM	F06	D 02 V					POST-LOCA HYDRO. CONT. SYS. VLVS. LEFT INCAPABLE OF B-	-EING CLOSED IN 1 MIN. // DEFECTIVE PROCED.
W PR2	017889	051977	B XV	V06	S D					PUMP INLET VALVE FOUND NEARLY SHUT/AUX FEED INLET	POSITION REQUIREMENT WILL GO ON CHECKLIST
W RD2	023053	110978	N XV	V06	S D					AIR SUPPLY VALVE FOUND OPEN WHEN REQUIRED SHUT	DEFICIENT OPERATING PROCEDURE
W SU1	021732*	052878	P UV	I06	B D 02 V					PROCEDURAL DISCREPANCY ABOUT WHAT LUBRICANT TO USE	FOREIGN MATERIAL ON VALVE SEAT SURFACES
W SU2	021987*	071278	F MV	I06	B D 02					INSPECTION OF MOV'S AFTER MAINT/EXCESS LUB ON SEATS	VALVES HAD TO BE CLEANED/PROCEDURAL PROB
W TR1	015172	042176	S RM	T06	D					DISCOVERED THAT MANY VLVS WERE NOT TESTED AS REQ.	PROCEDURE INADEQUACY/REVISED PROCEDURES

NRC FORM 335 (7-77)		U.S. NUCLEAR REGULATORY COMMISSION BIBLIOGRAPHIC DATA SHEET		1. REPORT NUMBER (Assigned by DDC) NUREG/CR-1363, Vol. 2 App. A-N EGG-EA-6126	
4. TITLE AND SUBTITLE (Add Volume No., if appropriate) Data Summaries of Licensee Event Reports of Valves at U.S. Commercial Nuclear Power Plants from January 1, 1976 to December 31, 1978, (Appendices A-N)				2. (Leave blank)	
7. AUTHOR(S) Warren H. Hubble Charles F. Miller				5. DATE REPORT COMPLETED MONTH YEAR April 1980	
9. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code) EG&G Idaho, Inc. Reliability and Statistics Branch P. O. Box 1625 Idaho Falls, ID 83401				DATE REPORT ISSUED MONTH YEAR May 1980	
12. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code) Probabilistic Analysis Staff Office of Nuclear Regulatory Research U.S. Nuclear Regulatory Commission Washington, DC 20555				6. (Leave blank)	
13. TYPE OF REPORT				8. (Leave blank)	
PERIOD COVERED (Inclusive dates) January 1, 1976 - December 31, 1978				10. PROJECT TASK WORK UNIT NO.	
15. SUPPLEMENTARY NOTES				11. CONTRACT NO. NRC FIN NO. A6276	
16. ABSTRACT (200 words or less) This report describes the results of an analysis of nuclear plant valve failures. The data used for this analysis were the Licensee Event Reports (LERs). The LERs are written reports filed with the NRC whenever certain failures or incidents occur concerning nuclear plant safety systems. The valve failures or incidents contained in the LERs were used to calculate summary valve failure rate statistics. The report includes a variety of different statistics calculated to highlight or show important failure modes or other failure information. In addition to the quantitative failure rate information, there is also considerable qualitative information tabulated to allow the user to make additional valve failure rate calculations or inferences.				14. (Leave blank)	
17. KEY WORDS AND DOCUMENT ANALYSIS			17a. DESCRIPTORS		
17b. IDENTIFIERS OPEN ENDED TERMS					
18. AVAILABILITY STATEMENT Unlimited			19. SECURITY CLASS (This report) Unclassified		21. NO. OF PAGES
			20. SECURITY CLASS (This page) Unclassified		22. PRICE \$