



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

Direct Dial Number

November 17, 1982

SNRC-792

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

NUREG-0803, "Generic Safety Evaluation Report
Regarding Integrity of BWR Scram System Piping"
SER Item Number 61
Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

References: (1) SNRC-703 dated 5/13/82
(2) Letter from NRC (A. Schwencer) to LILCO
(M. S. Pollock) dated 10/28/82

Dear Mr. Denton:

The reference (1) letter provided LILCO's Shoreham specific response to the issues raised by the staff in NUREG 0803. Based on the staff's review of this information, the reference 2 letter was transmitted to LILCO forwarding nine (9) specific requests for information.

This letter, as supplemented by Attachment 1 thru 6 (forty copies of each are enclosed), presents LILCO's response to these requests as outlined below:

Request No. 1 - The systems and equipment that would be used to detect a break in the Scram Discharge Volume (SDV) system consist of both safety related and non-safety related equipment as described in Attachments 1 and 2. Qualification of the safety-related equipment is discussed in Attachment 1.

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- Request No. 2 - A description on how the control room indications and alarms provided by the qualified detection equipment would be used is included in Attachment 3.
- Request No. 3 - The SDV environmental profiles (temperature) are included in Attachment 4 for secondary containment nodes. Peak temperatures and pressures are listed in Attachment 5, which also describes the correlation between nodes and zones. Only for zones 2,3,4,7,18, and 20 do the peak temperatures exceed those previously calculated and documented in the "Environment Qualification Report for Class IE Equipment" for Shoreham Nuclear Power Station - Unit 1. However, required equipment is qualified for these peak temperatures as described in Attachment 1.
- Request No. 4 - Equipment essential for SDV failure detection, mitigation and safe shutdown is listed in Attachment 6. The discussion on qualification of this equipment is included in Attachment 1. As stated in SNRC-703, major components required for prompt depressurization are located inside primary containment and are not affected by an SDV break.
- Request No. 5 - A review of the various leakage paths associated with SDV failures was performed to ensure there was no impact to safety related equipment essential for safe shutdown and decay heat removal. This review supported the response encompassed in the SDV analysis submitted via letter SNRC-703. Considered in the study were potential wetting effects (by water up to 212°F) due to spraying, dripping and/or cascading water passing through open hatches, penetrations or stairwells.

- Request No. 6 - Equipment needed for detection and mitigation of, and safe shutdown and long-term cooling following a pipe break in the SDV system is presently included in the Shoreham Equipment Qualification Program and is qualified as described in Attachment 1. As part of this overall program justifications for interim operation have been submitted to the staff via Revision 3 and 4 of the "Environmental Qualification Report for Class 1E Equipment for Shoreham Nuclear Power Station - Unit 1", which were transmitted by letters SNRC-746 dated 8/13/82 and SNRC-768 dated 11/3/82, respectively.
- Request No. 7 - As noted in Attachment 2, alarm response procedures already being revised to facilitate mitigation of this event. LILCO will, however, integrate any future BWR Owners' Group (BWROG) emergency procedure guidelines (EPG's) which improve the response to an SDV break, into the Shoreham Emergency Operating Procedures.
- A submittal addressing the applicability of the BWROG EPG's with regard to SDV breaks at Shoreham will be transmitted to the staff within sixty (60) days after the staff review of the BWROG report, and required modifications will be implemented in a time frame consistent with Shoreham operation.
- Request No. 8 - Stress analysis for the SDV piping has included the SRV and LOCA hydrodynamic loads and the required load combinations as delineated in the DAR, up to and including Revision 5.

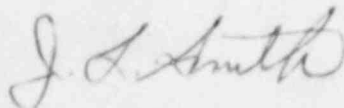
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Request No. 9 - For small diameter piping (less than 2½ inches nominal size), the piping and supports have been designed for the seismic and LOCA hydrodynamic load design. In addition, the actual piping and support installation is in the process of being verified to assure the validity of the piping analyses. This task is scheduled to be completed prior to fuel load.

This submittal provides sufficient information such that Issue No. 61, Scram System Piping, can be closed on the Shoreham docket.

Should you have any questions, please contact this office.

Very truly yours,



J. L. Smith
Manager, Special Projects
Shoreham Nuclear Power Station

KWG:mp

cc: J. Higgins
All parties

Qualification of the Equipment Required for Identification and Mitigation of an SDV Break:

In the unlikely event of an SDV break the Reactor Building Area Radiation Alarm would immediately be initiated. This would be followed by initiation of the following safety related alarms:

- o Reactor Building Flood Level Alarm, (1G11*LE645 A,B)
- o Reactor Building Ventilation High Radiation Alarm, (1D11*PNL068, 1D11*PNL126) and,
- o Reactor Building Differential Pressure Alarm (1T46*PDT043 A,B).

Initiation of these alarms would be sufficient for the operator to identify and take immediate action to mitigate the event. The operator would also have additional information from the following sources which are not safety related but would aid in identifying the problem:

- o CRD High Temperature Alarm,
- o CRD Drift Alarm,
- o Reactor Building Ventilation Isolation Alarm,
- o Reactor Building Area Radiation Alarm,
- o Reactor Building Ventilation High Radiation Alarm,
- o Reactor Building Floor Drain Sump Level Alarm *, and
- o Personnel Observation of Leakage.

The calculation of environmental conditions in the Reactor Building due to an SDV break assumes that the operator would not take any action for 30 minutes after initiation of the event. Depressurization of the reactor 30 minutes into the event would result in peak temperatures which are below those previously calculated for high energy line breaks for most zones. The peak temperatures in the SDV break scenario would occur a few seconds after actuation of the ADS to depressurize the reactor.

* Only 1G11*LE642C is safety related. This level element serves Reactor Building Floor Drain Sump 1G11-TK-056C, from which the suppression pool leakage return pump draws suction.

The temperatures would return to the maximum normal within 10 hours, which is less than the approximately 16 hours identified for the limiting break in the "Environmental Qualification Report for Class 1E Equipment for Shoreham Nuclear Power Station - Unit 1" (EQR).

The equipment identified in Attachment 6 and located in the Reactor Building either is or will be qualified for the peak SDV break temperatures calculated for its spatial zone.

A review was performed for such equipment which was identified in the EQR Revision 4 either as qualification status "EQ" or as not requiring justification for temperature. This review confirmed that the equipment qualification temperature exceeded its zone's peak SDV break temperature in all cases. This review also confirmed that the qualification time period included a segment which envelopes the relatively long (30 minutes) rise to the SDV break temperature peak.

For equipment for which temperature was identified in EQR Revision 4 as a parameter requiring justification, a similar review will be incorporated into the evaluation described in Section 4 of the EQR.

NON SAFETY ITEMS USABLE FOR SDV FAILURE DETECTION

<u>Item Mark Number</u>	<u>Description</u>	<u>Location</u>
1D21-RE08	Reactor Building Area Radiation Monitor	RB el 78
1D21-PNL08	R.B. Area Panel	RB el 78
1D21-RE09	R.B. Area Rad. Mon.	RB el 78
1D21-PNL09	R.B. Area Panel	RB el 78
1D21-RE37	R.B. Area Rad. Mon.	RB el 78
1D21-PNL37	R.B. Area Panel	RB el 78
1C11-TE100	CRD High Temp. Alarm	P.C.
1C11-TR100	CRD Temp. Recorder	RB el 78
1H11-P016	CRD Drift Alarm	C.R.
1D11-RE029	R.B. Vent High Rad Alarm	R.B. Vent
1D11-PNL029	R.B. Vent Panel	RB el 100
1G11-LT-255A	R.B. Floor Drain Sump Level	PB el 8
1G11-LT-255B	R.B. Floor Drain Sump Level	RB el 8

The Shoreham operators are trained to use all available information to diagnose abnormal events. Thus, their response to an unisolable leak in the secondary containment is not predicated solely upon safety-related detection equipment. Shoreham Alarm Response Procedures for both safety and non-safety related detection equipment have been modified to assure a prompt depressurization. Specifically, response procedures for the Reactor Building Area Radiation Alarm (non-safety related), the Reactor Building Differential Pressure Alarm (safety related), and the Reactor Building Floor Drain Sump Level Alarm (non-safety related except for 1G11*LE642C) all refer the operator to the Abnormal Performance Section of the Suppression Pool Leakage Return System Operating Procedure, SP.23.704.04. The Abnormal Performance Section of SP.23.702.04 describes conditions for which a rapid depressurization, in excess of 100°F per hour cooldown, is warranted. Further, it refers the operator to the BWR Owners' Group Procedures Level Control, and Cooldown.

The anticipated operator response to the SDV event was delineated in Sections 3.3.6 to 3.3.11 of the Shoreham Evaluation Report Regarding Integrity of Scram System Piping previously submitted. In these sections all the alarms anticipated for this event were described. Many of these alarms direct that personnel be sent into the Reactor Building to assess the problem. Hence, early personnel observation of the problem is anticipated. Here the emphasis is on how the safety related alarms would contribute to the diagnosis of the event.

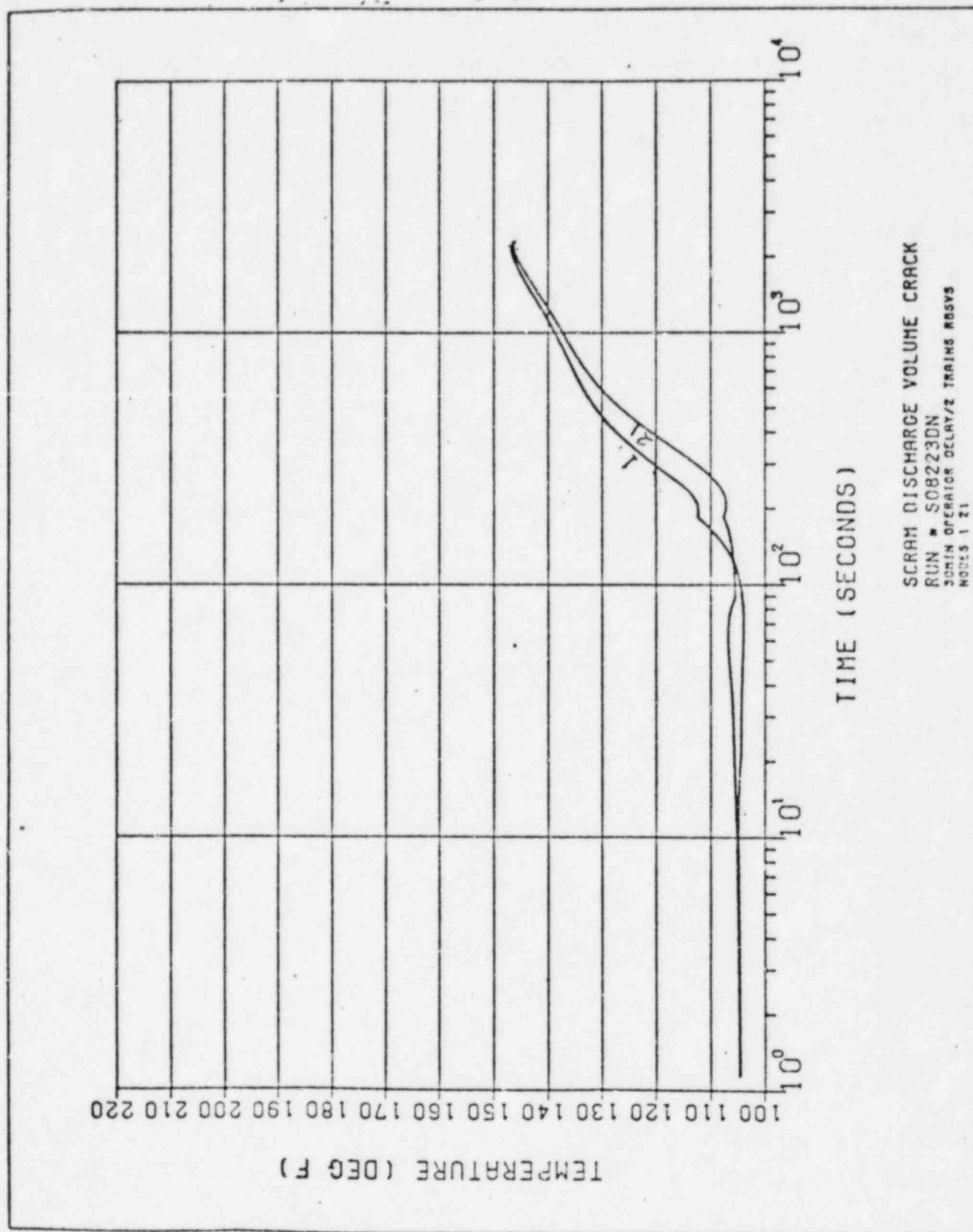
Immediately after the postulated scram and SDV failure, the Reactor Building Area Radiation Alarm would be initiated. In response the operators would direct the Health Physics Department to validate the alarm and determine the source. Then, they would refer to the Abnormal Performance Section of SP.23.702.04.

Based upon GE estimates in NEDO-24342, within minutes after event initiation the Reactor Building Ventilation High Radiation Alarm would sound followed within a few seconds by the Reactor Building Differential Pressure Alarm. Since floor drains in the SDV-HCU area would carry most of the leakage to sumps, the Reactor Building Floor Drain Sump Level Alarm would also sound within minutes of the event's initiation. As noted previously the alarm response procedures for the Reactor Building Differential Pressure and Floor Drain Sump Level Alarms refer to the Abnormal Performance Section of SP.23.702.04.

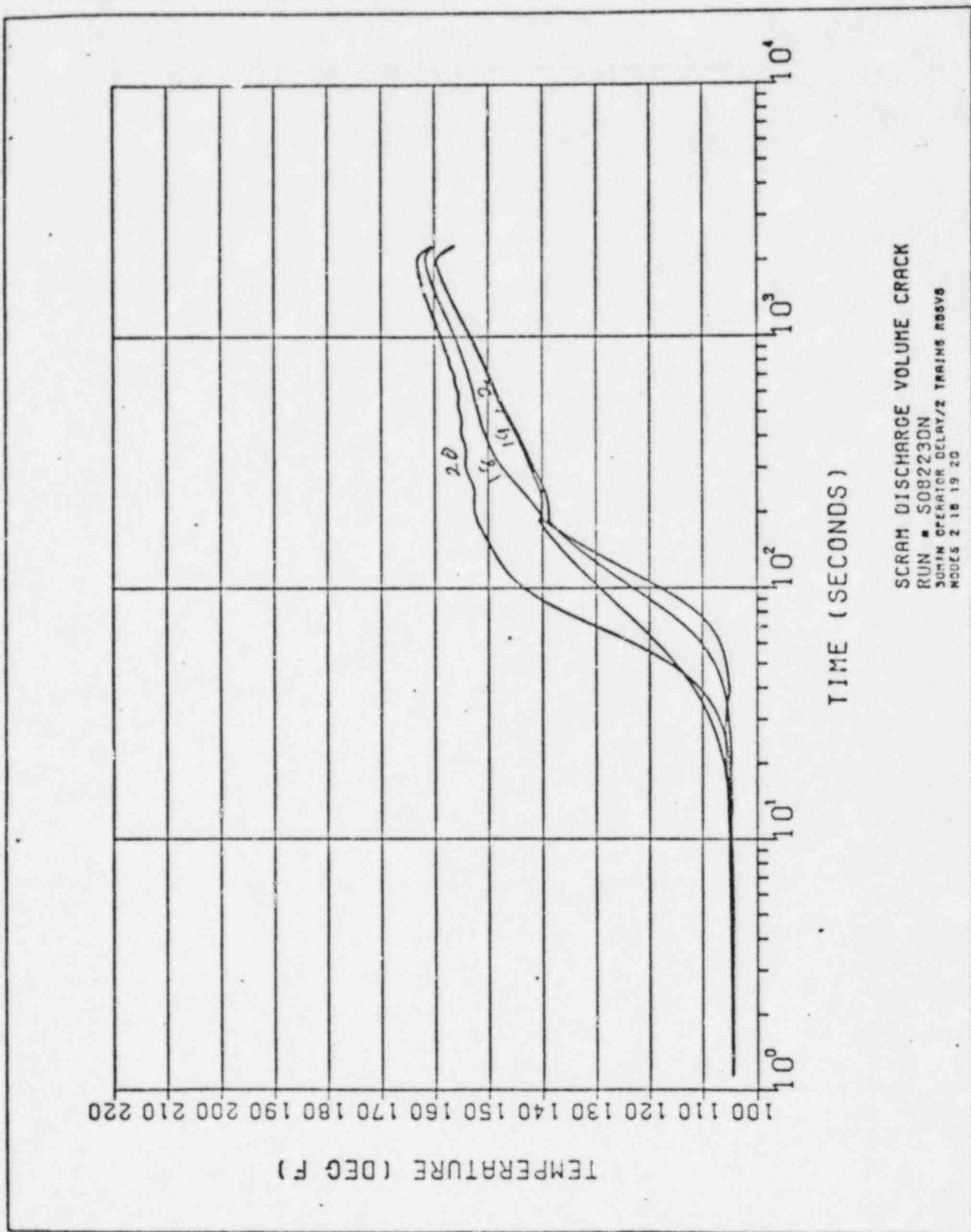
Attachment 3 (continued)
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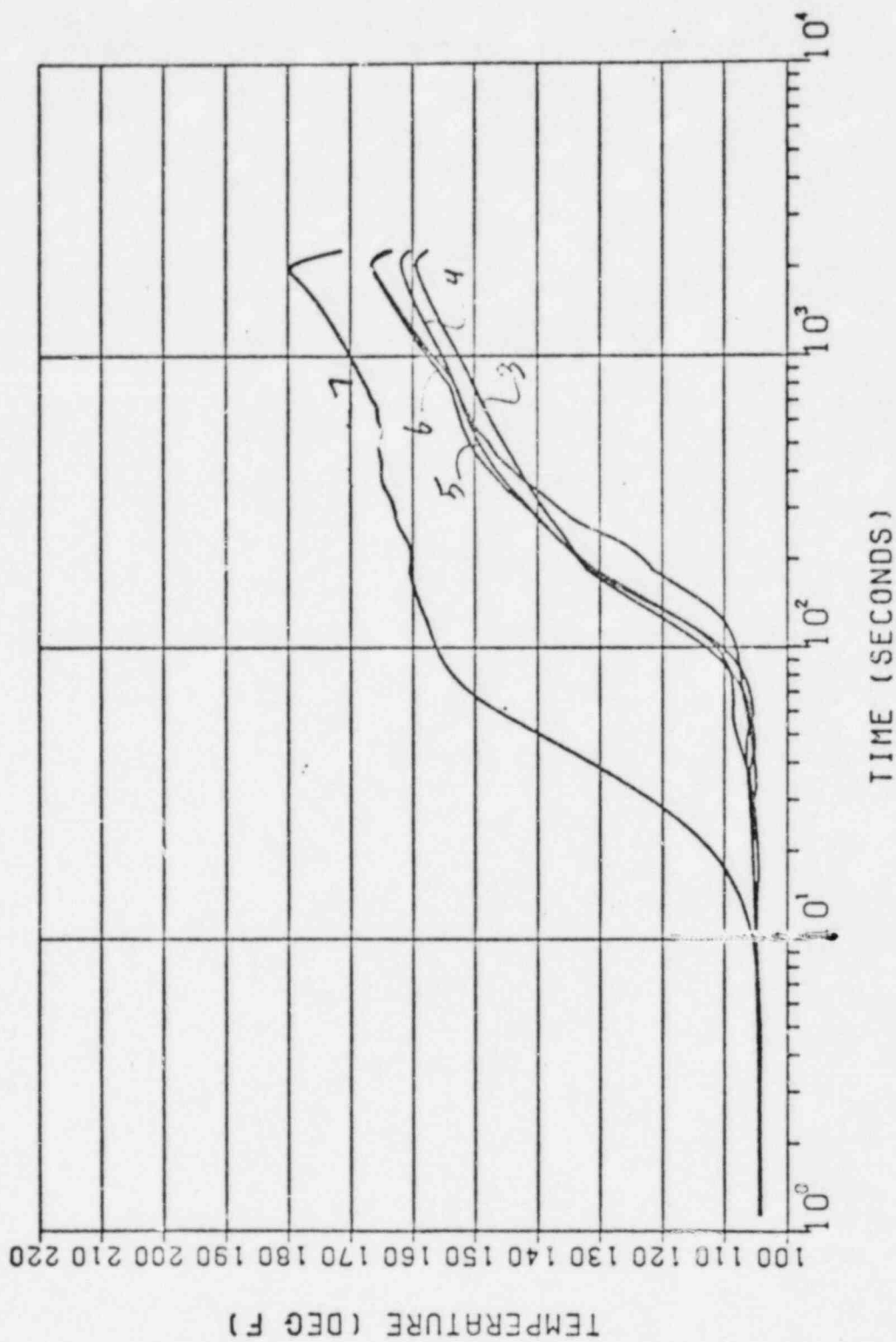
Using information from the safety-related detection equipment the operator would know that there is a high radiation source in the reactor building and that something is causing the loss of the building's differential pressure. The viable conclusion is that there is a break in a line with high temperature radioactive water, i.e., primary system coolant water outside the primary containment. Therefore, following the directions in SP.23.702.04, the operator would initiate a rapid depressurization and effectively terminate the event.

However, it must be emphasized again that as noted in the previous response several other alarms would be initiated and these would support the conclusions described above. Further, many of the alarm response procedures direct that personnel be sent into the reactor building to assess the problem. Thus, personnel observation of the leakage very shortly after the start of the event is anticipated.



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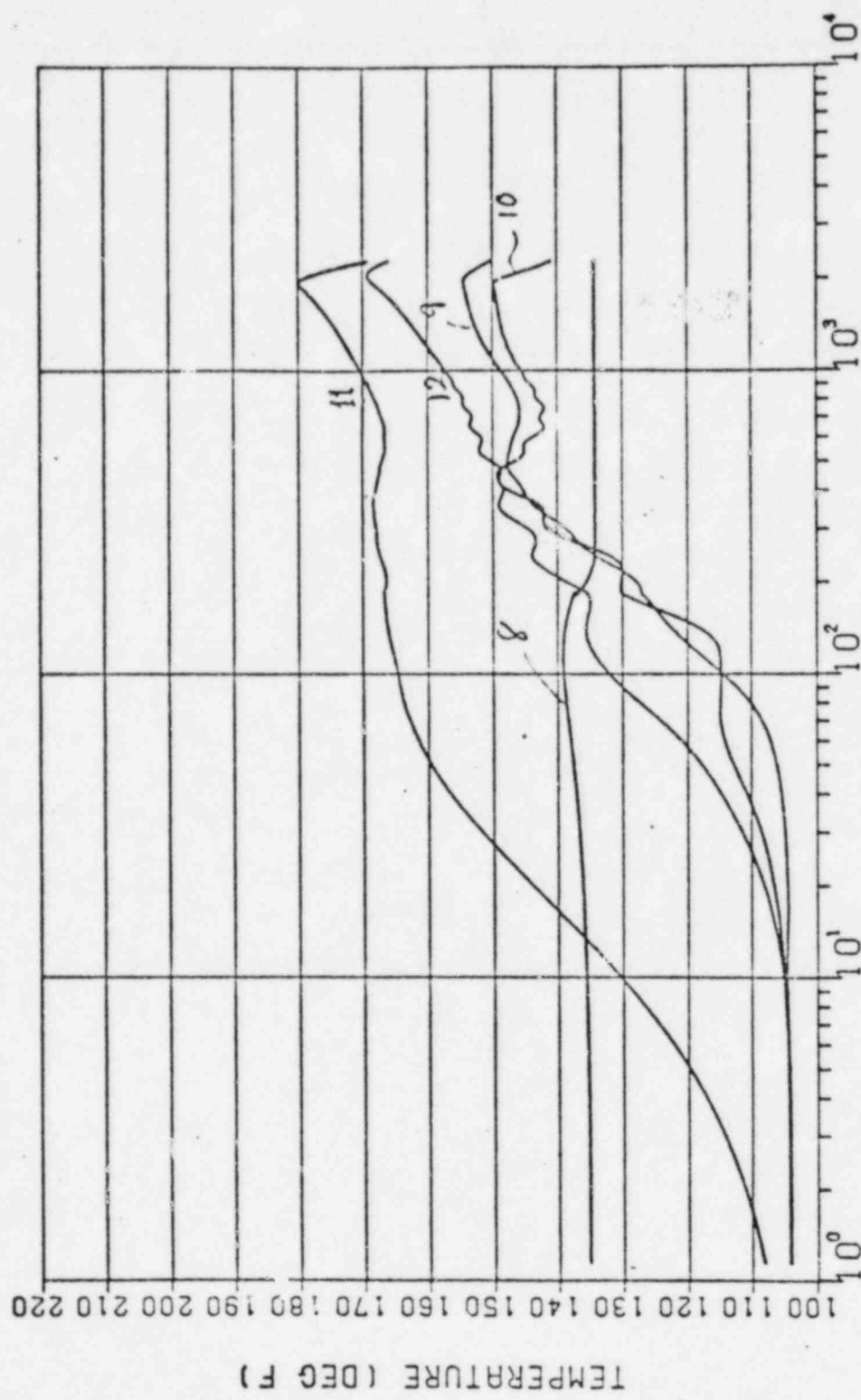




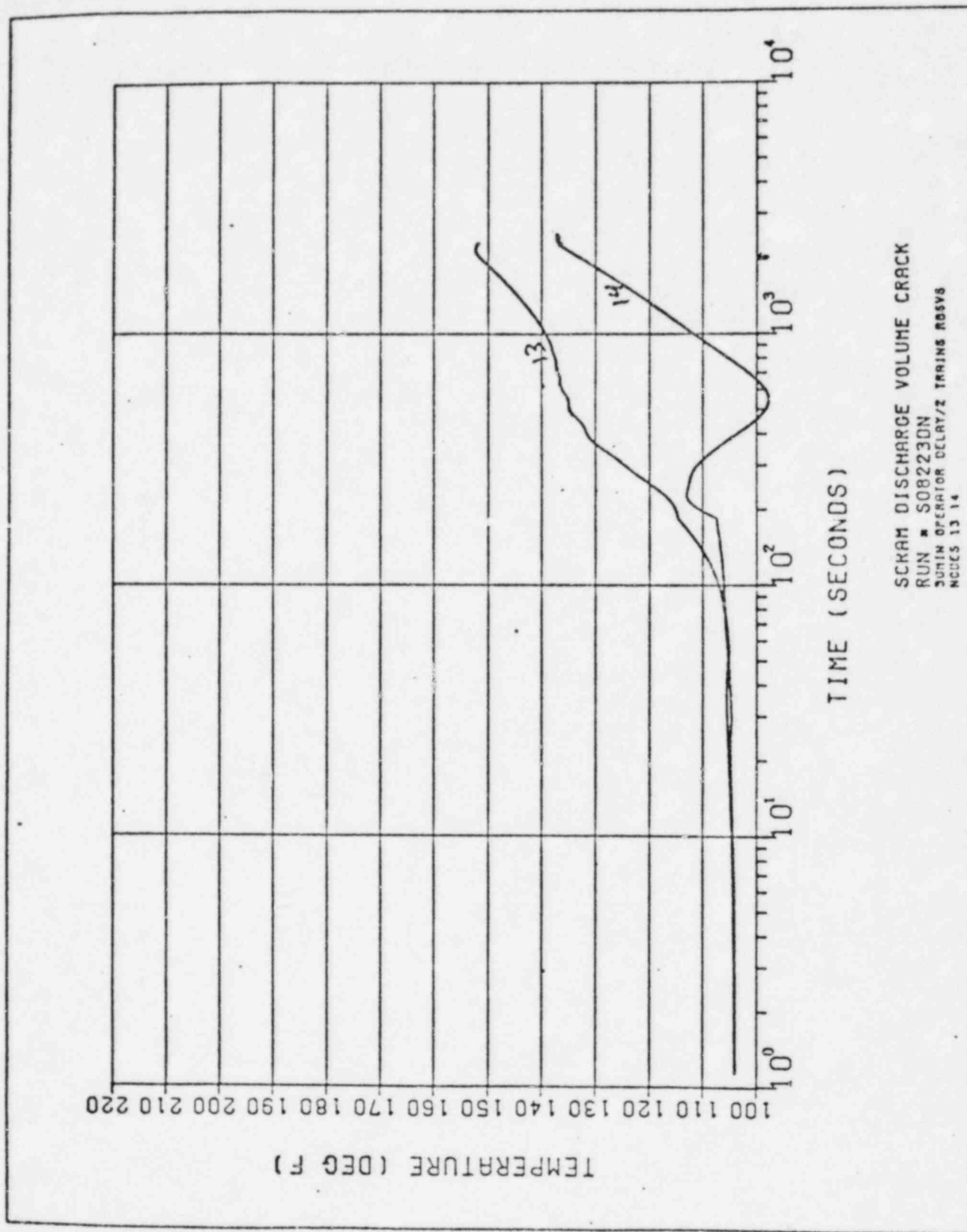
SCRAM DISCHARGE VOLUME CRACK
RUN # SC82230N
SCRAM OPERATOR DELAY/2 TRAINS AB5V6
MODES 5 4 5 5 7

1600.02 3/2

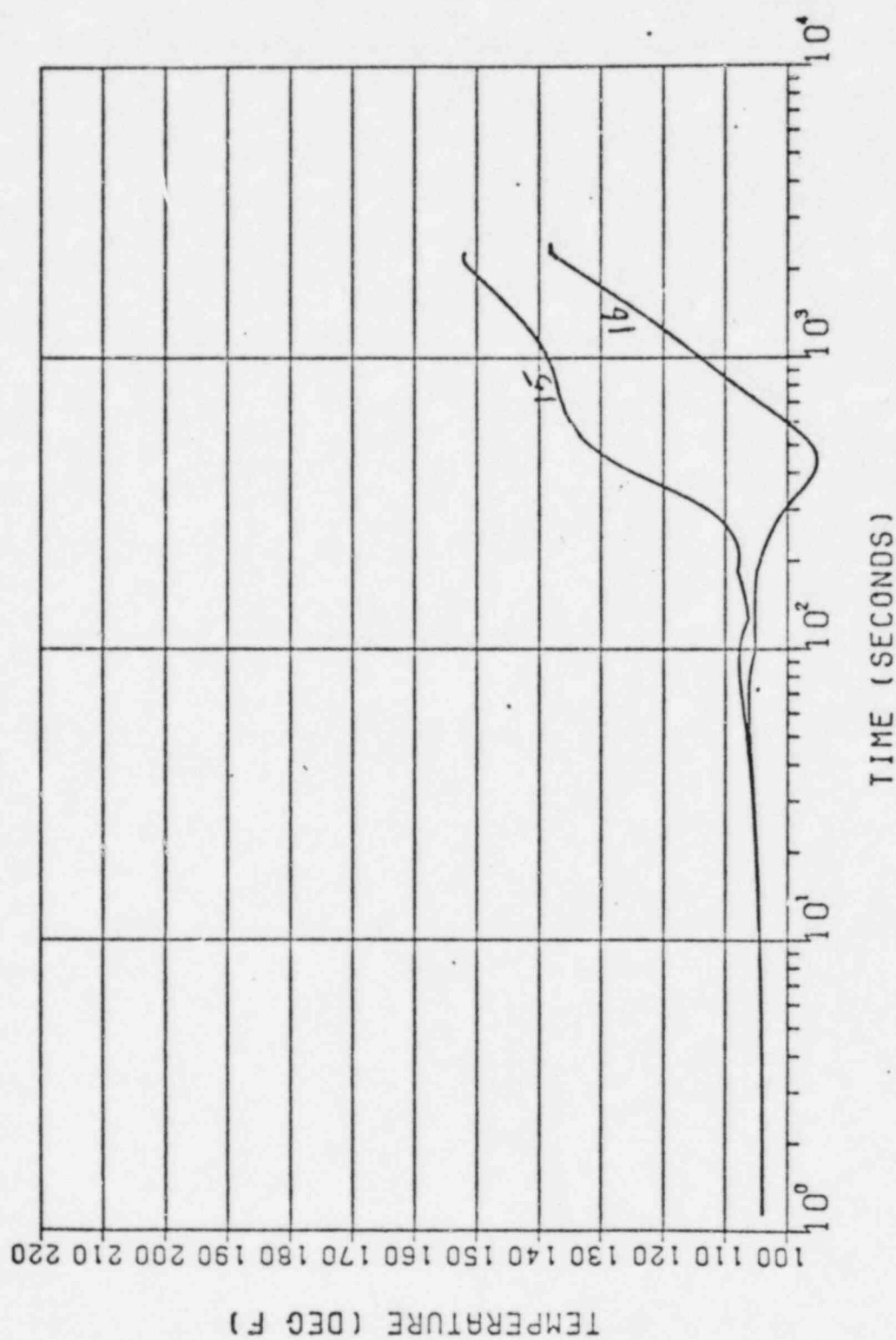
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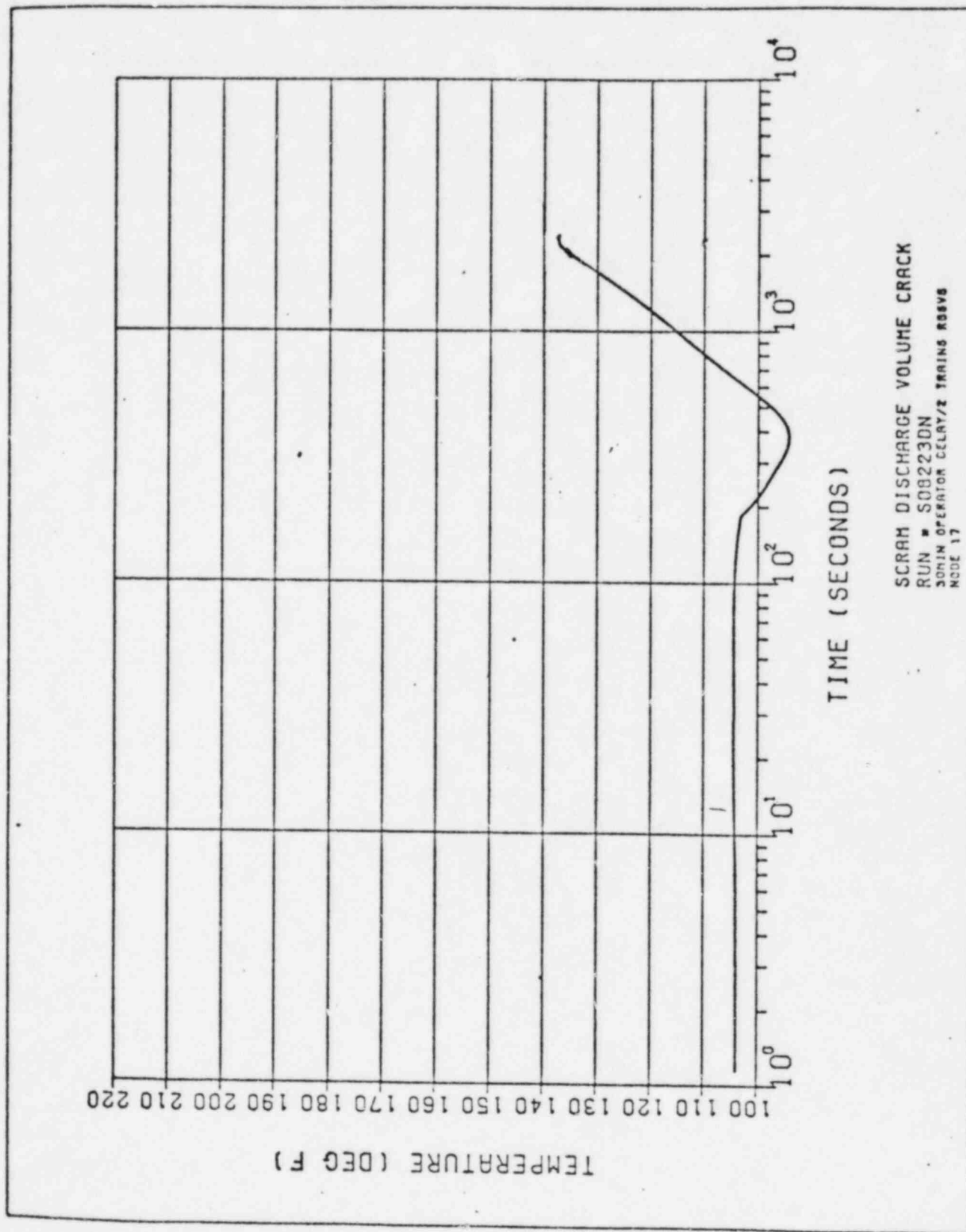
SCRAM DISCHARGE VOLUME CRACK
RUN # S08223DN
SCRAM OPERATOR DELAY/2 TRAINS MSSVS
MODES 8 9 10 11 12



1607 2



SCRAM DISCHARGE VOLUME CRACK
RUN = S08223DN
30MIN OPERATOR DELAY/2 TRAINING MSSYS
MODES 15 15



PEAK PRESSURES AND TEMPERATURES FOR SDV BREAK

NODE NUMBER	CORRESPONDING ZONE NUMBER (AS DEFINED IN EQR)	PRESSURE (PSIA)	TIME (SEC)	TEMPERATURE (DEG F)	TIME (SEC)
1	1	15.54	185.460	146.69	2134.000
2	2	15.52	185.399	159.61	1986.000
3	3	15.52	185.389	159.45	2061.500
4	4	15.52	185.394	161.90	2089.500
5	5	15.52	185.411	166.55	2074.000
6	6	15.52	185.402	166.62	2037.500
7	7	15.52	185.396	179.70	1986.500
8	8	15.51	185.416	139.23	114.200
9	9	15.50	185.376	154.46	1957.500
10	10	15.50	185.364	149.91	1926.500
11	11	15.50	185.368	180.00	1943.000
12	12	15.50	185.382	169.20	2061.500
13	15	15.49	185.350	152.36	2170.000
14	16	15.49	185.341	137.05	2300.500
15	18	15.47	185.324	152.19	2225.500
16	19	15.47	185.323	137.65	2300.500
17	20	15.45	185.315	317.81	2300.500
18)		15.53	185.424	161.63	2053.500
19)	2	15.53	185.405	159.61	2005.500
20)		15.53	185.414	163.14	2009.500
21	1	15.54	185.432	146.43	2242.000

EQUIPMENT ESSENTIAL FOR SDV FAILUREDETECTION AND MITIGATION AND SAFE SHUTDOWNNUREG-0588
Operability Code

<u>Equipment Item No.</u>	<u>Description</u>	<u>Location</u>	
1B21*AOVC81A	M.S. Line A	H-08	A
1B21*AOVC81B	M.S. Line B	H-08	A
1B21*AOVC81C	M.S. Line C	H-08	A
1B21*AOVC81D	M.S. Line D	H-08	A
1B21*AOVC82A	M.S. Line A	H-08	A
1B21*AOVC82B	M.S. Line B	H-08	A
1B21*AOVC82C	M.S. Line C	H-08	A
1B21*AOVC82D	M.S. Line D	H-08	A
1B21*LIT007A	Fuel Zone	G-09	A
1B21*LIT007B	Fuel Zone	G-11	A
1B21*LT154A	Reac.Lvl Trips	G-10	A
1B21*LT154B	Reac.Lvl Trips	G-10	A
1B21*LT154C	Reac.Lvl Trips	G-12	A
1B21*LT154D	Reac.Lvl Trips	G-12	A
1B21*LT155A	Wide Range	G-10	A
1B21*LT155B	Wide Range	G-10	A
1B21*LT155C	Wide Range	G-12	A
1B21*LT155D	Wide Range	G-10	A
1B21*LT157A	Reac.Lvl Trips	G-10	A
1B21*LT157B	Reac.Lvl Trips	G-12	A
1B21*LT157C	Reac.Lvl Trips	G-10	A
1B21*LT157D	Reac.Lvl Trips	G-12	A
1B21*LT159A	Auto Depressur.	G-10	A
1B21*LT159B	Auto Depressur.	H-12	A
1B21*PT004A	Reactor Pressure	G-10	A

1B21*PT004B	Reactor Pressure	G-10	A
1B21*PT153A	RVO92A Monitor	G-01	A
1B21*PT153B	RVO92B Monitor	G-01	A
1B21*PT153C	RVO92C Monitor	G-01	A
1B21*PT153D	RVO92D Monitor	G-01	A
1B21*SCV81AX	1B21*ACVO81A Ctrl	D-22	A
1B21*SCV81AY	1B21*ACVO81A Ctrl	D-22	A
1B21*SCV81AZ	1B21*ACVO81A Ctrl	D-22	A
1B21*SCV81BX	1B21*ACVO81B Ctrl	D-22	A
1B21*SCV81BY	1B21*ACVO81B Ctrl	D-22	A
1B21*SCV81BZ	1B21*ACVO81B Ctrl	D-22	A
1B21*SCV81CX	1B21*ACVO81C Ctrl	D-22	A
1B21*SCV81CY	1B21*ACVO81C Ctrl	D-22	A
1B21*SCV81CZ	1B21*ACVO81C Ctrl	D-22	A
1B21*SCV81DX	1B21*ACVO81D Ctrl	D-22	A
1B21*SCV81DY	1B21*ACVO81D Ctrl	D-22	A
1B21*SCV81DZ	1B21*ACVO81D Ctrl	D-22	A
1B21*SCV82AX	1B21*ACVO82A Ctrl	T-08	A
1B21*SCV82AY	1B21*ACVO82A Ctrl	T-08	A
1B21*SCV82AZ	1B21*ACVO82A Ctrl	T-08	A
1B21*SCV82BX	1B21*ACVO82B Ctrl	T-08	A
1B21*SCV82BY	1B21*ACVO82B Ctrl	T-08	A
1B21*SCV82BZ	1B21*ACVO82B Ctrl	T-08	A
1B21*SCV82CX	1B21*ACVO82C Ctrl	T-08	A
1B21*SCV82CY	1B21*ACVO82C Ctrl	T-08	A
1B21*SCV82CZ	1B21*ACVO82C Ctrl	T-08	A
1B21*SCV82DX	1B21*ACVO82D Ctrl	T-08	A
1B21*SCV82DY	1B21*ACVO82D Ctrl	T-08	A
1B21*SCV82DZ	1B21*ACVO82D Ctrl	T-08	A
1B21*SCV92AX	ADS VLV 1B21*RV- 92A SOV A	B-22	A
1B21*SCV92AY	ADS VLV 1B21*RV- 92A SOV B	B-22	A
1B21*SCV92BX	ADS VLV 1B21*RV- 92B SOV A	B-22	A
1B21*SCV92BY	ADS VLV 1B21*RV- 92B SOV B	B-22	A

1B21*SOV92EX	ADS VLV 1B21*RV-92E SOV A	B-22	A
1B21*SOV92EY	ADS VLV 1B21*RV-92E SOV B	B-22	A
1B21*SOV92HX	ADS VLV 1B21*RV-92H SOV A	B-22	A
1B21*SOV92HY	ADS VLV 1B21*RV-92H SOV B	B-22	A
1B21*SOV92JX	ADS VLV 1B21*RV-92J SOV A	B-22	A
1B21*SOV92JY	ADS VLV 1B21*RV-92J SOV B	B-22	A
1B21*SOV92KX	ADS VLV 1B21*RV-92K SOV A	B-22	A
1B21*SOV92KY	ADS VLV 1B21*RV-92K SOV B	B-22	A
1B21*SOV92LX	ADS VLV 1B21*RV-92L SOV A	B-22	A
1B21*SOV92LY	ADS VLV 1B21*RV-92L SOV B	B-22	A
1B21*SOV313A	SAMPLE PP SUPPRESS POOL RETURN	G-09	A
1B21*SOV313B	SAMPLE PP SUPPRESS POOL RETURN	G-09	A
1D11*PNL068	R.B. STA. VENT RAD ALARM	TB	D
1D11*PNL126	R.B. STA. VENT RAD ALARM	TB	D
1E11*FT001A	RHR MAIN FLOW	G-01	A
1E11*FT001B	RHR MAIN FLOW	G-01	A
1E11*MOV034A	RHR HX SHELL BYPASS	G-01	A
1E11*MOV034B	RHR HX SHELL BYPASS	G-01	A
1E11*MOV036A	RHR OUTBOARD VV	G-03	A
1E11*MOV036B	RHR OUTBOARD VV	G-07	A

1E11*MOV037A	RHR OUTBOARD VV	G-03	A
1E11*MOV037B	RHR OUTBOARD VV	G-07	A
1E11*MOV040A	RHR FLOW TO SUPP POOL	G-03	A
1E11*MOV040B	RHR FLOW TO SUPP POOL	G-07	A
1E11*MOV045A	RHR PP MIN FLOW BYPASS	G-01	A
1E11*MOV045B	RHR PP MIN FLOW BYPASS	G-01	A
1E11*POL4A	RHR PUMP	G-01	A
1E11*POL4B	RHR PUMP	G-01	A
1E11*POL4C	RHR PUMP	G-01	A
1E11*POL4D	RHR PUMP	G-01	A
1E11*PDS001A	VALVE INTERLOCK	G-01	A
1E11*PDS001B	VALVE INTERLOCK	G-01	A
1E11*PNS031A	POS SH ON 1E11*MOV031A	G-01	A
1E11*PNS031B	POS SW ON 1E11*MOV031B	G-01	A
1E11*PNS031C	POS SW ON 1E11*MOV031C	G-01	A
1E11*PNS031D	POS SW ON 1E11*MOV031D	G-01	A
1E11*PNS032A	POS SW ON 1E11*MOV032A	G-01	A
1E11*PNS032B	POS SW ON 1E11*MOV032B	G-01	A
1E11*PNS032C	POS SW ON 1E11*MOV032C	G-01	A
1E11*PNS032D	POS SW ON 1E11*MOV032D	G-01	A
1E11*PNS037A	POS SW ON 1E11*MOV037A	G-03	A
1E11*PNS037B	POS SW ON 1E11*MOV037B	G-03	A
1E11*PNS040A	POS SW ON 1E11*MOV040A	G-03	A
1E11*PNS040B	POS SW ON 1E11*MOV040B	G-07	A
1E11*PNS047	1E11*MOV047 POSITION SW	D-22	A
1E11*PNS048	1E11*MOV048 POSITION SW	G-03	A
1E11*PNS061A	ON 1E11*ACV061A	G-01	A
1E11*PS134A	RHR PUMP DISCHARGE	G-01	A
1E11*PS134B	RHR PUMP DISCHARGE	G-01	A
1E11*PS134C	RHR PUMP DISCHARGE	G-01	A
1E11*PS134D	RHR PUMP DISCHARGE	G-01	A
1E11*PS135A	RHR PUMP DISCHARGE	G-01	A
1E11*PS135B	RHR PUMP DISCHARGE	G-01	A
1E11*PS135C	RHR PUMP DISCHARGE	G-01	A
1E11*PS135D	RHR PUMP DISCHARGE	G-01	A

1G11*LE645A	REACT BLD FLOOD LEVEL	G-01	A
1G11*LE645B	REACT BLD FLOOD LEVEL	G-01	A
1H21*PNL15	MAIN STEAM FLOW RACK A	G-01	A
1H21*PNL16	CS/HPCI LEAK DET I RK	G-01	A
1H21*PNL17	RCIC INST RACK	G-01	A
1H21*PNL18	RHR INST RK CH A	G-01	A
1H21*PNL19	CORE SPRAY RK CH B	G-01	A
1H21*PNL21	RHR INST RK CH B	G-01	A
1H21*PNL22	RECIRC PUMP B RACK	L-02	A
1H21*PNL26	RV LEVEL & PRESS INST	H-12	A
1H21*PNL35	CS/RCIC LEAK DET RK B	L-02	A
1H21*PNL36	HPCI LEAK DET RK B	G-01	A
1H21*PNL37	RCIC LEAK DET RK A	G-01	A
1H21*PNL38	RCIC LEAK DET RK B	L-02	A
1P41*MOV034A	RHR HX E-34A DISCH	G-01	A
1P41*MOV034B	RHR HX E-34B DISCH	G-01	A
1P50*MOV114A	COMPA SVCE EMERG SPLY VV	D-22	A
1P50*MOV114B	COMPA SVCE EMER SPLY VV	D-22	A
1P50*PS113A	SERV AIR HDR A NORM SUP	H-18	A
1P50*PS113B	SERV AIR HDR B NORM SUP	H-18	A
1P50*PT116A	SERVICE AIR HEADER A	H-18	A
1P50*PT116B	SERVICE AIR HEADER B	H-18	A
1R24*MCC111W	MOTOR CONTROL CENTER	N-21	A

1R24*MCC111X	MOTOR CONTROL CENTER-LCPI	N-21	A
1R24*MCC112W	MOTOR CONTROL CENTER	N-21	A
1R24*MCC112Y	MOTOR CONTROL CENTER-LCPI	N-21	A
1R24*MCC1112	MOTOR CONTROL CENTER-EMER	N-21	A
1R24*MCC1113	MOTOR CONTROL CENTER-EMER	N-21	A
1R24*MCC1122	MOTOR CONTROL CENTER-EMER	N-21	A
1R24*MCC1123	MOTOR CONTROL CENTER-EMER	N-21	A
1R24*MCC1128	MOTOR CONTROL CENTER-EMER	N-21	A
1R24*MCC1131	MOTOR CONTROL CENTER-EMER	N-21	A
1R24*MG111	480V MOTOR GENERATOR (RED)	N-21	A
1R24*MG112	480V MOTOR GENERATOR (BLUE)	N-21	A
1R24*MG113A	480V MOTOR GENERATOR (ORANGE)	N-21	A
1R24*MG113B	480V MOTOR GENERATOR (ORANGE)	N-21	A
1R24*PNL-B1	BREAKER DIST PNL (BLUE)	N-21	A
1R24*PNL-R1	BREAKER DIST PNL (RED)	N-21	A
1R24*PNL-R2	BREAKER DIST PNL (RED)	N-21	A
1R24*PNL111	H-G SET CONTROL CABINET	N-21	A
1R24*PNL112	H-G SET CONTROL CABINET	N-21	A
1R24*PNL113A	H-G SET CONTROL CABINET	N-21	A
1R24*PNL113B	H-G SET CONTROL CABINET	N-21	A
1R24*TRS111X	480V AUTO TRANSFER SWITCH	N-21	A
1R24*TRS112Y	480V AUTO TRANSFER SWITCH	N-21	A
1R31*NFM02	POWER CABLE	ALL	A
1R31*NFN03	PWR CABLES	ALL	A
1R32*NFP044	INST CABLE	ALL	A
1R32*NFP-63	INST CABLE	ALL	A
1R32*NFP010	INST CABLE	ALL	A

1R32*NFPC97	INST CABLE	ALL	A
1R32*NFPC20	INST CABLE	ALL	A
1R35*PNL-B2	120VAC DIST PNL REAC BLDG	N-21	A
1R35*PNL-01	EMER 120V PNL 01-REL RM	RR	D
1R35*PNL-R2	120VAC DIST PNL REAC BLDG	N-21	A
1R35*T-B2	480-120/240V TRANS	N-21	A
1R35*T-B2	480-120/240V TRANS	N-21	A
1R42*MCC0A2	125VDC MOTOR CONT CENTER	N-21	A
1R42*MCC0B1	125VDC MOTOR CONT CENTER	N-21	A
1T46*AODO40A	RB REFUEL LEVEL EXHAUST	H-18	A
1T46*AODO40B	RB REFUEL LEVEL EXHAUST	H-18	A
1T46*AODO41A	RB POT CONTAM AREA EXH	K-15	A
1T46*AODO41B	RB POT CONTAM AREA EXH	K-15	A
1T46*ACVO35A	RB AIR EXHAUST	G-01	A
1T46*ACVO35B	RB AIR EXHAUST	G-01	A
1T46*ACVO37A	RB DISCHARGE ISOLATION	H-12	A
1T46*ACVO37B	RB DISCHARGE ISOLATION	H-12	A
1T46*FLT01A	FILTER TRAIN REHEAT COIL RBSVS	K-15	A
1T46*FLT01B	FILTER TRAIN REHEAT COIL RBSVS	K-15	A
1T46*FNCO3A	RBSVS EXH FAN	K-15	A
1T46*FNCO3B	RBSVS EXH FAN	K-15	A
1T46*FNCO3C	RBSVS EXH FAN	K-15	A
1T46*FN079A	RB EXHAUST BOOSTER FAN	K-15	A
1T46*FN079B	RB EXHAUST BOOSTER FAN	K-15	A
1T46*FN833A	1T46*UC-002A FAN	G-01	A
1T46*FN833B	1T46*UC-002B FAN	G-01	A
1T46*FN834A	1T46*UC-003A FAN	G-01	A

1T46*FN834B	1T46*UC-003B FAN	G-01	A
1T46*FN835A	1T46*UC-004A FAN	H-20	A
1T46*FN835B	1T46*UC-004B FAN	H-20	A
1T46*FN836A	1T46*UC-005A FAN	H-20	A
1T46*FN836B	1T46*UC-005B FAN	H-20	A
1T46*FN837A	1T46*UC-020A FAN	J-16	A
1T46*FN837B	1T46*UC-020B FAN	K-15	A
1T46*FN838A	1T46*UC-021A FAN	H-19	A
1T46*FN838B	1T46*UC-021B FAN	H-19	A
1T46*FN839A	1T46*UC-022A FAN	H-19	A
1T46*FN839B	1T46*UC-022B FAN	H-19	A
1T46*FT004A	RBSVS EXH AIR FLOW	H-18	A
1T46*FT004B	RBSVS EXH AIR FLOW	H-18	A
1T46*MODO31A	RBSVS INLE TO MIXED PLEN	K-15	A
1T46*MODO31B	RBSVS INLE TO MIXED PLEN	K-15	A
1T46*MODO34A	RBSVS FILTER TRAIN DISCH	H-20	A
1T46*MODO34B	RBSVS FILTER TRAIN DISCH	H-20	A
1T46*MODO36A	MOT DAMPER FOR FN 1T46*FN-CO3A	K-15	A
1T46*MODO36B	MOT DAMPER FOR FN 1T46*FN-CO3B	K-15	A
1T46*MODO36C	MOT DAMPER FOR FN 1T46*FN-CO3C	K-15	A
1T46*MODO47A	FN-79A DISCHARGE AIR	K-15	A
1T46*MODO47B	FN-79B DISCHARGE AIR	K-15	A
1T46*MODO48A	FLT 1A	K-15	A
1T46*MODO48B	FLT 1B	K-15	A
1T46*PDTCO3A	FLT-1A DIFF PRESSURE	K-15	A
1T46*PDTCO3B	FLT-1B DIFF PRESSURE	K-15	A
1T46*PDTO43A	REACTOR BLDG DIFF	H-20	A
1T46*PDTO43B	REACTOR BLDG DIFF	H-20	A
1T46*PNSO31A	POSITION ON MODO31A	K-15	A
1T46*PNSO31B	POSITION ON MODO31B	K-15	A
1T46*PNSO34A	POSITION ON MODO34A	H-20	A
1T46*PNSO34B	POSITION ON MODO34B	H-20	A

1T46*PNS035A	RBSVS INITIATION SIGNAL	G-01	A
1T46*PNS035B	RBSVS INITIATION SIGNAL	G-01	A
1T46*PNS037A	RBSVS INITIATION SIGNAL	H-12	A
1T46*PNS037B	RBSVS INITIATION SIGNAL	H-12	A
1T46*PNS040A	POSITION ON AODO40A	H-18	A
1T46*PNS040B	POSITION ON AODO40B	H-18	
1T46*PNS041A	POSITION ON AODO41A	K-15	A
1T46*PNS041B	POSITION ON AODO41B	K-15	A
1T46*SOVO35A	OPERATES ACVO35A	G-01	A
1T46*SOVO35B	OPERATES AOV035B	G-01	A
1T46*SOVO37A	OPERATES AOV 037A	G-01	A
1T46*SOVO37B	OPERATES AOV037B	G-01	A
1T46*SOVO40A	OPERATES ACDO40A	H-18	A
1T46*SOVO40B	OPERATES AODO40B	H-18	A
1T46*SOVO41A	OPERATES AODO41A	K-15	A
1T46*SOVO41B	OPERATES AODO41B	K-15	A

1T46*TCV022A	RB STANDBY VENT UC 2A	G-01	A
1T46*TCV022B	RB STANDBY VENT UC 2B	G-01	A
1T46*TCV023A	RB STANDBY VENT UC 3A	G-01	A
1T46*TCV023B	RB STANDBY VENT UC 3B	G-02	A
1T46*TCV024A	RB STANDBY VENT UC-4A	H-20	A
1T46*TCV024B	RB STANDBY VENT UC-4B	H-20	A
1T46*TCV025A	RB STANDBY VENT UC-5A	H-20	A
1T46*TCV025B	RB STANDBY VENT UC-5B	H-20	A
1T46*TCV026A	RB STANDBY BENT UC-6A	K-15	A
1T46*TCV026B	RB STANDBY VENT UC-6B	K-15	A
1T46*TCV028A	MCC RM UNIT COOLER	N-16	A
1T46*TCV028B	MCC RM UNIT COOLER	K-15	A
1T46*TCV059A	UC-21A UNIT CLEAR	H-19	A
1T46*TCV059B	UC-21B UNIT CLEAR	H-19	A
1T46*TCV060A	UC-22A UNIT CLEAR	H-19	A
1T46*TCV060B	UC-22B UNIT CLEAR	H-19	A
1T46*TE001A	RBSVS RECIRC AIR TEMP	K-15	A
1T46*TE001B	RBSVS RECIRC AIR TEMP	K-15	A
1T46*TE022A	AIR RETURN TO UC-2A	G-01	A
1T46*TE022B	AIR RETURN TO UC-2B	G-01	A
1T46*TE023A	AIR RETURN TO UC-3A	G-01	A
1T46*TE023B	AIR RETURN TO UC-3B	G-02	A
1T46*TE024A	AIR RETURN TO UC-4A	H-20	A
1T46*TE024B	AIR RETURN TO UC-4B	H-20	A
1T46*TE025A	AIR RETURN TO UC-5A	H-20	A
1T46*TE025B	AIR RETURN TO UC-5B	H-20	A
1T46*TE028A	MCC RM UNIT COOLER	H-16	A
1T46*TE028B	MCC RM UNIT COOLER	J-15	A
1T46*TE059A	UC-21A UNIT CLEAR	H-19	A
1T46*TE059B	UC-21B UNIT CLEAR	H-19	A
1T46*TE060A	UC-22A UNIT CLEAR	H-19	A
1T46*TE060B	UC-22B UNIT CLEAR	H-19	A