

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

JOSEPH W. GALLAGHER
MANAGER
ELECTRIC PRODUCTION DEPARTMENT

(215) 841-5003

April 7, 1983

Docket Nos.: 50-277
50-278

Mr. John F. Stolz, Chief
Operating Reactors Branch
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Stolz:

Your letter of February 2, 1983 (J. F. Stolz to E. G. Bauer, Jr.) forwarded a Request for Additional Information (RAI) regarding NUREG 0737 Item II.K.3.28, Verify Qualification of Accumulators on Automatic Depressurization System Valves.

Preparation of a complete response requires extensive review of the relevant design documents. However, the appropriate Mechanical Engineering Division Section has been heavily involved with other NRC directed modifications (e.g., Torus Attached Piping) and request for information regarding Limerick licensing including meetings in Bethesda with various NRC branches (including the Auxiliary Systems Branch, Power Systems Branch and Containment Systems Branch). For these reasons, we are unable to provide a complete response within the time frame you have requested. We expect to provide complete information by May 13, 1983.

In our submittals to the NRC dated July 19, 1982, and December 29, 1981 (S. L. Daltroff, PECO., to D. G. Eisenhut, NRC) we have provided a detailed comprehensive description of the modifications performed in response to NUREG 0737 Item II.K.3.28. We have performed a preliminary review of the Peach Bottom design in light of your present Request for Additional Information and have concluded that it meets or exceeds all relevant design requirements.

We have enclosed copies of surveillance tests (ST 2.6.23 A&B, ST 30.129, and ST 13.28) which provide information regarding

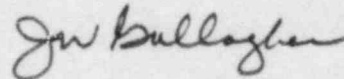
A046

your questions 7, 10, and 11. Further information relative to these questions will be included with our next submittal. Information relative to question 9 concerning alarms and instrumentation had been submitted in response to IE Bulletin 80-25 (S. L. Daltroff, PECO, to B. H. Grier, NRC, March 18, 1981 and S. L. Daltroff to R. C. Haynes, NRC, May 19, 1982). Copies of these letters are enclosed.

In response to question 13 which requests excerpts of the Technical Specifications which specify ADS leak test frequency, allowable leakage rate and actions to be taken if allowable leakage rate is exceeded, a review of the Peach Bottom Technical Specifications does not reveal any specifications relative to these matters. In addition, a review of the Standard Technical Specifications (NUREG 0123, Rev. 3) did not reveal specifications of the requested nature.

If you require further information prior to the receipt of our complete response, please contact us.

Very truly yours,



Attachments

cc: R. A. Blough
Site Inspector

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

COPY

May 19, 1982

Docket Nos. 50-277
50-278

IE Bulletin 80-25

Mr. R. C. Haynes, Administrator
US Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19046

Dear Mr. Haynes:

This letter provides supplemental information to our letter of March 18, 1981, (S. L. Daltroff, PECO to B. H. Grier, USNRC) regarding IE Bulletin 80-25 concerning overpressurization of safety/relief valve pneumatic supply system. Modifications are being undertaken which will provide a back-up pneumatic supply utilizing compressed gas cylinders. Appropriate overpressure relief devices are being installed in this back-up system. In addition, a high pressure alarm sensor will be installed as part of these modifications. This alarm sensor will be located exterior to containment, between the compressed gas cylinders and the balance of the system, and annunciate, as a general alarm, in the control room. Appropriate direction to operating personnel will be instituted upon completion of this modification so that high pressure will receive proper attention.

This modification has been discussed with our NRC Resident Inspectors.

If there are any further questions, do not hesitate to contact us.

Very truly yours,

Original signed by:
S. L. DALTROFF

cc: C. J. Cowgill

8206010561

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

MAR 19 1981

J. W. GALLAGHER

March 18, 1981

Docket Nos. 50-277
50-278

IE Bulletin 80-25

Mr. Boyce W. Grier, Director
Region 1
Office of Inspection & Enforcement
US Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Grier:

This letter is in response to your letter, which forwarded IE Bulletin 80-25. "Actions to be taken by utilities with BWR plants" are restated below with our responses. In response to your request concerning manpower requirements, approximately 55 manhours were expended in preparing this response.

Actions to be Taken by Utilities with BWR Plants with Operating Licenses or Near-Term Operating Licenses:

1. If your facility has not yet installed or changed or is presently in the process of changing to the two-stage S/R valves, initiate appropriate quality control procedures to assure inspection of the solenoid actuators for excess Loc-tite prior to operation. If the solenoid actuator manufactured by Target Rock Corporation is already installed in your facility, confirm its operability either by its operational performance (i.e., it has functioned as designed following an aging period of about 3 months in the higher temperature environment of power operating conditions) or by functional testing at full pressure during the next refueling

6104240314

shutdown of the facility. Include in your report the results of all attempts to operate the two-stage S/R valve(s).

Response

No two stage safety/relief valves (SRV's) are currently installed at Peach Bottom, nor are there any plans to install them at this time.

2. In the event that a S/R valve, regardless of make or model (e.g., both two or three stage), fails to function as designed, excepting for pressure setpoint requirements, and the cause of the malfunction is not clearly determined, understood, and therefore corrected, standard operating procedures shall require that the entire valve be removed from service, disassembled, inspected, adjusted, and pressure setpoint tested with steam for proper operation prior to returning the valve to service. These overhaul requirements shall be at least equivalent to those applicable to periodic surveillance rehabilitation requirements. Appropriate revisions to your operating procedures shall be made to include these requirements.

Response

Procedure OT-35 "Inadvertent opening of Safety/Relief Valve" and GP-2A Check Off List "Reactor Startup Order" are being modified to include steps regarding malfunctioning safety/relief valves.

3. A review of your S/R valve pneumatic supply systems shall be performed to determine the potential for and magnitude of an overpressure condition. The determined overpressure potential of the pneumatic supply shall be compared with the maximum operating pressure capabilities of the solenoid actuator valves serving the S/R valves, so as to determine whether supply pressure could result in valve malfunction. Protective devices (such as relief valves) shall be installed in the proximity of the S/R valves and set to protect against supply pressure in excess of the operating pressure capabilities of the solenoid actuator device. In addition, consideration should be given to modification or replacement to reduce the sensitivity of the solenoid actuator to pneumatic supply overpressure. Further, the failure, either high or low, of the pneumatic supply system shall be annunciated to the control room operator. The annunciated supply pressure shall be measured at a location as close as practical to the S/R valves and downstream of any check valve connecting two or more pneumatic sources. Appropriate operating procedures shall be provided to guide operator

response to such an occurrence of high or low supply pressure.

Response

We have completed a review of the S/R valve pneumatic supply systems at Peach Bottom and have concluded that the potential for an overpressure situation, as described, is negligible. A basis for our determination is as follows:

- a) The pneumatic supply to the S/R valves is from the Instrument Nitrogen System (P&ID M-333). This system consists of two trains of instrument air compressors, filters, dryers, receiver tanks, which take suction from the drywell atmosphere and provide compressed gas at a pressure of 85-105 psig to the A and B drywell instrument headers. In addition, the five S/R valves utilized for the Automatic Depressurization System (ADS) are provided with accumulators.
- b) Low pressure in the Instrument Nitrogen System receiver tanks is annunciated in the control room and station Instrument Air is provided as a backup. Operators have an annunciator alarm card which provides direction in the event of this alarm. High pressure in either Instrument Air System is prevented by compressor control logic and multiple relief valves.
- c) Under current design, no source of high pressure gas or liquified gas is utilized in the S/R valves pneumatic supplies. A system is under design which will provide a long term safety grade pneumatic supply to the SRV's associated with ADS. The new system, which is to be used only as a backup, has as a source the Containment Atmosphere Dilution (CAD) nitrogen facility which consists of a liquid nitrogen tank, vaporizers, and associated instruments and controls. Provisions for overpressure protection/relief of this system will be made downstream of all pressure regulating devices and external to primary containment. Appropriate control room indication will be provided to identify low system pressure.
- d) The Target Rock SRV's in use at Peach Bottom are equipped with three stage top-works and Automatic Valve Company (AVCO) solenoid valves. As stated in IE Information Notice 80-40, these solenoid valves have been tested to 300 psig and found not to leak.

Since the review described above clearly indicates that the problems described in IE Information Notice 80-40 and IE Bulletin 80-25 are not applicable to the Peach Bottom SRV pneumatic supply systems, no plans are being made for any system modifications in response to this concern.

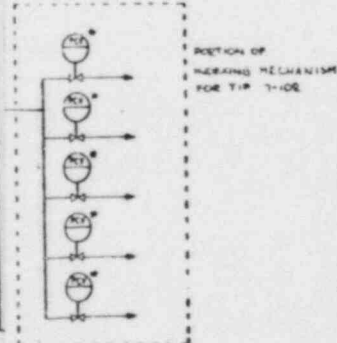
Very truly yours,

Original signed by
S. L. DALTROFF

JCN/klm
Attachment

cc: Victor Stello, Director
Office of Inspection & Enforcement
US Nuclear Regulatory Commission
Washington, DC 20555

bcc: V. S. Boyer
J. S. Kenper
✓ J. W. Gallagher
E. J. Bradley
R. H. Moore
M. J. Cooney
W. T. Ullrich
W. M. Alden/J. C. Nagle
J. N. Mollick

[illegible]

NUM REPLACES
NUM DELETES
NUM DELETES
NUM DELETES

[illegible]

PEACH BOTTOM UNIT

3

JFK:wai

Rsf
8/23/82SURVEILLANCE TESTST 2.10.30A - Calibration of FT-9130A, FS-9130A
TECHNICAL SPECIFICATION:TEST FREQUENCY: Once per operating cycleTEST RESULTS:

A. All of the asterisked steps were completed SATISFACTORILY.

PERFORMED BY:

SIGNATURE

TIME/DATE

PERFORMED BY:

SIGNATURE

TIME/DATE

INFORMED OF COMPLETION:

SIGNATURE (A.C.O. or C.O.)

TIME/DATE

REVIEWED BY:

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

B. One or more of the asterisked steps was completed UNSATISFACTORILY.
Refer to Tech. Spec.

MRF NO. _____

SIGNATURE

TIME/DATE

SIGNATURE (A.C.O. or C.O.)

TIME/DATE

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

IMMEDIATELY NOTIFY PLANT SUPERINTENDENT OR ALTERNATE

NAME OF PERSON NOTIFIED

TIME/DATE

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

Additional action required if other portions of test did not function properly
or other discrepancies were noted during test.

1. MRF submitted: MRF NO. _____

2. Other: _____

SIGNATURE

DATE

REVIEWED BY:

PLANT STAFF SUPERVISION

DATE

LOCATION:

FT-9130A - 135' Reactor Building near CRD Hatch
FS-9130A - Panel 30C722A in CSR

PURPOSE:

The purpose of this procedure is to verify the calibration and trip point of the FT-9130 loop.

DEVICE FUNCTION:

This device provides a PCIS isolation signal to the backup nitrogen supply of the ADS system. On a high flow signal, this device will close the nitrogen supply line valve 9130A.

REFERENCES:

E-333
E-2357
M-1-S-23, Sh. 1, 2, 9
6280-E117-4

TEST EQUIPMENT:

- | | | |
|----------------------------------|----------------|----------------|
| 1. Two flukes (0 - 20 mA range) | PECO No. _____ | CAL. DUE _____ |
| | PECO No. _____ | CAL. DUE _____ |
| 2. Wallace & Tiernan | PECO No. _____ | CAL. DUE _____ |
| 3. Medium size adjustable wrench | | |
| 4. VOM | | |

PREREQUISITES:

INITIAL STEPS

- | | |
|---|--------------------|
| 1. Obtain shift supervision permission to do this test. | SSV Initials _____ |
| 2. Obtain reactor operator permission to do this test. | ACO Initials _____ |
| 3. Verify all drywell conditions normal. | _____ |
| 4. Verify annunciator "ADS N ₂ supply line isolated" is clear. | _____ |
| 5. Verify nitrogen supply line valve 9130A is closed. | |
- NOTE: THIS PROCEDURE WILL NOT OPEN THE NITROGEN SUPPLY LINE VALVE 9130A.

PROCEDURE:

1. Close high side instrument shutoff valve.
2. Open equalizer valve.

INITIAL

3. Close low side shutoff valve to FT-9130A and bleed pressure.
4. Close equalizer valve.
5. Remove test caps.
6. Connect pressure test equipment to high side of FT-9130A.
7. Connect a fluke (4-20mA) in series with the XMTR signal on FT-9130A.
8. Connect a second fluke to FS-9130A (Terms (3+), 3(-), at 30C722A) and set at 20 VDC scale.
9. Connect a VOM across XS-9150A, Terms 1(+), 1(-) (at Rx 10K scale) and verify.
10. Inform operator that the following calibration will annunciate the "ADS N₂ Supply Line Isolated" alarm in the control room.
11. Do the following, filling in the appropriate spaces for FT-9130A, and using the fluke in-line with the transmitter.

0 ohms

Adj Press To:	As Found	Accpt. Lim.	Accpt. Unaccpt. As Found	As Left	Accpt. Unaccpt. As Left
"H ₂ O	mA				
0		4 ± .1 mA			
25		8 ± .1 mA			
50		12 ± .1 mA			
75		16 ± .1 mA			

Slowly increase pressure to the 100" H₂O trip point and verify the following:

	mA	Accpt. Unaccpt.	Accpt. Unaccpt.
100" H ₂ O	20 ± .1 mA		
A. FS-9130A Trips (9.95 - 10.05 VDC)			
B. VOM Indicates			
		00 ohms 0 ohms	
			00 ohms 0 ohms
C. Annunciator "ADS N ₂ Supply Line Isolated" is		Accpt. Unaccpt.	Alarmed Clear

Slowly reduce pressure and record the following:

Adj Press To: PSIG	As Found mA	Accept. Lim.	Accept.	Unaccept.	As Left mA	Accept.	Unaccept.
75		16 ± .1 mA	_____	_____		_____	<input type="text"/>
50		12 ± .1 mA	_____	_____		_____	<input type="text"/>
25		8 ± .1 mA	_____	_____		_____	<input type="text"/>
0		4 ± .1 mA	_____	_____		_____	<input type="text"/>

12. Request reactor operator to reset the nitrogen supply line valve 9130A.

ACO Initials

If all as found indications are within Accept. Lim., then continue procedure.

If any of the as found indications are outside Accept. Limits, instrument requires calibration. Proceed with the manufacturer's procedure for calibration of this inst., then recheck by filling out the as left spaces for a repeated calibration check.

IF CALIBRATION WAS NOT SUCCESSFUL, INSTRUMENT IS CONSIDERED DEFECTIVE. NOTIFY SHIFT SUPERVISION AND I&C ENGINEER IMMEDIATELY, AND COMMIT THE INSTRUMENT FOR REPAIR. IF THE INSTRUMENT IS REMOVED FROM THE RACK, A PRESSURE DECAY TEST MUST BE PERFORMED ON THE INSTRUMENT BEFORE RETURNING TO SERVICE.

If calibration was successful, continue with step 13 of procedure.

INITIAL STEPS

13. Have operator reset "ADS N₂ Supply Line Isolated".

14. Reduce pressure to zero and remove test equipment.

Initials

15. Replace test caps.

Initials

16. Open high side shutoff valve on FT-9130A.

Initials

17. Slowly close equalizer valve on FT-9130A.

Initials

18. Open low side shutoff valve to FT-9130A.

Initials

19. Remove all test instrumentation and inform operator that loop has been returned to service.

Initials

20. Inform shift supervision and reactor operator of the results of this test.

TECHNICIAN COMMENTS:

INSTRUMENT CALIBRATION SHEET

11-20645 6/81

DOCTYPE 095

STB 101

STATION: ☒ PUAPS ☐ LGS
UNIT: ☐ 1 ☐ 2 ☒ 3

INSTR. NO./NAME: FT 9.30A / N₂ FLOW						
RANGE:	INPUT	SCALE	SETPOINT:	SW. #	CLOSES INCR OPENS DECR	DIFF.
	0-100" H ₂ O	NA		NA		
	OUTPUT	REQ. ACC.		SW. #	CLOSES INCR OPENS DECR	DIFF.
	4-20 mA			NA		
MANU. Foxboro		MODEL N-E13DM-IIM-2-A		SERIAL NO.		
INSTR. DWGS.: M		E-2357-6	INSTR. LOC.: A 15	E 135' EL.		
P.O./FOREIGN PRINT			INSTR. SPEC. SHEET			
ROOT VALVE LOC.: A		E	PRINT & REV.			

IDEAL INPUT <i>H₂O</i>	ACTUAL INPUT <i>H₂O</i>	IDEAL OUTPUT mA	ACTUAL OUTPUT		LOOP CHECK <i>I/E 9.30A</i>	
			AS FOUND	AS LEFT	✓ IDEAL	ACTUAL
0		4			0	
25		8			2.5	
50		12			5.0	
75		16			7.5	
100		20			10.0	

SPECIAL FEATURES:

ADDRESS _____

WATER LEG _____

ALARMS & ACTIONS:

SIGNAL TO: **I/E 9.30A**

SIGNAL FROM: _____

REMARKS: LOCATION SHOWN ON E-1235 REV 47

DATE _____ TECHNICIAN _____

TEST INSTR. NO/CAL DUE _____

FOLDER NO. _____ APPROVED _____

CAL. SHT. X-REF.	
MRF NO.	
MOD NO.	625
S.T. NO.	

INSTRUMENT CALIBRATION SHEET

M-20645 8/81

DOCTYPE 095

STB 101

STATION: ☒ PUAPS ☐ LCS
UNIT: ☐ 1 ☐ 2 ☒ 3

INSTR. NO/NAME <u>I/E 9130A / N₂ Flow</u>							
RANGE:	INPUT	SCALE	SETPOINT:	SW. #	CLOSES INCR OPENS DECR	DIFF.	
	OUTPUT	REQ. ACC.		SW. #	CLOSES INCR OPENS DECR	DIFF.	
MANU. <u>Foxboro</u>		MODEL <u>N-2AI-12V</u>		SERIAL NO.			
INSTR. DWGS.: <u>M-</u>		<u>E-2357-6</u> <u>Sht. 5</u>		INSTR. LOC.: <u>A 3</u>		<u>E 150' EL.</u>	
P.O./FOREIGN PRINT				INSTR. SPEC. SHEET			
ROOT VALVE LOC.: <u>A</u>		<u>E</u>		PRINT & REV.			

m A IDEAL INPUT	m A ACTUAL INPUT	VDC IDEAL OUTPUT	ACTUAL OUTPUT		LOOP CHECK TO	
			AS FOUND	AS LEFT	IDEAL	ACTUAL
4		0				
8		2.5				
12		5.0				
16		7.5				
20		10.0				

SPECIAL FEATURES:

ADDRESS _____

WATER LEG _____

SIGNAL TO: FS 9130A

SIGNAL FROM: FI 9130A

ALARMS & ACTIONS: LOCATED IN PNL 30C772A

REMARKS:

DATE _____ TECHNICIAN _____

TEST INSTR. NO/CAL DUE _____

FOLDER NO. _____ APPROVED _____

CAL. SHT. X-REF.
MRF NO.
MOD NO. <u>625</u>
S.T. NO.

INSTRUMENT CALIBRATION SHEET

1-20645 0/01

DOCTYPE 095

STB 101

STATION: ☒ PUAPS ☐ LGS
UNIT: ☐ 1 ☐ 2 ☒ 3

INSTR. NO/NAME		FS9130A / Excess N ₂ Flow			
RANGE:	INPUT	SCALE	SETPOINT:	SW. #	CLOSING INCR OPENS DECR <input checked="" type="checkbox"/> * DIFF. 100 ¹ / ₁₊₂₀
	OUTPUT	REQ. ACC.		SW. #	
MANU.		MODEL		SERIAL NO.	
INSTR. DWGS.:		E-2357-6		N-2AP+ALM-AR	
P.O./FOREIGN PRINT		INSTR. LOC.:		E 150 ¹ EL	
ROOT VALVE LOC.:		A		E	
		INSTR. SPEC. SHEET		PRINT & REV.	

IDEAL INPUT	ACTUAL INPUT	IDEAL OUTPUT	ACTUAL OUTPUT		LOOP CHECK TO	
			AS FOUND	AS LEFT	IDEAL	ACTUAL
10VDC		OPEN CONTACTS				

SPECIAL FEATURES:

ADDRESS _____

WATER LEG _____

ALARMS & ACTIONS:

SIGNAL TO: XS 9150A
SIGNAL FROM: I/E 9130A

REMARKS: LOCATED IN PNL 30C 722A
* 10VDC.

INPUT TER. +3,-3

DATE _____ TECHNICIAN _____
TEST INSTR. NO/CAL DUE _____
FOLDER NO. _____ APPROVED _____

CAL. SHT. X-REF.
MRF NO.
MOD NO.
625
S.T. NO.

PEACH BOTTOM UNIT 3

SURVEILLANCE TESTST 2.10.30B - Calibration of FT-9130B, FS-9130B
TECHNICAL SPECIFICATION:TEST FREQUENCY: Once per operating cycleTEST RESULTS:

A. All of the asterisked steps were completed SATISFACTORILY.

PERFORMED BY:

SIGNATURE

TIME/DATE

PERFORMED BY:

SIGNATURE

TIME/DATE

INFORMED OF COMPLETION:

SIGNATURE (A.C.O. or C.O.)

TIME/DATE

REVIEWED BY:

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

B. One or more of the asterisked steps was completed UNSATISFACTORILY.
Refer to Tech. Spec.

MRF NO. _____

SIGNATURE

TIME/DATE

SIGNATURE (A.C.O. or C.O.)

TIME/DATE

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

IMMEDIATELY NOTIFY PLANT SUPERINTENDENT OR ALTERNATE

NAME OF PERSON NOTIFIED

TIME/DATE

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

Additional action required if other portions of test did not function properly
or other discrepancies were noted during test.

1. MRF submitted: MRF NO. _____

2. Other: _____

SIGNATURE

DATE

REVIEWED BY:

PLANT STAFF SUPERVISION

DATE

LOCATION:

FT-9130B - 135' Reactor Building near CRD Hatch
FS-9130B - Panel 30C722B in CSK

PURPOSE:

The purpose of this procedure is to verify the calibration and trip point of the FT-9130 loop.

DEVICE FUNCTION:

This device provides a PCIS isolation signal to the backup nitrogen supply of the ADS system. On a high flow signal, this device will close the nitrogen supply line valve 9130B.

REFERENCES:

E-333
E-2357
M-1-S-23, Sh. 1, 2, 9
6280-El17-4

TEST EQUIPMENT:

- | | | |
|----------------------------------|----------------|----------------|
| 1. Two flukes (0 - 20 mA range) | PECO No. _____ | CAL. DUE _____ |
| | PECO No. _____ | CAL. DUE _____ |
| 2. Wallace & Tiernan | PECO No. _____ | CAL. DUE _____ |
| 3. Medium size adjustable wrench | | |
| 4. VOM | | |

PREREQUISITES:

INITIAL STEPS

- | | |
|---|--------------|
| 1. Obtain shift supervision permission to do this test. | _____ |
| | SSV Initials |
| 2. Obtain reactor operator permission to do this test. | _____ |
| | ACO Initials |
| 3. Verify all drywell conditions normal. | _____ |
| 4. Verify annunciator "ADS N ₂ supply line isolated" is clear. | _____ |
| 5. Verify nitrogen supply line valve 9130B is closed. | |
| NOTE: THIS PROCEDURE WILL NOT OPEN THE NITROGEN SUPPLY LINE VALVE 9130B. | |

PROCEDURE:

- | | |
|--|-------|
| 1. Close high side instrument shutoff valve. | _____ |
| 2. Open equalizer valve. | _____ |

INITIAL

3. Close low side shutoff valve to FT-9130B and bleed pressure.
4. Close equalizer valve.
5. Remove test caps.
6. Connect pressure test equipment to high side of FT-9130B.
7. Connect a fluke (4-20mA) in series with the XMTR signal on FT-9130B.
8. Connect a second fluke to FS-9130B (Terms (3+), 3(-), at 30C722B) and set at 20 VDC scale.
9. Connect a VOM across XS-9150B, Terms 1(+), 1(-) (at Rx 10K scale) and verify.
10. Inform operator that the following calibration will annunciate the "ADS N₂ Supply Line Isolated" alarm in the control room.
11. Do the following, filling in the appropriate spaces for FT-9130B, and using the fluke in-line with the transmitter.

0 ohms

Adj Press To:	As Found	Accpt. Lim.	Accpt. Unaccpt. As Found	As Left	Accpt. Unaccpt. As Left
"H ₂ O	mA				
0		4 ± .1 mA	_____	_____	_____
25		8 ± .1 mA	_____	_____	_____
50		12 ± .1 mA	_____	_____	_____
75		16 ± .1 mA	_____	_____	_____

Slowly increase pressure to the 100" H₂O trip point and verify the following:

	As Found	Accpt. Lim.	Accpt. Unaccpt. As Found	As Left	Accpt. Unaccpt. As Left
100" H ₂ O	mA	20 ± .1 mA	_____	_____	_____
A. FS-9130B Trips (9.95 - 10.05 VDC)			_____	_____	_____
B. VOM Indicates			_____	_____	_____
			00 ohms 0 ohms		
C. Annunciator "ADS N ₂ Supply Line Isolated" is			_____	_____	_____
			Accpt. Unaccpt.	Alarmed Clear	

Slowly reduce pressure and record the following:

Adj Press To: PSIG	As Found mA	Accpt. Lim. 16 ± .1 mA	Accpt.	Unaccpt.	As Left mA	Accpt.	Unaccpt.
75		12 ± .1 mA	_____	_____		_____	<input type="checkbox"/>
50		8 ± .1 mA	_____	_____		_____	<input type="checkbox"/>
25		4 ± .1 mA	_____	_____		_____	<input type="checkbox"/>
0			_____	_____		_____	<input type="checkbox"/>

12. Request reactor operator to reset the nitrogen supply line valve 9130B.

ACO Initials

If all as found indications are within Accpt. Lim., then continue procedure.

If any of the as found indications are outside Accpt. Limits, instrument requires calibration. Proceed with the manufacturer's procedure for calibration of this inst., then recheck by filling out the as left spaces for a repeated calibration check.

IF CALIBRATION WAS NOT SUCCESSFUL, INSTRUMENT IS CONSIDERED DEFECTIVE. NOTIFY SHIFT SUPERVISION AND I&C ENGINEER IMMEDIATELY, AND COMMIT THE INSTRUMENT FOR REPAIR. IF THE INSTRUMENT IS REMOVED FROM THE RACK, A PRESSURE DECAY TEST MUST BE PERFORMED ON THE INSTRUMENT BEFORE RETURNING TO SERVICE.

If calibration was successful, continue with step 13 of procedure.

INITIAL STEPS

13. Have operator reset "ADS N₂ Supply Line Isolated".

14. Reduce pressure to zero and remove test equipment.

Initials

15. Replace test caps.

Initials

16. Open high side shutoff valve on FT-9130B.

Initials

17. Slowly close equalizer valve on FT-9130B.

Initials

18. Open low side shutoff valve to FT-9130B.

Initials

19. Remove all test instrumentation and inform operator that loop has been returned to service.

Initials

20. Inform shift supervision and reactor operator of the results of this test.

TECHNICIAN COMMENTS:

INSTRUMENT CALIBRATION SHEET

M-20645 8/81

DOCTYPE 095

STB 101

STATION: ☒ PUAPS ☐ LGS
UNIT: ☐ 1 ☐ 2 ☒ 3

INSTR. NO/NAME FT 91303 / N₂ FLOW					
RANGE:	INPUT	SCALE	SETPOINT:	SW. #	CLOSES INCH OPENS DECR. <input type="checkbox"/>
	OUTPUT	REQ. ACC.		SW. #	CLOSES INCH OPENS DECR. <input type="checkbox"/>
					DIFF.
MANU. Foxboro		MODEL N-E13DM-ILM-2-A		SERIAL NO.	
INSTR. DWGS.: M-		E-2357-6		INSTR. LOC.: A 15	
P.O./FOREIGN PRINT		SKT 6		E 135' EL.	
ROOT VALVE LOC.: A		E		INSTR. SPEC. SHEET	
PRINT & REV.					

IDEAL INPUT 1" H ₂ O	ACTUAL INPUT 1" H ₂ O	IDEAL OUTPUT mA	ACTUAL OUTPUT		LOOP CHECK TO I/E 91303	
			AS FOUND	AS LEFT	IDEAL	ACTUAL
0		4			0	
25		8			2.5	
50		12			5.0	
75		16			7.5	
100		20			10.0	

SPECIAL FEATURES:

ADDRESS _____

WATER LEG _____

ALARMS & ACTIONS:

SIGNAL TO: **I/E 91303**

SIGNAL FROM: _____

REMARKS: **LOCATION SHOWN ON E-1235 REV 47**

DATE _____ TECHNICIAN _____

TEST INSTR. NO/CAL DUE _____

FOLDER NO. _____ APPROVED _____

CAL. SHT. X-REF.
MRF NO.
MOD NO. 625
S.T. NO.

INSTRUMENT CALIBRATION SHEET

M-20645 8/81

DOCTYPE 095

STB 101

STATION: ☒ PDAPS ☐ LGS
UNIT: ☐ 1 ☐ 2 ☒ 3

INSTR. NO/NAME <u>I/E 91303 / N₂ Flow</u>							
RANGE:	INPUT	SCALE	SETPOINT:	SW. #	CLOSES INCR OPENS DECR	DIFF.	
	OUTPUT	REQ. ACC.		SW. #	CLOSES INCR OPENS DECR		
MANU. <u>Foxboro</u>		MODEL <u>N-2AI-IZV</u>		SERIAL NO.			
INSTR. DWGS.: <u>M-</u>		<u>E-2351-4</u> <u>Sht 6</u>		INSTR. LOC.: <u>A 3</u>		<u>E 150' EL.</u>	
P.O./FOREIGN PRINT				INSTR. SPEC. SHEET			
ROOT VALVE LOC.: <u>A</u>		<u>E</u>		PRINT & REV.			

mA IDEAL INPUT	mA ACTUAL INPUT	VDC IDEAL OUTPUT	ACTUAL OUTPUT		LOOP CHECK TO	
			AS FOUND	AS LEFT	IDEAL	ACTUAL
4		0				
8		2.5				
12		5.0				
16		7.5				
20		10.0				

SPECIAL FEATURES:

ADDRESS _____

WATER LEG _____

SIGNAL TO: _____

SIGNAL FROM: _____

ALARMS & ACTIONS: LOCATED IN PNL 306722B

REMARKS:

DATE 8/81 TECHNICIAN

TEST INSTR. NO/CAL DUE

FOLDER NO. APPROVED

CAL. SHT. X-REF.
MRF NO.
MOD NO. <u>625</u>
S.T. NO.

INSTRUMENT CALIBRATION SHEET

M-20645 0/01

DOCTYPE 095

STB 101

STATION: ☒ PUAPS ☐ LGS
UNIT: ☐ 1 ☐ 2 ☒ 3

INSTR. NO./NAME FS9130B / Excess N₂ Flow					
RANGE:	INPUT	SCALE	SETPOINT:	SW. #	SEUSES INCH
	OUTPUT	REQ. ACC.		OUTPUT 2	OPENS OLON
MANU Foxboro		MODEL	SW. #	CLOSES INCH	DIFF.
		N-2AP+ALM-AR	NA	OPENS DECR	
INSTR. DWGS.: M-		E-2357-6	INSTR. LOC.: A 3		SERIAL NO.
P.O./FOREIGN PRINT		Snt 4	E 150' EL.		
ROOT VALVE LOC.: A			INSTR. SPEC. SHEET		
			PRINT & REV.		

IDEAL INPUT	ACTUAL INPUT	IDEAL OUTPUT	ACTUAL OUTPUT		LOOP CHECK TO	
			AS FOUND	A LEFT	IDEAL	ACTUAL
10 VDC		open contacts				

SPECIAL FEATURES:

ADDRESS _____

WATER LEG _____

ALARMS & ACTIONS:

SIGNAL TO: **XS9.50B**

SIGNAL FROM: **71C9.30B**

REMARKS: **LOCATED IN PNL 3007223**

*** 10 VDC.**

DATE _____ TECHNICIAN _____

TEST INSTR. NO. / AL DUE _____

FOLDER NO. _____ APPROVED _____

CAL. SHT. X-REF.
MRF NO.
MOD NO. 625
S.T. NO.

PHILADELPHIA ELECTRIC COMPANY

Alden PEACH BOTTOM UNIT 3

SURVEILLANCE TEST

ST 30.129 LLRT ADS BACK-UP SUPPLY PENETRATIONS N-47 & N-102B

TECHNICAL SPECIFICATION:

4.7.A.2.F, Table 3.7.4

TEST FREQUENCY:

Each operating cycle, but in
no case greater than two years.

Penetration Number N-47, N-102B

Penetration Leak Rate _____ cc/min

LLRT Total _____ cc/min

TEST RESULTS:

A. All of the asterisked steps were completed SATISFACTORILY.

PERFORMED BY: _____

SIGNATURE

TIME/DATE

INFORMED OF COMPLETION: _____

SIGNATURE (A.C.O. or C.O.)

TIME/DATE

REVIEWED BY: _____

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

B. One or more of the asterisked steps was completed UNSATISFACTORILY.
Refer to Tech. Spec. 4.7.A.2.F, Table 3.7.4.

MRF NO. _____

SIGNATURE

TIME/DATE

SIGNATURE (A.C.O. or C.O.)

TIME/DATE

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

IMMEDIATELY NOTIFY PLANT SUPERINTENDENT OR ALTERNATE.

NAME OF PERSON NOTIFIED

TIME/DATE

SIGNATURE (SHIFT SUPERVISION)

TIME/DATE

Additional action required if other portions of test did not function properly
or other discrepancies were noted during test.

1. MRF submitted: MRF NO. _____

2. Other: _____

SIGNATURE

DATE

REVIEWED BY: _____

PLANT STAFF SUPERVISION

DATE

PURPOSE:

The purpose of this test is to determine the leakage rate of the primary containment penetrations and isolation valves.

REFERENCE:

1. Technical Specifications
2. 10CFR50, Appendix J
3. Various P&ID's

PREREQUISITES:

1. Plant conditions are such that testing will not interfere with planned operations. Request permission of shift supervision to begin this test.

Shift Supervision

2. RWP obtained if required. _____

3. Safety permit issued if required, as determined by Results Engineer or alternate.

Yes _____ No _____

If Yes: Permit No. _____

GENERAL LLRT PROCEDURE:

1. Read specific procedure. Follow procedure for system blocking (if required), draining, and valve line up. _____
2. With the box set up for a "FLOW IN TEST" and connected to the penetration test tap, perform ST 20.116 LLRT Test Taps. Record leakage on the test data sheet in the rear of this test. _____

3. Calculate test pressure as follows. Document calculations and reasoning below:

a) Determine the maximum back pressure against any isolation boundary being tested (existing at start of test or developing as the result of a water leg existing on the vent path). _____psig

b) Determine the maximum back pressure against any non-isolation boundary or isolation boundary not being tested. _____psig

IF THE PRESSURE CALCULATED IN STEP 3b) IS LARGE e.g., REACTOR PRESSURE, CONDUCT A FLOW OUT TEST TO MEASURE THE INLEAKAGE CONTRIBUTION AND ADD THIS TO LEAK TEST RESULTS. 3b) PRESSURE CAN THEN BE REGARDED AS ZERO.

c) Add 49.2 psi to the pressure determined in Step 3a. _____psig

d) Test pressure is the greater of Step 3b or Step 3c. _____psig
(Test Pressure)

IF USING AN ABSOLUTE PRESSURE GAGE COMPLETE STEP 3e. WRITE "PSIA" ON DATA SHEET IN COMMENTS SECTION.

e) $0.4912 \times \text{barometer} + \text{test pressure}$ _____psia
(Test Pressure)

Test Pressure Calculations:

4. Pressurize the test volume to the test pressure determined in Step 3 using service air (use N_2 or electrical penetrations and bellows).

5. Perform LLRT using one of the following three methods.

A. Flow In Test

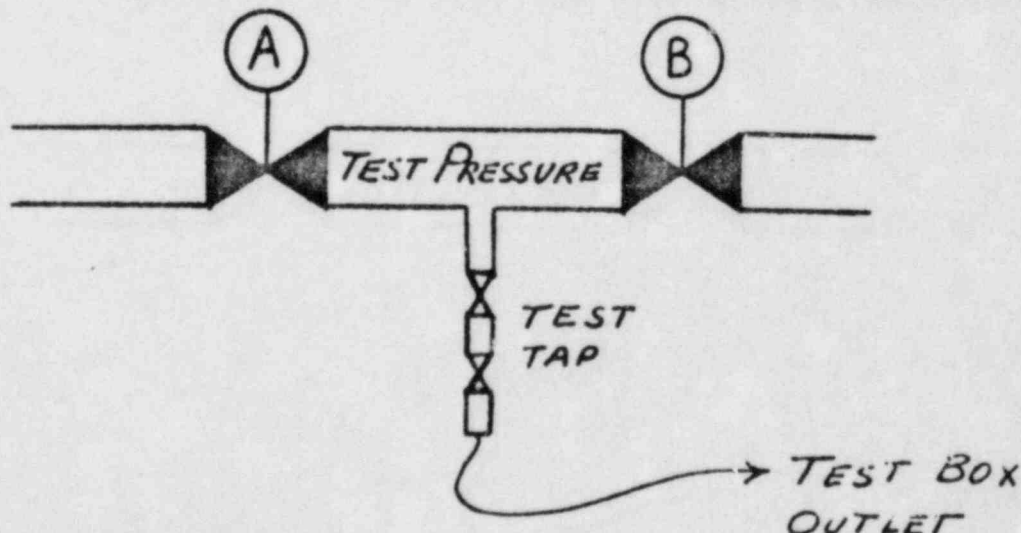
- 1) Test box outlet connected to test volume test tap. Test tap valves open.
- 2) Test box inlet connected to service air supply (use N_2 on electrical penetrations and bellows).
- 3) Align test box valves as follows:

V1 open _____	V9 Closed _____
V2 open _____	V10 Open _____
V4 closed _____	V11 Open _____
V5 open _____	V12 Open _____
V6 closed _____	

(Circle to indicate status)

F11 (V7A, V8A)	in service	out of service
F12 (V7B, V8B)	in service	out of service
F13 (V7C, V8C)	in service	out of service

- 4) Adjust PCV 1 to obtain pressure between supply pressure and test pressure on P1-1.
- 5) Adjust PCV 2 to obtain test pressure on P1-2.
- 6) Read and record on data sheet INDICATED flow and pressure (P1-2) for one hour after stabilization.



Typical "Flow In Test" set up. Test boundary is valves A & B. Leakage is measured as the "Flow In" required to maintain test pressure.

B. Flow Out Test

- 1) Test box SUPPLY VENT connected to DOWNSTREAM test tap via a drain bottle. Downstream test tap valves open.
- 2) Disconnect air supply to test box.
- 3) Align test box valves as follows:

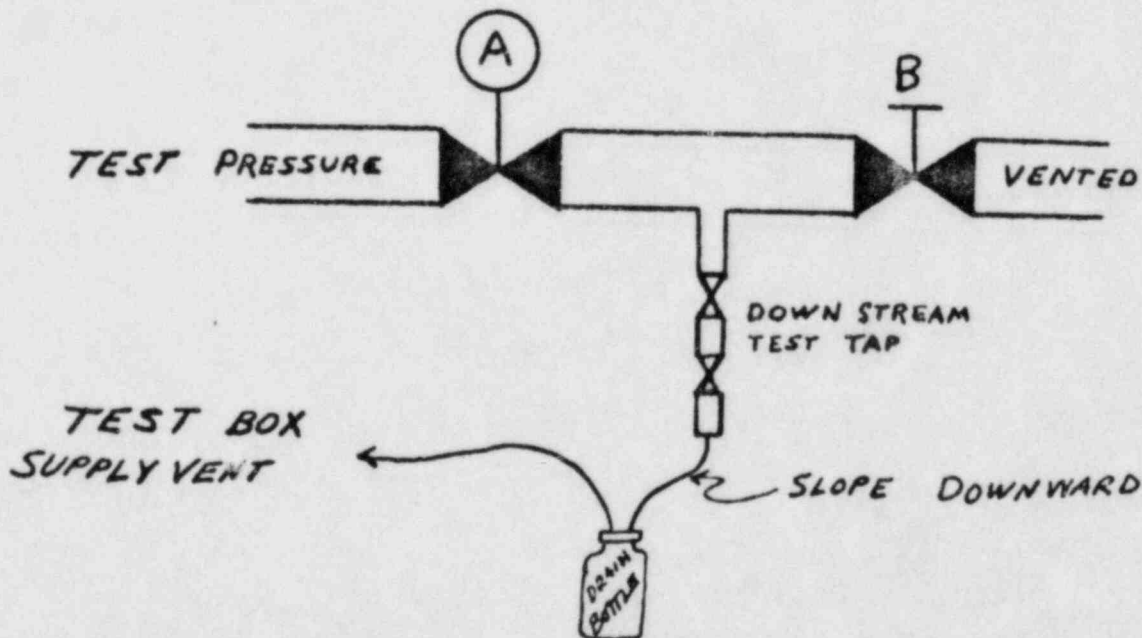
V1 Closed _____	V9 Closed _____
V2 Closed _____	V10 Open _____
V4 Open _____	V11 Closed _____
V5 Open _____	V12 Open _____
V6 Closed _____	

(Circle to indicate status)

F11 (V7A, V8A)	in service	out of service
F12 (V7B, V8B)	in service	out of service
F13 (V7C, V8C)	in service	out of service

AIR EXHAUSTING AT BOX OUTLET IS POTENTIALLY CONTAMINATED.

- 4) Read and record on data sheet INDICATED flow and pressure (P1-2) for one hour after stabilization.



Typical "Flow Out Test" set up. Valve A is being tested. Valve B blocks leakage vent path causing leakage to "vent" through box rotameter. Judgment must be exercised to select a tight "downstream boundary". Also tubing to test box should be less than 10 feet in length.

C. Pressure Decay Test

- 1) Allow test volume pressurization to continue to 1 psi above test pressure.
- 2) Disconnect test box air supply.
- 3) Allign test box valves as follows:

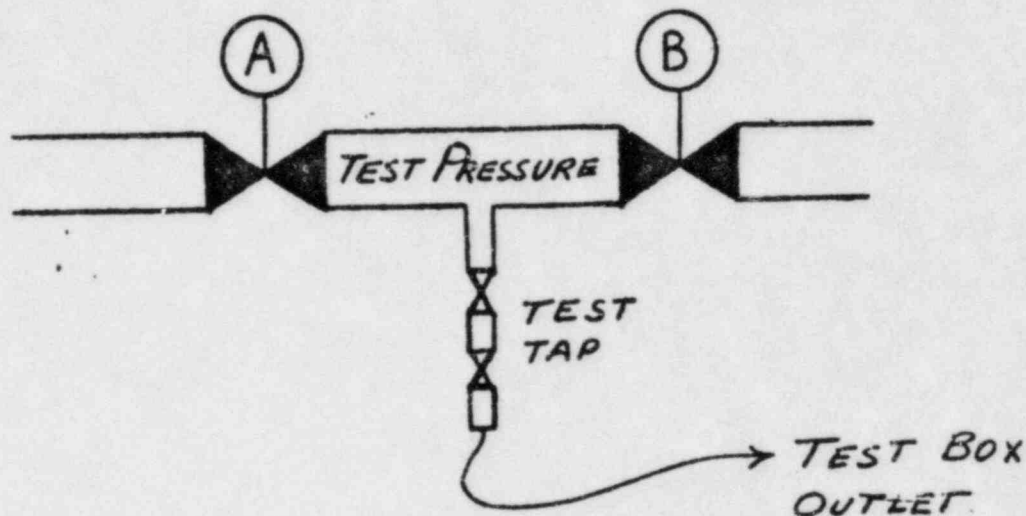
V1 Closed _____	V7A Closed _____	V8C Closed _____
V2 Closed _____	V7B Closed _____	V9 Open _____
V4 Closed _____	V7C Closed _____	V10 Open _____
V5 Open _____	V8A Closed _____	V11 Closed _____
V6 Open _____	V8B Closed _____	V12 Open _____

- 4) Begin recording test volume pressure (P1-2) every half hour for four hours.
- 5) Calculate test volume using 6280-M-100 series prints for center line length dimensions, pipe class and nominal size. Use spec 6280-M-300 for inside diameter of piping. Consider boundary valve volume as equivalent to cylinder of equal diameter, one half of the valve length long.

Calculated Volume (Cu. Ft.) = _____
Record Volume Calculations and Reference Prints Below

6) Calculate leakage (including error) below:

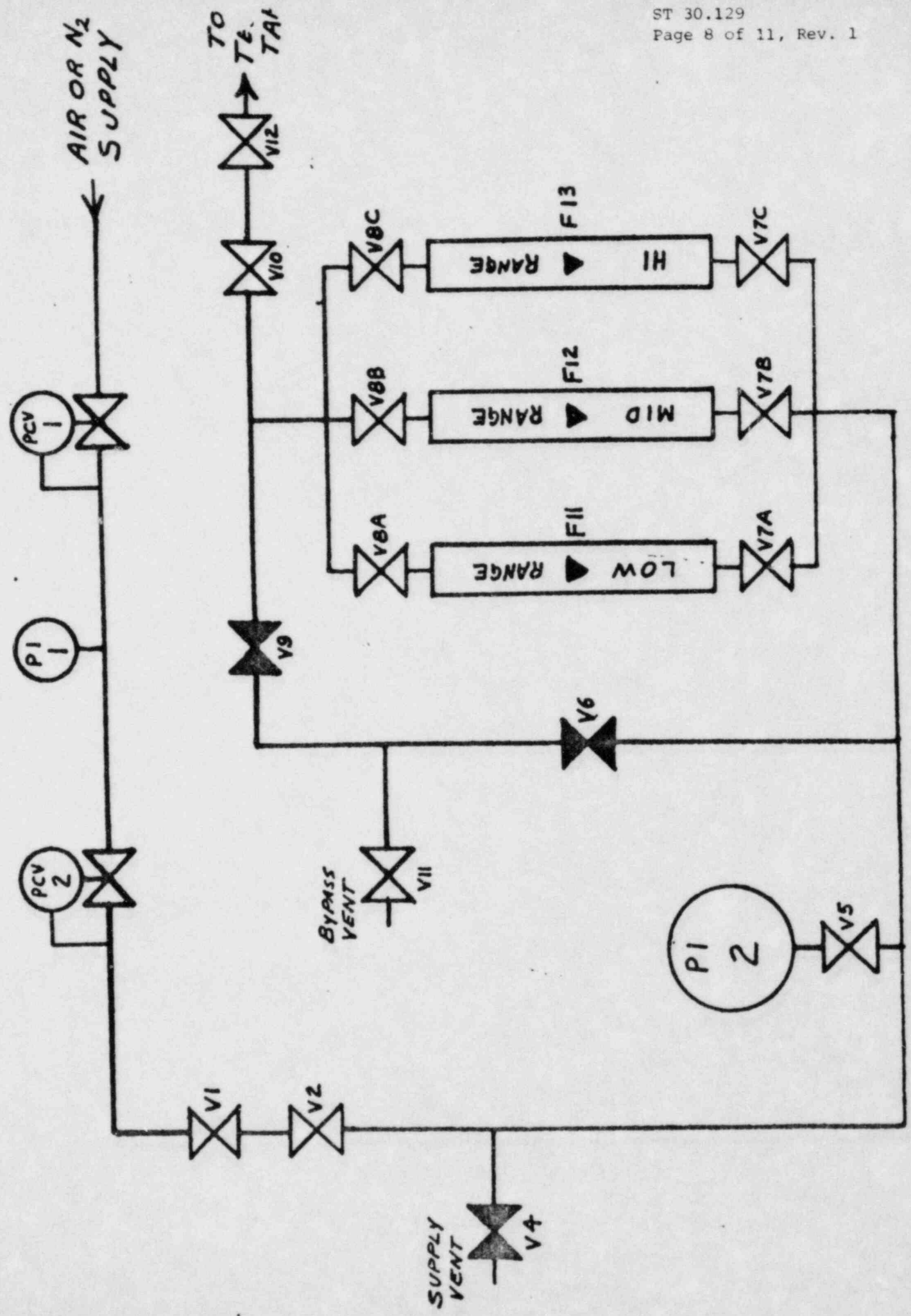
$$\text{leakage} = \frac{\text{Volume (step 5)}}{14.7 \text{ psi}} \times \frac{28,320 \text{ cc}}{\text{ft}^3} \times \frac{\text{pressure decay} + 0.1 \text{ psi}}{\text{elapsed time (min)}}$$



Typical "Pressure Decay Test" set up. Due to pressure gage potential error (0.1 psi), calculated leakage can be reduced by increasing the duration of the test.

TEST WRAP UP :

6. When test is completed, consult Results Engineer or alternate concerning venting the test volume.
7. Leave 15 psig of N₂ in electrical penetrations upon test completion.
8. Restore system to normal using LLRT Tag Accountability Log.
9. Using the pressure correction curve (available in T.E. office) for the particular rotameter used in the test, correct indicated flow to "AS FOUND LEAKAGE" using (Pl-2) as metering pressure (PSIG). Enter on test data sheet.



SPECIFIC PROCEDURE:

I. Back-Up System Availability and Requirements:

None

II. System Procedure:

1. Line up the valves per the LLRT Accountability Log and hang tags.
Have valve line-up verified.
2. Perform a flow out test on the block valves at each penetration.
Enter results below:

N-102B _____ N-47 _____

3. Connect LLRT box to test tap and perform the LLRT on the block valve and check valve for each penetration per the general procedure.
4. Perform LLRT on solenoid valve and block valve for each penetration per the general procedure.

III. 1. Restore valve line up at test completion and document on the accountability log. Have second verification performed by a qualified individual designated by the Results Engineer or his alternate.

*2. Verify no off-scale leakage.

Initial

IV. Inform ACO & Shift Supervision of the test results and fill out the test results section. Have operator review accountability log.

P&ID

[illegible]

C1192

[illegible]

Seal Leak Rate Test Sheet for Penetration

N-102B

Restrictions: _____

Test Boundaries

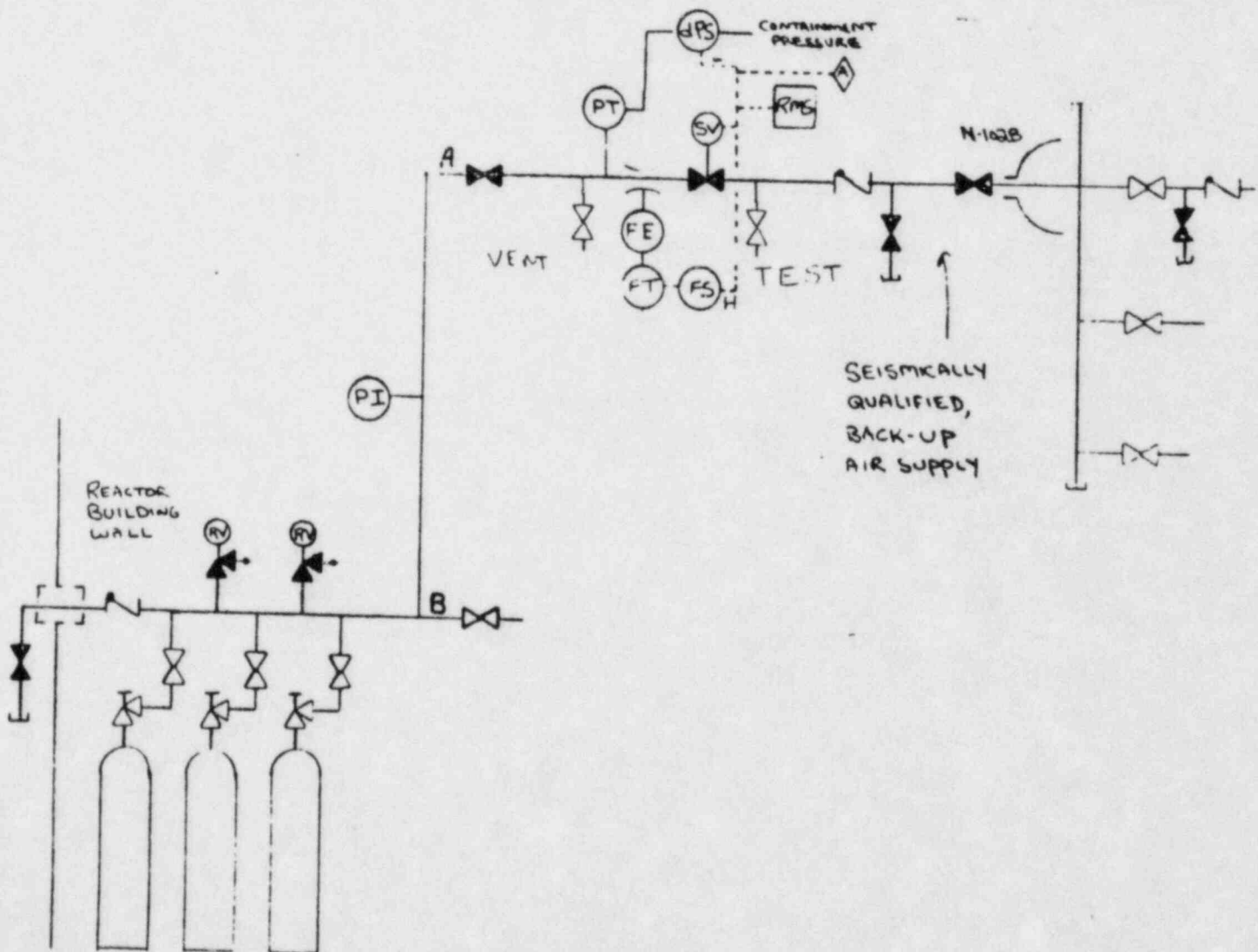
SOLENOID VALVE, BLOCK VALVE, VENT VALVE

Tested by _____

Date _____

TIME	PRESS	FLOW	COMMENTS:
AVERAGE FLOW = _____ $\frac{cc}{min}$			TEST TAP VALVES TESTED PER PROCEDURE ST 20.116 LEAKAGE = _____ cc/min
AS FOUND LEAKAGE = _____ $\frac{cc}{min}$ (SEE STEP 9 GENERAL PROC)			

LLRT Test Box Number _____
 CAL DATE _____



Local Leak Rate Test Sheet for Penetration N-102B

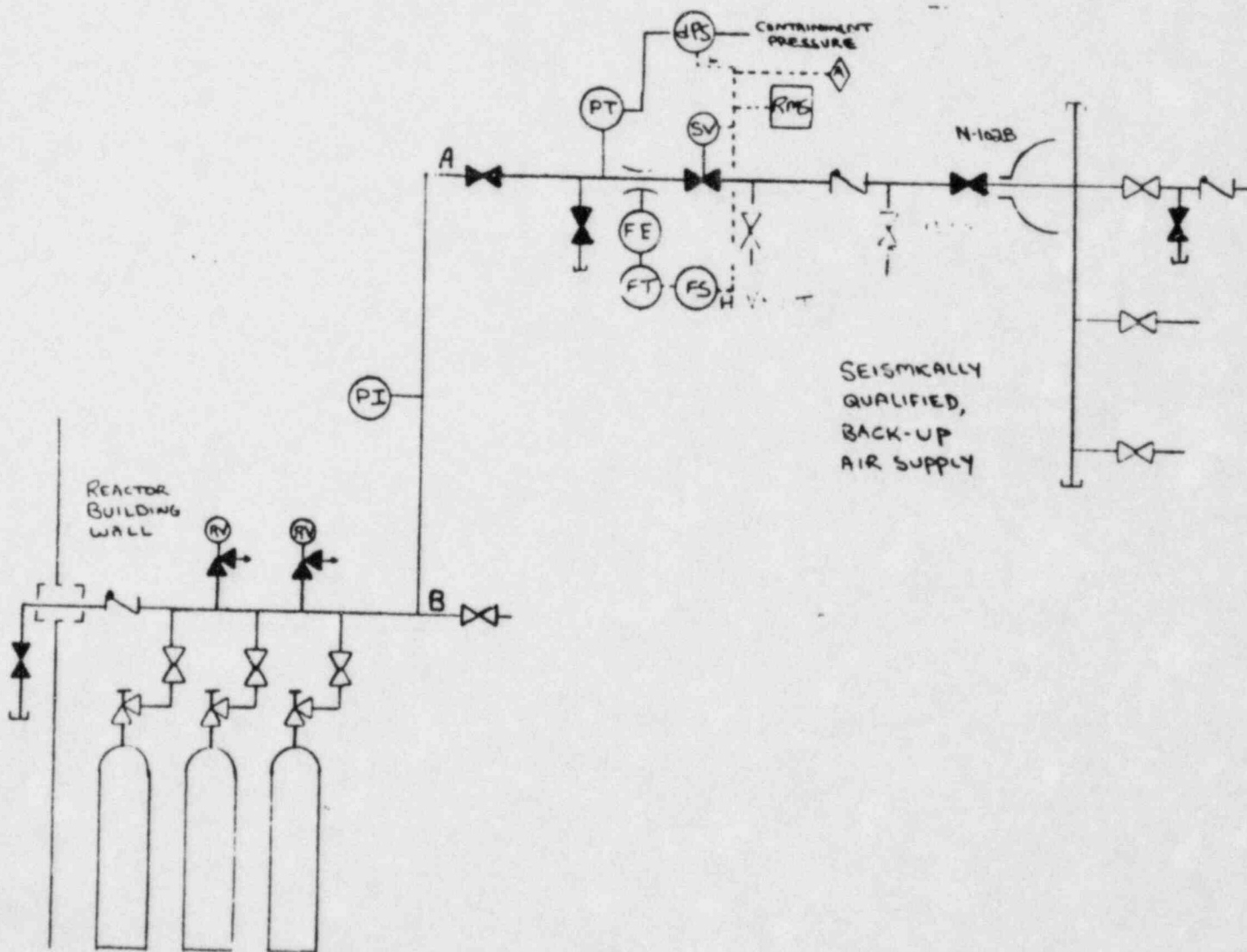
Restrictions: _____

Test Boundaries BLOCK VALVE CHECK VALVE

Tested by _____

Date _____

TIME	PRESS	FLOW	COMMENTS:
AVERAGE FLOW = _____ $\frac{cc}{min}$			TEST TAP VALVES TESTED PER PROCEDURE ST 20.116 LEAKAGE = _____ cc/min
AS FOUND LEAKAGE = _____ $\frac{cc}{min}$ (SEE STEP 9 GENERAL PROC)			
			LLRT Test Box Number _____ CAL DATE _____



Leak Rate Test Sheet for Penetration

N-47

Restrictions:

Test Boundaries

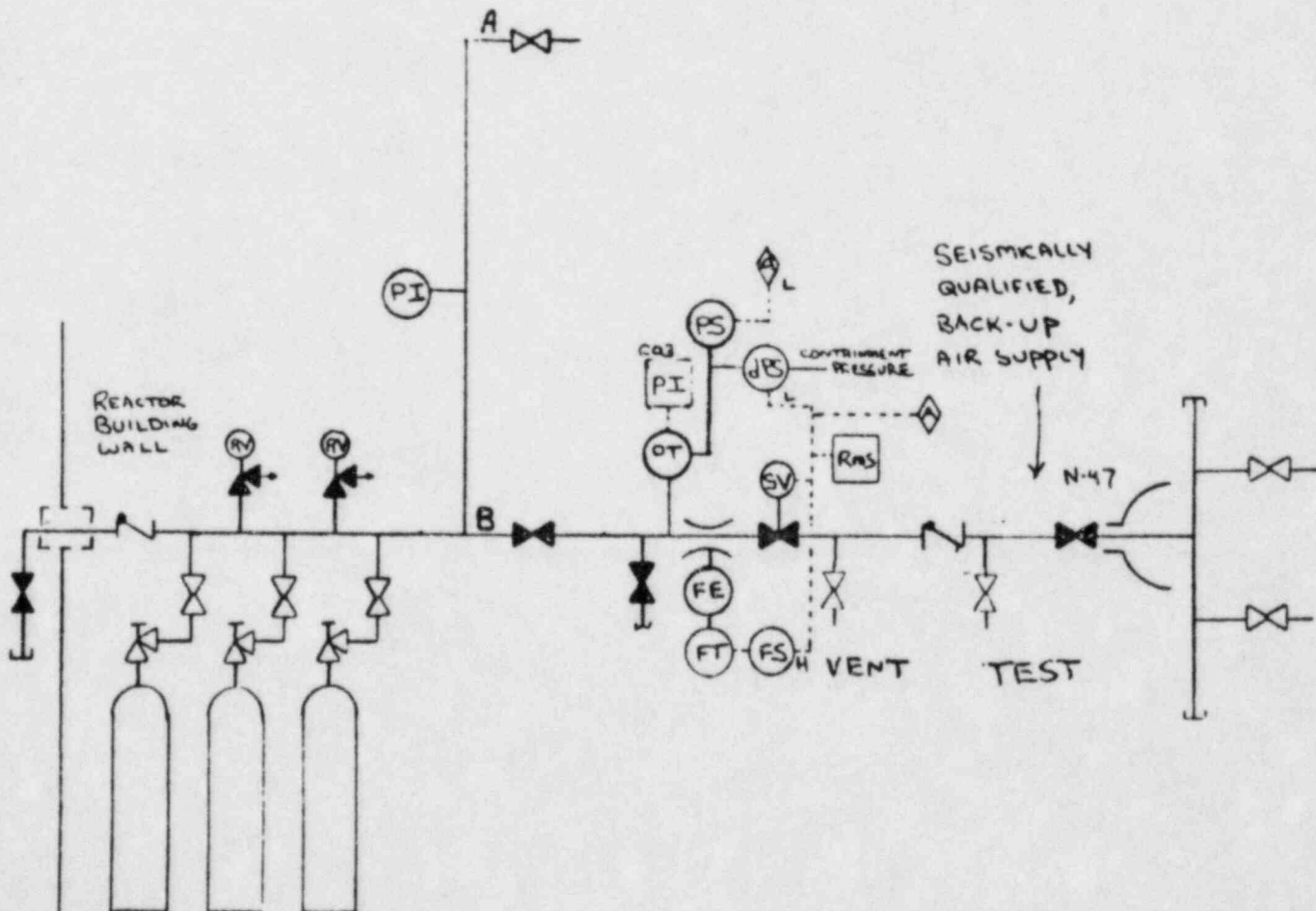
CHECK VALVE, BLOCK VALVE

Tested by

Date

TIME	PRESS	FLOW	COMMENTS:
<p>AVERAGE FLOW = $\frac{cc}{min}$</p>			<p>TEST TAP VALVES TESTED PER PROCEDURE ST 20.116 LEAKAGE = $\frac{cc}{min}$</p>
<p>AS FOUND LEAKAGE = $\frac{cc}{min}$ (SEE STEP 9 GENERAL PROC)</p>			

LLRT Test Box
Number _____
CAL DATE _____



Local Leak Rate Test Sheet for Penetration

N-47

Restrictions: _____

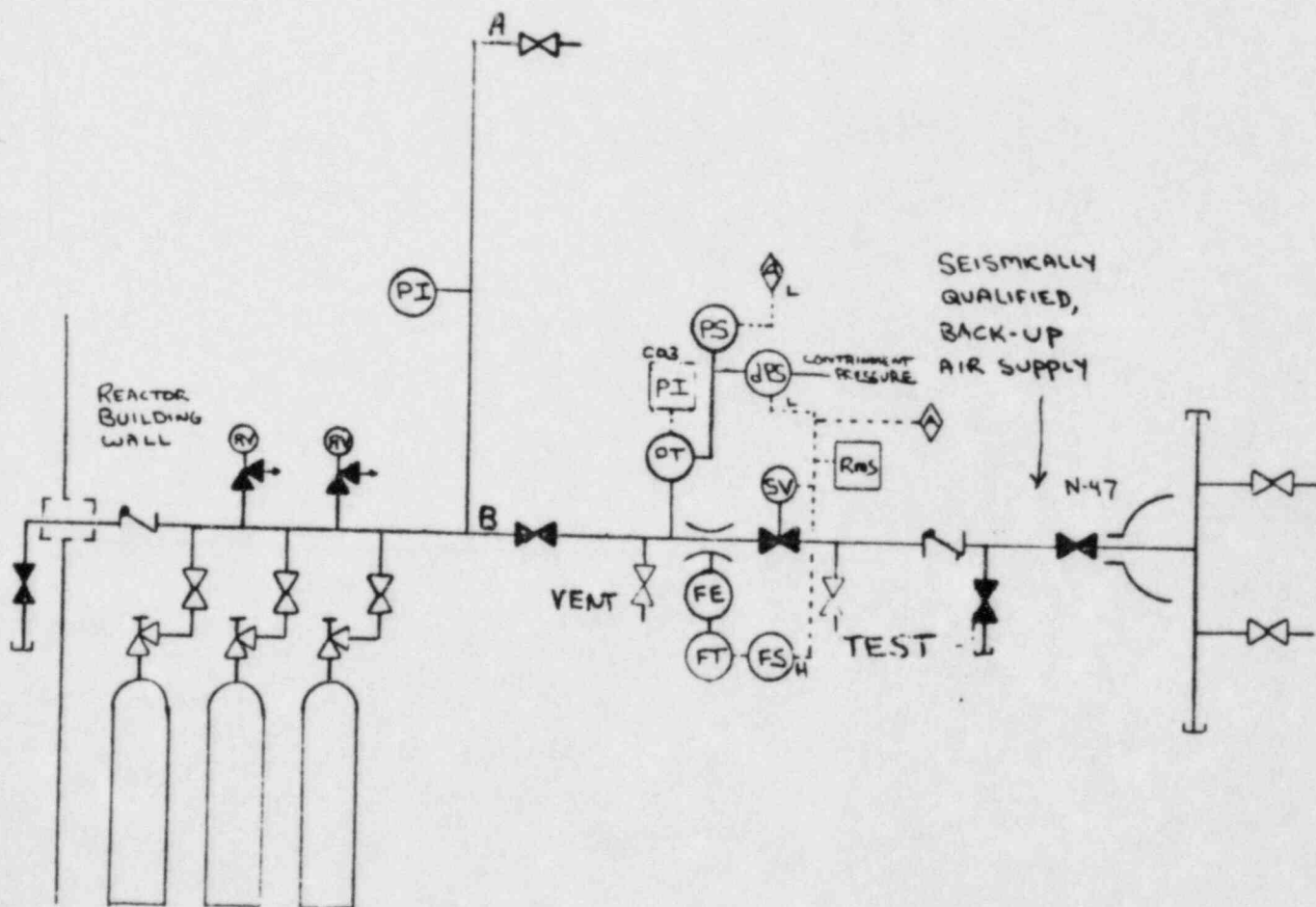
Test Boundaries SOLENOID VALVE, BLOCK VALVE, VENT VALVE

Tested by _____

Date _____

TIME	PRESS	FLOW	COMMENTS:
AVERAGE FLOW = _____ $\frac{CC}{MIN}$			TEST TAP VALVES TESTED PER PROCEDURE ST 20.116 LEAKAGE = _____ ccf/min
AS FOUND LEAKAGE = _____ $\frac{CC}{MIN}$ (SEE STEP 9 GENERAL PROC)			

LLRT Test Box Number _____
 CAL DATE _____



PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM UNIT 3

SURVEILLANCE TEST

ST 2.6.23B Calibration Check of PT-9102B & PR-9102B (Green Pen)
TECHNICAL SPECIFICATION: Tables 3.2.F, 4.2.F

TEST FREQUENCY: Once per operating cycle

TEST RESULTS:

- A. Test SATISFACTORY; no black boxes have been checked off.
Instrument has been returned to service.

PERFORMED BY: _____
SIGNATURE (TECHNICIAN) DATE/TIME

SIGNATURE (TECHNICIAN) DATE/TIME

REVIEWED BY: _____
SIGNATURE (SHIFT SUPERVISION) DATE/TIME

- B. Test UNSATISFACTORY; one or more black boxes have been checked off. Refer to Tech Spec

MRF NO. (If Required) _____

SIGNATURE (TECHNICIAN) DATE/TIME

SIGNATURE (SHIFT SUPERVISION) DATE/TIME

IMMEDIATELY NOTIFY PLANT SUPERINTENDENT OR ALTERNATE:

NAME OF PERSON NOTIFIED DATE/TIME

SIGNATURE (SHIFT SUPERVISION) DATE/TIME

Additional action required if other portions of test did not function properly or other discrepancies were noted during test.

1. MRF submitted: MRF NO. _____
2. Other: _____

SIGNATURE DATE

REVIEWED BY: _____

PLANT STAFF SUPERVISION DATE

CALIBRATION CHECK
PT-9102B/PR-9102B

Location: PT-9102B is located on Panel 3BC65 on the 135' El.
PR-9102B is located on Panel C03 in the Control Room El. 165'

PURPOSE:

The purpose of this test is to verify the calibration and operability of PT-9102B and PR-9102B (Green Pen).

DEVICE FUNCTION:

Transmits containment pressure, through an I/E converter, to a recorder.

REFERENCES:

1. Technical Specifications
2. Prints: M-361 Rev. J-1E - 2357 Rev. 3

REQUIRED TEST EQUIPMENT:

1. Medium Size Adjustable Wrench
2. Pressure Source (230 psig capability)
3. Pressure Indicator (230 psig capability)

PECO NO. _____ CAL. DUE DATE _____

PREREQUISITES:

INITIAL STEPS

- 1a. Obtain permission from shift supervision to perform this test. _____
- 1b. Obtain permission from reactor operator to perform this test. _____
2. Establish communications between PT-9102B and PR-9102B in the Main Control Room. _____
3. Have operator verify other drywell pressure instrumentation in service and operating normally. (PR-9102A) (Green Pen). _____

HALT THIS PROCEDURE IF ANY STEP FAILS TO PRODUCE THE EXPECTED RESULTS OR IF ANY BLACK BOX IS CHECKED OFF. NOTIFY SHIFT SUPERVISION AND I&C ENGINEER IMMEDIATELY.

PROCEDURE:

1. Inform control room operator that he is going to lose indication on PR-9102B (Green Pen). _____
2. Make the following notations on Recorder Chart. _____
 - a. The words "Instrument Surveillance Test"
 - b. Date and time the test started
 - c. Technician initials
3. Close shutoff valve. _____

PROCEDURE: (continued)INITIAL STEPS

- 3a. Verify that instrument root valve (at bottom of rack) is in the open position. (To prevent pressurizing PT 10-100B)
4. Remove test cap.
5. Slowly open test valve and bleed off pressure.
6. Connect pressure test equipment.
7. Do the following, filling in appropriate spaces for recorder pen (Green).

Adjust Pressure To:	AS FOUND Indication	Acceptable Limits	Acceptable	Unacceptable
A 0.0 psig		0.0 ± 4 psig		
B 56 psig		56 ± 4 psig		
C 112 psig		112 ± 4 psig		
D 168. psig		168 ± 4 psig		
E 225.0 psig		225 ± 4 psig		
F 168. psig		168 ± 4 psig		
G 112 psig		112 ± 4 psig		
H 56 psig		56 ± 4 psig		
I 0.0 psig		0.0 ± 4 psig		

If the As Found indications are all within acceptable limits, continue procedure starting with Step 9.

If any of the As Found indications are outside acceptable limits, instrument requires calibration. Proceed with Research & Testing Div Procedure RT-11-00305 for PT-9102B. Then re-check by performing the following:

PROCEDURE: (continued)
INITIAL STEPS

Adjust Pressure To:	AS FOUND Indication	Acceptable Limits	Acceptable	Unacceptable
A 0.0 psig		0.0 \pm 4 psig	_____	_____
B 56 psig		56 \pm 4 psig	_____	_____
C 112 psig		112. \pm 4 psig	_____	_____
D 168. psig		168 \pm 4 psig	_____	_____
E 225.0 psig		225.0 \pm 4 psig	_____	_____
F 168. psig		168 \pm 4 psig	_____	_____
G 112 psig		112 \pm 4 psig	_____	_____
H 56 psig		56 \pm 4 psig	_____	_____
I 0.0 psig		0.0 \pm 4 psig	_____	_____

If calibration was not successful instrument is considered defective. NOTIFY SHIFT SUPERVISION IMMEDIATELY and commit the instrument for repair.

If the instrument is removed from rack, a pressure decay test must be performed on the instrument before returning to service.

If calibration was successful, continue with Step 9 of procedure.

9. Inform the control room operator of the test results and that you are about to return the instrument to service. _____
10. Decrease pressure and remove pressure test equipment. _____
11. Close Test Valve and replace test cap. _____
(Initial)
12. Open shutoff valve. _____
(Initial)
13. Make the following notations on recorder chart
 - a. The words "End of Instrument Surveillance Test"
 - b. Date and time test ended
 - c. Technician initials
14. Have operator verify recorder PR-9102B is reading normally for existing plant conditions. _____
15. Fill out test results on front page and notify shift supervision and control room operator of test results. _____

TECHNICIAN COMMENTS:

PHILADELPHIA ELECTRIC CO.
INSTRUMENT CALIBRATION SHEET

INSTR. NO./NAME PT-9102 B CONTAINMENT Pressure

RANGE: INPUT 0-225 PSIG SCALE — SETPOINT: SM — CLOSER INCR — OPENS DECR — DIFF —

OUTPUT 4-20 mA REQ. ACC ±.5% SM — CLOSER INCR — OPENS DECR — DIFF —

MFG. ROSEMOUNT MODEL 1153 GA 8 SERIAL NO. —

INSTR. QUES: M- 361 E- 2357 INSTR. LOC. A 16 E 135' 3065

P.O./FOREIGN PRINT — INSTR. SPEC. SHEET — PRINT & REV. —

ROOT VALVE LOG. A E

IDEAL INPUT	ACTUAL INPUT	IDEAL OUTPUT	ACTUAL OUTPUT		LOOP CHECK TO <u>PR-9102 B</u>	
			AS FOUND	AS LEFT	IDEAL	ACTUAL
0.0 PSIG		4.0 mA				
56.		7.98				
112.		11.96				
168.		15.94				
225.0 PSIG		20.0 mA				

SPECIAL FEATURES

ADDRESS —

WATER LOG —

ALARMS & ACTIONS:

REMARKS:

SIG. TO: I/E-9102 B → PR-9102 B
(GREEN PIN)

SIG. FROM: —

DATE — TECHNICIAN —

TEST INSTR. NO/CAL DUE —

FOLDER NO. — APPROVED —

PHILADELPHIA ELECTRIC CO.
INSTRUMENT CALIBRATION SHEET

INSTR. NO./NAME PR-9102 B CONTAINMENT PRESSURE
0 → 225 PSIG (GREEN) PT-9102 B
5 → 25 PSIA (RED) PT-9102 D
 RANGE: INPUT 0-10 VOLTS SCALE _____ SETPOINT: SM # _____ CLOSING INCH _____ DIFF _____
 OUTPUT _____ REQ. ACC ± .75 % F.S. SM # _____ CLOSING INCH _____ DIFF _____
 MANU. FOR BORO MODEL N-2265-26 SERIAL NO. _____
 INSTR. DWS: M- 361 E- 2357 INSTR. LOC. A 3 E 165 PANEL C03
 P.O./FOREIGN PRINT _____ INSTR. SPEC. SHEET _____
 ROOT VALVE LOG. A E PRINT & REV. _____

IDEAL INPUT	ACTUAL INPUT		IDEAL OUTPUT		ACTUAL OUTPUT				LOOP CHECK TO	
					AS FOUND		AS LEFT		IDEAL	ACTUAL
	RED	GREEN	RED	GREEN	RED	GREEN	RED	GREEN		
0 volts			5	0						
2.49			PSIA	PSIG						
4.98			10	56.						
7.46			15	112.						
10 volts			20	168.						
			25	225.0						
				PSIG						

SPECIAL FEATURES NA
 ADDRESS _____
 WATER LOG NA
 ALARMS & ACTIONS:

SIG. TO: NA

SIG. FROM:
 (GREEN) I/E-9102B (PT-9102B)
 (RED) I/E-9102B (PT-9102D)

REMARKS:

Loop ACCURACY FOR RED PEN ± .3 PSIA
 " " " GREEN PEN ± .4 PSIG

DATE _____ TECHNICIAN _____
 TEST INSTR. NO./CAL DUE _____
 FOLDER NO. _____ APPROVED _____

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM UNIT 3

SURVEILLANCE TESTST 2.6.23A Calibration Check of PT-9102A & PR-9102A (GREEN PEN)
TECHNICAL SPECIFICATION: Tables 3.2.F, 4.2.FTEST FREQUENCY:

Once per operating cycle

TEST RESULTS:

- A. Test SATISFACTORY; no black boxes have been checked off.
Instrument has been returned to service.

PERFORMED BY:

SIGNATURE (TECHNICIAN)

DATE/TIME

SIGNATURE (TECHNICIAN)

DATE/TIME

REVIEWED BY:

SIGNATURE (SHIFT SUPERVISION)

DATE/TIME

- B. Test UNSATISFACTORY; one or more black boxes have been checked off. Refer to Tech Spec

MRF NO. (If Required)

SIGNATURE (TECHNICIAN)

DATE/TIME

SIGNATURE (SHIFT SUPERVISION)

DATE/TIME

IMMEDIATELY NOTIFY PLANT SUPERINTENDENT OR ALTERNATE:

NAME OF PERSON NOTIFIED

DATE/TIME

SIGNATURE (SHIFT SUPERVISION)

DATE/TIME

Additional action required if other portions of test did not function properly or other discrepancies were noted during test:

1. MRF submitted: MRF NO. _____
2. Other: _____

SIGNATURE

DATE

REVIEWED BY:

PLANT STAFF SUPERVISION

DATE

CALIBRATION CHECK
PT-9102A/PR-9102A

LOCATION: PT-9102A is located on Panel 3AC65 on the 165 El.

PR-9102A is located on Panel C04C in the Control
Room 165 El.

DATE/TIME _____

PURPOSE:

The purpose of this test is to verify the calibration and operability of PT-9102A & PR-9102A (Green Pen)

DEVICE FUNCTION:

Transmits containment pressure, through an I/E converter, to a recorder.

REFERENCES:

1. Technical Specifications
2. Prints M-361 Rev. J-1
E-2357 Rev. 3

REQUIRED TEST EQUIPMENT:

1. Medium Size Adjustable Wrench
2. Pressure Source (230 psig capability)
3. Pressure Indicator (230 psig capability)

PECO No. _____ Cal. Due Date _____

PREREQUISITES:

INITIAL STEPS

- 1a. Obtain permission from Shift Supervision to perform this test. _____
- 1b. Obtain permission from the Reactor Operator to perform this test. _____
2. Establish communications between PT-9102A and PR-9102A in the Main Control Room. _____
3. Have operator verify other drywell pressure instrumentation in service and operating normally. (PR-9102B) (Green Pen) _____

HALT THIS PROCEDURE IF ANY STEP FAILS TO PRODUCE THE EXPECTED RESULTS OR IF ANY BLACK BOX IS CHECKED OFF. NOTIFY SHIFT SUPERVISION AND I&C ENGINEER IMMEDIATELY.

PROCEDURE:

INITIAL STEPS

1. Inform control room operator that he is going to lose indication on PR-9102A (Green Pen). _____
2. Make the following notations on Recorder Chart. _____
 - a. The words "Instrument Surveillance Test"
 - b. Date and time the test started
 - c. Technician initials
3. Close shutoff valve. _____
- 3a. Verify that instrument root valve (at bottom of rack) is in the open position. (To prevent pressurizing PT 10-100A) _____
4. Remove test cap. _____
5. Slowly open test valve and bleed off pressure. _____
6. Connect pressure test equipment. _____
7. Do the following filling in appropriate spaces for recorder pen (green). _____

Adjust Pressure To:	As Found Indication	Acceptable Limits	Acceptable	Unacceptable
A 0.0 psig		0.0 ± 4 psig	_____	_____
B 56 psig		56 ± 4 psig	_____	_____
C 112 psig		112 ± 4 psig	_____	_____
D 168 psig		168 ± 4 psig	_____	_____
E 225.0 psig		225.0 ± 4 psig	_____	_____
F 168 psig		168 ± 4 psig	_____	_____
G 112 psig		112 ± 4 psig	_____	_____
H 56 psig		56 ± 4 psig	_____	_____
I 0.0 psig		0.0 ± 4 psig	_____	_____

If the As Found indications are all within acceptable limits, continue procedure starting with Step 9.

If any of the As Found indications are outside acceptable limits, instrument requires calibration. Proceed with Research & Testing Div. procedure RT-11-00305 for PT-9102A. Then re-check by perform the following:

INITIAL STEPS

8.

Adjust Pressure To:	As Found Indication	Acceptable Limits	Acceptable	Unacceptable
A 0.0 psig		0.0 ± 4 psig	_____	_____
B 56 psig		56 ± 4 psig	_____	_____
C 112 psig		112 ± psig	_____	_____
D 168 psig		168 ± 4 psig	_____	_____
E 225.0 psig		225.0 ± 4 psig	_____	_____
F 168 psig		168 ± 4 psig	_____	_____
G 112 psig		112 ± 4 psig	_____	_____
H 56 psig		56 ± 4 psig	_____	_____
I 0.0 psig		0.0 ± 4 psig	_____	_____

If calibration was not successful instrument is considered defective. NOTIFY SHIFT SUPERVISION IMMEDIATELY and commit the instrument for repair. If the instrument is removed from rack, a pressure decay test must be performed on the instrument before returning to service.

If calibration was successful, continue with Step 9 of procedure.

9. Inform the control room operator of the test results and that you are about to return the instrument to service. _____
10. Decrease pressure and remove pressure test equipment. _____
11. Close Test Valve and replace test cap. _____
(Initial)
12. Open shutoff valve. _____
(Initial)
13. Make the following notations on recorder chart
 - a. The words "End of Instrument Surveillance Test"
 - b. Date and time test ended
 - c. Technician initials

INITIAL STEPS

14. Have operator verify recorder PR-9102A is
reading normally for existing plant conditions. _____
15. Fill out test results on front page and notify
Shift Supervision and Control Room Operator of test results. _____

TECHNICIAN COMMENTS:

PHILADELPHIA ELECTRIC CO.
INSTRUMENT CALIBRATION SHEET

M-10556 4/77

INST NO/NAME PR-9102 A CONTAINMENT PRESSURE
0 → 22.5 PSIG (GREEN) PT-9102A
5 → 25 PSIA (RED) PT-9102C
 RANGE: INPUT 0-10 VOLTS SCALE _____ SETPOINT: SW # _____ CLOSING INCR _____ DIFF _____
 OUTPUT _____ REQ. ACC ± .75% SW # _____ OPENING DEGR _____
 MANU. FOX BORO MODEL N-2205-26 SERIAL NO. _____
 INSTR. DWGS: M- 361 E- 2357 INSTR. LOC. A 3 E 165 PANEL C04C
 P.O./FOREIGN PRINT _____ INSTR. SPEC. SHEET _____
 ROOT VALVE LOC. A E PRINT & REV. _____

IDEAL INPUT	ACTUAL INPUT		IDEAL OUTPUT		ACTUAL OUTPUT				LOOP CHECK TO	
					AS FOUND		AS LEFT		IDEAL	ACTUAL
	RED	GREEN	RED	GREEN	RED	GREEN	RED	GREEN		
0 Volts			5.0	0.0						
3.49			PSIA	PSIG						
			10.0	56.						
4.98			15.0	112.						
7.46			20.0	168.						
10 Volts			25.0	225.0						
			PSIA	PSIG						

SPECIAL FEATURES

ADDRESS NA

SIG. TO: NA

WATER LEG NA

SIG. FROM: GREEN I/E-9102A (PT-9102A)
RED I/E-9102C (PT-9102C)

ALARMS & ACTIONS:

REMARKS:

Loop ACCURACY FOR RED PEN ± .3 PSIA
 " GREEN PEN ± .4 PSIG

DATE _____ TECHNICIAN _____

TEST INSTR. NO/CAL DUE _____

FOLDER NO. _____ APPROVED _____

PHILADELPHIA ELECTRIC CO.
INSTRUMENT CALIBRATION SHEET

INSTR. NO./NAME PT-9102 A Containment Pressure

RANGE: INPUT 0-225 PSIG SCALE — SETPOINT: SW — CLOSER INCR. OPENS DEGR. — DIFF. —

OUTPUT 4-20 mA RES. ACC. ±.5% SW — CLOSER INCR. OPENS DEGR. — DIFF. —

MANU. Rosemount MODEL 1152GA8 SERIAL NO. —

INSTR. DWG. NO. 361 E. 2357 INSTR. LOC. A 16 E 165 JACGS

P.O./FOREIGN PRINT — INSTR. SPEC. SHEET — PRINT & REV. —

AT VALVE LOC. A E

IDEAL INPUT	ACTUAL INPUT	IDEAL OUTPUT	ACTUAL OUTPUT		LOOP CHECK TO <u>PR-9102A</u>	
			AS FOUND	AS LEFT	IDEAL	ACTUAL
0.0 PSIG		4 mA				
56.		7.98				
12.		11.96				
168.		15.94				
225.0 PSIG		20 mA				

SPECIAL FEATURES

ADDRESS —

WATER LOG —

ALARMS & ACTIONS: —

REMARKS:

SIG. TO: I/E-9102A → PR 9102A
(GREEN PEN)

SIG. FROM: —

DATE — TECHNICIAN —

TEST INSTR. NO./CAL USE —

FOLDER NO. — APPROVED —

RS
MAY 14 1982

— DVM Alden
PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM UNITS 2 and 3

SURVEILLANCE TEST

ST 13.28 ADS Relief Valve Accumulator Leak Test

TECHNICAL SPECIFICATION: 4.6.D.3

Test Frequency:

Once per operating cycle

Test Results:

A. All of the asterisked steps were completed SATISFACTORILY.

PERFORMED BY: _____
SIGNATURE TIME/DATE

PERFORMED BY: _____
SIGNATURE TIME/DATE

SIGNATURE (SHIFT SUPERVISION) TIME/DATE

B. One or more of the asterisked steps was completed UNSATISFACTORILY.
Refer to Tech Spec 4.6.D.3

MRF _____

SIGNATURE

SIGNATURE (SHIFT SUPERVISION) TIME/DATE

IMMEDIATELY NOTIFY PLANT SUPERINTENDENT OR ALTERNATE.

NAME OF PERSON NOTIFIED TIME/DATE

SIGNATURE (SHIFT SUPERINTENDENT OR SUPERVISOR)

Additional action required if other portions of test did not function properly or other discrepancies were noted during test.

1. MRF submitted: MRF _____
2. Other: _____

SIGNATURE DATE

REVIEWED BY: _____

PLANT STAFF SUPERVISION DATE

PURPOSE:

The purpose of this test is to leak check the air accumulators and piping used for actuation of the ADS valves, and the remaining relief valves.

REFERENCES:

1. Technical Specification 4.6.D.3
2. FSAR 4.4.5, 7.4.3.3.1

PREREQUISITES:

1. Request permission from Shift Supervision to begin this test. _____
2. Reactor pressure at atmospheric. _____
3. Instrument N₂ header pressurized to ≈ 90 psig. _____

TEST EQUIPMENT REQUIRED:

1. Leak Detector Fluid

THE PERFORMANCE OF THIS TEST REQUIRES ENERGIZING THE SOLENOID VALVE THAT OPERATES THE RELIEF VALVE. IN ORDER TO PREVENT THE RELIEF VALVE FROM OPERATING AND POSSIBLY SUFFERING DAMAGE, THE FOLLOWING CONDITIONS MUST EXIST:

1. Reactor at atmospheric pressure. _____
2. Reactor vessel level to be maintained below the steamline nozzle elevation for the duration of this test, or the steamline nozzle plugs are to be installed. _____

PROCEDURE:

1. Place the control switch for relief valve 71A in the OPEN position. _____

Verify that the solenoid valve in the air supply line to the relief valve "CLICKS" when the control switch is placed in the OPEN position. _____

2. Verify that no leaks exist in the air supply line from the check valve on the supply side of the accumulator to the 71A relief valve using leak detection fluid checking all joints, welds, valve bonnets, etc. _____

3. Return the control switch for relief valve 71A to the AUTO position. _____

4. Fill in the appropriate line on the following data sheet:

	INITIAL	INITIAL	INITIAL
VALVE NUMBER	VALVE CLICKS WHEN ENERGIZED	NO LEAKAGE IN ACCUMULATOR OR AIR PIPING	NO LEAKAGE ON MANUAL BLOCK VALVE
* RV-71A			
* RV-71B			
* RV-71C			
* RV-71D			
* RV-71E			
* RV-71F			
* RV-71G			
* RV-71H			
* RV-71J			
* RV-71K			
* RV-71L			

1. LEAKAGE OF THE MANUAL BLOCK VALVE UPSTREAM OF THE CHECK VALVE IN THE INST. N₂ LINE TO THE RELIEF VALVE OPERATOR IS NOT A TECH. SPEC. VIOLATION.

2. ON VALVES 71 D, E, F, H, J, and L, THERE IS ONLY AIR PIPING TO BE LEAK CHECKED.

5. Repeat steps 1 thru 4 for relief valve 71B.

6. Repeat steps 1 thru 4 for relief valve 71C.

7. Repeat steps 1 thru 4 for relief valve 71D.

8. Repeat steps 1 thru 4 for relief valves 71E.

9. Repeat steps 1 thru 4 for relief valves 71F.

10. Repeat steps 1 thru 4 for relief valves 71G.

11. Repeat steps 1 thru 4 for relief valves 71H.

12. Repeat steps 1 thru 4 for relief valves 71J

- | 13. Repeat steps 1 thru 4 for relief valve 71K
- | 14. Repeat steps 1 thru 4 for relief valve 71L
- 15. Inform Shift Supervision of the results of this test and fill out the TEST RESULTS section of this test.

ST 13.28 DOUBLE VERIFICATION

Verify following control switches are in auto position:

1. RV-71A	<u>Initial</u>
2. RV-71B	<u>Initial</u>
3. RV-71C	<u>Initial</u>
4. RV-71D	<u>Initial</u>
5. RV-71E	<u>Initial</u>
6. RV-71F	<u>Initial</u>
7. RV-71G	<u>Initial</u>
8. RV-71H	<u>Initial</u>
9. RV-71J	<u>Initial</u>
10. RV-71K	<u>Initial</u>
11. RV-71L	<u>Initial</u>