bcc to DMB (IE14)

bcc distrib. by RIV:

R. D. Martin
DRSS-FRPS
Lisa Shea, RM/ALF
DRP
T. Alexion, NRR Project Manager (MS: 13-E-21)
C. Poslusny, NRR Project Manager (MS: 13-D-18)
Resident Inspector
Section Chief (DRP/A)
RIV File
Project Engineer (DRP/A)
DRS

NOV 23 1990

Docket Nos. 50-313/90-38
50-368/90-38
License Nos. DPR-51
NPF-6
EA No. 88-283

Entergy Operations, Inc.
ATTN: Neil S. Carns, Vice President
Operations, Arkansas Nuclear One
Route 3, Box 137G
Russellville, Arkansas 72801

Gentlemen:

This refers to the Enforcement Conference conducted at Region IV's request in the Region IV office on October 30, 1990. This meeting related to activities authorized by NRC License Nos. DPR-51 and NPF-6 for Arkansas Nuclear One and was attended by those on the attached Attendance List.

The subjects discussed at this meeting are described in the enclosed Meeting Summary.

It is our opinion that this meeting was beneficial and has provided a better understanding of the findings of the NRC inspection conducted October 1-5, 1990 (NRC Inspection Report 50-313/90-38; 50-368/90-38), in followup of an issue identified during the operational safety team inspection conducted September 10-21, 1990. In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Original Signed By:
Thomas P. Gwynn

Samuel J. Collins, Director
Division of Reactor Projects

Enclosure:
Meeting Summary w/Attachments

cc w/enclosure:
Entergy Operations, Inc.
ATTN: Donald C. Hintz, Executive Vice
President & Chief Operating Officer
P.O. Box 31995
Jackson, Mississippi 39286

RIV:C:DRP/A	D:DRS	EO	D:DRP	
TFWesterman;df	LJCallan	GFSanborn	SJCollins	
11/14/90	11/21/90	11/21/90	11/23/90	

IE14
IE01
1/1

Entergy Operations, Inc.
ATTN: Gerald W. Muench, Vice President
Operations Support
P.O. Box 31995
Jackson, Mississippi 39286

Wise, Carter, Child & Caraway
ATTN: Robert B. McGehee, Esq.
P.O. Box 651
Jackson, Mississippi 39205

Arkansas Nuclear One
ATTN: Early Ewing, General Manager
Technical Support and Assessment
Route 3, Box 137G
Russellville, Arkansas 72801

Arkansas Nuclear One
ATTN: Jerry Yelverton, Director
Nuclear Operations
Route 3, Box 137G
Russellville, Arkansas 72801

Arkansas Nuclear One
ATTN: Mr. Tom W. Nickels
Route 3, Box 137G
Russellville, Arkansas 72801

Combustion Engineering, Inc.
ATTN: Charles B. Brinkman, Manager
Washington Nuclear Operations
12300 Twinbrook Parkway, Suite 330
Rockville, Maryland 20852

Honorable Joe W. Phillips
County Judge of Pope County
Pope County Courthouse
Russellville, Arkansas 72801

Winston & Strawn
ATTN: Nicholas S. Reynolds, Esq.
1400 L Street, N.W.
Washington, D.C. 20005-3502

Arkansas Department of Health
ATTN: Ms. Greta Dicus, Director
Division of Environmental Health
Protection
4815 West Markam Street
Little Rock, Arkansas 72201

Babcock & Wilcox
Nuclear Power Generation Division
ATTN: Mr. Robert B. Borsum
1700 Rockville Pike, Suite 525
Rockville, Maryland 20852

Admiral Kinnaird R. McKee, USN (Ret)
P.O. Box 41
Oxford, Maryland 21654

bcc to DMB (IE14)

bcc distrib. by RIV:

R. D. Martin
DRSS-FRPS
Lisa Shea, RM/ALF
DRP
T. Alexion, NRR Project Manager (MS: 13-E-21)
C. Poslusny, NRR Project Manager (MS: 13-D-18)
Resident Inspector
Section Chief (DRP/A)
RIV File
Project Engineer (DRP/A)
DRS

MEETING SUMMARY

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One

License No.: DPR-51; NPF-6

Docket No.: 50-313; 50-368

Subject: ESCALATED ENFORCEMENT CONFERENCE CONCERNING NRC FINDINGS (NRC INSPECTION REPORT 50-313/90-38; 50-368/90-38)

On October 30, 19901, representatives of Arkansas Power & Light Company met with Region IV personnel in Arlington, Texas, to discuss the apparent violation identified during the NRC inspection conducted October 1-5, 1990, in followup to an issue identified during the operational safety team inspection conducted September 10-21, 1990, and corrective actions taken or planned by the licensee.

Attachments:
1. Attendance List
2. Licensee Presentation (NRC distribution only)

ATTENDANCE LIST

Attendance at the Enforcement Conference between Arkansas Power & Light Company and NRC on October 30, 1990, at the NRC Region IV office.

Entergy Operations, Inc.

Neil S. Carns, Vice President - Operations
J. J. Fisicaro, Manager, Licensing
C. H. Turk, Manager, Nuclear Engineering Design
D. C. Mims, Manager, Systems Engineering, Unit 2
M. R. Chisum, Assistant Operations Manager, Unit 2
T. G. Mitchell, BOP System Engineering Supervisor
R. J. King, Supervisor, Licensing

NRC

T. P. Gwynn, Acting Director, Division of Reactor Projects (DRP)
L. J. Callan, Director, Division of Reactor Safety (DRS)
R. Wise, Allegations Coordinator
T. F. Westerman, Acting Deputy Director, DRP
P. H. Harrell, Acting Chief, Project Section A, DRP
J. E. Gagliardo, Chief, Operational Programs Section, DRS
J. E. Cummins, Reactor Inspector, DRS
C. C. Warren, Senior Resident Inspector, ANO, DRP
T. W. Alexion, Project Manager, Office of Nuclear Reactor Regulation

ANO-1
CONTROL ROOM ISOLATION SYSTEM

10/30/90

ENFORCEMENT CONFERENCE

ENTERGY
OPERATIONS

AGENDA

ANO-1 10/30/90 ENFORCEMENT CONFERENCE ON CONTROL ROOM ISOLATION SYSTEM

• INTRODUCTION	N.S. CARNS
• OPENING REMARKS	R.A. FENECH
• SYSTEM DESCRIPTION	D.C. MIMS
• PROBLEM IDENTIFICATION - CHRONOLOGY - OPERABILITY - REPORTABILITY	R.A. FENECH
• SYSTEM DESIGN BASIS	C.H. TURK
• AS-FOUND CONDITIONS AND IMMEDIATE CORRECTIVE ACTIONS - TEST PLAN DEVELOPMENT - AS-FOUND TESTING - MODIFICATIONS/REWORK - AS LEFT TESTING - SYSTEM RESTORATION	D.C. MIMS
• ROOT CAUSE	R.A. FENECH
• CORRECTIVE ACTIONS - SPECIFIC ACTION RELATED TO CONTROL ROOM ISOLATION CONCERN - RELATED CORRECTIVE ACTIONS - G. L. 88-14 INVESTIGATION	J.J. FISICARO
• SAFETY SIGNIFICANCE	C.H. TURK
• CONCLUSIONS	R.A. FENECH/ N.S. CARNS

ELEMENTS OF SYSTEM CONFIGURATION

- NORMAL VENTILATION
- EMERGENCY VENTILATION
  - EMERGENCY FILTRATION
  - EMERGENCY AIR CONDITIONING
- INSTRUMENT AIR SYSTEM INTERFACE

NORMAL VENTILATION

- VSF-8A AND VSF-8B
- CV-7905 - SUPPLY ISOLATION DAMPER
- CV-7907 - EXHAUST ISOLATION DAMPER
- RECIRCULATION WITH FRESH AIR MAKEUP
- UNIT 2 DIFFERENT
  - 2UCD-8683 - SUPPLY ISOLATION DAMPER
  - 2PCD-8685 - EXHAUST ISOLATION DAMPER

EMERGENCY VENTILATION

- EMERGENCY FILTRATION
  - VSF-9 - FAN/FILTER UNIT
  - RECIRCULATION WITH FRESH AIR MAKE-UP
  - ISOLATED DURING NORMAL OPERATIONS
  - SEPARATE DUCTWORK
  - 2VSF-9 SIMILAR - REDUNDANT

- EMERGENCY AIR CONDITIONING
  - 2VUC-27A AND 2VUC-27B - REDUNDANT TO EACH OTHER
  - SERVE BOTH CONTROL ROOMS
  - 2VE-1A AND 2VE-1B

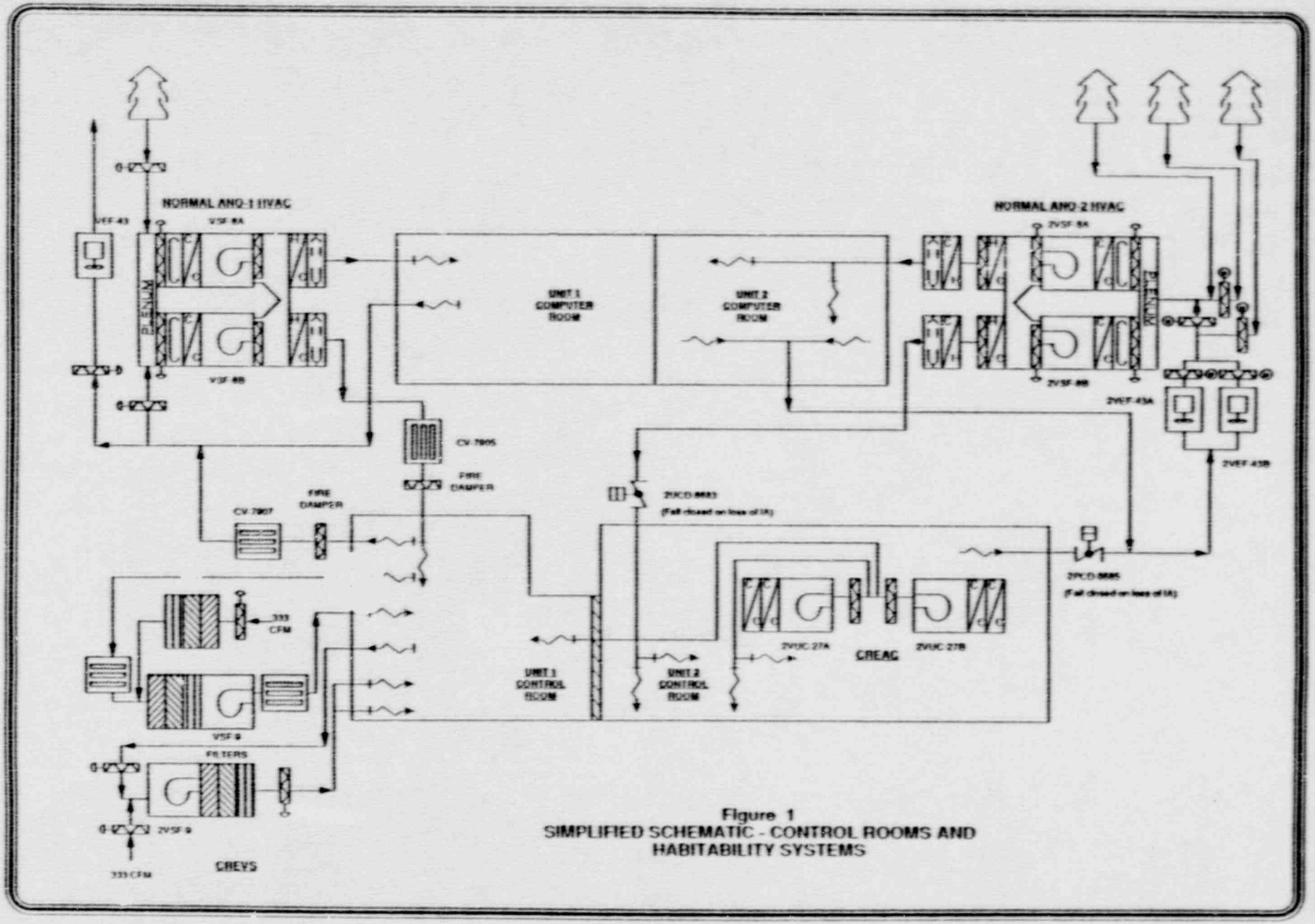


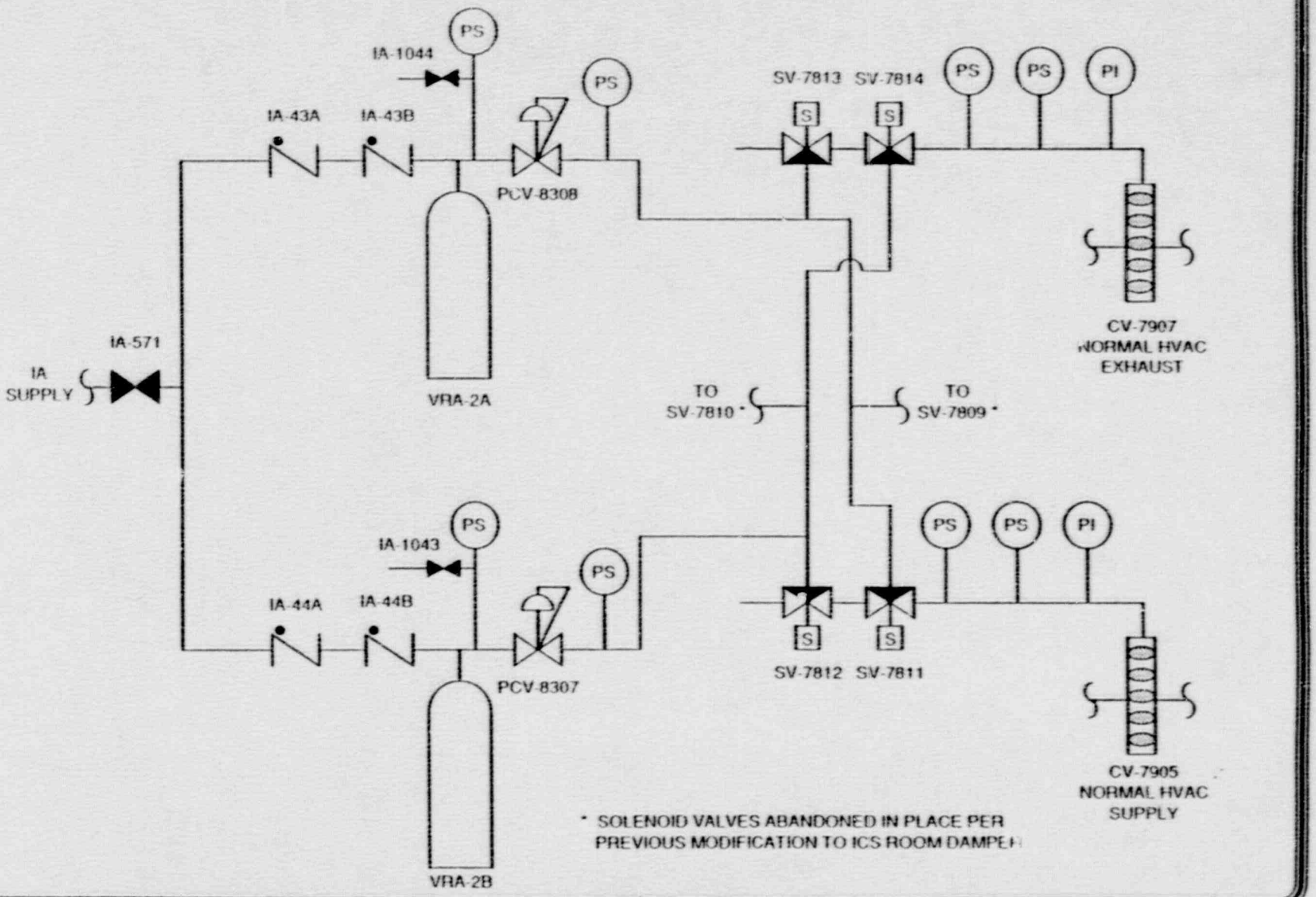
Figure 1
SIMPLIFIED SCHEMATIC - CONTROL ROOMS AND HABITABILITY SYSTEMS

INSTRUMENT AIR SYSTEM INTERFACE

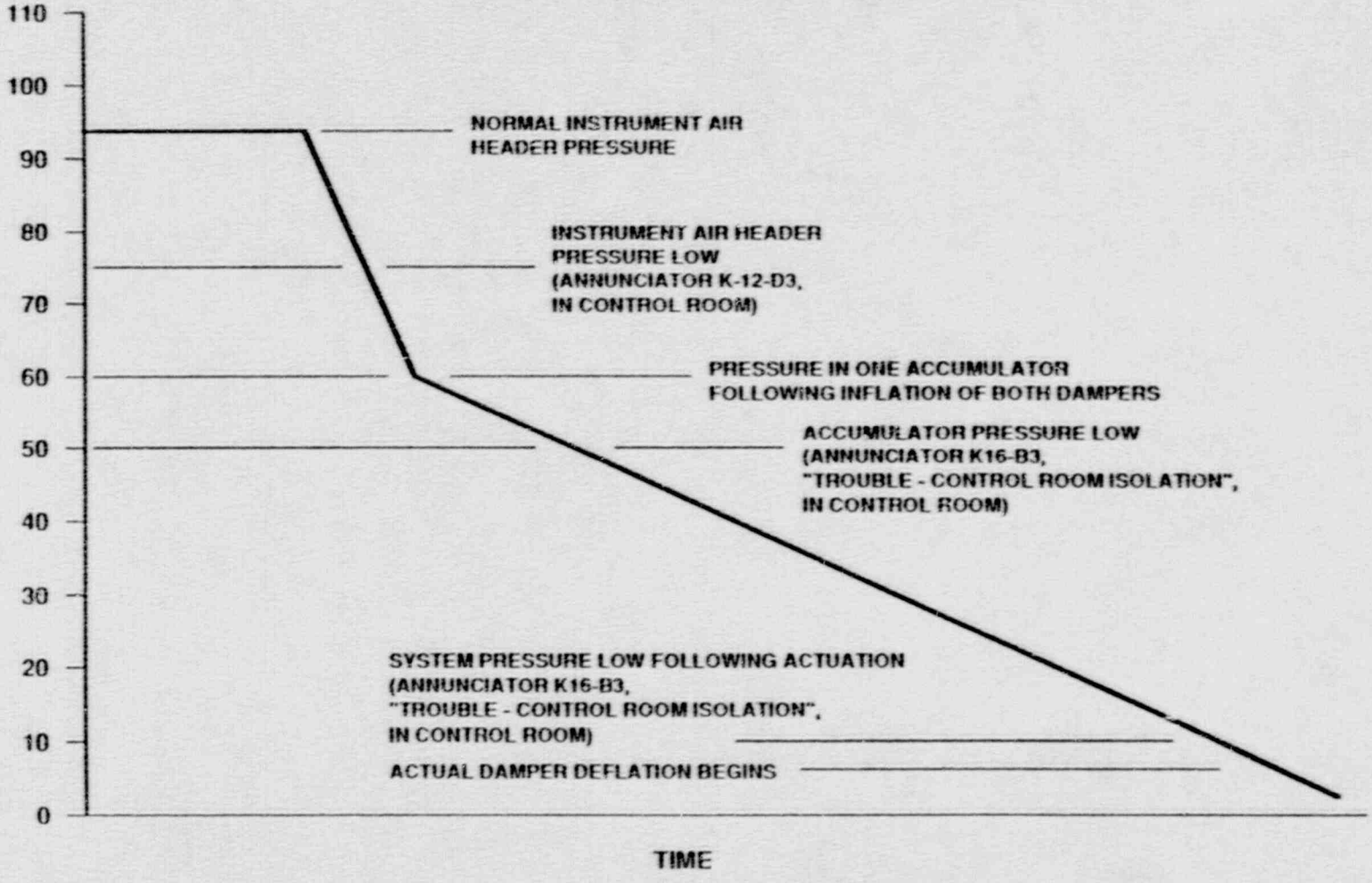
CV-7905 AND CV-7907 - ACTUATION

- REDUNDANT TRAINS
  - CHECK VALVES ISOLATE FROM INSTRUMENT AIR
  - CHECK VALVES ISOLATE TRAINS FROM EACH OTHER
- NORMAL ALIGNMENT/ACTUATION
- PRESSURE CONTROL VALVE
- UNIT 2 INSTRUMENT AIR INTERFACE - DIFFERENT
  - NOT REQUIRED FOR PLACING OR MAINTAINING 2UCD-8683 OR 2PCD-8685 IN SAFETY POSITION

DAMPER AIR SYSTEM



ACCUMULATOR PRESSURE DECAY
SEQUENCE OF EVENTS
LOSS OF INSTRUMENT AIR



CHRONOLOGY OF EVENTS

09/10/90 - 09/21/90	-	NRC OPERATIONAL SAFETY TEAM INSPECTION (OSTI)
09/12/90 - 09/15/90	-	NRC INSPECTOR REQUESTED DATA REGARDING CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)
09/15/90	-	RESEARCH CONCLUDED THAT FOUR INSTRUMENT AIR ISOLATION VALVES HAD NOT BEEN ADEQUATELY TESTED
	-	CONDITION REPORT C-90-00?? WRITTEN
	-	CONDITION CONSIDERED SIGNIFICANT - MANAGEMENT INVOLVED
	-	OPERABILITY DETERMINATION PERFORMED • CONTROL ROOM ISOLATION DAMPERS • CV-7905/7 CONSIDERED OPERABLE
	-	EXPEDITIOUS TESTING CONSIDERED MANDATORY
09/21/90	-	CONTROL ROOM ISOLATION DAMPER INSTRUMENT AIR SYSTEM FAILS INTEGRITY TEST
	-	CV-7905/7 DECLARED INOPERABLE
	-	50.72 REPORT MADE
09/27/90	-	CV-7905/7 DECLARED OPERABLE
10/22/90	-	50.73 REPORT SUBMITTED

DESIGN BASIS EVOLUTION

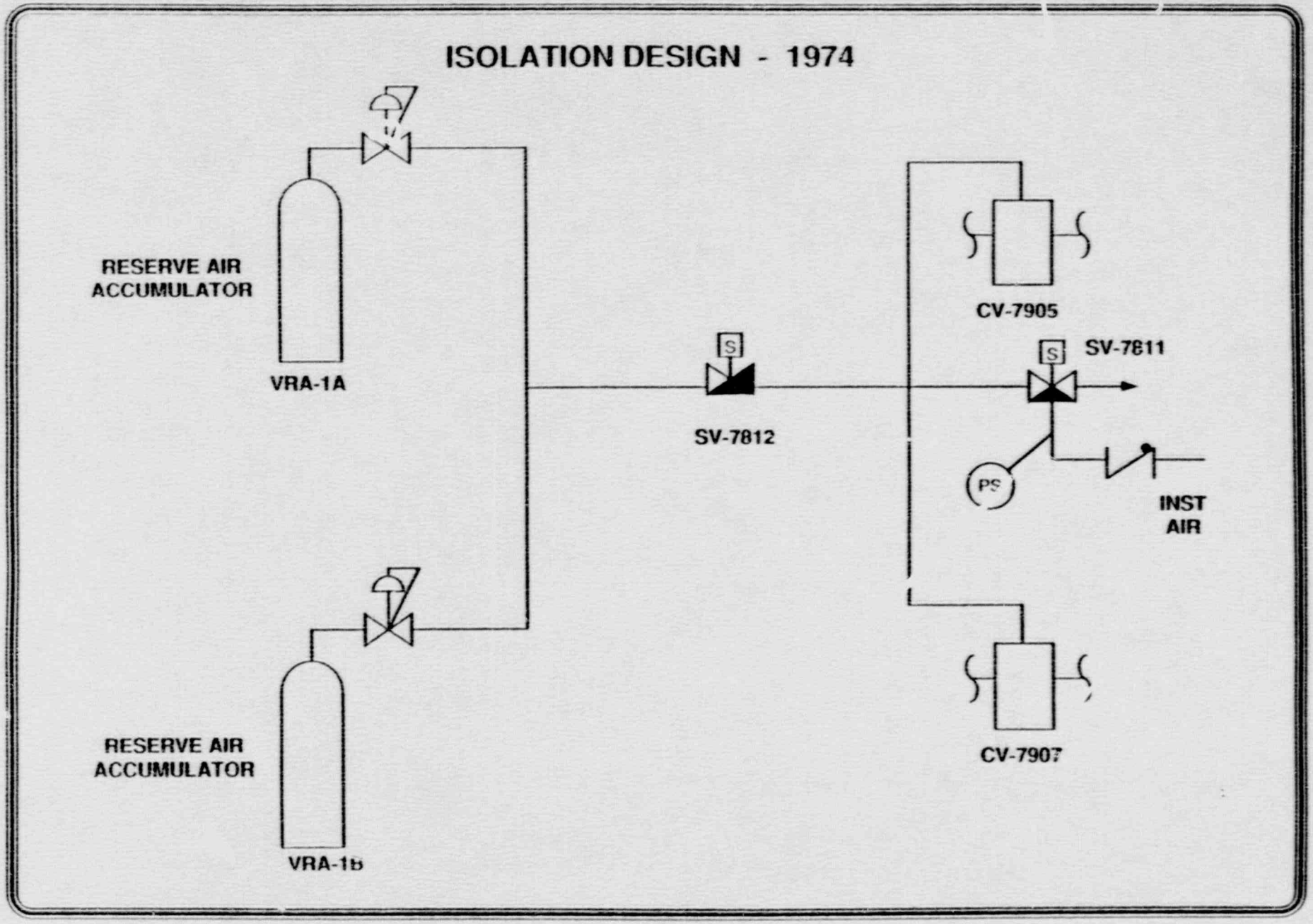
- 1968 - ORIGINAL DESIGN CONCEPT
- 1974 - DESIGN AT STARTUP
- 1976 - DCR 436 CHANGES
- 1978 - DCR 569 CHANGES
- POST 1978 - NO SIGNIFICANT CHANGES

1968 ORIGINAL DESIGN CONCEPT

" IN THE EVENT OF A HYPOTHETICAL LOSS OF COOLANT ACCIDENT, DAMPERS IN THE DUCTS SERVING AREAS OTHER THAN THE CONTROL ROOM SHALL BE AUTOMATICALLY CLOSED, SIMULTANEOUSLY WITH THE CLOSING OF THE OUTDOOR AIR-INTAKE DAMPER AND THE OUTDOOR EXHAUST AIR DAMPER, THEREBY CAUSING 100% RECIRCULATION OF THE CONTROL ROOM AIR."

1974 DESIGN AT STARTUP

- "LEAK-TIGHT" CONTROL ROOM DESIGN DETAILED ISOLATION SYSTEM FEATURES:
  - HIGH PRESSURE ACCUMULATORS (850# DESIGN)
  - SOLENOID VALVES FOR CONTROLLING AIR SOURCE BASED ON RADIATION SIGNAL AND INST. AIR PRESSURE
- STARTUP TESTS CONFIRMED ABILITY OF RESERVE AIR TO HOLD 24 HOURS
- CLOSURE TIME NOT TESTED, THOUGH DESIGNED TO CLOSE IN 3 SECONDS PER FSAR
- DOSE CALCULATIONS NOT TIED TO SPECIFIC CLOSURE TIME, NO TECHNICAL SPECIFICATIONS FOR CLOSURE TIME


ISOLATION DESIGN - 1974
RESERVE AIR ACCUMULATOR
VRA-1A
RESERVE AIR ACCUMULATOR
VRA-1b
S
SV-7812
CV-7905
S
SV-7811
PS
INST AIR
CV-7907

1978 DCR 569 CHANGES

- AS PART OF THE UNIT 2 / UNIT 1 COMMON CONTROL ROOM INTERTIE, SIGNIFICANT CHANGES WERE ACCOMPLISHED (SEE SKETCH)
  - TIE-IN OF NEW "PRESSURIZATION" SCHEME
  - RESERVE AIR BOTTLE SWITCHED TO LOW PRESSURE TO "FLOAT" ON INSTRUMENT AIR (REQUIRING CHECK VALVES), CHANGES MADE TO ENSURE 10 SECOND CLOSURE TIMES ACHIEVED
  - CHLORINE DETECTORS / ISOLATION FEATURE ADDED
- TECHNICAL SPECIFICATION FOR 10 SECOND CLOSURE ADDED (BASED ON CHLORINE RESPONSE CLOSURE REQUIREMENTS FOR ANO-2)
- NO ISOLATION HOLD TESTING PERFORMED FOR NEW ISOLATION DESIGN

ANO-1 REQUIREMENTS SUMMARY

1968 ORIGINAL DESIGN CONCEPT

- LEAKTIGHT CONTROL ROOM WITH AUTOMATIC ISOLATION FOLLOWING LOCA

1974 STARTUP

- LEAKTIGHT CONTROL ROOM (10CFM IN-LEAKAGE ASSUMED)
- NO SPECIFIC CLOSURE TIME REQUIREMENTS
- AUTOMATIC ISOLATION UPON HIGH RADIATION BY EITHER INSTRUMENT AIR OR RESERVE AIR BOTTLES
- THIRTY (30) DAY POST-ACCIDENT TIMES ASSUMED
- 24 HOUR ISOLATION HOLD WITHOUT INTERVENTION

1978 - DCR 569 (ANO-1/ANO-2 INTERTIE)

- PRESSURIZED CONTROL ROOM (3 CFM IN-LEAKAGE ASSUMED)
- AUTOMATIC ISOLATION WITHIN 10 SECONDS UPON HIGH RADIATION (TECHNICAL SPECIFICATION REQUIREMENT) BY EITHER INSTRUMENT AIR OR RESERVE AIR
- ISOLATION HOLD CRITERIA NOT ADDRESSED

TEST METHODOLOGY

- CV-7905 AND CV-7907 CURRENT TESTING

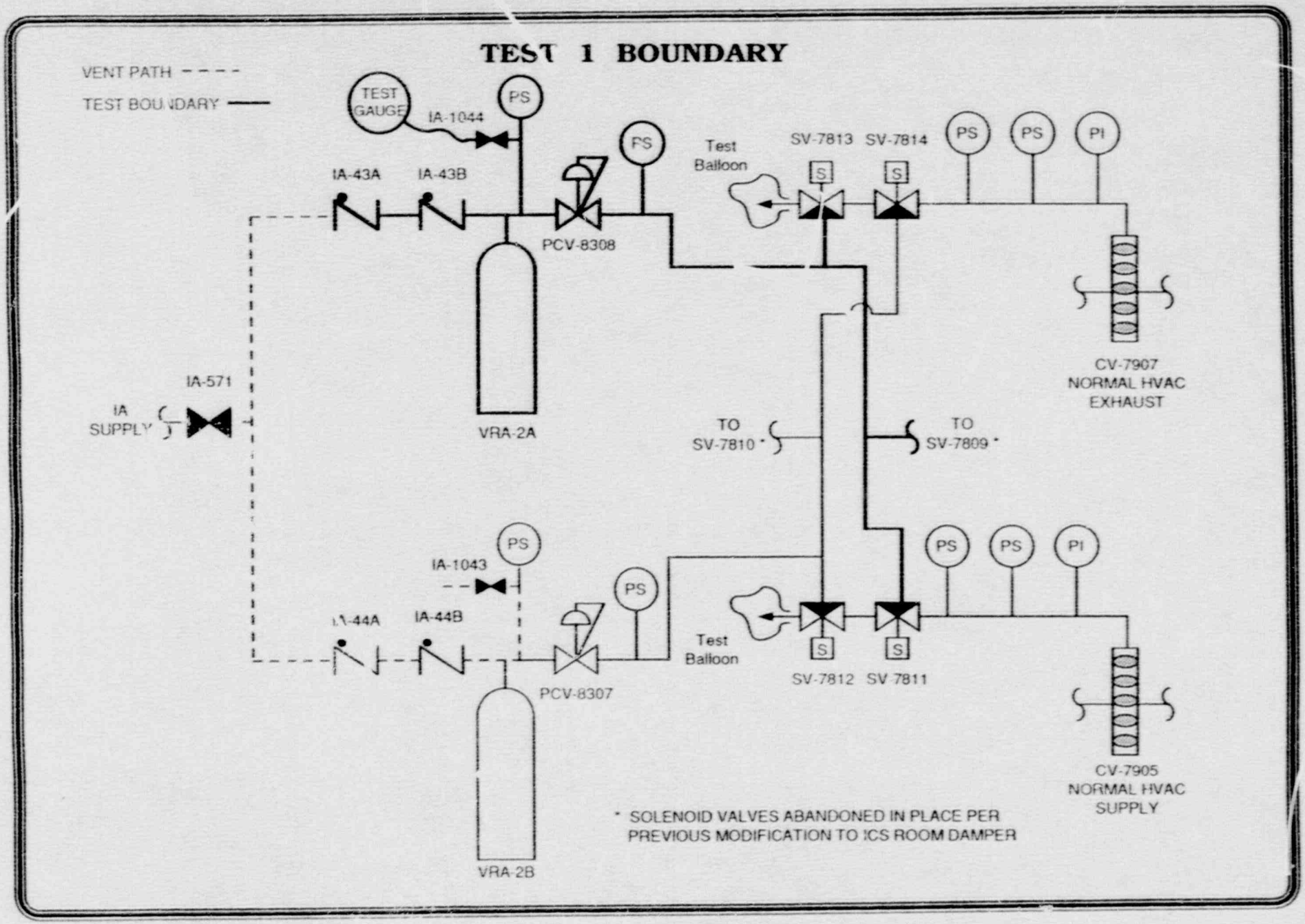
- TEST PLAN
  - GENERIC LETTER 88-14 REQUIREMENTS
  - CONSERVATIVE TEST CONFIGURATION
  - TEST CHECK VALVES ALONE
  - TEST SYSTEM IN ACTUATED STATE
  - ORIGINAL TEST - FOUR PARTS
  - COMPENSATORY ACTIONS

ACCEPTANCE CRITERIA

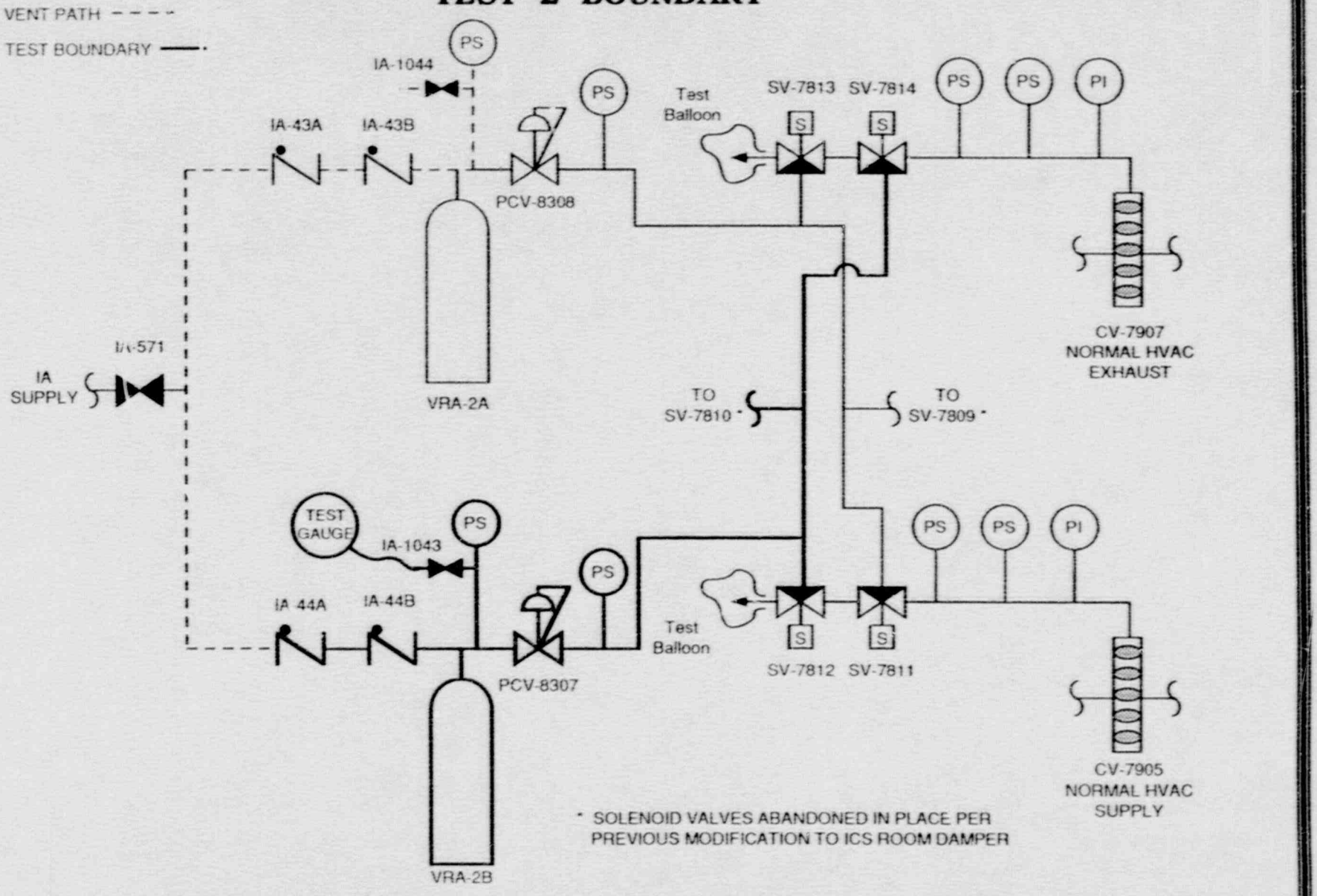
- CONTROL ROOM INTEGRITY - 30 DAYS
- NO FIRM BASIS FOR ACCEPTANCE CRITERIA FOUND
- EIGHT HOUR ACCEPTANCE CRITERIA SPECIFIED
  - OPERATIONALLY PRUDENT
  - CONSISTENT WITH PRECEDENT
  - COMPENSATORY ACTION ACHIEVABLE
- INTEND TO MAINTAIN SYSTEM AT 72 HOUR LEVEL

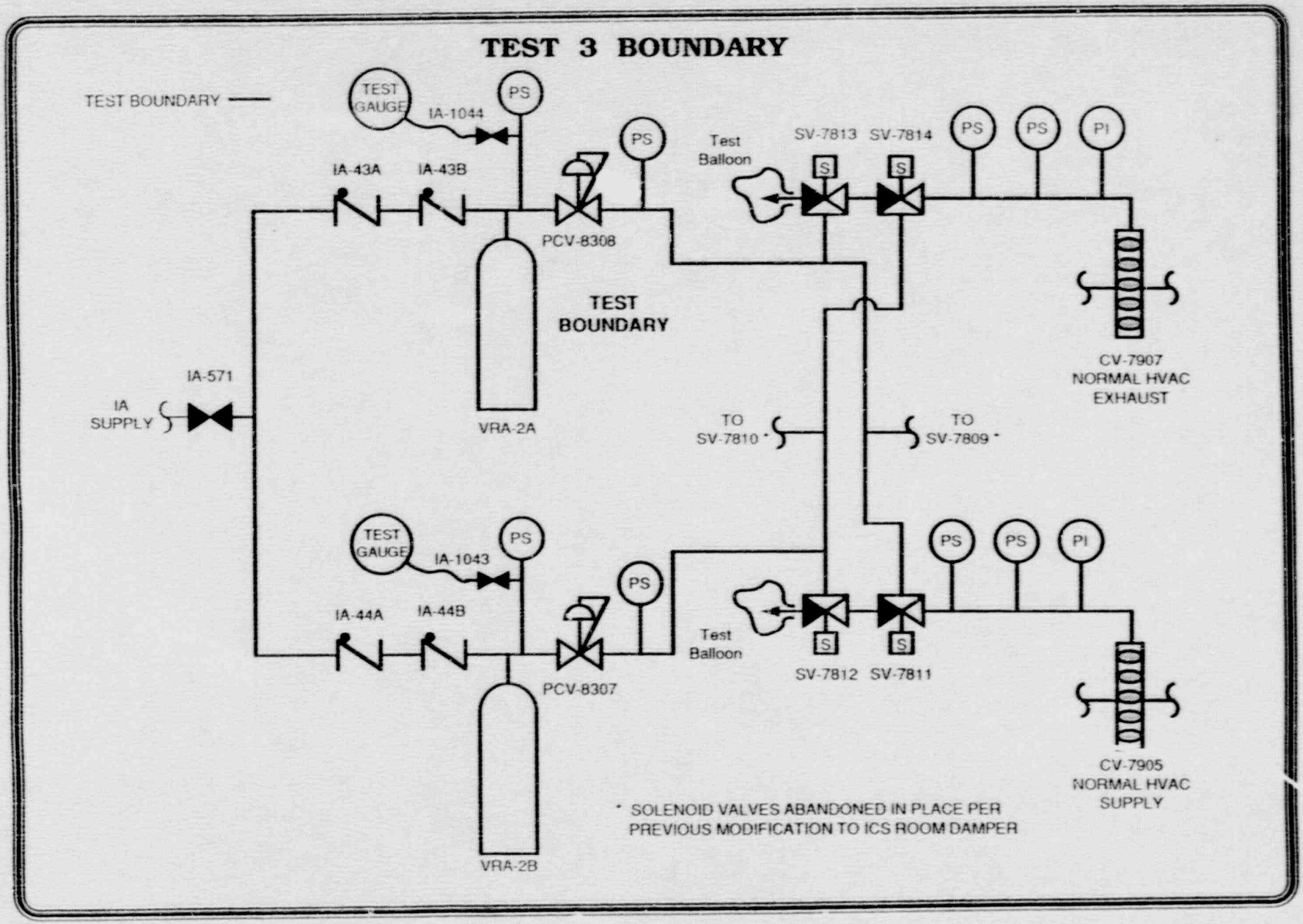
AS FOUND TESTING

- TEST 1
  - VRA-2A SIDE - CHECK VALVES TO SOLENOID VALVES
- TEST 2
  - VRA-2B SIDE - CHECK VALVES TO SOLENOID VALVES
- TEST 3
  - FULL ACTUATION OF SYSTEM WITH IA ISOLATED
  - USED WITH TEST 1 AND TEST 2 TO DEFINE AS FOUND SYSTEM PERFORMANCE
  - VERIFIED = REGULATOR PERFORMANCE
    = BLADDER INFLATION
    = BLADDER INTEGRITY
- DATA REDUCTION
  - VRA-2A SIDE MAINTAINED ISOLATION 62 MINUTES
  - VRA-2B SIDE MAINTAINED ISOLATION 212 MINUTES
  - MOST PROBABLE SCENARIO - MAINTAIN ISOLATION 75 MINUTES


TEST 1 BOUNDARY
VENT PATH
TEST BOUNDARY
TEST GAUGE
IA-1044
PS
IA-43A
IA-43B
PCV-8308
Test Balloon
SV-7813
SV-7814
PS
PS
PI
CV-7907
NORMAL HVAC EXHAUST
IA-571
IA SUPPLY
VRA-2A
TO SV-7810 *
TO SV-7809 *
IA-1043
IA-44A
IA-44B
PCV-8307
SV-7812
SV-7811
CV-7905
NORMAL HVAC SUPPLY
* SOLENOID VALVES ABANDONED IN PLACE PER PREVIOUS MODIFICATION TO ICS ROOM DAMPER
VRA-2B

TEST 2 BOUNDARY



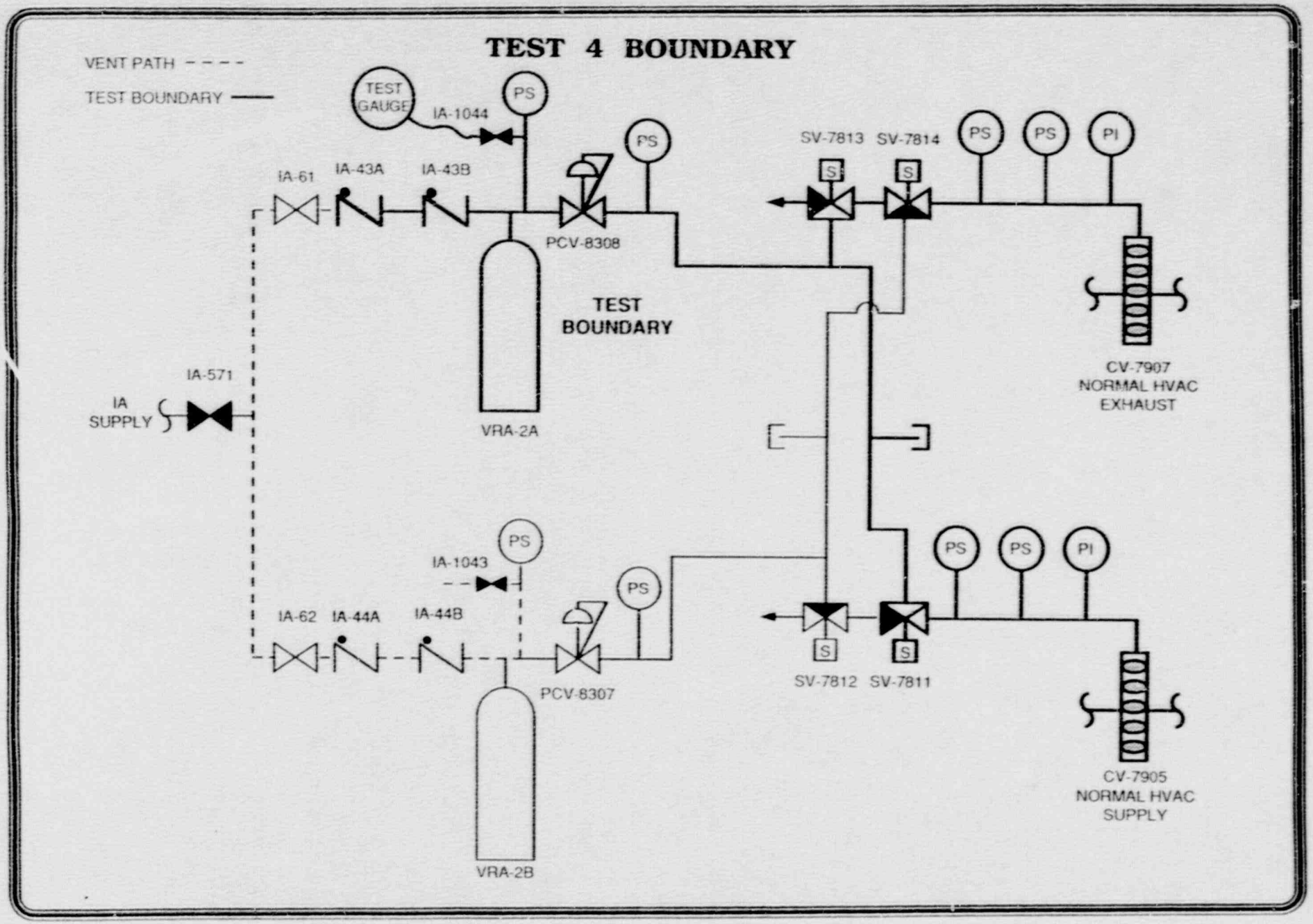

TEST 3 BOUNDARY
TEST BOUNDARY
TEST GAUGE
IA-1044
PS
IA-43A
IA-43B
PCV-8308
PS
Test Balloon
SV-7813
SV-7814
PS
PS
PI
S
S
TEST BOUNDARY
CV-7907 NORMAL HVAC EXHAUST
IA-571
IA SUPPLY
VRA-2A
TO SV-7810 *
TO SV-7809 *
TEST GAUGE
IA-1043
PS
IA-44A
IA-44B
PCV-8307
PS
Test Balloon
SV-7812
SV-7811
PS
PS
PI
S
S
CV-7905 NORMAL HVAC SUPPLY
VRA-2B
* SOLENOID VALVES ABANDONED IN PLACE PER PREVIOUS MODIFICATION TO ICS ROOM DAMPER

SYSTEM MODIFICATION AND REWORK

- LEAKS REPAIRED ON PIPING
- SV-7813 LEAK REPAIRED
- TUBING AND VALVES ABANDONED - REMOVED
- REPLACED CHECK VALVES WITH SIMILAR VALVES
- ADDED MANUAL ISOLATION VALVES UPSTREAM OF CHECK VALVES

AS LEFT TESTING

- TEST 4
  - VRA-2A SIDE - CHECK VALVES TO DAMPERS
- TEST 5
  - VRA-2B SIDE - CHECK VALVES TO DAMPERS
- TEST 4 AND TEST 5 DID NOT MEET ACCEPTANCE CRITERIA
- TEST 6
  - VRA-2A SIDE - MANUAL ISOLATION VALVES TO DAMPERS
  - MET ACCEPTANCE CRITERIA - 200 HOURS OF ISOLATION
- TEST 7
  - VRA-2B SIDE - MANUAL ISOLATION VALVE TO DAMPERS
  - MET ACCEPTANCE CRITERIA - 106 HOURS OF ISOLATION


TEST 4 BOUNDARY
VENT PATH
TEST BOUNDARY
TEST GAUGE
IA-1044
PS
IA-61
IA-43A
IA-43B
PCV-8308
TEST BOUNDARY
VRA-2A
IA-571
IA SUPPLY
SV-7813
SV-7814
PS
PS
PI
S
S
CV-7907
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IA-44A
IA-44B
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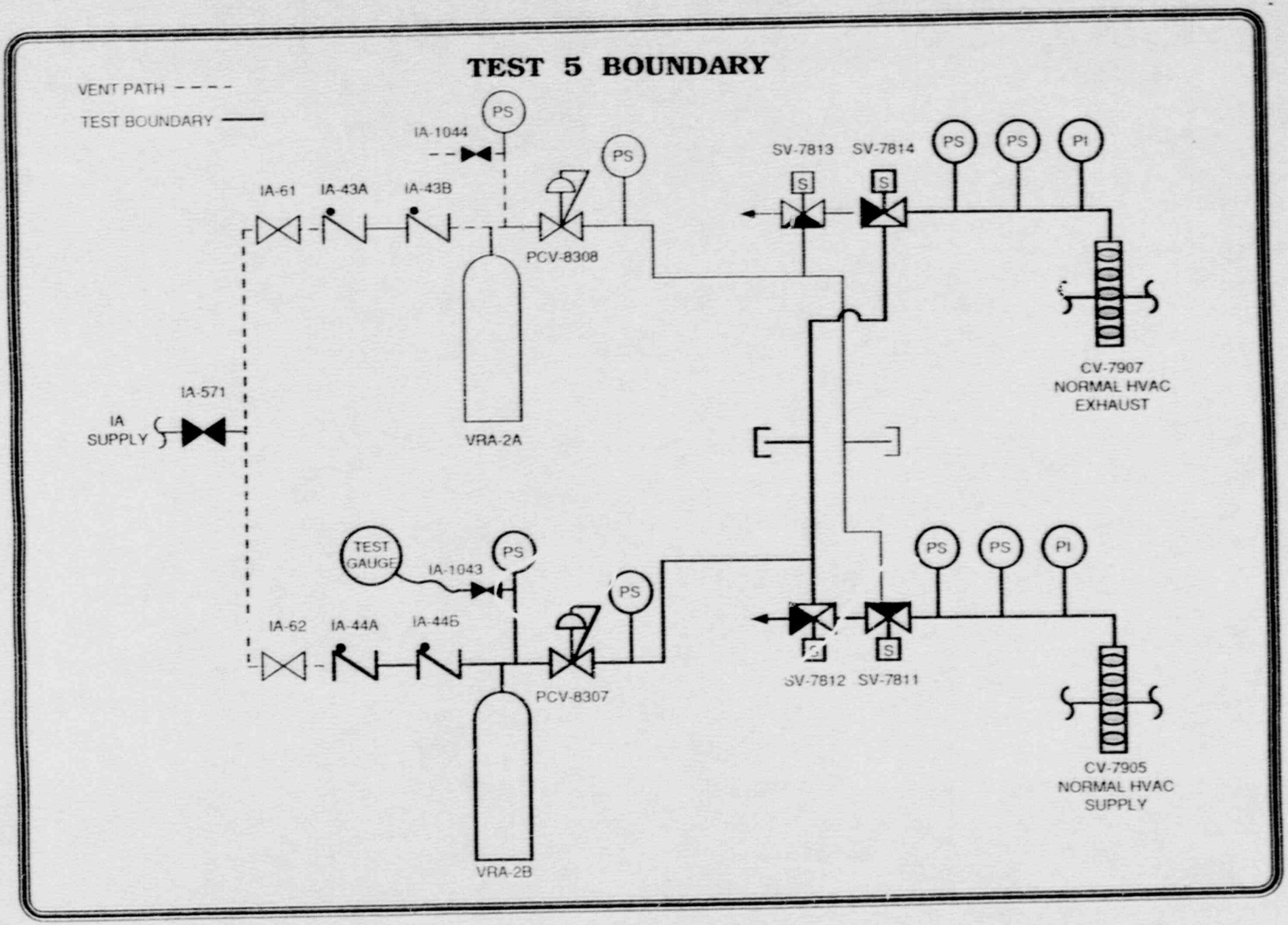
SV-7812
SV-7811
CV-7905
NORMAL HVAC SUPPLY
VRA-2B


TEST 5 BOUNDARY
VENT PATH
TEST BOUNDARY
PS
IA-1044
PS
SV-7813
SV-7814
PS
PS
PI
IA-61
IA-43A
IA-43B
PCV-8308
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CV-7907
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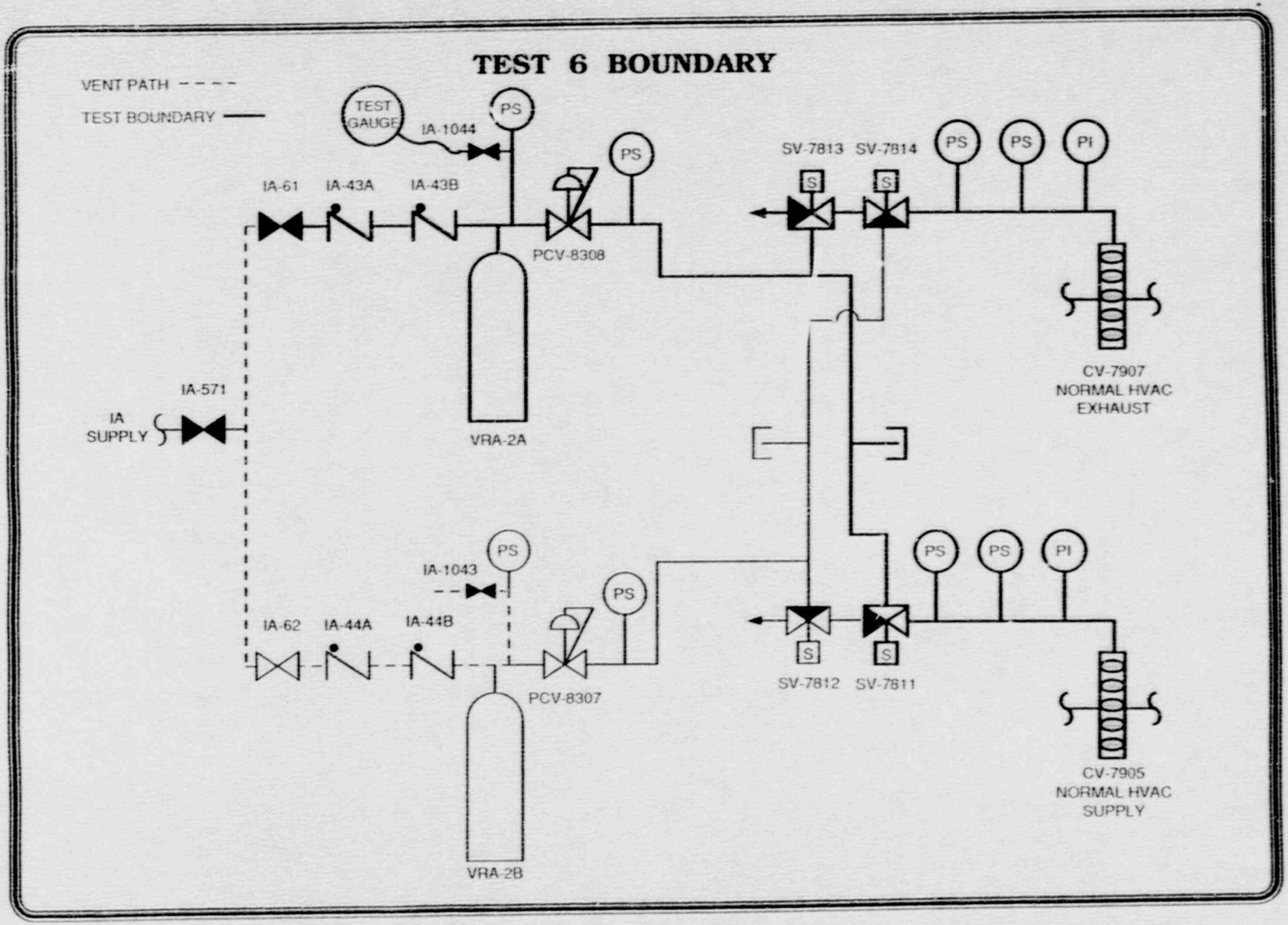
SUPPLY
VRA-2B


TEST 6 BOUNDARY
VENT PATH
TEST BOUNDARY
TEST GAUGE
IA-1044
PS
IA-61
IA-43A
IA-43B
PCV-8308
SV-7813
SV-7814
PS
PS
PI
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SV-7811
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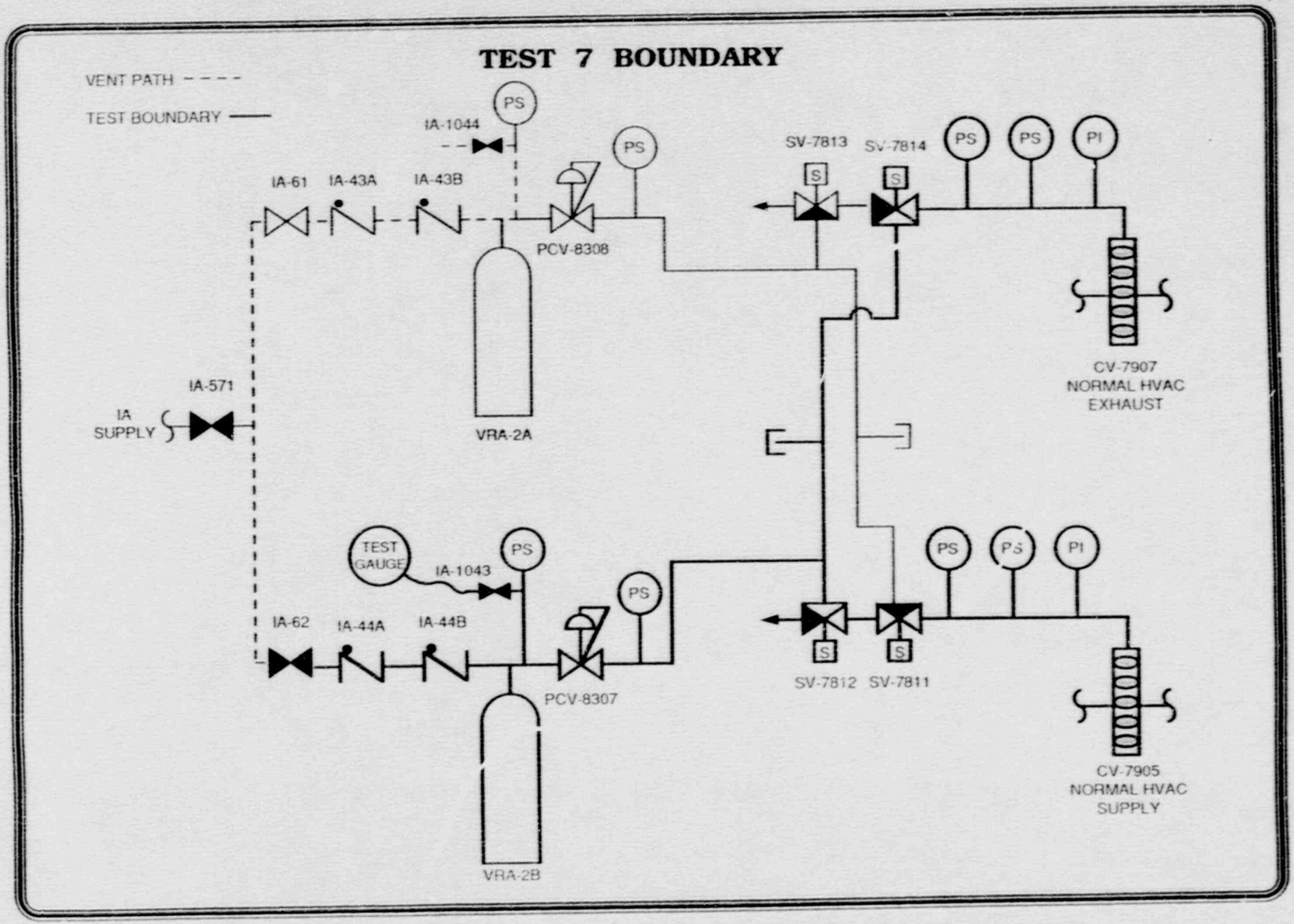
SUPPLY
VRA-2B


TEST 7 BOUNDARY
VENT PATH
TEST BOUNDARY
PS
IA-1044
IA-61
IA-43A
IA-43B
PCV-8308
SV-7813
SV-7814
PS
PS
PI
CV-7907
NORMAL HVAC
EXHAUST
IA-571
IA
SUPPLY
VRA-2A
TEST
GAUGE
IA-1043
IA-62
IA-44A
IA-44B
PCV-8307
SV-7812
SV-7811
CV-7905
NORMAL HVAC
SUPPLY
VRA-2B

SYSTEM RESTORATION

- MANUAL ISOLATION VALVES IA-61 AND IA-62 NORMALLY CLOSED
  - OPENED DAILY TO RECHARGE ACCUMULATORS
- COMPENSATORY ACTIONS PROCEDURALIZED
- ALTERNATIVE COMPENSATORY MEASURE AVAILABLE
- REPETITIVE TEST FREQUENCY

ROOT CAUSE

INADEQUATE TESTING OF CONTROL ROOM ISOLATION. SYSTEM TESTING FOCUSED ON VALVE ISOLATION TIME. DID NOT INCLUDE KEEPING VALVES IN THEIR REQUIRED POSITION.

CONTRIBUTING CAUSES

INADEQUATE FUNCTIONAL/SURVEILLANCE TESTING THAT RESULTED IN FAILURE TO RECOGNIZE DEFICIENT EQUIPMENT.

DEFICIENCIES IN THE PROCESS TO ENSURE THOROUGH RESPONSE TO GENERIC LETTER 88-14

SPECIFIC CORRECTIVE ACTIONS RELATED TO CONTROL ROOM ISOLATION CONCERN

	COMP DATE
COMPLETED ACTIONS	
• SYSTEM MODIFICATION	
• TESTING OF SYSTEM	
• PREPARE AND SUBMIT LER	
• SYSTEM ENGINEER ASSIGNED	
• DEVELOPED DESIGN BASIS EVOLUTION FOR CONTROL ROOM DAMPERS	
PROCEDURES	
• PROVIDE PERIODIC TESTING OF ACCUMULATORS/CHECK VALVES FOR NORMAL VENTILATION SYSTEM	12/31/90
• PERIODIC TESTING OF VSF-9 ACCUMULATORS	04/08/91
TESTING	
• ACCUMULATOR/DAMPERS	QUARTERLY (INITIAL)
DESIGN	
• DETERMINE FEASIBILITY OF UTILIZING FAIL SAFE DAMPERS OR OTHER COMPONENTS	03/01/91
• RE-EVALUATE G.L. 88-14 RESPONSE	
- ACCUMULATORS REVIEW	
= UNIT-1	PRIOR TO STARTUP
= UNIT-2	11/30/90
- REMAINING G.L. 88-14 REVIEW	02/15/91
TECH SPECS	
• T.S. CHANGE UNIT 1 SECTION 3.9.3 DAMPER CLOSING & SECURING VENTILATION FANS	12/31/90

ADDITIONAL RELATED ACTIONS TAKEN OR UNDERWAY

ACTIONS TAKEN SINCE 1978

- MAJOR CHANGES IN OUR 10CFR 50.59 PROGRAM
  - COMPREHENSIVE PROCEDURE
  - TRAINING AND CERTIFICATION
  - BETTER DOCUMENTATION
- SIGNIFICANT CHANGES TO PLANT MODIFICATION PROGRAM
- IMPROVED SAFETY REVIEW OF CHANGE PACKAGES
  - POST-MODIFICATION TESTING
  - REVIEW BOARD

ACTIONS UNDERWAY

- SURVEILLANCE TESTING UPGRADE PROGRAM (BUSINESS PLAN C.1)
- SYSTEM ENGINEERING PROGRAM (BUSINESS PLAN C.5)
- UPGRADE ANO CHECK VALVE PROGRAM (BUSINESS PLAN D.5.m)
- DESIGN CONFIGURATION DOCUMENTATION PROGRAM (BUSINESS PLAN D.6.a)
- ISOMETRIC UPDATE PROGRAM (BUSINESS PLAN D.6.b)

SAFETY SYSTEM FUNCTIONAL INSPECTION
USINESS PLAN D.10)

GENERIC LETTER 88-14
INCORRECT STATEMENT REVIEW

- INVESTIGATION
- ROOT CAUSE
- CORRECTIVE ACTIONS

GENERIC LETTER 88-14
INVESTIGATION

- INTERVIEWS
- PROCEDURAL REVIEWS
- "GREEN FOLDER" REVIEW

GENERIC LETTER 88-14
ROOT CAUSE

FAILURE TO FOLLOW THE APPLICABLE PROCEDURE CONCERNING VERIFICATION OF INFORMATION CONTAINED IN LIR.

CONTRIBUTING CAUSES

LACK OF MANAGEMENT INVOLVEMENT AND LEADERSHIP

LACK OF SPECIFIC PROCEDURAL GUIDANCE

GENERIC LETTER 88-14
CORRECTIVE ACTIONS

	DATE
• CONDUCT ADDITIONAL REVIEWS	
· RESPONSES WITH OPERATIONS ASSESSMENT GROUP INPUT (BULLETIN 88-03)	03/31/91
· GENERIC LETTER AND BULLETIN RESPONSES	12/31/90
· ADDITIONAL NRC SUBMITTALS	01/31/91
• ENHANCE PROCEDURAL GUIDANCE	12/15/90
• INCREASE AWARENESS OF LIR RESPONDENTS	11/30/90

SAFETY SIGNIFICANCE

- FAILURE TO ADEQUATELY TEST THE REDESIGNED (1978) CONFIGURATION IS CONSIDERED SIGNIFICANT WITH RESPECT TO BOTH THE ORIGINAL POST-MODIFICATION TESTING AND RECENT G.L. 88-14 REQUIREMENTS

- THE SPECIFIC CONSEQUENCES BEING CONSIDERED ARE RELATED TO A POSSIBLE EXCEEDANCE OF GDC 19 LIMITS FOR CONTROL ROOM OPERATOR DOSE. THE ACTUAL SAFETY SIGNIFICANCE IS MINIMIZED BY THE FOLLOWING FACTORS:

  - DOSE CALCULATIONS ARE BASED ON NUMEROUS CONSERVATISMS
  - GDC LIMITS ARE CONSERVATIVE
  - SEVERAL POTENTIAL RECOVERY ACTIONS WOULD HAVE BEEN AVAILABLE
  - RADIATION PROTECTION FEATURES ARE AVAILABLE (ALARMS, SCBA's, ETC.)

DOSE CALCULATION ASSUMPTIONS

	CONSERVATIVE ASSUMPTION	REALISTIC ASSUMPTION
1.	105% OF FULL POWER TID 14844 SOURCE	100% POWER GAP ACTIVITY OR LESS
2.	INSTANTANEOUS RELEASE OF CORE INVENTORY TO CONTAINMENT ATMOSPHERE (NO DECAY BEFORE RELEASE)	DELAYED POST TRIP RELEASE WITH DECAY
3.	CONTAINMENT SPRAY EFFICIENCY LIMITED PER SRP 6.5.2, REV. O	HIGHER IODINE REMOVAL EFFICIENCY PER SRP 6.5.2, REV. 2
4.	NO DECAY OR PLATEOUT BETWEEN LEAKAGE FROM CONTAINMENT AND IN-LEAKAGE TO CONTROL ROOM	DECAY MODELED
5.	CONSERVATIVE X/Q: 95% OF DATA INDICATES USE OF A SMALLER X/Q VALVE	. . .
6.	10 CFM UNFILTERED IN-LEAKAGE IS ARBITRARY FOR CONSERVATISM	. . .

OPERATOR DOSE IMPACT

	CURRENT DESIGN (REM)	GDC 19 LIMITS	SRP 6.4 GUIDANCE	CASE I	CASE II
WHOLE BODY	1.6	5	5	3.6	.36
THYROID	26.8	(EQUIV)	30 (40)*	37	3.7
SKIN (BETA)	32.3	(EQUIV)	75	64	6.4

CASE I: ESTIMATED DOSE DUE TO DEGRADED ISOLATION SYSTEM ASSUMING (NON-MECHANISTIC)

1) ISOLATION LOST AT 1 HOUR
2) TID SOURCE TERMS
3) 30 CFM UNFILTERED IN-LEAKAGE AFTER 1 HOUR
4) ISOLATION RESTORED AT 8 HOURS
5) SRP 6.5.2, REV 2 SPRAY EFFICIENCIES

CASE II: ESTIMATED DOSE - REALISTIC ASSUMPTIONS (MECHANISTIC)

1) GAP ACTIVITY SOURCE TERM
2) OTHER ASSUMPTIONS HELD CONSTANT

* ACCEPTANCE LIMIT FOR ANO PER MEETING WITH NRC

SAFETY SIGNIFICANCE SUMMARY

- ESTIMATED OPERATOR DOSE IS CONSERVATIVELY CALCULATED TO REMAIN WITHIN ACCEPTANCE LIMITS ASSUMING THE CONTROL ROOM ISOLATION SYSTEM IS DEGRADED AFTER ONE HOUR. THEREFORE, THE SAFETY SIGNIFICANCE IS CONSIDERED MINIMAL.