Washington Public Power Supply System

Box 1223 Elma, Washington 98541-1223 (206)482-4428

Docket No. 50-508
November 22, 1983
G03-83-893

Director of Nuclear Reactor Regulation
ATTN: Mr. G. W. Knighton, Chief
Licensing Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: NUCLEAR PROJECT 3
RESPONSES TO NRC QUESTIONS

In accordance with the guidance of Generic Letter 82-14, the Supply System hereby submits 40 copies of responses to the NRC's requests for Additional Information as shown.

In preparing this submittal it was necessary to revise several large Tables from the FSAR. Since as a practical matter it is quite difficult to include a copy of each for each copy of this letter, the NRC Licensing Project Manager will receive three copies of each for Distribution.

This situation has been discussed with the NRC Licensing Project Manager for WNP-3.

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NUCLEAR PROJECT 3 RESPONSES TO NRC QUESTIONS

If you require additional information or clarification, the Supply System Point of Contact for this matter is Mr. D. W. Coleman, Licensing Project Manager (206/482-4428 ext. 5436).

Sincerely,

D. W. Coleman for

G. C. Sorensen, Manager
Regulatory Programs

GCS/kh

Attachments:
1. NRC Question No. 430.21
2. NRC Question No. 430.36
3. NRC Question No. 430.37
4. NRC Question No. 430.61
5. NRC Question No. 430.64
6. NRC Question No. 450.6
7. NRC Question No. 450.12
8. NRC Question No. 460.1
9. NRC Question No. 471.6
10. NRC Question No. 480.13
11. NRC Question No. 480.17
12. NRC Question No. 480.18
13. NRC Question No. 480.21

cc: P Christofakis - Ebasco NYO
N. S. Reynolds - D & L
J. A. Adams - NESCO
D. Smithpeter - BPA
A. Vietti - NRC
A. A. Tuzes - CE
Ebasco - Elma
WNP-3 Files

Question No.

430.21 (SRP 9.5.4) Discuss the precautionary measures that will be taken to assure the quality and reliability of the fuel oil supply for emergency diesel generator operation. Include the type of fuel oil, impurity and quality limitations as well as diesel index number or its equivalent, cloud point, entrained moisture, sulfur, particulates and other deleterious insoluble substances; procedure for testing newly delivered fuel, periodic sampling and testing of onsite fuel oil (including interval between tests), interval of time between periodic removal of condensate from fuel tanks and periodic system inspection. In your discussion include reference to industry (or other) standard which will be followed to assure a reliable fuel oil supply to the emergency generators.

Response

The specific standards that will be followed to assure a reliable supply of fuel oil to the emergency diesel generators are:

(1) ASTM-D240-65, Standard Method of Sampling Petroleum and Petroleum Products.

(2) ASTM-D975-74, Standard Classification of Diesel Fuel Oils.

(3) Manufactures Diesel Fuel Recommendations, Maintenance Instruction 1750 Rev. D, March 1973, EMD - General Motors Corporation.

The fuel is No. 2-D and meets the requirements of the following specifications:

	Requirement	Specification 2	Analysis Method
1.	Cetane Number	50 min, 57 max	ASTM-D-613
2.	90% Boiling Pt	600 max	ASTM-D-86
		----	ASTM-D-86
	Final Boilding Pt	625°F max	ASTM-D-86
	Distillation Recovery	99.0%	ASTM-D-86
3.	Total Sulphur	.2% max not to exceed legal limit	ASTM-D-129 or ASTM-D-1552
4.	Copper Strip Corrosion 3 hr # 212°F	No. 1 Strip or better	ASTM-D-130 Modified
5.	Carbon Residue 10% bottoms	.15% max	ASTM-D-189 or ASTM-D-524

Question No.

430.21

Response (Cont'd)

	Requirement	Specification 2	Analysis Method
6.	Ash, wt%	trace max	ASTM-D-482
7.	Water and Sediment	trace max	ASTM-D-96
8.	Cloud & Pour Point	ASTM-D-975	ASTM-D-2500
9.	Flash Point	150°F min	ASTM-D-93
10.	Organic Chlorides	20ppm max total chloride	UOP Method 395
11.	Filtration Cleanliness	1.3 mg/l max on 0.80 Micron Filter	ASTM-D-2276
12.	ASTM Color	1.0 max	ASTM-D-1500
13.	Viscosity, 100°F Kinematic, est.	2.4 min ----	ASTM-D-445
14.	Gravity, API	37 max	ASTM-D-287
15.	Thermal stability 16 hr	15 mg max	ASTM-D-2274
16.	Aniline Point, F	115 min	ASTM-D-611
17.	Neutralization Number	0.2 max	ASTM-D-974

Representative samples shall be collected from new delivered fuel.

Representative samples of diesel fuel from the diesel fuel storage tanks will also be collected quarterly (every 92 days). Viscosity, API gravity, water and sediment, and flash point will be determined for each sample. If the diesel fuel does not meet the manufacturer's specifications it will be replaced or, in the case of water and sediment, treated to remove imputities.

See the response to Q430.17 concerning the removal of water from the diesel fuel storage tanks.

Question No.

430.36 (SRP 9.5.6) Provide the design dew point temperature (^{o}F) for the compressed air as it leaves the refrigerant air dryers. Show that the design dew point will be at least $10^{o}F$ lower than the lowest possible ambient temperature in the diesel generator room. Discuss the procedures that will be implemented to ensure that compressed air dew point design is maintained and that moisture does not collect in the air receivers.

Response

The compressed air design dew point temperature is 35°F (1.7°C). This temperature is maintained in the heat exchanger automatically by a thermostat that controls the operation of the refrigeration system. The moisture is collected in the condensate separator and is periodically drained (see response to Question 430.37). As described in Subsection 9.4.5.2.1, the lowest ambient temperature in the DG room is 60°F during all conditions of operation and varying outside air temperature. This is 25°F higher than the automatically maintained design dew point temperature of 35°F.

Table 9.5.6-1 will be amended to reflect the design dew point of the diesel generator compressed air system.

TABLE 9.5.6-1

DIESEL GENERATOR STARTING SYSTEM EQUIPMENT DESIGN DATA

1.	**Air Compressors**		
	Operator	motor, 15 HP, 3 ph, 60 Hz, 460V	1
	Design Pressure, psig	700	
	Design Temperature, F	139	
	Quantity/Engine	2	
	Seismic Category	I	
2.	**Air Receivers**		
	Volume ft^3	54.7	
	Design Pressure, psig	700	1
	Design Temperature, F	139	
	Quantity/Engine	2	
	Seismic Category	I	
	ASME Section	III	
3.	**Air Dryers**		
	Type	Refrigerant	
	Design Pressure, psig	700	1
	Design Temperature, F	139	
	Quantity/Engine	2	
	Seismic Category	I	
4.	**Shutdown Air Accumulator**		
	Volume, Cu. inches	230	
	Design Pressure, psig	700	
	Operating Pressure, psig	670	1
	Design Temperature, F	140	
	Quantity/Engine	1	
	ASME Section	III	

DESIGN Dew Point, F

35

Q 430.36
SCN 570

Question No.

430.37 (SRP 9.5.6) Describe the provisions in the design of your compressed air system which prevent accumulation of dirt and oil in the receiver and/or other parts of the system.

Response

The Ingersoll-Rand refrigeration type air dryers are installed between the air compressors and receivers. They are utilized to remove moisture, dirt, oil vapor and other contaminants from compressed air. The moisture, dirt and oil vapor are collected in the air dryers (condensate separator) and periodically drained and cleaned in accordance with the procedure provided in Vendor Instruction Manual.

Subsection 9.5.6.2 will be amended to reflect the response to this question.

and foreign materials. Both air starting systems are used for normal starts. Therefore, the combined capacity of the dual train system is 10 cold start cycles without recharging the air receivers. The average expected cranking cycle duration is three to three and one half seconds. A limit switch is provided to limit the duration of cranking cycle to a maximum of seven seconds. If this duration exceeds seven seconds the air supply for cranking will be shutoff. The air receivers are provided with a pressure switch to start and stop the compressor as required. Each air train is provided with a low pressure alarm. The compressors are not required during the starting operation or during diesel engine operation. Two complete automatic refrigerant type air dryers on the discharge side of the air compressors provide moisture-free air by reducing the air dewpoint for starting and control. A check valve located upstream of the air receiver ensures that a broken line in the non-safety portion of the piping will not result in a sudden loss of air. The main air start control valve and air start solenoid valves are used for startup of the system.

INSERT 1

A shutdown air accumulator with a solenoid operated shutdown valve is provided, which holds enough air trapped by a check valve on the upstream of the accumulator to close the fuel racks to shut the diesel engine down even if both starting air systems lose pressure. The design data for major components of this system is shown in Table 9.5.6-1.

9.5.6.3 Safety Evaluation

The portion of the diesel generator starting system between the diesel generator and the first check valves upstream of the air receivers is classified as Nuclear Safety Class 3 and designed to ASME Section III, Class 3, seismic Category I requirements to ensure system operation during an SSE. The non-safety portions of the starting air system are designed in accordance with the applicable codes and standards listed in Table 9.5.4-2. The system is shown on Figure 9.5.6-1. | 1

The air starting systems for one diesel are physically and electrically separated from those for the other diesel to assure that no single failure can cause malfunction of both divisions of standby ac power. | 1

The single failure criterion is satisfied and significantly enhanced by having a dual train air starting system for each diesel generator.

The dual train starting system ensures that a failure of any components of any train cannot cause loss of system ability to start the diesel, to supply emergency power, so as to safely mitigate the consequences of an accident and safely shutdown the reactor. A failure in the non-safety portion of the system piping will not have any impact in the safe operation of the system. A failure mode and effects analysis of the DGSS is presented in Table 9.5.6-2. | 1

9.5.6.4 Inspection and Testing Requirements

The system will be operated and tested initially with regard to flow path, flow capacity and mechanical operability in accordance with Section 14.0. To

Q430.37
SCN571

Question 430.37
INSERT 1

Moisture, dirt, oil vapor are removed from the compressed air. They are collected in the condensate separators, which are periodically drained and cleaned in accordance with the Vendor Instruction Manual.

Question No.

430.61 (SRP 10.2) Discuss your inservice testing and inspection program for the motor operated steam extraction valves such as provided for the turbine governor, control, interceptor, and reheat stop valves.

Response

Inservice inspection is not covered by SRP 10.2 for turbine extraction motor operated valves. The acceptance criteria (10.2.II.3) is directed at extraction steam non-return valves limiting steam flow so turbine speed stablizes. The motor operated valves do not perform this function.

Question No.

430.64 (SRP 10.4.1) In Section 10.4.1.4 you have discussed tests and initial field inspection but not the frequency and extent of inservice inspectionof the main condenser. Provide this information in the FSAR.

Response

Inservice inspection is performed in two ways:

a) Continuous monitoring of condensate to detect leaks and;

b) Periodic (refueling outage intervals) inspections to assess conditions of tubes in known, industry wide problem areas, and to assess condenser air in leakage.

The Supply System will continue to follow industry efforts to improve condenser leakage detection and will select additional inspection methods as the worth of these inspections is proven.

Question No.

450.6 (15.6.3) The operating procedures for responding to a steam generator tube rupture are currently an open issue on CESSAR. Resolution of the bases for analysis of this accident must either be accomplisned for CESSAR, or on a plant specific basis for WNP-3. In order to resolve the issue for WNP-3, the following question must be answered. The current operating procedures call for the operators to steam the affected steam generator to prevent overfilling. the present steam generator tube rupture accident evaluation in the FSAR assumed tht no releases occur from the affected steam generator after 30 minutes. Describe why the CESSAR-FSAR evaluation is bounding for a steam generator tube rupture event in light of the operator action guidance.

Response This issue has been addressed on the CESSAR-F Docket via letter LD-83-066, from A. E. Scherer to D. G. Eisenhut, dated July 22, 1983, "Confirmatory Item 18 Steam Generator Tube Rupture Event". Additionally, guidance for operator actions during emergencies is contained in CEN-152, "Emergency Procedure Guidelines" which have been approved by the NRC via a Safety Evaluation Report forwarded by letter from D. G. Eisenhut to R. W. Wells, dated July 29, 1983. The WNP-3 emergency procedure will be developed from these guidelines, which include specifics concerning Steam Generator Tube Rupture.

Once confirmatory Item 18 is accepted by the staff the Supply System will reflect the most limiting SGTR event in the WNP-3 FASR, as appropriate.

Question No.

450.12 Because WNP-3 intends to reference CESSAR for certain accidents, demonstrate how the interface requirements for CESSAR are met.

Response

Chapter 15, as presently written, does not identify any interface conditions as specified in CESSAR System 80. It should, however, be noted that the FSAR sections which describe those systems that are used to mitigate the accidents described in Chapter 15 do reference and denote which interface requirements are met. Those sections also note those interface requirements which have been modified, as required. Furthermore, FSAR Section 1.9 lists all CESSAR interface requirements, cross-reference to interface requirements, FSAR compliance status with the CESSAR requirements, and the FSAR sections which address the NSSS requirements.

Question No.

460.1 (11.5.2.4.2) Supply information relating to the effluent radiation monitors for steam generator blowdown flash tank vent and steam seal gland steam condenser ventilation which the FSAR indicates as later or provide a schedule for submittal of this information.

Response

As committed to in Letter #GO3-82-1085, dated October 22, 1982. FSAR Section 11.5 will be updated as shown to include the requested information.

pre-established setpoints an annunciation is made through the system CRTs and event typer. If the activity exceeds the high radiation alarm setpoint, or if the monitor fails, as determined by the local microprocessor, a contact closure is made at the local microprocessor which is used to automatically terminate the waste gas discharge.

The receipt of these alarms will alert the operators to analyze additional gas samples to determine the reason for the alarm. The records of the total quantity of radioactive material released is used in writing the reports required by Regulatory Guide 1.21. The alarm setpoints are selected in consideration of the requirement to prevent activity concentrations at the plant boundary or beyond from exceeding 10CFR20 limits, and to support the release limits set in the plant technical specification. The setpoints may be adjusted continuously over the entire range of the monitor. The range of this monitor was selected to span the expected range of radioactive gas concentrations expected in the waste gas.

e) Steam Generator Blowdown Flash Tank Vent Radiation Monitor

The steam generator blowdown flash tank vent radiation monitor provides plant operations personnel with an indication and record of contamination of the Secondary Steam System and the potential for release via the steam generator blowdown flash tank vent. This contamination could occur due to leakage of primary reactor coolant into the secondary coolant through a steam generator.

This monitor is an ambient type monitor located next to the steam generator blowdown flash tank vent line 6BD12-200 ~~at EL. 423 ft. in~~ outlet on the roof of the Turbine Building. The monitor is collimated with a lead shield to reduce the effect of background. The unshielded portion of the detector has an unobstructed view of the vent line. The ambient monitor is described in Subsection 11.5.2.8. 2

The measured activity level is automatically transmitted to the system computer where it is recorded and available for display. If the activity exceeds setpoints an annunciation is made through the system CRTs and event typer. Receipt of these alarms will alert the operator to the possibility of contamination of the Secondary Steam System and indicate the need for additional sampling and further action.

The alarm setpoints are selected above plant background to give the greatest sensitivity for possible contamination without causing frequent false alarms. These setpoints may be adjusted continuously over the entire range of the monitor.

f) Auxiliary Condensate Flash Tank Radiation Monitor

The auxiliary condensate flash tank radiation monitor provides plant operations personnel with an indication and record of contamination of the Auxiliary Steam System and the potential for release via various vents in the Auxiliary Steam and Condensate System. This contamination could occur due to inleakage from the various radioactive systems that are serviced by the Auxiliary Steam System. 2

Q460.1
SCN 388R1

Vent Line (6AS8-057) Outlet on the roof of the Reactor Auxiliary Building

This monitor is an ambient type monitor located next to the Auxiliary Condensate Flash Tank ~~in the Reactor Auxiliary Building next to line 6BU12-200 on the 335 ft. level. The monitor is collimated with a lead shield to reduce the effect of background. The unshielded portion of the detector has an unobstructed view of the flash tank.~~ The ambient monitor is described in Subsection 11.5.2.3. 2

The measured activity level is automatically transmitted to the system computer where it is recorded and available for display. If the activity exceeds setpoints an annunciation is made through the system CRTs and event typer. Receipt of these alarms will alert the operators to the possibility of contamination of the Auxiliary Steam and Condensate System and indicate the need for additional sampling and further action.

The alarm setpoints are selected above plant background to give the greatest sensitivity for possible contamination without causing frequent false alarms. These setpoints may be adjusted continuously over the entire range of the monitor.

g) Steam Seal Gland Steam Condenser Exhaust Radiation Monitor

The steam seal gland steam condenser radiation monitor provides plant operations personnel with an indication and record of contamination of the Secondary Steam System and the potential for release via the steam seal gland steam condenser vent. This contamination could occur due to leakage of primary reactor coolant into the secondary coolant through a steam generator.

Outlet on the roof

The monitor is an ambient type monitor located next to the vent line (6AE10-022) ~~on EL. 455 ft.~~ of the Turbine Building.

The monitor is collimated with a lead shield to reduce the effect of background. The unshielded portion of the detector has an unobstructed view of the vent line. The ambient monitor is described in Subsection 11.5.2.3. 2

The measured activity level is automatically transmitted to the system computer where it is recorded and available for display. If the activity exceeds setpoints an annunciation is made through the system CRTs and event typer. Receipt of these alarms will alert the operators to the possibility of contamination of the Secondary Steam System and indicate the need for additional sampling and further action.

The alarm setpoints are selected above plant background to give the greatest sensitivity for possible contamination without causing frequent false alarms. These setpoints may be adjusted continuously over the entire range of the monitor.

Q460.1
SCN 388/1

16154-3

WNP-3
FSAR

TABLE 11.5-1 (Cont'd)

Name (Instrument Tag Number)	Q'ty	Design Background (mr/hr Co-60)	Sampler Type	Activity Measured	Sensitivity @ Background	Range μCi/cc	Typical Alarm Set-points μCi/cc	Automatic Actions Initiated	Location	Duty
Administration Building Discharge Radiation Monitor (RE-RM-0008 & RE-RM-0009)	1	2.5	Two Stage Airborne	Gross β Particulate & Gas	$1x10^{-9}$ μCi/cc Sr-90 @ 1 mR/hr Co-60(2) $1x10^{-6}$ μCi/cc Kr-85 @ 1 mR/hr Co-60(3)	$1x10^{-10}$ to $1x10^{-5}$ $1x10^{-7}$ to $1x10^{-2}$	$3x10^{-10}$ $3x10^{-9}$ $5x10^{-7}$ $5x10^{-6}$	Alarm Only	Inside HR-51	Continuous
Condenser Mechanical Vacuum Pump Discharge Radiation Monitor (RE-AE-1400)	1	2.5	One Stage Airborne	Gross β Gas	$1x10^{-6}$ μCi/cc Xe-133 @ 1 mR/hr Co-60(3)	$1x10^{-7}$ to $1x10^{-2}$	$1x10^{-4}$ $1x10^{-3}$	Alarm Only	Line 6AE16-021	Continuous
Waste Gas Discharge Radiation Monitor (RE-WG-0548)	1	2.5	One Stage Airborne	Gross β Gas	$1x10^{-2}$ μCi/cc Kr-85 @ mR/hr Co-60(3)	$1x10^{-3}$ to $1x10^{+3}$	$2x10^{-1}$ $2x10^{0}$	Alarm, Termination of Discharge	6GMI-137R	Batch
Steam Generator Blowdown Flash Tank Vent Radiation Monitor	1		Ambient ~~Pb Collimated~~	Gross γ	~~Later*~~ 70cpm/MR(4)	$1x10^{-1}$ to $1x10^{4}$ mR/hr	Above ambient background	Alarm Only	Line 6BD12-200	Continuous
Auxiliary Condensate Flash Tank Radiation Monitor	1	2.5	Ambient Pb Collimated	Gross γ	~~Later*~~ 70cpm/mR (4)	$1x10^{-1}$ to $1x10^{4}$ mR/hr	Above ambient background	Alarm Only	Line 6AS8-037 ~~Near Aux. Condr. Tank Flash~~	Continuous
Steam Gland Seal Steam Exhaust Radiation Monitor	1	2.5	Ambient Pb Collimated	Gross γ	~~Later*~~ 70cpm/mR(4)	$1x10^{-1}$ to $1x10^{4}$ mR/hr	Above ambient background	Alarm Only	Line 6AE10-022	Continuous
Hot Machine Shop Discharge Sampler (RE-RM-0010)	1	2.5	Sampler	None	N.A.	N.A.	N.A.	None	Inside CB-51	Continuous
Waste Management System Discharge Radiation Monitor (RE-WM-6213)	1	2.5	Liquid	Gross γ	$1x10^{-6}$ μCi/cc Cs-137 @ 1 mR/hr Co-60(1)	$5x10^{-7}$ to $5x10^{-2}$	$5x10^{-5}$ $5x10^{-4}$	Alarm Termination of Discharge	Line 6LS3-080 WNP-3 6LS3-101 WNP-5	Batch
Common Plant Effluent Radiation Monitor (RE-CW-8830)	1	2.5	Liquid	Gross γ	$1x10^{-6}$ μCi/cc Cs-137 @ 1 mR/hr Co-60(1)	$5x10^{-7}$ to $5x10^{-2}$	$5x10^{-6}$ $5x10^{-5}$	Alarm Only	Line 6CW21-05b via 6CW 1 1/2-123	Continuous

2

note (4) · Efficiency of detector

Q460.1
SCN388 1

* Information will be supplied no later than February 1981.

Question No.

471.6 (12.5.2) Regulatory Guide 1.70 and the SRP (NUREG-0800) state that the description of the health physics instrumentation should include the instruments sensitivity. You provided the type of radiation the instrument detects and not the instrument sensitivity in Table 12.5-1. Provide the requested information.

Response

As committed to in Letter #G03-82-1085, dated October 22, 1982. FSAR Section 12.5 will be updated as shown to provide the requested informatiohn.

Q471.6
SCN 518

TABLE 12.5-1

WNP-3/5 PLANT HEALTH PHYSICS INSTRUMENTATION

Number/Plant	Type	Sensitivity	Range	
1	Multichannel Gamma Spectrometer with Ge(Li) or HPGe Detector	note 1 ~~Gamma~~	N/A	1
1	Multichannel Gamma Spectrometer with NaI(Tl) Detector	note 1 ~~Gamma~~	N/A	1
2	Low Background Alpha-Beta Proportional Counters	note 1 ~~Alpha, Beta~~	N/A	
1	Liquid Scintillation Counter	note 1 ~~Beta~~	N/A	
4	End Window G-M Counting Systems	note 1 ~~Beta~~	N/A	
14	Ion Chamber Dose Rate Meters	1mR/hr ~~Beta, Gamma~~	10^{-3}-5 R/hr	1
4	Extendable Probe High Range Dose Rate Meters	1mR/hr ~~Gamma~~	10^{-3}-10^{4} R/hr	
2	Neutron Dose Equivalent Rate Meters	1mR/hr ~~Neutron~~	10^{-3}-10 rem/hr	1
14	G-M Survey Meters with Thin Wall, End Window or Pancake Probe	500dpm/100cm² ~~Beta, Gamma~~	0-50,000 cpm	
2	Portable Alpha Counters	100dpm/100cm² ~~Alpha~~	0-500,000 cpm	
10	Frisker Type Personnel Contamination Monitors	500dpm/100cm² ~~Beta, Gamma~~	0-50,000 cpm	
2	Portal Radiation Monitors	0.5 μCi ~~Beta and/or Gamma~~	N/A	1
6	Portable Constant Air Monitors	1×10^{-9} μCi/cc Sr-90 in 2mR/hr background ~~Beta~~	10^{-10}-10^{-4} μCi/cc Sr-90	1
500	Direct Reading Personnel Dosimeters	N/A ~~Gamma~~	0-500 mR	
100	Direct Reading Personnel Dosimeters-High Range	N/A ~~Gamma~~	Various ranges to 100 R	

notes:

1. The sensitivity will meet or exceed the LLD values given in NUREG-0472, "Draft Radiological Effluent Technical Specifications for PWR's.

Question No.

480.13 (6.2.3) In Appendix 6.2A, it is stated that the WATEMPT code is an extension of the CONTEMPT code. Identify the modifications that have been made to the CONTEMPT code to assure a conservative caluclation of the shield building annulus pressure response.

Response The modifications to the code which assure a conservative calculation of the Shield Building annulus pressure response are described in a proprietary description of the WATEMPT code. This proprietary code was also used to analyze the performance of the Shield Building Ventilation System for St Lucie Unit 2 (Florida Power & Light Co.) and its approval by the staff was benchmarked via St Lucie Unit 2's Safety Evaluation Report (NUREG-0843).

Question No.

480.17 (6.2.4) Identify all valves in FSAR Table 6.2.4-1 that are greater than 10 feet from the containment wall. Provide the rationale for their locations and justify that they have been placed as close to the containment as practical, as required by G. C 55, 56, and 57.

Response

All the containment isolation valves in FSAR Table 6.2.4-1 that are greater than 10 feet from the containment are listed on Table 480.17-1. The valves listed are all located in the penetration area adjacent to the containment building. These containment isolation valves have been located as close to the containment as possible while allowing adequate space requirements for operability and maintenance

FSAR Table 6.2.4-1 will be updated as shown.

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM

Penetration No.	Service	GDC Isolation Criteria	System Category	Valve No.	Electrical Division	Electrical Power	Valve Size (Inches)	Type of Valve Operator	Valve Type	Location with Respect to RB	Normal Valve Position	Shutdown Valve Position	Post-Accident Valve Position	Post-Accident Valve Failure Mode	Length from Penetration (Feet)	Valve Closure Signal	Valve Open Signal	Closure Time (Seconds)	Override	Fluid	Type C Test
1	SG1 Main Steam Line	57 A	ESFREL	2MS-VD001	5A/5B	-	28	AO	Gate	O	O	C	C	FAI	31	MSIS	-	5	No	S	No
				2MS-VE091	5A	-	2	AO	Globe	O	C	C	C	FC	31	MSIS	-	10	No		
			ESFREL	2MS-RO09	5A	-	8	Spr	Relief	O	C	C	O/C	-	8	-	-	-	-		
			ESFREL	2MS-RO10	5A	-	8	Spr	Relief	O	C	C	O/C	-	13	-	-	-	-		
			ESFREL	2MS-RO11	5A	-	8	Spr	Relief	O	C	C	O/C	-	20	-	-	-	-		
			ESFREL	2MS-PO16	5A	440V ac	8	EH	Globe	O	C	C	O/C	FC	38	MSIS	-	13	Yes		
			ESF	2MS-VE055	5A	-	4	AO	Gate	O	C	C	O/C	FO	14	MSIS	AFAS	10	No		
			ESFREL	2MS-VE057	5A	-	2	AO	Globe	O	C	C	C	FC	13	MSIS	-	5	No		
			ESFREL	4MS-VE093	5B	-	2	AO	Globe	O	C	C	C	FC	14	MSIS	-	5	No		
2	SG1 Main Steam Line	57 A	ESFREL	2MS-VD002	5A/5B	-	28	AO	Gate	O	O	C	C	FAI	31	MSIS	-	5	No	S	No
			ESFREL	2MS-RO06	5A	-	8	Spr	Relief	O	C	C	O/C	-	8	-	-	-	-		
			ESFREL	2MS-RO07	5A	-	8	Spr	Relief	O	C	C	O/C	-	13	-	-	-	-		
			ESFREL	2MS-RO08	5A	-	8	Spr	Relief	O	C	C	O/C	-	20	-	-	-	-		
			ESFREL	2MS-PO12	5B	440V ac	8	EH	Globe	O	C	C	O/C	FC	38	MSIS	-	13	Yes		
			ESF	2MS-VE138	5B	-	4	AO	Gate	O	C	C	O/C	FO	14	MSIS	AFAS	10	No		
			ESFREL	2MS-VE059	5B	-	2	AO	Globe	O	C	C	C	FC	13	MSIS	-	5	No		
			ESFREL	4MS-VE094	5B	-	2	AO	Globe	O	C	C	C	FC	14	MSIS	-	5	No		
3	SG2 Main Steam Line	57 A	ESFREL	2MS-VD003	5A/5B	-	28	AO	Gate	O	O	C	C	FAI	31	MSIS	-	5	No	S	No
			ESFREL	2MS-VE092	5B	-	2	AO	Globe	O	C	C	C	FC	31	MSIS	-	10	No		
			ESFREL	2MS-RO18	5B	-	8	Spr	Relief	O	C	C	O/C	-	8	-	-	-	-		
			ESFREL	2MS-RO19	5B	-	8	Spr	Relief	O	C	C	O/C	-	13	-	-	-	-		
			ESFREL	2MS-RO20	5B	-	8	Spr	Relief	O	C	C	O/C	-	20	-	-	-	-		
			ESFREL	2MS-PO23	5A	440V ac	8	EH	Globe	O	C	C	O/C	FC	38	MSIS	-	13	Yes		
			ESF	2MS-VE082	5B	-	4	AO	Gate	O	C	C	O/C	FO	14	MSIS	AFAS	10	No		
			ESFREL	2MS-VE073	5A	-	2	AO	Globe	O	C	C	C	FC	13	MSIS	-	5	No		
			ESFREL	4MS-VE095	5A	-	2	AO	Globe	O	C	C	C	FC	14	MSIS	-	5	No		
4	SG2 Main Steam Line	57 A	ESFREL	2MS-VD004	5A/5B	-	28	AO	Gate	O	O	C	C	FAI	31	MSIS	-	5	No	S	No
			ESFREL	2MS-RO13	5B	-	8	Spr	Relief	O	C	C	O/C	-	8	-	-	-	-		
			ESFREL	2MS-RO14	5B	-	8	Spr	Relief	O	C	C	O/C	-	13	-	-	-	-		
			ESFREL	2MS-RO15	5B	-	8	Spr	Relief	O	C	C	O/C	-	20	-	-	-	-		
			ESFREL	2MS-PO21	5B	440V ac	8	EH	Globe	O	C	C	O/C	FC	38	MSIS	-	13	Yes		
			ESF	2MS-VE140	5A	-	4	AO	Gate	O	C	C	O/C	FO	14	MSIS	AFAS	10	No		
			ESFREL	2MS-VE074	5A	-	2	AO	Globe	O	O	C	C	FC	13	MSIS	-	5	No		
			ESFREL	2MS-VE070	5A	-	2	AO	Globe	O	O	C	C	FC	13	MSIS	-	5	No		

TABLE 6.2.4-1 (Cont'd)

Penetration No.	Service	GDC Isolation Criteria	System Category	Valve No.	Electrical Division	Electrical Power	Valve Size (Inches)	Type of Valve Operator	Valve Type	Location with Respect to RB	Normal Valve Position	Shutdown Valve Position	Post-Accident Valve Position	Failure Mode	Length from Penetration (Feet)	Valve Closure Signal	Valve Open Signal	Closure Time (Seconds)	Override	Fluid	Type C Test
5	SG1 Blowdown	57	Non	28D-VE039	BB	-	4	AO	Globe	0	0	0	C	FC	1	HS1B	-	10	No	W	No
		A		28D-VE037	BA	-	4	AO	Globe	1	0	0	C	FC	-	HS1B	-	10	No		
6	SG2 Blowdown	57	Non	28D-VE040	BB	-	4	AO	Globe	0	0	0	C	FC	1	HS1B	-	10	No	W	No
		A		28D-VE038	BA	-	4	AO	Globe	1	0	0	C	FC	-	HS1B	-	10	No		
7	SG2 Main Fdwtr	57	ESFREL	2FW-VD036	BB	440V ac	16	EB	Stop Ch	0	0	0	C	FO*	15	HS1B	-	5*	No	W	No
		A		2FW-VD037	BA	-	16	MO	Gate	0	0	0	C	FAI	15	HS1B	-	5	No		
8	SG1 Main Fdwtr	57	ESFREL	2FW-VD021	BB	440V ac	16	EB	Stop Ch	0	0	0	C	FO*	15	HS1B	-	5*	No	W	No
		A		2FW-VD022	BA	440V ac	16	MO	Gate	0	0	0	C	FAI	5	HS1B	-	5	No		
9	SG2 Main Fdwtr	57	ESFREL	2FW-VD042	BB	440V ac	16	EB	Stop Ch	0	0	0	C	FO*	15	HS1B	-	5*	No	W	No
		A		2FW-VD043	BA	440V ac	16	MO	Gate	0	0	0	C	FAI	5	HS1B	-	5	No		
10	SG1 Main Fdwtr	57	ESFREL	2FW-VD027	BB	440V ac	16	EB	Stop Ch	0	0	0	C	FO*	15	HS1B	-	5*	No	W	No
		A		2FW-VD028	BA	440V ac	16	MO	Gate	0	0	0	C	FAI	5	HS1B	-	5	No		
11	SG2 Downcomer Fdwtr & Auxiliary Fdwtr	57	ESFREL	2FW-VD038	BB	440V ac	8	EB	Gate	0	0	0	C	FAI	16	HS1B	-	5	No	W	No
		A		2FW-VD039	BA	440V ac	8	EB	Gate	0	0	0	C	FAI	13	HS1B	-	5	No		
			ESF	2AF-VE133	BB	-	6	-	Check	0	C	C	O/C	-	23	-	-	-	-	W	No
				2AF-VD036	BB	125V dc	6	MO	Globe	0	C	C	O/C	FO	27	-	AFAS	5	No		
				2AF-VE132	BA	-	6	-	Check	0	C	C	O/C	-	23	-	-	-	-		
				2AF-VD039	BA	125V dc	6	MO	Globe	0	C	C	O/C	FO	27	-	AFAS	5	No		
12	SG1 Downcomer Fdwtr & Auxiliary Fdwtr	57	ESFREL	2FW-VD023	BB	440V ac	8	EB	Gate	0	0	0	C	FAI	16	HS1B	-	5	No	W	No
		A		2FW-VD024	BA	440V ac	8	EB	Gate	0	0	0	C	FAI	13	HS1B	-	5	No		
			ESF	2AF-VE133	BB	-	6	-	Check	0	C	C	O/C	-	23	-	-	-	-	W	No
				2AF-VD040	BB	125V dc	6	MO	Globe	0	C	C	O/C	FO	27	-	AFAS	5	No		
				2AF-VE134	BA	-	6	-	Check	0	C	C	O/C	-	23	-	-	-	-		
				2AF-VD035	BA	125V dc	6	MO	Globe	0	C	C	O/C	FO	27	-	AFAS	5	No		

*Refers to hydraulic operator. Check valve feature is instantaneous.

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QUESTION 480.17

TABLE 480.17-1

CONTAINMENT ISOLATION VALVES

Valve No.	Length from Penetration (ft.)	Service	Penetration Number
2MS-VD001	31	SG1 MS Line	1
2MS-VE091	31	SG1 MS Line	1
2MS-R010	13	SG1 MS Line	1
2MS-R011	20	SG1 MS Line	1
2MS-P016	38	SG1 MS Line	1
2MS-VE055	14	SG1 MS Line	1
2MD-VE001	39	SG1 MS Line	1
2MD-VE087	42	SG1 MS Line	1
2MS-VD002	31	SG1 MS Line	2
2MS-R007	13	SG1 MS LIne	2
2MS-R008	20	SG1 MS Line	2
2MS-P012	38	SG1 MS Line	2
2MS-VE138	14	SG1 MS Line	2
2MD-VE002	39	SG1 MS Line	2
2MD-VE088	42	SG1 MS Line	2
2MS-VD003	31	SG2 MS Line	3
2MS-VE092	31	SG2 MS Line	3
2MS-R019	13	SG2 MS LIne	3
2MS-R020	20	SG2 MS Line	3
2MS-P023	38	SG2 MS Line	3
2MS-VE082	14	SG2 MS Line	3
2MD-VE003	39	SG2 MS Line	3
2MD-VE089	42	SG2 MS Line	3
2MS-VD004	31	SG2 MS Line	4
2MS-R014	13	SG2 MS LIne	4
2MS-R015	20	SG2 MS Line	4
2MS-P021	38	SG2 MS Line	4
2MS-VE140	14	SG2 MS Line	4
2MD-VE004	39	SG2 MS Line	4
2MD-VE090	42	SG2 MS Line	4
2FW-VD036	15	SG2 Main FW	7
2FW-VD021	15	SG1 Main FW	8
2FW-VD042	15	SG2 Main FW	9
2FW-VD027	15	SG1 Main FW	10

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TABLE 480.17-1 (Cont'd)

CONTAINMENT ISOLATION VALVES

Valve No.	Length from Penetration (ft.)	Service	Penetration Number
2FW-VD038	16	SG2 DWNCMR FW & Aux FW	11
2FW-VD039	13	SG2 DWNCMR FW & Aux FW	11
2AF-VE135	23	SG2 DWNCMR FW & Aux FW	11
2AF-VD036	27	SG2 DWNCMR FW & Aux FW	11
2AF-VE132	23	SG2 DWNCMR FW & Aux FW	11
2AF-VD039	27	SG2 DWNCMR FW & Aux FW	11
2FW-VD023	16	SG1 DWNCMR FW & Aux FW	12
2FW-VD024	13	SG1 DWNCMR FW & Aux FW	12
2AF-VE133	23	SG1 DWNCMR FW & Aux FW	12
2AF-VD040	27	SG1 DWNCMR FW & Aux FW	12
2AF-VE134	23	SG1 DWNCMR FW & Aux FW	12
2AF-VD035	27	SG1 DWNCMR FW & Aux FW	12
2SI-VQ019	14	HPSI Loop 2A	13
2SI-VQ020	17	HPSI Loop 2A	13
2SI-VQ016	17	HPSI Loop 2B	14
2SI-VQ017	14	HPSI Loop 2B	14
2SI-VQ013	19	HPSI Loop 1A	15
2SI-VQ014	16	HPSI Loop 1A	15
2SI-VQ008	19	HPSI Loop 1B	16
2SI-VQ009	16	HPSI Loop 1B	16
2SI-VS060	15	SHTDN COOL Suction	27
2SI-VU061	12	SHTDN COOL Suction	27
2SI-VS054	15	SHTDN COOL Suction	28
2SI-VU055	12	SHTDN COOL Suction	28

Question No.

480.18 (6.2.4) Provide a tabulation of those containment isolation valves for which provision has been made to allow them to be individually leak tested, in the correct direction.

Response

Containment Isolation Valves which have provisions for leak testing are shown on Table 480.18-1.

FSAR Figures 6.2-36b - k, m, o and p and Table 6.2.4-1 will be revised as shown.

TABLE 480.18-1

PENETRATION	VALVE	SERVICE
21	2CS-VS091	Containment Spray
21	2CS-VS037	Containment Spray
22	2CS-VS092	Containment Spray
22	2CS-VS038	Containment Spray
23	2CS-B002	Containment Spray
24	2CS-B001	Containment Spray
27	2SI-VS060	Safety Injection
27	2SI-VU061	Safety Injection
27	1SI-VP097	Safety Injection
28	2SI-VS054	Safety Injection
28	2SI-VU055	Safety Injection
28	1SI-VP091	Safety Injection
29	2SI-VQ169	Safety Injection
29	2SI-VQ115	Safety Injection
30	2CC-B522	Component Cooling
30	2CC-VH012	Component Cooling
31	2CC-B521	Component Cooling
31	2CC-VH023	Component Cooling
32	2CC-B526	Component Cooling
32	2CC-B524	Component Cooling
33	2CC-B525	Component Cooling
33	2CC-B523	Component Cooling
34	2HA-VS002	Hydrogen Analyzer
34	2HA-VS008	Hydrogen Analyzer
34	2HA-VS009	Hydrogen Analyzer
34	2HA-VS010	Hydrogen Analyzer
34	2HA-VS012	Hydrogen Analyzer
35	2HA-VS021	Hydrogen Analyzer
35	2HA-VS027	Hydrogen Analyzer
35	2HA-VS028	Hydrogen Analyzer
35	2HA-VS029	Hydrogen Analyzer
35	2HA-VS031	Hydrogen Analyzer
36	2SL-VP102	Sampling
36	2SL-VP103	Sampling
38	2IA-VE020	Instrument Air
38	2IA-VE021	Instrument Air
39	2SA-VH007	Station Air
39	2SA-VH008	Station Air
40	2CH-VP011	CVCS
40	2CH-VP077	CVCS
41	2CH-VQ040	CVCS
41	2CH-VQ064	CVCS
42	2CH-VP029	CVCS
42	2CH-VP030	CVCS
42	2DI-VS043	Dionized Water
42	2DI-VS044	Dionized Water
44	2CH-VW037	CVCS
44	2CH-VW040	CVCS

TABLE 480.18-1 (Cont'd)

PENETRATION	VALVE	SERVICE
45	2CH-VS041	CVCS
45	2CH-VS501	CVCS
46	2SI-VQ173	Safety Injection
46	1SI-VP183	Safety Injection
47	2SI-VQ172	Safety Injection
47	1SI-VP181	Safety Injection
50	2PC-VW010	Fuel Pool Cleanup
50	2PC-VW011	Fuel Pool Cleanup
51	2PC-VW008	Fuel Pool Cleanup
51	2PC-VW009	Fuel Pool Cleanup
54	2NG-VE057	Nitrogen Supply
54	2NG-VE058	Nitrogen Supply
56	2SL-VP104	Sampling
56	2SL-VP105	Sampling
56	2SL-VP106	Sampling
56	2SL-VP107	Sampling
60	2PV-B009	Plant Ventilation
60	2PV-B010	Plant Ventilation
65	2PV-B014	Plant Ventilation
65	2PV-V015	Plant Ventilation
68	2PV-B016	Plant Ventilation
68	2PV-B017	Plant Ventilation
68	2PV-B018	Plant Ventilation
70	2PV-B109	Plant Ventilation
70	2PV-B110	Plant Ventilation
73	2PV-B111	Plant Ventilation
73	2PV-B112	Plant Ventilation
73	2PV-B113	Plant Ventilation
75	2PV-B114	Plant Ventilation
75	2PV-B115	Plant Ventilation
80	2PV-B019	Plant Ventilation
80	2PV-V021	Plant Ventilation
81	2PV-B164	Plant Ventilation
81	2PV-B064	Plant Ventilation
82	2EC-B009	Chilled Water
82	2EC-B010	Chilled Water
83	2EC-B011	Chilled Water
83	2EC-B012	Chilled Water
90	2CH-VS042	CVCS
90	2CH-VS044	CVCS
90	2CH-VS047	CVCS
90	2CH-VS049	CVCS
93	2CH-VQ005	CVCS
93	2CH-VQ006	CVCS
95	2FP-VH003	Fire Protection
95	2FP-VH006	Fire Protection
96	2SD-VS126	Sump Dishcarge
96	2SD-VS127	Sump Discharge

TABLE 6.2.4-1 (Cont'd)

Penetration No.	Service	GDC Isolation Criteria	System Category	Valve No.	Electrical Division	Electrical Power	Valve Size (Inches)	Type of Valve Operator	Valve Type	Location with Respect to RB	Normal Valve Position	Shutdown Valve Position	Post-Accident Valve Position	Failure Mode	Length from Penetration (Feet)	Valve Closure Signal	Valve Open Signal	Closure Time (Seconds)	Override	Fluid	Type C Test
23	Recirc Sump B Discharge	56 B	ESF	2CS-M002	SB	440V ac	30	MO	Btfly	O	C	C	O	FAI	2	SIAS	RAS	10	Yes	W	Yes
24	Recirc Sump A Discharge	56 B	ESF	2CS-M001	SA	440V ac	30	MO	Btfly	O	C	C	O	FAI	2	SIAS	RAS	10	Yes	W	Yes
25	Fire Protection (Sprinklers)	56 C	NON	2FP-VM007	SB	440V ac	4	MO	Gate	O	O	C	C	FAI	1	CIAS	-	10	No	W	Yes
				2FP-VM004	SB		4		Check	I	C	C	C		-	-	-	-	-		
26	SG1 Sample	57 A	NON	2BD-VB035	SB	-	1	AO	Globe	O	O	O	C	FC	3	MSIS	-	10	No	W	No
				2BD-VB033	SA	-	1	AO	Globe	I	O	O	C	FC	-	MSIS	-	10	No		
26	SG1 Sample	57 A	NON	2BD-VB091	SB	-	1	AO	Globe	O	O	O	C	FC	3	MSIS	-	10	No	W	No
				2BD-VB089	SA	-	1	AO	Globe	I	O	O	C	FC	-	MSIS	-	10	No		
26	SG2 Sample	57 A	NON	2BD-VB092	SB	-	1	AO	Globe	O	O	O	C	FC	1	MSIS	-	10	No	W	No
				2BD-VB090	SA	-	1	AO	Globe	I	O	O	C	FC	-	MSIS	-	10	No		
26	SG2 Sample	57 A	NON	2BD-VB036	SB	-	1	AO	Globe	O	O	O	C	FC	1	MSIS	-	10	No	W	No
				2BD-VB034	SA	-	1	AO	Globe	I	O	O	C	FC	-	MSIS	-	10	No		
27	Shutdown Cool. Suction	55 B	ESF	2SI-VB060	SB	440V ac	10	MO	Globe	O	C	O	C	FAI	15	RM	RM	10	-	W	No
				2SI-VU061	SB	440V ac	16	MO	Gate	O	C	O	C	FAI	12	RM	RM	10	-		
				1SI-VP097	SB	440V ac	16	EM	Gate	I	C	O	C	FAI	-	-	-	-	-		
				2SI-R006	SA/SB	-	4	Spr	Relief	I	C	C	C	-	-	-	-	-	-		
				2SI-R033	SA/SB	-	4	Spr	Relief	I	C	C	C	-	-	-	-	-	-		
				2SI-R034	SA/SB	-	4	Spr	Relief	I	C	C	C	-	-	-	-	-	-		
28	Shutdown Cool. Suction	55 B	ESF	2SI-VB054	SA	440V ac	10	MO	Globe	O	C	O	C	FAI	15	RM	RM	10	-	W	No
				2SI-VU055	SA	440V ac	16	MO	Gate	O	C	O	C	FAI	12	RM	RM	10	-		
				1SI-VP091	SA	440V ac	16	EM	Gate	I	C	O	C	FAI	-	RM	RM	10	-		
				2SI-R009	SA/SB	-	4	Spr	Relief	I	C	C	C	-	-	-	-	-	-		
				2SI-R036	SA/SB	-	4	Spr	Relief	I	C	C	C	-	-	-	-	-	-		
				2SI-R037	SA/SB	-	4	Spr	Relief	I	C	C	C	-	-	-	-	-	-		

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TABLE 6.2.4-1 (Cont'd)

Penetration No.	Service	GDC Isolation Criteria	System Category	Valve No.	Electrical Division	Electrical Power	Valve Size (Inches)	Type of Valve Operator	Valve Type	Location with Respect to RB	Normal Valve Position	Shutdown Valve Position	Post-Accident Valve Position	Failure Mode	Length from Penetration (Feet)	Valve Closure Signal	Valve Open Signal	Closure Time (Seconds)	Override	Fluid	Type C Test
29	SIT Fill & Drain	56	NON	2SI-V0169	8A/8B	-	2	MU	Globe	O	LC	LC	LC	-	1	M	M	-	-	W	Yes
		B		2SI-V0115	8A	-	2	AO	Globe	I	C	C	C	FC	-	SIAS	-	5	Yes		
				2SI-R016	8A/8B	-	3/4	Rpr	Relief	I	C	C	C	-	-	-	-	-	-		
30	Cooling Water to	56	ESFREL	2CC-B522	8B	440V ac	8	MO	Btfly	O	O	O	C	FAI	2	CIAS	-	10	Yes	W	Yes
	RCP 2A and 2B	C		2CC-V8012	8A/8B	-	8	-	Check	I	O	O	C	-	-	-	-	-	-		
31	Cooling Water to	56	ESFREL	2CC-B521	8B	440V ac	8	MO	Btfly	O	O	O	C	FAI	2	CIAS	-	10	Yes	W	Yes
	RCP 1A and 1B	C		2CC-V8023	8A/8B	-	8	-	Check	I	O	O	C	-	-	-	-	-	-		
32	Cooling Water from	56	ESFREL	2CC-B526	8B	440V ac	10	MO	Btfly	O	O	O	C	FAI	2	CIAS	-	10	Yes	W	Yes
	RCP 2A and 2B	C		2CC-B534	8A	440V ac	10	MO	Btfly	I	O	O	C	FAI	-	CIAS	-	10	Yes		
33	Cooling Water from	56	ESFREL	2CC-B525	8B	440V ac	10	MO	Btfly	O	O	O	C	FAI	4	CIAS	-	10	Yes	W	Yes
	RCP 1A and 1B	C		2CC-B523	8A	440V ac	10	MO	Btfly	I	O	O	C	FAI	-	CIAS	-	10	Yes		
34	Hydrogen Analyzer	56	ESF	2HA-V8009	8A	125V dc	3/8	SO	Globe	O	C	C	O	FC		RM	RM	5	-	A	Yes
	Suction	B		2HA-V8008	8A	125V dc	3/8	SO	Globe	I	C	C	O	FC	-	RM	RM	5	-	A	
				2HA-V8002	8A	125V dc	3/8	SO	Globe	O	C	C	O	FC		RM	RM	5	-	A	
34	Hydrogen Analyzer	56	ESF	2HA-V8010	8A	125V dc	3/8	SO	Globe	O	C	C	O	FC		RM	RM	5	-	A	Yes
	Return	B		2HA-V8012	8A	125V dc	3/8	-	Check	I	C	C	O	-	-	RM	RM	-	-		
35	Hydrogen Analyzer	56	ESF	2HA-V8028	8B	125V dc	3/8	SO	Globe	O	C	C	O	FC		RM	RM	5	-	A	Yes
	Suction	B		2HA-V8027	8B	125V dc	3/8	SO	Globe	I	C	C	O	FC	-	RM	RM	5	-	A	
				2HA-V5031	8B	125V dc	3/8	SO	Globe	O	C	C	O	FC		RM	RM	5	-	A	
35	Hydrogen Analyzer	56	ESF	2HA-V8029	8B	125V dc	3/8	SO	Globe	O	C	C	O	FC		RM	RM	5	-	A	Yes
	Return	B		2HA-V8031	8B	-	3/8	-	Check	I	C	C	O	-	-	-	RM	-	-		
36	Chem Feed to SG's	57	NON	2CF-V0001	8B	-	1	AO	Globe	O	O	O	C	FC	3	MSIS	-	10	No	W	Yes
		A		2CF-V0002	8A	-	1	AO	Globe	I	O	O	C	FC	-	MSIS	-	10	No		
36	Pre-Surge Line	57	NON	2RL-V8103	8B	-	3/8	AO	Globe	O	C	C	C	FC	2	CIAS	-	5	No	W	Yes
	Sample	C		2RL-V8102	8A	-	3/8	AO	Globe	I	C	C	C	FC	-	CIAS	-	5	No		

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TABLE 6.2.4-1 (Cont'd)

Penetration No.	Service	GDC Isolation Criteria	System Category	Valve No.	Electrical Division	Electrical Power	Valve Size (Inches)	Type of Valve Operator	Valve Type	Location with Respect to RB	Normal Valve Position	Shutdown Valve Position	Post-Accident Valve Position	Failure Mode	Length from Penetration (Feet)	Valve Closure Signal	Valve Open Signal	Closure Time (Seconds)	Override	Fluid	Type C Test
55	Spare Penetration	-	-																		
56	RC Hot Leg Sample	55 C	NON	2SL-VP101 (107)	5B	125V dc	3/8	SO	Globe	O I	C C	C C	C C	FC FC	2 -	CIAS CIAS	- -	5 5	No No	W	Yes
56	PZR Steam Space Sample	55 C	NON	2SL-VP105 2SL-VP104 (106)	5A	- -	3/8 3/8	AO AO	Globe Globe	O I	C C	C C	C C	FC FC	2 -	CIAS CIAS	- -	5 5	No No	S	Yes
57	Post-accident Sampling (liquid) return	56 B	ESF	2SL-V8176 2SL-V8178	5B	125V dc -	1 1	SO -	Globe Check	O I	C C	C C	O O	LATER -	- -		- -	5 5	No No	W	No
57	Post-accident Sampling (gas) return	56 B	ESF	2SL-V8177 2SL-V8179	5B	125V dc -	1 1	SO -	Globe Check	O I	C C	C C	O O	LATER -	- -		- -	5 -	No -	A	No
58	Spare Penetration	-	-																		
59	Spare Penetration	-	-																		
60	Hydrogen Purge Exhaust	56 C	ESFREL	2PV-8009 2PV-8010	5B 5A	440V ac 440V ac	8 8	MO MO	Btfly Btfly	O I	C C	C C	C C	FAI FAI	5 -	CIAS CIAS	- -	10 10	No No	A	Yes
61	Shield Bldg Vent Supply	5B	ESF	2PV-8025	5A	440V ac	30	MO	Btfly	O	C	C	O	FAI	2	-	HP	10	No	A	No
62	Shield Bldg Vent Exhaust	5B	ESF	2PV-8001	5A	440V ac	30	MO	Btfly	O	C	C	O	FAI	2		HP	10	No	A	No
63	Spare Penetration	-	-																		
65	RB Vacuum Relief	56 C	NON	2PV-8014 2PV-V015	5A 5A	440V ac -	42 42	MO -	Btfly Check	O I	C C	C C	C C	FAI -	3 -	- -	HV -	10 -	No -	A	Yes
66	SB Vacuum Maint	5B	NON	2PV-8023 2PV-8024	5B 5A	- -	10 10	AO AO	Btfly Btfly	O O	O O	O O	C C	FC FC	1 4	CIAS CIAS	- -	5 5	No No	A	No

 RAI 212.18 SRP 6.2.4

TABLE 6.2.4-1 (Cont'd)

Penetration No.	Service	CDC Isolation Criteria	System Category	Valve No.	Electrical Division	Electrical Power	Valve Size (Inches)	Type of Valve Operator	Valve Type	Location with Respect to RB	Normal Valve Position	Shutdown Valve Position	Post-Accident Valve Position	Failure Mode	Length from Penetration (Feet)	Valve Closure Signal	Valve Open Signal	Closure Time (Seconds)	Override	Fluid	Type C Test
90	Nitrogen from RC Drain Tank	56	NON	2CH-VS042	SB	-	1-1/4	AO	Globe	O	O	O	C	FC	7	CIAS	-	5	No	G	Yes
		C		2CH-VS044	SA	-	1-1/4	AO	Globe	I	O	O	C	FC	-	CIAS	-	5	No		
90	Nitrogen from RC Drain Tank	56	NON	2CH-VS047	SB	-	1-1/4	AO	Globe	O	O	O	C	FC	2	CIAS	-	5	No	G	Yes
		C		2CH-VS049	SA	-	1-1/4	AO	Globe	I	O	O	C	FC	-	CIAS	-	5	No		
91	SG2 Sample	57	NON	2SD-VS080	SB	-	1	AO	Globe	O	O	O	C	FC	1	MSIS	-	10	No	W	No
		A		2SD-VS078	SA	-	1	AO	Globe	I	O	O	C	FC	-	MSIS	-	10	No		
92	Fire Protection (Header)	56	NON	2FP-VS005	SB	440V ac	4	MO	Gate	O	O	O	C	FAI	1	CIAS	-	10	No	W	Yes
	Spare	C		2FP-VH002	SB	-	4	-	Check	I	C	C	C	-	-	-	-	-	No		
93	RCP Seal Inj	55		2CH-VQ005	SB	440V ac	1-1/2	MO	Globe	O	O	O	O/C	FAI	1	RH	RH	5	-	W	Yes
		C	ESFREL	2CH-VQ006	SB	-	1-1/2	-		I	O	O	O/C	-	-	-	-	-			
94	Spare Penetration	-	-																		
95	Fire Protection (Header)	56		2FP-VH006	SB	440V ac	4	MO	Globe	O	O	O	C	FAI	1	CIAS	-	10	No	W	Yes
		C	NON	2FP-VH003	SB	-	4	-	Check	I	C	C	C	-	-	-	-	-	No		
96	RB Sump Pump Discharge	56		2SD-VS127	SB	-	2	AO	Globe	O	O	O	C	FC	2	CIAS	-	10	No	W	Yes
		C	NON	2SD-VS126	SA	-	2	AO	Globe	I	O	O	C	FC	-	CIAS	-	10	No		
97	Station Air to Shield Bldg	SB	NON	2SA-VE017	SA/SB	-	1	HV	Globe	O		LC	LC	-	1	M	M	-	-		
98	Spare Penetration	-	-																		
99	Spare Penetration	-	-																		
200, 201, 202, 203	Main Steam to Aux Feedwater System	SB	ESF	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
204, 205 206, 207	Aux Feedwater Pumps to Feedwater System	SB	ESF	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
208	H_2 Analyzer Suct.	SB	ESF	2HA-VS002	SA	125V dc	3/8	SO	Globe	O	C	C	O/C	FC		RH	RH	5	-	A	NA
209	H_2 Analyzer Suct.	SB	ESF	2HA-VS021	SB	125V dc	3/8	SO	Globe	O	C	C	O/C	FC		RH	RH	5	-	A	NA
210	Spare Penetration	SB	-	-			-	-		-	-	-	-	-	-	-	-	-	-	-	-
211	Spare Penetration	SB	-	-			-	-		-	-	-	-	-	-	-	-	-	-	-	-

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Figures 6.2-36 through 6.2-36r and Figures 3.8.2-1 through 5 show the various piping and electrical penetrations, respectively. Mechanical and electrical penetrations that will not be subject to Type B tests are those that rely on welds for sealing and are designed such that the penetrations are subject to the Integrated Leak Rate Test conditions. Leakage from those penetrations will be included in the overall leak rate measured during the Type A test. Test of the personnel access lock after each entry under some conditions is described below. 2

6.2.6.3 Containment Isolation Valve Leak Rate Test

Table 6.2.4-1 also provides a listing of all containment isolation valves and identifies those that require and those that are exempt from leak rate test Type C. Type C leak testing is performed as for Type B leak testing described in Subsection 6.2.6.2a or b.

Type C Leak test should be completed prior to Type A tests. In the event that a Type C test is not completed prior to the Type A test, any Type C penetration path test leakage not accounted for in the Type A test shall be added to the measured leakage determined by the Type A test.

Figures 6.2-36 through 6.2-36r show the ~~arrangement to be provided for testing of containment isolation valves subject to Type C testing along with the direction of pressurization to be used for the test~~. Type C tests are performed by local pressurization. Each valve to be tested shall be closed by normal operation without any preliminary exercising or adjustments and pressurized to not less than the peak accident pressure of 39.4 psig. in the correct direction

The combined leakage of penetrations and valves subject to Type B and C testing shall be less than 0.60 of La.

6.2.6.4 Scheduling and Reporting of Periodic Tests

The Type A, B and C leakage tests will be completed prior to any reactor operating period. After the initial preoperational leak testing, periodic tests shall be performed in accordance with the following schedule:

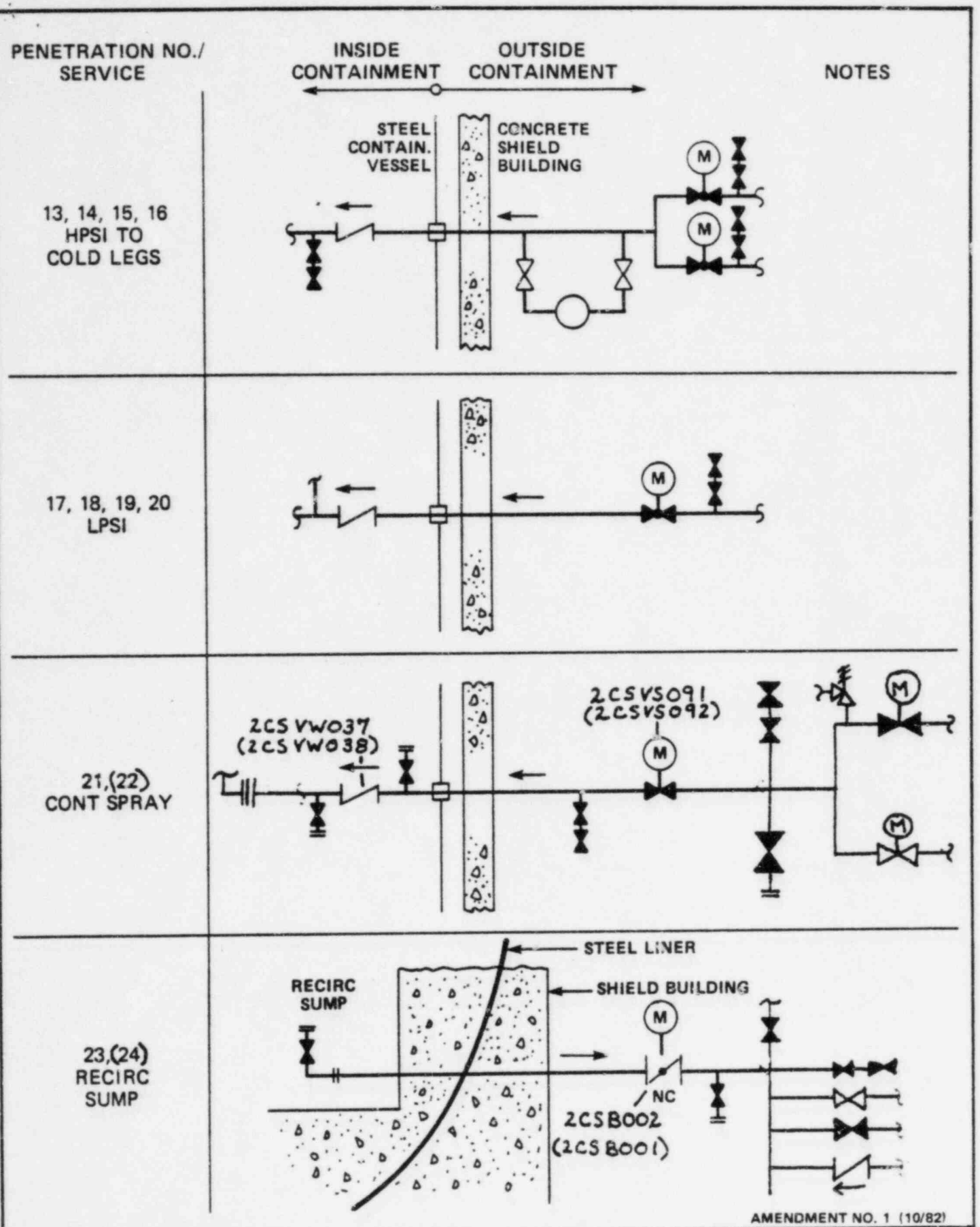
a) A set of three Type A tests shall be performed at approximately equal intervals during each 10 year service period. The third test of each set shall be conducted when the plant is shut down for the 10 year plant in-service inspection.

b) Type B tests shall be performed during each reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than two years. Air locks shall be tested at six monnth intervals. Air locks which are opened during such intervals shall be tested after each opening.

c) Type C tests shall be performed during each reactor shutdown for refueling, but in no case at an interval greater than two years.

Containment isolation valve arrangements and indicate those valves for which test provisions have been provided for individual leak testing.

by tag number



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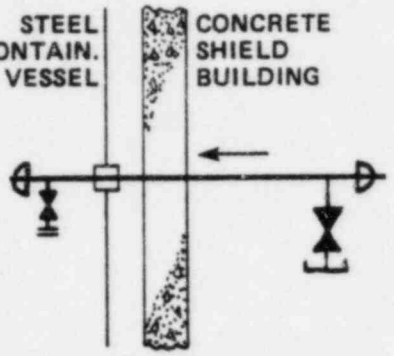
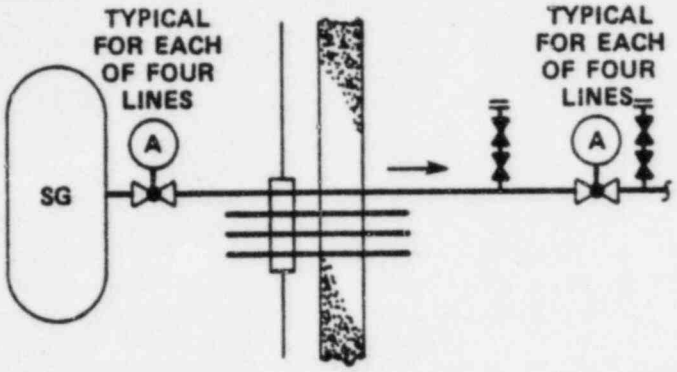
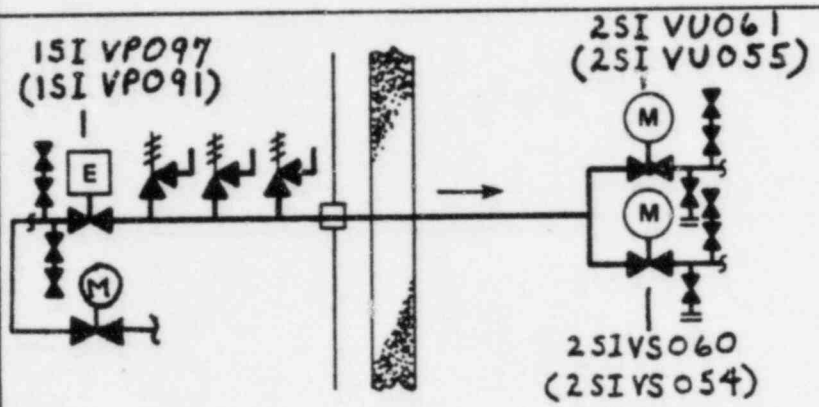
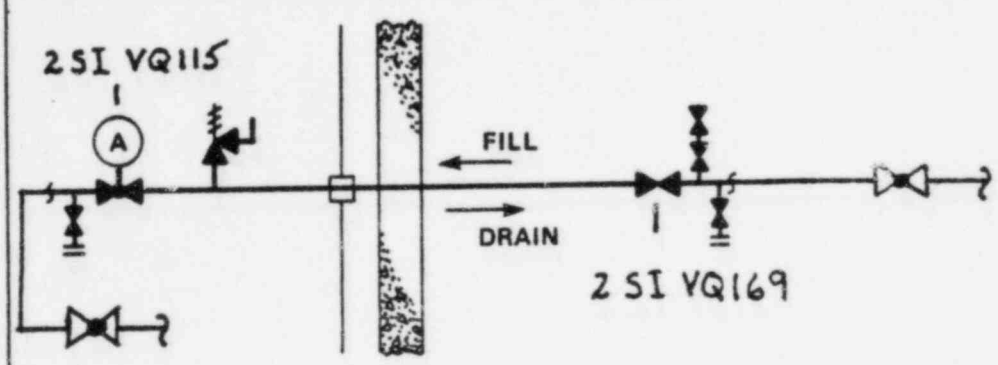
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SUN577	FIGURE 6.2-36b

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
~~25 (92 AND 95)~~ & 92 FIRE PROTECTION		
26 SG SAMPLE		
27,(28) SHUTDOWN COOLING		
29 SIT FILL & DRAIN		

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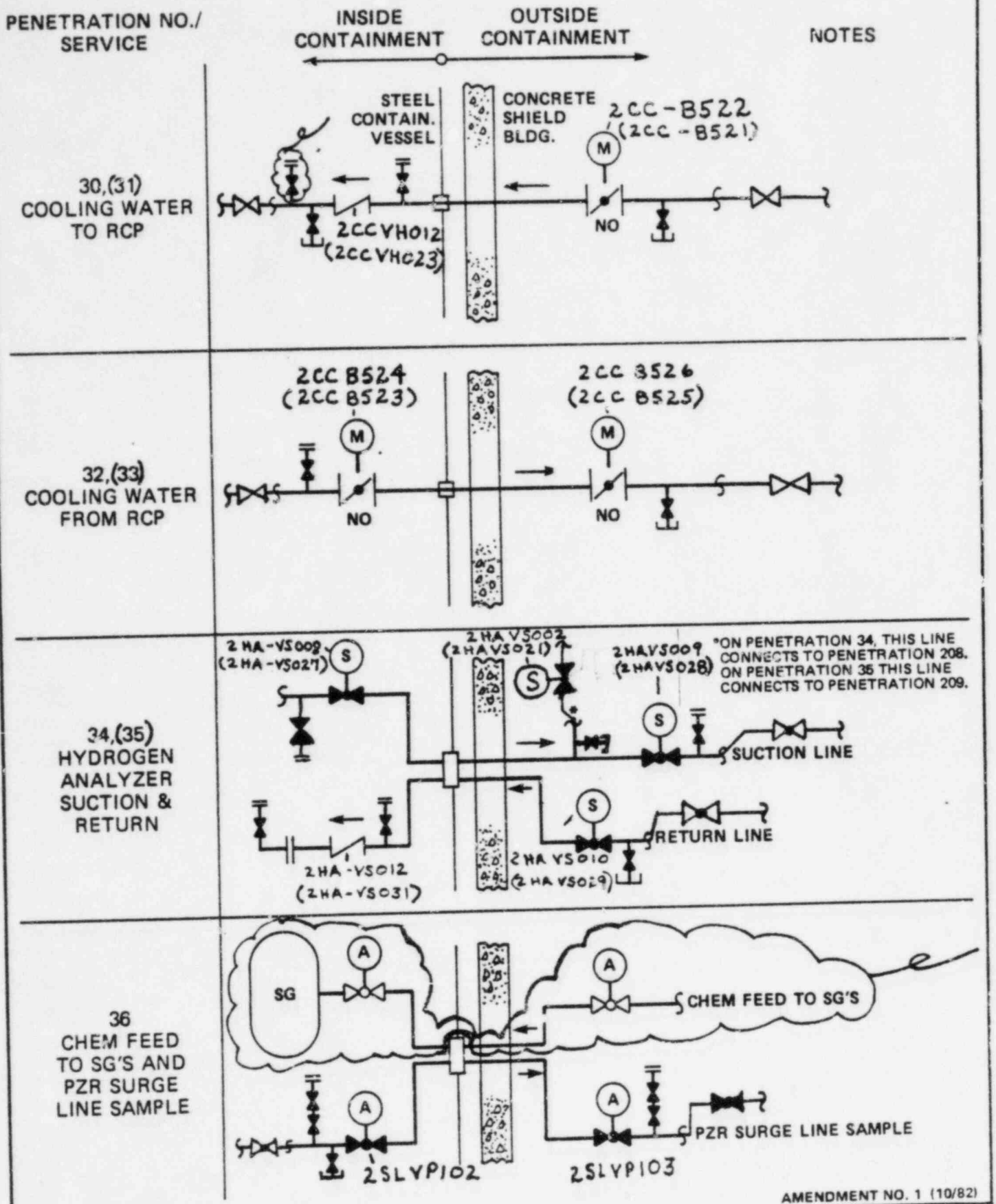
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN 577	FIGURE 6.2-36c



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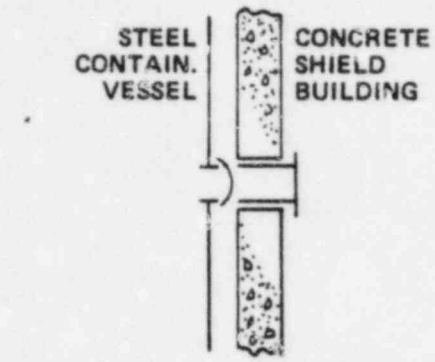
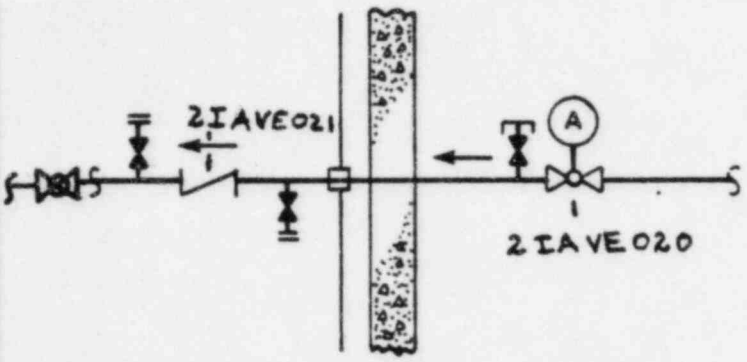
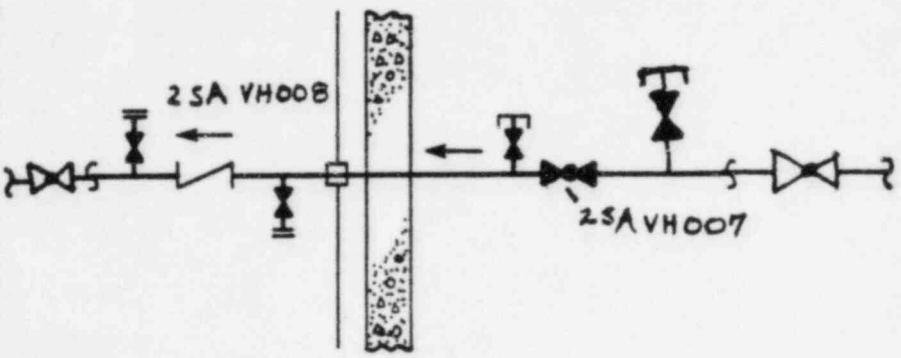
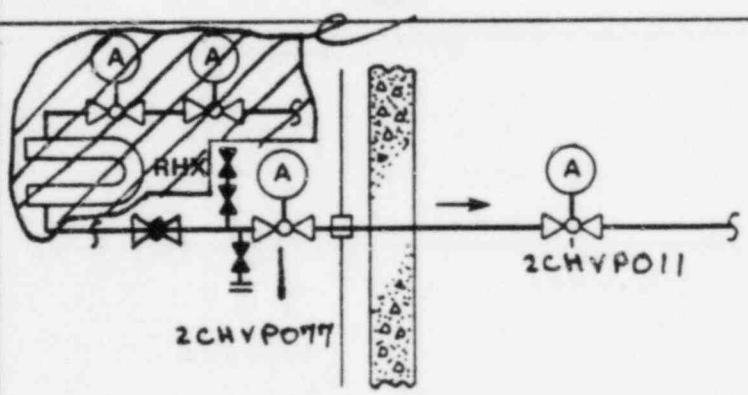
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN577	FIGURE 6.2-36d

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
37 SPARE		
38 INSTRUMENT AND CONTROL AIR		
39 SERVICE AIR		
40 LETDOWN LINE		

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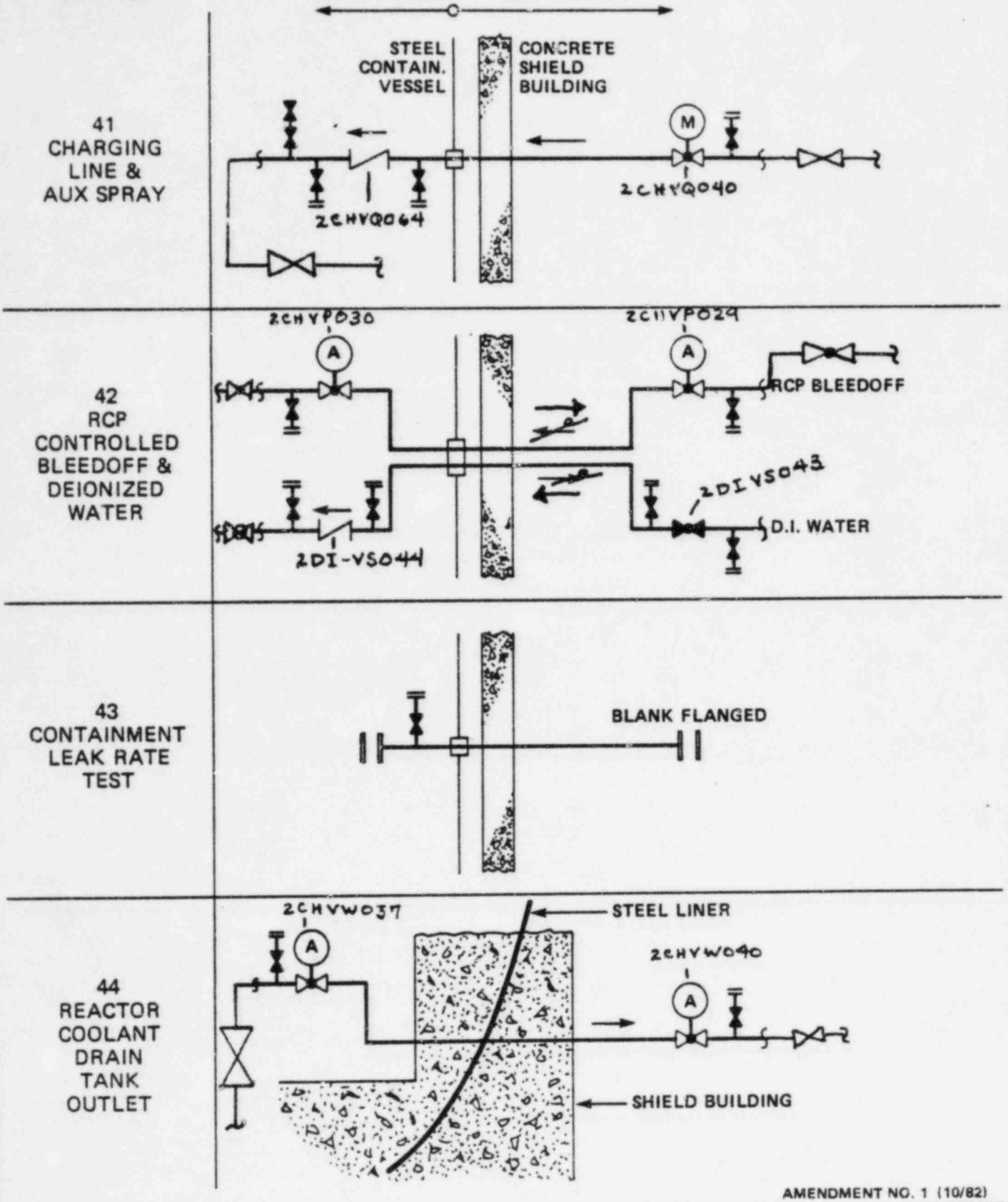
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN577	FIGURE 6.2-36e



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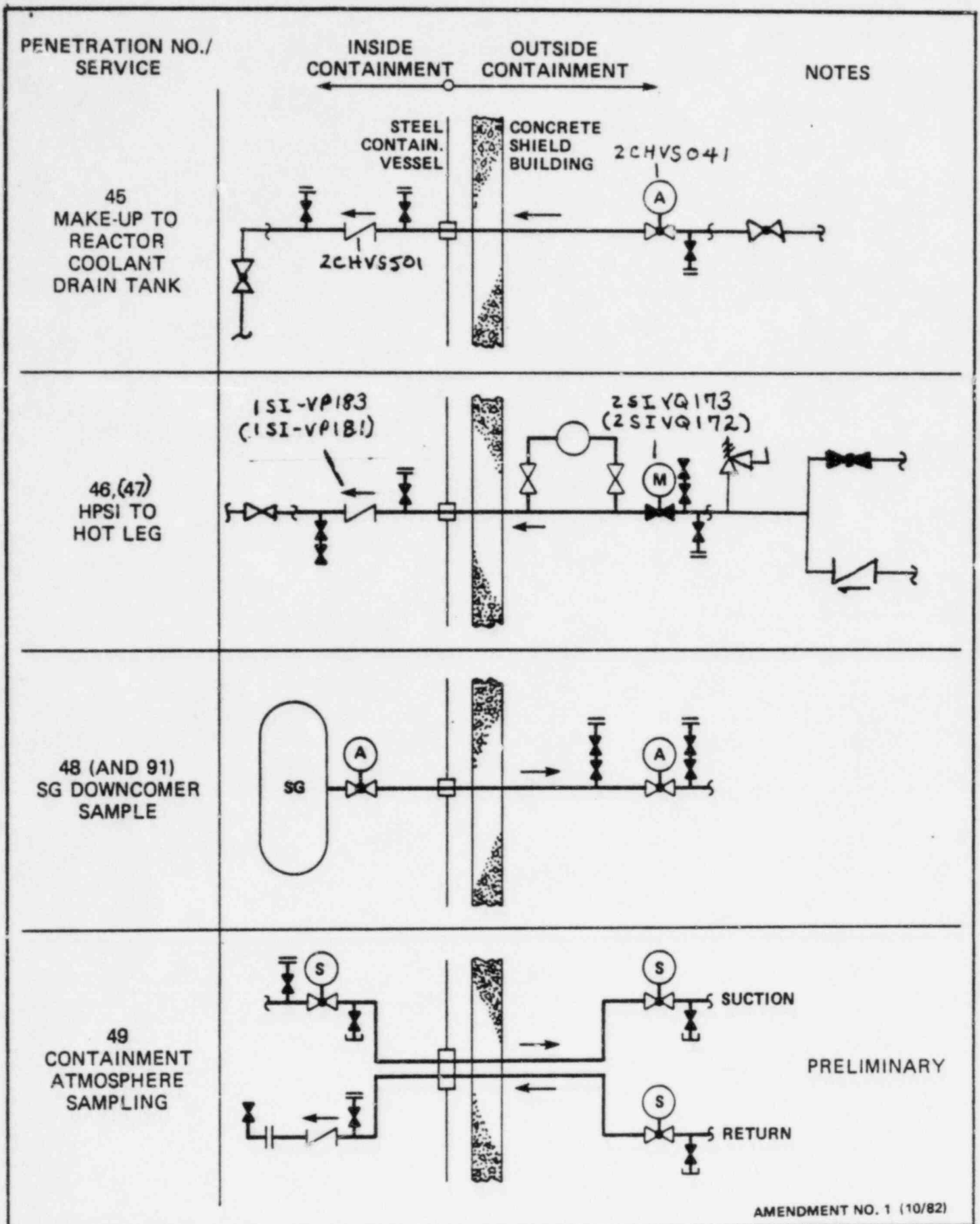
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q 480.18 SCN577	FIGURE 6.2-36f



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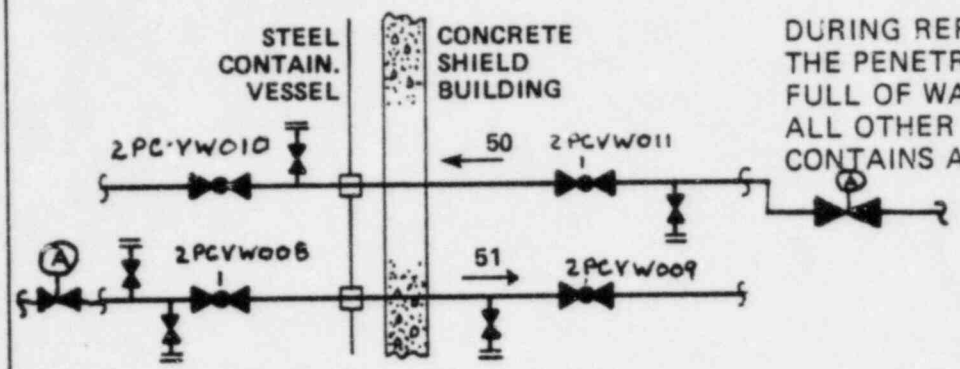
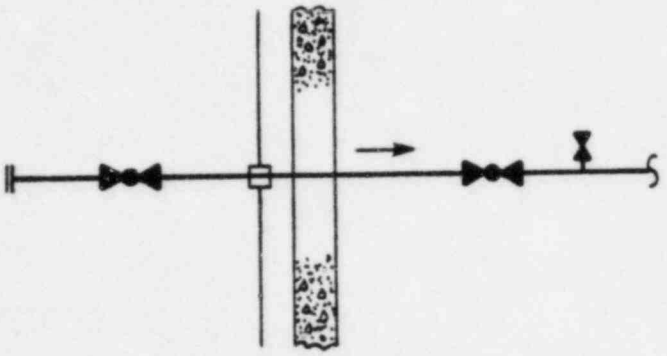
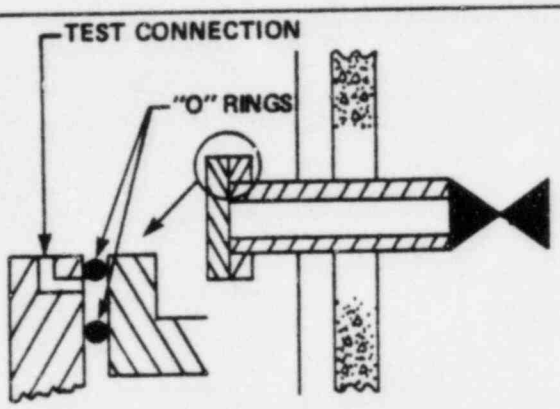
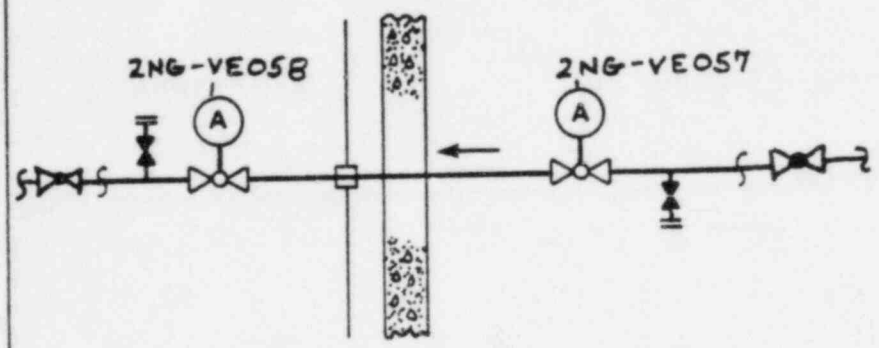
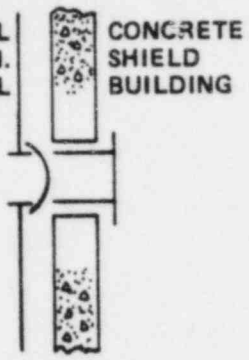
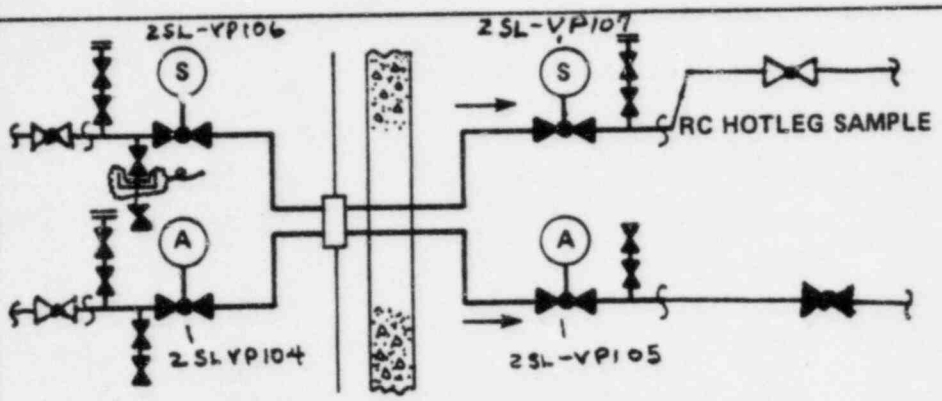
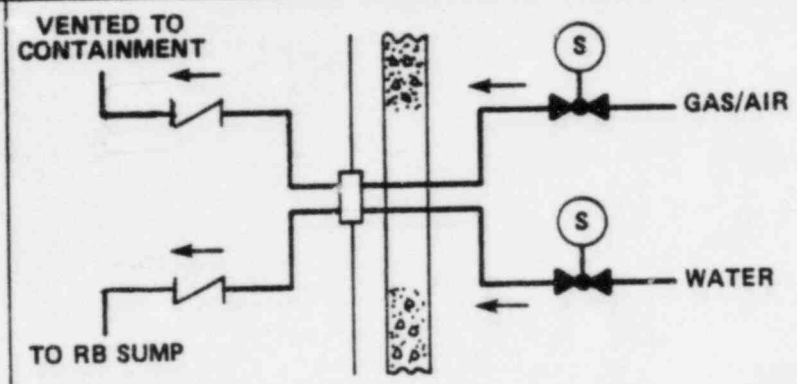
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q 480.18 SCHS77	FIGURE 6.2-36g

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
50 REFUELING CAVITY PURIF. SUPPLY 51 REFUELING CAVITY PURIF. RETURN		DURING REFUELING THE PENETRATION IS FULL OF WATER. AT ALL OTHER TIMES, IT CONTAINS AIR.
52 FAILED FUEL DETECTOR		DURING REFUELING THE PENETRATION MAY CONTAIN GAS. AT ALL OTHER TIMES, IT CONTAINS AIR.
53 FUEL TRANSFER CANAL		SEE NOTE FOR PENETRATION 50, 51.
54 NITROGEN SUPPLY		

AMENDMENT NO. 1 (10/82)

WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SLNS77	FIGURE 6.2-36h

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
55 SPARE		
56 RC HOT LEG SAMPLE, PRESSURIZER STEAM SPACE SAMPLE		
57 POST-ACCIDENT SAMPLING RETURNS		
58 SPARE		

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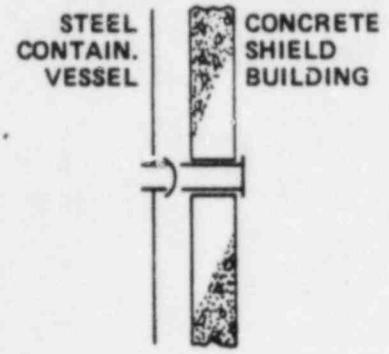
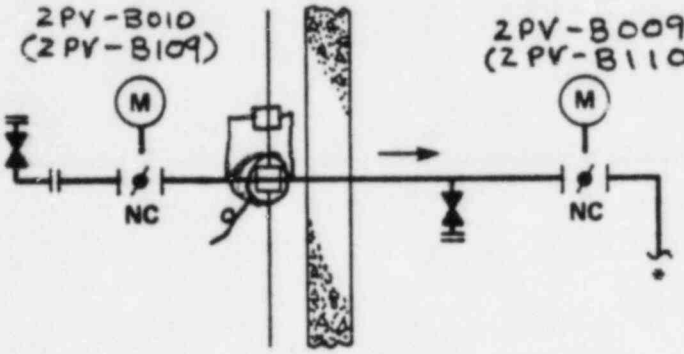
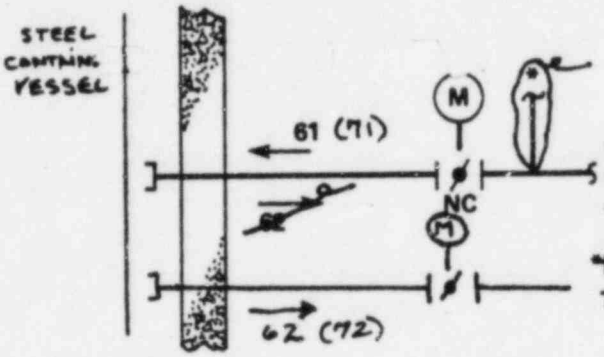
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN 577	FIGURE 6.2-36i

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
59 SPARE		
60 (AND 70) HYDROGEN PURGE EXHAUST		*PENETRATION 60 CONNECTS TO PENETRATION 62. PENETRATION 70 CONNECTS TO PENETRATION 72.
61 (AND 71) SHIELD BLDG SUPPLY 62 (AND 72) SHIELD BLDG EXHAUST		~~*PENETRATION 62 AND 72 ONLY.~~
63 SPARE		DOES NOT HAVE A SHIELD BUILDING PENETRATION.

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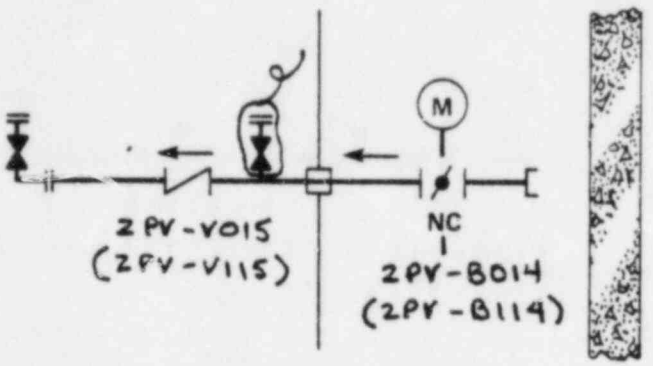
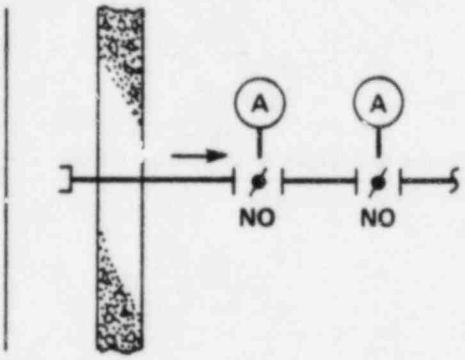
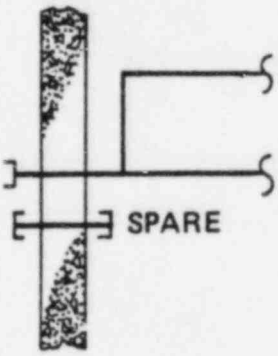
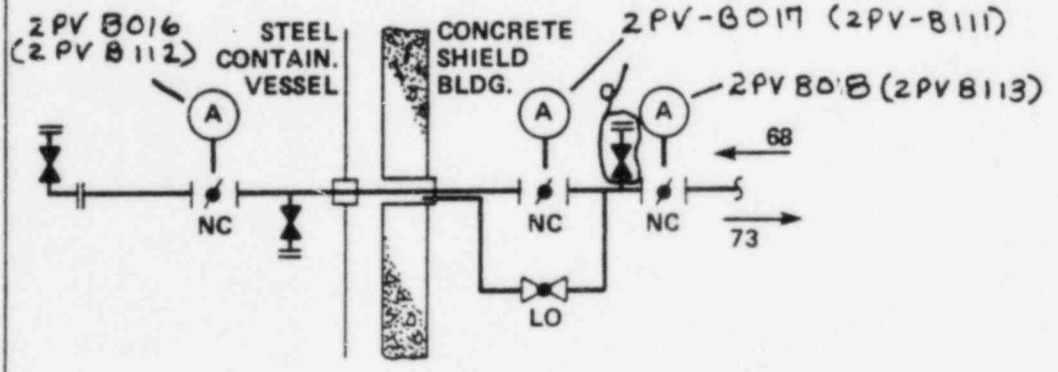
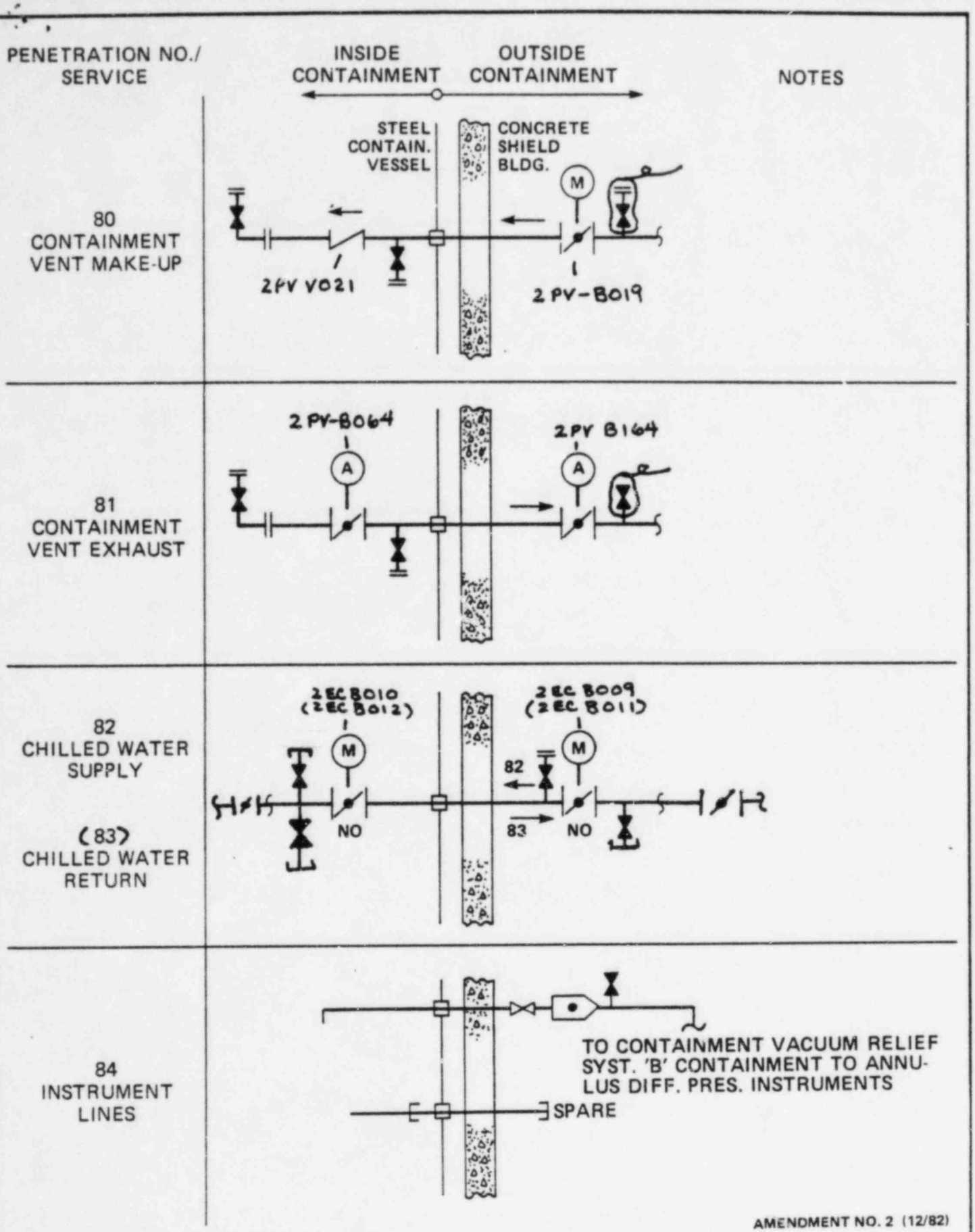
WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN577	FIGURE 6.2-36

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
65 (AND 75) RB VACUUM RELIEF		
66 (AND 76) SB VACUUM MAINTENANCE		
67 INSTRUMENT LINES		TO CONTAINMENT VACUUM RELIEF SYST. 'A' CONTAINMENT TO ANNULUS DIFF. PRES. INSTRUMENTS TO SHIELD BLDG VENT SYST 'A' ANNULUS TO OUTSIDE RAB DIFF. PRES. INSTRUMENTS
68 RB PURGE SUPPLY 73 RB PURGE EXHAUST		

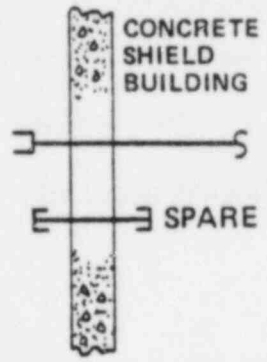
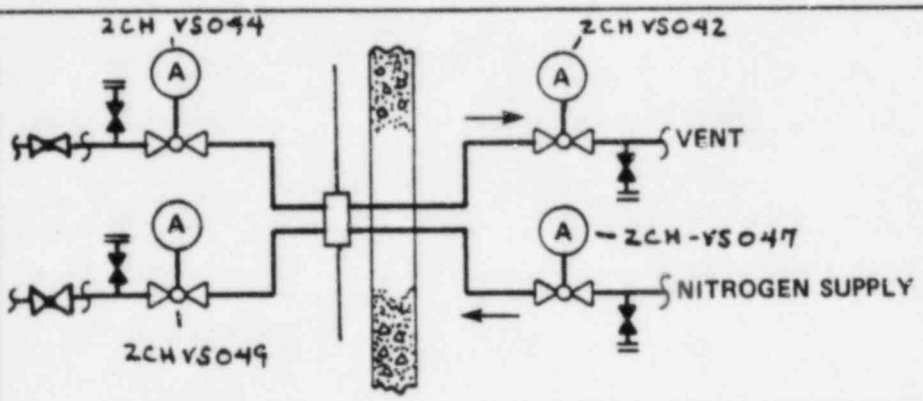
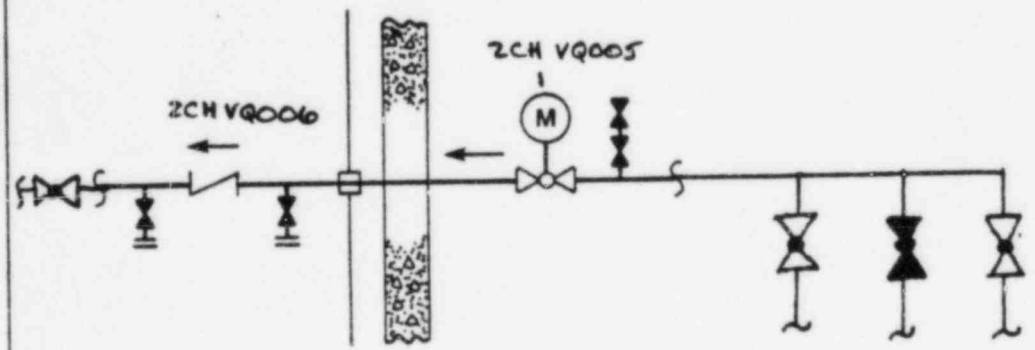
AMENDMENT NO. 2 (12/82)

WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN 577	FIGURE 6.2-36k



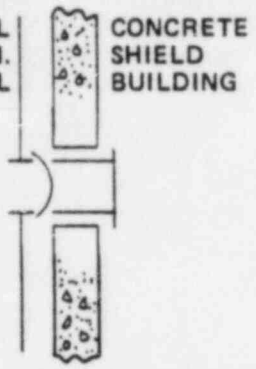
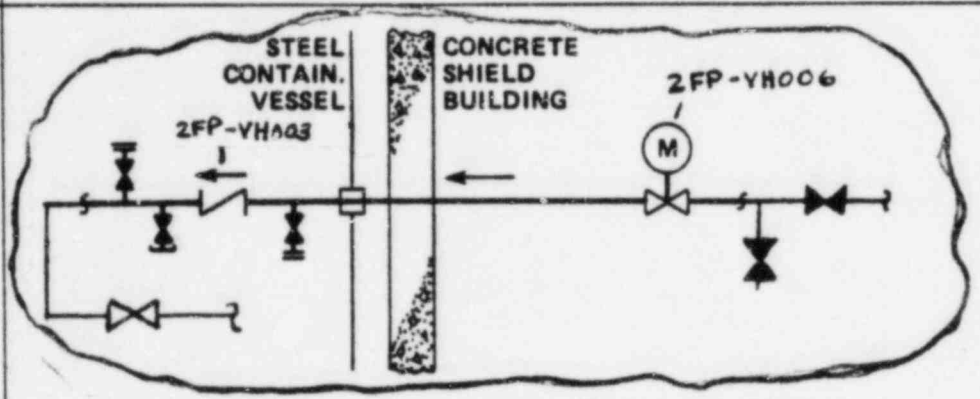
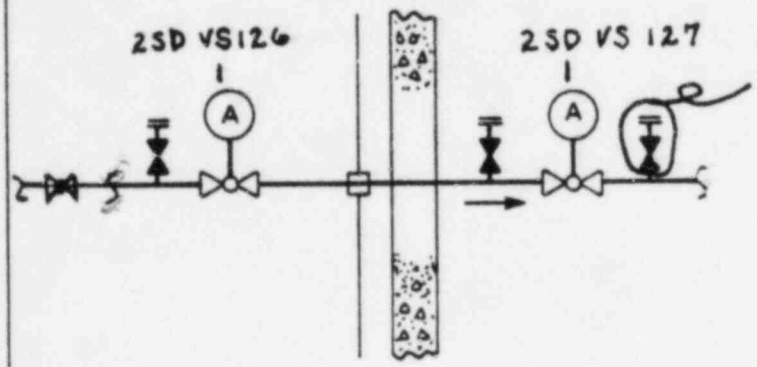
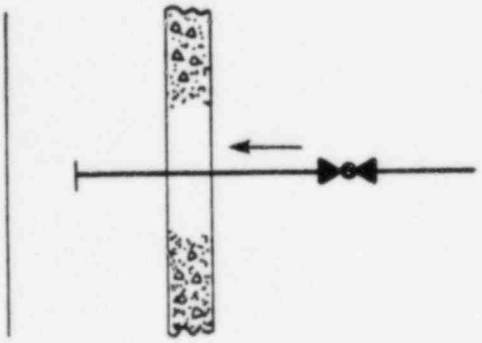
AMENDMENT NO. 2 (12/82)

WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN 577	FIGURE 6.2-36m

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
89 INSTRUMENT LINES		TO SB ANNULUS VACUUM MAINTAINANCE SYST. 'B' - ANNULUS TO OUTSIDE RAB DIFF. PRES. INSTRUMENTS
90 REACTOR DRAIN TANK VENT, AND REACTOR DRAIN TANK NITROGEN SUPPLY		
91	SEE PENETRATION 48	
92	SEE PENETRATION 25	
93 SEAL INJECTION HEADER		

AMENDMENT NO. 2 (12/82)

WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q450.18 SCN577	FIGURE 6.2-36o

PENETRATION NO./ SERVICE	INSIDE CONTAINMENT / OUTSIDE CONTAINMENT	NOTES
94 SPARE		
95 FIRE Protection		
96 RB SUMP PUMP DISCHARGE		
97 STATION AIR TO SHIELD BLDG.		

AMENDMENT NO. 1 (10/82)

WASHINGTON PUBLIC POWER SUPPLY SYSTEM Nuclear Projects 3 & 5 FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES ARRANGEMENT Q480.18 SCN577	FIGURE 6.2-36p

Question No.

480.21 (6.2.5) Section 6.2.5.2.1 states that manual operator action from the control room is required to actuate the containment hydrogen analyzers. Discuss and justify the emergency procedures that will alert an operator of the need to actuate the hydrogen analyzers.

Response

The WNP-3 Emergency Procedures have not yet been fully developed. These procedures will, however, be based on the guidance of CEN-152 "Combustion Engineering Emergency Procedure Guidelines", which include discussions on containment combustible gas control. The subject CE guidelines have received an SER, per NRC letter dated July 29, 1983; D. G. Eisenhut to R. G. Wells of CE Owners Group; Safety Evaluation of "Emergency Procedure Guidelines".