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RECIP. NAME RECIPIENT AFFILIATION
RUBENSTEIN, L. S. PWR Project Directorate 2

SUBJECT: Forwards response to Reg Guide 1.97, Item 3.3.3 re containment isolation & motor-operated valves. Annotated figures showing redundant valve functions encl.

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NLS-86-396

OCT 20 1986

Director of Nuclear Reactor Regulation
Attention: Mr. Lester S. Rubenstein, Director
PWR Project Directorate #2
Division of PWR Licensing - A
United States Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
SUPPLEMENTAL RESPONSE TO REGULATORY GUIDE 1.97 INTERIM REPORT

Dear Sir:

On July 28, 1986, Carolina Power & Light Company provided a response to the Interim Report on Regulatory Guide 1.97 (R.G. 1.97) compliance transmitted by your April 24, 1986 letter. Our July 28, 1986 letter deferred our response to Item 3.3.3 in the Interim Report. This letter transmits the deferred response.

Questions regarding this matter may be referred to Mr. R. W. Prunty at (919) 836-7318.

Yours very truly,

S. D. Floyd for

S. R. Zimmerman
Manager
Nuclear Licensing Section

JSK/bmc (5031JSK)

Attachment

cc: Dr. J. Nelson Grace (NRC-RII)
Mr. G. Requa (NRC)
Mr. H. Krug (NRC Resident Inspector - RNP)

411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

A003
1/1

Response to R.G. 1.97 Interim Report

Item 3.3.3

NRC Concern:

"...a single power source for the indication of the position of both valves is unacceptable and does not satisfy the single failure criteria. We assume that of the two valves identified in Table B of the response that are powered by the same power source, one valve is located inside containment, and the other valve is located outside containment. If this is the case, there is no redundancy, and failure of the single power source fails the indication for both valves. The license should provide specific information on the valve functions and clarification of the power supply configuration. The lack of independent power sources is unacceptable."

Response:

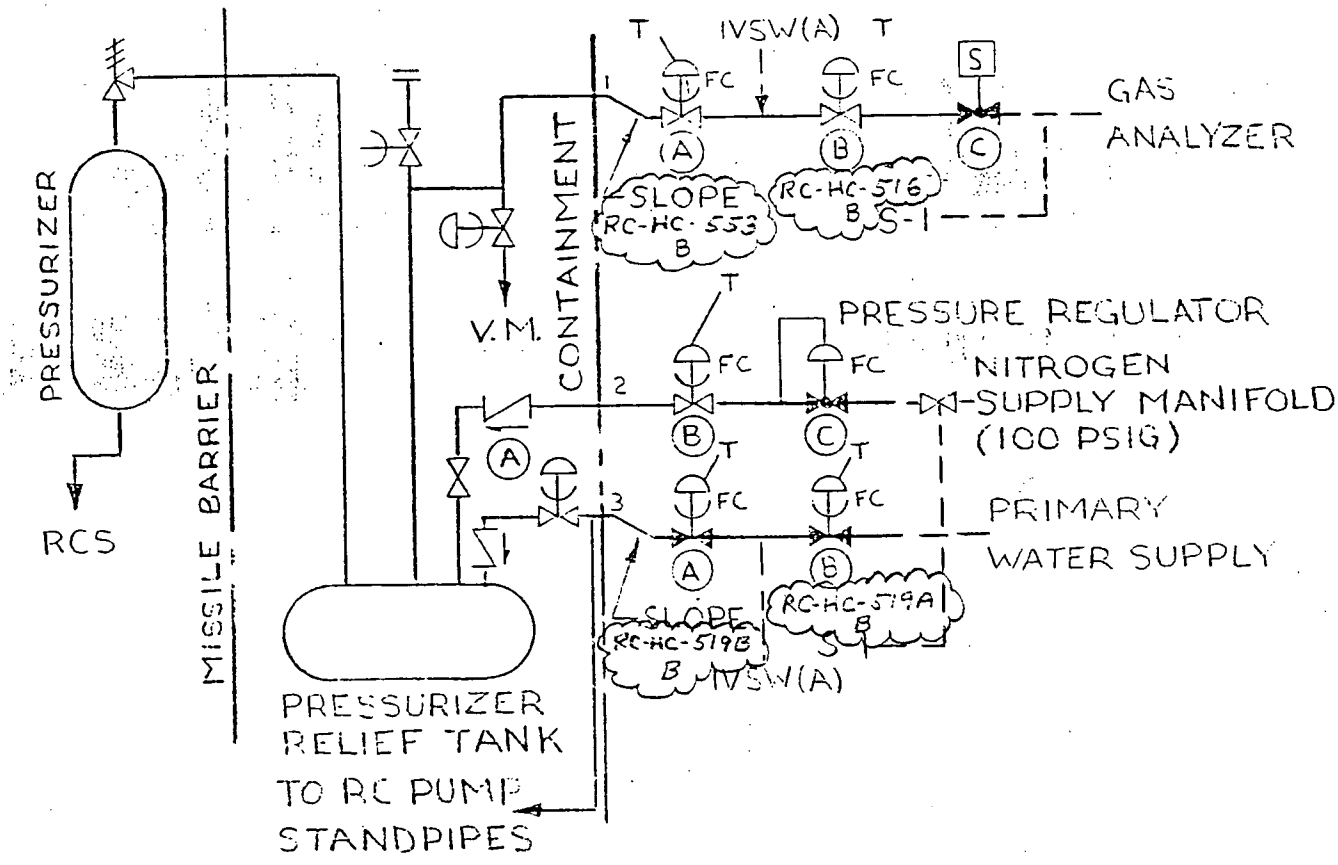
An in-depth discussion of the containment isolation system at the Robinson Plant is contained in the Updated Final Safety Analysis Report (UFSAR), Section 6.2.4.

In cases where isolation is provided by two motor-operated valves in series, the valves are powered from different sources. (The position indication is powered from the same source as the valve motive power.) Hence, in the event of loss of one channel of power, containment isolation can be verified from the redundant valve. For penetrations where isolation is provided by two air-operated diaphragm valves, the valves fail closed on loss of power, and isolation is assumed.

Various figures showing valves contained in Table 3 of our RG 1.97 submittal have been extracted from UFSAR, Section 6.2.4, which show redundant valve functions and are annotated to clarify power supply configuration. These figures are attached for your convenience.

(5031JSK/mf)

PENE. Nº. 1- PRESSURIZER RELIEF GAS ANALYZER LINE
PENE. Nº. 2- PRESSURIZER RELIEF NITROGEN SUPPLY
PENE. Nº. 3- PRESSURIZER RELIEF TANK MAKEUP



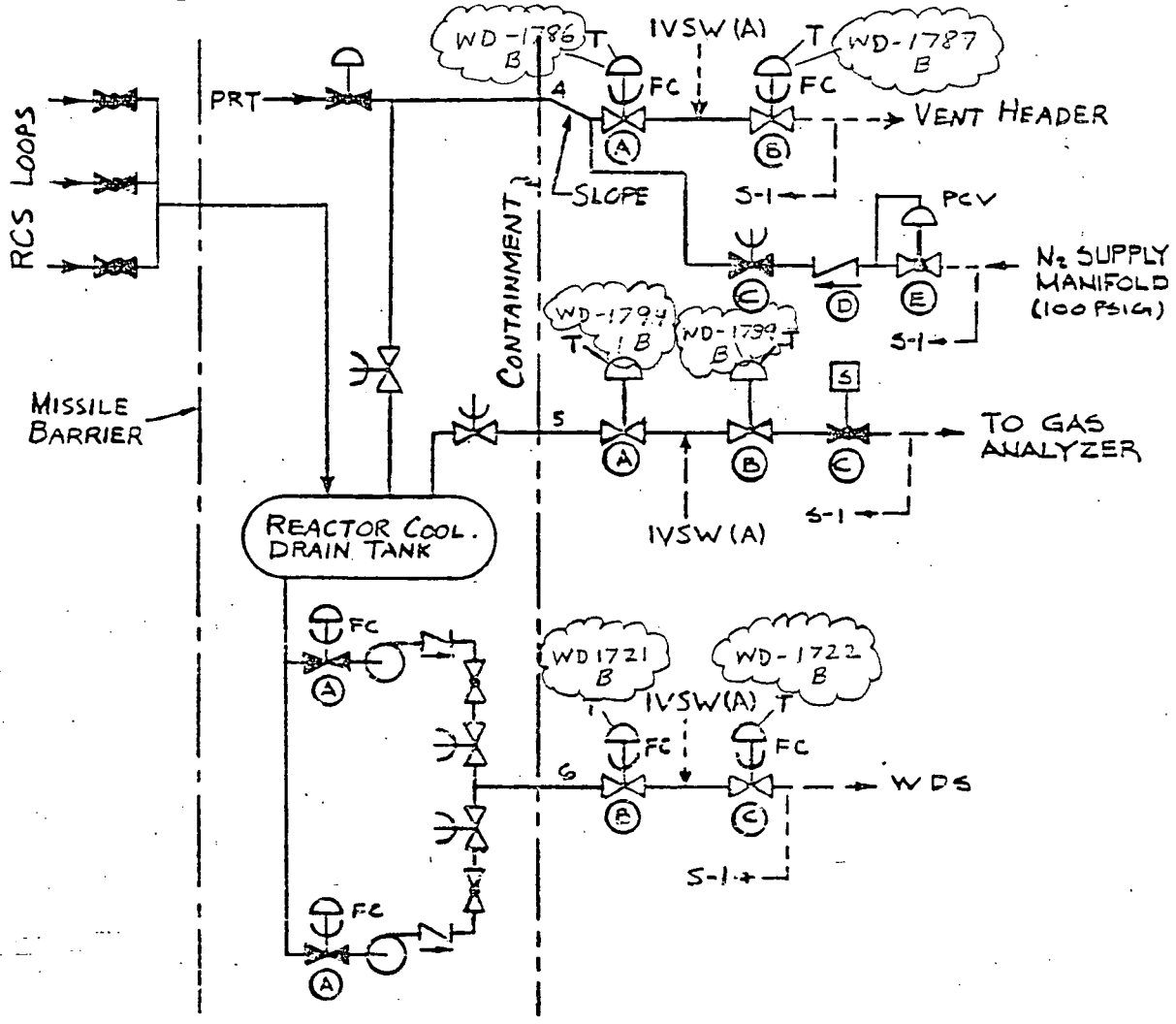
1. ALTHOUGH THE PRESSURIZER RELIEF TANK IS MISSILE PROTECTED, THESE PENETRATING LINES CAN BECOME EXPOSED TO CONTAINMENT ATMOSPHERE IF THE PRESSURIZER SAFETY VALVE DISCHARGE HEADER IS BREACHED BY THE ACCIDENT.
2. VALVE (C) IN THE LINE TO THE GAS ANALYZER IS OPENED INTERMITTENTLY TO WITHDRAW A GAS SAMPLE. THIS OPERATION IS AUTOMATICALLY CONTROLLED BY THE GAS ANALYZER.

FOR LIST OF SYMBOLS SEE FIG. 6.2.4-21

AMENDMENT 3

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES PRESSURIZER RELIEF TANK	FIGURE 6.2.4 - 1

PENE. NO. 4 - PRIMARY SYSTEM VENT HEADER (& H_2 SUPPLY LINE)
PENE. NO. 5 - REACTOR COOLANT DRAIN TANK GAS ANALYZER LINE
PENE. NO. 6 - REACTOR COOLANT DRAIN TANK PUMP DISCHARGE LINE



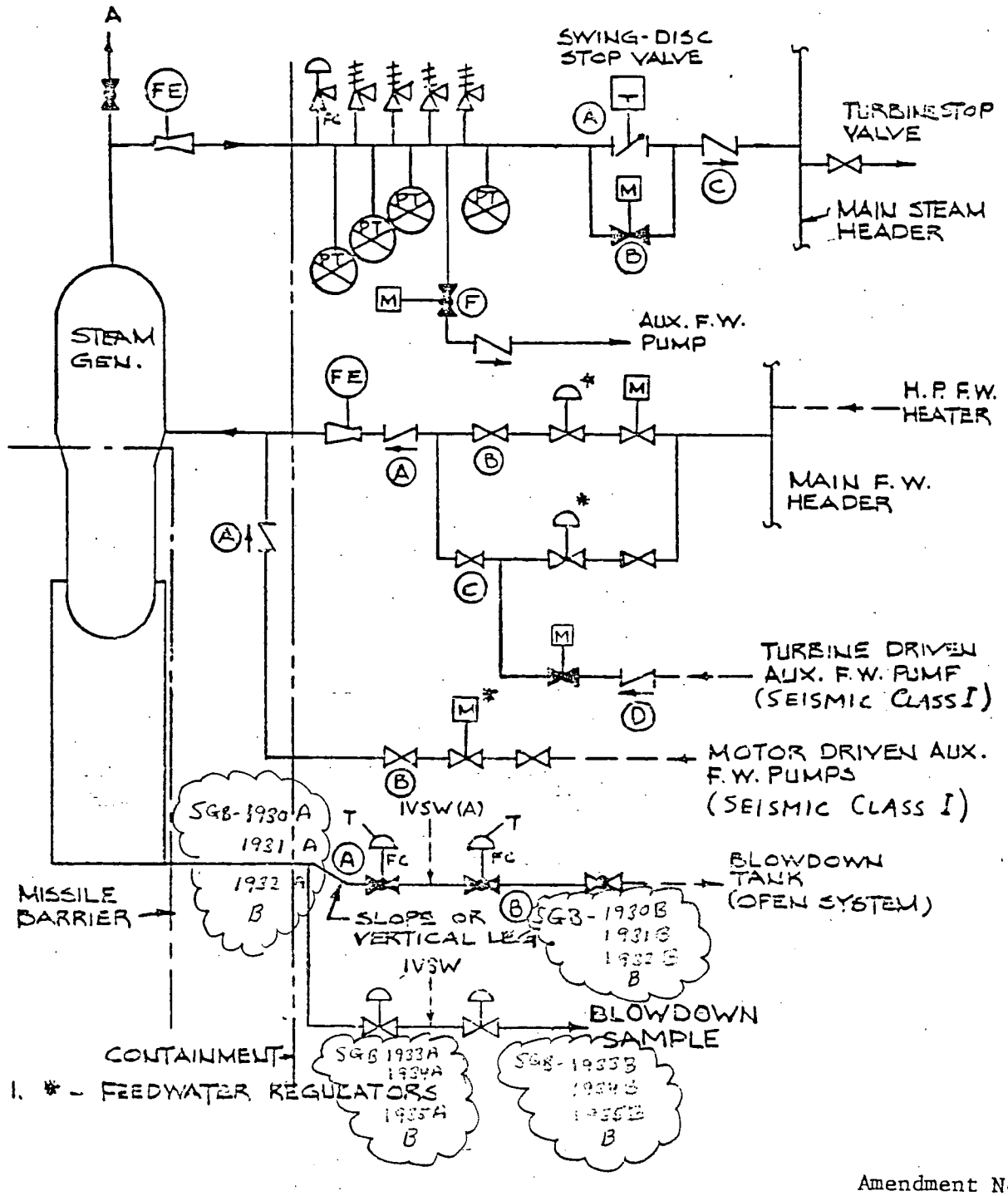
WDS – WASTE DISPOSAL SYSTEM

1. VALVE (C) IN THE LINE TO THE GAS ANALYZER IS OPENED INTERMITTENTLY TO WITHDRAW A GAS SAMPLE. THIS OPERATION IS AUTOMATICALLY CONTROLLED BY THE GAS ANALYZER.

AMENDMENT 2

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES REACTOR COOLANT DRAIN TANK	FIGURE 6.2.4 - 2

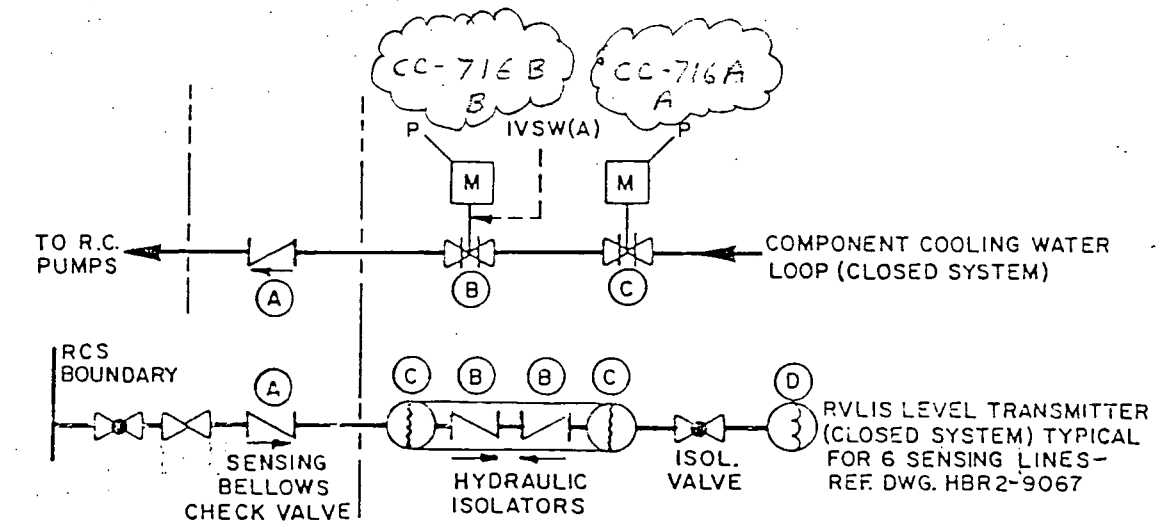
PENE. NOS. 7, 8, 9 – MAIN STEAM HEADERS
PENE. NOS. 10, 11, 12 – FEEDWATER HEADERS
PENE. NOS. 13, 14, 15 – STEAM GENERATOR BLOWDOWN LINES
PENE. NOS. 57, 58, 59 – EMERGENCY FEEDWATER HEADERS



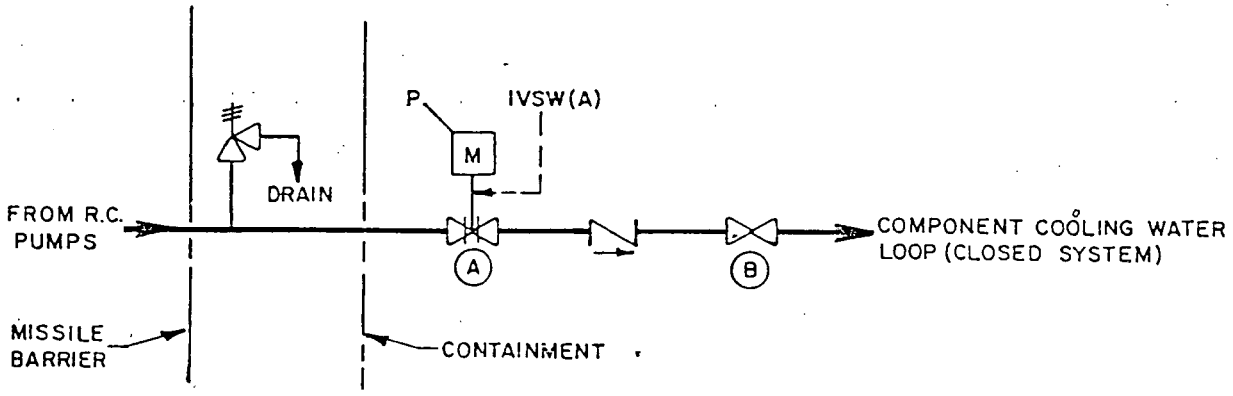
1. * – FEEDWATER REGULATORS

Amendment No. 1

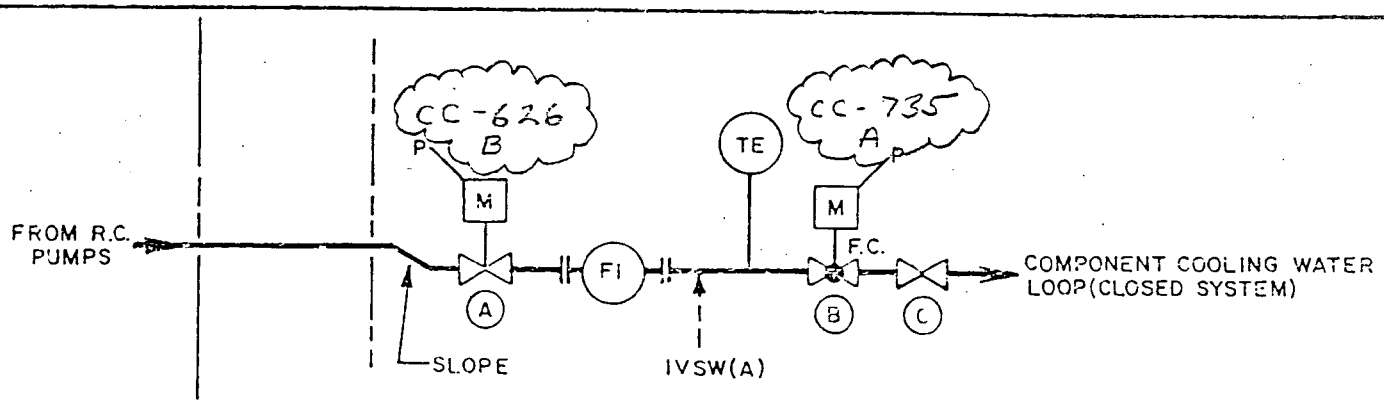
H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES STEAM AND FEEDWATER HEADERS	FIGURE 6.2.4 - 3



PENE. NO. 18 - REACTOR COOLANT PUMP COOLING WATER IN- & RVLIS SENSING LINES



PENE. NO. 19 - REACTOR COOLANT PUMP COOLING WATER OUT (6")

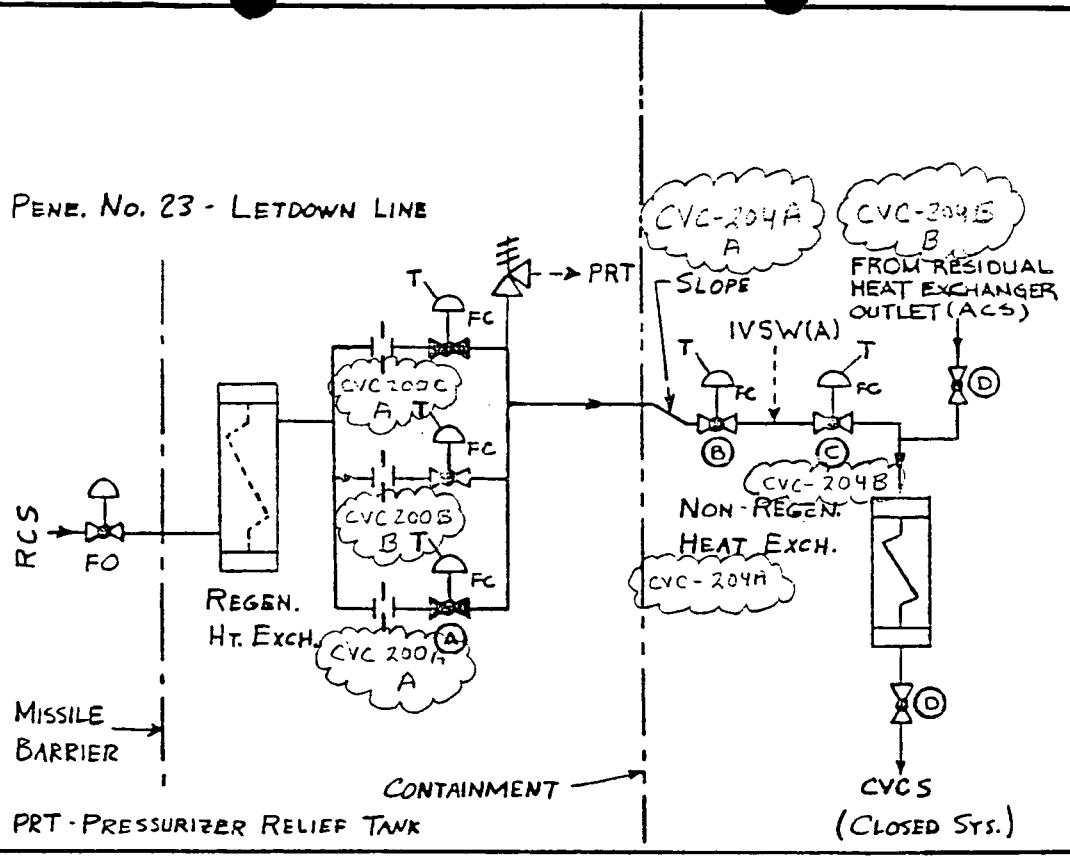


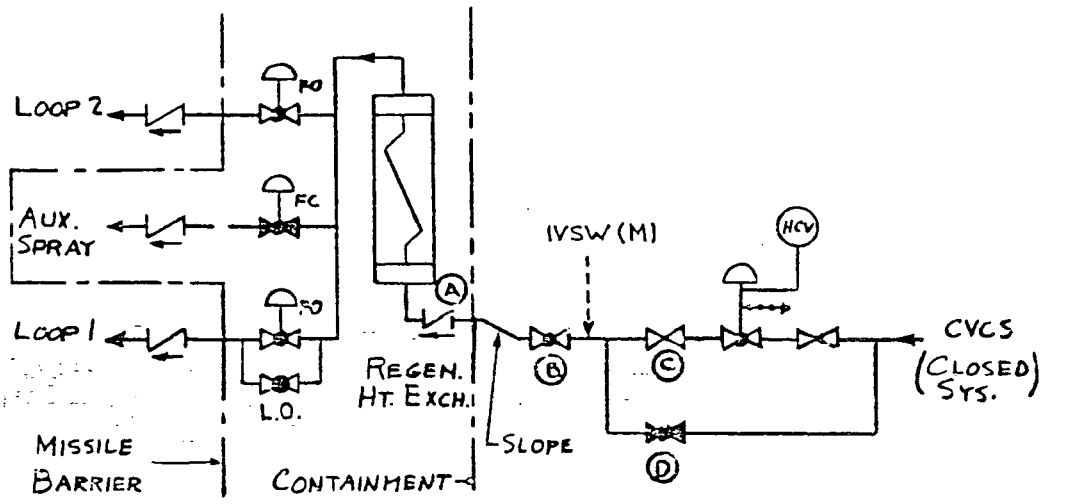
PENE. NO. 20 - REACTOR COOLANT PUMP COOLING WATER OUT (3")

COMPONENT COOLING WATER LOOP IS SEISMIC CLASS I.

AMENDMENT 3

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES R. C. PUMP COOLING WATER AND RVLIS SENSING LINES	FIGURE 6.2.4 - 6

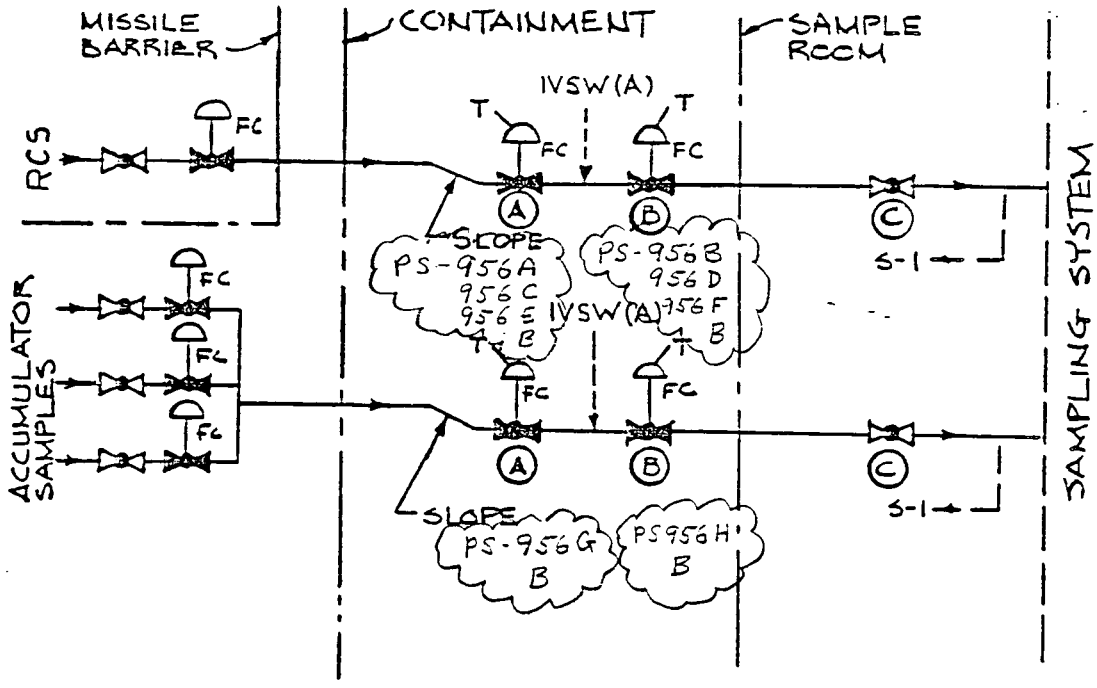




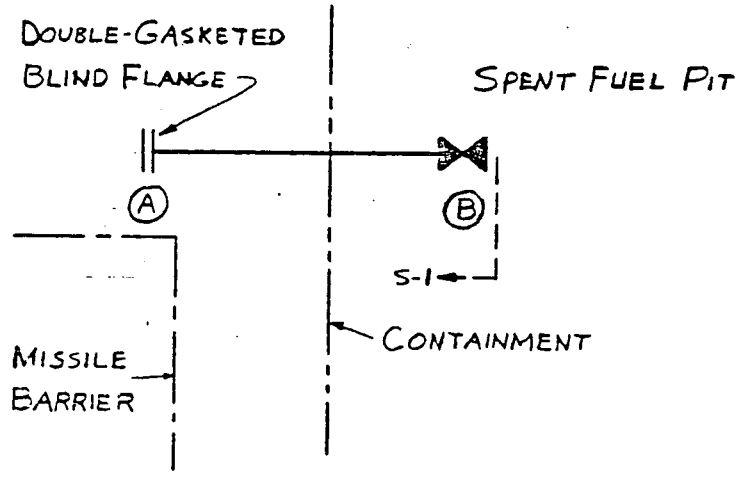
CVCS AND ACS ARE SEISMIC CLASS I DESIGN

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES LETDOWN LINE	FIGURE 6.2.4 - 8

PENE. NOS. 29, 30, 31 - REACTOR COOLANT SYSTEM SAMPLE LINES
PENE. NO. 60 - ACCUMULATOR SAMPLE LINE

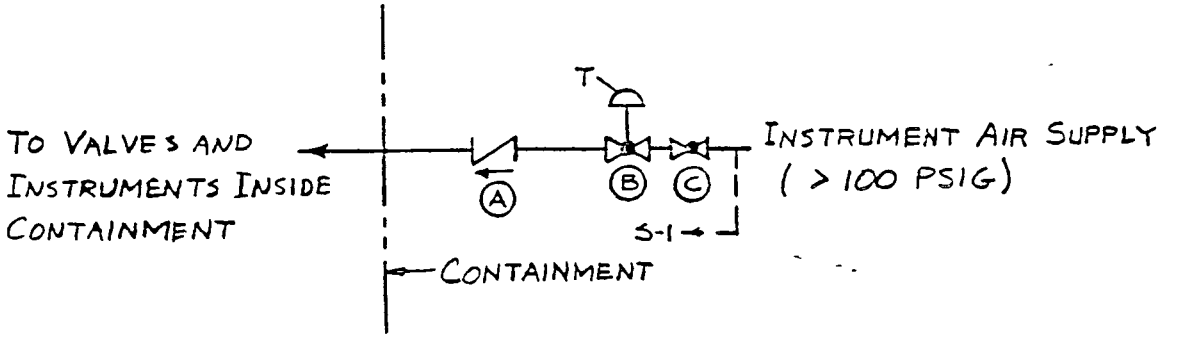


PENE. NO. 32 - FUEL TRANSFER TUBE

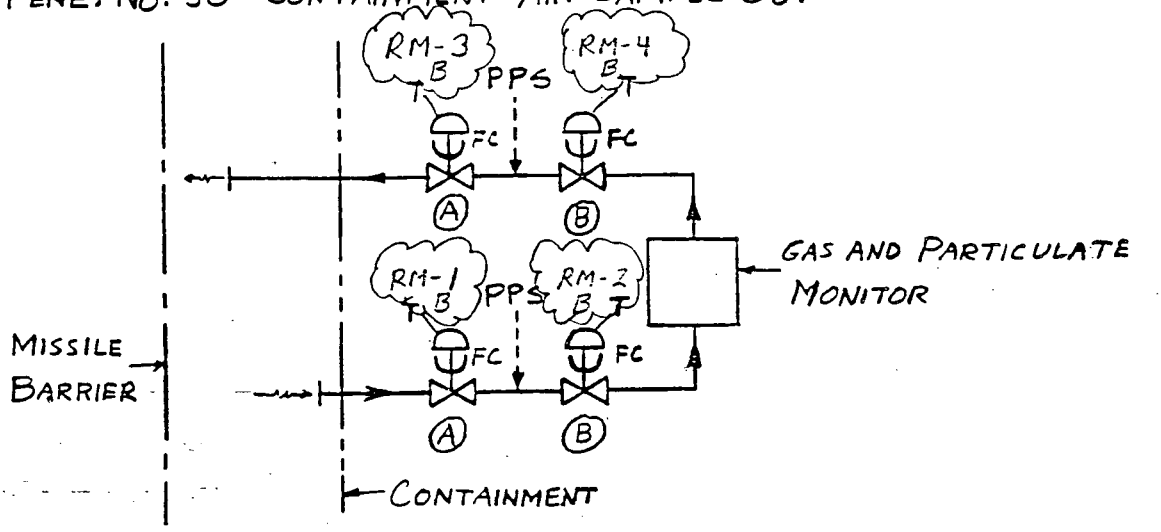


H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES R. C. SYSTEM SAMPLE LINES AND FUEL TRANSFER TUBE	FIGURE 6.2.4 - 10

PENE. NO. 33 - INSTRUMENT AIR HEADER



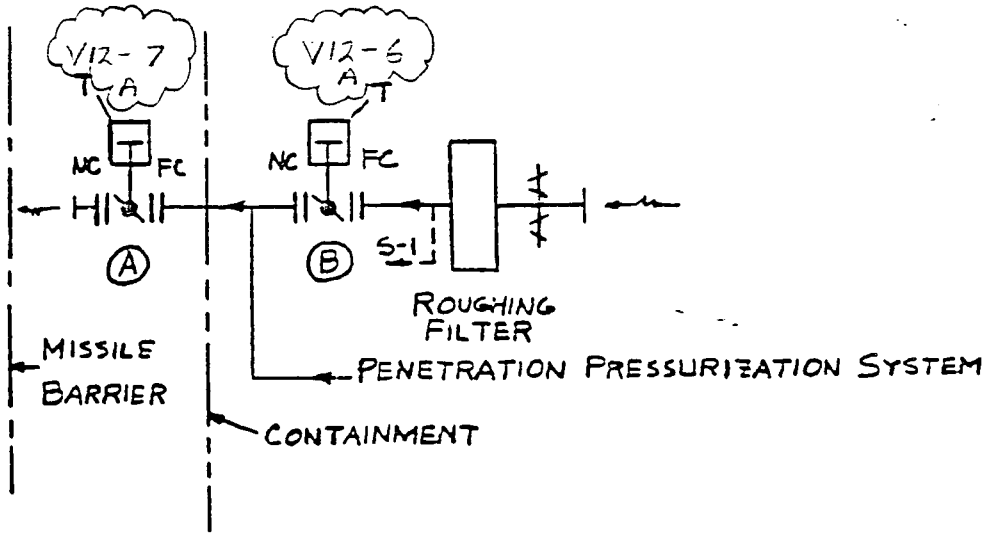
PENE. NO. 35 - CONTAINMENT AIR SAMPLE IN
PENE. NO. 36 - CONTAINMENT AIR SAMPLE OUT



1. CONTAINMENT ISOLATION SIGNAL APPLIED TO THESE VALVES MUST BE OVERRIDDEN IN ORDER TO USE THE MONITOR AFTER AN ACCIDENT.
2. PPS – PENETRATION PRESSURIZATION SYSTEM.
3. ENTIRE SYSTEM IS SEISMIC CLASS I DESIGN.

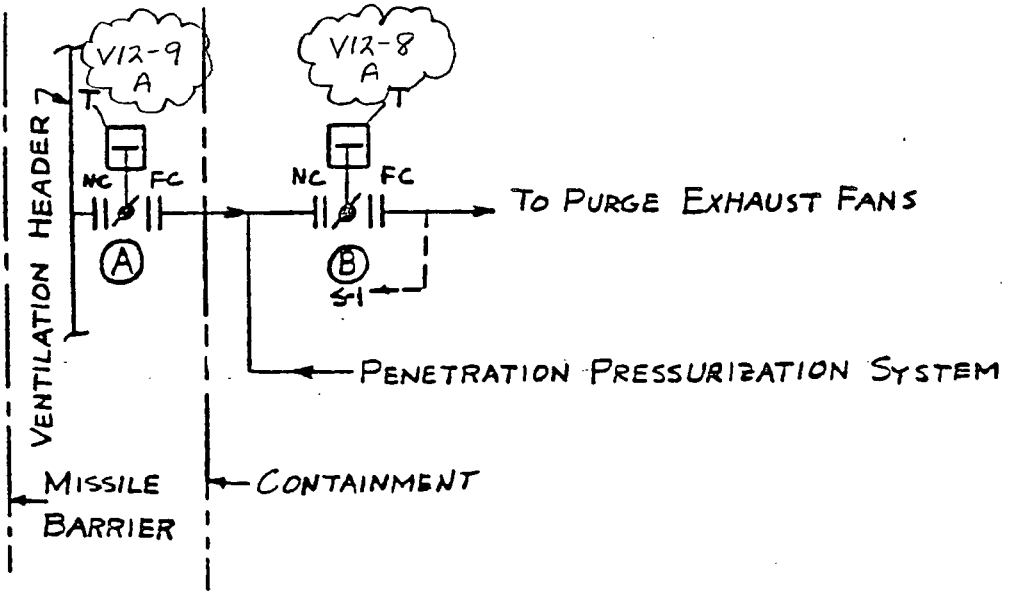
H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES IA HEADER AND CONTAINMENT AIR SAMPLE	FIGURE 6.2.4 - 11

PENE. NO. 37 - CONTAINMENT PURGE SUPPLY DUCT



1. THESE VALVES HAVE AIR CYLINDER OPERATORS.

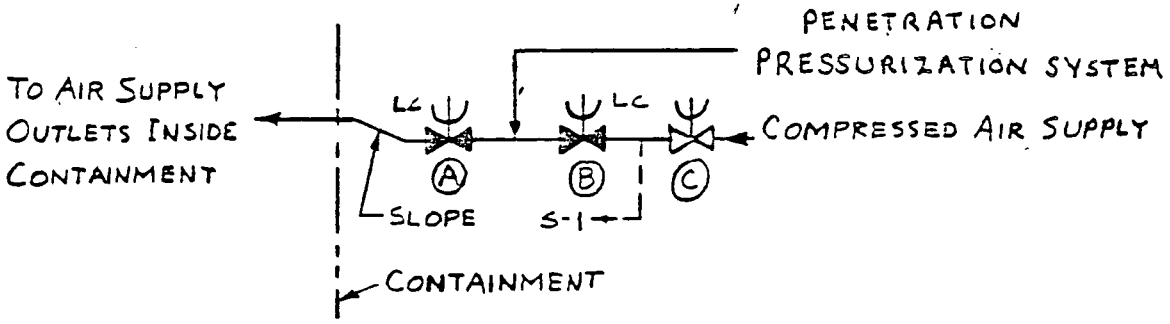
PENE. NO. 38 - CONTAINMENT PURGE EXHAUST DUCT



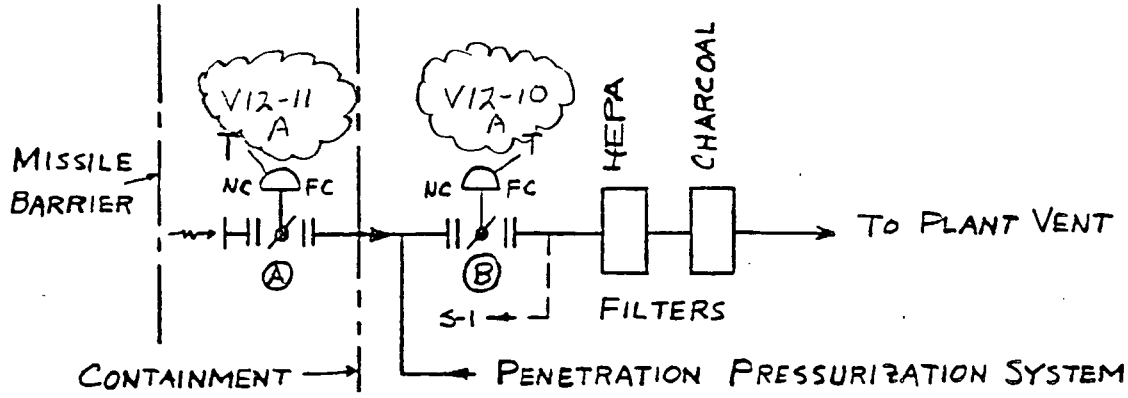
1. THESE VALVES HAVE AIR CYLINDER OPERATORS.

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES PURGE SUPPLY AND EXHAUST	FIGURE 6.2.4 - 13

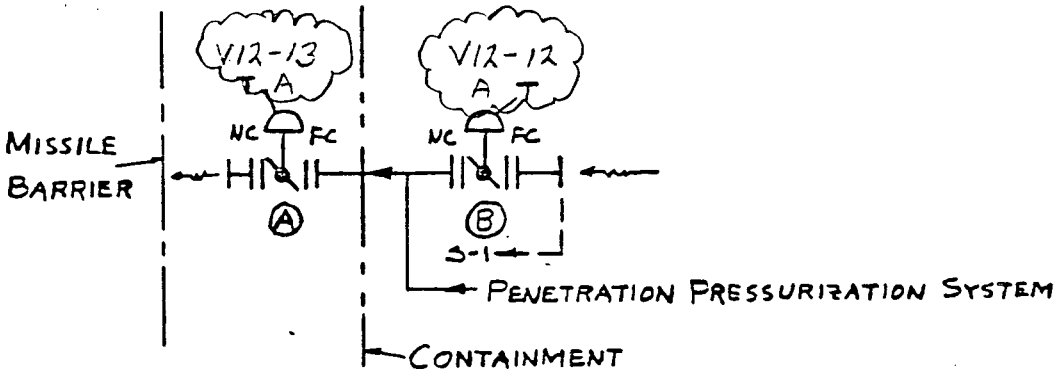
PENE. NO. 39 — PLANT AIR SUPPLY HEADER



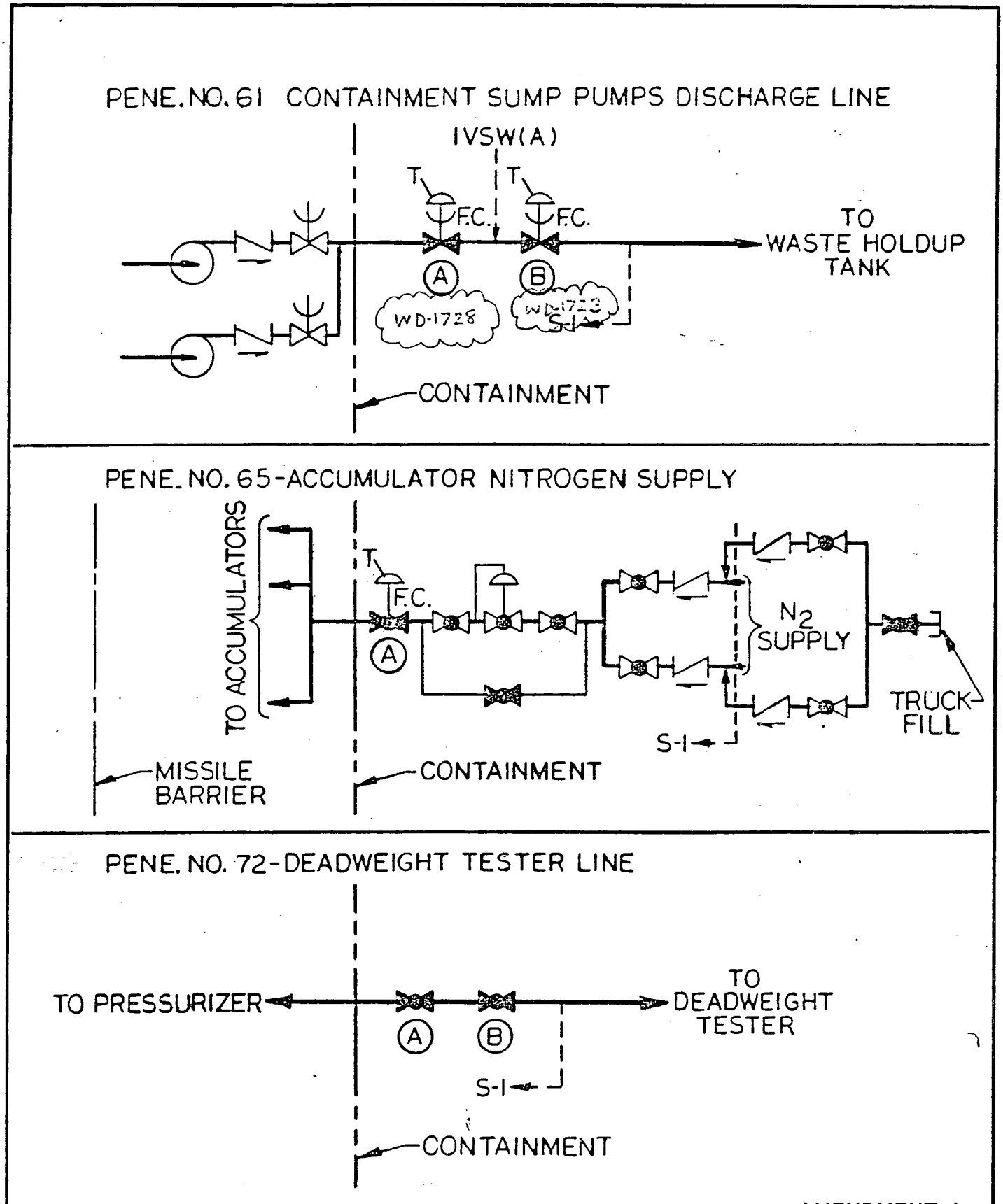
PENE. NO. 41 - CONTAINMENT PRESSURE RELIEF



PENE. NO. 42 - CONTAINMENT VACUUM RELIEF

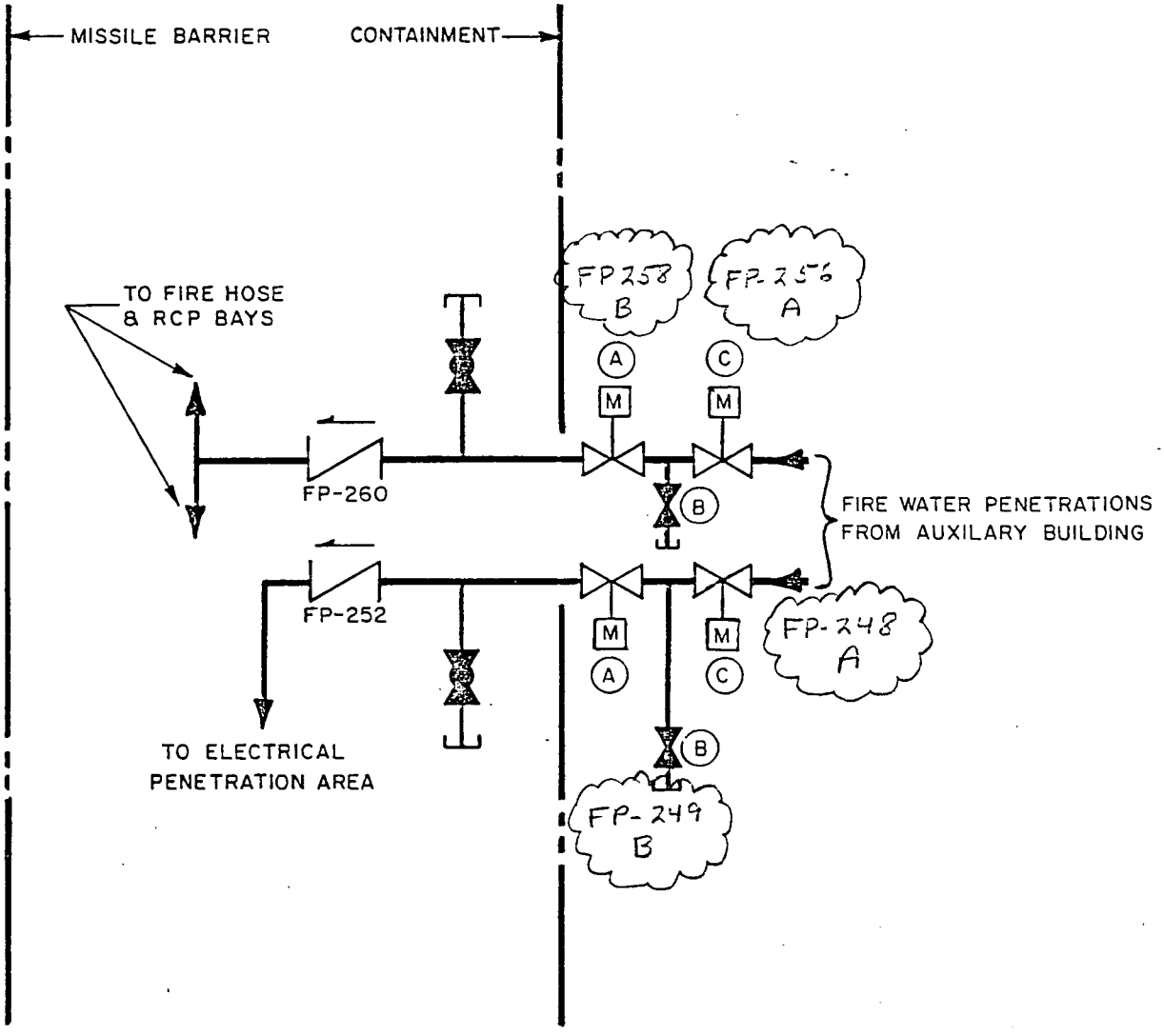


H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES SA HEADER, PRESSURE AND VACUUM RELIEF	FIGURE 6.2.4 - 14



AMENDMENT 4

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	CONTAINMENT ISOLATION VALVES SUMP PUMPS DISCHARGE, N_2, AND DEADWEIGHT TESTER	FIGURE 6.2.4 - 17



H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	FIRE WATER PENETRATIONS # 73, #74	FIGURE 6.2.4 - 20

LEGEND

VALVES


GLOBE

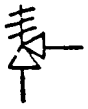

DIAPHRAGM

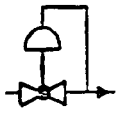

GATE


DOUBLE DISC GATE


CHECK


BUTTERFLY


SAFETY OR RELIEF


SELF CONTAINED
PRESSURE REGULATOR


NEEDLE

OPERATORS


AIR DIAPHRAGM


AIR CYLINDER


MOTOR


SOLENOID

DARKENED SYMBOL INDICATES
NORMALLY CLOSED VALVE


VALVE STEM LEAKOFF

NOTATION

T - TRIPPED BY CONTAINMENT ISOLATION SIGNAL, PHASE A
P - TRIPPED BY CONTAINMENT ISOLATION SIGNAL, PHASE B
IVSW (A)- ISOLATION VALVE SEAL WATER (AUTOMATIC)
IVSW (M)- ISOLATION VALVE SEAL WATER (MANUAL)
NO - NORMALLY OPEN
NC - NORMALLY CLOSED
FO - FAIL OPEN
FC - FAIL CLOSED
LO - LOCKED OPEN
LC - LOCKED CLOSED
PRT - PRESSURIZER RELIEF TANK
RWST - REFUELING WATER STORAGE TANK
DT - REACTOR COOLANT DRAIN TANK
S-I - SEISMIC CLASS I

H. B. ROBINSON UNIT 2 Carolina Power & Light Company UPDATED FINAL SAFETY ANALYSIS REPORT	LEGEND FOR SYMBOLS USED ON FIGURES 6.4.2 - 1 THRU - 20	FIGURE 6.2.4 - 21