JOSEPH M. FARLEY NUCLEAR PLANT

UNIT NO. 2

Response to
The Provisions of
10CFR 50.55a(g)

Inservice Testing Program
For
Class 1, 2, and 3 Pumps and Valves

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1.0 INTRODUCTION

1.1 General

This document is presented in accordance with the requirements 10CFR50.55a(g) for issuing the inservice testing programs at each 120-month interval of operation.

1.2 Scope

This document provides a description of the inservice testing program for Unit No. 2 of Farley Nuclear Plant for Code Class 1, 2, and 3 Pumps and Valves in accordance with the requirements of Subsections IWP and IWV of ASME Section XI, 1974 Edition through the Summer 1975 Addenda.

1.3 Effective Date

The program will go into effect at the issuance of the facility operating license.

1.4 Effective Period

In accordance with the regulations of 10CFR50.55a, the inservice testing program remains effective for a 120-month period of commercial operation.

1.5 Program Revisions

As a minimum, the program will be reviewed and revised for compliance with the effective code at the end of 120 months of plant commercial operation and at each subsequent 120-month interval. Alabama Power Company reserves the right to submit program revisions which may enhance or improve the testing program at any time within the effective period.

2.0 INSERVICE TESTING OF PUMPS

Table P-I describes the inservice testing program for pumps subject to the requirements of Subsection IWP of the 1974 Edition of ASME Section XI with Addenda through Summer 1975. The table provides identification of the pumps to be tested, pump code classes, parameters to be measured, and test intervals. Relief from the testing requirements of Section XI is requested where full compliance with the requirements of the code is not practical. In such cases, specific information is provided which identifies the applicable code requirements, justification for the relief request, and the testing to be used as an alternate.

TABLE P-I PUMP TESTING PROGRAM

Rev. No. 0

Pump Identification Total Plant Numbering System	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Relief Request
Q2E21P002A-A	Charging (HHSI)	2	1. Inlet Pressure (Pi)	Monthly	NO
Q2E21P002B-AB			2. Outlet Pressure (Po)	Monthly	NO
Q2E21P002C-B			3. Differential Pressure (ΔP = Po - Pi)	Monthly	2.1.6
			4. Vibration Amplitude	Quarterly	2.1.1
			5. Bearing Temperature	Annually	NO
			6. Lubricant Level or Pressure	Observe Quarterly	2.1.1

TABLE P-I PUMP TESTING PROGRAM

Rev. No. 0

Pump Identification Total Plant Numbering System	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Relief Request
Q2E11P001A-A	Residual Heat Removal (RHR)	2	1. Inlet Pressure (Pi)	Monthly	2.1.11
Q2E11P001B-B			2. Outlet Pressure (Po)	Monthly	2.1.11
			3. Differential Pressure (ΔP = Po - Pi)	Monthly	2.1.11
			4. Vibration Amplitude	Quarterly	2.1.1
			5. Bearing Temperature	Annually	NO
			6. Lubricant Level or Pressure	Observe Quarterly	2.1.1
			7. Flow Rate	Monthly	2.1.11
Q2P17P001A-B	Component Cooling Water (CCW)	3	1. Inlet Pressure (Pi)	Quarterly	2.1.1
Q2P17P001B-AB			2. Outlet Pressure (Po)	Quarterly	2.1.1
Q2P17P001C-A			3. Differential Pressure (ΔP = Po - Pi)	Quarterly	2.1.1
			4. Vibration Amplitude	Quarterly	2.1.1
			5. Bearing Temperature	Annually	NO
			6. Lubricant Level or Pressure	Observe Quarterly	2.1.1
			7. Flow Rate	Monthly	2.1.7

TABLE P-I PUMP TESTING PROGRAM

Rev. No. 0

Pump Identification Total Plant Numbering System	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Relief Request
Q2P16P001A-A	Service Water (SW)	3	1. Inlet Pressure (Pi)	Quarterly	2.1.1, 2.1.2, 2.1.3
Q2P16P001B-A			2. Outlet Pressure (Po)	Quarterly	2.1.1, 2.1.3
Q2P16P001C-AB			3. Differential Pressure (ΔP = Po - Pi)	Quarterly	2.1.1, 2.1.3
Q2P16P001D-B			4. Flow Rate	Quarterly Monthly	2.1.1, 2.1.3 2.1.8
Q2P16P001E-B			5. Vibration Amplitude	Quarterly	2.1.1
			6. Bearing Temperature	Annually	NO
			7. Lubricant Level or Pressure	Observe Quarterly	2.1.1
Q2N23P001A-A	Auxiliary Feed-water (Motor Driven)	3	1. Inlet Pressure (Pi)	Monthly	NO
Q2N23P001B-B			2. Outlet Pressure (Po)	Monthly	NO
			3. Differential Pressure (ΔP = Po - Pi)	Monthly	NO
			4. Vibration Amplitude	Quarterly	2.1.1
			5. Bearing Temperature	Annually	NO
			6. Lubricant Level or Pressure	Observe Quarterly	2.1.1

TABLE P-I PUMP TESTING PROGRAM

Rev. No. 0

Pump Identification Total Plant Numbering System	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Relief Request
Q2N23P002	Auxiliary Feedwater (Turbine Driven)	3	1. Inlet Pressure (Pi)	Monthly	NO
			2. Outlet Pressure (Po)	Monthly	NO
			3. Differential Pressure ($\Delta P = Po - Pi$)	Monthly	2.1.9
			4. Flow Rate	Monthly	2.1.9
			5. Vibration Amplitude	Quarterly	2.1.1
			6. Bearing Temperature	Annually	NO
			7. Lubricant Level or Pressure	Observe Quarterly	2.1.1
			8. Speed	Quarterly	2.1.1

TABLE P-I PUMP TESTING PROGRAM

Rev. No. 0

Pump Identification Total Plant Numbering System	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Relief Request
Q2E13P001A-A	Containment Spray (CS)	2	1. Inlet Pressure (Pi)	Monthly	NO
Q2E13P001B-B			2. Outlet Pressure (Po)	Monthly	NO
			3. Differential Pressure (ΔP = Po - Pi)	Monthly	NO
			4. Vibration Amplitude	Quarterly	2.1.1
			5. Bearing Temperature	Annually	NO
			6. Lubricant Level or Pressure	Observe Quarterly	2.1.1
QSP25P001-B	River Water (RW)	3	1. Inlet Pressure (Pi)	Quarterly	2.1.1, 2.1.4
QSP25P002-B			2. Outlet Pressure (Po)	Monthly	2.1.1, 2.1.10
QSP25P003-B			3. Differential Pressure (ΔP = Po - Pi)	Quarterly	2.1.1, 2.1.5
QSP25P006-A			4. Vibration Amplitude	Quarterly	2.1.1
QSP25P007-A			5. Bearing Temperature	Annually	NO
			6. Lubricant Level or Pressure	Observe Quarterly	2.1.1

2.1 Request for Relief from ASME Section XI Requirements

2.1.1 Test Requirement

Sub-Article IWP-3100 requires that the necessary test parameters of Table IWP-3100-1 be measured at each test and Sub-Article IWP-3400 requires that an inservice test be run on each pump nominally each month during normal plant operation.

2.1.1.1 Basis for Relief

The intent of imposing the pump testing program is to provide assurance of an increased level of plant safety obtained by verifying that the pumps are capable of performing their safety function. A monthly test provides such assurance; however, monthly testing also requires additional run times and unusual operation of the equipment necessary to drive the pump and to align the system for the test. A penalty for increased usage and run time is increased equipment degradation and possibly failure. An optimized testing program would provide assurance of pump operability and have the least impact on the normal degradation of equipment expected over its service lifetime. Operating experience has indicated that pumps will not degrade over a single 30-day period. Of the approximately 24 monthly tests previously conducted on each of the pumps in the Farley Unit No. 2 program, adequate assurance of operability is provided in as few as eight 3-month tests. In addition, extensive investigation has been conducted within the ASME Section XI Subgroup for inservice testing of pumps and valves concerning the optimization of the test frequency. The investigation has resulted in a proposed revision to the code which would require a pump test frequency of nominally once every 3 months.

2.1.1.2 Alternate Testing

The pumps will be tested and the required parameters measured nominally once every three (3) months. If deviations fall within the "alert range" of Table IWP-3100-2, the frequency of testing shall be increased to monthly until the cause of the deviation is determined and corrected and either the existing reference values reverified or a new set established per IWP-3111.

In addition, the pumps will be operated nominally once every month to maintain the lubrication of the pump bearings and to prevent other undesirable occurrences. The test will require the pumps to be run in either their test or normal operating configuration for at least five (5) minutes and a single hydraulic parameter to be measured to detect any gross degradation of the pumps or the system in which they operate. In cases of multiple pump operation within a system or train of a system, a system or train parameter will be measured and used to verify that the pumps are operating sufficiently to satisfy system requirements. The parameters to be measured monthly are indicated in Table P-1. Any pumps whose measured parameters indicates unsatisfactory performance will be retested within 48 hours and parameters measured in accordance with the quarterly test interval indicated in Table P-1. Any further corrective action will result from the quarterly test parameters.

2.1.2 Test Requirement

Sub-Article IWP-4200 requires direct pressure measurement.

2.1.2.1 Basis for Relief

The service water pumps are of vertical design with no means of direct inlet pressure measurement as required by IWP-4200.

2.1.2.2 Alternate Testing

Indirect inlet pressure measurement will be obtained utilizing service water structure wet pit station level instrumentation. The level is then converted to pump inlet pressure by the following calculation:

$$\text{Inlet Pressure} = \frac{\text{Wet Pit Level (ft.)} - 152.5 \text{ ft.}}{2.3066 \text{ ft/psig}}$$

2.1.3 Test Requirement

Sub-Article IWP-3400 requires that an inservice test shall be run on each pump.

2.1.3.1 Basis for Relief

Due to the demands of dependent systems, the individual testing of service water pumps as required by IWP-3400 would jeopardize safe plant operation and be impossible to accomplish during plant shutdown.

2.1.3.2 Alternate Testing

Tests involving combinations of two pumps within each train will indicate the hydraulic condition of the pumping system. The combinations are arranged such that each pump is included in at least one combination test in each train. The initial tests are run on all combinations in each train including the swing pump to provide base line data for any subsequent tests. In the event of a detection of hydraulic change by a test, the test results are applied to both pumps in the combination. Each of the pumps is then tested in combination with another appropriate pump to assess the individual pump operational readiness.

2.1.4 Test Requirement

Sub-Article IWP-4200 requires direct pressure measurement.

2.1.4.1 Basis for Relief

The river water pumps are of vertical design with no means of direct inlet pressure measurement as required by IWP-4200.

2.1.4.2 Alternate Testing

Indirect inlet pressure measurement will be obtained by using river water structure wet pit station level instrumentation. The level is then converted to pump inlet pressure by the following calculation:

$$\text{Inlet Pressure} = \frac{\text{Wet Pit Level (ft.)} - 62.5 \text{ ft.}}{2.3066 \text{ ft/psig}}$$

2.1.5 Test Requirement

Sub-Article IWP-3100 requires that all subsequent test results shall be compared to reference values established during preoperational testing or during the first inservice test run.

2.1.5.1 Basis for Relief

Due to a continuously fluctuating river level and the fixed resistance associated with the system, the determination of readily duplicated points of operation as required by IWP-3110 is not possible.

2.1.5.2 Alternate Testing

Each pump's test results are maintained as reference values. When subsequent results provide an inlet pressure within ±2% of a previous test inlet pressure, the tests are compared and an assessment of the pump hydraulic condition is made.

2.1.6 Test Requirement

Sub-Article IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity and any deviation determined shall be compared to the limits given in Table IWP-3100-2.

2.1.6.1 Basis for Relief

In order to comply with this test requirement for the Charging/HHSI pump ΔP, the pumps must be aligned to their fixed resistance recirculation flow path. This alignment to the test configuration requires that normal charging and RCP seal water requirements be provided from a pump in the other train and isolation of the pump train to be tested. The pump now providing normal charging and seal water must be provided with its cooling water from the appropriate train source which may cause realignment in that system and its support systems. The pump now aligned in the test configuration is not available for charging or HHSI.

In addition, the normal charging and seal supply configuration is not considered fixed resistance and adequate flow instrumentation is not provided.

2.1.6.2 Alternate Testing

A test parameter of ΔP will be determined while the pumps are operating, either normally or in accordance with the alternate testing specified in paragraph 2.1.1.2, in their normal operating configuration providing charging and RCP seal requirements. The acceptable limit for each pump's ΔP will be equivalent to 93% of the manufacturer's curve at a maximum charging and recirculation flow of 180 GPM ($\Delta P \geq 2315$ psi). Inability to meet this criteria will result in corrective action as provided in paragraph 2.1.1.2. The ΔP parameter will be measured, compared, and analyzed in accordance with code nominally once every 3 months.

2.1.7 Test Requirement

Sub-Article IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity and any deviations determined shall be compared to the limits given in Table IWP-3100-2.

2.1.7.1 Basis for Relief

The flow measuring devices for the Component Cooling Water System are located downstream of the CCW heat exchangers and are neither designed nor strategically located to provide flow indication within sufficient accuracy to accommodate the test requirement. As a result, CCW pump ΔP must be measured while the pumps are aligned in a fixed resistance recirculation flow path in order to satisfy the test requirement. This alignment to the test configuration requires that each pump be manually isolated from its normal flow path each month. CCW system requirements must be met by the other CCW pumps which may cause train supply switchover for certain systems such as RHR or Charging. This alignment to a test configuration on a monthly frequency reduces pump availability and is contrary to the justification for quarterly testing provided in paragraph 2.1.1.1.

2.1.7.2 Alternate Testing

A test parameter of flow (Q) will be measured while the pumps are operating, either normally or in accordance with the alternate testing specified in paragraph 2.1.1.2, in their normal operating configuration. Due to variable resistance in the system and the accuracy of the flow measurement, the flow parameter will be required to meet or exceed a heat exchanger discharge flow corresponding to hot shutdown loads ($Q \geq 6400$ GPM). Inability to meet this criteria will result in corrective action as provided in paragraph 2.1.1.2. This alternate test will not be conducted coincidently with the quarterly requirements of Table P-1 and paragraph 2.1.1.2.

2.1.8 Test Requirement

Sub-Article IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity and any deviation determined shall be compared to the limits given in Table IWP-3100-2.

2.1.8.1 Basis for Relief

As indicated in paragraph 2.1.3.1, the service water pumps cannot be individually tested. The pumps must be tested quarterly by train (two (2) pumps) as a variable resistance system. This is accomplished by throttling the flow to a repeatable quantity and measuring the ΔP. The monthly measurement of a single hydraulic parameter, as allowed in paragraph 2.1.1.2 and comparison per the test requirement, is meaningless since either flow (Q) or differential pressure (ΔP) is readily attainable regardless of pump operability. The monthly measurement of both hydraulic parameters imposes extended abnormal operating conditions on the pumps and the system in order to attain the repeatable values and defeats the purpose of implementing quarterly tests as provided in paragraph 2.1.1.1.

2.1.8.2 Alternate Testing

A test parameter of flow (Q) will be measured for each train (two (2) pumps operating in each train). The swing pump will be operated with either of the pumps in the train to which it is aligned and flow will be measured for the train. The pumps will be operationally acceptable if the test flow meets or exceeds a quantity equivalent to the cold shutdown requirements for that system train ($Q \geq 15{,}200$ GPM). Inability to meet this criteria will result in corrective action as provided in paragraph 2.1.1.2. The flow parameter will be measured, compared, and analyzed in accordance with the Code nominally once every 3 months.

2.1.9 Test Requirement

Sub-Article IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity and any deviation determined shall be compared to the limits given in Table IWP-3100-2.

2.1.9.1 Basis for Relief

The plant Technical Specifications require that the pumps be tested at least once per 31 days by verifying that the pump develops a differential pressure of at least 93% for the applicable flow rate as determined from the manufacturer's pump performance curve when the secondary steam supply pressure is greater than 90 psig. A test in accordance with the Code requires a different hydraulic test circuit than the Technical Specification (Tech. Spec.) test in order to obtain a fixed resistance recirculation flow path because the flow device used in the Tech. Spec. test is not designed for the accuracy limitations of the Code. As a result, tests performed monthly and quarterly as described in paragraph 2.1.1 would require two (2) separate tests with two (2) separate system alignments and an increased test duration.

The monthly test required by the Tech. Spec. accomplishes the same purpose as the Code test with a more conservative allowable range for test quantities in the required action range. For example:

	Code	Tech. Spec.
Req'd. Action if	$\Delta P < .90\Delta Pr$ or $> 1.03\ \Delta Pr$	$\Delta P \leq .93\ \Delta Pc$*
Req'd. Action if	$Q < .90\ Qr$ or $> 1.03\ Qr$	$Q = Qc$*

* Where Qc and ΔPc are points on the mfg. curve.

2.1.9.2 Alternate Testing

The pumps will be tested and hydraulic parameters measured and analyzed in accordance with plant Technical Specifications.

2.1.10 Test Requirement

Sub-Article IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity and any deviation determined shall be compared to the limits given in Table IWP-3100-2.

2.1.10.1 Basis for Relief

Since discharge pressure instrumentation is provided for each train, single pump tests are required in order to satisfy the test requirement for ΔP. Starting and stopping of individual pumps and aligning the system into a test configuration for testing on a monthly basis defeats the intent and purpose of quarterly testing provided in paragraph 2.1.1.

2.1.10.2 Alternate Testing

A test parameter of discharge pressure (Po) will be measured for each train with two (2) pumps operating and providing normal pond supply. All pumps will be operated with another pump in that particular train. The pumps will be operationally acceptable if the test discharge pressure (Po) meets or exceeds a quantity corresponding to a ΔP for the system at minimum river level with two (2) pump flow. Inability to meet this criteria will result in corrective action as provided in paragraph 2.1.1.2. This alternate test will not be conducted coincidentally with the quarterly requirements of Table P-1 and paragraph 2.1.1.2.

2.1.11 Test Requirement

Sub-Article IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity and any deviation determined shall be compared to the limits given in Table IWP-3100-2.

2.1.11.1 Basis for Relief

In order to satisfy the test requirement for ΔP, each pump must be aligned to a fixed resistance recirculation flow path. In the event the system is providing reactor coolant flow or is aligned to do so, each of the pumps must be realigned for the test while the other pump is realigned to satisfy reactor coolant flow requirements. The test configuration also requires the train to be isolated from the RCS and aligned to the RWST. This test configuration jeopardizes the overpressurization protection requirements outlined in the Technical Specifications.

2.1.11.2 Alternate Testing

Test parameters will be measured and acceptability determined in accordance with the following:

Test	RCS	Pump Function	Parameter Measured	Acceptance Criteria	Criteria Basis
(1)	Power Operation or Pressure ≥450 psig	ECCS	ΔP, each pump	Per Test Requirement (2.1.11)	Code
(2)	Pressure <450 psig and/or temperature <310°F, RC Pump(s) Operating.	Aligned to RCS for RHR	ΔP, each pump	≥126.5 psid	.93 ΔPc* @ Qc*=3000
(3)	Pressure <450 psig and/or temperature <310°F, RC Pump Not Operating.	Reactor Coolant Flow	Q, each pump	≥3000 GPM	Tech. Spec.

* Where Qc and ΔPc are points on the mfg. curve.

Inability to meet this criteria will result in corrective action as provided in paragraph 2.1.1.2. The alternate tests (2) or (3) will not be conducted coincidently with the quarterly requirements of Table P-1 and paragraph 2.1.1.2. In the event the quarterly requirements of Table P-1 and Test (1) are required when the RCS condition is as specified in tests (2) or (3), tests (2) or (3) will be conducted in lieu of the quarterly requirements. The Quarterly Test Parameters and the test (1) parameter will then be measured, compared, and analyzed in accordance with the test requirement (2.1.11) within one (1) week after the plant is returned to normal operation.

3.0 INSERVICE TESTING OF VALVES

Table V-1 describes the inservice testing for valves subject to the requirements of Subsection IWV of the 1974 Edition of ASME Section XI with Addenda through Summer 1975. The table provides the identification of the valves to be tested, valve code classes, test categories, type, size, test requirements, function, and any alternate testing necessary. Table V-2 provides a legend which describes the alpha coding used in Table V-1. Relief from the testing requirements of Section XI is requested where full compliance with the requirements of the code is not practical. In such cases Table V-1 refers to a specific relief request number for the appropriate valves. The relief request provides specific information which identifies the applicable code requirements, justification for the relief request, and the testing to be used as an alternate. The design of Farley Nuclear Plant does not include any valves which would be classified as ASME Section XI Category D valves. Category E valves are not included in the program because no regular testing is required. The position of all Category E valves will be verified before and after valve operation as part of the system operating procedures and recorded in the plant record.

Table V-1 Valve Test Program

System Name: Reactor Coolant System

Revision Number: 0

System Number: Q2B13

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V026A	2-8090A	2	D-205037/2	F-2	A	1/8	N	M	C	Q	NT	3.1.29	--	Pressurizer Press. Trans. to Dead Weight Press. Gen.	
										LT	--	NO	--		
V026B	2-8090B	2	D-205037/2	F-2	A	1/8	N	M	C	Q	NT	3.1.29	--	Pressurizer Press. Trans. to Dead Weight Press. Gen.	
										LT	--	NO	--		
V031A	2-8010A	1	D-205037/2	D-5	C	6	PR	SA	C	SRV	--	NO	--	Pressurizer Safety Valve	
V031B	2-8010B	1	D-205037/2	D-4	C	6	PR	SA	C	SRV	--	NO	--	Pressurizer Safety Valve	
V031C	2-8010C	1	D-205037/2	D-3	C	6	PR	SA	C	SRV	--	NO	--	Pressurizer Safety Valve	
V037	2-8047	2	D-205037/2	B-10	A	1	D	AO	O	Q*	--	NO	--	Nitrogen to RCS Pressurizer Relief Tank	
										MT	--	NO	10		
										LT	--	NO	--		
V038	2-8046	2	D-205037/2	B-10	AC	3	CK	SA	O	CV	RR	3.1.3	--	Reactor Make-up Water to Pressurizer Relief Tank	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Reactor Coolant System Revision Number: 0

System Number: Q2B13 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V039	2-8033	2	D-205037/2	B-11	A	1	D	AO	O	Q*	--	NO	--	Nitrogen to RCS Pressurizer	
										MT	--	NO	10	Relief Tank	
										LT	--	NO	--		
V040	2-8028	2	D-205037/2	B-11	A	3	D	AO	C	Q*	--	NO	--	RMW to RCS Pressurizer Relief	
										MT	--	NO	10	Tank	
										LT	--	NO	--		
V054	2-8092	2	D-205037/2	C-6	AC	2	CK	SA	O	CV	RR	3.1.3	--	Charging Pump Relief Valve	
										LT	--	NO	--	Discharge to RCS Pressurizer	
														Relief Tank	

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-8701A	1	D-205041	G-3	A	12	GA	MO	C	Q*	CS	3.1.8	--	Reactor Coolant from RCS to RHR Pump	
												3.1.32			
												3.1.33			
										MT	--	NO	120		
										LT	--	NO	--		
V001B	2-8702A	1	D-205041	E-3	A	12	GA	MO	C	Q*	CS	3.1.8	--	Reactor Coolant from RCS to RHR Pump	
												3.1.32			
												3.1.33			
										MT	--	NO	120		
										LT	--	NO	--		
V009A	2-8706A	2	D-205041	B-8	B	8	GA	MO	C	Q*	--	NO	--	Charging Pump Suction from RHR Heat Exchanger	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (Inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V009B	2-8706B	2	D-205041	C-8	B	8	GA	MO	C	Q*	--	NO	--	Charging Pump Suction from RHR Heat Exchanger	
										MT	--	NO	15		
V015A	2-8708A	2	D-205041	G-4	C	3	PR	SA	C	SRV	--	NO	--	RHR Pump Suction	
V015B	2-8708B	2	D-205041	E-4	C	3	PR	SA	C	SRV	--	NO	--	RHR Pump Suction	
V016A	2-8701B	1	D-205041	G-2	B	12	GA	MO	C	Q*	CS	3.1.8	--	RHR Pump Suction	
												3.1.32			
												3.1.33			
										MT	--	NO	120		
V016B	2-8702B	1	D-205041	E-2	B	12	GA	MO	C	Q*	CS	3.1.8	--	RHR Pump Suction	
												3.1.32			
												3.1.33			
										MT	--	NO	120		

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V021A	2-8973A	1	D-205038/2	E-1	AC	6	CK	SA	C	CV	RR	3.1.12	--	RHR Pumps Disc. to SIS Injection CL	
										LT	--	NO	--		
V021B	2-8973B	1	D-205038/2	F-1	AC	6	CK	SA	C	CV	RR	3.1.12	--	RHR Pumps Disc. to SIS Injection CL	
										LT	--	NO	--		
V021C	2-8973C	1	D-205038/2	G-1	AC	6	CK	SA	C	CV	RR	3.1.12	--	RHR Pumps Disc. to SIS Injection CL	
										LT	--	NO	--		
V023A	2-8888A	2	D-205038/2	G-3	B	10	GA	MO	O	Q*	--	NO	--	RHR Pump Discharge	
										MT	--	NO	17		
V023B	2-8888B	2	D-205038/2	F-3	B	10	GA	MO	O	Q*	--	NO	--	RHR Pump Discharge	
										MT	--	NO	17		
V024A	2-8887A	2	D-205038/2	F-4	B	10	GA	MO	O	Q*	--	NO	--	RHR Pump Discharge	
										MT	--	NO	17		

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V024B	2-8887B	2	D-205038/2	J-4	B	10	GA	MO	O	Q*	--	NO	--	RHR Pump Discharge	
										MT	--	NO	17		
V025A	2-8811A	2	D-205038/2	J-4	A	14	GA	MO	C	Q	--	NO	--	RHR Pump (LHSI) Suction from CTMT Sump	
										MT	RPI	3.1.23	17		
										LT	CI	3.1.4	--		
V025B	2-8811B	2	D-205038/2	H-4	A	14	GA	MO	C	Q	--	NO	--	RHR Pump (LHSI) Suction from CTMT Sump	
										MT	RPI	3.1.23	17		
										LT	CI	3.1.4	--		
V026A	2-8812A	2	D-205038/2	J-5	A	14	GA	MO	C	Q*	--	NO	--	RHR (LHSI) Pump Suction from CTMT Sump	
										MT	--	NO	17		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: RHR LHSI System Revision Number: 0

System Number: Q2E11 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V026B	2-8812B	2	D-205038/2	H-5	A	14	GA	MO	C	Q*	--	NO	--	RHR (LHSI) Pump Suction from CTMT Sump	
										MT	--	NO	17		
										LT	--	NO	--		
V027A	2-8809A	2	D-205038/2	F-10	B	14	GA	MO	O	Q*	--	NO	--	RWST to RHR (LHSI) Pump	
										MT	--	NO	20		
V027B	2-8809B	2	D-205038/2	G-10	B	14	GA	MO	O	Q*	--	NO	--	RWST to RHR (LHSI) Pump	
										MT	--	NO	20		
V028	2-8958	2	D-205038/2	F-10	C	14	CK	SA	C	CV	--	3.1.10	--	RWST Supply to RHR (LHSI) Pump	
V032A	2-HCV603A	2	D-205041	B-7	B	10	B	AO	O	Q*	--	NO	--	Residual HX Tube Side Disc. to SIS	
										MT	NST	3.1.9	--		
V032B	2-HCV603B	2	D-205041	C-7	B	10	B	AO	O	Q*	--	NO	--	Residual HX Tube Side Disc. to SIS	
										MT	NST	3.1.9	--		

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V033A	2-HCV605A	2	D-205041	C-7	B	8	B	AO	C	Q*	--	NO	--	Residual HX By-Pass	
										MT	NST	3.1.9	--		
V033B	2-HCV605B	2	D-205041	D-8	B	8	B	AO	C	Q*	--	NO	--	Residual HX By-Pass	
										MT	NST	3.1.9	--		
V037A	2-FCV602A	2	D-205041	D-5	B	2	GL	MO	O	Q*	--	NO	--	RHR Pump Recirculation	
										MT	--	NO	15		
V037B	2-FCV602B	2	D-205041	D-5	B	2	GL	MO	O	Q*	--	NO	--	RHR Pump Recirculation	
										MT	--	NO	15		
V038A	2-8716A	2	D-205041	B-5	C	10	CK	SA	C	CV	--	3.1.10	--	RHR Discharge to RCS	
V038B	2-8716B	2	D-205041	C-5	C	10	CK	SA	C	CV	--	3.1.10	--	RHR Discharge to RCS	
V039A	2-8864B	2	D-205038/2	F-3	AC	3/4	PR	SA	C	SRV	--	NO	--	Residual Heat Exchanger Discharge	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V039B	2-8864A	2	D-205038/2	F-3	AC	3/4	PR	SA	C	SRV	--	NO	--	Residual Heat Exchanger Discharge	
										LT	--	NO	--		
V040	2-8865	2	D-205038/2	F-3	AC	3/4	PR	SA	C	SRV	--	NO	--	Residual Heat Exchanger Discharge	
										LT	--	NO	--		
V042A	2-8974B	2	D-205038/2	G-2	C	10	CK	SA	C	CV	RR	3.1.12	--	RHR Pumps Disc. to SIS Injection CL	
V042B	2-8974A	2	D-205038/2	E-2	C	10	CK	SA	C	CV	RR	3.1.12	--	RHR Pumps Disc. to SIS Injection CL	
V044	2-8889	2	D-205038/2	F-3	B	10	GA	MO	C	Q*	CS	3.1.17	--	SIS Residual HX Tube Side Disc. to SIS HL	
												3.1.32			
												3.1.33			
										MT	--	NO	17		
V051A	2-8998A	1	D-205038/1	C-2	AC	6	CK	SA	C	CV	RR	3.1.13	--	SIS - Boron Injection Tank to RCS CL Loops	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: RHR LHSI System

Revision Number: 0

System Number: Q2E11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V051B	2-8998B	1	D-205038/1	D-2	AC	6	CK	SA	C	CV	RR	3.1.13	--	SIS - Boron Injection Tank to RCS CL Loops	
										LT	--	NO	--		
V051C	2-8998C	1	D-205038/1	D-2	AC	6	CK	SA	C	CV	RR	3.1.13	--	SIS - Boron Injection Tank to RCS CL Loops	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Cooling System

Revision Number: 0

System Number: Q2E12

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-HV3999A	2	D-205010/2	B-10	B	36	B	AO	O	Q*	--	NO	--	Reactor Cavity Cooling System	
										MT	--	NO	45		
V001B	2-HV3999B	2	D-205010/2	B-10	B	36	B	AO	O	Q*	--	NO	--	Reactor Cavity Cooling System	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: Containment Spray System

Revision Number: 0

System Number: Q2E13

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002A	2-8822A	2	D-205038/3	C-2	C	8	CK	SA	C	CV	RR	3.1.40	--	CTMT Spray Pump Discharge	
V002B	2-8822B	2	D-205038/3	F-2	C	8	CK	SA	C	CV	RR	3.1.40	--	CTMT Spray Pump Discharge	
V003A	2-8826A	2	D-205038/3	H-3	A	12	GA	MO	C	Q*	--	NO	--	CTMT Spray Pump Suction from CTMT Sump	
										MT	RPI	3.1.23	17		
										LT	CI	3.1.4	--		
V003B	2-8826B	2	D-205038/3	H-3	A	12	GA	MO	C	Q*	--	NO	--	CTMT Spray Pump Suction from CTMT Sump	
										MT	RPI	3.1.23	17		
										LT	CI	3.1.4	--		
V004A	2-8827A	2	D-205038/3	H-4	A	12	GA	MO	C	Q*	--	NO	--	CTMT Spray Pump Suction from CTMT Sump	
										MT	--	NO	17		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Spray System

Revision Number: 0

System Number: Q2E13

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Catagor/ Size (inches)		Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V004B	2-8827B	2	D-205038/3	H-4	A	12	GA	MO	C	Q*	--	NO	--	CTMT Spray Pump Suction from CTMT Sump	
										MT	--	NO	17		
										LT	--	NO	--		
V005A	2-8820A	2	D-205038/3	B-5	B	8	GA	MO	C	Q*	--	NO	--	CTMT Spray Pump Discharge	
										MT	--	NO	15		
V005B	2-8820B	2	D-205038/3	G-5	B	8	GA	MO	C	Q*	--	NO	--	CTMT Spray Pump Discharge	
										MT	--	NO	15		
V007A	2-8839A	2	D-205038/3	C-6	C	3	CK	SA	C	CV	RR	3.1.39	--	Spray Additive Tank Discharge to Eductors	
V007B	2-8839B	2	D-205038/3	F-6	C	3	CK	SA	C	CV	RR	3.1.39	--	Spray Additive Tank Discharge to Eductors	
V012A	2-8817A	2	D-205038/3	E-10	B	10	GA	MO	O	Q*	--	NO	--	RWST to CTMT Spray Pump	
										MT	--	NO	17		

Table V-1 Valve Test Program

System Name: Containment Spray System

Revision Number: 0

System Number: Q2E13

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V012B	2-8817B	2	D-205038/3	G-10	B	10	GA	MO	O	Q*	--	NO	--	RWST to CTMT Spray Pump	
										MT	--	NO	17		
V014	2-8816	2	D-205038/3	E-10	C	12	CK	SA	C	CV	--	3.1.31	--	Containment Spray Suction from RWST	
V018	2-8841	3	D-205038/3	C-9	C	3/4	PR	SA	C	SRV	--	NO	--	SIS-Spray Additive Tank Relief Valve	
V021A	2-8836A	3	D-205038/3	F-8	B	3	GA	MO	C	Q*	--	NO	--	Spray Additive Tank Discharge to Eductors	
										MT	--	NO	15		
V021B	2-8836B	3	D-205038/3	F-9	B	3	GA	MO	C	Q*	--	NO	--	Spray Additive Tank Discharge to Eductors	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: Containment Isolation System

Revision Number: 0

System Number: Q2E14

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001	None	2	D-205010/2	A-2	AC	1	CK	SA	O	CV	RR	3.1.3	--	CTMT Air Sample	
										LT	--	NO	--		
V002	2-MOV3660	2	D-205010/2	B-2	A	1	GL	MO	O	Q*	CS	3.1.27	--	CTMT Air Sample	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
V003	2-MOV3318A	2	D-205010/2	C-2	A	1	GL	MO	C	Q*	CS	3.1.28	--	CTMT Diff. Pressure Iso. Valve	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Isolation System

Revision Number: 0

System Number: Q2E14

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V004	2-MOV3318B	2	D-205010/2	C-2	A	1	GL	MO	C	Q*	CS	3.1.28	--	CTMT Diff. Pressure Iso. Valve	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
HV3657	None	2	D-205010/2	A-4	A	1	GL	AO	O	Q*	CS	3.1.27	--	CTMT Air Sample	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Isolation System

Revision Number: 0

System Number: Q2E14

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3658	None	2	D-205010/2	B-4	A	1	GL	AO	O	Q*	CS	3.1.27	--	CTMT Air Sample	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Penetration Room Filtration System

Revision Number: 0

System Number: Q2E15

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-MOV3361B	3	D-205022	D-4	B	18	B	MO	O	Q*	--	NO	--	Penetration Filtration System	
										MT	--	NO	45		
V001B	2-MOV3361A	3	D-205022	D-5	B	18	B	MO	O	Q*	--	NO	--	Penetration Filtration System	
										MT	--	NO	45		
V001C	2-MOV3362B	3	D-205022	D-5	B	18	B	MO	O	Q*	--	NO	--	Penetration Filtration System	
										MT	--	NO	45		
V001D	2-MOV3362A	3	D-205022	D-6	B	18	B	MO	O	Q*	--	NO	--	Penetration Filtration System	
										MT	--	NO	45		
V002A	2-HV3356A	3	D-205022	C-2	B	14	B	AO	C	Q*	--	NO	--	Penetration Room Recirculation Fan Discharge	
										MT	--	NO	45		
V002B	2-HV3356B	3	D-205022	B-8	B	14	B	AO	C	Q*	--	NO	--	Penetration Room Recirculation Fan Discharge	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: Penetration Room Filtration System

Revision Number: 0

System Number: Q2E15

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V003A	2-HV3357A	3	D-205022	A-2	B	12	B	AO	C	Q*	--	NO	--	Penetration Room Recirculation Fan Discharge	
										MT	--	NO	45		
V003B	2-HV3357B	3	D-205022	D-8	B	12	B	AO	C	Q*	--	NO	--	Penetration Room Recirculation Fan Discharge	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V004A	2-8801A	2	D-205038/1	C-5	B	3	GA	MO	C	Q*	--	NO	--	Boron Injection Tank Discharge	
										MT	--	NO	10		
V004B	2-8801B	2	D-205038/1	D-5	B	3	GA	MO	C	Q*	--	NO	--	Boron Injection Tank Discharge	
										MT	--	NO	10		
V006A	2-8940A	2	D-205038/1	C-8	C	1	CK	SA	O	CV	--	NO	--	Boron Injection Recirculation Pump Discharge	
V006B	2-8940B	2	D-205038/1	D-8	C	1	CK	SA	O	CV	--	NO	--	Boron Injection Recirculation Pump Discharge	
V015	2-8942	2	D-205038/1	D-8	B	1	GL	AO	O	Q*	CS	3.1.38	--	Boron Injection Recirculation Pump Disc to Boron Injection Tank	
										MT	--	NO	10		
V016A	2-8803A	2	D-205038/1	G-7	B	3	GA	MO	C	Q*	--	NO	--	HHSI Pumps Discharge to Boron Injection Tank	
										MT	--	NO	10		
V016B	2-8803B	2	D-205038/1	G-7	B	3	GA	MO	C	Q*	--	NO	--	HHSI Pumps Discharge to Boron Injection Tank	
										MT	--	NO	10		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V026	2-8926	2	D-205038/1	E-12	C	8	CK	SA	C	CV	RR	3.1.14	--	HHSI Suction from RWST	
V032A	2-8948A	1	D-205038/2	D-2	C	12	CK	SA	C	CV	RR	3.1.15	--	Accumulator Tank Discharge to RCS Loops CL	
V032B	2-8948B	1	D-205038/2	D-2	C	12	CK	SA	C	CV	RR	3.1.15	--	Accumulator Tank Discharge to RCS Loops CL	
V032C	2-8948C	1	D-205038/2	E-2	C	12	CK	SA	C	CV	RR	3.1.15	--	Accumulator Tank Discharge to RCS Loops CL	
V037A	2-8956A	1	D-205038/2	D-3	C	12	CK	SA	C	CV	RR	3.1.34	--	Accumulator Tank Discharge to RCS Loops CL	
V037B	2-8956B	1	D-205038/2	D-6	C	12	CK	SA	C	CV	RR	3.1.34	--	Accumulator Tank Discharge to RCS Loops CL	
V037C	2-8956C	1	D-205038/2	D-8	C	12	CK	SA	C	CV	RR	3.1.34	--	Accumulator Tank Discharge to RCS Loops CL	
V049	2-8871	2	D-205038/2	E-9	A	3/4	GL	AO	C	Q*	--	NO	--	SIS Acc. Test Line to RWST	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V050	2-8961	2	D-205038/2	E-10	A	3/4	GL	AO	C	Q*	--	NO	--	SIS Acc. Test Line to RWST	
										MT	--	NO	10		
										LT	--	NO	--		
V052	2-8861	2	D-205038/2	D-9	AC	1	CK	SA	C	CV	NT	3.1.35	--	SIS Acc. Tanks fill Line	
										LT	--	NO	--		
V056A	2-8945A	2	D-205038/1	C-6	B	1	GL	AO	O	Q*	CS	3.1.38	--	Boron Inj. Tank Recirculation	
										MT	--	NO	10		
V056B	2-8945B	2	D-205038/1	C-7	B	1	GL	AO	O	Q*	CS	3.1.38	--	Boron Inj. Tank Recirculation	
										MT	--	NO	10		
V058	2-8947	2	D-205038/2	A-9	AC	1	CK	SA	O	CV	RR	3.1.3	--	Nitrogen Supply to Accumulator Tanks	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V059	2-8880	2	D-205038/2	A-11	A	1	GL	AO	C	Q*	--	NO	--	Nitrogen Supply to Accumulator Tanks	
										MT	--	NO	10		
										LT	--	NO	--		
V062A	2-8997A	1	D-205038/1	E-3	AC	2	CK	SA	C	CV	RR	3.1.14	--	SIS-Boron Injection Tank to RCS Loops CL	
										LT	--	NO	--		
V062B	2-8997B	1	D-205038/1	E-3	AC	2	CK	SA	C	CV	RR	3.1.14	--	SIS-Boron Injection Tank to RCS Loops CL	
										LT	--	NO	--		
V062C	2-8997C	1	D-205038/1	F-3	AC	2	CK	SA	C	CV	RR	3.1.14	--	SIS-Boron Injection Tank to RCS Loops CL	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V063	2-8885	2	D-205038/1	B-6	B	3	GA	MO	C	Q*	CS	3.1.25	--	HHSI Pumps Discharge to RC Loops CL	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
V066A	2-8995A	1	D-205038/1	A-4	AC	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops CL	
										LT	--	NO	--		
V066B	2-8995B	1	D-205038/1	B-4	AC	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops CL	
										LT	--	NO	--		
V066C	2-8995C	1	D-205038/1	C-4	AC	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops CL	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V068	2-8886	2	D-205038/1	H-7	B	3	GA	MO	C	Q*	CS	3.1.25	--	HHSI Pumps Discharge to RC Loops HL	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
V072	2-8884	2	D-205038/1	J-6	B	3	GA	MO	C	Q*	CS	3.1.25	--	HHSI Pumps Discharge to RC Loops HL	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
V076A	2-8988A	1	D-205038/1	F-4	AC	6	CK	SA	C	CV	RR	3.1.1	--	Water from Residual HX to SI to RCS HL Loops 1 & 2	
										LT	--	NO	--		
V076B	2-8988B	1	D-205038/1	G-4	AC	6	CK	SA	C	CV	RR	3.1.1	--	Water from Residual HX to SI to RCS HL Loops 1 & 2	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V077A	2-8993A	1	D-205038/1	F-2	AC	6	CK	SA	C	CV	RR	3.1.36	--	HHSI/LHSI and RHR to RC HL Loops 1 & 2	
										LT	--	NO	--		
V077B	2-8993B	1	D-205038/1	G-2	AC	6	CK	SA	C	CV	RR	3.1.36	--	HHSI/LHSI and RHR to RC HL Loops 1 & 2	
										LT	--	NO	--		
V077C	2-8993C	1	D-205038/1	G-2	AC	6	CK	SA	C	CV	RR	3.1.2	--	HHSI/LHSI and RHR to RC HL Loops 1 & 2	
										LT	--	NO	--		
V078A	2-8990A	1	D-205038/1	G-3	C	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops HL	
V078B	2-8990B	1	D-205038/1	G-3	C	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops HL	
V078C	2-8990C	1	D-205038/1	G-3	C	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops HL	
V079A	2-8992A	1	D-205038/1	G-3	C	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops HL	
V079B	2-8992B	1	D-205038/1	G-2	C	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops HL	
V079C	2-8992C	1	D-205038/1	G-2	C	2	CK	SA	C	CV	RR	3.1.2	--	HHSI Pumps Discharge to RC Loops HL	

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V091	2-8860	2	D-205038/2	D-10	A	1	GL	AO	C	Q*	--	NO	--	SIS Acc. Tanks Fill Line	
										MT	--	NO	10		
										LT	--	NO	--		
V115A	2-8368A	2	D-205039/1	G-2	AC	2	CK	SA	O	CV	RR	3.1.3	--	CVCS Seal Inj.-RC Pump	
										LT	--	NO	--		
V115B	2-8368B	2	D-205039/1	G-2	AC	2	CK	SA	O	CV	RR	3.1.3	--	CVCS Seal Inj.-RC Pump	
										LT	--	NO	--		
V115C	2-8368C	2	D-205039/1	G-2	AC	2	CK	SA	O	CV	RR	3.1.3	--	CVCS Seal Inj.-RC Pump	
										LT	--	NO	--		
V119	2-8381	2	D-205039/1	B-11	AC	3	CK	SA	O	CV	RR	3.1.3	--	CVCS Charging Pump Discharge to Reg. HX	
										LT	--	NO	--		
V122A	2-8481A	2	D-205039/2	F-4	C	3	CK	SA	C	CV	--	3.1.42	--	Charging Pump Discharge	

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V122B	2-8481B	2	D-205039/2	G-4	C	3	CK	SA	C	CV	--	3.1.42	--	Charging Pump Discharge	
V122C	2-8481C	2	D-205039/2	H-4	C	3	CK	SA	C	CV	--	3.1.42	--	Charging Pump Discharge	
V210	2-8442	2	D-205039/2	H-9	C	2	CK	SA	C	CV	RR	3.1.41	--	CVCS BA Filter to Charging Pump Suction	
V213	2-8103	2	D-205039/1	D-11	AC	3/4	CK	SA	O	CV	RR	3.1.3	--	Seal Water from RC Pumps to Seal Water Heat Exchanger	
										LT	--	NO	--		
V249A	2-8112	2	D-205039/1	C-11	A	3	GA	MO	O	Q*	CS	3.1.18	--	Seal Water from RC Pumps to Seal Water Heat Exchanger	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V249B	2-8100	2	D-205039/1	C-11	A	3	GA	MO	O	Q*	CS	3.1.18	--	Seal Water from RC Pumps to Seal Water Heat Exchanger	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		
V253A	2-8149A	2	D-205039/1	A-7	A	2	GL	AO	C	Q*	--	NO	--	RC from Reg. Heat Exchanger Shell Side to CVCS Letdown Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		
V253B	2-8149B	2	D-205039/1	A-7	A	2	GL	AO	O	Q*	--	NO	--	RC from Reg. Heat Exchanger Shell Side to CVCS Letdown Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V253C	2-8149C	2	D-205039/1	A-6	A	2	GL	AO	C	Q*	--	NO	--	RC from Reg. Heat Exchanger Shell Side to CVCS Letdown	
										MT	--	NO	10	Heat Exchanger	
										LT	--	NO	--		
V254	2-8152	2	D-205039/1	A-11	A	3	GL	AO	O	Q*	CS	3.1.19	--	RC from Reg. Heat Exhanger Shell Side to CVCS Letdown	
										MT	--	NO	10	Heat Exchanger	
										LT	--	NO	--		
V257	2-8107	2	D-205039/2	E-1	A	3	GA	MO	O	Q*	CS	3.1.19	--	CVCS Charging Pump Discharge to Reg. Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		
V258	2-8108	2	D-205039/2	E-2	A	3	GA	MO	O	Q*	CS	3.1.19	--	CVCS Charging Pump Discharge to Reg. Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (Inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V259A	2-8109A	2	D-205039/2	E-4	B	2	GL	MO	O	Q*	--	NO	--	Charging Pump Bypass Orifice Line	
										MT	--	NO	15		
V259B	2-8109B	2	D-205039/2	F-4	B	2	GL	MO	O	Q*	--	NO	--	Charging Pump Bypass Orifice Line	
										MT	--	NO	15		
V259C	2-8109C	2	D-205039/2	G-4	B	2	GL	MO	O	Q*	--	NO	--	Charging Pump Bypass Orifice Line	
										MT	--	NO	15		
V263A	2-8116A	2	D-205039/2	F-6	AC	3/4	PR	SA	C	SRV	--	NO	--	SIS RHR HX to Charging Pumps Suction	
										LT	--	NO	--		
V263B	2-8116B	2	D-205039/2	J-6	AC	3/4	PR	SA	C	SRV	--	NO	--	SIS RHR HX to Charging Pumps Suction	
										LT	--	NO	--		
V264	2-8104	2	D-205039/2	H-9	B	2	GL	MO	C	Q*	RR	3.1.37	--	CVCS BA Filter to Charging Pump Suction	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: NHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V265	2-8106	2	D-205039/2	D-4	B	3	GA	MO	O	Q*	--	NO	--	Charging Pump Bypass Orifice Disc. to Seal Water Heat Exchanger	
										MT	--	NO	15		
V324A	2-8130A	2	D-205039/2	G-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual HX	
										MT	--	NO	15		
V324B	2-8130B	2	D-205039/2	G-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual HX	
										MT	--	NO	15		
V325A	2-8131A	2	D-205039/2	G-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual Heat Exchanger	
										MT	--	NO	15		
V325B	2-8131B	2	D-205039/2	H-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual Heat Exchanger	
										MT	--	NO	15		
V326A	2-8132A	2	D-205039/2	G-3	B	4	GA	MO	O	Q*	--	NO	--	Charging Pump Disc.	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Categor/ Size (inches)		Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V326B	2-8132B	2	D-205039/2	G-3	B	4	GA	MO	O	Q*	--	NO	--	Charging Pump Disc.	
										MT	--	NO	15		
V327A	2-8133A	2	D-205039/2	G-3	B	4	GA	MO	O	Q*	--	NO	--	Charging Pump Disc.	
										MT	--	NO	15		
V327B	2-8133B	2	D-205039/2	H-3	B	4	GA	MO	O	Q*	--	NO	--	Charging Pump Disc.	
										MT	--	NO	15		
V336A	2-LCV115B	2	D-205039/2	G-7	B	8	GA	MO	C	Q*	--	NO	--	Charging Pump Suction from Refueling Water Storage Tank	
										MT	--	NO	15		
V336B	2-LCV115D	2	D-205039/2	H-7	B	8	GA	MO	C	Q*	--	NO	--	Charging Pump Suction from Refueling Water Storage Tank	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 0

System Number: Q2E21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V376A	2-LCV115C	2	D-205039/2	E-6	B	4	GA	MO	O	Q*	CS	3.1.19	--	Charging Pump Suction from Volume Control Tank	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
V376B	2-LCV115E	2	D-205039/2	E-6	B	4	GA	MO	O	Q*	CS	3.1.19	--	Charging Pump Suction from Volume Control Tank	
												3.1.32			
												3.1.33			
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: Reactor Cavity Post LOCA Dilution System

Revision Number: 0

System Number: Q2E22

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-MOV3872A	2	D-205019	D-5	B	10	GA	MO	C	Q	--	NO	--	Air from Reactor Cavity Hydrogen Dilution Fan to Reactor Cavity Wall	
										MT	--	NO	20		
V001B	2-MOV3872B	2	D-205019	E-5	B	10	GA	MO	C	Q	--	NO	--	Air from Reactor Cavity Hydrogen Dilution Fan to Reactor Cavity Wall	
										MT	--	NO	20		

Table V-1 Valve Test Program

System Name: Post Accident CTMT Venting & Sampling System

Revision Number: 0

System Number: Q2E23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Categor/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002	2-MOV3740	2	D-205019	C-10	A	6	GL	MO	C	Q*	--	NO	--	CTMT - Post Accident Vent	
										MT	--	NO	45		
										LT	--	NO	--		
V003	2-MOV3530	2	D-205019	C-9	A	6	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Vent	
										MT	--	NO	45		
										LT	--	NO	--		
V021	2-MOV3536	2	D-205019	B-8	B	2	GL	MO	C	Q*	RR	3.1.30	--	CTMT Pressurization Line	
										MT	--	NO	15		
V022A	2-MOV3528A	2	D-205019	C-8	A	3/4	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Sample	
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Post Accident CTMT Venting & Sampling System Revision Number: 0

System Number: Q2E23 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V022B	2-MOV3528B	2	D-205019	C-9	A	3/4	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Sample	
										MT	--	NO	15		
										LT	--	NO	--		
V022C	2-MOV3528C	2	D-205019	D-8	A	3/4	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Sample	
										MT	--	NO	15		
										LT	--	NO	--		
V022D	2-MOV3528D	2	D-205019	D-9	A	3/4	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Sample	
										MT	--	NO	15		
										LT	--	NO	--		
V023A	2-MOV3739A	2	D-205019	C-10	A	3/4	GL	MO	C	Q*	--	NO	--	Air Sample from CTMT to Air Sample Fan	
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Post Accident CTMT Venting & Sampling System

Revision Number: 0

System Number: Q2E23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category/ Size (inches)		Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V023B	2-MOV3739B	2	D-205019	D-10	A	3/4	GL	MO	C	Q*	--	NO	--	Air Sample from CTMT to Air Sample Fan	
										MT	--	NO	15		
										LT	--	NO	--		
V024A	2-MOV3745A	2	D-205019	G-10	A	3/4	GL	MO	C	Q*	--	NO	--	Air Sample Return from Air Sample Fan	
										MT	--	NO	15		
										LT	--	NO	--		
V024B	2-MOV3745B	2	D-205019	F-10	A	3/4	GL	MO	C	Q*	--	NO	--	Air Sample Return from Air Sample Fan	
										MT	--	NO	15		
										LT	--	NO	--		
V025A	2-MOV3835A	2	D-205019	G-9	A	3/4	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Sample Return	
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Post Accident CTMT Venting & Sampling System

Revision Number: 0

System Number: Q2E23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V025B	2-MOV3835B	2	D-205019	F-9	A	3/4	GL	MO	C	Q*	--	NO	--	CTMT Post-LOCA Sample Return	
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Liquid Waste Disposal System

Revision Number: 0

System Number: Q2G21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Categor/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001	2-7150	2	D-205042/1	B-5	A	3/4	D	AO	O	Q*	--	NO	--	Reactor Coolant Drain Tank Vent to WGS	
										MT	--	NO	10		
										LT	--	NO	--		
V005	2-7135	2	D-205042/1	C-11	A	3	D	M	C	Q	NT	3.1.29	--	Reactor Coolant Drain Tank Pump Disc. Control Valve By-Pass	
										LT	--	NO	--		
V006	2-7136	2	D-205042/1	C-10	A	3	D	AO	O	Q*	--	NO	--	Reactor Coolant Drain Tank Pump Disc. to Recycle Holdup Tank	
										MT	--	NO	10		
										LT	--	NO	--		
V064	2-LCV1003	2	D-205042/1	C-10	A	3	GL	AO	O	Q*	--	NO	--	Reactor Coolant Drain Tank Pump Disc. Control Valve	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Liquid Waste Disposal System

Revision Number: 0

System Number: Q2G21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V082	2-7126 5	2	D-205042/1	C-4	A	3/4	D	AO	O	Q*	--	NO	--	Reactor Coolant Drain Tank Vent to Waste Gas System	
										MT	--	NO	10		
										LT	--	NO	--		
V204	None	2	D-205004/1	G-9	AC	2	CK	SA	O	CV	RR	3.1.3	--	Containment Sump Recirculation	
										LT	--	NO	--		
V291	None	2	D-205004/1	H-8	AC	3/4	CK	SA	O	CV	RR	3.1.3	--	Containment Sump Pump Discharge	
										LT	--	NO	--		
HV3376	None	2	D-205004/1	H-8	A	3	GL	AO	O	Q*	--	NO	--	Containment Sump Pump Discharge	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Liquid Waste Disposal System

Revision Number: 0

System Number: Q2G21

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3377	None	2	D-205004/1	H-8	A	3	GL	AO	O	Q*	--	NO	--	Containment Sump Pump Discharge	
										MT	--	NO	10		
										LT	--	NO	--		
HV3380	None	2	D-205004/1	G-8	A	2	GL	AO	O	Q*	--	NO	--	Containment Sump Recirculation	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Spent Fuel Pool Cooling & Clean-Up System

Revision Number: 0

System Number: Q2G31

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V012	None	2	D-205043	B-4	A	2	D	M	C	Q*	NT	3.1.29	--	Spent Fuel Pool Clean-up Loop to Refueling Cavity	
										LT	--	NO	--		
V013	None	2	D-205043	B-3	AC	2	CK	SA	O	CV	RR	3.1.3	--	Spent Fuel Pool Clean-up Loop to Refueling Cavity	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Main Steam System

Revision Number: 0

System Number: Q2N11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-HV3369A	2	D-205033/1	G-7	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator Discharge to H.P. Turbine (MSIV)	
												3.1.33			
										MT	--	NO	5		
V001B	2-HV3369B	2	D-205033/1	E-8	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator Discharge to H.P. Turbine (MSIV)	
												3.1.33			
										MT	--	NO	5		
V001C	2-HV3369C	2	D-205003/1	B-8	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator Discharge to H.P. Turbine (MSIV)	
												3.1.33			
										MT	--	NO	5		
V002A	2-HV3370A	2	D-205033/1	G-8	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator to H.P. Turbine (MSIV)	
												3.1.33			
										MT	--	NO	5		

Table V-1 Valve Test Program

System Name: Main Steam System

Revision Number: 0

System Number: Q2N11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002B	2-HV3370B	2	D-205033/1	E-8	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator to H.P. Turbine (MSIV)	
												3.1.33			
										MT	--	NO	5		
V002C	2-HV3370C	2	D-205033/1	B-8	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator to H.P. Turbine (MSIV)	
												3.1.33			
										MT	--	NO	5		
V003A	2-HV3368A	2	D-205033/1	G-7	B	3	GA	AO	C	Q*	CS	3.1.22	--	MSIV Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	10		

Table V-1 Valve Test Program

System Name: Main Steam System

Revision Number: 0

System Number: Q2N11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V003B	2-HV3368B	2	D-205033/1	E-8	B	3	GA	AO	C	Q*	CS	3.1.22	--	MSIV Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
V003C	2-HV3368C	2	D-205033/1	C-8	B	3	GA	AO	C	Q*	CS	3.1.22	--	MSIV Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
V003D	2-HV3976A	2	D-205033/1	G-8	B	3	GA	AO	C	Q*	CS	3.1.22	--	MSIV Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	10		

Table V-1 Valve Test Program

System Name: Main Steam System

Revision Number: 0

System Number: Q2N11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V003E	2-HV3976B	2	D-205033/1	E-8	B	3	GA	AO	C	Q*	CS	3.1.22	--	MSIV Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
V003F	2-HV3976C	2	D-205033/1	C-8	B	3	GA	AO	C	Q*	CS	3.1.22	--	MSIV Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
V010A	None	2	D-205033/1	G-3	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V010B	None	2	D-205033/1	G-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V010C	None	2	D-205033/1	G-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V010D	None	2	D-205033/1	G-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	

Table V-1 Valve Test Program

System Name: Main Steam System

Revision Number: 0

System Number: Q2N11

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V010E	None	2	D-205033/1	G-5	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V011A	None	2	D-205033/1	D-3	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V011B	None	2	D-205033/1	D-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V011C	None	2	D-205033/1	D-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V011D	None	2	D-205033/1	D-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V011E	None	2	D-205033/1	D-5	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V012A	None	2	D-205033/1	B-3	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V012B	None	2	D-205033/1	B-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V012C	None	2	D-205033/1	B-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V012D	None	2	D-205033/1	B-4	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	
V012E	None	2	D-205033/1	B-5	C	6	PR	SA	C	SRV	--	NO	--	Main Steam Line Safety/Relief	

Table V-1 Valve Test Program

System Name: Aux. Steam System

Revision Number: 0

System Number: Q2N12

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	[illegible]														
HV3226	None	3	D-205033/2	C-5	B	3	GL	AO	C	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	45		
HV3234A	None	2	D-205033/2	G-8	B	1	GL	AO	O	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	10		
HV3234B	None	2	D-205033/2	C-8	B	1	GL	AO	O	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	10		
V001A	2-HV3235A	2	D-205033/2	E-8	B	3	GL	AO	C	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	10		
V001B	2-HV3235B	2	D-205033/2	D-8	B	3	GL	AO	C	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	10		
V010A	None	3	D-205033/2	E-6	C	4	CK	SA	C	CV	--	3.1.26	--	Main Steam to Aux. Feedwater Pump Turbine	
V010B	None	3	D-205033/2	D-6	C	4	CK	SA	C	CV	--	3.1.26	--	Main Steam to Aux. Feedwater Pump Turbine	

Table V-1 Valve Test Program

System Name: Condensate & Feedwater System

Revision Number: 0

System Number: Q2N21/Q2C22

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-MOV3232A	2	D-205073	G-7	C	14	CK	SA	O	CV	CS	3.1.24	--	Main Feedwater to Steam Generator	
												3.1.32			
V001B	2-MOV3232B	2	D-205073	E-7	C	14	CK	SA	O	CV	CS	3.1.24	--	Main Feedwater to Steam Generator	
												3.1.32			
V001C	2-MOV3232C	2	D-205073	B-7	C	14	CK	SA	O	CV	CS	3.1.24	--	Main Feedwater to Steam Generator	
												3.1.32			
FCV478	None	3	D-205073	G-6	B	14	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator	
												3.1.32			
												3.1.33			
										MT	--	NO	5		

Table V-1 Valve Test Program

System Name: Condensate & Feedwater System

Revision Number: 0

System Number: Q2N21/Q2C22

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
FCV488	None	3	D-205073	D-6	B	14	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator	
												3.1.32			
												3.1.33			
										MT	--	NO	5		
FCV498	None	3	D-205073	B-6	B	14	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator	
												3.1.32			
												3.1.33			
										MT	--	NO	5		
FCV2919A	None	3	D-205073	F-5	B	6	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	5		

Table V-1 Valve Test Program

System Name: Condensate & Feedwater System

Revision Number: 0

System Number: Q2N21/Q2C22

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
FCV2919B	None	3	D-205073	D-5	B	6	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	5		
FCV2919C	None	3	D-205073	A-5	B	6	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator Bypass	
												3.1.32			
												3.1.33			
										MT	--	NO	5		

Table V-1 Valve Test Program

System Name: Aux. Feedwater System

Revision Number: 0

System Number: Q2N23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002A	None	3	D-205007	B-6	C	4	CK	SA	C	CV	CS	3.1.32	--	MDAFW Discharge to Steam Generators	
												3.1.5	--		
V002B	None	3	D-205007	E-6	C	4	CK	SA	C	CV	CS	3.1.32	--	MDAFW Discharge to Steam Generators	
												3.1.5	--		
V002C	None	3	D-205007	B-9	C	4	CK	SA	C	CV	CS	3.1.32	--	MDAFW Discharge to Steam Generators	
												3.1.5	--		
V002D	None	3	D-205007	C-9	C	4	CK	SA	C	CV	CS	3.1.32	--	TDAFW Discharge to Steam Generators	
												3.1.7	--		
V002E	None	3	D-205007	D-9	C	4	CK	SA	C	CV	CS	3.1.32	--	MDAFW Discharge to Steam Generators	
												3.1.5	--		
V002F	None	3	D-205007	F-9	C	4	CK	SA	C	CV	CS	3.1.32	--	TDAFW Discharge to Steam Generators	
												3.1.7	--		

Table V-1 Valve Test Program

System Name: Aux. Feedwater System

Revision Number: 0

System Number: Q2N23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (Inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002G	None	3	D-205007	G-9	C	4	CK	SA	C	CV	CS	3.1.32	--	MDAFW Discharge to Steam Generators	
												3.1.5	--		
V002H	None	3	D-205007	H-9	C	4	CK	SA	C	CV	CS	3.1.32	--	TDAFW Discharge to Steam Generators	
												3.1.7	--		
V003	None	3	D-205007	G-6	C	6	CK	SA	C	CV	CS	3.1.32	--	TDAFW Discharge to Steam Generators	
												3.1.7			
V006	None	3	D-205007	H-3	C	8	CK	SA	C	CSP	--	3.1.43	--	Turbine-Driven Aux. Feedwater Pump Suction	
V007A	None	3	D-205007	B-3	C	6	CK	SA	C	CSP	--	3.1.44	--	Motor-Driven Aux. Feedwater Pump Suction	
V007B	None	3	D-205007	E-3	C	6	CK	SA	C	CSP	--	3.1.44	--	Motor-Driven Aux. Feedwater Pump Suction	
V011A	2-MOV3350A	2	D-205007	B-10	C	4	CK	SA	C	CV	CS	3.1.5	--	Aux. Feedwater to Steam Generator	
												3.1.32			

Table V-1 Valve Test Program

System Name: Aux. Feedwater System

Revision Number: 0

System Number: Q2N23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V011B	2-MOV3350B	2	D-205007	D-10	C	4	CK	SA	C	CV	CS	3.1.5	--	Aux. Feedwater to Steam Generator	
												3.1.32			
V011C	2-MOV3350C	2	D-205007	G-10	C	4	CK	SA	C	CV	CS	3.1.5	--	Aux. Feedwater to Steam Generator	
												3.1.32			
V013A	2-MOV3210A	3	D-205007	A-3	B	6	GA	MO	C	Q*	RR	3.1.6	--	Service Water to Aux. Feedwater Pump Suction	
										MT	--	NO	15		
V013B	2-MOV3210B	3	D-205007	D-3	B	6	GA	MO	C	Q*	RR	3.1.6	--	Service Water to Aux. Feedwater Pump Suction	
										MT	--	NO	15		
V014A	2-MOV3209A	3	D-205007	A-2	B	8	GA	MO	C	Q*	RR	3.1.6	--	Service Water to Aux. Feedwater Pump Suction	
										MT	--	NO	15		
V014B	2-MOV3209B	3	D-205007	D-2	B	8	GA	MO	C	Q*	RR	3.1.6	--	Service Water to Aux. Feedwater Pump Suction	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: Aux. Feedwater System

Revision Number: 0

System Number: Q2N23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V014C	2-MOV3216	3	D-205007	G-3	B	8	GA	MO	C	Q*	RR	3.1.6	--	Service Water to Aux. Feedwater Pump Suction	
										MT	--	NO	15		
V025A	2-MOV3764A	3	D-205007	B-7	B	4	GA	MO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
V025B	2-MOV3764B	3	D-205007	D-7	B	4	GA	MO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
V025C	2-MOV3764C	3	D-205007	F-7	B	4	GA	MO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
V025D	2-MOV3764D	3	D-205007	D-7	B	4	GA	MO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
V025E	2-MOV3764E	3	D-205007	B-7	B	4	GA	MO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: Aux. Feedwater System

Revision Number: 0

System Number: Q2N23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V025F	2-MOV3764F	3	D-205007	G-7	B	4	GA	MO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: Aux. Feedwater System

Revision Number: 0

System Number: Q2N23

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3227A	None	3	D-205007	B-8	B	3	GL	AO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
HV3227B	None	3	D-205007	D-8	B	3	GL	AO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
HV3227C	None	3	D-205007	G-8	B	3	GL	AO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
HV3228A	None	3	D-205007	C-8	B	3	GL	AO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
HV3228B	None	3	D-205007	F-8	B	3	GL	AO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		
HV3228C	None	3	D-205007	H-8	B	3	GL	AO	O	Q*	--	NO	--	Aux. Feedwater to Steam Generators	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: Condensate & Demin. Water Transfer and Storage Revision Number: 0

System Number: Q2P11 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001	2-HV3659	2	D-205047	H-10	A	3	GL	AO	C	Q*	--	NO	--	Demin. Water to Reactor Vessel Head Storage Stand	
										MT	--	NO	10		
										LT	--	NO	--		
V002	None	2	D-205047	H-8	AC	3	CK	SA	O	CV	RR	3.1.3	--	Demin. Water to Reactor Vessel Head Storage Stand	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Purge System Revision Number: 0

System Number: Q2P13 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V281	2-HV3198D	2	D-205010/2	F-3	A	48	B	AO	C	Q*	--	NO	--	Containment Purge Supply	
										MT	--	NO	5		
										LT	--	NO	--		
V282	2-HV3197	2	D-205010/1	G-9	A	48	B	AO	C	Q*	--	NO	--	Containment Purge Supply	
										MT	--	NO	5		
										LT	--	NO	--		
V283	2-HV3196	2	D-205010/1	E-9	A	48	B	AO	C	Q*	--	NO	--	Containment Purge Exhaust	
										MT	--	NO	5		
										LT	--	NO	--		
V284	2-HV3198A	2	D-205010/2	D-3	A	48	B	AO	C	Q*	--	NO	--	Containment Purge Exhaust	
										MT	--	NO	5		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Purge System

Revision Number: 0

System Number: Q2P13

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V289	2-HV2866A	2	D-205010/2	F-3	A	18	B	AO	C	Q*	--	NO	--	Containment Mini-Purge	
										MT	--	NO	5		
										LT	--	NO	--		
V290	2-HV2866B	2	D-205010/1	F-9	A	18	B	AO	C	Q*	--	NO	--	Containment Mini-Purge	
										MT	--	NO	5		
										LT	--	NO	--		
V291	2-HV2867A	2	D-205010/2	D-3	A	18	B	AO	C	Q*	--	NO	--	Containment Mini-Purge	
										MT	--	NO	5		
										LT	--	NO	--		
V292	2-HV2867B	2	D-205010/1	E-10	A	18	B	AO	C	Q*	--	NO	--	Containment Mini-Purge	
										MT	--	NO	5		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Sampling System

Revision Number: 0

System Number: Q2P15

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category/	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3103	None	2	D-205009/1	A-3	A	3/8	GL	AO	0	Q*	--	NO	--	Pressurizer Liquid Sample Line to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		
HV3104	None	2	D-205009/2	F-2	A	3/8	GL	AO	0	Q*	--	NO	--	Pressurizer Steam Sample Line to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		
HV3331	None	2	D-205009/2	F-4	A	3/8	GL	AO	0	Q*	--	NO	--	Pressurizer Steam Sample Line to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		
HV3332	None	2	D-205009/1	A-5	A	3/8	GL	AO	0	Q*	--	NO	--	Pressurizer Liquid Sample to Gross Failed Fuel Detector (GFFD)	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Sampling System

Revision Number: 0

System Number: Q2P15

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3333	None	2	D-205009/1	C-5	A	3/8	GL	AO	O	Q*	--	NO	--	Loops 2 & 3 Reactor Coolant HL Sample Line to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		
HV3334	None	2	D-205009/1	G-5	A	3/8	GL	AO	O	Q*	--	NO	--	Accumulator Tanks 1, 2, and 3 Sample Lines to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		
HV3765	None	2	D-205009/1	C-4	A	3/8	GL	AO	O	Q*	--	NO	--	Loops Nos. 1, 2, and 3 Reactor Coolant Hot Leg Sample Line to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		
HV3766	None	2	D-205009/1	G-4	A	3/8	GL	AO	O	Q*	--	NO	--	Accumulator Tanks 1, 2, and 3 Sample Line to GFFD	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 0

System Number: Q2P16

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V010A	2-MOV3019A	2	D-205003/1	A-7	B	12	GA	MO	O	Q*	--	NO	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V010B	2-MOV3019B	2	D-205003/1	C-7	B	12	GA	MO	O	Q*	--	NO	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V010C	2-MOV3019C	2	D-205003/1	E-7	B	12	GA	MO	O	Q*	--	NO	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V010D	2-MOV3019D	2	D-205003/1	F-7	B	12	GA	MO	O	Q*	--	NO	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V043A	2-MOV3024A	2	D-205003/1	A-10	B	10	GA	MO	C	Q*	--	NO	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		
V043B	2-MOV3024B	2	D-205003/1	C-10	B	10	GA	MO	C	Q*	--	NO	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 0

System Number: Q2P16

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V043C	2-MOV3024C	2	D-205003/1	E-10	B	10	GA	MO	C	Q*	--	NO	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		
V043D	2-MOV3024D	2	D-205003/1	F-10	B	10	GA	MO	C	Q*	--	NO	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		
V071	2-MOV3135	2	D-205003/2	B-9	A	6	GA	MO	O	Q*	CS	3.1.11	--	Service Water to Reactor Coolant Pump Motor Coolers	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 0

System Number: Q2P16

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V072	2-MOV3134	2	D-205003/2	B-12	A	6	GA	MO	O	Q*	CS	3.1.11	--	Service Water Return from Reactor Coolant Pump Motor Coolers	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
V075	None	2	D-205003/2	B-9	AC	6	CK	SA	O	CV	RR	3.1.3	--	Service Water to Reactor Coolant Pump Motor Coolers	
										LT	--	NO	--		
V081	2-MOV3131	2	D-205003/2	B-12	A	6	GA	MO	O	Q*	--	3.1.11	--	Service Water Return from Reactor Coolant Pump Motor Coolers	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 0

System Number: Q2P16

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V207A	2-MOV3441A	2	D-205003/1	A-9	B	10	GA	MO	0	Q*	--	NO	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V207B	2-MOV3441B	2	D-205003/1	C-9	B	10	GA	MO	0	Q*	--	NO	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V207C	2-MOV3441C	2	D-205003/1	E-9	B	10	GA	MO	0	Q*	--	NO	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V207D	2-MOV3441D	2	D-205003/1	F-9	B	10	GA	MO	0	Q*	--	NO	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V514	None	3	D-200013/8	E-5	B	24	B	MO	0	Q*	--	NO	--	Service Water Supply to Turbine Building - Train B	
										MT	--	NO	75		
V515	None	3	D-200013/8	E-4	B	24	B	MO	0	Q*	--	NO	--	Service Water Supply to Turbine Building - Train A	
										MT	--	NO	75		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 0

System Number: Q2P16

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V516	None	3	D-200013/8	D-5	B	24	B	MO	O	Q*	--	NO	--	Service Water Supply to Turbine Building - Train A	
										MT	--	NO	75		
V517	None	3	D-200013/8	D-3	B	24	B	MO	O	Q*	--	NO	--	Service Water Supply to Turbine Building - Train B	
										MT	--	NO	75		
V518	None	3	D-200013/3	B-3	B	12	B	MO	O	Q*	--	NO	--	Service Water Supply to Diesel Building - Train B	
										MT	--	NO	75		
V519	None	3	D-200013/3	B-3	B	12	B	MO	O	Q*	--	NO	--	Service Water Supply to Diesel Building - Train A	
										MT	--	NO	75		
V538	None	3	D-200013/8	C-10	B	42	B	MO	C	Q*	--	NO	--	Emergency Service Water Recirculation Line to Pond -	
										MT	--	NO	45	Train B	
V539	None	3	D-200013/8	E-9	B	42	B	MO	C	Q*	--	NO	--	Emergency Service Water Recirculation Line to Pond -	
										MT	--	NO	45	Train A	

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 0

System Number: Q2P16

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V545	None	3	D-200013/8	A-12	B	30	B	AO	O	Q*	--	NO	--	Service Water Train B to River	
										MT	--	NO	45		
V546	None	3	D-200013/8	C-12	B	30	B	AO	O	Q*	--	NO	--	Service Water Train A to River	
										MT	--	NO	45		
V659	None	3	D-200013/3	C-3	C	6	CK	SA	C	CV	--	3.1.16	--	Unit 2 Service Water Supply to Diesel Gen. 2C	
V660	None	3	D-200013/3	C-10	C	6	CK	SA	C	CV	--	3.1.16	--	Unit 2 Service Water Supply to Diesel Gen. 1C	
V661	None	3	D-200013/3	C-12	C	8	CK	SA	C	CV	--	3.1.16	--	Unit 2 Service Water Supply to Diesel Gen. 1-2A	

Table V-1 Valve Test Program

System Name: Component Cooling Water System Revision Number: 0

System Number: Q2P17 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V082	2-MOV3052	2	D-205002/2	C-1	A	6	GA	MO	O	Q*	CS	3.1.20	--	Component Cooling Water (CCW) to Reactor Coolant Pumps	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
V083	None	2	D-205002/2	C-2	AC	6	CK	SA	O	CV	RR	3.1.3	--	CCW Supply to Reactor Coolant Pumps	
										LT	--	NO	--		
V097	2-MOV3046	2	D-205002/2	B-6	A	6	GA	MO	O	Q*	CS	3.1.20	--	CCW Return from Reactor Coolant Pump Bearings	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Component Cooling Water System

Revision Number: 0

System Number: Q2P17

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V099	2-MOV3182	2	D-205002/2	C-7	A	6	GA	MO	O	Q*	CS	3.1.20	--	CCW Return from Reactor Coolant Pump Bearings	
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
V117A	2-MOV3031A	3	D-205002/1	A-5	B	2	GL	MO	C	Q*	--	NO	--	Reactor Make-up Water to Component Cooling Water System	
										MT	--	NO	15		
V117B	2-MOV3031B	3	D-205002/1	B-5	B	2	GL	MO	C	Q*	--	NO	--	Reactor Make-up Water to Component Cooling Water System	
										MT	--	NO	15		
V121A	2-MOV3030A	3	D-205002/1	A-5	B	2	GL	MO	C	Q*	--	NO	--	Demin. Water to Component Cooling Water System	
										MT	--	NO	15		

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Table V-1 Valve Test Program

System Name: Component Cooling Water System Revision Number: 0

System Number: Q2P17 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V121B	2-MOV3030B	3	D-205002/1	B-5	B	2	GL	MO	C	Q*	--	NO	--	Demin. Water to Component Cooling Water System	
										MT	--	NO	15		
V159	None	2	D-205002/2	E-2	AC	6	CK	SA	O	CV	RR	3.1.3	--	CCW Supply to Excess Letdown Heat Exchanger	
										LT	--	NO	--		
HV3045	None	2	D-205002/2	D-6	A	3	GL	AO	O	Q*	CS	3.1.20	--	CCW Return from Reactor Coolant Pumps Thermal Barrier	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		
HV3067	None	2	D-205002/2	E-6	A	6	GL	AO	O	Q*	--	NO	--	CCW Return from Excess Letdown Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Component Cooling Water System

Revision Number: 0

System Number: Q2P17

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3095	None	2	D-205002/2	E-1	A	6	GL	AO	O	Q*	--	NO	--	CCW Supply to Excess Letdown Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		
HV3096A	None	3	D-205002/2	G-12	B	8	GL	AO	O	Q*	--	NO	--	CCW Supply to Recycle Sys., Waste Gas Sys., Hydrogen	
										MT	--	NO	10	Recombiner.	
HV3096B	None	3	D-205002/2	F-7	B	8	GL	AO	O	Q*	--	NO	--	CCW Supply to Recycle Sys., Waste Gas Sys., Hydrogen	
										MT	--	NO	10	Recombiner.	
HV3184	None	2	D-205002/2	D-6	A	3	GL	AO	O	Q*	CS	3.1.20	--	CCW Return from Reactor Coolant Pumps Thermal Barrier	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Component Cooling Water System Revision Number: 0

System Number: Q2P17 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
HV3443	None	2	D-205002/2	E-5	A	6	GL	AO	O	Q*	--	NO	--	CCW Return from Excess Letdown Heat Exchanger	
										MT	--	NO	10		
										LT	--	NO	--		
RV3028	None	3	D-205002/1	A-2	B	2	GL	AO	O	Q*	--	NO	--	CCW Surge Tank Vent Valve Disch. to Auxiliary Building	
										MT	--	NO	45		

Table V-1 Valve Test Program

System Name: Service Air System

Revision Number: 0

System Number: Q2P18

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001	None	2	D-205035/1	G-7	A	2	GL	M	C	Q	NT	3.1.29	--	Service Air to Pipe Penetration Rooms and Containment	
										LT	--	NO	--		
V002	None	2	D-205035/1	G-7	A	2	GL	M	C	Q	NT	3.1.29	--	Service Air to Pipe Penetration Rooms and Containment	
										LT	--	NO	--		
V004	None	2	D-205035/1	B-12	A	2	GL	M	C	Q	NT	3.1.29	--	Service Air to Pipe Penetration Rooms and Containment	
										LT	--	NO	--		
V005	None	2	D-205035/1	B-12	A	2	GL	M	C	Q	NT	3.1.29	--	Service Air to Pipe Penetration Rooms and Containment	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Instrument Air System

Revision Number: 0

System Number: Q2P19

(Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002	None	2	D-205034/4	E-3	AC	2	CK	SA	O	CV	RR	3.1.3	--	Containment Instrument Air Supply	
										LT	--	NO	--		
HV3611	None	2	D-205034/2	D-11	A	2	GL	AO	O	Q*	CS	3.1.21	--	Containment Instrument Air Supply	
												3.1.32			
												3.1.33			
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: CTMT Cooling & Purge System Revision Number: 0

System Number: Q2P23 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V002A	2-MOV3238	2	D-205010/1	G-2	A	8	GL	MO	C	Q	NT	3.1.29	--	Containment Leak Rate Test Valve	
										MT	NST	3.1.29	--		
										LT	--	NO	--		
V002B	2-MOV3239	2	D-205010/1	G-2	A	8	GL	MO	C	Q	NT	3.1.29	--	Containment Leak Rate Test Valve	
										MT	NST	3.1.29			
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Spent Fuel Pool Vent & Filtration System Revision Number: 0

System Number: Q2V48 (Note: See Table V-2 for Legend of Symbols)

Valve Number		Code Class	P&ID/Sh Number	Coordinates	Section XI Valve Category	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Test Alternates	Relief Requests	Stroke Time Limit (Sec.)	Function	Remarks
TPNS	Other														
V001A	2-HV3538A	3	D-205022	B-11	B	16	B	AO	C	Q*	--	NO	--	Spent Fuel Pool Filtration System to Penetration Room	
										MT	--	NO	45	Filter Unit	
V001B	2-HV3538B	3	D-205022	D-11	B	16	B	AO	C	Q*	--	NO	--	Spent Fuel Pool Filtration System to Penetration Room	
										MT	--	NO	45	Filter Unit	

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TABLE V-2 LEGEND OF SYMBOLS

Legend for Valve Type

B - Butterfly

CK - Check

D - Diaphragm

GA - Gate

GL - Globe

N - Needle

PR - Pressure Relief or Safety

RC - Reversed check valve for Main Steam Isolation. Check valve is reversed in line to block flow.

Legend for Actuator Type

AO - Air Operated

M - Manual

MO - Motor Operated

SA - System Actuated

Legend for Valve Testing Requirements

Q - Exercise valves (full stroke) for operability every three (3) months except that when one train of a redundant system is inoperable, then nonredundant valves in the remaining train should not be cycled since their failure would cause a loss of total system function.

LT - Valves are leak tested per Section XI Article IWV-3420.

MT - Stroke time measurements are taken and compared to the stroke time limiting value per Section XI Article IWV-3410.

CV - Exercise check valves to the position required to fulfill their function every three (3) months.

SRV- Safety and relief valves are tested per Section XI Article IWV-3510.

CSP- Exercise valve (full stroke) for operability every cold shutdown and exercise valve (partial stroke) every (3) months.

* - Remote valve position indicator lights are used to verify valve stem position.

Legend for Valve Testing Alternates

RR - Exercise valve for operability at each reactor refueling outage.

CI - Containment isolation valve can be leak tested only in reverse pressure differential mode.

RPI- Redundant remote position indicator will be used for stroke time measurements.

NT - No testing required.

NST- No stroke time measurements are taken.

CS - Exercise valve (full stroke) for operability during each cold shutdown and at each refueling outage. In case of frequent cold shutdowns, valve testing will not be performed more often than once every three (3) months for Category A, B, and C valves.

Valve testing will commence not later than 48 hours after an unscheduled cold shutdown and continue until complete or until plant is ready to return to power. Completion of all valve testing is not a prerequisite to return to power. Any testing not completed at one cold shutdown should be performed during the subsequent cold shutdowns to meet the code-specified testing frequency.

3.1 Relief Requests

3.1.1 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.1.1 Basis for Relief

Operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, these valves cannot be full or partial stroked because the RHR/LHSI pumps cannot overcome RCS pressure. During cold shutdown, these valves cannot be fully or partially stroked without bypassing the core during RHR and defeating the RHR cooling function.

3.1.1.2 Alternate Testing

The valves will be full-stroke tested at each refueling outage when RHR/LHSI design flow is used to fill the reactor cavity.

3.1.2 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.2.1 Basis for Relief

Operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, these valves cannot be full-stroke exercised because the HHSI pumps cannot achieve design flow against RCS pressure. Partially stroking the valves at power would induce thermal shock to the safety injection nozzles. During cold shutdown, full stroking would overpressurize the RCS.

3.1.2.2 Alternate Testing

The valves will be verified as operable by comparing HHSI flow to the sum of the established individual reactor loop injection flows. The valve test will coincide with the testing of the HHSI system during each refueling outage.

3.1.3 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.3.1 Basis for Relief

Due to plant design it is not practical to verify by any positive means, neither directly nor indirectly, the operability of these normally open check valves per the requirements of IWV-3520.

3.1.3.2 Alternate Testing

Valve closure will be verified during the performance of the valve leak rate test which shall be conducted at the same frequency as reactor refueling outages per the plant Technical Specifications.

3.1.4 Test Requirement

Valves shall be leak tested with the differential pressure in the same direction as applied when the valves are performing their safety functions.

3.1.4.1 Basis for Relief

These valves provide primary isolation for containment sump penetrations with no provisions for leak rate testing with the differential pressure in the same direction as applied when the valves are performing their function as required by IWV-3420(c).

3.1.4.2 Alternate Testing

Leak rate testing will be performed by applying the differential pressure between the primary and secondary isolation valves.

3.1.5 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.5.1 Basis for Relief

The only positive means of exercising this normally closed valve is by directing AFW flow into the Steam Generators. The initiation of AFW during power operation will result in unnecessary thermal shock to the Auxiliary Feedwater-to-Main Feedwater connection. An introduction of cold water into the secondary system will also cause power transients.

3.1.5.2 Alternate Testing

AFW flow will be directed through the valve at the design flow rate of the AFW system at cold shutdown. Verification of this flow through the valve in conjunction with verification that the control valve position is the same for each test will provide assurance that the valve has opened sufficiently to perform its function.

3.1.6 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.6.1 Basis for Relief

It is not practical to exercise these valves during normal plant operation or at cold shutdown per IWV-3410. The exercising of these valves would introduce chlorides and fluorides into the Steam Generators, jeopardizing the secondary water chemistry.

3.1.6.2 Alternate Testing

These valves will be exercised at reactor refueling outages.

3.1.7 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.7.1 Basis for Relief

The only positive means of exercising (full or partial stroke) of this normally closed valve is by directing AFW flow into the Steam Generators. The initiation of AFW during power operation will result in unnecessary thermal shock to the Auxiliary Feedwater-to-Main Feedwater connection. An introduction of cold water into the secondary system will also cause power transients. The operation of the Turbine Driven AFW pump during cold shutdown is not possible because Turbine Drive steam is not available.

3.1.7.2 Alternate Testing

AFW flow will be directed through the valve at the design flow of the AFW system during a mode of operation approaching cold shutdown or leaving cold shutdown in which steam is available. Verification of this flow through the valve in conjunction with verification that the control valve position is the same for each test will provide assurance that the valve has opened sufficiently to perform its function.

3.1.8 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.8.1 Basis for Relief

The operability testing (full or partial stroke) of these valves during normal operation cannot be accomplished during normal operation because:

1) Valve is interlocked with RCS pressure signal which prohibits valve opening at a RCS pressure greater than 402.5 psig.

2) The motor operated valve is not designed for partial stroking.

3.1.8.2 Alternate Testing

The valve will be full-stroke tested for operability at each cold shutdown.

3.1.9 Test Requirement

The stroke time of all power operated valves shall be measured.

3.1.9.1 Basis for Relief

The measurement of stroke time for these flow control valves provides no increase in the level of safety for this system. The valves have no active function when the system is aligned for the LHSI function.

3.1.9.2 Alternate Testing

The operability testing of these valves every 3 months will verify that the valves will operate from a closed to an open position.

3.1.10 Test Requirement

IWV-3520(2) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by pressure indications, or by other positive means.

3.1.10.1 Basis for Relief

Due to plant design, the operability of these normally closed check valves cannot be determined by any of the specific methods allowed in IWV-3520(2).

3.1.10.2 Alternate Testing

The only positive means of demonstrating operability is by verification of flow such that the valves move to perform their function. During power operation, the RHR pumps will be operated to provide design flow in the recirculation path back to the RWST, thereby full stroking these valves.

3.1.11 Test Requirement

Exercise valves for operability at least once every three (3) months.

3.1.11.1 Basis for Relief

The operability testing of these valves during normal operation could cause a loss of system function. The failure of one of these valves in a nonconservative (closed) position would cause overheating of the RCP motors and would require the shutdown of RC Pumps and of the reactor. Valve design does not facilitate partial-stroke testing.

3.1.11.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.12 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.12.1 Basis for Relief

The operability testing of these normally closed check valves per IWV-3520 requires flow verification under LHSI into each RCS loop. These valves cannot be exercised during power operation because the LHSI/RHR pumps cannot overcome RCS pressure. During cold shutdown, these valves cannot be full-stroke exercised because design flow cannot be verified through the valve unless all initial test conditions can be met (i.e., suction from RWST through both pumps to the RCS with the RCS at atmospheric pressure).

3.1.12.2 Alternate Testing

The valves will be full-stroked using the LHSI design flow during each refueling outage.

3.1.13 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.13.1 Basis for Relief

The operability testing of these normally closed check valves per IWV-3520 requires flow verification under HHSI or LHSI into each RCS loop. This flow verification cannot be accomplished during normal operation or cold shutdown.

During normal operation with the Reactor Coolant System at operating pressure, these valves cannot be full-stroke exercised because the HHSI pumps cannot provide design flow and the LHSI pumps cannot provide any flow.

During normal operation, partial-stroke exercising these valves would induce undesired thermal shock to the safety injection nozzles.

During cold shutdown, design flow (full-stroke exercising) cannot be verified because the Reactor Coolant System is pressurized.

3.1.13.2 Alternate Testing

The valve will be verified as operable by comparing HHSI flow through the BIT to the sum of the established individual reactor loop injection flows. The valve test will coincide with the testing of the HHSI system via the BIT at each refueling outage.

3.1.14 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.14.1 Basis for Relief

The operability testing of this normally closed check valve per IWV-3520 requires flow verification under HHSI into each RCS loop. This flow verification cannot be accomplished during normal operation or cold shutdown. During normal operation, full or partial stroking would cause overboration of the RCS, possibly causing a plant shutdown. During cold shutdown, stroking the valve would cause overpressurization of the RCS.

3.1.14.2 Alternate Testing

The valve will be verified as operable by initiation of HHSI through the BIT to the RCS during each refueling outage.

3.1.15 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.15.1 Basis for Relief

The operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, these valves cannot be full- or partial-stroke exercised because the accumulators cannot overcome RCS pressure. During cold shutdown, these valves cannot be fully or partially stroked without overpressurizing the RCS. During refueling outages, these valves cannot be full-stroke exercised at accumulator operating pressure without causing internal core damage due to excessive flow rates. Disassembly of the valves during refueling outages requires the draining of the accumulators and associated piping.

3.1.15.2 Alternate Testing

The valves will be partial-stroke exercised at each refueling outage by discharging the accumulators into the RCS with the accumulators at atmospheric pressure. The valves will be verified as closed prior to the exercising by testing for leakage with a differential pressure >100 psi across the valves. A decrease in accumulator level when the system is discharged to the RCS will verify a partial stroke.

3.1.16 Test Requirement

IWV-3520(2) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by appropriate pressure indications, or by other positive means.

3.1.16.1 Basis for Relief

Due to plant design, the operability of these normally closed check valves cannot be determined by any of the specific methods allowed in IWV-3520(2).

3.1.16.2 Alternate Testing

Verification that the valve will sufficiently open to perform its function is provided if:

1) Diesel Generator is supplied by this valve, i.e., Unit No. 1 supply is isolated;

2) Diesel Generator is operating (tested pursuant to Technical Specifications); and

3) Diesel-Generator Jacket Cooling-Water Temperature is adequate for continued operation.

3.1.17 Test Requirement

Exercise the valve for operability at least once every three (3) months.

3.1.17.1 Basis for Relief

The operability testing (full or partial stroke) of this valve during normal operation could subject the RHR system to pressure in excess of its design

pressure (600 psig). It is assumed for the purpose of the cycling test that the upstream check valves have failed. Venting of the upstream pressure cannot be accomplished under any conditions because of the radiation hazard to plant personnel.

3.1.17.2 Alternate Testing

Once every three (3) months the upstream pressure will be measured. If the pressure is less than or equal to 550 psig, then the valve will be full-stroke exercised. If the pressure is greater than 550 psig, the valve will not be exercised that quarter. If the upstream pressure prohibits quarterly testing, the valve will be full stroked at cold shutdowns.

3.1.18 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.18.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation could cause a loss of system function. The failure of these valves in a non-conservative position during a cycling test would cause the loss of the RCP seal water cooling function. The design of the valve will not facilitate a partial-stroke test.

3.1.18.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.19 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.19.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation could jeopardize the charging function of the CVCS. Failure in a nonconservative position would eliminate the VCT as a source of RCS charging and possibly cause a reactor trip. The design of the valves will not facilitate a partial-stroke test.

3.1.19.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.20 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.20.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation would jeopardize the RCP cooling function. Cycling of the valves would interrupt the CCW supply to the reactor coolant pumps. Also the failure of the

valves in a nonconservative position during the cycling test would result in a loss of the system function. The design of the motor-operated valves will not facilitate a partial-stroke test.

3.1.20.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.21 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.21.1 Basis for Relief

The operability testing (full stroke) of this valve during normal operation would cause an interruption of instrument air supply to instruments and equipment associated with the RCS. Also, a failure in a nonconservative position during a cycling test would cause a complete loss of instrument air supply to the containment. The design of the valve will not facilitate a partial-stroke test.

3.1.21.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.22 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.22.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation is not possible. The bypass valves are interlocked with the MSIVs such that when the MSIVs are open, the bypass valves are closed. The design of the valves will not facilitate a partial-stroke test.

3.1.22.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.23 Test Requirement

Normally inaccessible valves with remote position indicators shall be visually observed at the same (or greater) frequency as reactor refueling outages to confirm operability of position indicators.

3.1.23.1 Basis for Relief

Remote position indicators will be used to verify valve position per IWV-3300. However, visual observation of valve operation is not practical. Such observation would require removal of the valve protective chamber which is also considered to be a portion of the containment pressure boundary. Since the valve is provided with redundant indicators, position is accurately reflected by the remote indications.

3.1.23.2 Alternate Testing

The leak rate test during each refueling outage will verify that the remote position indicators accurately reflect the closed position of the valves. No practical means exists to verify the open position of the valves. However, following each leak rate test the air pressure will be relieved by opening these valves, thus verifying that the disk moves away from the seat.

3.1.24 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.24.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation would cause an interruption of feedwater to the Steam Generators and introduce unwarranted transients to the primary as well as the secondary systems. The design of the valves will not facilitate a partial-stroke test.

3.1.24.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.25 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.25.1 Basis for Relief

The operability testing (full stroke) of this valve during normal operation could put the plant in an unsafe condition. The normally closed valve provides back-up safety-injection into the RCS bypassing the BIT. Failure during cycling in a nonconservative position would jeopardize the normal safety injection function. The valve design does not facilitate a partial-stroke test.

3.1.25.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.26 Test Requirement

IWV-3520(2) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by appropriate pressure indications, or by other positive means.

3.1.26.1 Basis for Relief

Due to plant design, the operability of these normally closed check valves cannot be determined by any of the specific methods allowed in IWV-3520(2).

3.1.26.2 Alternate Testing

The only positive means of demonstrating operability is by verification of flow such that the valves move to perform their function. Steam for the Turbine Driven Auxiliary Feedwater Pump quarterly test will be supplied through each of these valves in succession. An acceptable pump test verifies that each valve moves to perform its function.

3.1.27 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.27.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation could cause a loss of system function. A failure while cycling in a nonconservative position would cause a loss of the CTMT radiation monitoring system. The valve design does not facilitate a partial-stroke test.

3.1.27.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.28 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.28.1 Basis for Relief

The operability testing (full stroke) of these valves during normal operation could cause a loss of system function. A failure while cycling in a nonconservative position would cause a loss of the CTMT Pressure Instrument System. The valve design does not facilitate a partial-stroke test.

3.1.28.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.29 Test Requirement

Exercise the valves for operability at least once every three (3) months.

3.1.29.1 Basis for Relief

The operability testing (full or partial stroke) during normal operation or cold shutdown of these valves provides no assurance of an increase in safety. The valves are containment isolation valves which are normally closed and passive.

3.1.29.2 Alternate Testing

The valves' closed position will be verified during the performance of the leak-rate tests at each refueling outage.

3.1.30 Test Requirement

The valve will be full-stroke tested for operability at least once every three (3) months.

3.1.30.1 Basis for Relief

The operability testing (full stroke) of this valve during normal operation or cold shutdown could cause a loss of system function. During normal operation, opening the valve dumps all instrument air into the CTMT atmosphere causing a loss of RCS pressure control for spray and a loss of letdown control. During cold shutdown, exercising the valve would cause loss of pressure control and level control. Valve design does not facilitate a partial-stroke test.

3.1.30.2 Alternate Testing

The valve will be full-stroke tested for operability at each refueling outage.

3.1.31 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.31.1 Basis for Relief

The operability testing (full stroke) of this normally closed check valve per IWV-3520 during plant operation, cold shutdown, or refueling is not practical. The only means of full stroking the valve is by initiating the Containment Spray System which would cause excessive damage to equipment in CTMT. Manually exercising the valve would require removing the valve bonnet after draining the RWST. This action would put the plant in an unsafe condition.

3.1.31.2 Alternate Testing

The valve will be verified as operable during the quarterly testing of the Containment Spray Pumps. Due to system design, the valve can only be partial-stroke tested.

3.1.32 Test Requirement

IWV-3410(g) and IWV-3520(c) state that when corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable operation shall be run following any required corrective action before the valve is returned to service.

3.1.32.1 Basis for Relief

The plant Technical Specifications provide the requirements and plant conditions necessary for plant startup.

3.1.32.2 Alternate Testing

The test requirement will be satisfied before the valve is required for plant operability as defined in the plant Technical Specifications.

3.1.33 Test Requirement

IWV-3410(c) states that if an increase in stroke time of 25% or more from the previous test for valves with stroke times greater than ten seconds or 50% or more for valves with stroke times less than or equal to ten seconds is observed, test frequency shall be increased to once each month until corrective action is taken.

3.1.33.1 Basis for Relief

Valves that are normally tested during cold shutdown or refueling cannot be tested once each month. Stroking these valves during power operation may place the plant in an unsafe condition.

3.1.33.2 Alternate Testing

The test frequency shall be increased to once each cold shutdown, not to exceed once each month.

3.1.34 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.34.1 Basis for Relief

The operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, these valves cannot be full-stroke exercised because the accumulators cannot overcome RCS pressure. The valves cannot be partial-stroke exercised during normal operation without making the accumulators inoperable, thus placing the plant in an unsafe condition. During cold shutdown, these valves cannot be fully or partially stroked without overpressurizing the RCS. During refueling outages, these valves cannot be full-stroke exercised at accumulator operating pressure without causing internal core damage due to excessive flow rates. Disassembly of the valves during refueling outages requires the draining of the accumulators and associated piping.

3.1.34.2 Alternate Testing

The valves will be partial-stroke exercised at each refueling outage by discharging the accumulators into the RCS with the accumulators at atmospheric pressure. The valves will be verified as closed prior to the exercising by testing for leakage with a differential pressure $\geq$100 psi across the valves. A decrease in accumulator level when the system is discharged to the RCS will verify a partial stroke.

3.1.35 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.35.1 Basis for Relief

The valve is a passive containment isolation valve whose safety function is to remain closed.

3.1.35.2 Alternate Testing

Valve closure will be verified during the performance of the valve leak-rate test which shall be conducted at the same frequency as refueling outages.

3.1.36 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.36.1 Basis for Relief

Operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, these valves cannot be full stroked because the HHSI pumps cannot provide design flow and the LHSI pumps cannot provide any flow. Partial stroking the valves at power would induce thermal shock to the safety injection nozzles. During cold shutdown, full or partial stroking would overpressurize the RCS.

3.1.36.2 Alternate Testing

The valves will be full stroked by initiation of LHSI while filling the cavity during each refueling outage. Establishment of LHSI/ECCS design flow through the Hot Leg injection path will verify that the valves have sufficiently opened to perform their function.

3.1.37 Test Requirement

Exercise the valve for operability at least once every three (3) months.

3.1.37.1 Basis for Relief

Operability testing of this valve during normal operation or cold shutdown would require that the boric acid system be made inoperable, thus placing the plant in an unsafe condition.

3.1.37.2 Alternate Testing

The valve will be full-stroke tested for operability at each refueling outage.

3.1.38 Test Requirement

Exercise valves for operability at least once every three (3) months.

3.1.38.1 Basis for Relief

The operability testing (full stroke) of this valve during normal operation could cause a loss of system function. A failure while cycling in a nonconservative (closed) position would render the boron injection system inoperable. The volume of the BIT could not be assured. Valve design does not facilitate a partial-stroke test.

3.1.38.2 Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.39 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.39.1 Basis for Relief

Operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, exercising these valves with flow would introduce sodium hydroxide into the RWST (ECCS water supply). During cold shutdown, both trains of the system would have to be made inoperable in order to drain the system for bonnet removal and manual exercising of the valve disk. This test is beyond the scope of cold shutdown testing.

3.1.39.2 Alternate Testing

The valves will be verified as operable by removing the bonnet and manually full-stroke exercising the disk at each refueling outage.

3.1.40 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.40.1 Basis for Relief

Operability testing of these normally closed check valves per IWV-3520 during power operation or cold shutdown is not practical. During power operation the CTMT is not available. During cold shutdown, valve disassembly or an air test for flow verification requires draining a portion of the system. These tests are beyond the scope of cold-shutdown testing.

3.1.40.2 Alternate Testing

The valves will be verified as operable by removing the bonnet and manually full-stroke exercising the disk at each refueling outage.

3.1.41 Test Requirement

Exercise check valves for operability at least once every three (3) months.

3.1.41.1 Basis for Relief

Operability testing of this normally closed check valve per IWV-3520 during normal operation or cold shutdown would require that the boric acid system be made inoperable, thus placing the plant in an unsafe condition.

3.1.41.2 Alternate Testing

The valve will be full-stroke tested at each refueling outage. A flow or differential pressure greater than or equal to the manufacturer's minimum full-open values (Flow $\geq$ 10 GPM, $\Delta P \geq$ 5 psig) will be verified.

3.1.42 Test Requirement

IWV-3520(2) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by appropriate pressure indications, or by other positive means.

3.1.42.1 Basis for Relief

Due to plant design, the operability of this normally closed check valve cannot be determined by any of the specific methods allowed in IWV-3520(2).

3.1.42.2 Alternate Testing

The only positive means of demonstrating operability is by verification of flow such that the valve is full-stroke exercised. A flow greater than or equal to the manufacturer's minimum full-open value (Flow $\geq$ 70 GPM) will be verified quarterly provided the associated charging pump is operable.

3.1.43 Test Requirement

IWV-3520(2) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by appropriate pressure indications, or by other positive means.

3.1.43.1 Basis for Relief

Due to plant design, the operability of this normally closed check valve cannot be determined by any of the specific methods allowed in IWV-3520(2).

3.1.43.2 Alternate Testing

The only positive means of demonstrating operability is by verification of flow such that the valve moves to perform its function. A partial-stroke test will be accomplished during the quarterly testing of the TDAFW pump. Acceptance of the pump test will provide assurance that the valve has partially opened. A full-stroke test will be accomplished by providing AFW system design flow into the Steam Generators during a mode of operation approaching or leaving cold shutdown in which steam is available. Verification of this flow in conjunction with verification that the control valve position is the same for each test will provide assurance that the valve has opened sufficiently to perform its function.

3.1.44 Test Requirement

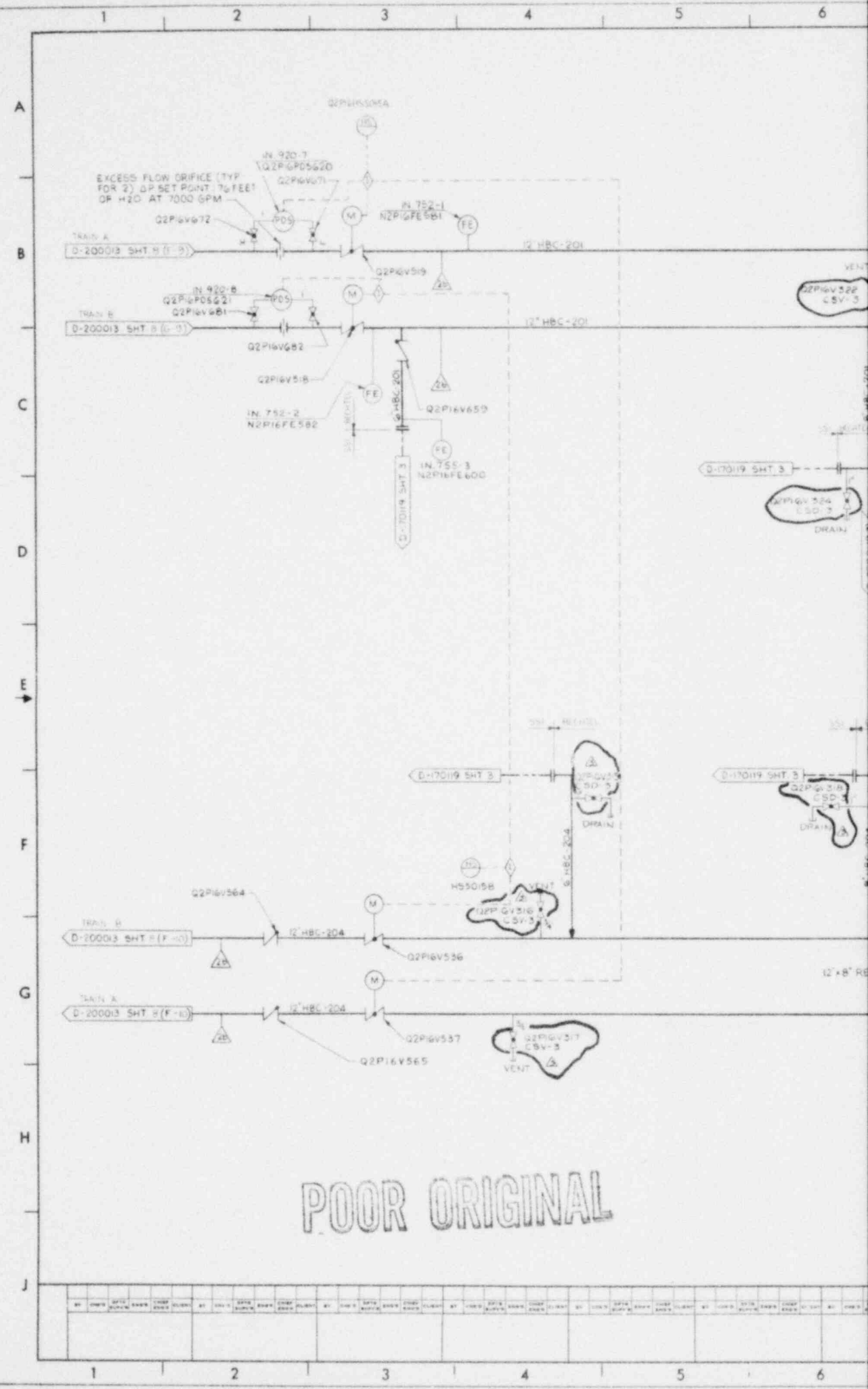
Sub-Article IWV-3520(2) requires that the differential pressure for equivalent flow be no greater than that observed during preoperational testing when flow is used to test a swing or tilting disk valve.

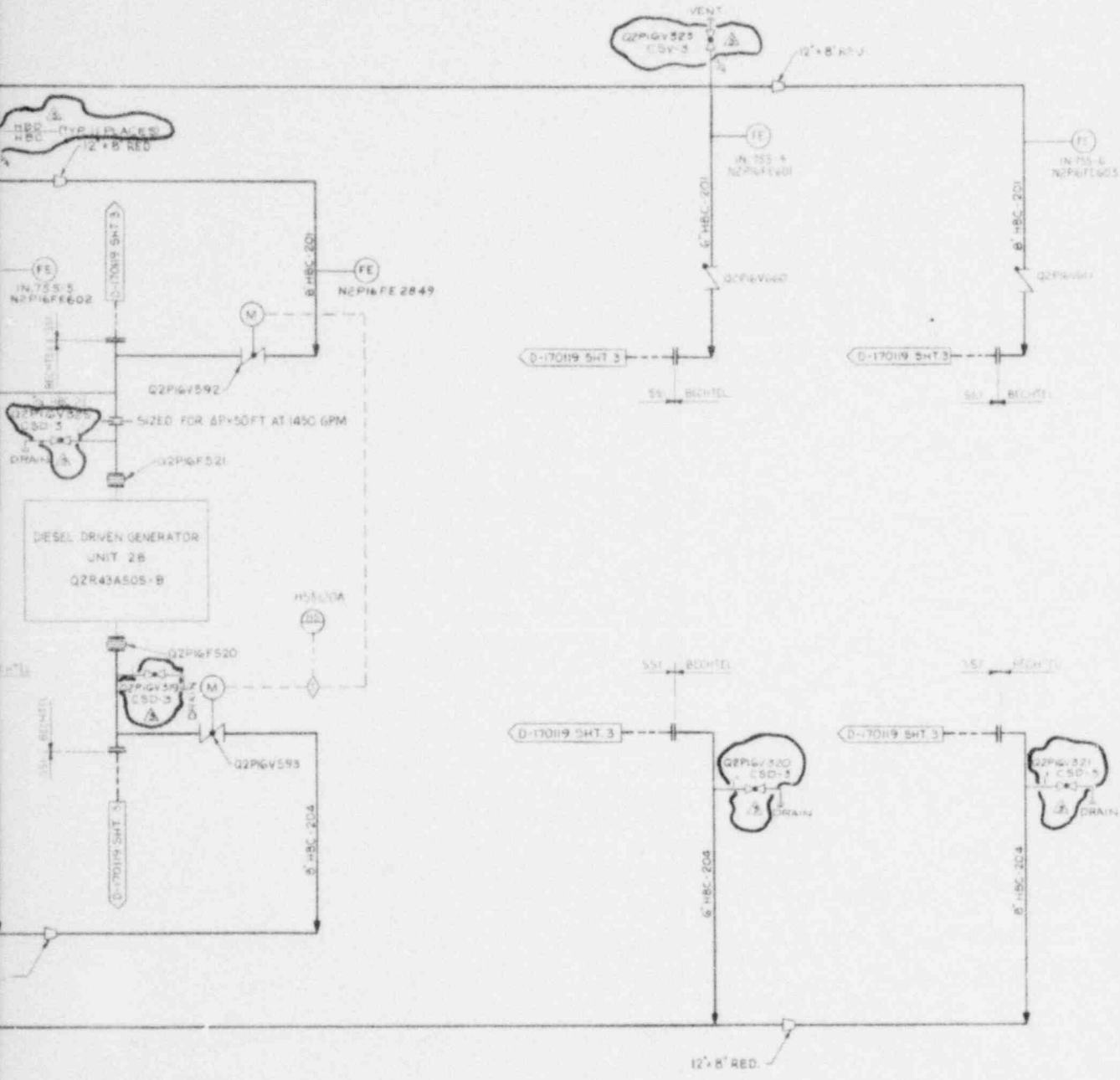
3.1.44.1 Basis for Relief

No instrumentation is provided for the determination of differential pressure across the valve.

3.1.44.2 Alternate Testing

A partial-stroke test will be accomplished during the quarterly testing of the MDAFW pumps. Acceptance of the pump test will provide assurance that the valve has partially opened. A full-stroke test will be accomplished by providing MDAFW pump design flow to the Steam Generators during cold shutdown. Verificaton that design flow is reached provides assurance that the valve has opened in order to perform its function.





NOTE.
FOR NOTES, SEE DWG D-200013 SHT 1

THIS DRAWING DUPLICATES
UNIT 1 DRAWING D-170119 REVISION 4
SHT 3

POOR ORIGINAL

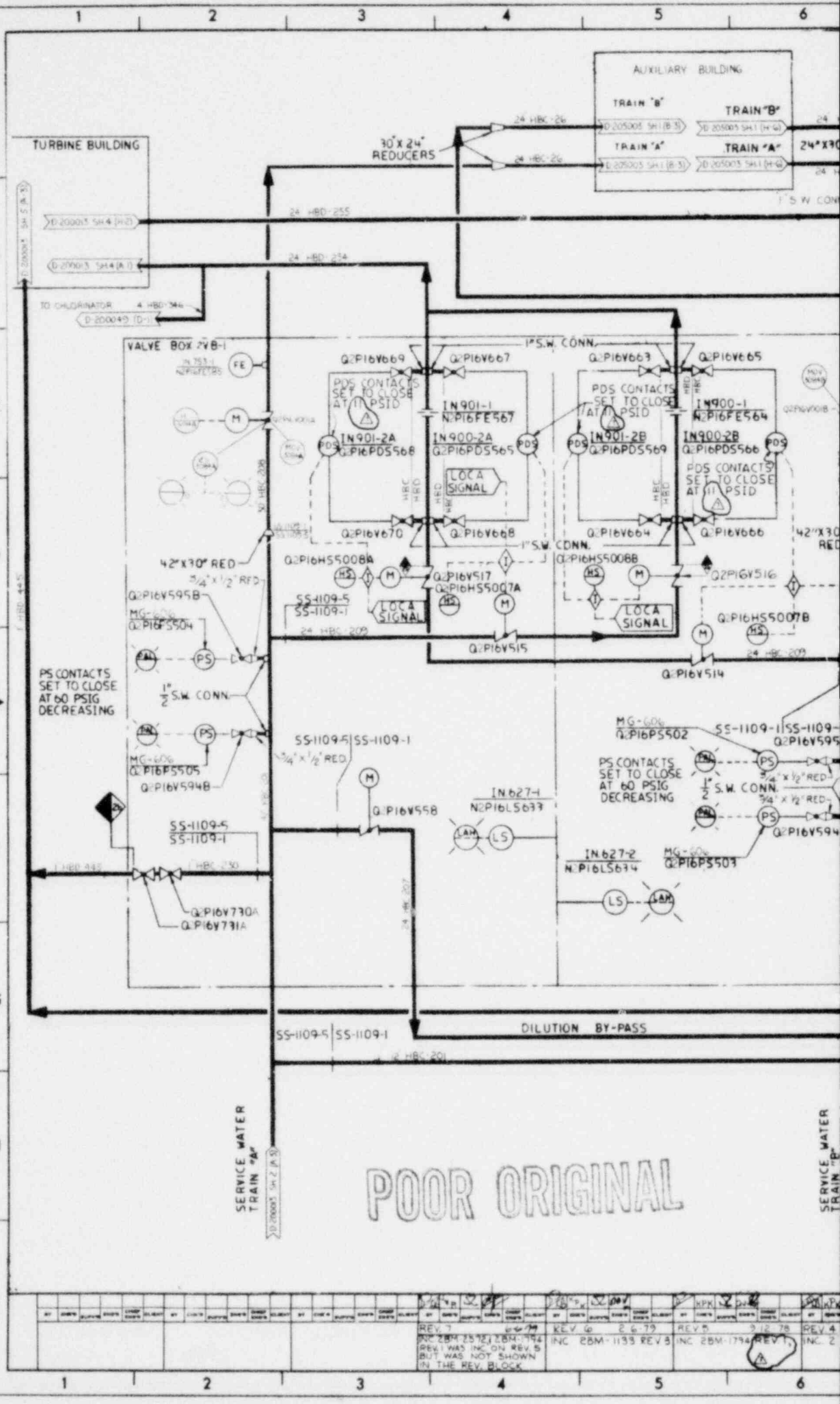
XPK	4948B	TEC	RAB
REV. 5 7-5-77	REV. 2 9-10-76	REV. 1 11-21-75	REV. 0 1-31-75
REVISED TO INC ZBM-449	REVISED TO REFLECT SSI DWG D-170119 SH 3 REV 4 & AS CIRCLED	REVISED AS CIRCLED	ISSUED FOR CONSTRUCTION

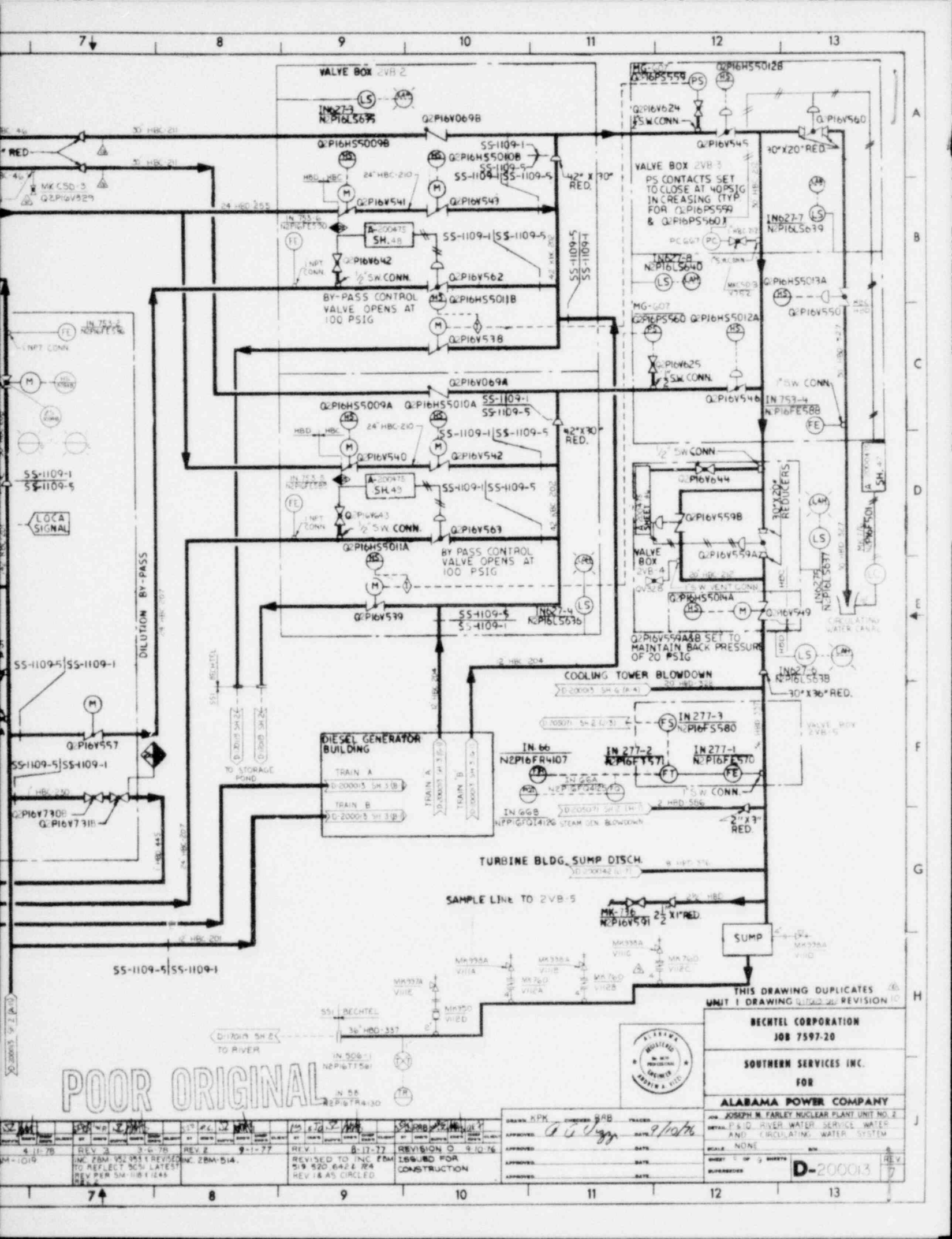
DRAWN M. RAO CHECKED R.A.B. TRACED
APPROVED [signature] DATE 1-30-75
APPROVED [signature] DATE 9/10/76
APPROVED DATE
APPROVED DATE

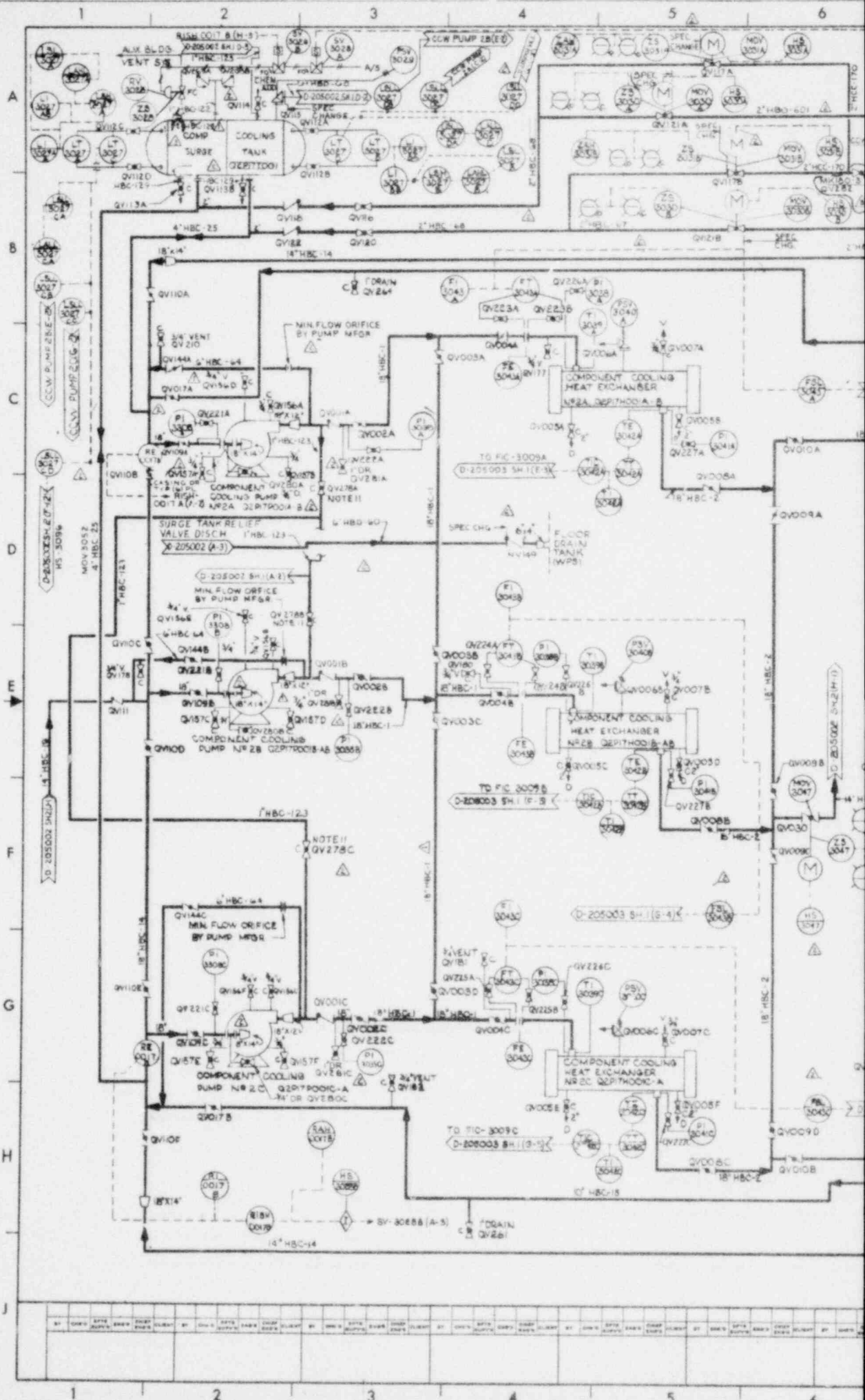
BECHTEL CORPORATION
JOB 7597-20

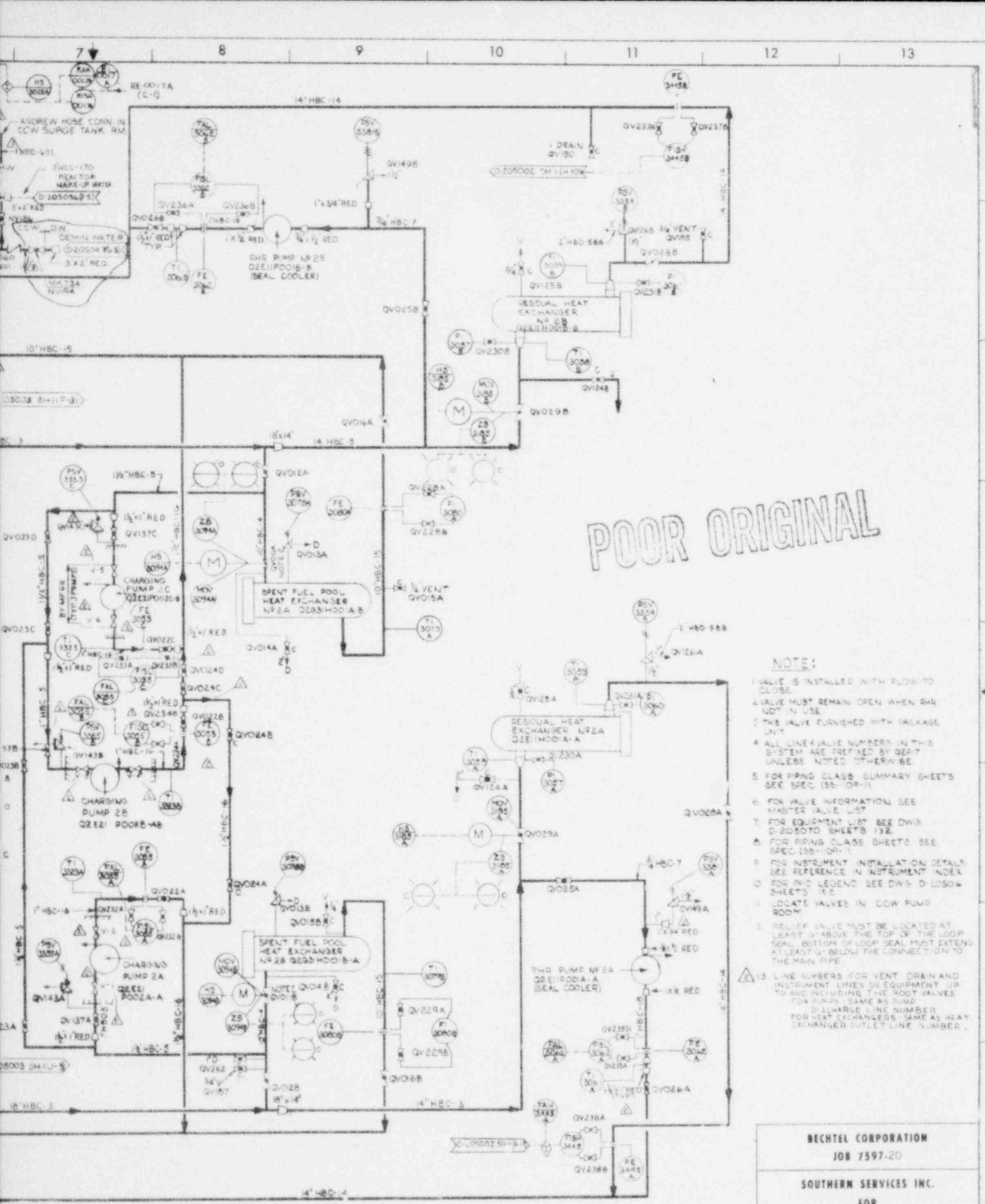
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
P & I.D. RIVER WATER, SERVICE WATER AND CIRCULATING WATER SYSTEMS
SCALE NONE
SHEET 3 OF 5 SHEETS
SUPERSEDES
D-200013 REV 3


AUXILIARY BUILDING
TRAIN "B"
TRAIN "A"
TURBINE BUILDING
30"X24" REDUCERS
24 HBC-26
24 HBD-255
24 HBD-254
TO CHLORINATOR
VALVE BOX 7VB-1
1" S.W. CONN.
Q2P16V669
Q2P16V667
Q2P16V663
Q2P16V665
PDS CONTACTS SET TO CLOSE AT 11 PSID
IN901-1 N2P16FE567
IN900-1 N2P16FE564
IN901-2A Q2P16PDS568
IN900-2A Q2P16PDS565
IN901-2B Q2P16PDS569
IN900-2B Q2P16PDS566
LOCA SIGNAL
Q2P16V670
Q2P16V668
Q2P16V664
Q2P16V666
42"X30" RED
Q2P16HS5008A
Q2P16HS5008B
Q2P16V517
Q2P16HS5007A
Q2P16V516
Q2P16HS5007B
SS-1109-5
SS-1109-1
Q2P16V515
Q2P16V514
PS CONTACTS SET TO CLOSE AT 60 PSIG DECREASING
1" S.W. CONN.
MG-606 Q2P16PS504
Q2P16V595B
MG-606 Q2P16PS505
Q2P16V594B
3/4"x1/2" RED
Q2P16V558
IN627-1 N2P16LS633
IN627-2 N2P16LS634
MG-606 Q2P16PS502
MG-606 Q2P16PS503
Q2P16V730A
Q2P16V731A
DILUTION BY-PASS
SERVICE WATER TRAIN "A"
SERVICE WATER TRAIN "B"
POOR ORIGINAL
REV. 7 2-6-79
INC 28M-2592, 28M-1794 REV. 1 WAS INC. ON REV. 5 BUT WAS NOT SHOWN IN THE REV. BLOCK
REV. 6 2-6-79
INC 28M-1193 REV. 3
REV. 5 9-12-78
INC 28M-1794 REV. 1
REV. 4
INC. 2


VALVE BOX 2VB-2
Q2P16V069B
Q2P16HS5009B
Q2P16HS5010B
SS-1109-1
SS-1109-5
42" X 30" RED.
24" HBC-210
Q2P16V541
Q2P16V543
Q2P16V642
½" SW CONN.
Q2P16V562
BY-PASS CONTROL VALVE OPENS AT 100 PSIG
Q2P16HS5011B
Q2P16V538
Q2P16V069A
Q2P16HS5009A
Q2P16HS5010A
Q2P16V540
Q2P16V542
Q2P16V643
Q2P16V563
Q2P16HS5011A
Q2P16V539
LOCA SIGNAL
DILUTION BY-PASS
Q2P16V557
Q2P16V730B
Q2P16V731B
DIESEL GENERATOR BUILDING
TRAIN A
TRAIN B
TO STORAGE POND
TO RIVER
MG-607
Q2P16PS559
Q2P16HS5012B
Q2P16V624
Q2P16V560
Q2P16V545
40"X20" RED.
VALVE BOX 2VB-3
PS CONTACTS SET TO CLOSE AT 40PSIG IN CREASING (TYP FOR Q2P16PS559 & Q2P16PS560)
IN627-7 N2P16LS639
IN627-8 N2P16LS640
Q2P16HS5013A
Q2P16V550
Q2P16PS560
Q2P16HS5012A
Q2P16V625
Q2P16V546
IN 753-4 N2P16FE588
½" SW CONN.
Q2P16V644
30"X20" REDUCERS
Q2P16V559B
Q2P16V559A
VALVE BOX 2VB-4
Q2P16HS5014A
Q2P16V549
Q2P16V559A&B SET TO MAINTAIN BACK PRESSURE OF 20 PSIG
IN627-6 N2P16LS638
30"X36" RED.
COOLING TOWER BLOWDOWN
IN 277-3 N2P16FS580
IN 277-2 N2P16FT571
IN 277-1 N2P16FE570
IN 66 N2P16FR4107
IN 66A N2P16FQI4125
IN 66B N2P16FQI4126 STEAM GEN. BLOWDOWN
2"X3" RED.
TURBINE BLDG. SUMP DISCH.
SAMPLE LINE TO 2VB-5
MK-736 N2P16V591 2½ X1" RED.
SUMP
THIS DRAWING DUPLICATES UNIT 1 DRAWING
BECHTEL CORPORATION
JOB 7597-20
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
P & I D. RIVER WATER SERVICE WATER AND CIRCULATING WATER SYSTEM
NONE
D-200013
REV. 7
REVISION 0 9-10-76 ISSUED FOR CONSTRUCTION
REVISED TO INC. FDM 519 520 642 & 724 REV 1 & AS CIRCLED
REV. 2 9-1-77 INC. 2BM-514.
REV. 3 3-6-78 INC. 2BM-552 553 & REVISED TO REFLECT SCN LATEST REV PER SM-1108 & 1246
4-11-78 SM-1019
POOR ORIGINAL





NOTES:

1. VALVE IS INSTALLED WITH FLOW TO CLOSE.
2. VALVE MUST REMAIN OPEN WHEN RHR NOT IN USE.
3. THIS VALVE FURNISHED WITH PACKAGE UNIT.
4. ALL LINE/VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY QZEII UNLESS NOTED OTHERWISE.
5. FOR PIPING CLASS SUMMARY SHEETS SEE SPEC. (SS-1DP-1).
6. FOR VALVE INFORMATION SEE MASTER VALVE LIST.
7. FOR EQUIPMENT LIST SEE DWG. D-205070 SHEETS 1&2.
8. FOR PIPING CLASS SHEETS SEE SPEC. (SS-1DP-1).
9. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX.
10. FOR P&ID LEGEND SEE DWG. D-205010 SHEETS 1&2.
11. LOCATE VALVES IN CCW PUMP ROOM.
12. RELIEF VALVE MUST BE LOCATED AT LEAST 9' ABOVE THE TOP OF THE LOOP SEAL. BOTTOM OF LOOP SEAL MUST EXTEND AT LEAST 9' BELOW THE CONNECTION TO THE MAIN PIPE.
13. LINE NUMBERS FOR VENT, DRAIN AND INSTRUMENT LINES ON EQUIPMENT UP TO AND INCLUDING THE ROOT VALVES FOR PUMPS - SAME AS PUMP DISCHARGE LINE NUMBER. FOR HEAT EXCHANGERS - SAME AS HEAT EXCHANGER OUTLET LINE NUMBER.

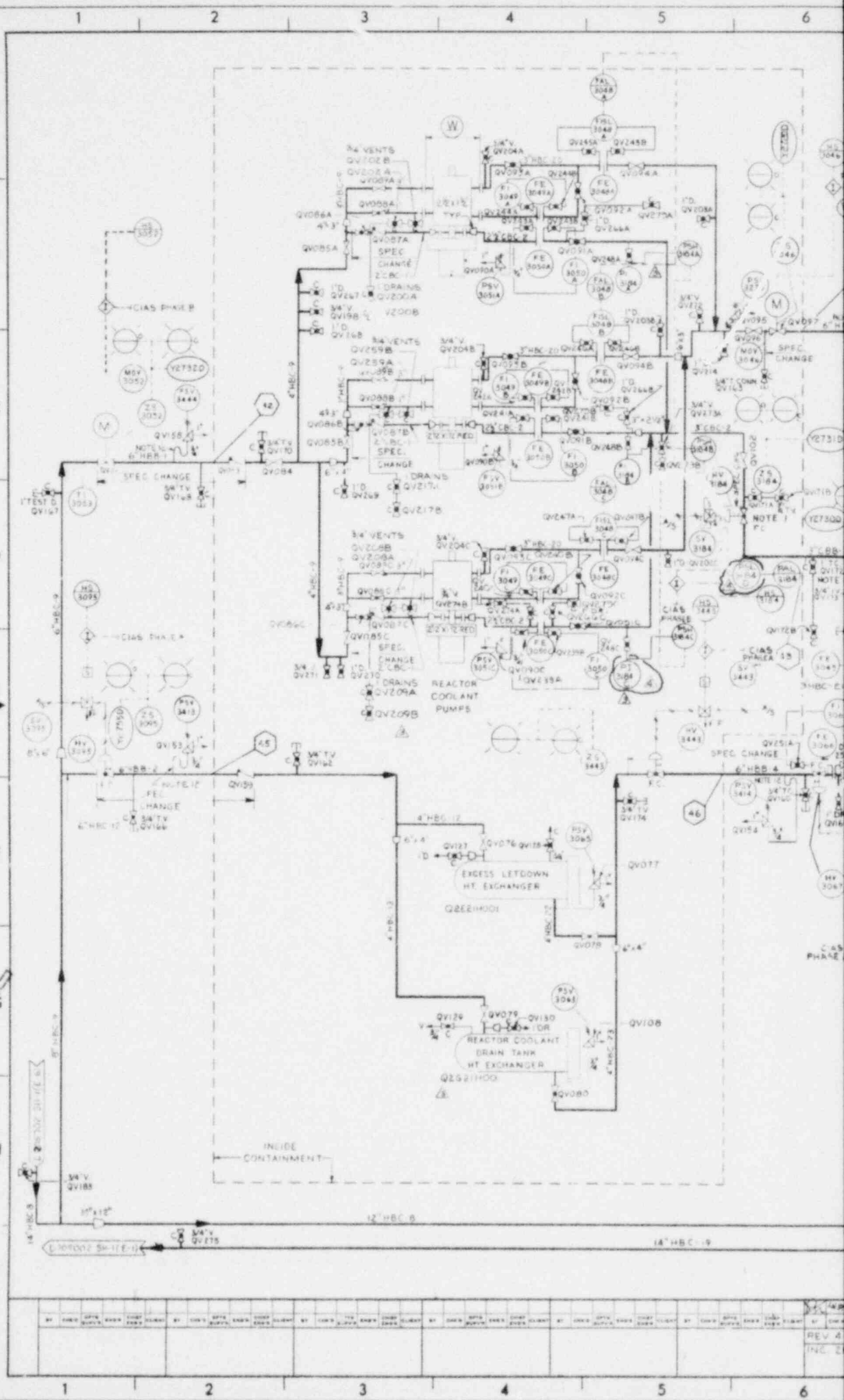
REV.	DESCRIPTION	DATE
5	INC. 2BM-367 (2BM-842 WAS INC. ON REV. 2, 2BM-405 & 2BM-407)	6-13-78
4	INC. 2BM-489 604 & 608. ADDED NOTE 13. REVISED AS CIRCLED.	9-9-77
1	REDRAWN. ADDED VENTS, DRAINS, & ROOT VALVES. REV AS CIRCLED.	12-15
0	ISSUED FOR ENGINEERING	8-25-73

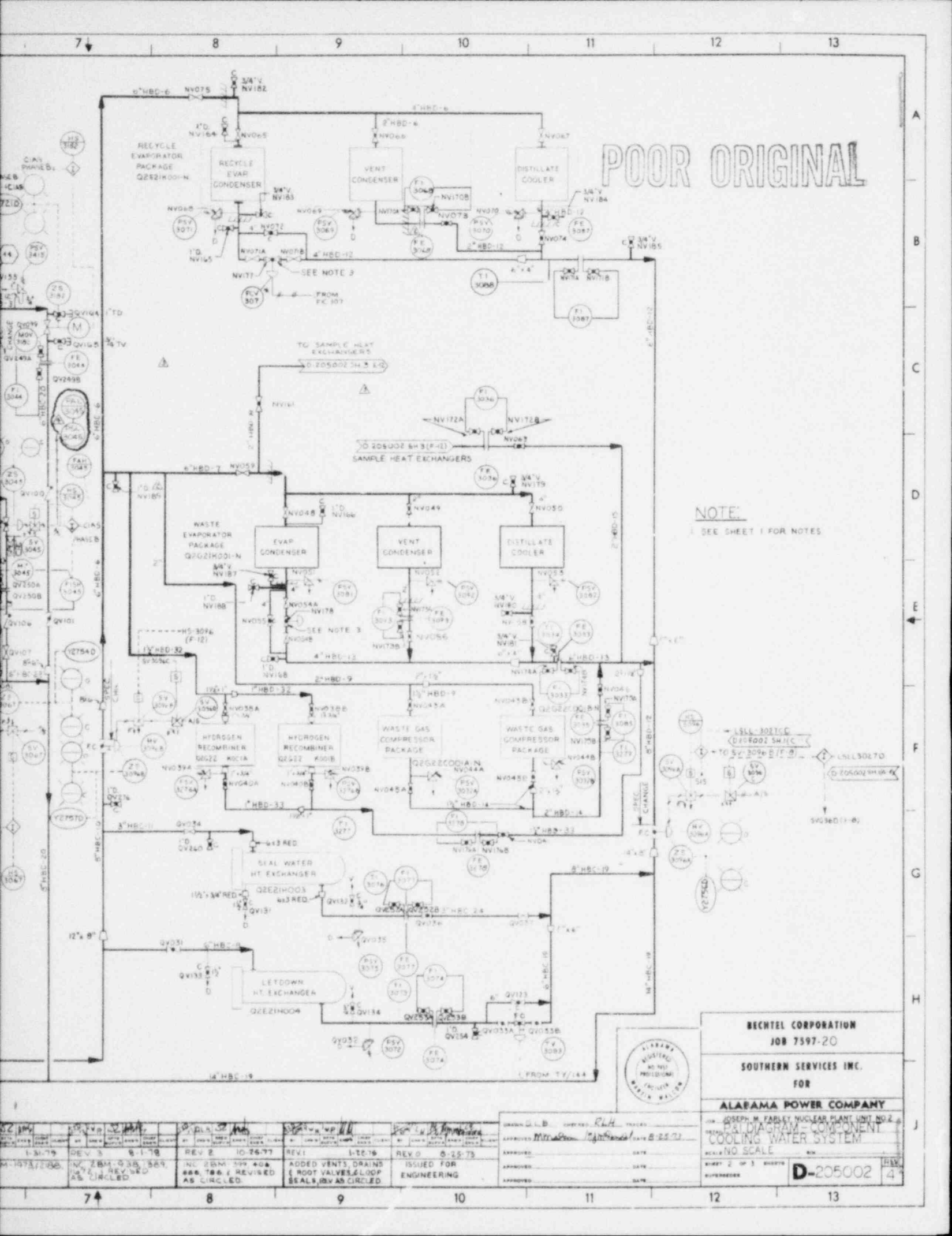
DRAWN DLB CHECKED RLH TRACED
APPROVED [illegible] DATE 8-25-73
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
P&I DIAGRAM - COMPONENT COOLING WATER SYSTEM
SCALE NONE
SHEET 1 OF 3 SHEETS
D-205002 REV. 5





BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

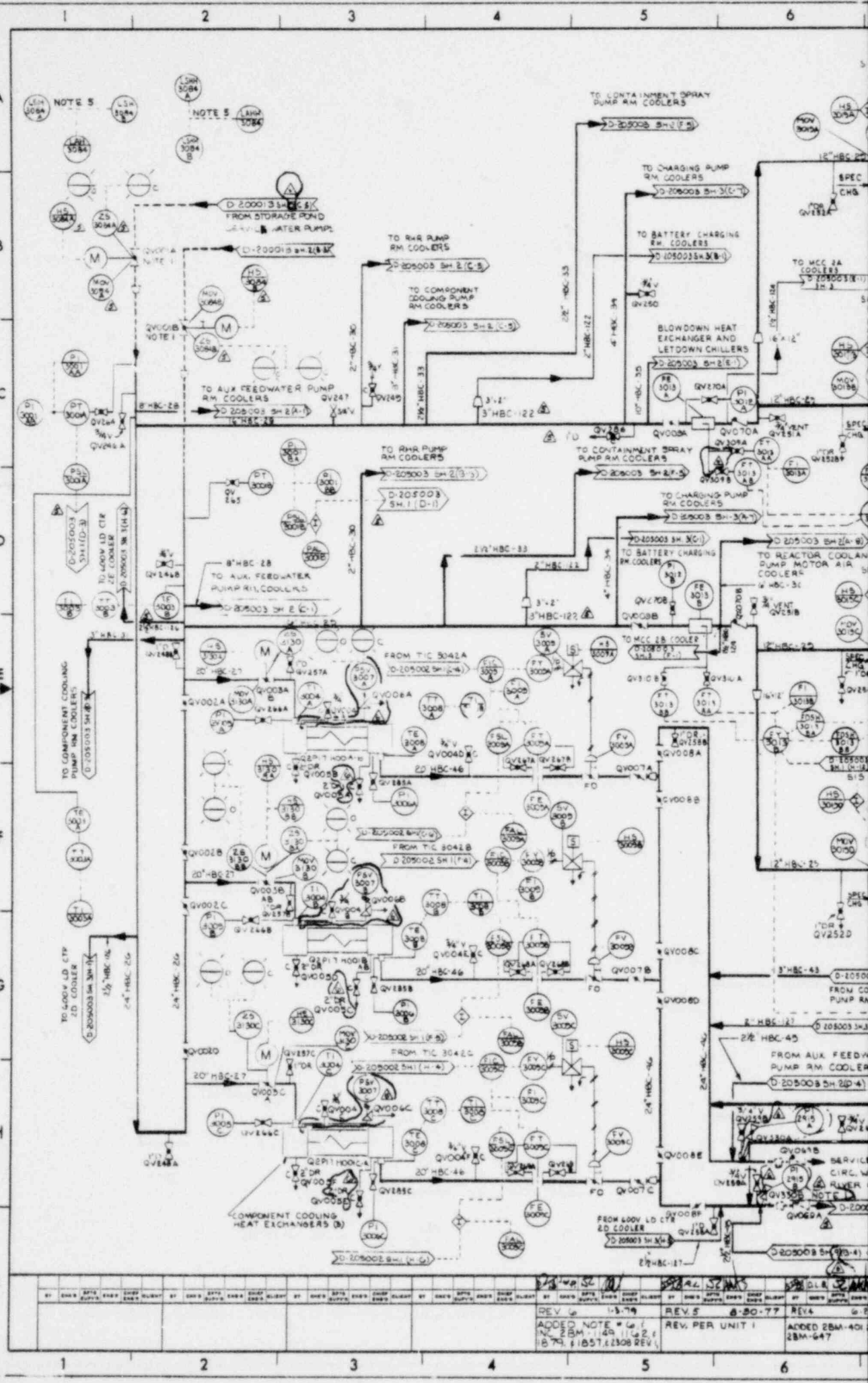
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

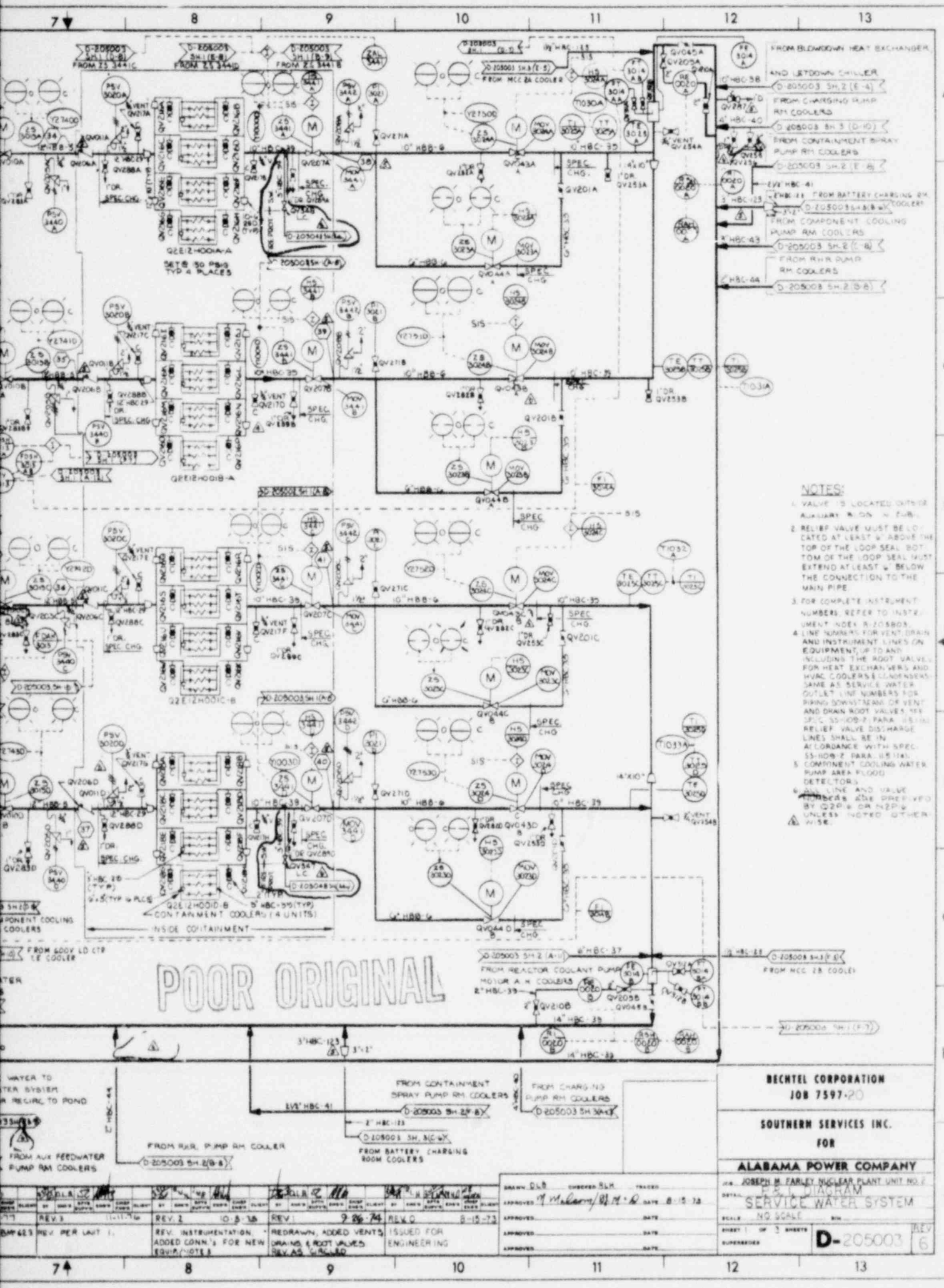
P&I DIAGRAM - COMPONENT COOLING WATER SYSTEM

SCALE: NO SCALE

D-205002 REV. 4

REV.	DESCRIPTION
3	NC 2BM-938, 589, 666, 786 & REVISED AS CIRCLED
2	NC 2BM-599, 406 & REVISED AS CIRCLED
1	ADDED VENTS, DRAINS & ROOT VALVES & LOOP SEALS AS CIRCLED
0	ISSUED FOR ENGINEERING





BECHTEL CORPORATION
JOB 7597-20

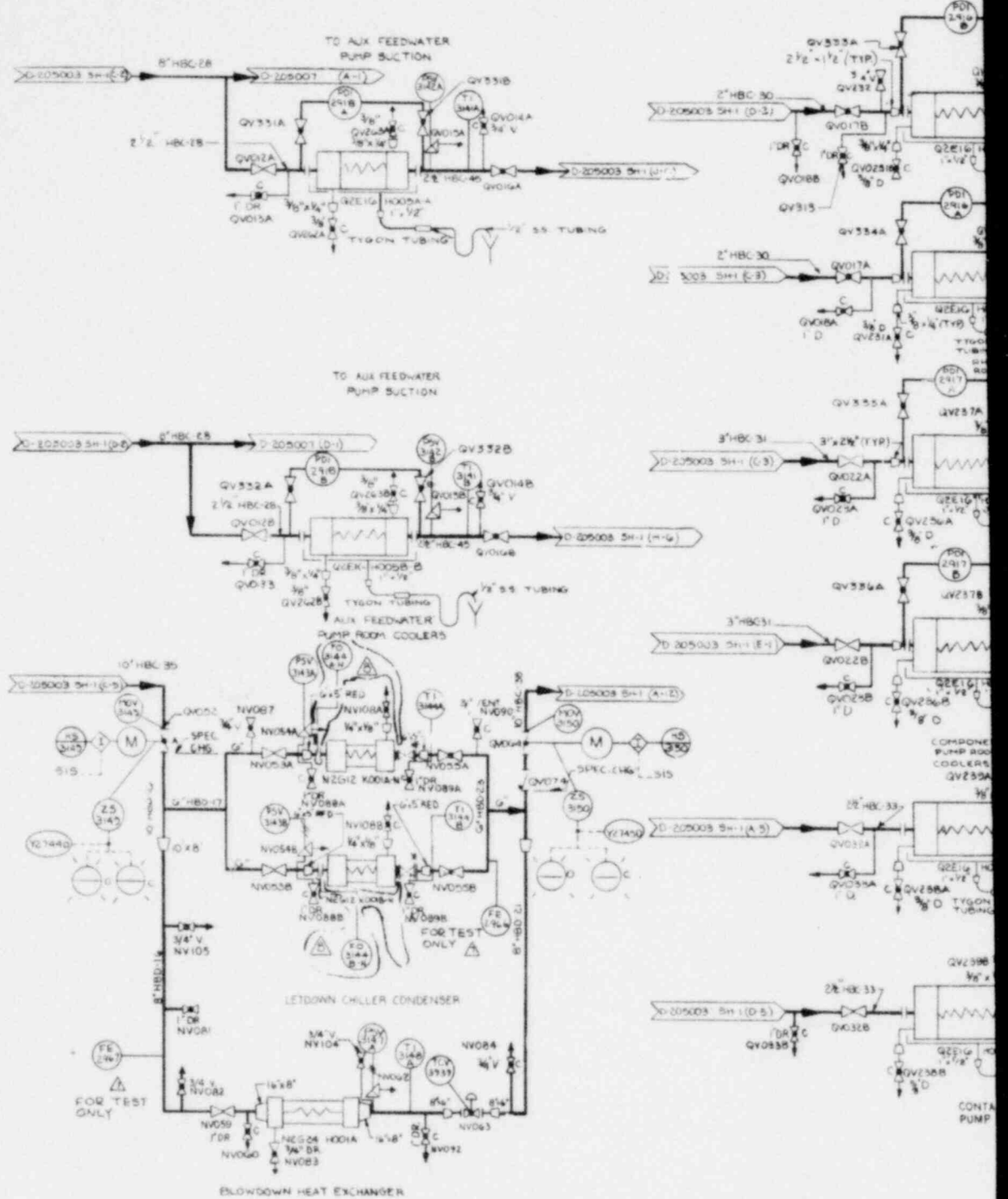
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

P & I DIAGRAM
SERVICE WATER SYSTEM

SCALE NO SCALE

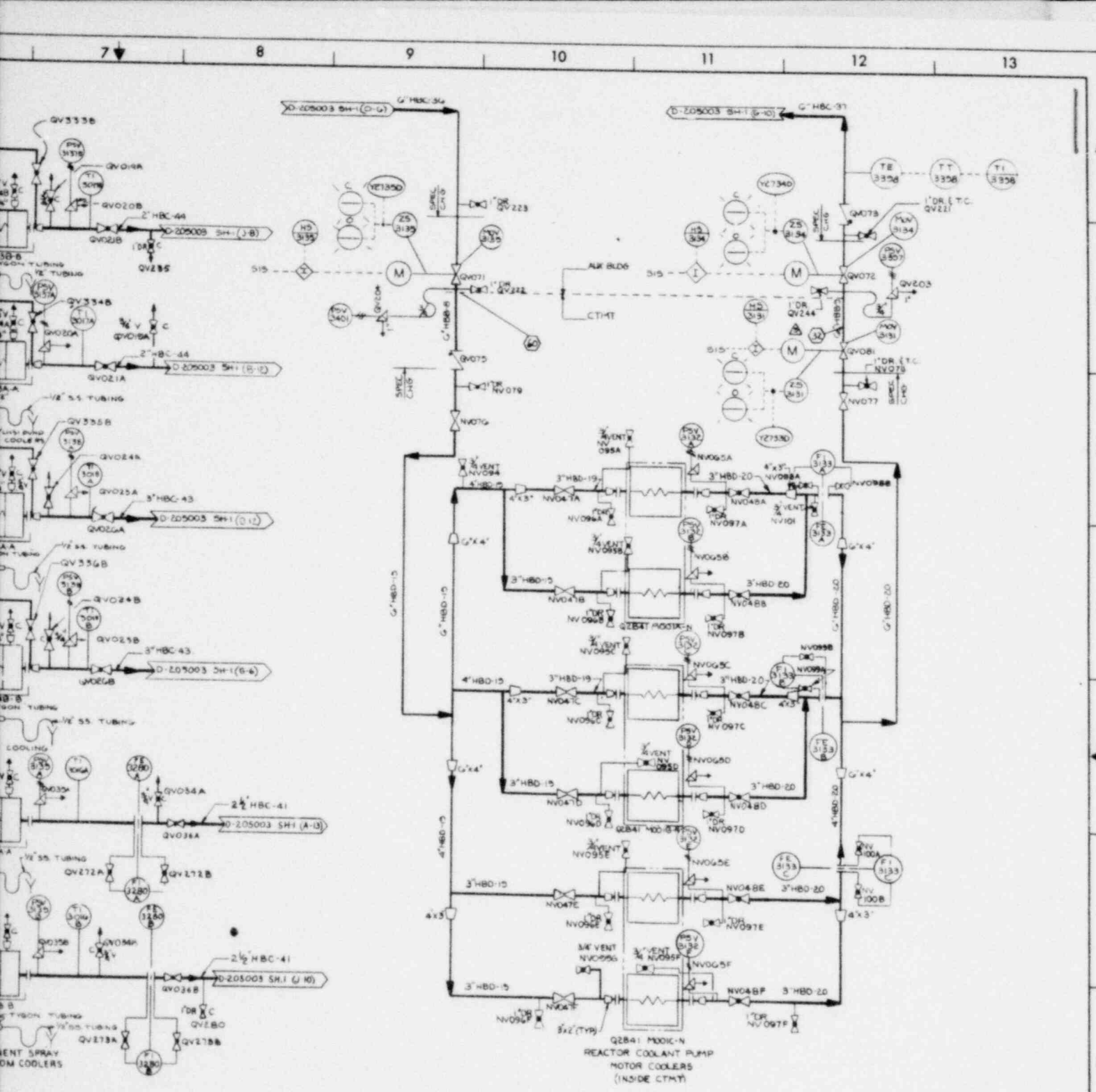
D-205003 REV 6

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
3	REV. PER LAUT 1.				
2	REV. INSTRUMENTATION ADDED CONN'S FOR NEW EQUIP. (NOTE 3)				
1	REDRAWN, ADDED VENTS, DRAINS & ROOT VALVES REV. AS SHOWN				
0	ISSUED FOR ENGINEERING	DLB	RLH		8-15-73



POOR ORIGINAL

REV. 8 10-16-79	REV. 7 1-8-79	REV. 6 10-10-78	REV. 5 8-1-78	REV 4
INC. 28M-1348 REV. 1	INC. 28M-2152.	28M-1547 WAS INC. ON REV. 5 BUT NOT SHOWN IN REV. BLOCK	INC. 28M 875 REV. 1, 1431, 1348, 1636, 1730 & 28M 395 & 396 WERE INCORRECT ON REV 4 INC. 28M-1547	NOTE AD 28M-395



NOTE
1. ✱ VALVE SUPPLIED WITH EQUIPMENT

POOR ORIGINAL

REV.	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
REV 3	REV. PER UNIT-1	DLB	SZ		11-11-76
REV 2	CHANGED NV063	DLB	SZ		10-3-75
REV 1	REDRAWN				9-26-75
REV 0	ISSUED FOR ENGINEERING	RLH			8-15-75

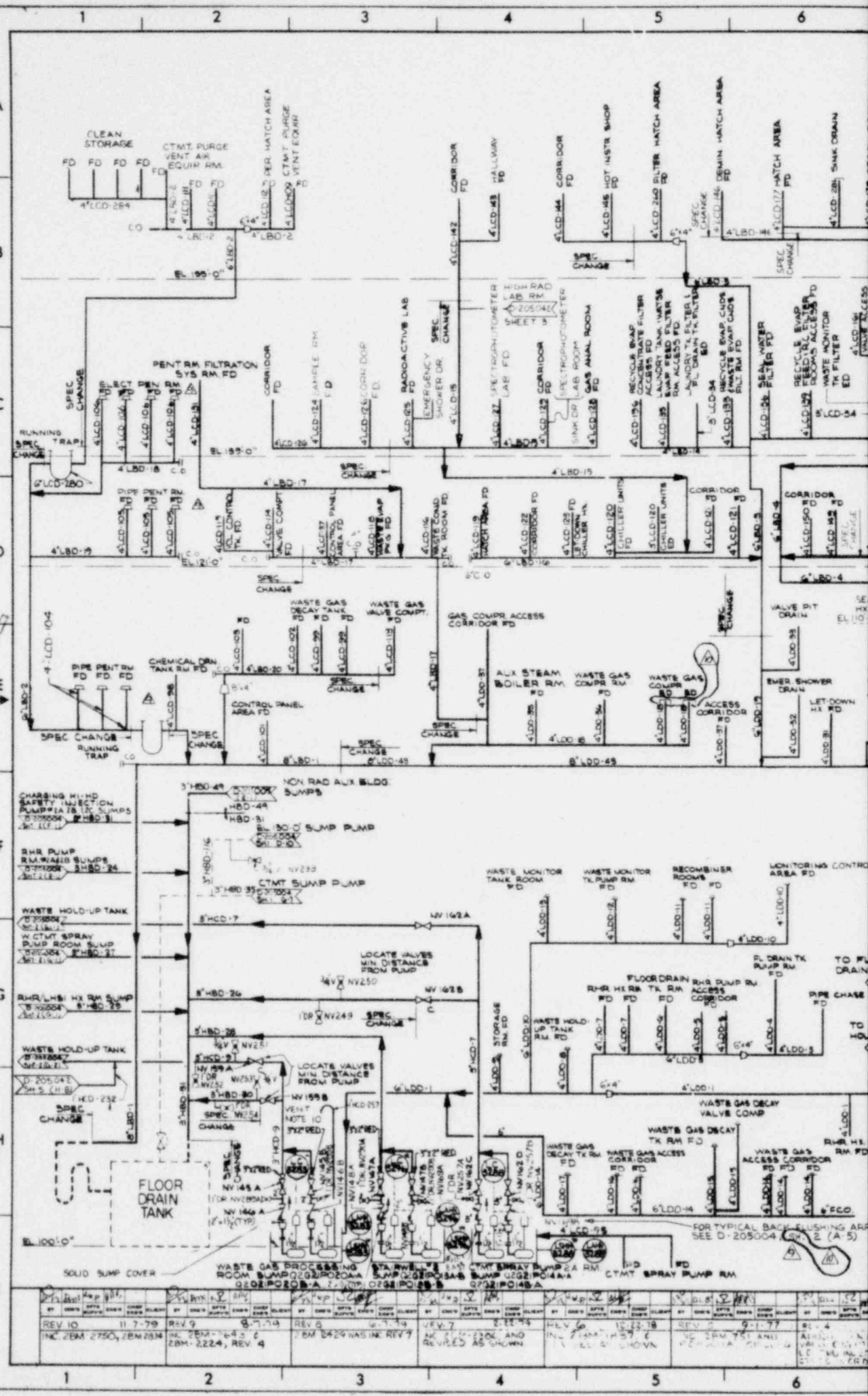
BECHTEL CORPORATION
JOB 7597-20

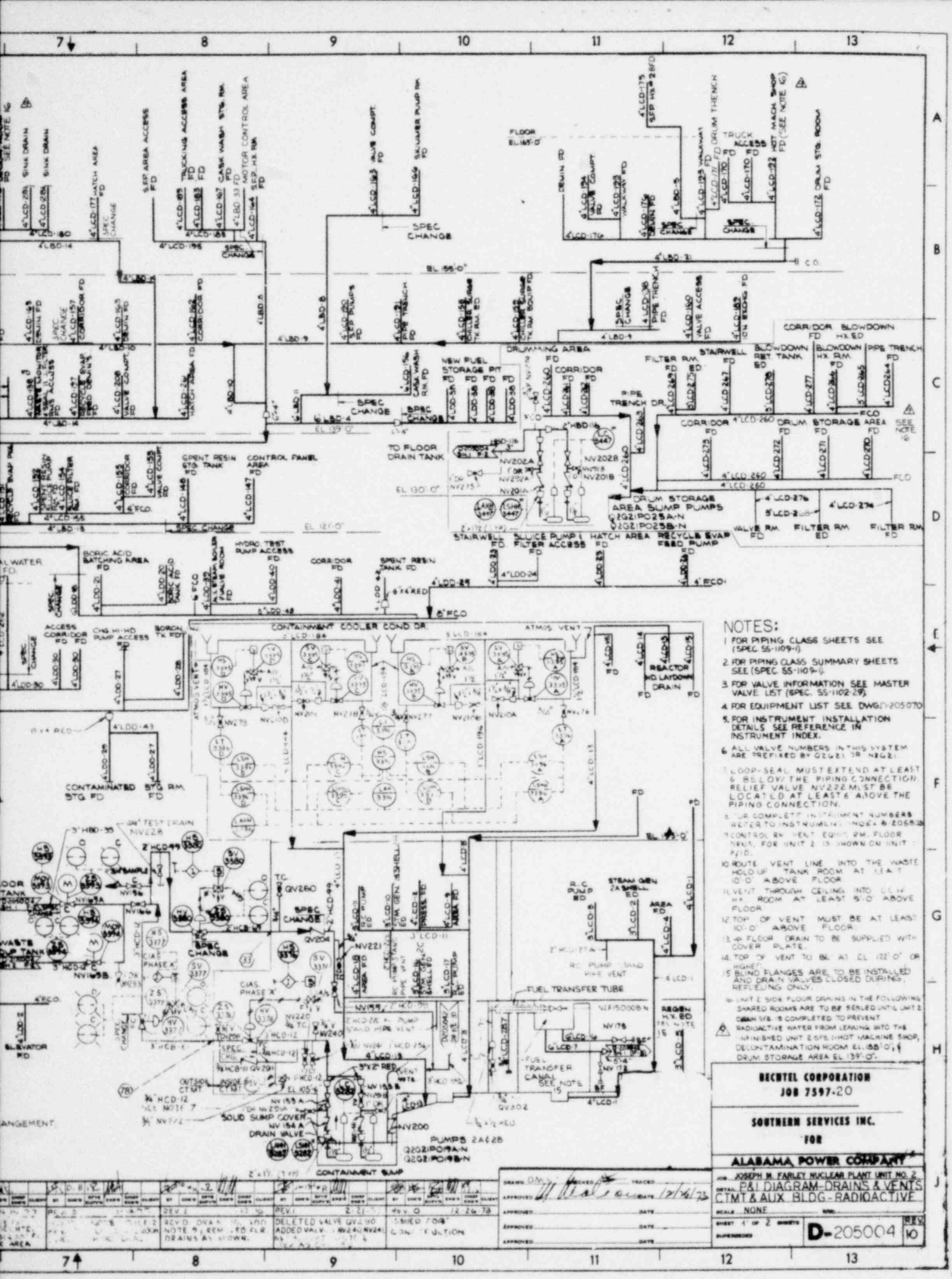
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

DRAWN DLB CHECKED RLH TRACED
APPROVED [signature] DATE 8-19-75
APPROVED DATE
APPROVED DATE
APPROVED DATE

DETAIL P&I DIAGRAM
SERVICE WATER SYSTEM
SCALE NONE
SHEET 2 OF 3 SHEETS
SUPERSEDES

D-205003 REV. 8





NOTES:

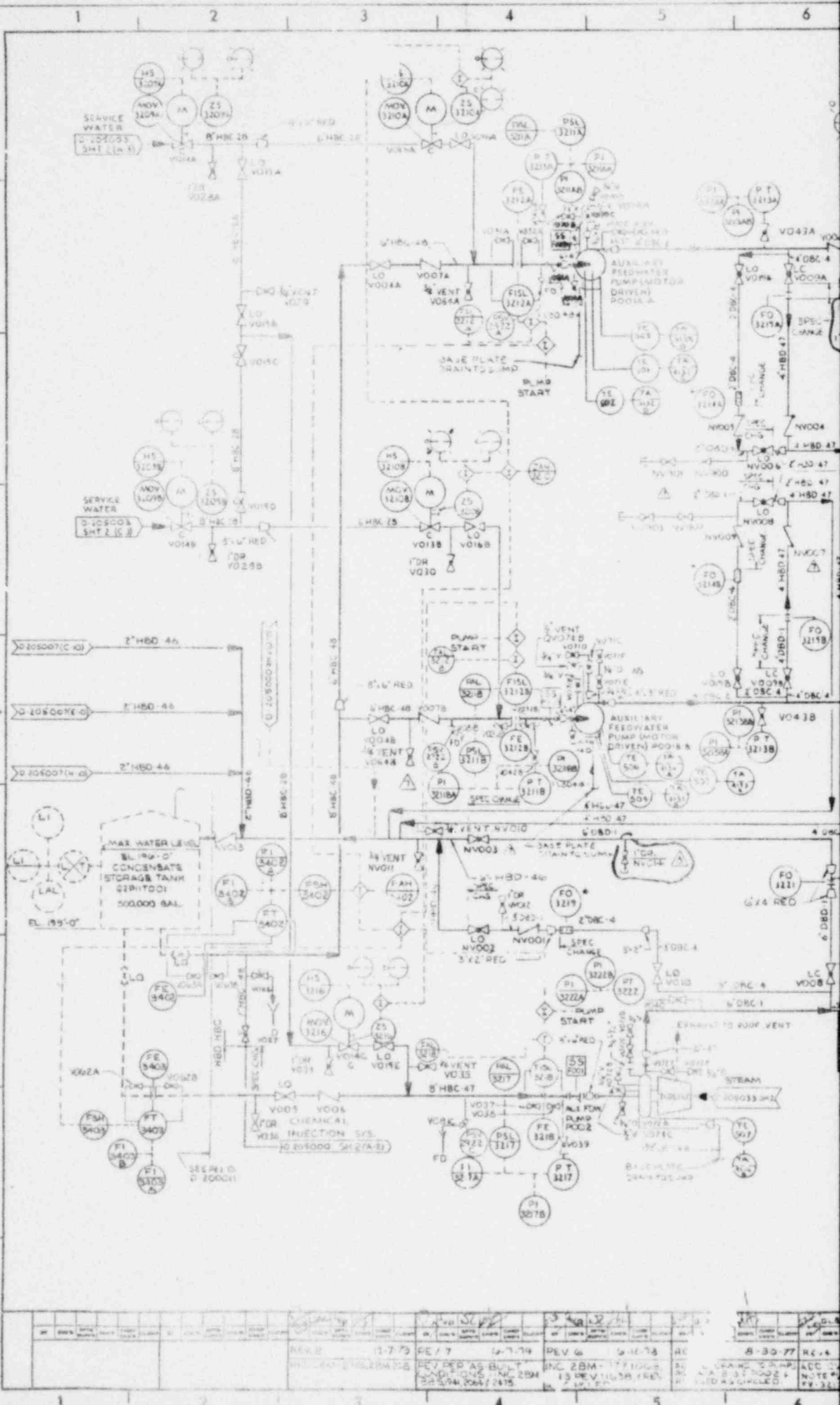
1. FOR PIPING CLASS SHEETS SEE (SPEC. SS-1109-I).
2. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. SS-1109-I).
3. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. SS-1102-29).
4. FOR EQUIPMENT LIST SEE DWG. D-205070.
5. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX.
6. ALL VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY Q2G21 OR N2G21.
7. LOOP SEAL MUST EXTEND AT LEAST 6' BELOW THE PIPING CONNECTION. RELIEF VALVE NV222 MUST BE LOCATED AT LEAST 6' ABOVE THE PIPING CONNECTION.
8. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX & 205830.
9. CONTROL RM. VENT EQUIP. RM. FLOOR DRNS. FOR UNIT 2 IS SHOWN ON UNIT 1 P&ID.
10. ROUTE VENT LINE INTO THE WASTE HOLD UP TANK ROOM AT LEAST 10'-0" ABOVE FLOOR.
11. VENT THROUGH CEILING INTO D.G.W. HX ROOM AT LEAST 5'-0" ABOVE FLOOR.
12. TOP OF VENT MUST BE AT LEAST 10'-0" ABOVE FLOOR.
13. 4" FLOOR DRAIN TO BE SUPPLIED WITH COVER PLATE.
14. TOP OF VENT TO BE AT EL 122'-0" OR HIGHER.
15. BLIND FLANGES ARE TO BE INSTALLED AND DRAIN VALVES CLOSED DURING REFUELING ONLY.
16. UNIT 2 SIDE FLOOR DRAINS IN THE FOLLOWING SHARED ROOMS ARE TO BE SEALED UNTIL UNIT 2 DRAIN SYS. IS COMPLETED TO PREVENT RADIOACTIVE WATER FROM LEAKING INTO THE UNFINISHED UNIT 2 SYS. (HOT MACHINE SHOP, DECONTAMINATION ROOM EL. 155'-0", DRUM STORAGE AREA EL. 139'-0").

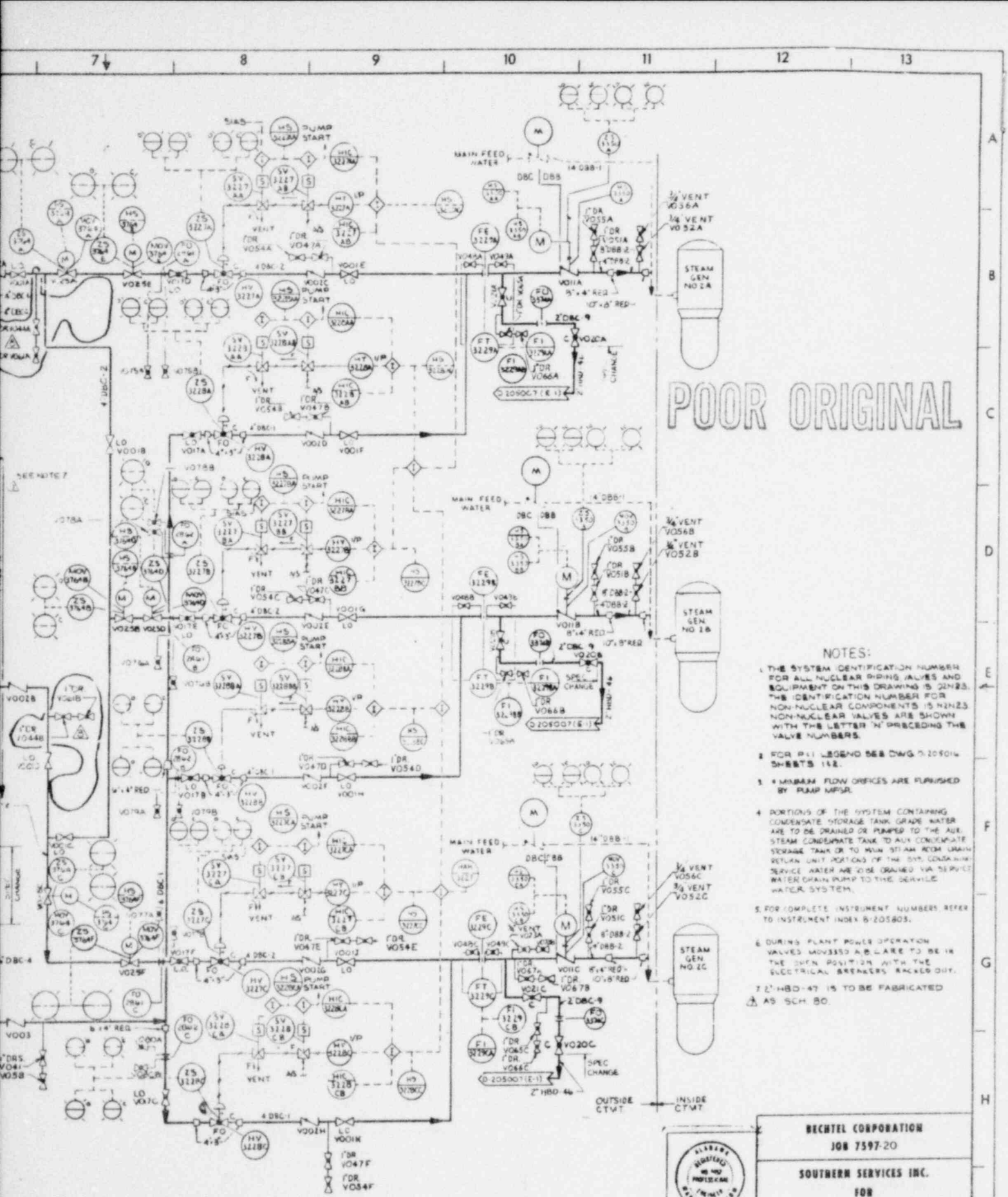
NO.	DESCRIPTION	DRAWN	CHECKED	TRACED	APPROVED	APPROVED	APPROVED
2	REVD. DRAIN VLVS AND NOTE 9, REMOVED FLR. DRAINS AS SHOWN.						
1	DELETED VALVE QV240 ADDED VALVE NV240, NV241						
0	ISSUED FOR CONSTRUCTION	DJV		12/26/78			

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
DETAIL P&I DIAGRAM-DRAINS & VENTS CTMT & AUX. BLDG.-RADIOACTIVE
SCALE NONE
SHEET 1 OF 2 SHEETS
SUPERSEDES
D-205004
REV. 10





NOTES:

1. THE SYSTEM IDENTIFICATION NUMBER FOR ALL NUCLEAR PIPING, VALVES AND EQUIPMENT ON THIS DRAWING IS 2CN23. THE IDENTIFICATION NUMBER FOR NON-NUCLEAR COMPONENTS IS N2CN23. NON-NUCLEAR VALVES ARE SHOWN WITH THE LETTER 'N' PRECEDING THE VALVE NUMBERS.
2. FOR P&I LEGEND SEE DWG. 5-205016 SHEETS 1&2.
3. * MINIMUM FLOW ORIFICES ARE FURNISHED BY PUMP MFGR.
4. PORTIONS OF THE SYSTEM CONTAINING CONDENSATE STORAGE TANK GRADE WATER ARE TO BE DRAINED OR PUMPED TO THE AUX. STEAM CONDENSATE TANK, TO AUX CONDENSATE STORAGE TANK OR TO NON STEAM ROOM DRAIN RETURN UNIT. PORTIONS OF THE SYS. CONTAINING SERVICE WATER ARE TO BE DRAINED VIA SERVICE WATER DRAIN PUMP TO THE DEMIN. WATER SYSTEM.
5. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX 8-205803.
6. DURING PLANT POWER OPERATION VALVES MOV3350 A,B,C ARE TO BE IN THE OPEN POSITION WITH THE ELECTRICAL BREAKERS RACKED OUT.
7. 2"-HBD-47 IS TO BE FABRICATED AS SCH. 80.

REV	DATE	DESCRIPTION
0	12-27-73	ISSUED FOR ENGINEERING
1	5-22-75	ADDED VENTS, DRAINS & ROUT VALVES ADDED REVISIONS AS CIRCLED
2	9-8-75	REINSTATED MOV ON DWG. 1 & B/C ADD. NOTE 7 AS SHOWN
3	1-6-77	INC. 28" SCH 3/8" ADDED FOR 2"-HBD-47 A,B,C, 2"-HBC
	6-30-77	FOR A,B,C, 1 & REMOVED FOR FV-3210

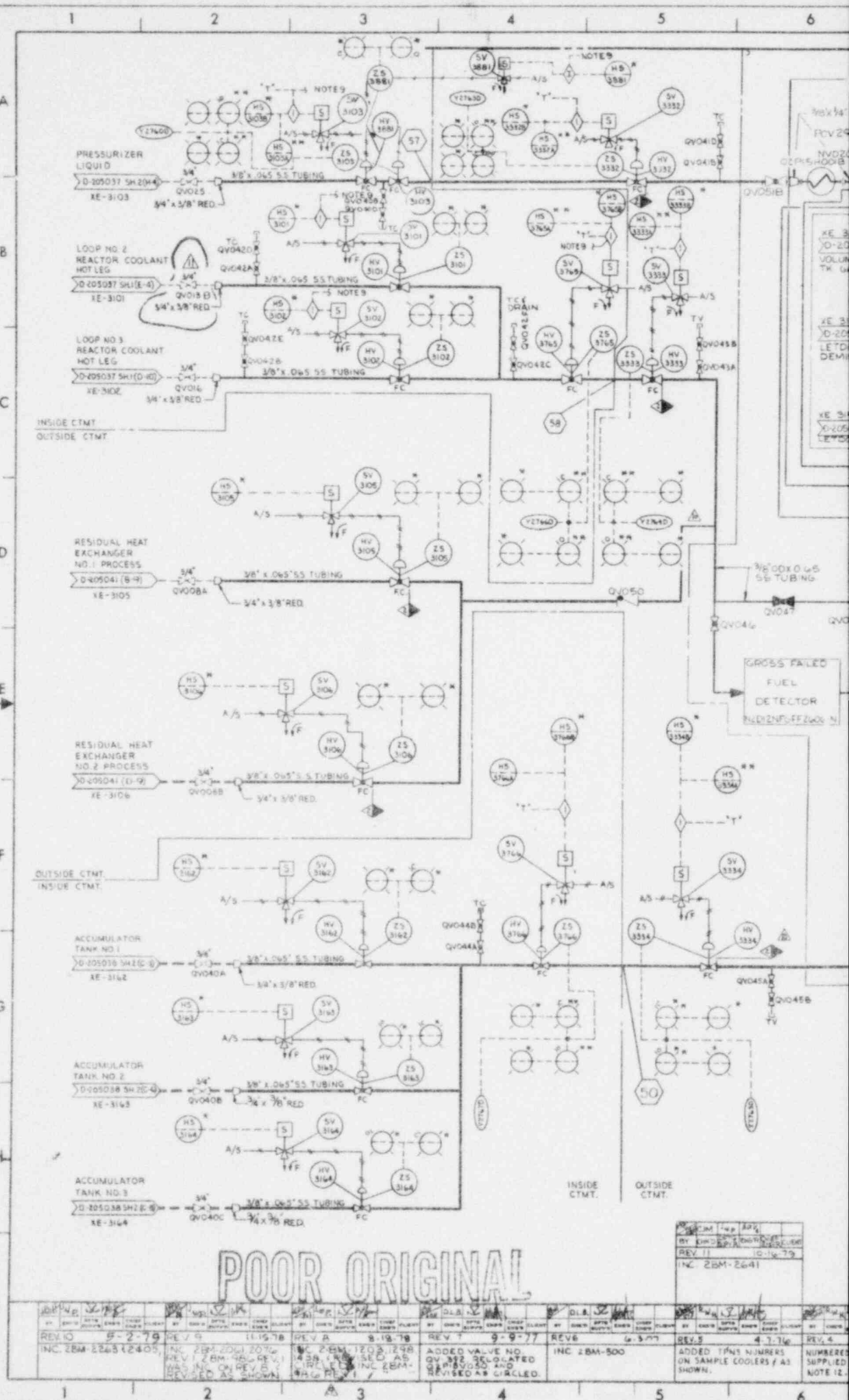
BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

P&I DIAGRAM
AUX. FEEDWATER SYSTEM

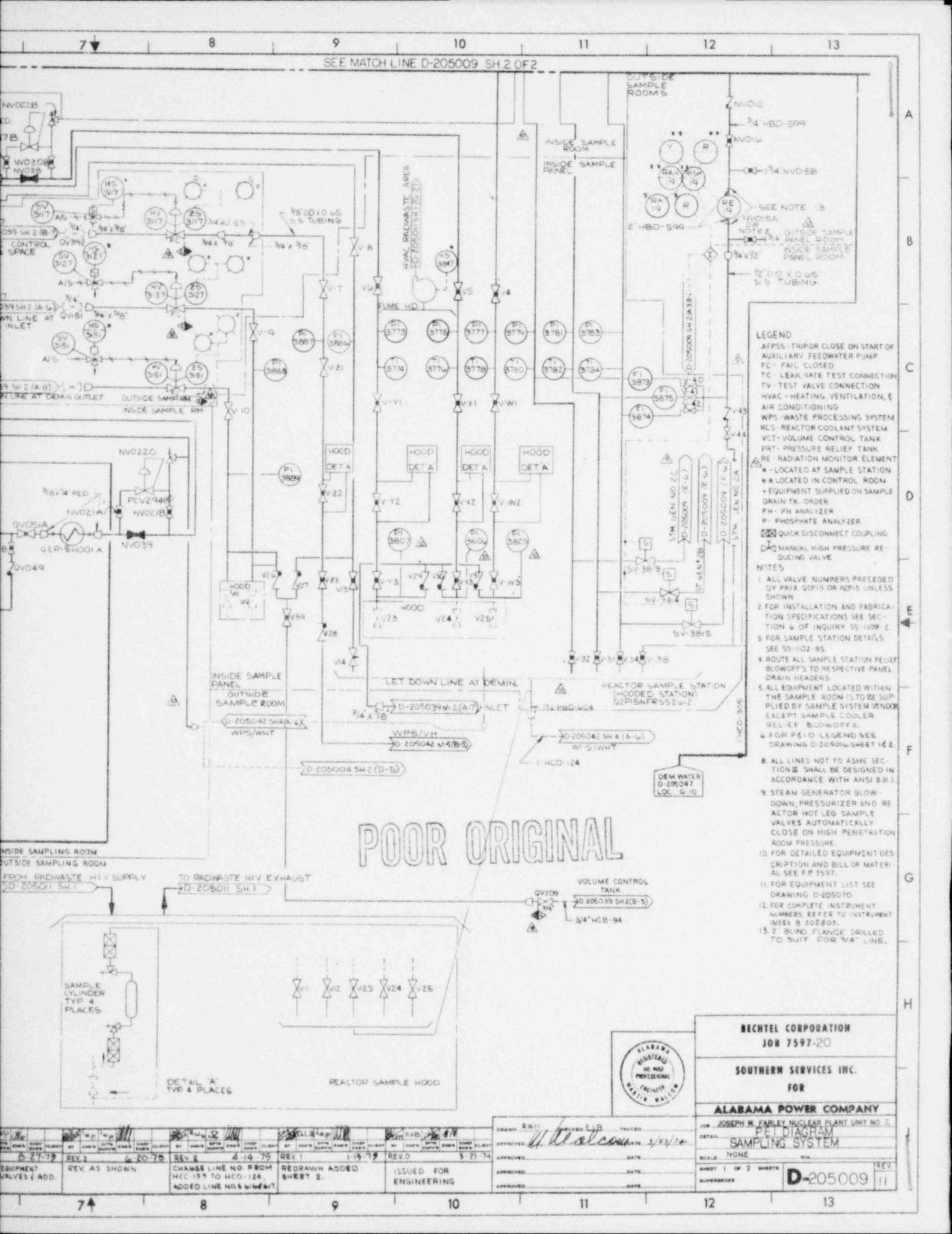
SCALE: NONE

D-205007 | REV. 8



POOR ORIGINAL

REV.	DESCRIPTION	DATE	BY
REV. 10	INC. 2BM-2263, 2405	5-2-79	
REV. 9	INC. 2BM-2061, 2076, REV. 1 2BM-1960 REV. 1 WAS INC. ON REV. 8 REVISED AS SHOWN	11-15-78	
REV. A	INC. 2BM-1203, 1248 439 REVISED AS CURRENTLY INC. 2BM-1960 REV. 1	8-18-78	
REV. 7	ADDED VALVE NO. QV 332 RELOCATED QV 3320 AND REVISED AS CIRCLED.	9-9-77	
REV 6	INC. 2BM-500	6-3-77	
REV. 5	ADDED TINS NUMBERS ON SAMPLE COOLERS AS SHOWN.	4-7-76	
REV. 4	NUMBERS SUPPLIED NOTE 12.		
REV. 11	INC. 2BM-2641	10-16-79	



BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

P&I DIAGRAM
SAMPLING SYSTEM

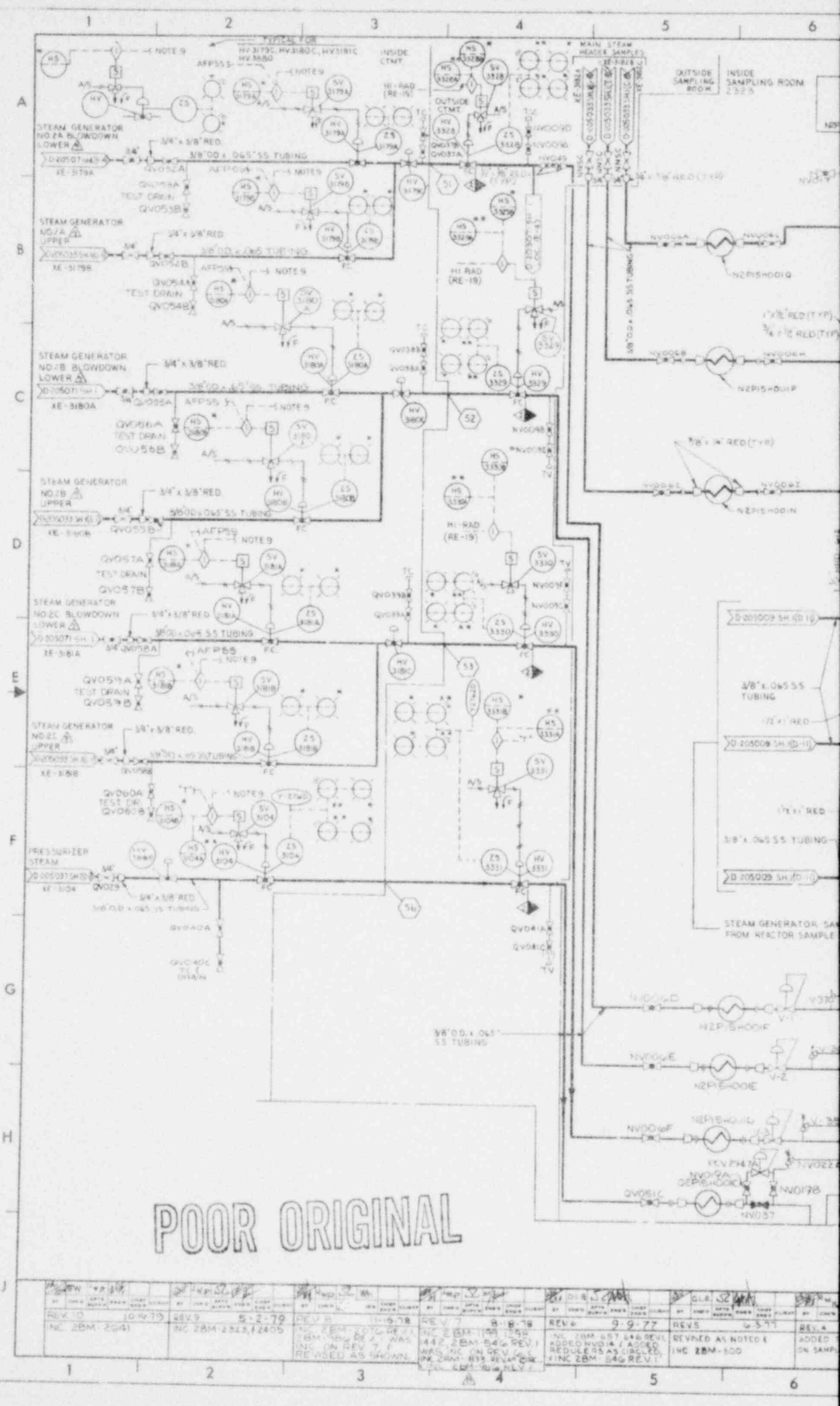
SCALE: NONE

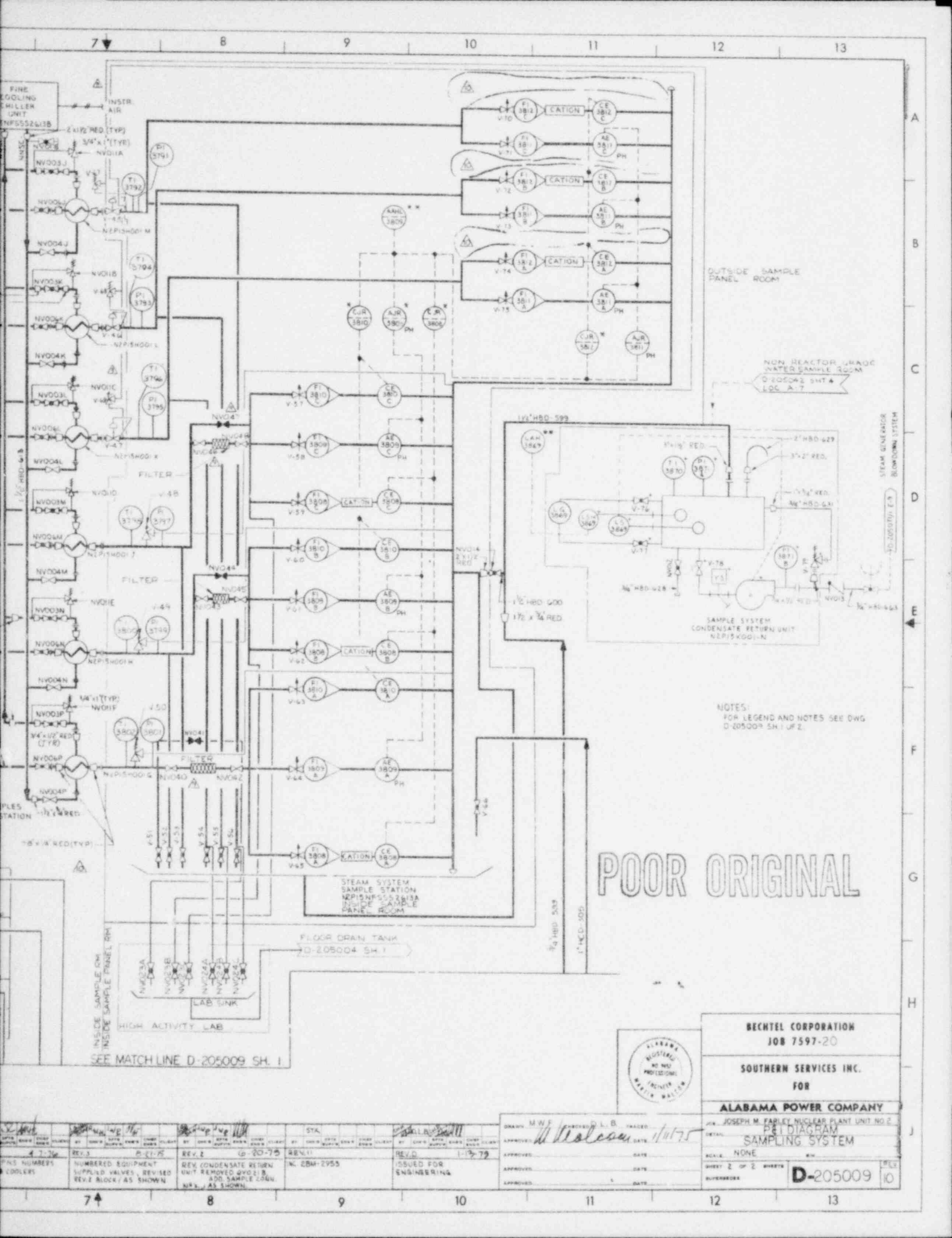
SHEET 1 OF 2 SHEETS

D-205009 REV. 11

REV.	DESCRIPTION	DATE
	EQUIPMENT VALVES & ADD.	6-27-79
2	REV. AS SHOWN	6-20-75
1	CHANGE LINE NO. FROM HCC-139 TO HCD-124, ADDED LINE NOS.	4-14-75
1	REDRAWN ADDED SHEET 2.	1-13-75
0	ISSUED FOR ENGINEERING	3-21-74

DRAWN: RWH
APPROVED: E.I.B.
TRACED:
APPROVED: [signature] 3/27/74
APPROVED: DATE
APPROVED: DATE
APPROVED: DATE


TYPICAL FOR HV-3179C, HV-3180C, HV-3181C, HV-3680
INSIDE CTMT.
MAIN STEAM HEADER SAMPLES
OUTSIDE SAMPLING ROOM
INSIDE SAMPLING ROOM
STEAM GENERATOR NO.2A BLOWDOWN LOWER
STEAM GENERATOR NO.2A UPPER
STEAM GENERATOR NO.2B BLOWDOWN LOWER
STEAM GENERATOR NO.2B UPPER
STEAM GENERATOR NO.2C BLOWDOWN LOWER
STEAM GENERATOR NO.2C UPPER
PRESSURIZER STEAM
TEST DRAIN
HI-RAD (RE-19)
AFPSS
3/4" x 3/8" RED.
3/8" OD x .065" SS TUBING
STEAM GENERATOR SAMPLE FROM REACTOR SAMPLE
POOR ORIGINAL



POOR ORIGINAL

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

DETAIL: P&I DIAGRAM
SAMPLING SYSTEM

SCALE: NONE

SHEET 2 OF 2 SHEETS

D-205009

REV. 10

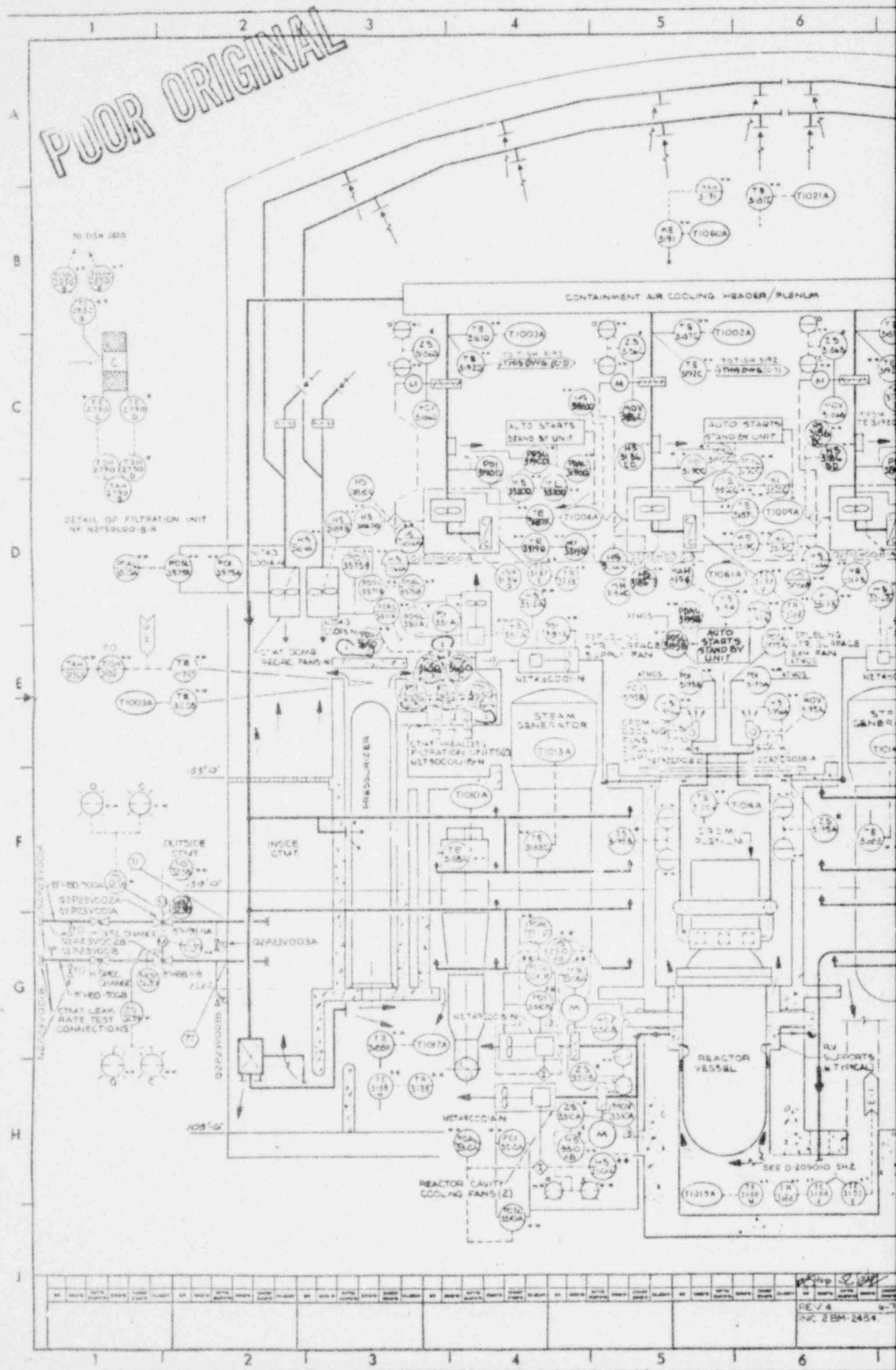
4-7-76	REV. 3 8-21-75	REV. 2 6-20-75	STA.	REV. 0 1-13-75
PNS NUMBERS & COOLERS	NUMBERED EQUIPMENT SUPPLIED VALVES, REVISED REV. 2 BLOCK / AS SHOWN	REV. CONDENSATE RETURN UNIT REMOVED @ V021 B, ADD. SAMPLE CONN. NR's / AS SHOWN	NC. 2BM-2955	ISSUED FOR ENGINEERING

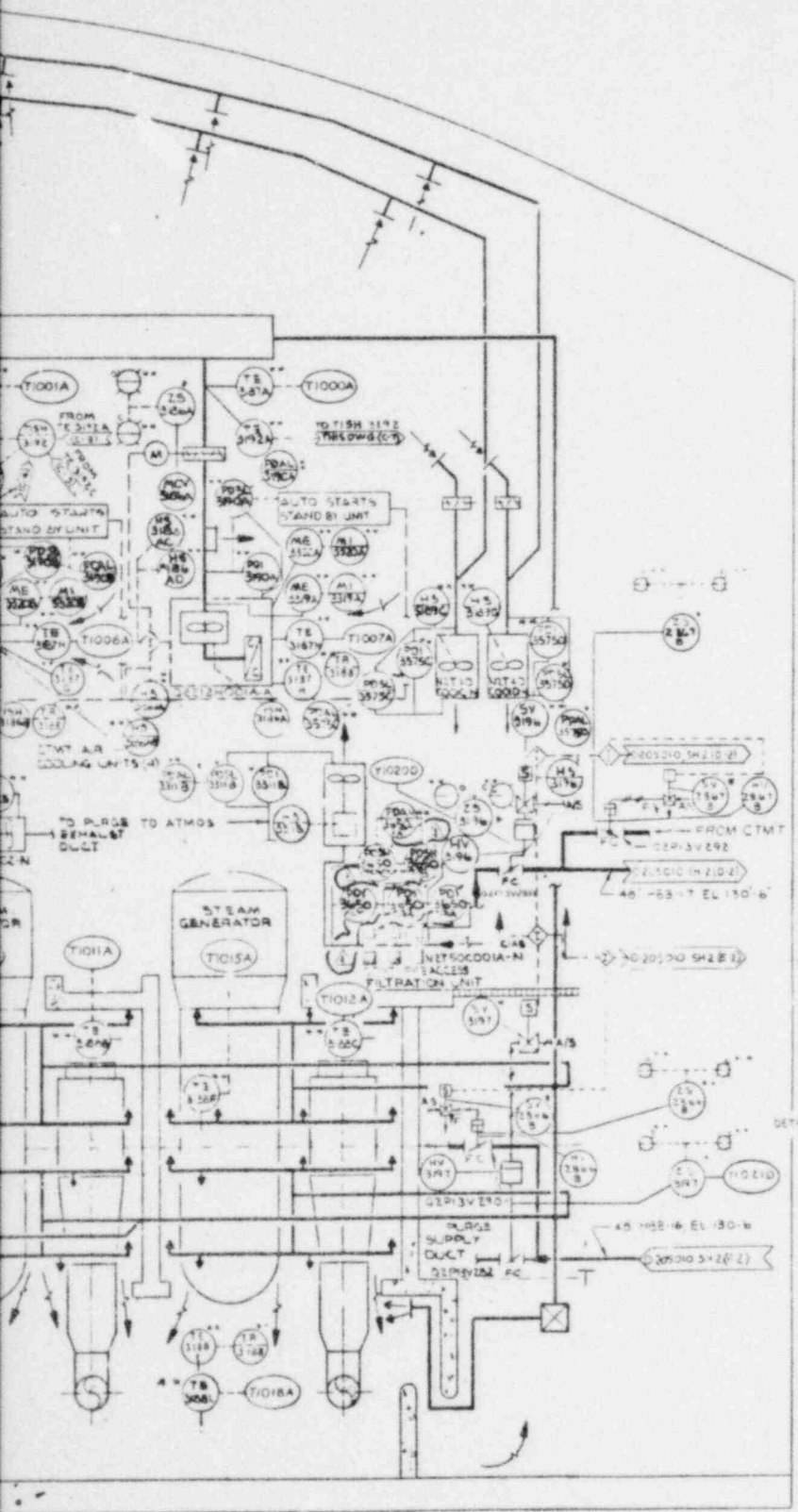
DRAWN M.W.F. CHECKED L.B. TRACED

APPROVED _____ DATE _____

APPROVED _____ DATE _____

APPROVED _____ DATE _____





POOR ORIGINAL

NOTES

1. FOR DUCT MATERIAL & CONSTRUCTION SEE SPEC. SS-1102-54).
2. FOR DAMPER INFORMATION SEE SPEC. SS-1102-54).
3. FOR SEISMIC CLASSIFICATION OF DUCTWORK, SEE SPECS. SS-1102-54
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX D-205803.
5. SEE DRAWING D-205028 FOR PROCESS FLOW DIAGRAM.
6. INDEX THIS DWG WITH D-205090 THRU D-205098, D-205101 THRU D-205105, D-205108 & D-205122.
7. ## ASSOCIATED INSTRUMENTATION TO BE PROVIDED UNDER INSTRUMENTATION & CONTROL CONTRACT.
   # ASSOCIATED INSTRUMENTATION TO BE PROVIDED BY EQUIP. MANUFACTURER
   ALL OTHER INSTRUMENTATION SHALL BE PROVIDED BY DUCTWORK SUB-CONTRACTOR.
8. ALL SOLENOID VALVES FOR PNEUMATIC OPERATED VALVES & DAMPERS SHALL BE 90-140V DC UNLESS OTHERWISE INDICATED.
9. FOR P&ID LEGEND SEE DWG. D-205016 SHEETS 1&2.
10. FOR EQUIPMENT LIST SEE DWG. D-205070 SHEET 1&2.
11. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-205803.

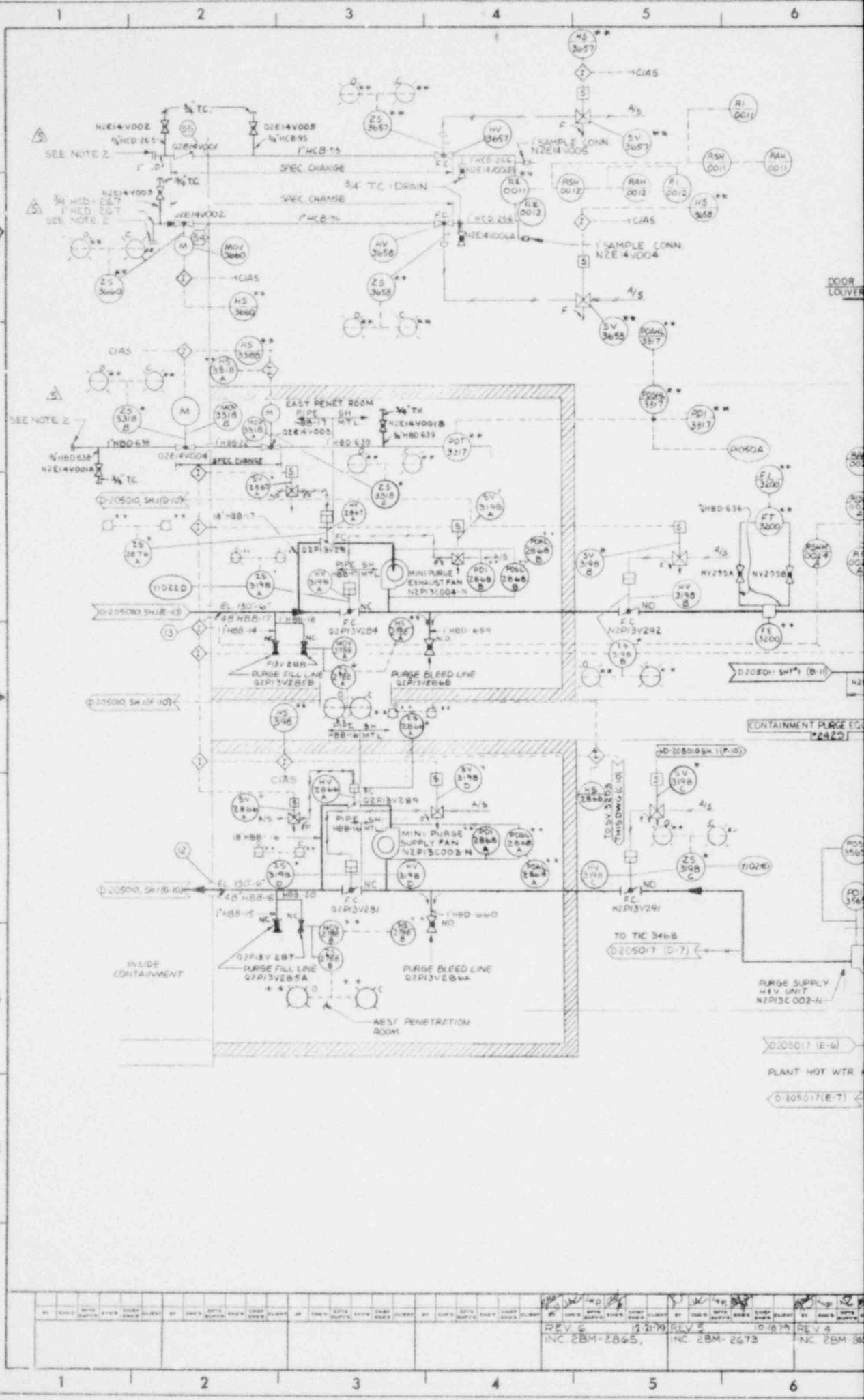
BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

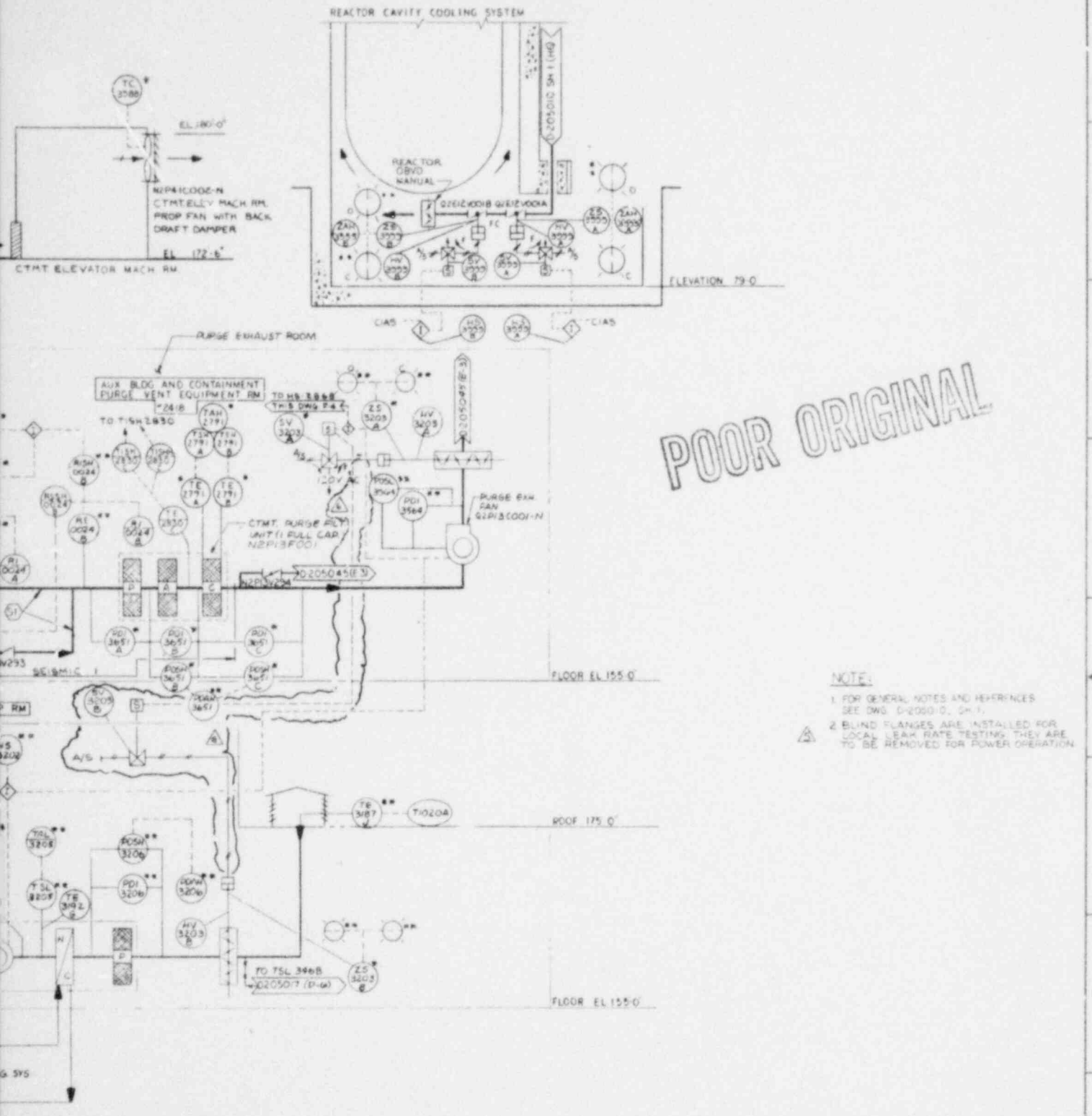
P&I DIAGRAM
CONTAINMENT COOLING & PURGE SYSTEMS
SCALE NONE

D-205010 REV 4

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
3	INC. ZBM-1158				4-18-78
2	DWG. REV. TO INC. APPL. UNIT #1 REVISIONS.				11-4-77
1	REVISED AS CIRCLED AND ADDED SHEET 2.				4-20-76
0	ISSUED FOR ENGINEERING	HR	P.H.	M.J. Mc	8-18-75
				G.A. Day	4-19-76



REV 6	REV 5	REV 4
INC 2BM-2865,	INC 2BM-2673	INC 2BM-3



NOTE:

1. FOR GENERAL NOTES AND REFERENCES SEE DWG. D-2050-10, SH. 1.
2. BLIND FLANGES ARE INSTALLED FOR LOCAL LEAK RATE TESTING. THEY ARE TO BE REMOVED FOR POWER OPERATION.

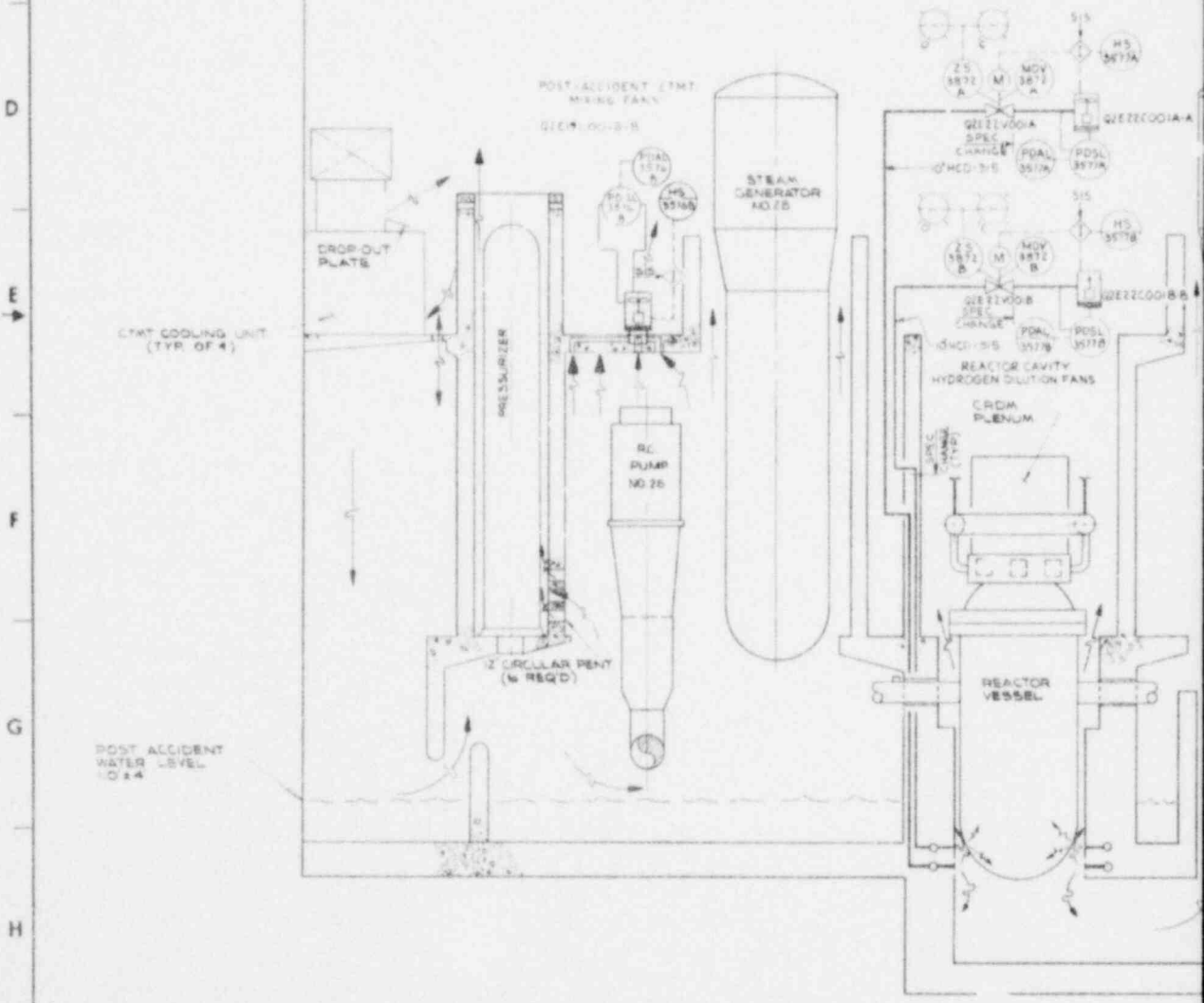
REV	DESCRIPTION	DATE
3	INC. ZBM-1293, 1737, 1984	12-22-78
2	REVISED AS SHOWN	6-15-78
1	DWG REV TO INC APPL UNIT 1 REVISIONS & INCORP BM-2998	11-4-77
0	ISSUED FOR ENGINEERING	4-20-76

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO 2
DETAIL P & I DIAGRAM
CONTAINMENT COOLING & PURGE SYS
SCALE NONE
SHEET 2 OF 2 SHEETS
SUPERVISOR

D-205010 REV 6

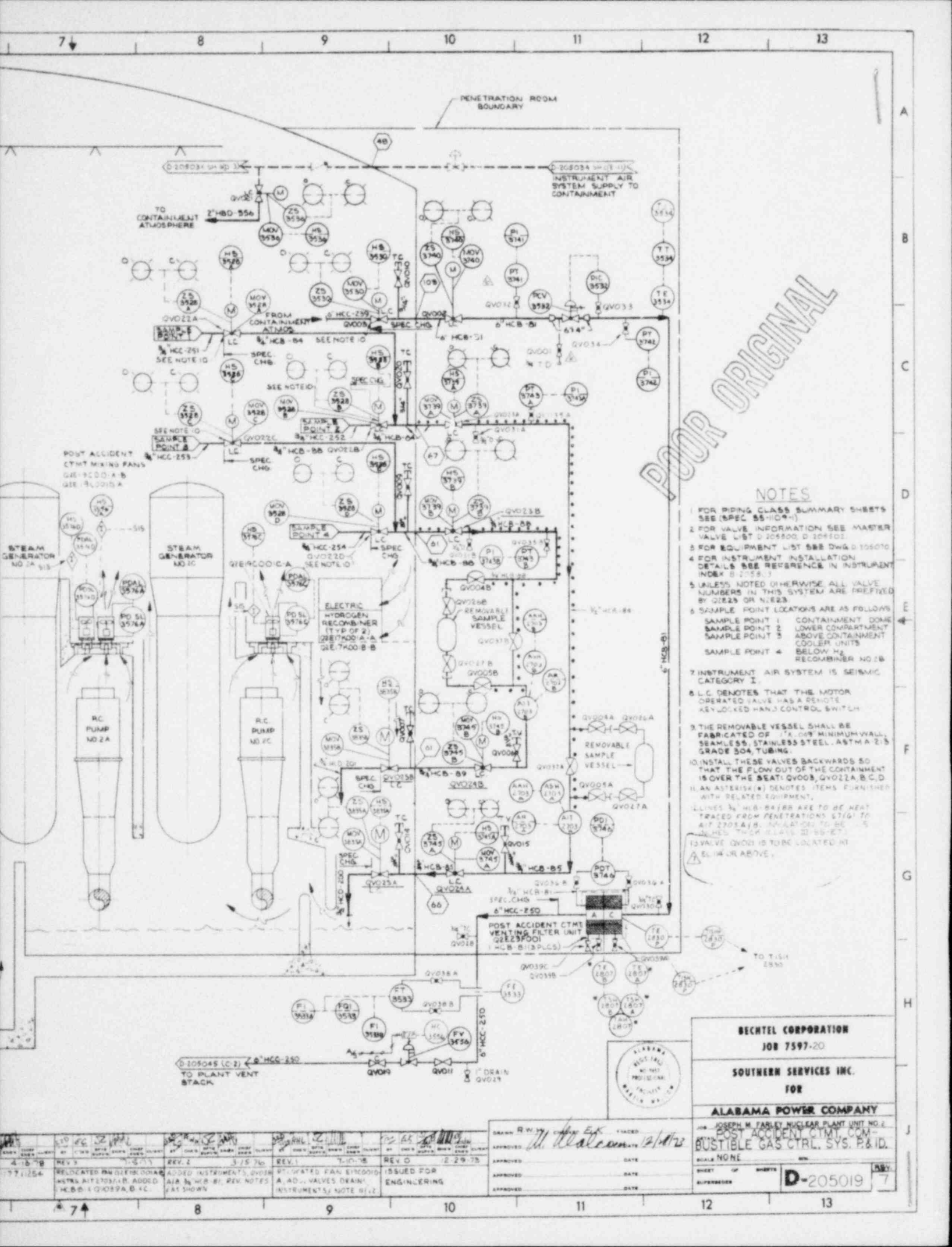


REV 7 8-7-79 NC 2BM-2040

REV 6 4-7-79 NC 2BM-2535

REV 5 1-8-79 NC 2BM-2249, 2576

REV 4 NC 2BM



POOR ORIGINAL

NOTES

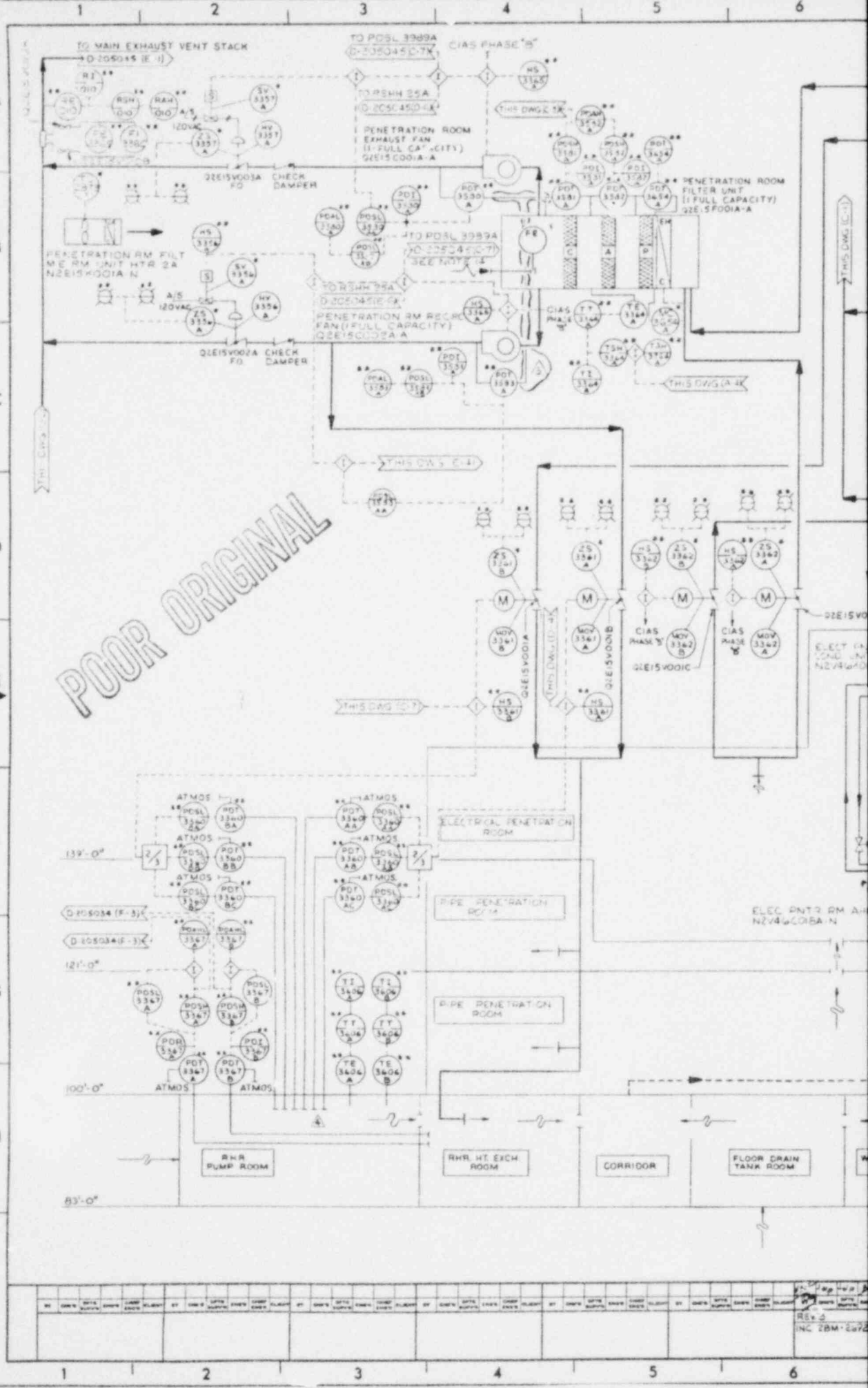
1. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC 55-1109-1)
2. FOR VALVE INFORMATION SEE MASTER VALVE LIST D 205800, D 205802
3. FOR EQUIPMENT LIST SEE DWG D 205010
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX B-2058-3
5. UNLESS NOTED OTHERWISE ALL VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY 2E23 OR N-E23
6. SAMPLE POINT LOCATIONS ARE AS FOLLOWS

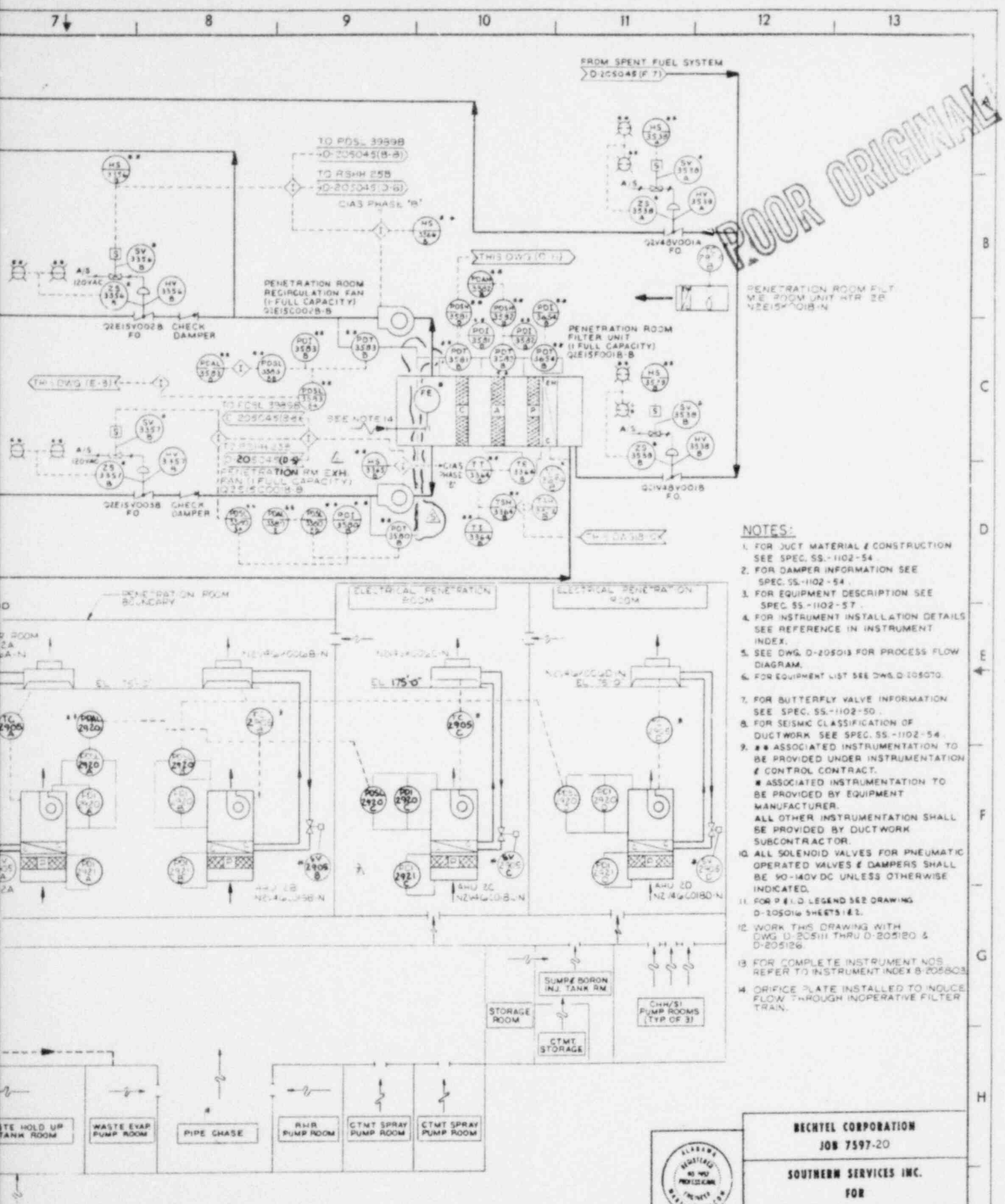
SAMPLE POINT 1	CONTAINMENT DOME
SAMPLE POINT 2	LOWER COMPARTMENT
SAMPLE POINT 3	ABOVE CONTAINMENT COOLER UNITS
SAMPLE POINT 4	BELOW H_2 RECOMBINER NO 2B

7. INSTRUMENT AIR SYSTEM IS SEISMIC CATEGORY I.
8. L.C. DENOTES THAT THE MOTOR OPERATED VALVE HAS A REMOTE KEY LOCKED HAND CONTROL SWITCH
9. THE REMOVABLE VESSEL SHALL BE FABRICATED OF .134 MINIMUM WALL, SEAMLESS, STAINLESS STEEL, ASTM A-213 GRADE 304, TUBING.
10. INSTALL THESE VALVES BACKWARDS SO THAT THE FLOW OUT OF THE CONTAINMENT IS OVER THE SEAT: QV008, QV022A, B, C, D
11. AN ASTERISK (*) DENOTES ITEMS FURNISHED WITH RELATED EQUIPMENT.
12. LINES ¾" HCB-84/BB ARE TO BE HEAT TRACED FROM PENETRATIONS 67/61 TO AIT 2703 A/B. INSULATION TO BE 1½ INCHES THICK (LAYIN 11-55-ET).
13. VALVE QV001 IS TO BE LOCATED AT ⚠ EL 18'-0" OR ABOVE.

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR ENGINEERING	R.W.Y.	Jim Eat	W. Wallace	12/10/75
1	RELOCATED FAN COOLER UNITS AIT 2703 A/B. ADDED HCB-84 (QV039A, B, C.				4-16-78
2	ADDED INSTRUMENTS, QV038A, B, AIR ¾ HCB-81, REV. NOTES				3-15-76
1	RELOCATED FAN COOLER UNITS, ADDED VALVES DRAIN INSTRUMENTS, NOTE 6				7-10-75

BECHTEL CORPORATION
JOB 7597-20
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
POST ACCIDENT CTMT. COMBUSTIBLE GAS CTRL. SYS. P & I.D.
SCALE NONE
SHEET OF SHEETS
SUPERSEDES
D-205019
REV 7


TO MAIN EXHAUST VENT STACK
D-205045 (E-1)
TO PDSL 3989A
D-355045 (C-7)
CIAS PHASE "B"
TO RSHH 25A
D-205045 (E-4)
PENETRATION ROOM EXHAUST FAN (1-FULL CAPACITY) 2EE15C001A-A
2EE15V003A FD CHECK DAMPER
PENETRATION ROOM FILTER UNIT (1-FULL CAPACITY) 2EE15F001A-A
PENETRATION RM FILTER RM UNIT HTR 2A N2EE15K001A-N
TO PDSL 3989A
D-205045 (C-7)
SEE NOTE 4
TO RSHH 25A
D-205045 (E-4)
PENETRATION RM RECIRC FAN (1-FULL CAPACITY) 2EE15C002A-A
2EE15V002A FD CHECK DAMPER
THIS DWG (C-1)
THIS DWG (C-4)
THIS DWG (C-7)
THIS DWG (A-4)
2EE15V001A
2EE15V001B
2EE15V001C
CIAS PHASE "B"
ELECTRICAL PENETRATION ROOM
PIPE PENETRATION ROOM
PIPE PENETRATION ROOM
ELEC PNTR RM A-H N2V46C0BA-N
RHR PUMP ROOM
RHR HT. EXCH. ROOM
CORRIDOR
FLOOR DRAIN TANK ROOM
139'-0"
121'-0"
100'-0"
83'-0"
ATMOS
D-205034 (F-3)
D-205034 (F-3)
POOR ORIGINAL



POOR ORIGINAL

NOTES:

1. FOR DUCT MATERIAL & CONSTRUCTION SEE SPEC. SS.-1102-54.
2. FOR DAMPER INFORMATION SEE SPEC. SS.-1102-54.
3. FOR EQUIPMENT DESCRIPTION SEE SPEC. SS.-1102-57.
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX.
5. SEE DWG. D-205013 FOR PROCESS FLOW DIAGRAM.
6. FOR EQUIPMENT LIST SEE DWG. D-205070.
7. FOR BUTTERFLY VALVE INFORMATION SEE SPEC. SS.-1102-50.
8. FOR SEISMIC CLASSIFICATION OF DUCTWORK SEE SPEC. SS.-1102-54.
9. ** ASSOCIATED INSTRUMENTATION TO BE PROVIDED UNDER INSTRUMENTATION & CONTROL CONTRACT.
   * ASSOCIATED INSTRUMENTATION TO BE PROVIDED BY EQUIPMENT MANUFACTURER.
   ALL OTHER INSTRUMENTATION SHALL BE PROVIDED BY DUCTWORK SUBCONTRACTOR.
10. ALL SOLENOID VALVES FOR PNEUMATIC OPERATED VALVES & DAMPERS SHALL BE 90-140V DC UNLESS OTHERWISE INDICATED.
11. FOR P & I.D. LEGEND SEE DRAWING D-205016 SHEETS 1 & 2.
12. WORK THIS DRAWING WITH DWG. D-205111 THRU D-205120 & D-205126.
13. FOR COMPLETE INSTRUMENT NOS. REFER TO INSTRUMENT INDEX B-205803.
14. ORIFICE PLATE INSTALLED TO REDUCE FLOW THROUGH INOPERATIVE FILTER TRAIN.

REV	DESCRIPTION
4	INC. 28M-3543.
3	REVISED PER NIT# INC. 28M-1799
2	DWG REVISED TO INC. APPLICABLE UNIT #1 REVISIONS
1	REDRAWN & ISSUED FOR ENGINEERING

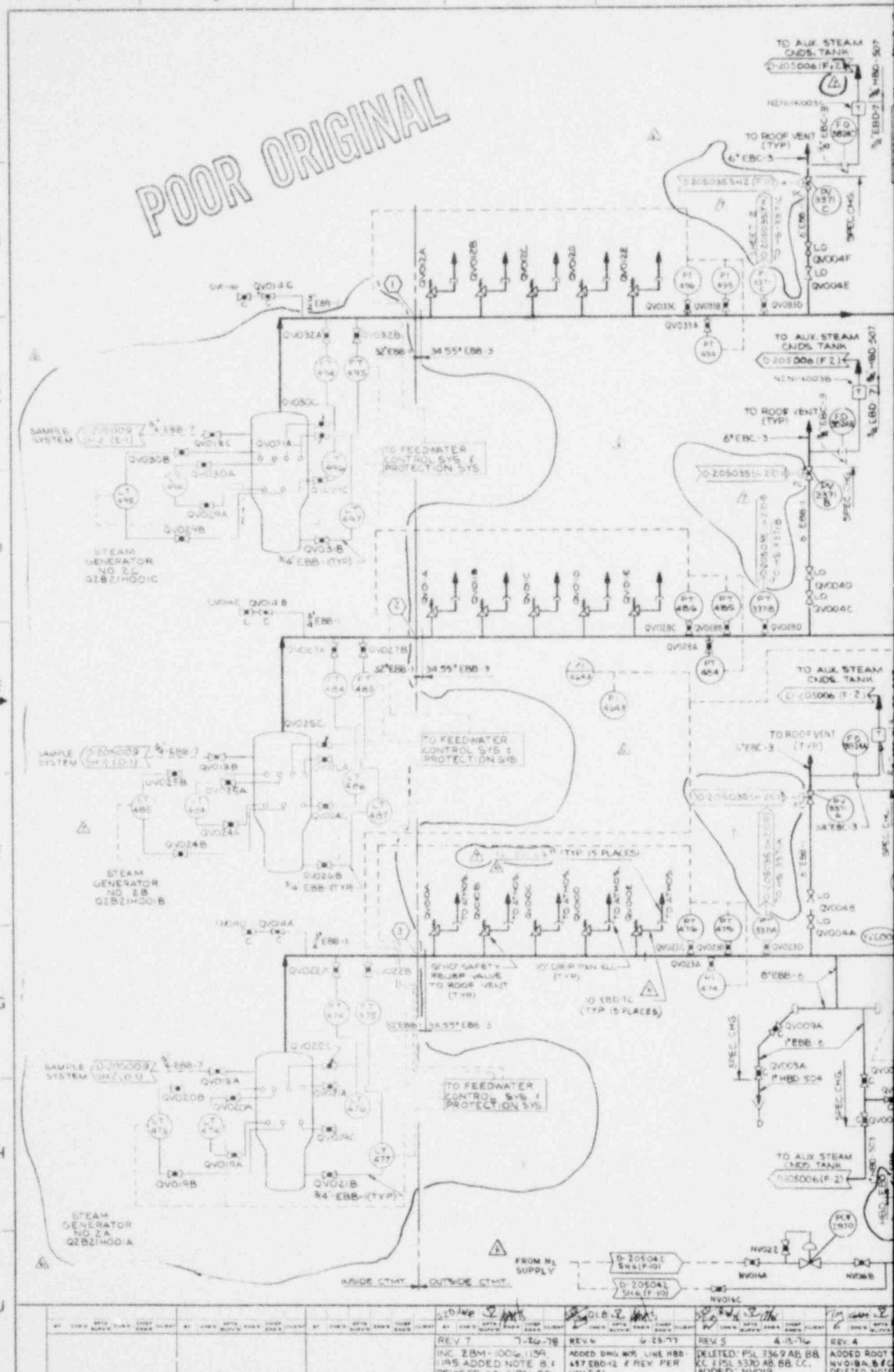
BECHTEL CORPORATION
JOB 7597-20

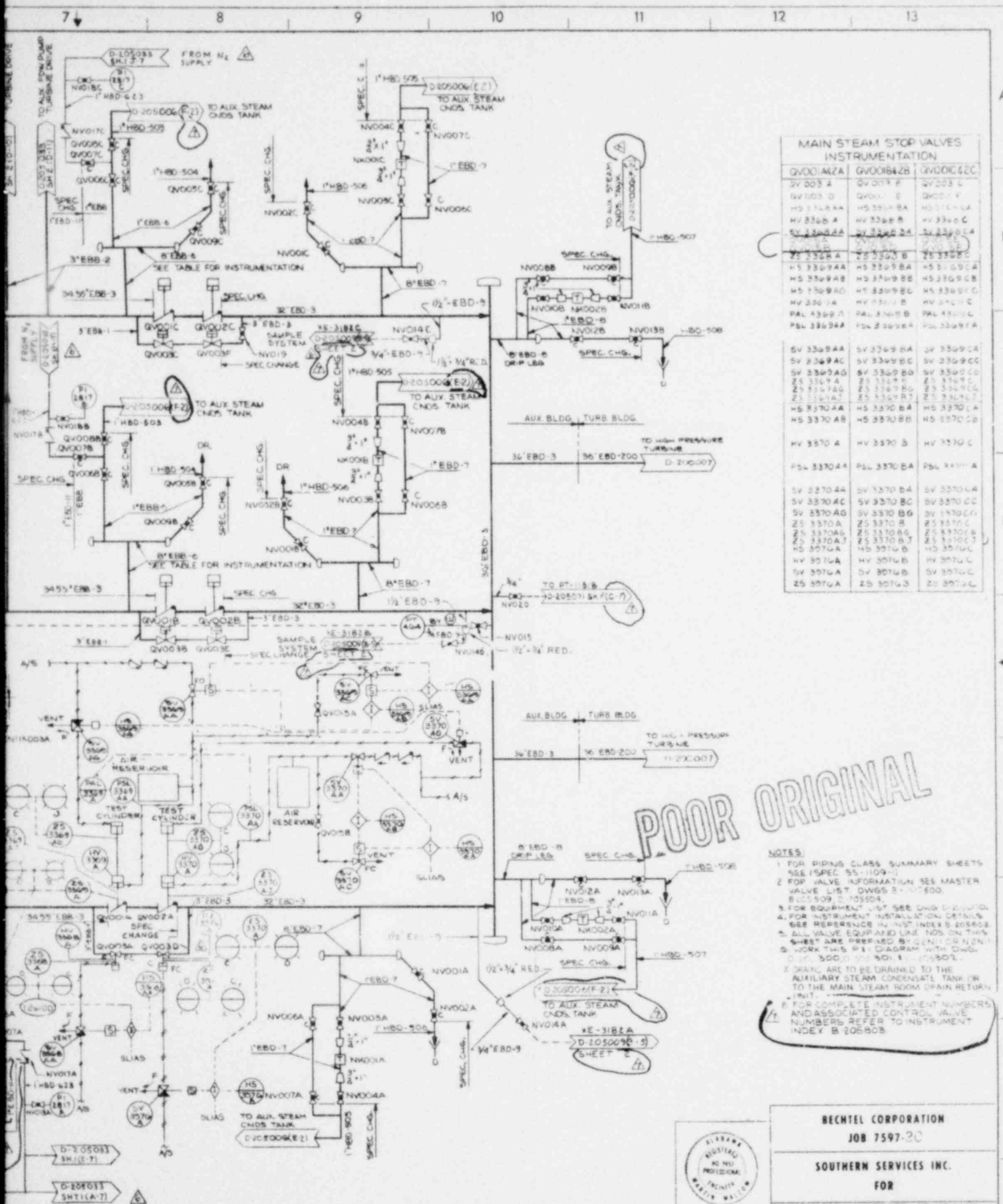
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

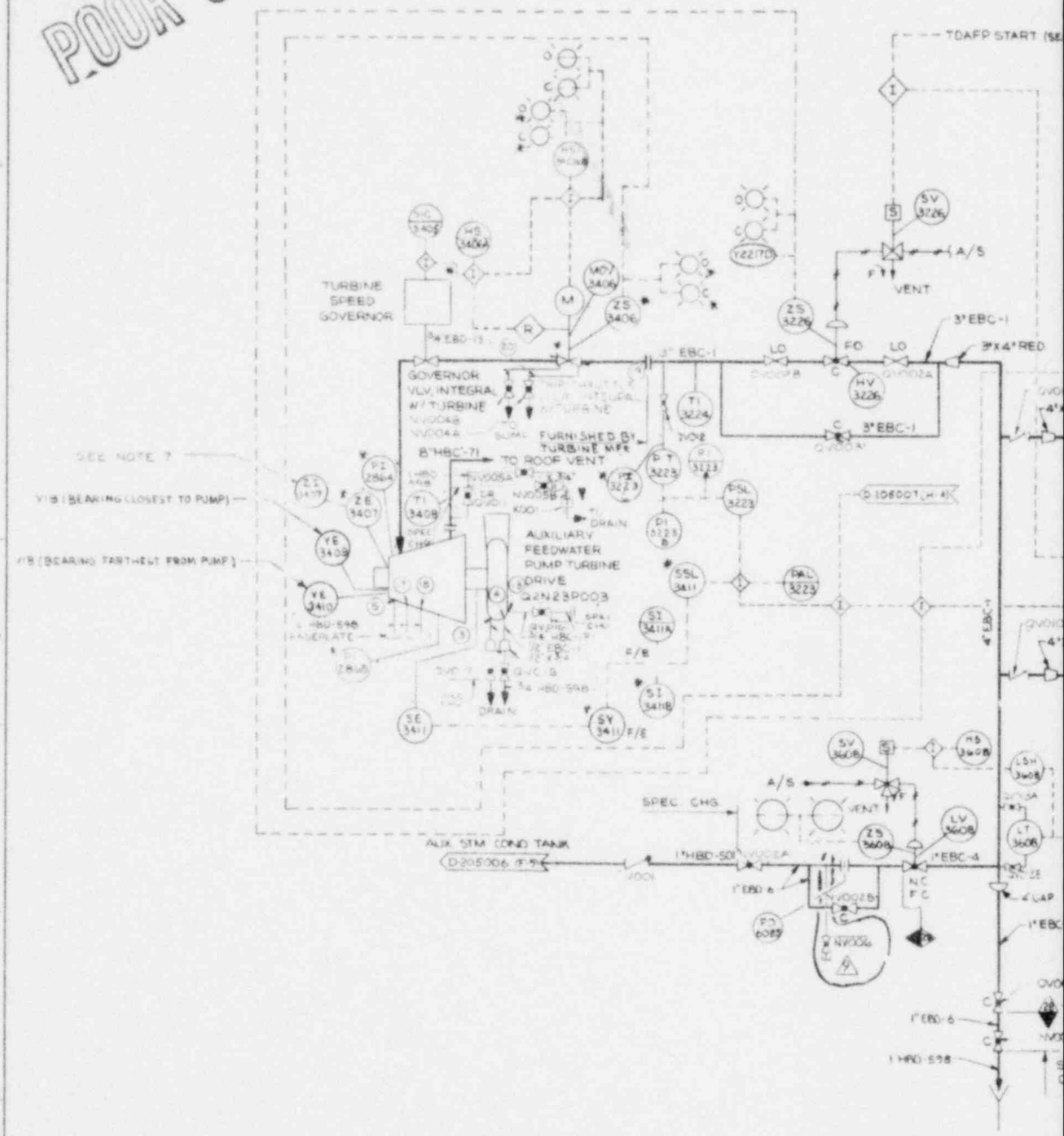
HVAC P&I DIAGAM
PENETRATION FILTRATION SYS.

SCALE NONE

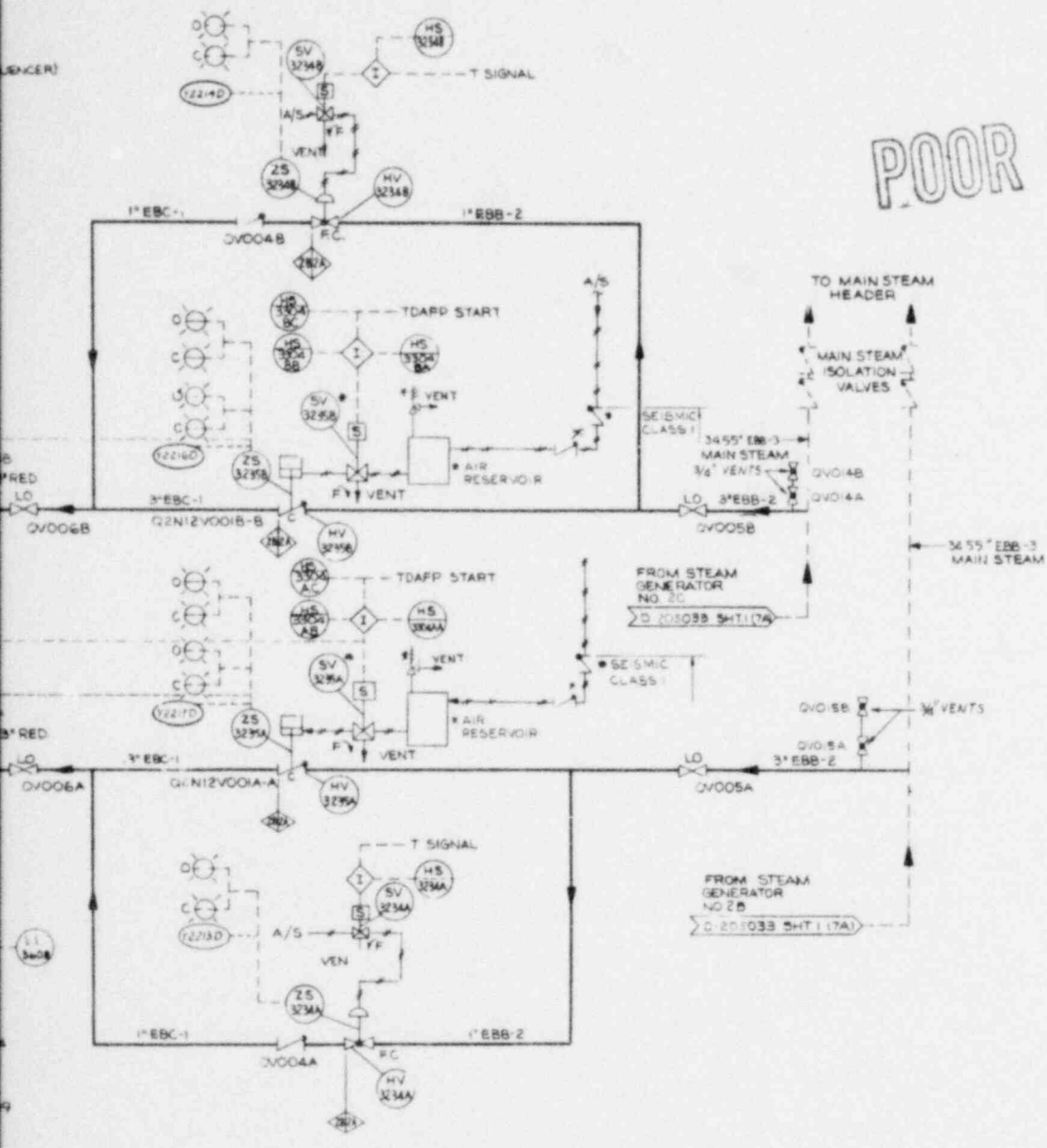
D-205022 REV. 5




MAIN STEAM STOP VALVES INSTRUMENTATION
QV0018A2A
QV0018B2B
QV0018C2C
SV 3369 A
SV 3369 B
SV 3369 C
HS 3369AA
HS 3369BA
HS 3369CA
HV 3369 A
HV 3369 B
HV 3369 C
PAL 3369 A
PAL 3369 B
PAL 3369 C
PSL 3369AA
PSL 3369BA
PSL 3369CA
SV 3369AA
SV 3369BA
SV 3369CA
SV 3369AC
SV 3369BC
SV 3369CC
SV 3369AG
SV 3369BG
SV 3369CG
ZS 3369 A
ZS 3369 B
ZS 3369 C
ZS 3369AG
ZS 3369BG
ZS 3369CG
ZS 3369AT
ZS 3369BT
ZS 3369CT
HS 3370AA
HS 3370BA
HS 3370CA
HS 3370AB
HS 3370BB
HS 3370CB
HV 3370 A
HV 3370 B
HV 3370 C
PSL 3370AA
PSL 3370BA
PSL 3370CA
SV 3370AA
SV 3370BA
SV 3370CA
SV 3370AC
SV 3370BC
SV 3370CC
SV 3370AG
SV 3370BG
SV 3370CG
ZS 3370A
ZS 3370B
ZS 3370C
ZS 3370AG
ZS 3370BG
ZS 3370CG
ZS 3370AT
ZS 3370BT
ZS 3370CT
HS 3371A
HS 3371B
HS 3371C
HV 3371A
HV 3371B
HV 3371C
SV 3371A
SV 3371B
SV 3371C
ZS 3371A
ZS 3371B
ZS 3371C
FROM N2 SUPPLY
AUX STEAM PUMP TURBINE DRIVE
TO AUX STEAM CNDS. TANK
SAMPLE SYSTEM
SEE TABLE FOR INSTRUMENTATION
TO HIGH PRESSURE TURBINE
AUX. BLDG.
TURB. BLDG.
AIR RESERVOIR
TEST CYLINDER
SPEC CHANGE
SPEC CHG.
DRIP LEG
VENT
SLIAS
A/S
FC
FO
DR
NOTES
1. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC 55-1109-H)
2. FOR VALVE INFORMATION SEE MASTER VALVE LIST DWGS B-205500, B-205509, B-205504.
3. FOR EQUIPMENT LIST SEE DWG D-205003.
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INST INDEX B-205803
5. ALL VALVE EQUIPMENT LINE NOS ON THIS SHEET ARE PREFIXED BY GENERIC NZN
6. WORK THIS P&I DIAGRAM WITH DWGS D-205500, 501, 503, 504, 505, 506, 507, 508, 509, D-205502.
7. DRAINS ARE TO BE DRAINED TO THE AUXILIARY STEAM CONDENSATE TANK OR TO THE MAIN STEAM ROOM DRAIN RETURN UNIT.
8. FOR COMPLETE INSTRUMENT NUMBERS AND ASSOCIATED CONTROL VALVE NUMBERS REFER TO INSTRUMENT INDEX B-205803.
POOR ORIGINAL
BECHTEL CORPORATION
JOB 7597-20
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P&I DIAGRAM
MAIN STEAM AND AUXILIARY STEAM SYSTEMS
D-205033
7
REV. 3 5-29-75 ADDED 1½" EBD-9, REDUCER (REV'D. AS SHOWN). ADDED NOTE 7. REVISED EBD-3 & PLACES
REV. 2 2-4-76 ADDED QV0010, E.F. QV0140, E.F. REVISED TABLE AND AS NOTED. ADDED INST. & ROOT VALVES.
REV. 1 1-14-74 REVISED MSIV ARRG'T & INST. AND REVISED AS CALLED.
REV. 0 8-7-73 ISSUED FOR ENGINEERING
DRAWN JEN TRACED
APPROVED 8/6/73
APPROVED DATE
APPROVED DATE
APPROVED DATE



REV.9 12-7-79	REV. 8 1-31-79	REV. 7 7-26-78	REV. 6 6-2-78	REV. 5 2-29-76	REV. 4
2BM-2850	2BM-1272 WAS INC. ON 2BV 6 BUT WAS NOT SHOWN IN REV. BLOCK	INC. 2BM-1719.	REVISED AS PER DWG D-175033 REV. 9	ADDED PI 2864, 2865A 3123C. DELETED SA 3411 AND REV. AS SHOWN	ADDED 1B AND Q



NOTES:

1. SEE SHEET 1 FOR GENERAL NOTES.
2. * FURNISHED WITH EQUIPMENT.
3. UNLESS OTHERWISE SHOWN, ALL VALVE AND LINE NUMBERS SHOWN ON THIS SHEET ARE PREFIXED BY Q2N12, OR N2N12.
4. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-205A/B.
5. THE FOLLOWING PRESSURE INSTRUMENTS DETECT HIGH ENERGY LINE FAILURES AND ACTIVATE PAH-2650 IN THE MAIN CONTROL ROOM.

INSTRUMENT NO.	TRAIN
Q2N 2PSH2650 A	A
B	A
C	A
D	B
E	B
F	B

6. ○ INDICATES CONNECTION NUMBERS ON THE AUX. FEEDWATER PUMP (SEE 1H-[illegible]).
7. PORTABLE INSTRUMENT MAY BE USED.

NO.	DESCRIPTION	DATE
4	4-29-75	
3	REV. 3 DELETED STRAINER	1-22-75
2	REV. 2 ADDED VALVES, DRAIN AND FLANGES, REVISED AS CIRCLED.	6-8-74
1	REV. 1 ADDED 3 CHECK VALVES QV4102A, B & C, CHANGED MSIV CORRECTED N4D01-B TPN.	2-11-74
0	REV. 0 ISSUED FOR ENGINEERING	8-7-73

DRAWN TH FIXED RLH TRACED
APPROVED [signature] DATE 8/6/73
APPROVED DATE
APPROVED DATE
APPROVED DATE

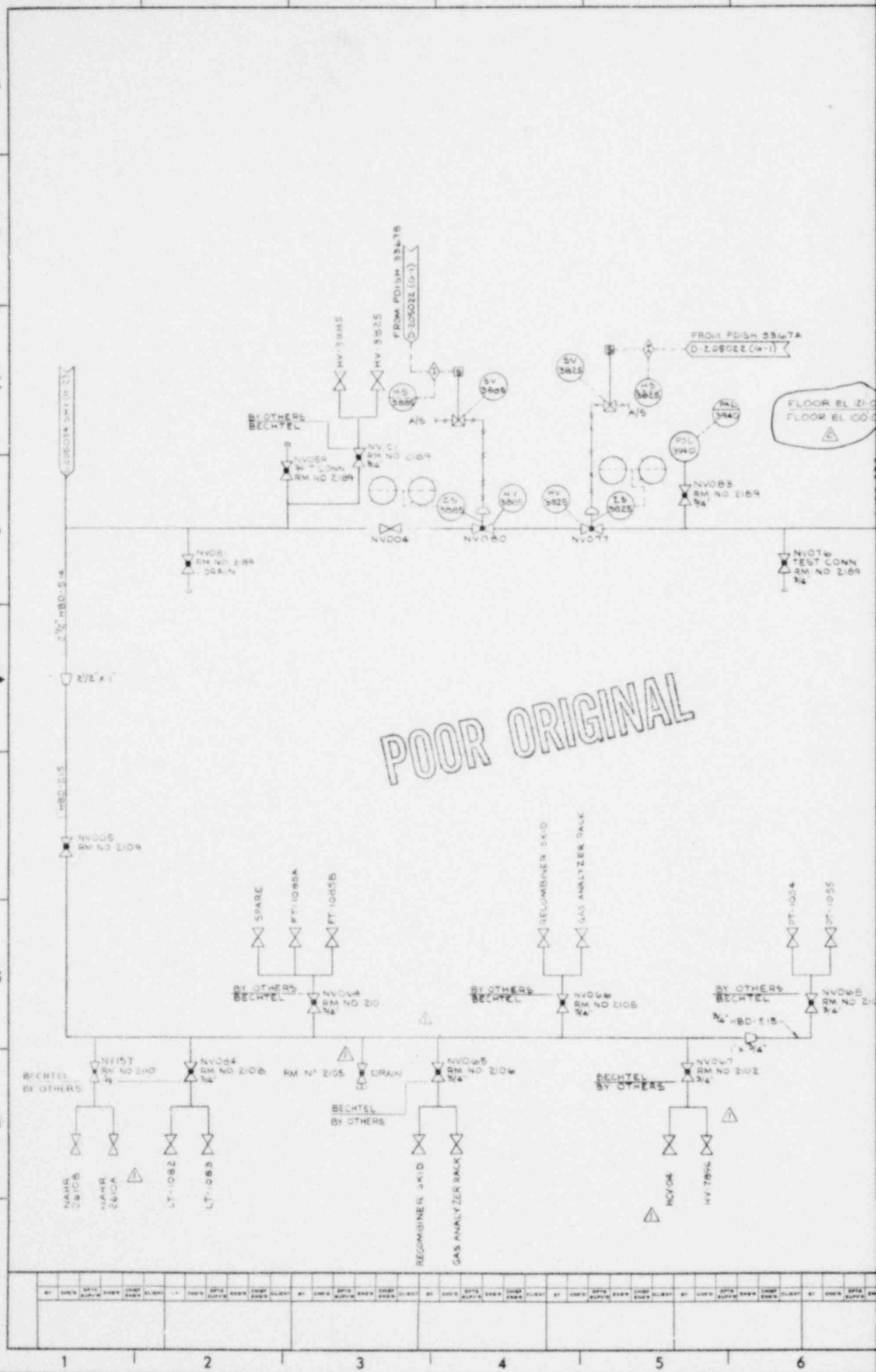
ALABAMA REGISTERED NO. 9651 PROFESSIONAL ENGINEER MARTIN MATSON

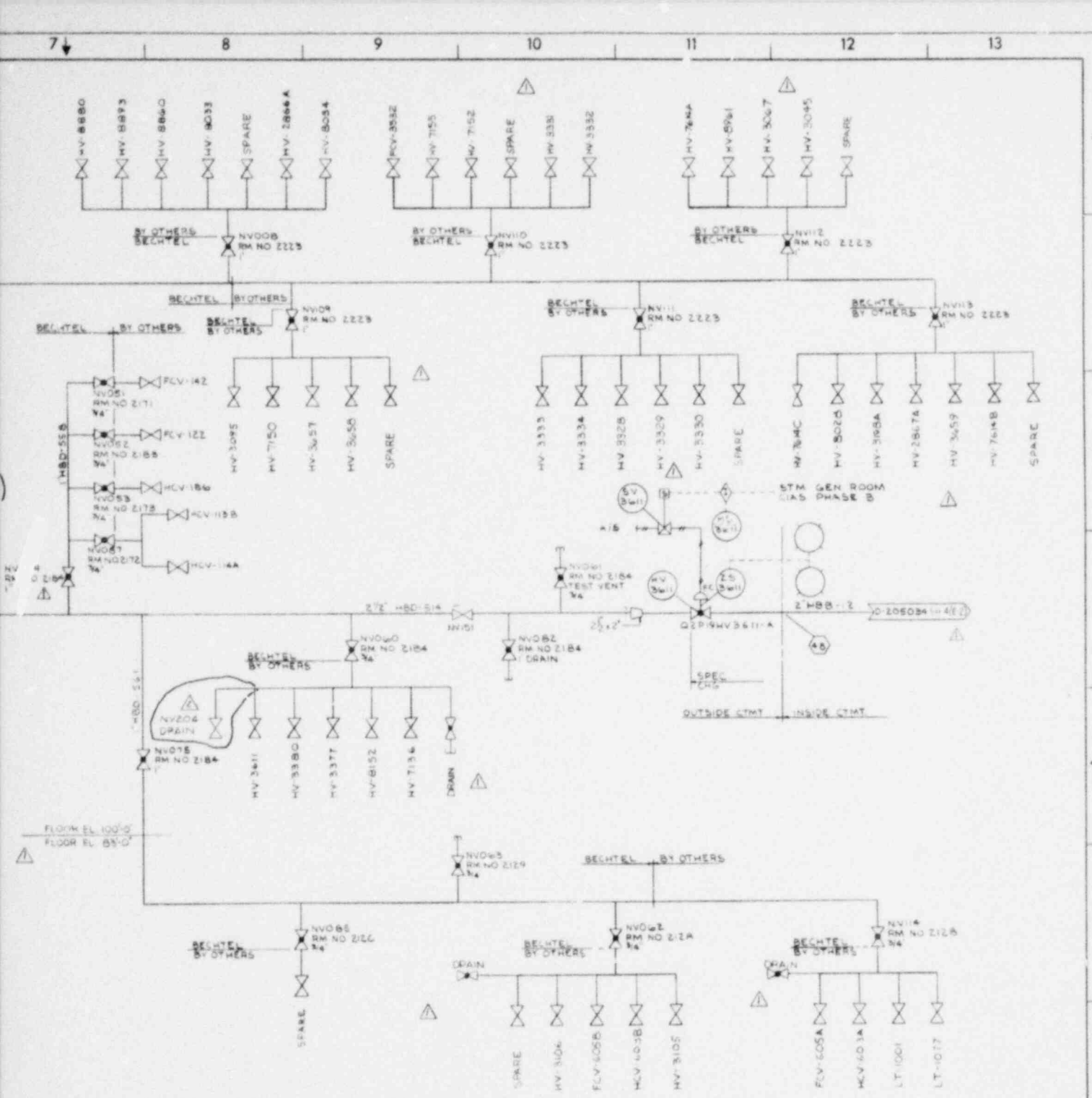
BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
DETAIL P & I DIAGRAM
MAIN STEAM AND AUXILIARY STEAM SYSTEMS

SHEET 2 OF 2 SHEETS
SUPERSEDES
D-205033
REV. 9





POOR ORIGINAL

REV	BY	CHKD	APPD	DRAWING APPD	CLIENT	DESCRIPTION
2						REVISED PER AS BUILT CONDITIONS. INC. ZBM-7586 6-7-79
1						REVISED PER AS BUILT CONDITIONS INC. ZBM-7276 & 33 208 & GOLD BOOK REV. 1 2-22-79
0						D-205034 SH 2 OF 3 ADDED TO SHOW AS BUILT CONDITIONS AS PER ZBM-737, 1085 3-30-78

BECHTEL CORPORATION
JOB 7597-20

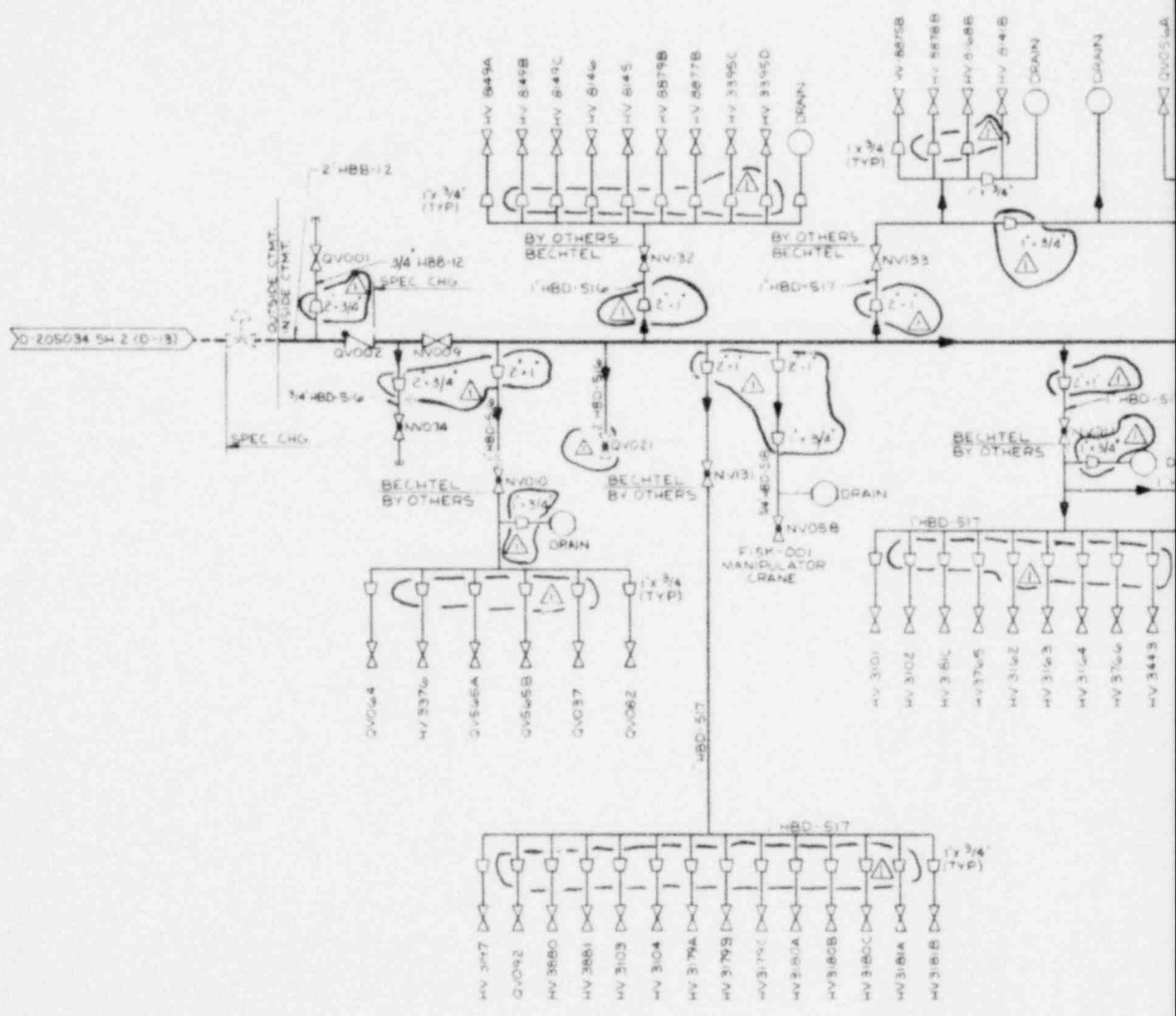
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

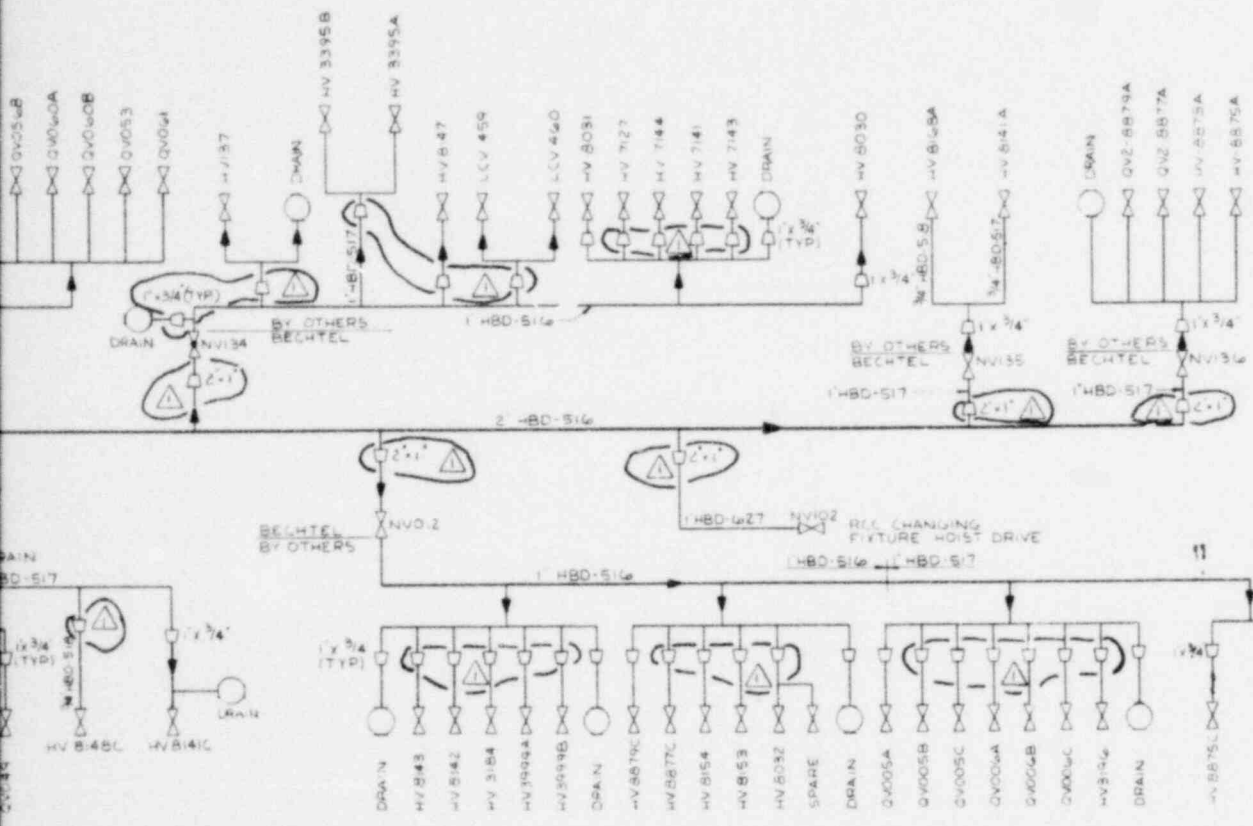
JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
DETAIL P&I DIAGRAM
INSTRUMENT AIR SYSTEM
SCALE NONE

DRAWN M.W.E. CHECKED D.L.B. TRACED
APPROVED DATE 3/30/78
APPROVED DATE
APPROVED DATE
APPROVED DATE
SUPERVISOR

SHEET 2 OF 4 SHEETS

D-205034 REV 2





NOTES

1. FOR GENERAL NOTES SEE SHEET

REV	BY	DATE	DESCRIPTION
1		6-9-79	REVISED PER AS BUILT CONDITIONS. INC 2BM-2586
0		2-22-79	D-205034 SH 4 OF 4. ADDED PER 2BM-2187, INC 2BM-2245, 2353

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

DRAWN M.W.E. CHECKED J.W.P. TRACED

APPROVED G. C. Yoggy DATE 4/16/79

APPROVED DATE

APPROVED DATE

APPROVED DATE

DETAIL P&I DIAGRAM
INSTRUMENT AIR SYSTEM

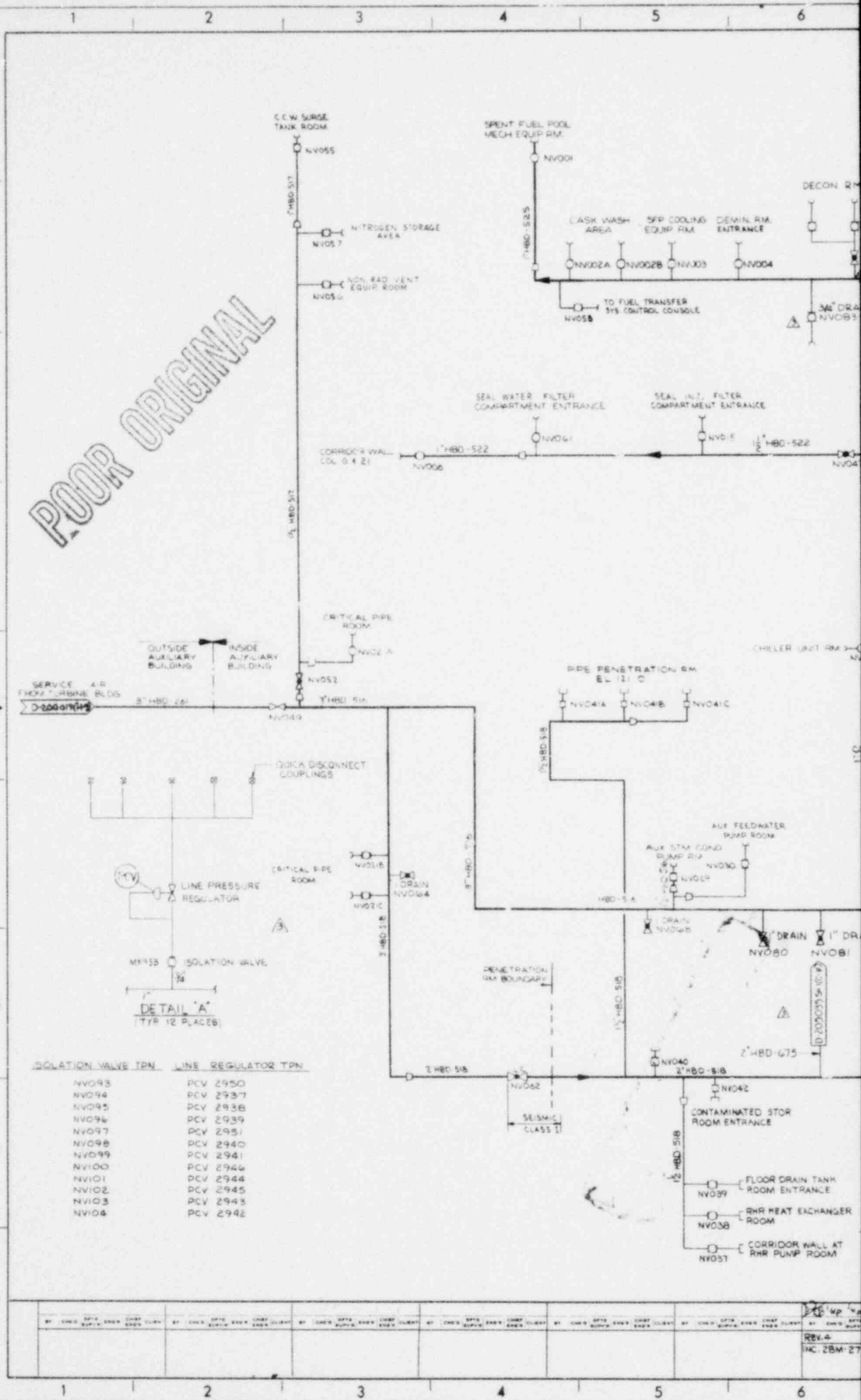
SCALE NONE

SHEET 4 OF 4 SHEETS

SUPERSEDES

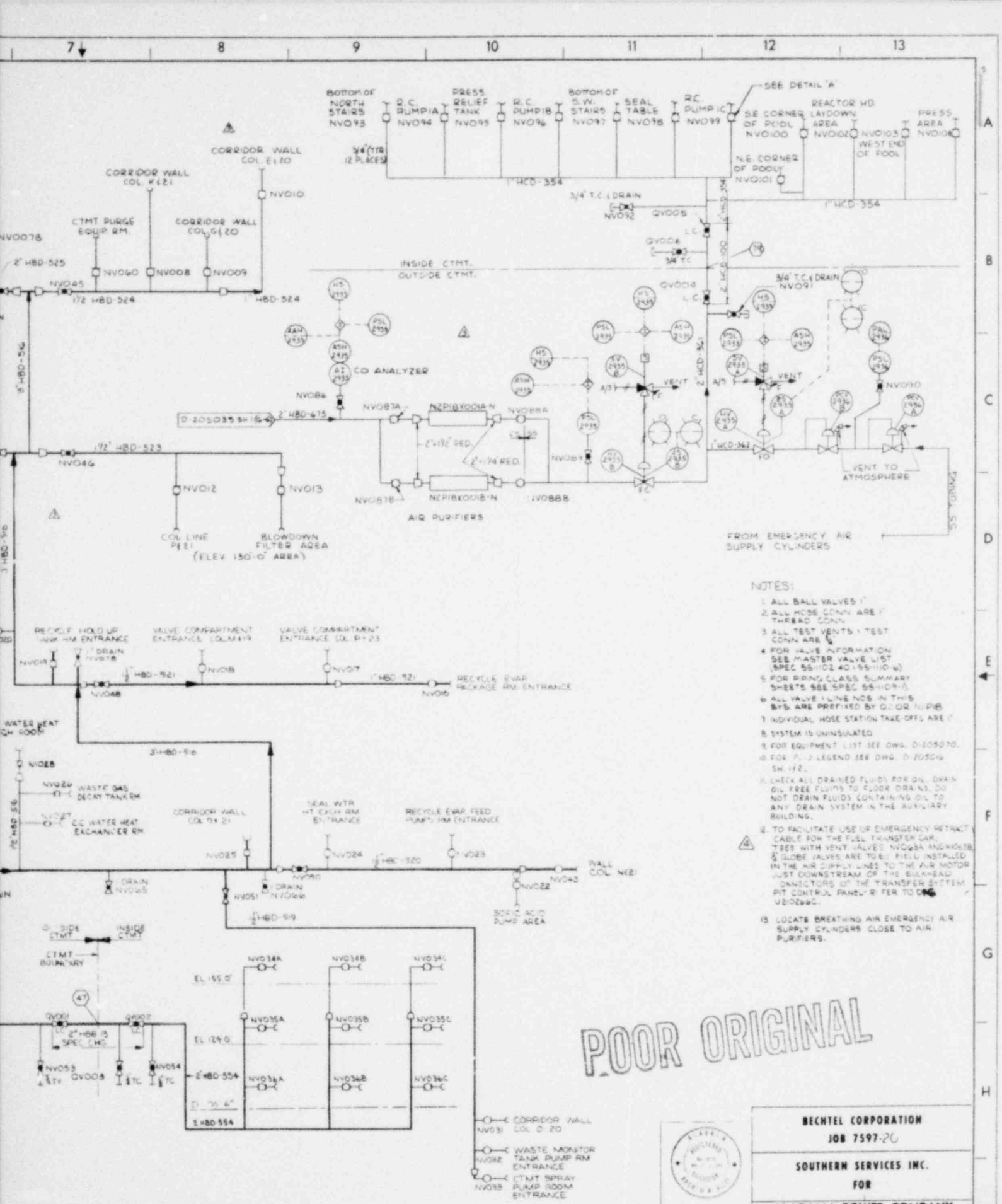
D-205034

REV 1



ISOLATION VALVE TPN	LINE REGULATOR TPN
NV093	PCV 2950
NV094	PCV 2937
NV095	PCV 2938
NV096	PCV 2939
NV097	PCV 2951
NV098	PCV 2940
NV099	PCV 2941
NV100	PCV 2946
NV101	PCV 2944
NV102	PCV 2945
NV103	PCV 2943
NV104	PCV 2942

REV. 4



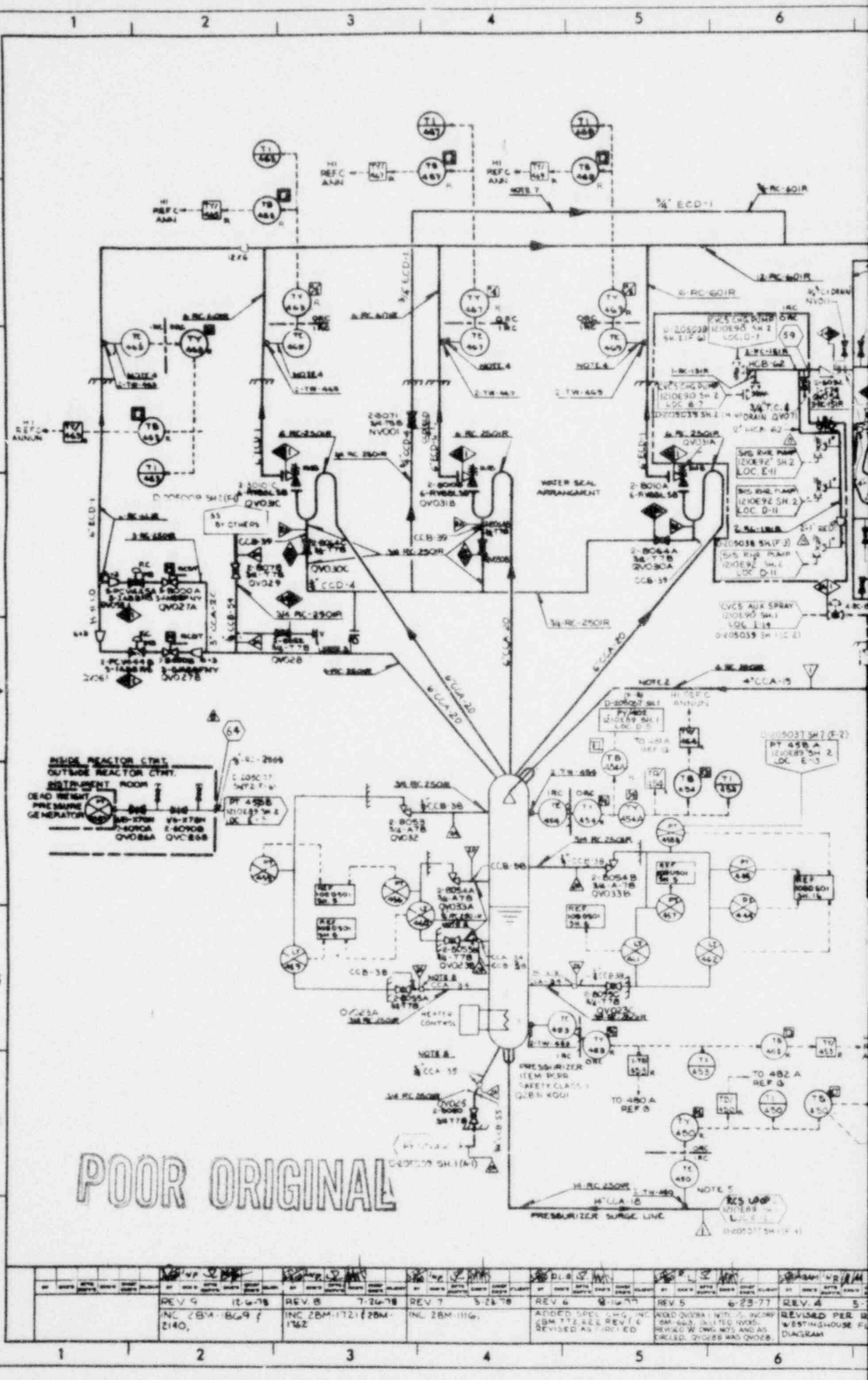
NOTES:

1. ALL BALL VALVES 1"
2. ALL HOSE CONN ARE 1" THREAD CONN
3. ALL TEST VENTS & TEST CONN ARE 1/2"
4. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. 5S-1102.40-1.5S-1110-W)
5. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. 5S-1109-P)
6. ALL VALVE LINE NOS. IN THIS B.Y.S. ARE PREFIXED BY COLOR NUMB.
7. INDIVIDUAL HOSE STATION TAKE-OFFS ARE 1"
8. SYSTEM IS UNINSULATED
9. FOR EQUIPMENT LIST SEE DWG. D-205070.
10. FOR P. & I. LEGEND SEE DWG. D-205016 SH. 1 & 2.
11. CHECK ALL DRAINED FLUIDS FOR OIL. DRAIN OIL FREE FLUIDS TO FLOOR DRAINS. DO NOT DRAIN FLUIDS CONTAINING OIL TO ANY DRAIN SYSTEM IN THE AUXILIARY BUILDING.
12. TO FACILITATE USE OF EMERGENCY RETRACT CABLE FOR THE FUEL TRANSFER CAR, TEES WITH VENT VALVES NV083A AND NV083B & GLOBE VALVES ARE TO BE FIELD INSTALLED IN THE AIR SUPPLY LINES TO THE AIR MOTOR JUST DOWNSTREAM OF THE BULKHEAD CONNECTORS OF THE TRANSFER SYSTEM PIT CONTROL PANEL. REFER TO DWG. U-210266.
13. LOCATE BREATHING AIR EMERGENCY AIR SUPPLY CYLINDERS CLOSE TO AIR PURIFIERS.

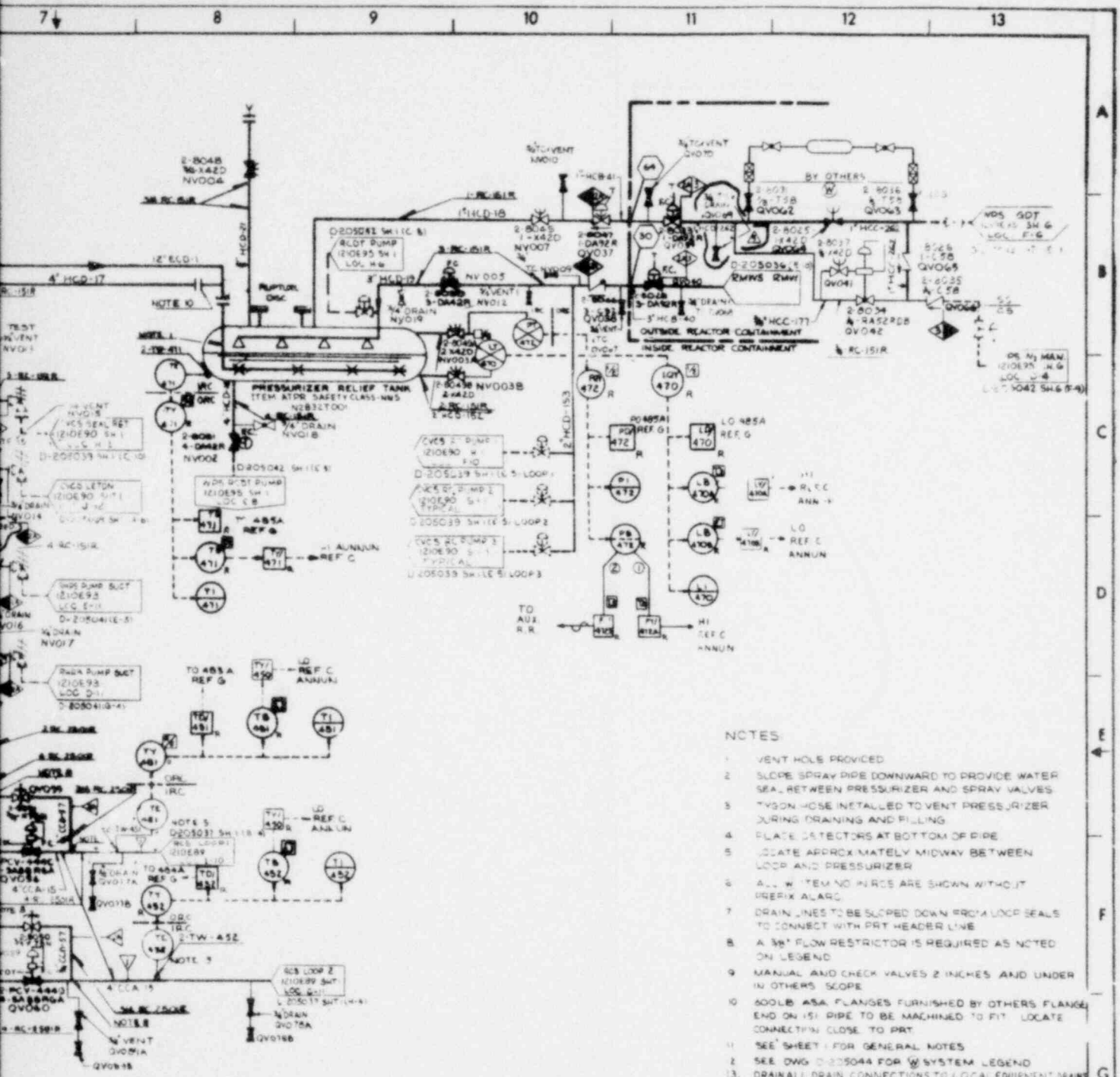
10-18-79	REV. 3 11-17-78	REV. 2 6-13-78	REV. 1 3-30-76	REV. 0 8-25-73
INC. ZBM-1854, 1960, Z080 REVISED PER UNIT 1, & ADDED NOTE 13.	INC. ZBM-1094 12.7, 1094, 1084 (1)(2) 1509	ADDED HEAT EXCH. ROOM AT LOC. P-6. NOTES 9,10,11 1/2 AS SHOWN.	ISSUED FOR ENGINEERING

DRAWN RWL CHECKED RLH TRACED
APPROVED [illegible] DATE 8-25-73
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-20
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
DETAIL P&I DIAGRAM SERVICE AIR
SCALE NONE
SHEET 1 OF 2 SHEETS
SUPERSEDES
D-205035 REV. 4



REV.	DATE	DESCRIPTION
REV 9	12-6-78	INC. CBM-869 & 2140.
REV 8	7-26-78	INC. ZBM-1721 & ZBM-1762
REV 7	5-26-78	INC. ZBM-1116.
REV 6	8-16-77	ADDED SPEC. CHG., INC. CBM 772 & 662. REV. 6 REVISED AS CIRCLED
REV 5	6-23-77	ADD QV028A (NOTE 5) INCORP. BM-663. DELETED NOTE. REVISED W. DWG. NOS. AND AS CIRCLED. QV028 WAS QV028
REV. 4	5	REVISED PER W. WESTINGHOUSE F. DIAGRAM



NOTES:

1. VENT HOLE PROVIDED
2. SLOPE SPRAY PIPE DOWNWARD TO PROVIDE WATER SEAL BETWEEN PRESSURIZER AND SPRAY VALVES
3. TYGON HOSE INSTALLED TO VENT PRESSURIZER DURING DRAINING AND FILLING
4. PLACE DETECTORS AT BOTTOM OF PIPE
5. LOCATE APPROXIMATELY MIDWAY BETWEEN LOOP AND PRESSURIZER
6. ALL W ITEM NO IN RCS ARE SHOWN WITHOUT PREFIX ALARC
7. DRAIN LINES TO BE SLOPED DOWN FROM LOOP SEALS TO CONNECT WITH PRT HEADER LINE
8. A 3/8" FLOW RESTRICTOR IS REQUIRED AS NOTED ON LEGEND
9. MANUAL AND CHECK VALVES 2 INCHES AND UNDER IN OTHERS SCOPE
10. 600LB ASA FLANGES FURNISHED BY OTHERS FLANGE END ON 1SI PIPE TO BE MACHINED TO FIT LOCATE CONNECTION CLOSE TO PRT
11. SEE SHEET 1 FOR GENERAL NOTES
12. SEE DWG D-205044 FOR W SYSTEM LEGEND
13. DRAINALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAINS
14. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX 6-506808
15. FLANGED CONNECTION TO FACILITATE BLIND FLANGE FOR LOCAL LEAK RATE TEST.

REFERENCES

1. ALPHA REFERENCES ON LEGEND (DIDER)

THIS DWG WAS REDRAWN FROM WESTINGHOUSE DWG. 210E87 SH. 2

BECHTEL CORPORATION
JOB 7597-20

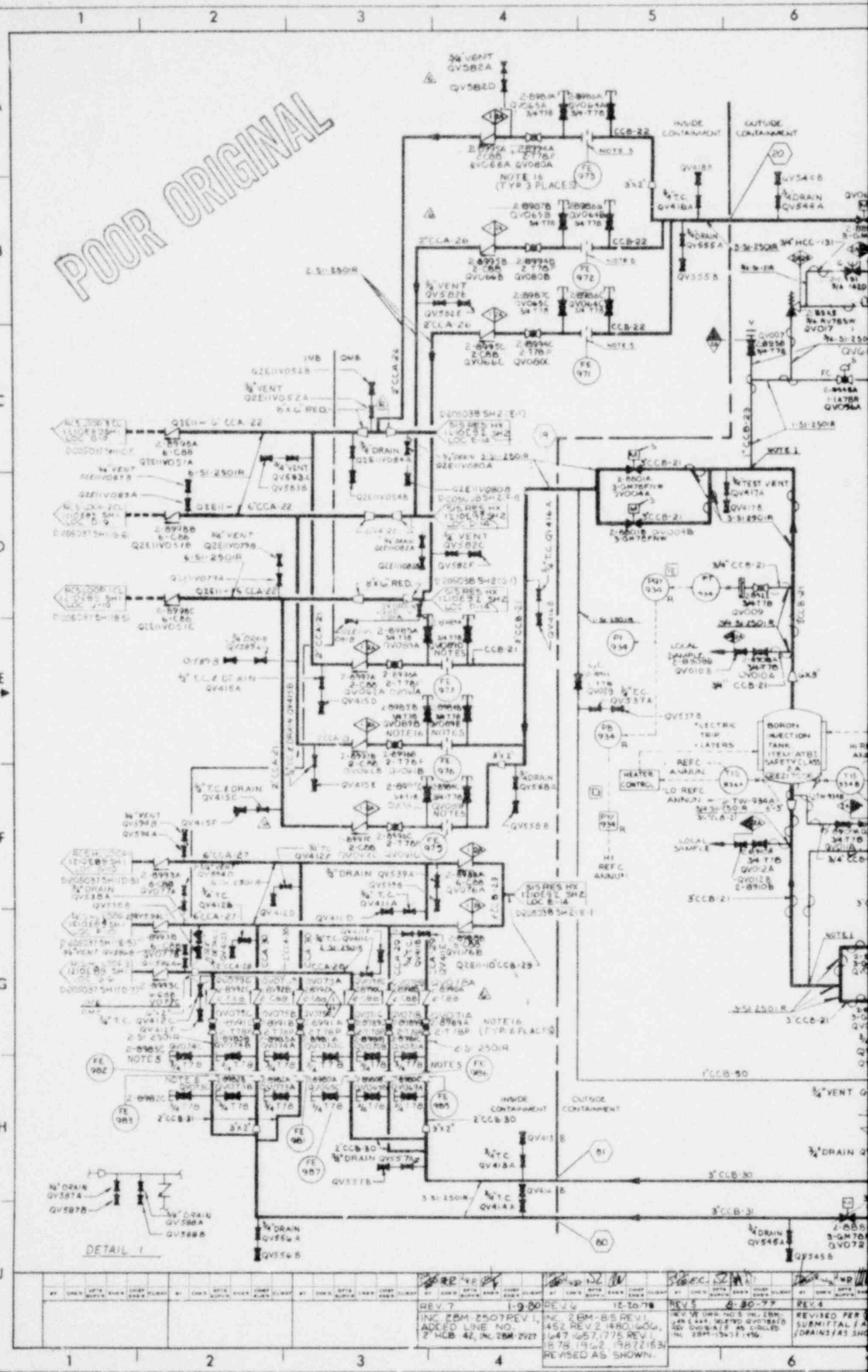
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

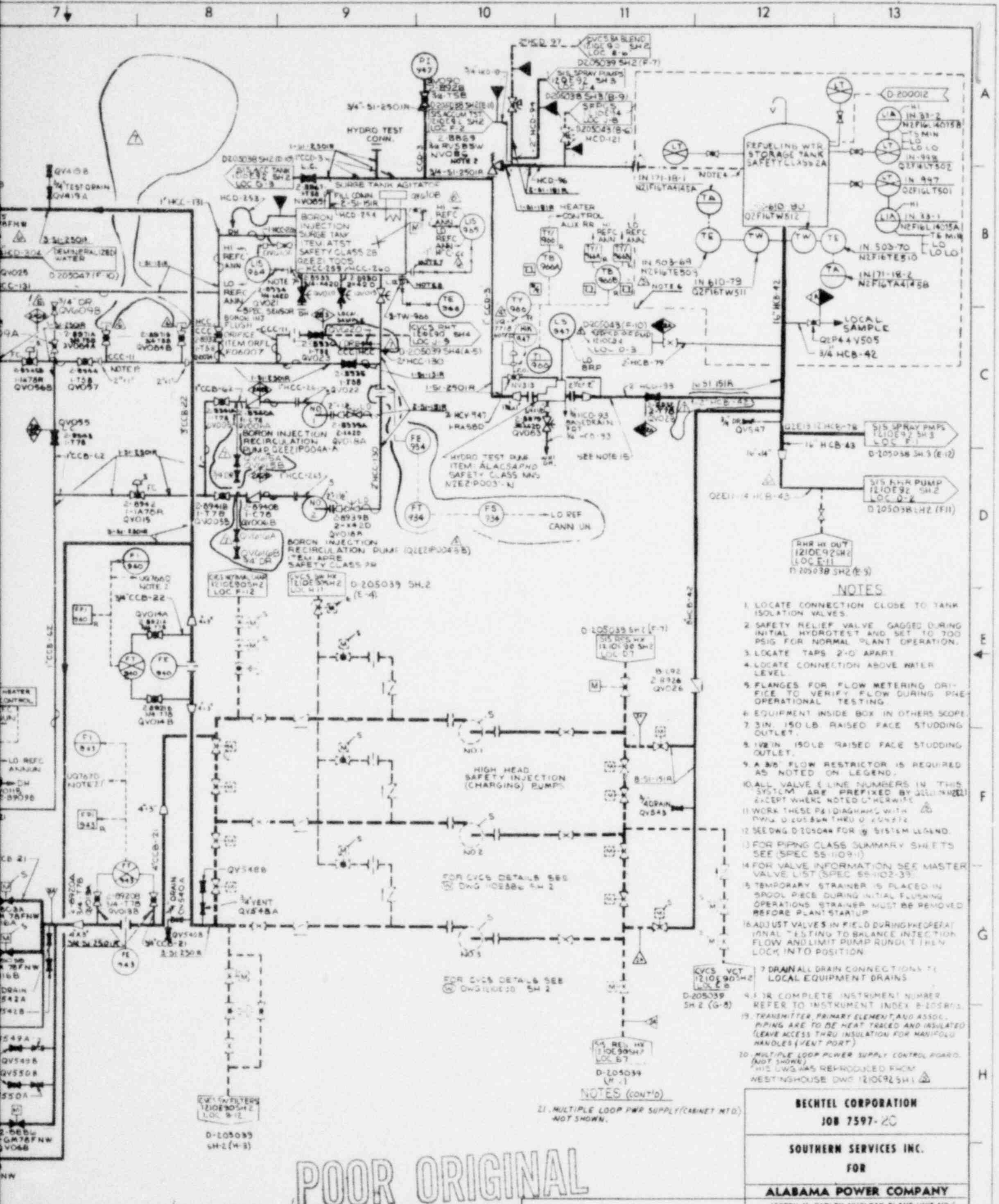
P & I DIAGRAM
REACTOR COOLANT SYSTEM

D-205037 REV 9

REV.	DESCRIPTION	DATE
3	ADD DOUBLE VALVING ADDED NOTE 14	2-28-75
2	REVISED PER REV. 8 WESTINGHOUSE LATEST SUBMITTAL CHANGED VALVE NUMBERS	8-29-74
1	ADDED VENTS & DRAINS ETC INC. 6MO. REVISIONS AS CP	4-18-74
0	ISSUED FOR ENGINEERING	8-22-73

DRAWN ... CKED ... TRACED ...
APPROVED ... DATE 8-22-73
APPROVED ... DATE
APPROVED ... DATE
APPROVED ... DATE


POOR ORIGINAL
DETAIL 1
INSIDE CONTAINMENT
OUTSIDE CONTAINMENT
BORON INJECTION TANK
HEATER CONTROL
REV. 7 1-9-80
REV. 6 12-20-79
REV. 5 6-30-79
REV. 4



NOTES

1. LOCATE CONNECTION CLOSE TO TANK ISOLATION VALVES.
2. SAFETY RELIEF VALVE GAGGED DURING INITIAL HYDROTEST AND SET TO 700 PSIG FOR NORMAL PLANT OPERATION.
3. LOCATE TAPS 2'-0" APART.
4. LOCATE CONNECTION ABOVE WATER LEVEL.
5. FLANGES FOR FLOW METERING ORIFICE TO VERIFY FLOW DURING PRE-OPERATIONAL TESTING.
6. EQUIPMENT INSIDE BOX IN OTHERS SCOPE.
7. 3IN. 150 LB. RAISED FACE STUDDING OUTLET.
8. 1 1/2 IN. 150 LB. RAISED FACE STUDDING OUTLET.
9. A 3/8" FLOW RESTRICTOR IS REQUIRED AS NOTED ON LEGEND.
10. ALL VALVE & LINE NUMBERS IN THIS SYSTEM ARE PREFIXED BY [illegible] EXCEPT WHERE NOTED OTHERWISE.
11. WORK THESE P&I DIAGRAMS WITH DWG. D-205 [illegible] THRU D-2 [illegible]
12. SEE DWG. D-205044 FOR [illegible] SYSTEM LEGEND.
13. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC SS-1109-1)
14. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC SS-1102-39).
15. TEMPORARY STRAINER IS PLACED IN SPOOL PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT STARTUP.
16. ADJUST VALVES IN FIELD DURING PREOPERATIONAL TESTING TO BALANCE INJECTION FLOW AND LIMIT PUMP RUNOUT THEN LOCK INTO POSITION.
17. DRAIN ALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAINS
18. FOR COMPLETE INSTRUMENT NUMBER REFER TO INSTRUMENT INDEX B-205 [illegible].
19. *TRANSMITTER, PRIMARY ELEMENT, AND ASSOC. PIPING ARE TO BE HEAT TRACED AND INSULATED (LEAVE ACCESS THRU INSULATION FOR MANIFOLD HANDLES (VENT PORT))*
20. *MULTIPLE LOOP POWER SUPPLY CONTROL BOARD. (NOT SHOWN)*

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG 1210E92 SH 1

NOTES (CONT'D)

21. *MULTIPLE LOOP PWR SUPPLY (CABINET MTD) NOT SHOWN.*

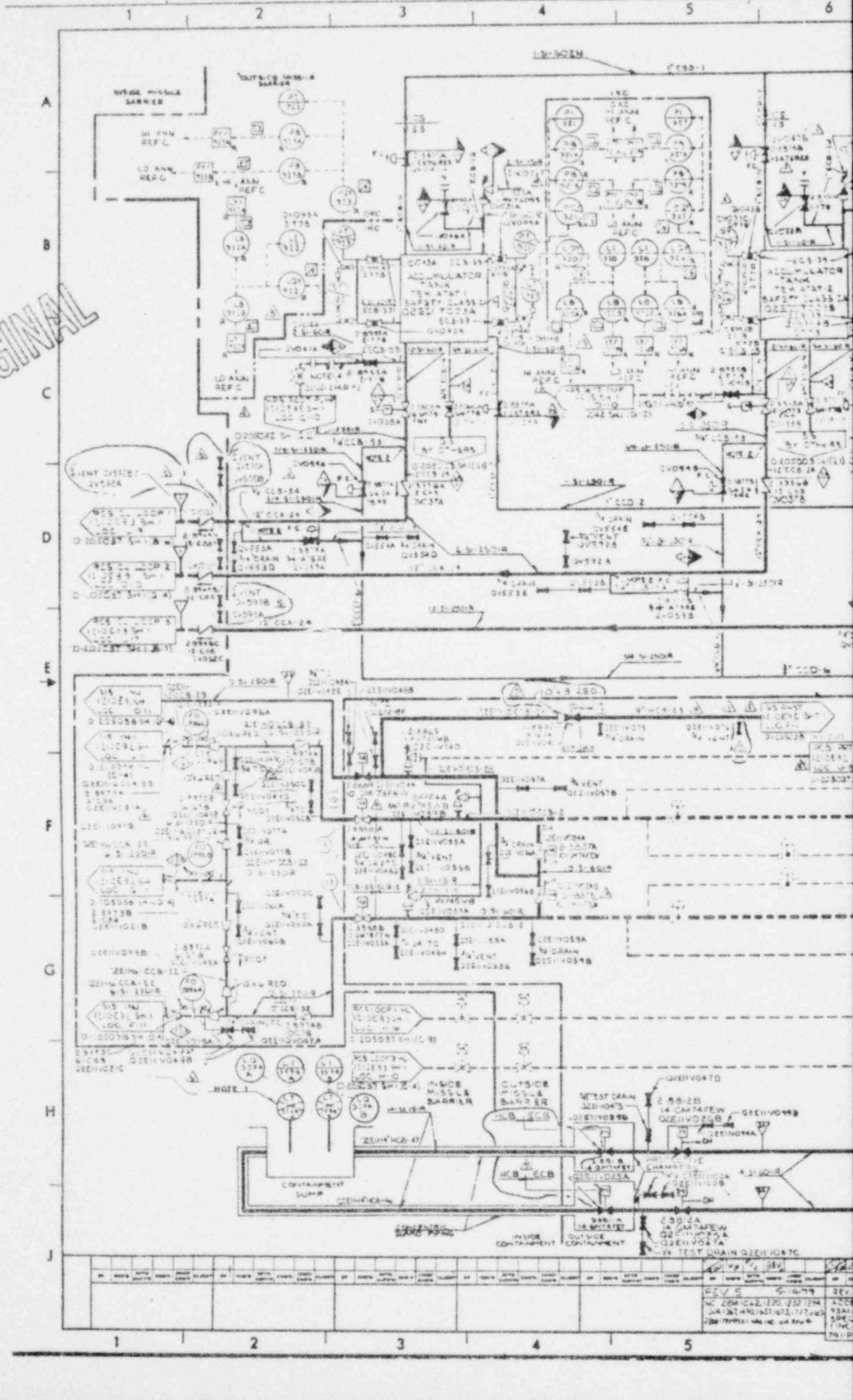
-7-75	REV. 3 2-18-75	REV. 2 8-26-74	REV. 1 12-3-73	REV. 0 8-28-73
LATEST ... ADDED VENTS ... WN	ADDED VENTS V682A, B&C AND V683. REVISED AS SHOWN & ADD. DOUBLE VALVING	ADDED TEST CONNECTIONS, VENTS AND DRAINS AND REVISED AS CIRCLED.	REVISED AS SHOWN.	ISSUED FOR ENGINEERING

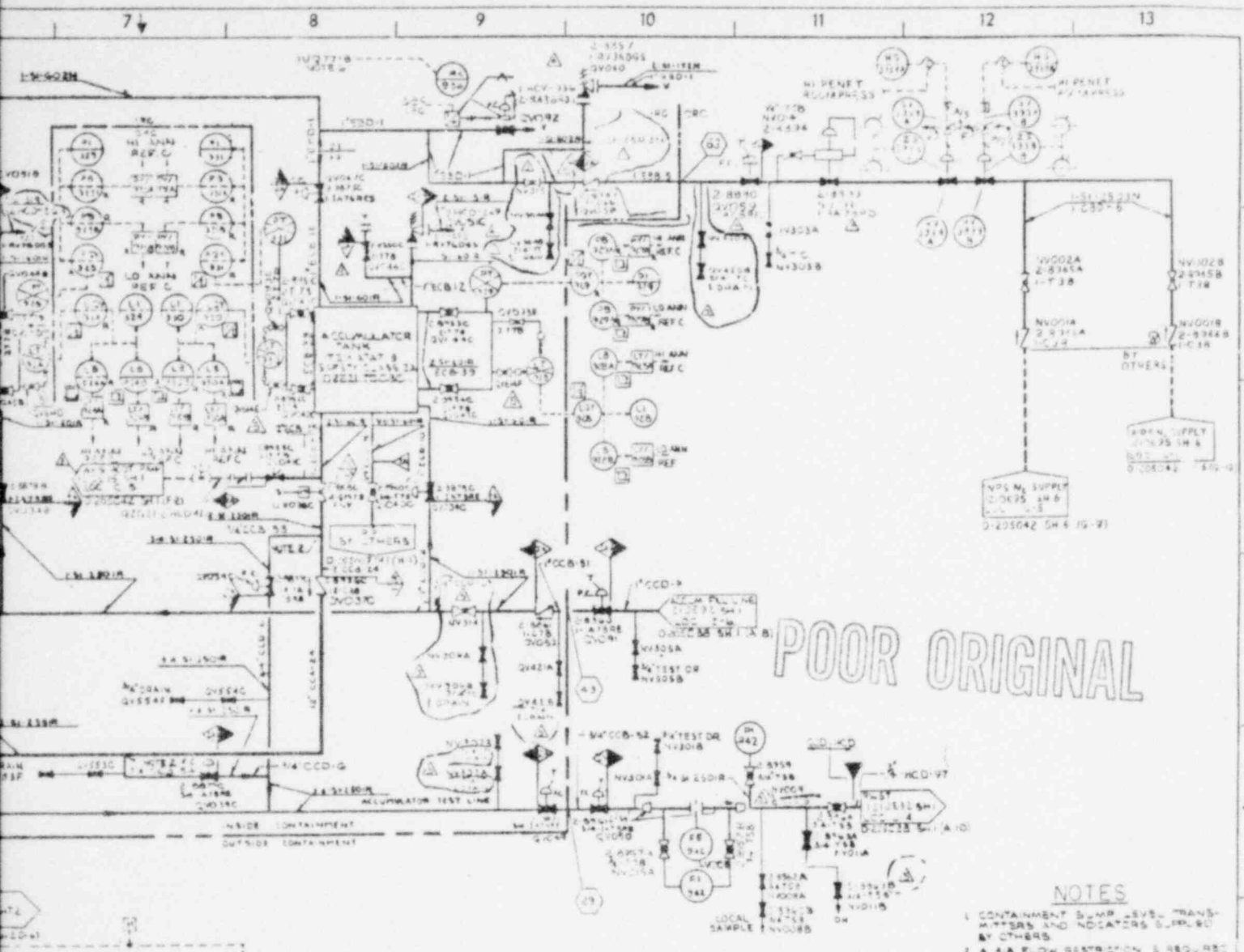
DRAWN EJS   CHK'D RLH   TRACED
APPROVED [signature]   DATE 8/28/73
APPROVED   DATE
APPROVED   DATE
APPROVED   DATE

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
DETAIL P&I DIAGRAM SAFETY INJECTION SYSTEM
SCALE NONE
SHEET 1 OF 3 SHEETS
SUPERSEDES
D-205038 REV 7





NOTES

1. CONTAINMENT SUMP LEVEL TRANSMITTERS AND INDICATORS SUPPLIED BY OTHERS.
2. A & B FLOW RESTRICTION IS REQUIRED AS NOTED ON LEGEND.
3. ALL ITEM NUMBERS IN S/S ARE SHOWN WITHOUT PREFIX A(A,B).
4. SPOOL PIECE TO BE REPLACED WITH BLANK FLANGES EXCEPT DURING ACCUMULATOR DRAINING.
5. MANUAL AND CHECK VALVES 6 INCHES AND UNDER IN OTHERS SCOPE.
6. MULTIPLE LOOP PWR SUPPLY CONTROL BOX NOT SHOWN.
7. SEE SHEET 1 FOR GENERAL NOTES.
8. ALL VALVE AND LINE NUMBERS IN THIS SYSTEM ARE PREFIXED BY NUCLEAR UNIT (EXCEPT WHERE NOTED OTHERWISE).
9. HAS ALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAINS.
10. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B 205803 REFERENCE.

ALPHA REFERENCES ON SHEET 1 OF 3 10E340.

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG. 1E6E1-2017

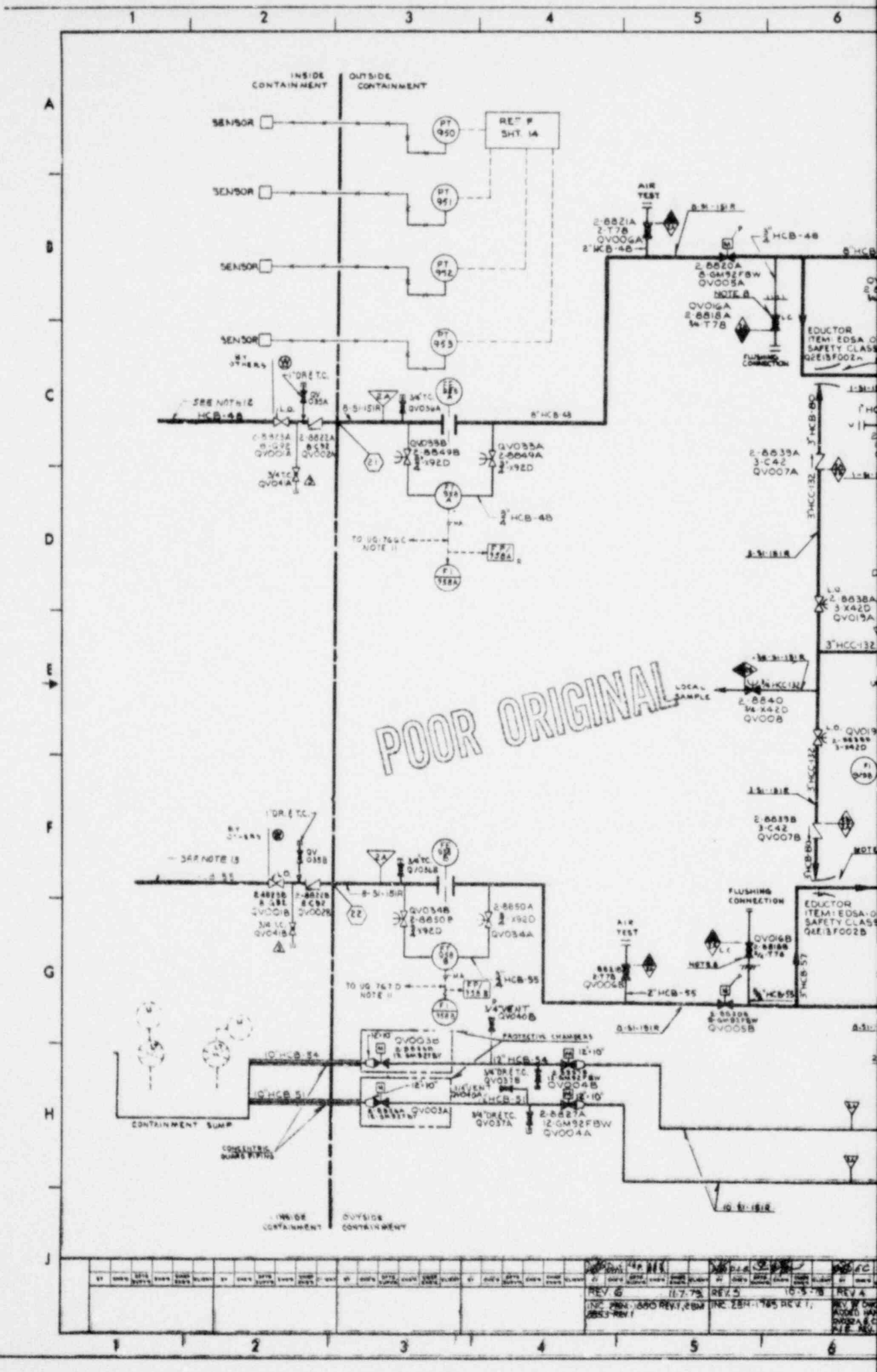
BECHTEL CORPORATION
JOB 7597-20

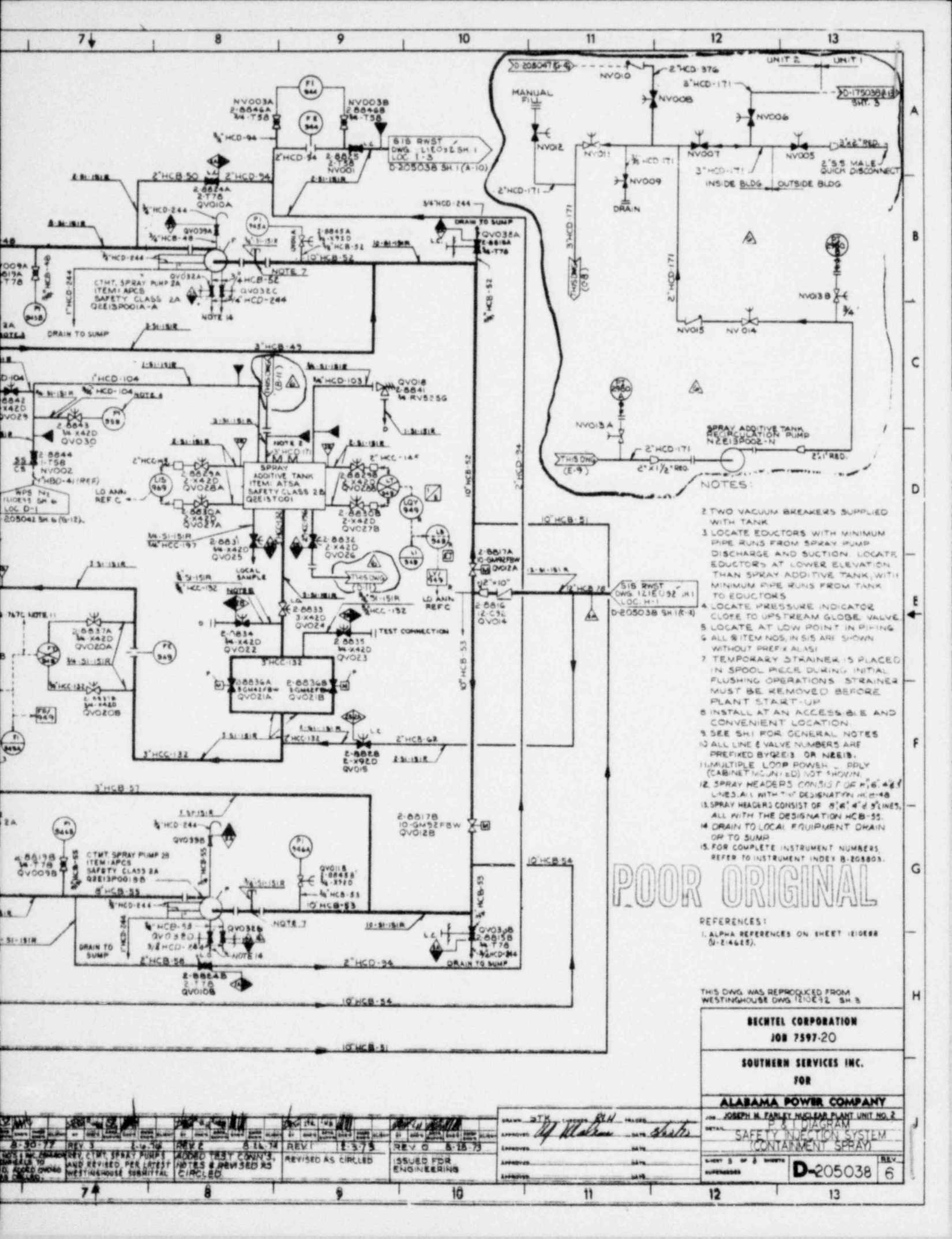
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO.2

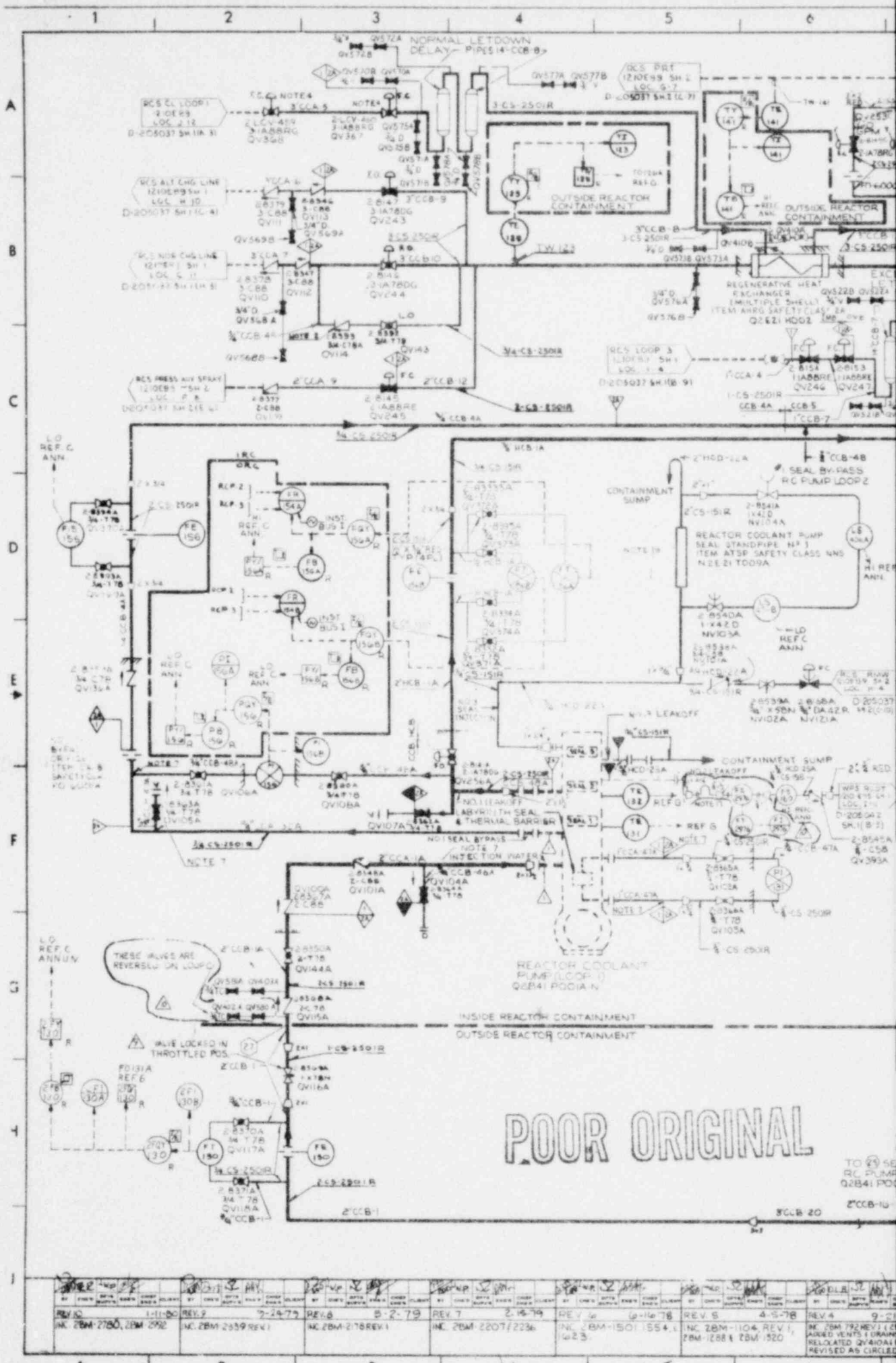
TITLE: P&I DIAGRAM
SAFETY INJECTION SYSTEM

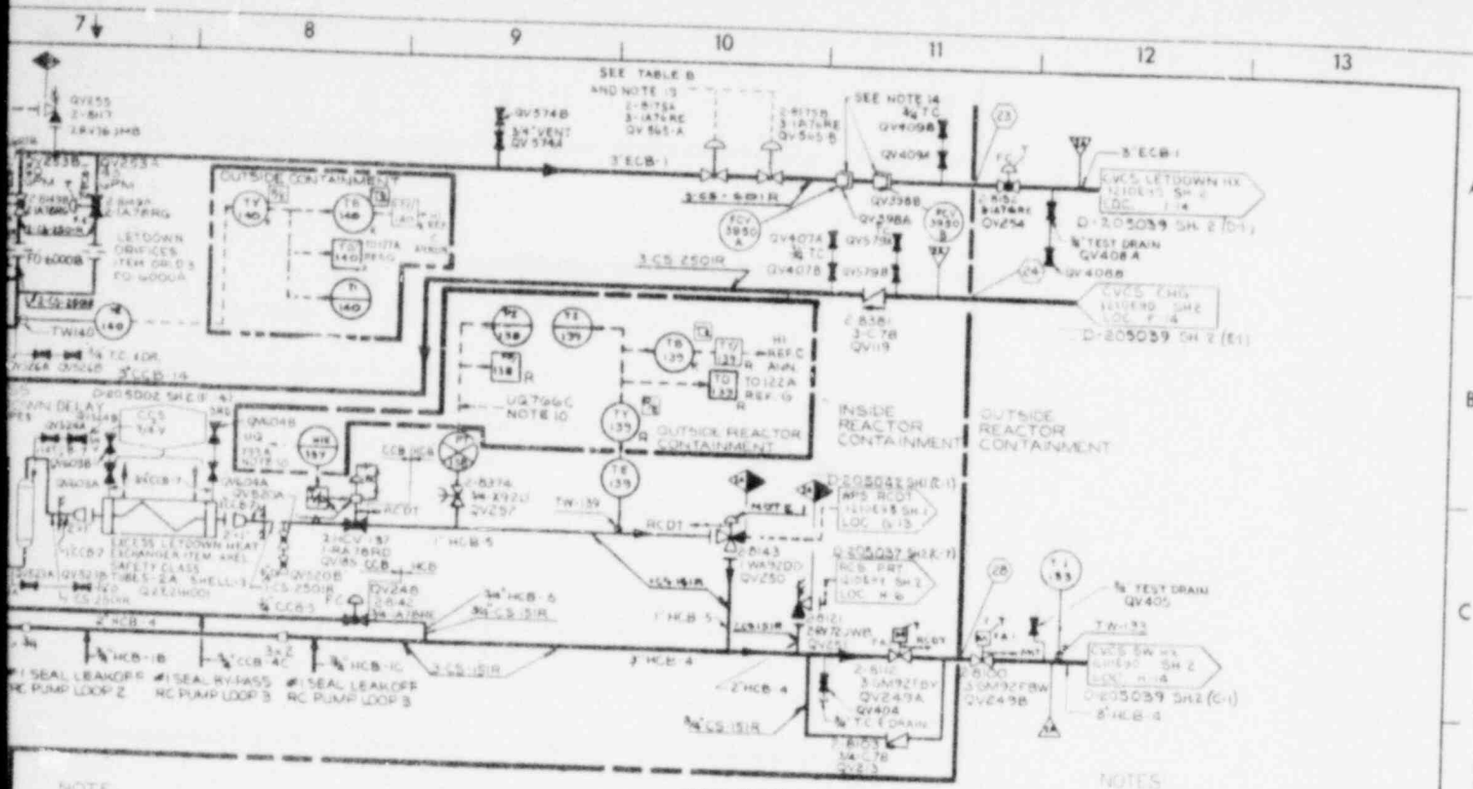
SCALE: NONE
SHEET 2 OF 3 SHEETS
D-205038
REV 5

REV	DESCRIPTION
3	ADDED DOUBLE VALVING AND REVISED AS CIRCLED
4	ADDED TEST CONNS VENTS & DRAINS REVISED AS CIRCLED
5	REVISED AS SHOWN
5	ISSUED FOR ENGINEERING


INSIDE CONTAINMENT
OUTSIDE CONTAINMENT
SENSOR
SENSOR
SENSOR
SENSOR
PT 950
PT 951
PT 952
PT 953
REF P SHT. 14
AIR TEST
EDUCTOR
FLUSHING CONNECTION
LOCAL SAMPLE
PROTECTION CHAMBERS
CONTAINMENT SUMP
POOR ORIGINAL


UNIT 2
UNIT 1
MANUAL FILL
NV010
NV008
NV006
NV012
NV011
NV007
NV005
NV009
DRAIN
INSIDE BLDG
OUTSIDE BLDG
2"SS MALE QUICK DISCONNECT
NV038
NV015
NV014
NV013A
SPRAY ADDITIVE TANK RECIRCULATION PUMP N2E13P002-N
NV003A
NV003B
NV001
NV002
NV030
NV029
NV028A
NV028B
NV027A
NV027B
NV025
NV026
NV024
NV022
NV023
NV021A
NV021B
NV020A
NV020B
NV014
NV012A
NV012B
NV016
NV018
NV017
NV039A
NV039B
NV032A
NV032B
NV032C
NV035A
NV035B
NV010A
NV010B
NV033A
NV033B
NV033C
NV033D
NV034A
NV034B
NV036A
NV036B
NV037A
NV037B
SPRAY ADDITIVE TANK ITEM: ATSA SAFETY CLASS 2A
CTMT. SPRAY PUMP 2A ITEM: APCS SAFETY CLASS 2A
CTMT SPRAY PUMP 2B ITEM: APCS SAFETY CLASS 2A
DRAIN TO SUMP
LOCAL SAMPLE
TEST CONNECTION
NOTES:
2. TWO VACUUM BREAKERS SUPPLIED WITH TANK.
3. LOCATE EDUCTORS WITH MINIMUM PIPE RUNS FROM SPRAY PUMP DISCHARGE AND SUCTION. LOCATE EDUCTORS AT LOWER ELEVATION THAN SPRAY ADDITIVE TANK, WITH MINIMUM PIPE RUNS FROM TANK TO EDUCTORS.
4. LOCATE PRESSURE INDICATOR CLOSE TO UPSTREAM GLOBE VALVE.
5. LOCATE AT LOW POINT IN PIPING.
6. ALL ITEM NOS. IN SIS ARE SHOWN WITHOUT PREFIX ALASI
7. TEMPORARY STRAINER IS PLACED IN SPOOL PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP.
8. INSTALL AT AN ACCESSIBLE AND CONVENIENT LOCATION.
9. SEE SH.1 FOR GENERAL NOTES
10. ALL LINE & VALVE NUMBERS ARE PREFIXED BY Q2E13 OR N2E13.
11. MULTIPLE LOOP POWER SUPPLY (CABINET MOUNTED) NOT SHOWN.
12. SPRAY HEADERS CONSIST OF 8"Ø, 6"Ø & 4"Ø LINES, ALL WITH THE DESIGNATION HCB-48
13. SPRAY HEADERS CONSIST OF 8"Ø, 6"Ø & 4"Ø LINES, ALL WITH THE DESIGNATION HCB-55.
14. DRAIN TO LOCAL EQUIPMENT DRAIN OR TO SUMP.
15. FOR COMPLETE INSTRUMENT NUMBERS, REFER TO INSTRUMENT INDEX B-205803.
REFERENCES:
1. ALPHA REFERENCES ON SHEET 1 (D6888 (N-2-4685).
POOR ORIGINAL
THIS DWG. WAS REPRODUCED FROM WESTINGHOUSE DWG. 121C892 SH. 3
BECHTEL CORPORATION
JOB 7597-20
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
P & I DIAGRAM
SAFETY INJECTION SYSTEM (CONTAINMENT SPRAY)
D-205038
REV. 6
8-30-77 REV. 3 2-16-76 REV. CTMT. SPRAY PUMPS AND REVISED PER LATEST WESTINGHOUSE SUBMITTAL
REV. 2 8-16-74 ADDED TEST CONN'S, NOTES & REVISED RS CIRCLED.
REV. 1 2-3-75 REVISED AS CIRCLED
REV. 0 8-28-73 ISSUED FOR ENGINEERING


NORMAL LETDOWN DELAY — PIPE 14-CCB-8
OUTSIDE REACTOR CONTAINMENT
REGENERATIVE HEAT EXCHANGER
REACTOR COOLANT PUMP SEAL STANDPIPE
SEAL BY-PASS RC PUMP LOOP 2
CONTAINMENT SUMP
REACTOR COOLANT PUMP (LOOP 1)
INSIDE REACTOR CONTAINMENT
OUTSIDE REACTOR CONTAINMENT
THESE VALVES ARE REVERSED ON LOOP C
VALVE LOCKED IN THROTTLED POS.
POOR ORIGINAL



NOTE:
REACTOR COOLANT PUMP SHOWN FOR LOOP NO. 1 TYPICAL FOR ALL LOOPS EXCEPT FOR INSTRUMENT AND VALVE IDENTIFICATION NUMBERS. SEE NOTE 9 FOR VALVE IDENTIFICATION NUMBERS AND TABLE FOR INSTRUMENTATION IDENTIFICATION NUMBERS.

17 RUN PIPING HORIZONTAL OR UPWARD TO LOOP RISING A MIN ABOVE RCP NO2 SEAL LEAKOFF CONNECTION AFTER LOOP RUN PIPING HORIZONTAL OR DOWNWARD THROUGH RUN TO RCDT

18 LOCATE BOTTOM OF STAND PIPE 28-4 1/2" ± 1/2" ABOVE CONN TO RCP #3 SEAL

19 SENSOR LOCATIONS ARE SHOWN ON D-175143 D-175144 & D-175147

REACTOR COOLANT PUMP INSTRUMENTATION

RCP #2A	RCP #2B	RCP #2C
FE-120	FE-127	FE-124
FT-120	FT-127	FT-124
FB-120	FB-127	FB-124
FQY-120	FQY-127	FQY-124
FT-120A	FT-127A	FT-124A
FS-120	FS-127	FS-124
FT-131	FT-108	FT-125
TE-131	TE-108	TE-125
TE-132	TE-109	TE-126
FE-156B	FE-155B	FE-154B
FB-156A	FB-155A	FB-154A
FB-156B	FB-155B	FB-154B
FY-156A	FY-155A	FY-154A
FY-156B	FY-155B	FY-154B
FT-156A	FT-155A	FT-154A
FT-156B	FT-155B	FT-154B
FQY-156A	FQY-155A	FQY-154A
FQY-156B	FQY-155B	FQY-154B
FE-156	FE-155	FE-154
FIS-156	FIS-155	FIS-154
PY-156	PY-155	PY-154
PB-156	PB-155	PB-154
PT-156	PT-155	PT-154
PQY-156	PQY-155	PQY-154
PI-156A	PI-155A	PI-154A
PI-156B	PI-155B	PI-154B
LS-406A	LS-417A	LS-414A
LS-406B	LS-417B	LS-414B
FT-120B	FT-127B	FT-124B
FQY-120A	FQY-127A	FQY-124A
FS-160	FS-159	FS-158
FB-156A FB-156B	COMMON TO ALL RCP'S	

TABLE B
ROOM PRESSURE SENSING INSTRUMENTATION

INSTRUMENTATION	TRAIN
Q2012FSH 2852 A	A
B	A
C	A
D	B
E	B
F	A
G	B
H	B
Q2012FSH 2851 A	A
B	A
C	B
D	A
E	B
F	B

NOTES:
1. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK
2. SPECIAL SPRING LOADED CHECK VALVE
3.
4. PRESSURIZER LOW LEVEL SIGNAL CLOSES THESE VALVES
5. ALL (2) TEMINATION CUTS ARE SHOWN WITHOUT PREFIX APRCS
6. FOR LEGEND SEE DWG. D-205044
7. A RESTRICTIVE ORIFICE IS REQUIRED AS NOTED ON LEGEND.
ALL VALVES & LINE IDENTIFICATIONS IN PUMP CIRCUITS FOR PUMPS 2B & 2C ARE NUMBERED THE SAME AS PUMP 2A (SHOWN) SUFFIX A ON VALVE OR LINE NUMBER SIGNIFIES PUMP 2A CIRCUITRY. SUFFIX B FOR PUMP 2B AND SUFFIX C FOR PUMP 2C
8. ALL VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY (2) (ORENZE 2)
9. MULTIPLE LINE PWR SUPPLY (CONTROL BOARD NOT SHOWN)
10. FOR EQUIPMENT LIST SEE DWG. D-205070
12. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE (N) INSTRUMENT INDEX B-205803
13. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC SS-1109-1)
14. VALVES QV398A & QV398B ARE EXCESS FLOW CHECK VALVES TO BE PROVIDED BY BECHTEL
15. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC SS-1102-39)

REFERENCES:
1) FOR ALPHA REFERENCES SEE DWG. D-205044

THIS DRAWING WAS REPRODUCED FROM WESTINGHOUSE DWG. 121E69

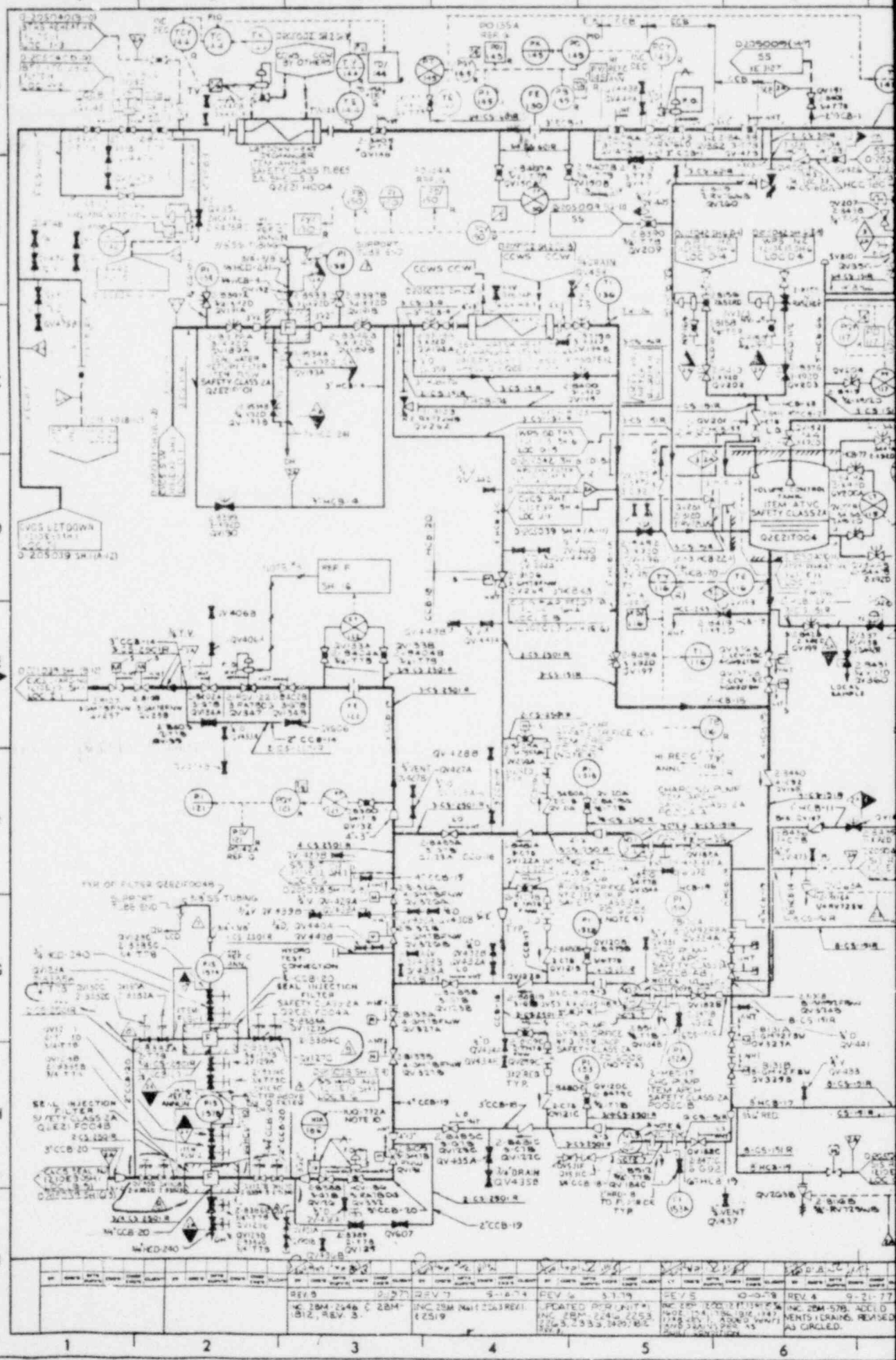
REV.	BY	DATE	DESCRIPTION
REV 1	[illegible]	2-17-75	REVISED AS PER UNIT 1 ADDED ADDITIONAL INFO
REV 2	[illegible]	2-17-75	ADDED DOUBLE VALVING TO VENTS & DRAINS ADDED NOTE 16 & 17 & REVISED AS CIRCLED
REV 1	[illegible]	12-5-73	REVISED AS CIRCLED TO INCORPORATE WESTINGHOUSE DCNS. & ADDT'L INFO.
REV 0	[illegible]	9-6-73	ISSUED FOR ENGINEERING

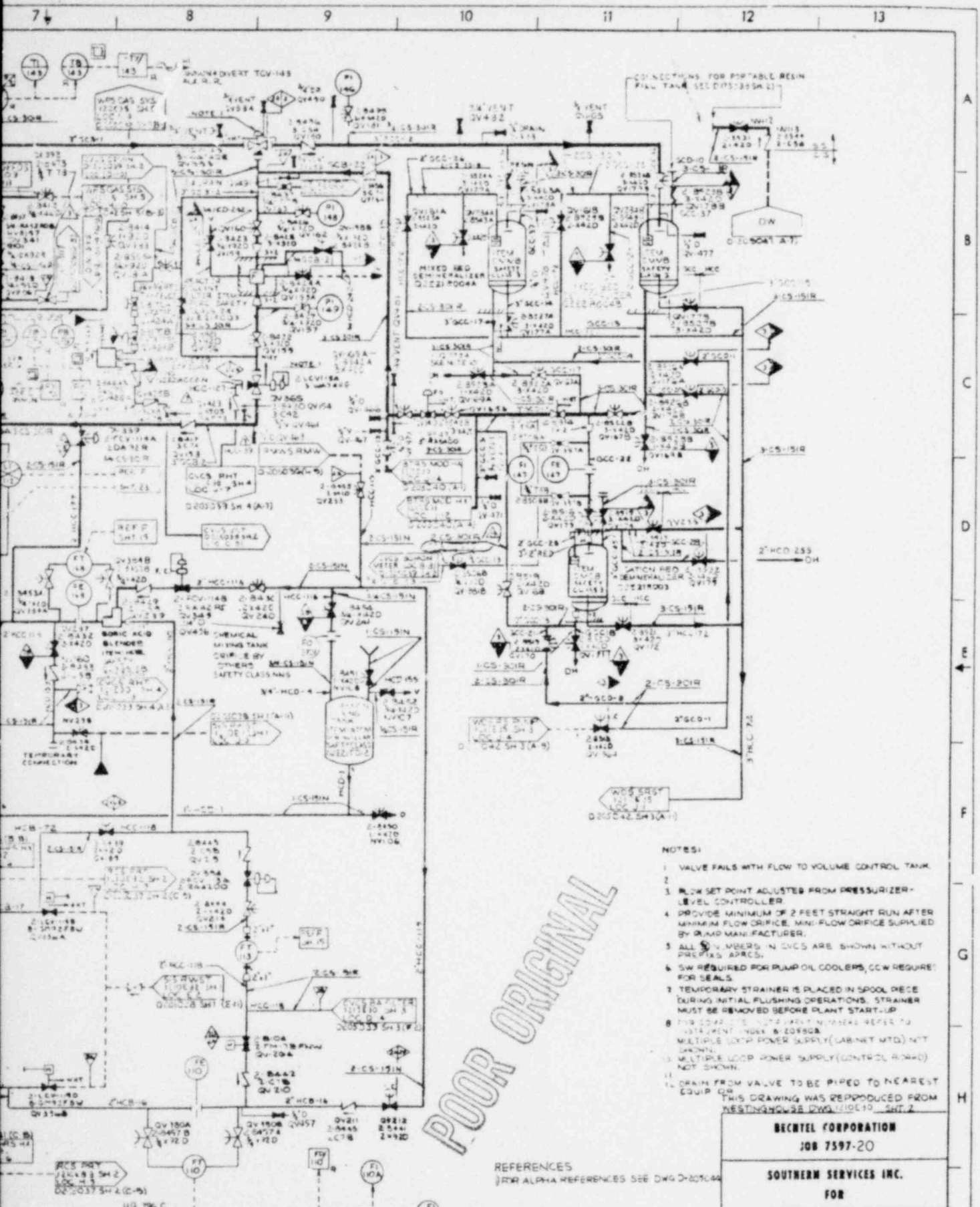
DRAWN TJ [illegible] RLH TRACED
APPROVED [illegible] DATE 9/6/73
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
DETAIL P & I DIAGRAM
CHEM & VOL CONTROL SYSTEM

SCALE NONE
SHEET 1 OF 4 SHEETS
D-205039
REV 10





NOTES:

1. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
2.
3. FLOW SET POINT ADJUSTED FROM PRESSURIZER LEVEL CONTROLLER.
4. PROVIDE MINIMUM OF 2 FEET STRAIGHT RUN AFTER MINIMUM FLOW ORIFICE. MINI-FLOW ORIFICE SUPPLIED BY PUMP MANUFACTURER.
5. ALL SW NUMBERS IN CVCS ARE SHOWN WITHOUT PREFIXES A,B,C,D.
6. SW REQUIRED FOR PUMP OIL COOLERS, CCW REQUIRED FOR SEALS.
7. TEMPORARY STRAINER IS PLACED IN SPOOL PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP.
8. FOR CONNECTION NOTE AND ITEM NUMERALS REFER TO INSTRUMENT INDEX D-205058.
9. MULTIPLE LOOP POWER SUPPLY (CABINET MTD.) NOT SHOWN.
10. MULTIPLE LOOP POWER SUPPLY (CONTROL BOARD) NOT SHOWN.
11.
12. DRAIN FROM VALVE TO BE PIPED TO NEAREST EQUIP DR.

THIS DRAWING WAS REPRODUCED FROM WESTINGHOUSE DWG. 11I9E10 SHT. 2

REFERENCES

FOR ALPHA REFERENCES SEE DWG D-205044

REV	DATE	DESCRIPTION
3	6-5-73	REVISED AS PER INIT'S ADDED ADDITIONAL INFO INCL. [illegible]
2	2-7-73	ADDED DRAINS & VENTS, REVISED AS CIRCLED
1	12-15-72	REVISED AS CIRCLED TO INCORPORATE WESTINGHOUSE DWG'S & ADDT'L INFO.
0	9-6-72	ISSUED FOR ENGINEERING

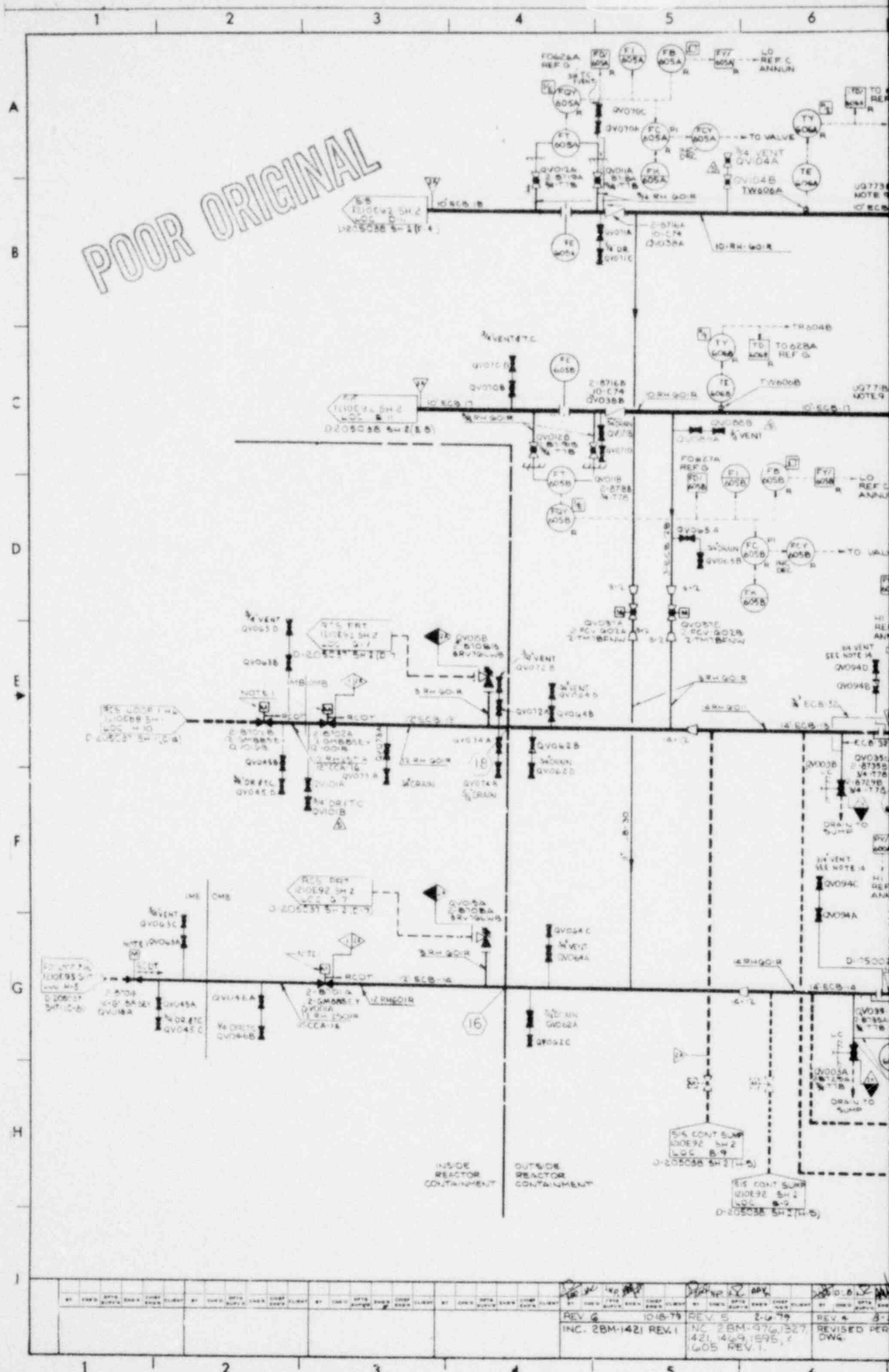
BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO 2

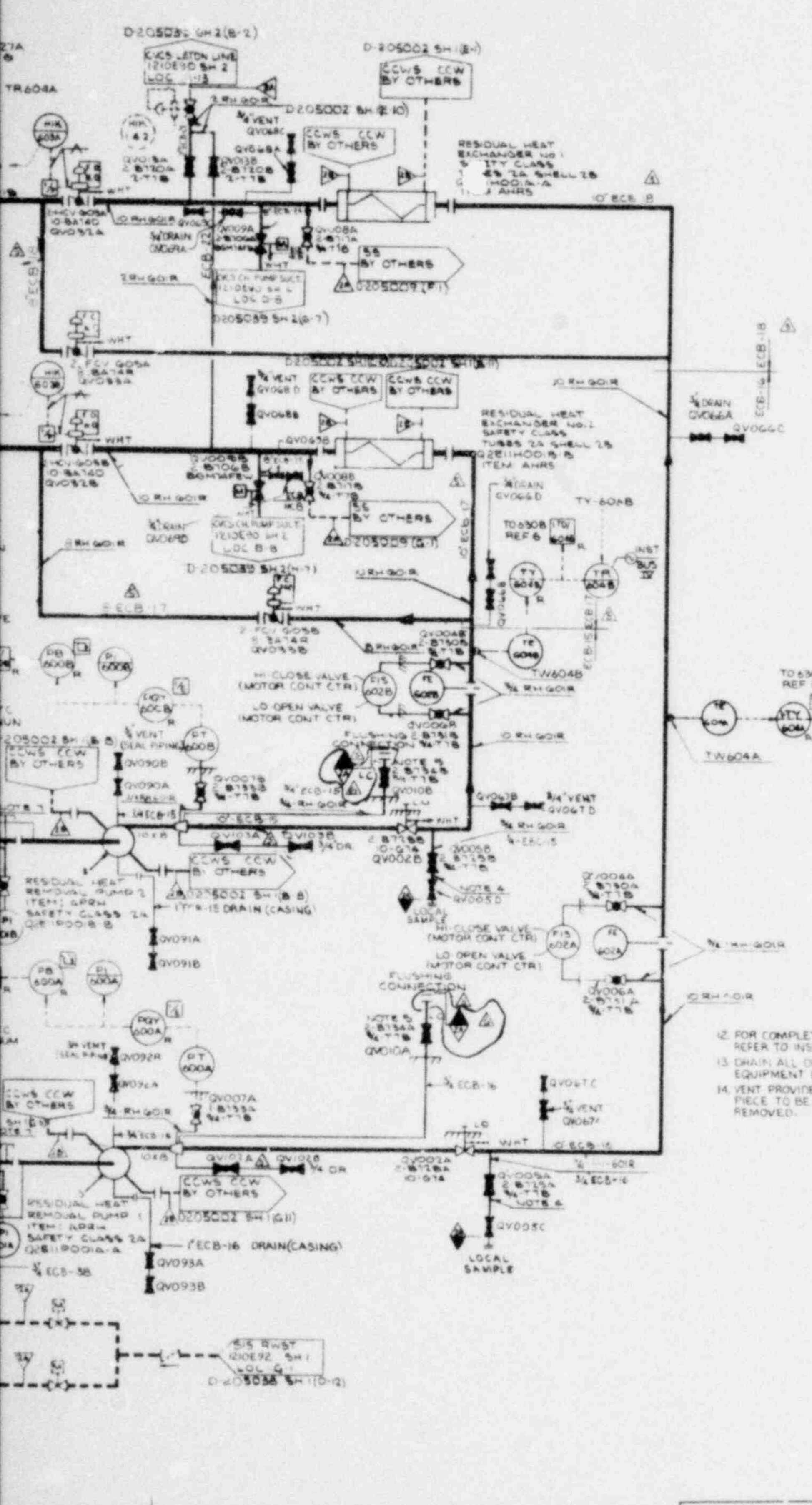
P & I. DIAGRAM
CHEM. & VOL. CONTROL SYSTEM

SHEET 2 OF 4 SHEETS

D-205039 3



REV. 6 10-18-79	REV. 5 2-6-79	REV. 4 8-
INC. 2BM-1421 REV. 1	NC. 2BM-976,1327, 1421, 1469, 1695, & 1605 REV. 1.	REVISED PER DWG.



12. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-205803.
13. DRAIN ALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAINS.
14. VENT PROVIDED ON PERMANENT SPOOL PIECE TO BE USED AFTER STRAINER IS REMOVED.

NOTES:

1. VALVE INTERLOCKED WITH REACTOR COOLANT SYSTEM PRESSURE SIGNAL.
2. SEE DWG 205044 FOR W SYSTEM LEGEND
3.
4. LOCATE VALVE OUTSIDE OF SHIELD WALL. SAMPLE LINE MUST BE AT A LOWER ELEVATION THAN RHR PIPE TO ALLOW GRAVITY FLOW.
5. LOCATE VALVE ABOVE RESIDUAL HEAT REMOVAL PUMP SHIELDING.
6. ALL W ITEM NOS. ARE SHOWN WITHOUT PREFIX ALAAC.
7. TEMPORARY STRAINER IS PLACED IN SPOOL PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP.
8. MANUAL & CHECK VALVES 2 INCHES AND UNDER IN OTHER SCOPE.
9. MULTIPLE LOOP POWER SUPPLY (CONTROL BOARD) NOT SHOWN.
10. ALL LINE AND VALVE NUMBERS PREFIXED BY G2E11.
11.

REFERENCES

1. ALPHA REFERENCE ON SHEET 1210E88

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG 1110E93

BECHTEL CORPORATION
JOB 7597-10

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

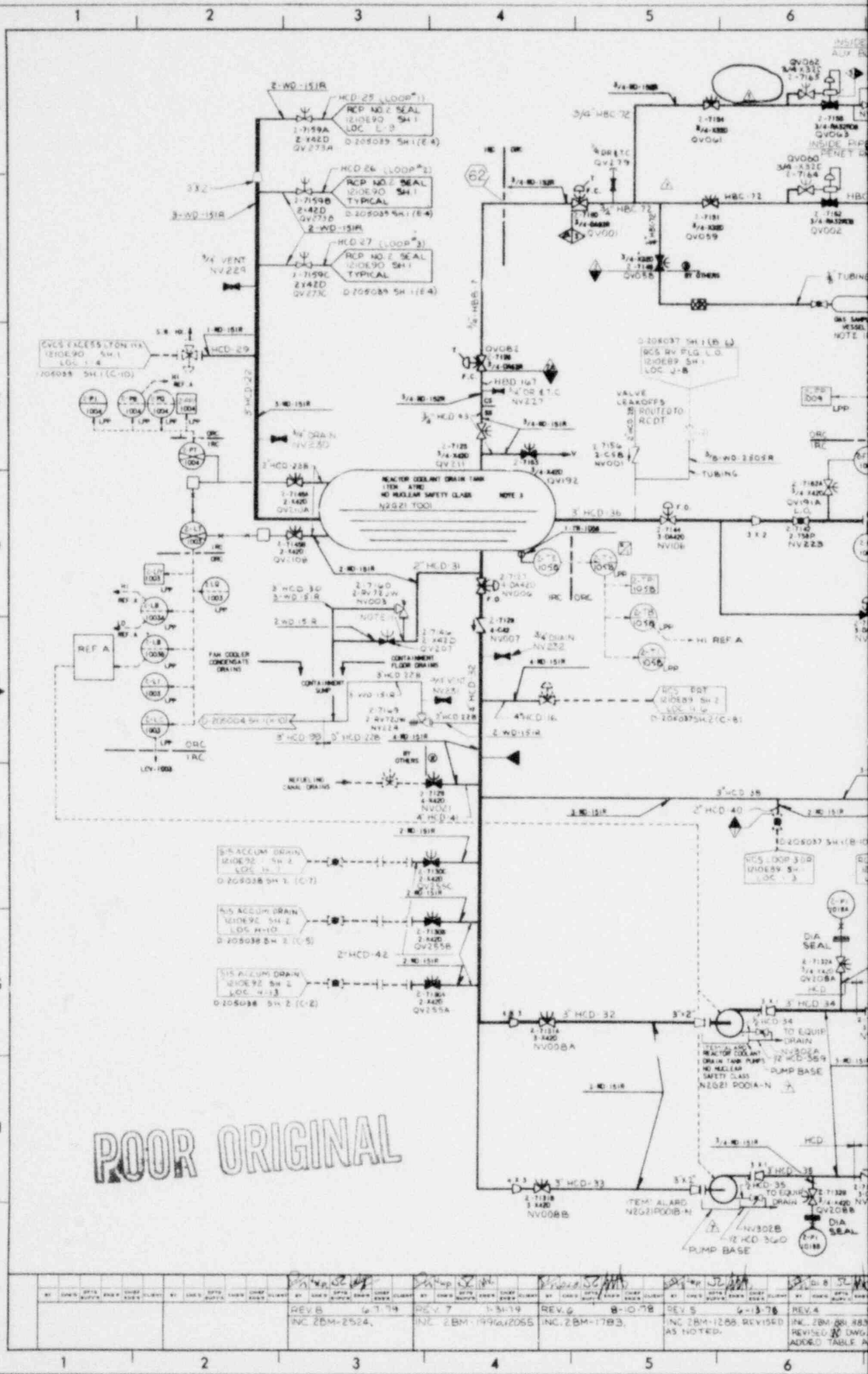
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

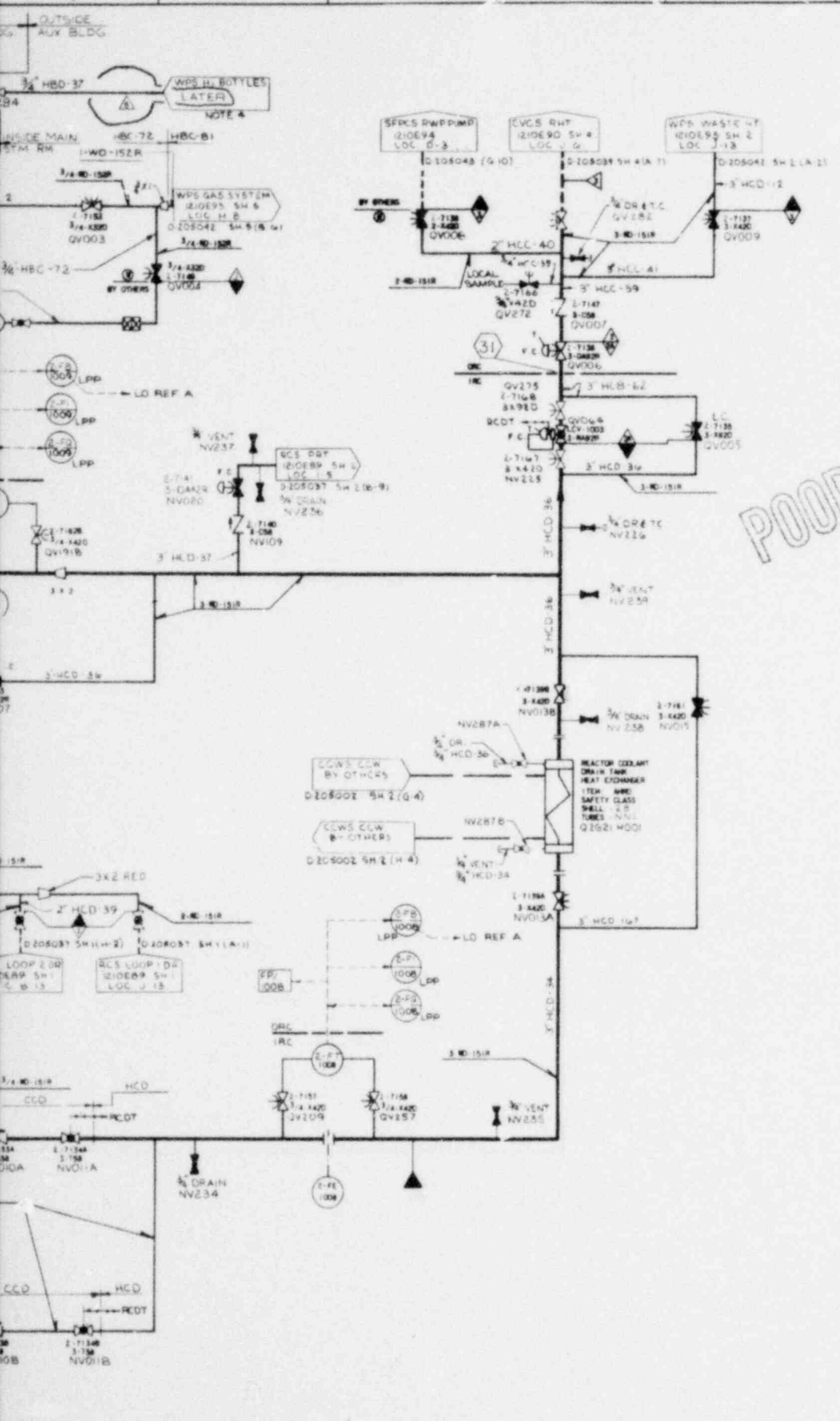
P&I DIAGRAM RESIDUAL HEAT REMOVAL SYS.

DRAWN TJ CHECKED RLH DATE 8-15-73

D-205041 REV. 6

REV.	DATE	DESCRIPTION
REV. 3	7-11-75	ADDED QV094A,B, LTD QV093A,B; NOTES 10-14, DELETED NOTE 11; REV. W DWG NOS AND RS
REV. 2	2-28-75	ADDED DOUBLE VALVING FOR VENTS AND DRAINS AND ADDED NOTE 12.
REV. 1	4-18-74	ADDED VENTS, DRAINS AND NOTE 11, REMOVED HOLD, REVISED AS CIRCLED
REV. 0	8-15-73	ISSUED FOR ENGINEERING


REACTOR COOLANT DRAIN TANK
NO NUCLEAR SAFETY CLASS
NOTE 3
N2921 T001
REACTOR COOLANT DRAIN TANK PUMPS
NO NUCLEAR SAFETY CLASS
N2921 P001A-N
PUMP BASE
PUMP BASE
REF A
HI REF A
FAN COOLER CONDENSATE DRAINS
CONTAINMENT FLOOR DRAINS
CONTAINMENT SUMP
REFUEL INC CANAL DRAINS
RCS RV FLG. L.O.
VALVE LEAKOFFS ROUTED TO RCDT
RCS EQT
RCS LOOP 3 DR
DIA SEAL
DIA SEAL
TO EQUIP DRAIN
TO EQUIP DRAIN
TEMP ALARD N2921P001B-N
POOR ORIGINAL



REFERENCES:

A. LIQUID PROCESSING PANEL DWG. (W) 271C597

NOTES:

1\.
2\. ALL (W) ITEM NOS IN WPS ARE SHOWN WITHOUT PREFIX ALAIW.
3\. TANK INLET AND RECIRCULATION CONNECTIONS ARE BELOW THE NORMAL WATER LEVEL.
4\. LIMIT AVAILABLE H_2 SUPPLY TO TWO STD. BOTTLES. PRESSURE REGULATOR SUPPLIED ON BOTTLES TO BE SET @ 5 PSIG.
5\. ALL LINE & VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY Q OR N2G21 ON SHTS 1 THRU 4
6\. SEE DWG. D-205044 FOR (W) SYS. LEGEND.
7\. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC 1109-1)
8\. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. SS-1102-39)
9\. WORK THESE P&I DIAGRAMS WITH DWG D-205368 THRU 363, 381, 388, 389, 390, 391, 416, 417, 418 & D-205424, D-205425 & D-205426
10\. 1/2" GLOBE VALVES TO BE SUPPLIED WITH SAMPLE VESSEL.
11\. LOCATE CLOSE TO RCDT

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG 1210E95 SH 1

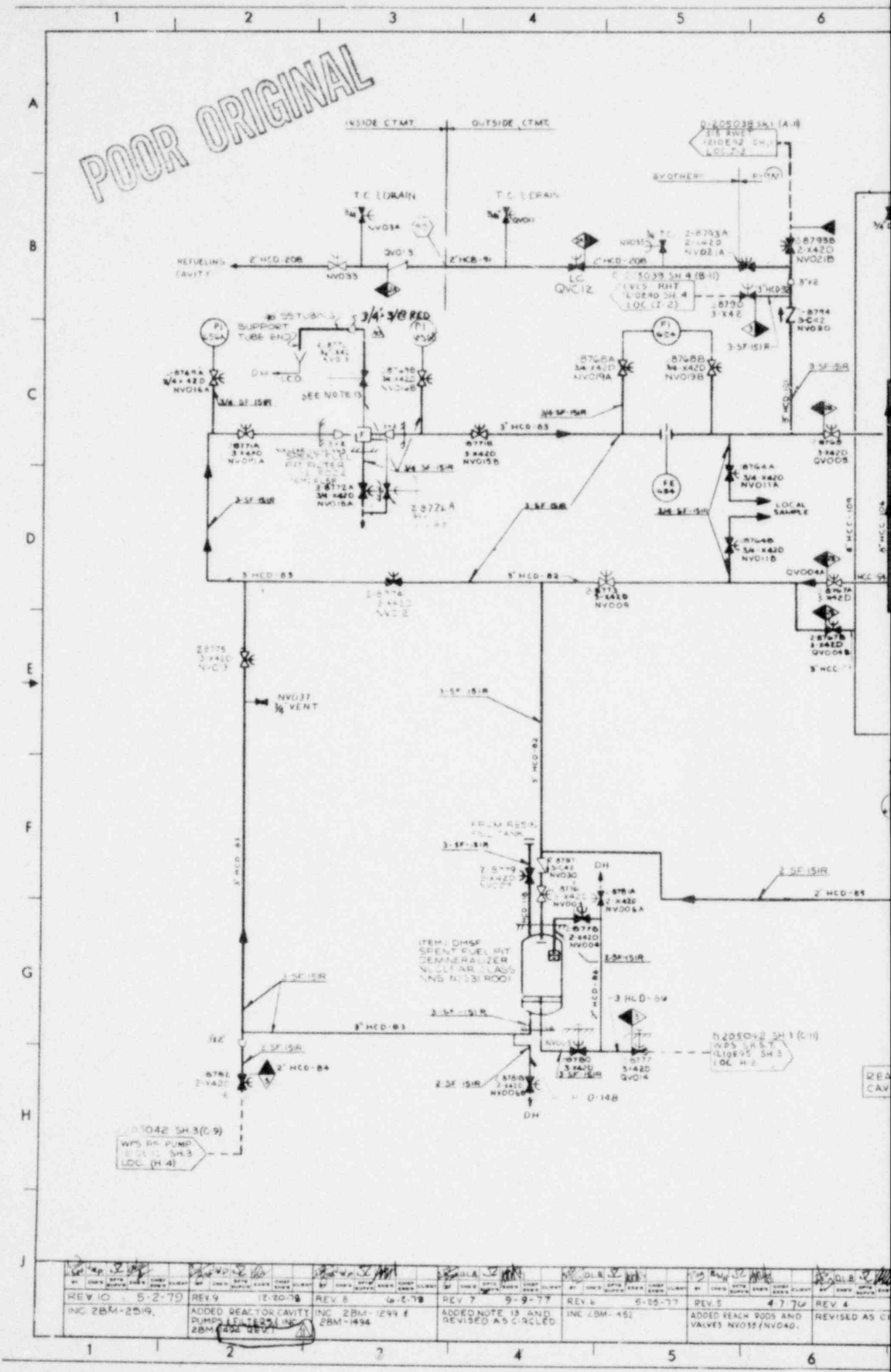
2-25-77	REV 3 1-14-77	REV 2 2-4-75	REV 1 8-23-74	REV 0 2-26-74
899, NO'S	REVISED PER PIPING DWG.	ADDED NOTE 11 & REVISED AS CIRCLED	REVISED PER REV 7 WESTINGHOUSE LATEST SUBMITTAL	ISSUED FOR CONSTRUCTION

DRAWN R.W.H. CHECKED TRACED
APPROVED DATE 2-25-74
APPROVED DATE
APPROVED DATE
APPROVED DATE

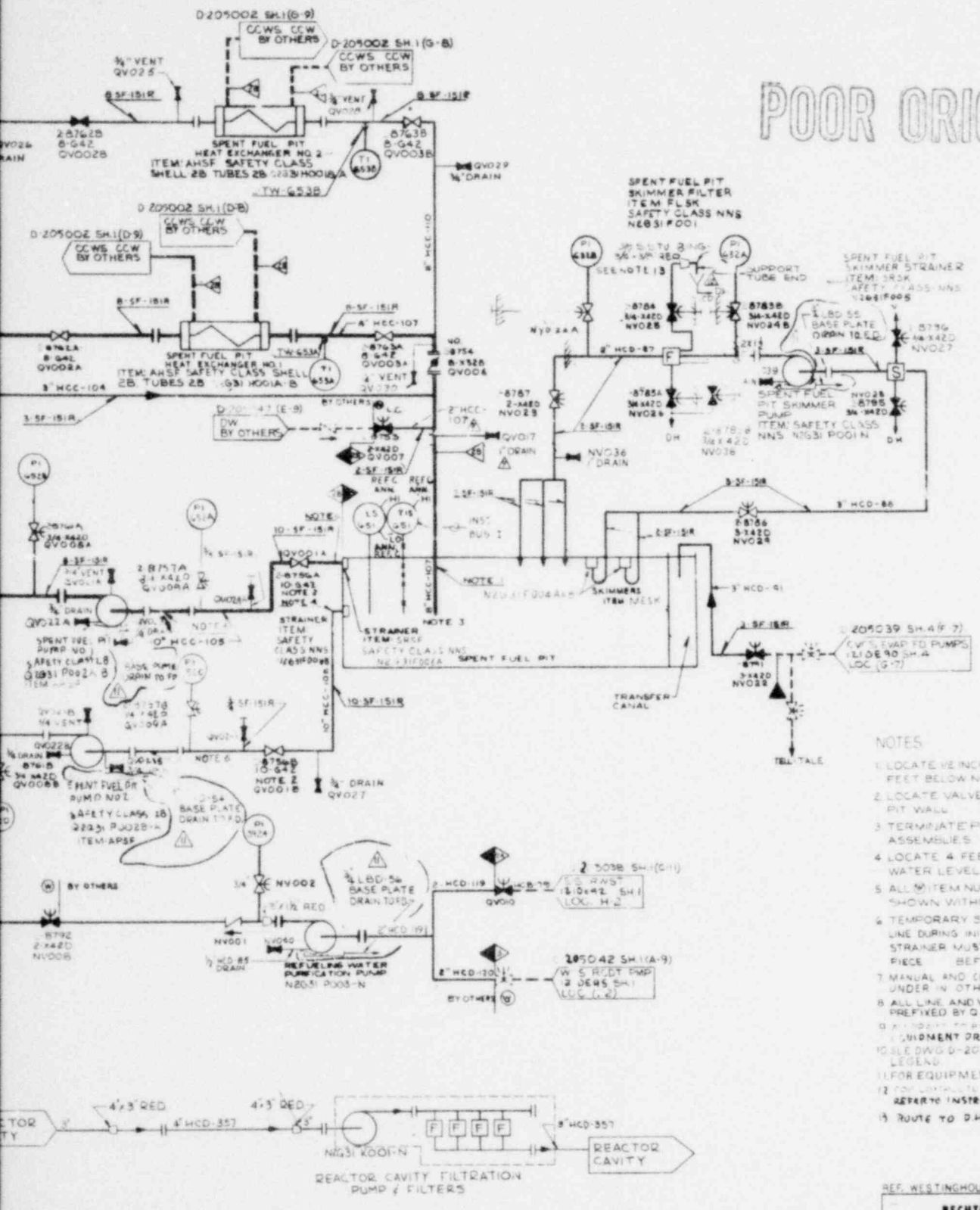
BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2
DETAIL P&I DIAGRAM WASTE PROCESSING SYSTEM
SCALE NONE
SHEET 1 OF 6 SHEETS
SUPERSEDES
D-205042 REV. 8



REV 10 5-2-79	REV 9 12-20-78	REV 8 6-2-78	REV 7 9-9-77	REV 6 6-25-77	REV 5 4-7-76	REV 4
INC 2BM-2519.	ADDED REACTOR CAVITY PUMPS & HEATERS INC 2BM-2496 REV 1	INC 2BM-1299 & 2BM-1494	ADDED NOTE 13 AND REVISED AS CIRCLED	INC 2BM-452	ADDED REACH RODS AND VALVES NV035/NV040.	REVISED AS C



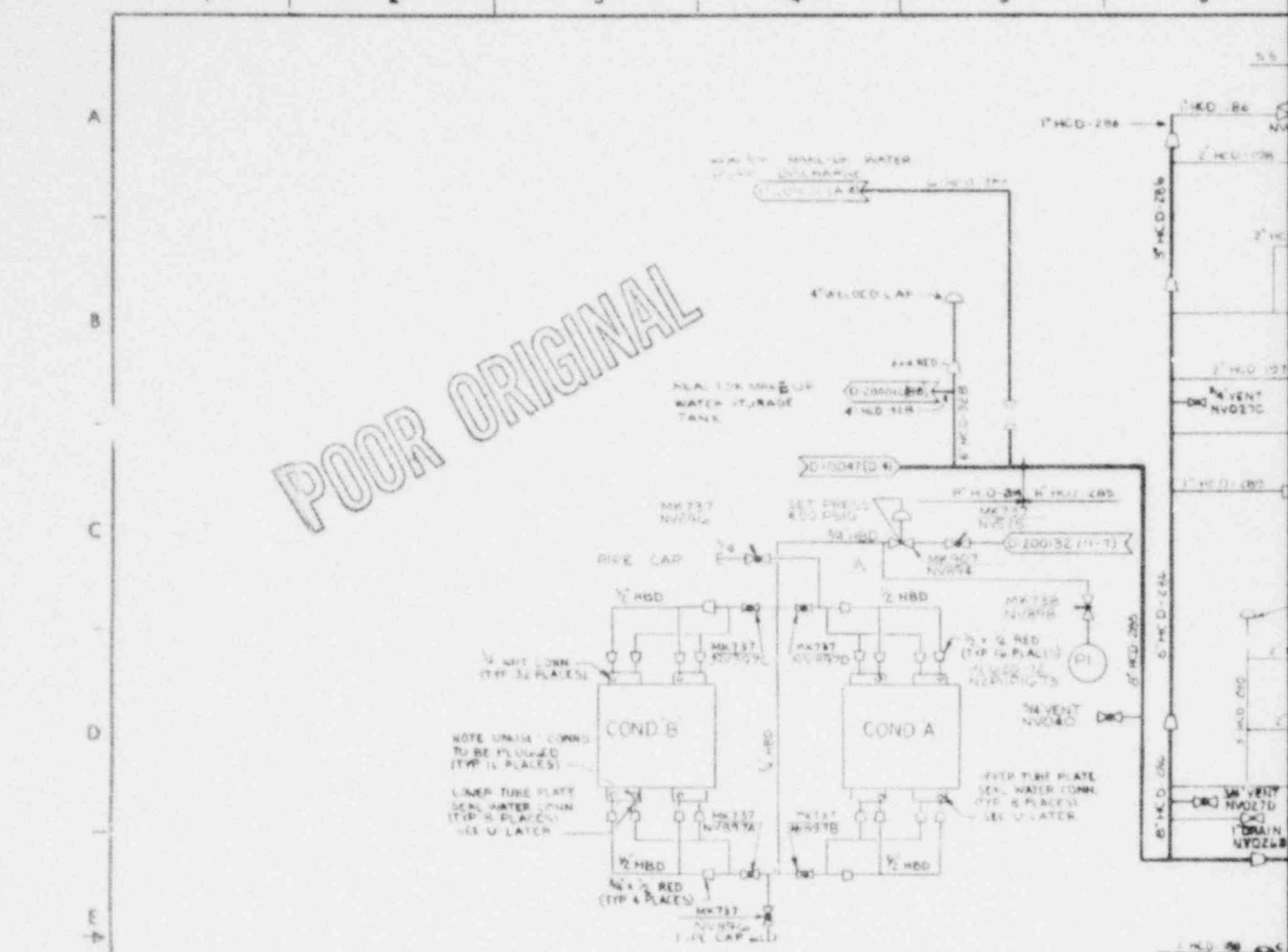
NOTES:

1. LOCATE ¾" INCH HOLE IN PIPE TWO FEET BELOW NORMAL WATER LEVEL.
2. LOCATE VALVE CLOSE TO SPENT FUEL PIT WALL.
3. TERMINATE PIPE 6 FEET ABOVE FUEL ASSEMBLIES.
4. LOCATE 4 FEET BELOW NORMAL WATER LEVEL.
5. ALL ITEM NUMBERS IN SFPCS ARE SHOWN WITHOUT PREFIX ALAAC.
6. TEMPORARY STRAINER IS PLACED IN LINE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REPLACED BY A SPOOL PIECE BEFORE PLANT START UP.
7. MANUAL AND CHECK VALVES 2" AND UNDER IN OTHERS SCOPE.
8. ALL LINE AND VALVE NUMBERS ARE PREFIXED BY Q OR NGSI.
9. ALL SPENT FUEL POOL PIPING IS ASME SECTION III, CLASS 3.
10. EQUIPMENT DRAINS TO SLE DWG D-205044 FOR (W) SYSTEM LEGEND.
11. FOR EQUIPMENT LIST SEE DWG D-205070.
12. FOR CONTROLS INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX D-205805.
13. ROUTE TO D.H.

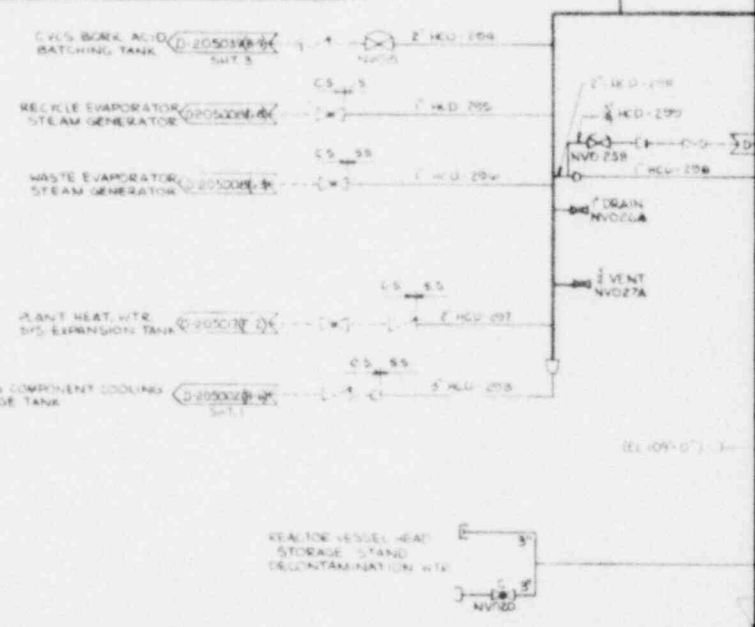
REF. WESTINGHOUSE DWG.

BECHTEL CORPORATION	
JOB 7597-20	
SOUTHERN SERVICES INC.	
FOR	
ALABAMA POWER COMPANY	
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2	
P&I DIAGRAM SPENT FUEL POOL COOLING SYS.	
SCALE	DWG. D-205043 REV. 11

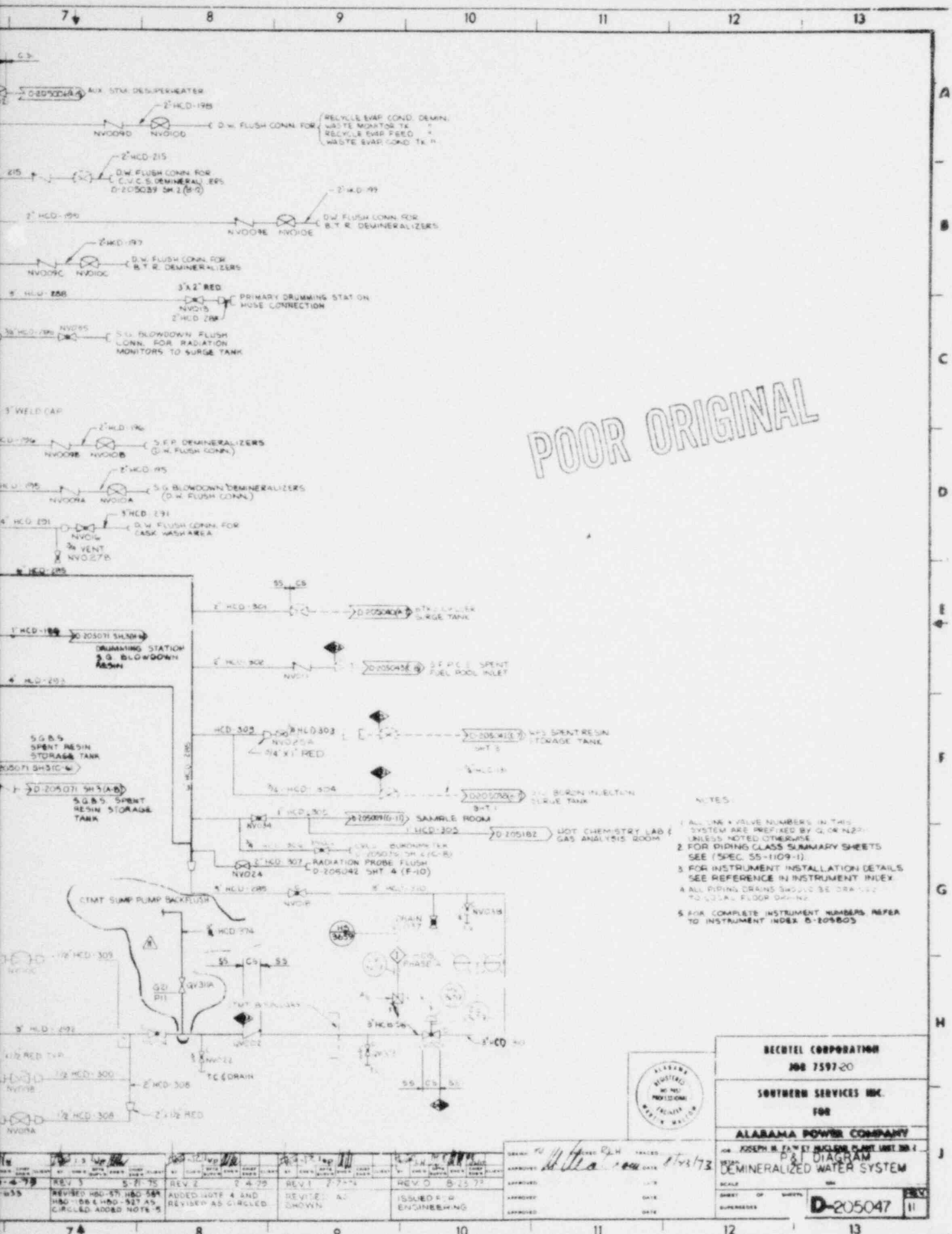
REV.	DESCRIPTION
3 2-21-75	REVISED VALVE 8785 TO 8785A OR AS CIRCLED.
2 8-2-74	REVISED PER (W) LATEST COMMENTS AND REVISED AS SHOWN.
1	ISSUED FOR ENGINEERING



CONDENSER TUBE PLATE SEAL WATER



REV.	DESCRIPTION	DATE
10	INC. 2BM-2309 REV 1,	1-31-79
9	INC. 2BM-2018	12-22-78
8	INC. 2BM-1624 & 1680 REVISED AS SHOWN	8-10-78
7	INC. 2BM-1279 2BM-1491 & 2BM-1517	5-22-78
6	INC. 2BM-1491 & 1517 REVISED SYSTEM TO 304 SS & ADDED ONE TUBE PLATE SEAL WATER	7-3-77
5	INC. 2BM-1485 & AS NOTED	11-8-76
4	ADDED H&V	
5	INC. 2BM-1424	5-10-79



NOTES:

1. ALL MAJOR VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY G OR N2P UNLESS NOTED OTHERWISE.
2. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. 55-1109-1).
3. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX.
4. ALL PIPING DRAINS SHOULD BE DRAINED TO LOCAL FLOOR DRAINS.
5. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX D-205805.

REV.	DESCRIPTION	DATE
REV. 5	REVISED HBD-89, HBD-58A, HBD-88 & HBD-927 AS CIRCLED. ADDED NOTE 5	5-21-75
REV. 4	ADDED NOTE 4 AND REVISED AS CIRCLED.	2-4-75
REV. 1	REVISED AS SHOWN	7-7-74
REV. 0	ISSUED FOR ENGINEERING	8-25-72

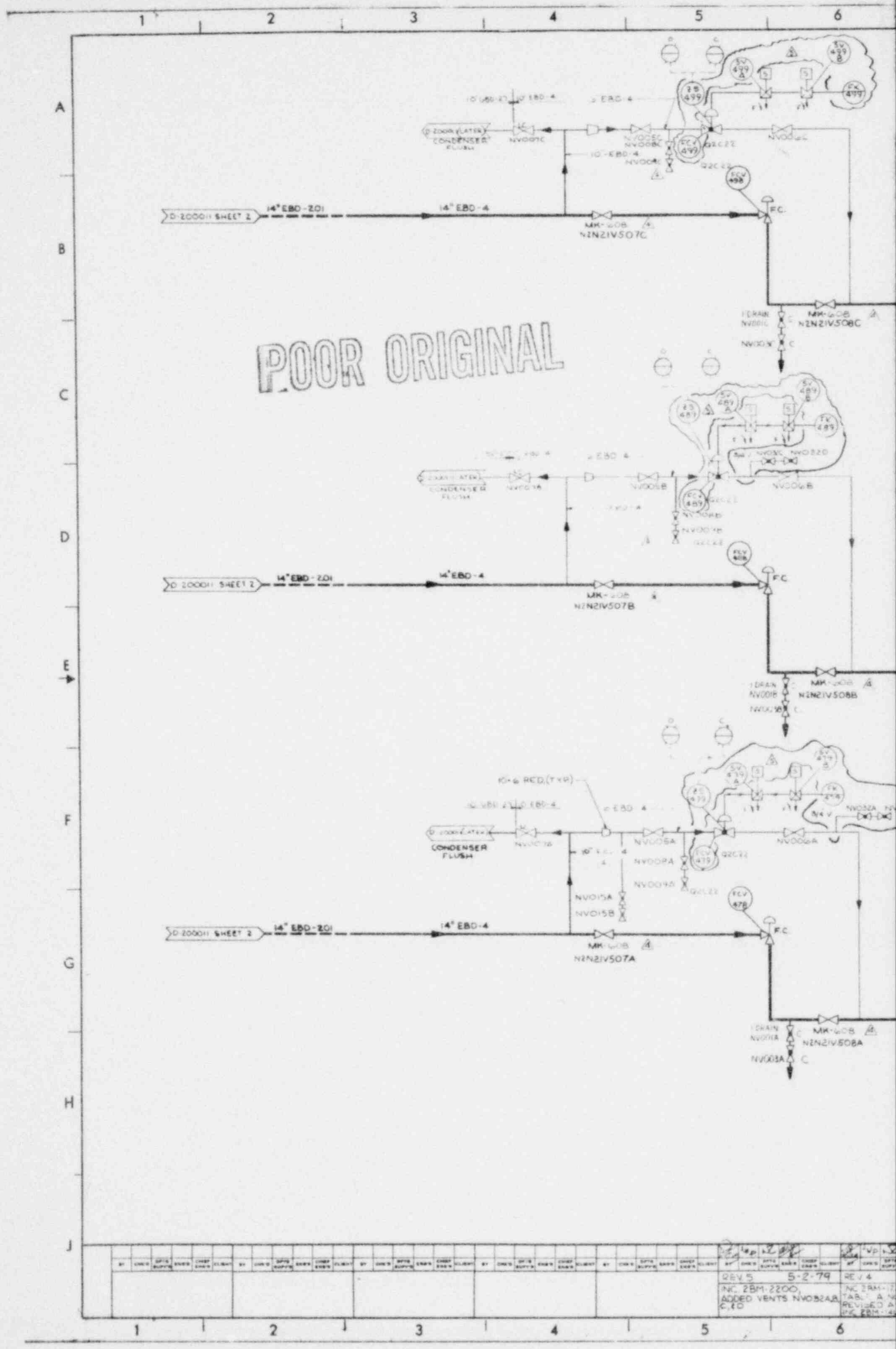
BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
FOR JOSEPH M. FARLEY NUCLEAR PLANT UNIT NOS. 1 & 2

P & I DIAGRAM
DEMINERALIZED WATER SYSTEM

SCALE: NONE

D-205047 | REV. 11



POOR ORIGINAL
CONDENSER FLUSH
D-200011 SHEET 2
14" EBD-201
14" EBD-4
10" EBD-4
MK-608
N2N2IV507C
N2N2IV508C
NV007C
NV005C
NV006C
NV008C
NV009C
FCV 498
FCV 497
F.C.
TX 499
1 DRAIN
NV001C
NV003C
NV007A
NV005B
NV006B
NV008B
NV009B
NV032C
NV032D
FCV 488
FCV 489
N2N2IV507B
N2N2IV508B
NV001B
NV003B
10-6 RED.(TYP)
NV005A
NV006A
NV008A
NV009A
NV015A
NV015B
NV032A
FCV 478
FCV 479
N2N2IV507A
N2N2IV508A
NV001A
NV003A
Q2C22
REV 5
5-2-79
INC 2BM-2200,
ADDED VENTS NV032A,B,
C,&D
REV 4

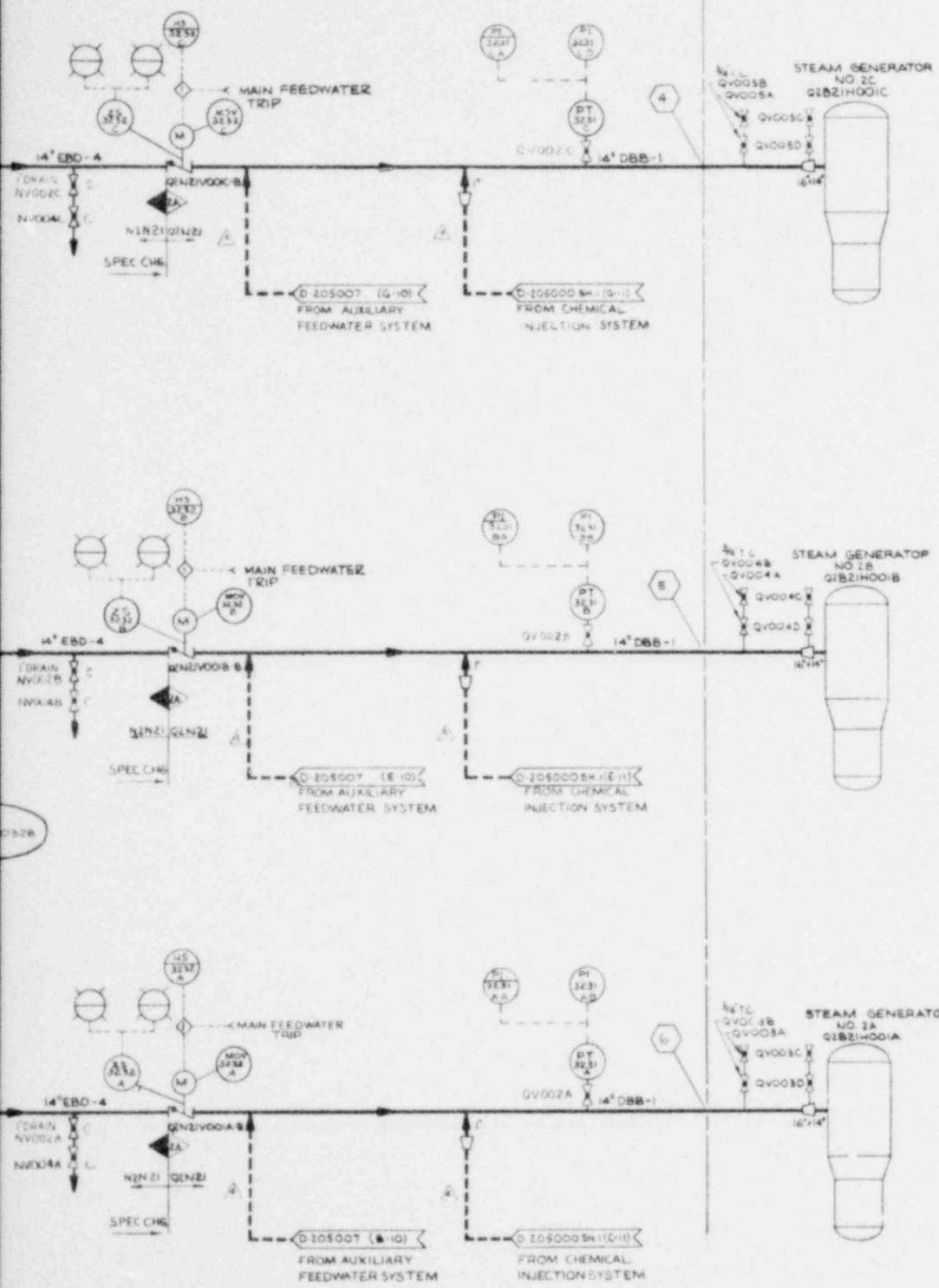


TABLE A			
A	Q2EN21VSH 1 2B	A-A, B-A, C-A	TRIP MAIN FEED PUMP 2A 2B
	Q2EN21VSH 2 2B2A	A-B, B-B, C-B	TRIP MAIN FEED PUMP 2A 2B

NOTES:

1. *PIPING CLASS SUMMARY SHEETS SEE (SPEC SS-1109-1).
2. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX A 205803.
3. FOR P&I DIAGRAM LEGEND SEE DRAWING D-205001.
4. DRAINS ARE TO BE PUMPED OR DRAINED TO THE AUXILIARY STEAM CONDENSATE TANK TO THE CONDENSATE STORAGE TANK, OR TO THE MAIN STEAM ROOM DRAIN RETURN UNIT.
5. UNLESS OTHERWISE NOTED ALL VALVE, EQUIPMENT AND LINE NUMBERS ON THIS SHEET ARE PREFIXED BY Q OR N2N21.
6. FOR COMPLETE INSTRUMENT NUMBERS AND ASSOCIATED CONTROL VALVE NUMBERS, REFER TO INSTRUMENT INDEX B 205803.
7. MAIN STEAM ROOM FLOODING SENSORS LISTED IN TABLE A ARE SET TO TRIP THE MAIN FEEDWATER PUMPS IN ACCORDANCE WITH LOGIC B-205810 SHEET 126.

REV.	DESCRIPTION	DRAWN	CHECKED	TRACED	APPROVED	DATE
5	REMOVED REDUCERS & REVISED NOTES 2/4.					5-5-76
4	ADDED VALVES QV003A,B, & A,B,C,D. & REVISED AS NOTED.					3-30-76
3	ADDED DRAINS, ROOT VALVES, AND REVISED AS CIRCLED.					8-11-74
2	ISSUED FOR ENGINEERING.	RWH				12-27-73
1						
0						

BECHTEL CORPORATION
JOB 7597-20

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 2

DETAIL P&I DIAGRAM
MAIN FEEDWATER SYSTEM

SCALE: NONE
SUPERVISOR:
SHEET OF SHEETS

D-205073 REV. 5