Joseph M. Farley Nuclear Plant - Unit 1
Inservice Testing Program
Revision 4

List of Effective Pages

REMOVE PAGES	INSERT PAGES
Table of Contents	Table of Contents
2-7	2-7
2-11	2-11
2-12	2-12
3-1	3-1
3-2	3-2
3-3	3-3
3-16	3-16
3-17	3-17
3-21	3-21
3-23	3-23
3-28	3-28
3-29	3-29
3-30	3-30
3-31	3-31
3-32	3-32
3-33	3-33
3-34	3-34
3-36	3-36
3-42	3-42
3-44	3-44
3-45	3-45
3-50	3-50
3-51	3-51
3-60	3-60
3-65	3-65
3-66	3-66
3-67	3-67
3-68	3-68
3-69	3-69
3-70	3-70
3-71	3-71
3-73	3-73
3-74	3-74
3-75	3-75
3-77	3-77
3-93	3-93
3-100	3-100
3-102	3-102
3-103	3-103
-	3-104
4-1	4-1
All P&ID's	All P&ID's

TABLE OF CONTENTS

4

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. 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 an approved edition of the code (1980 Edition) which requires a pump test frequency of nominally once every 3 months. 4

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.

2.1.8.2 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

A test in accordance with the code requires that variable resistance systems be varied until either the measured differential pressure or the measured flowrate equals a reference valve. The flow device used is not designed for the accuracy limitations of the code. 4

2.1.9.2 Alternate Testing

The pump will be tested at least once per 31 days by verifying that the pump develops a differential pressure of at least 93% for the applicable flowrate as determined from the manufacturer's pump performance curve.

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.

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. Listed below are the ASME Section XI Category E valves. System operating procedures require recording of the position of these valves before and after valve operation in the plant record and verification that each valve is locked or sealed.

ASME SECTION XI CATEGORY E VALVES

Valve(s)	P&ID/Sheet	Function
Q1E11V002A&B	D-175041	RHR pump discharge
Q1E11V043A&B	D-175038/2	RHR discharge header cross-connection
Q1E13V001A&B	D-175038/3	Containment spray header manual isolations
Q1E13V010A&B	D-175038/3	Spray pump recirculation isolations
Q1E13V019A&B	D-175038/3	Additive supply to eductor checks
Q1E13V024	D-175038/3	Spray additive tank outlet
Q1E21V061A,B&C	D-175038/1	BIT to cold leg injection throttle valves
Q1E21V071A,B&C	D-175038/1	Hot leg injection throttle valves
Q1E21V075A,B&C	D-175038/1	Hot leg injection throttle valves
Q1E21V080A,B&C	D-175038/1	Cold leg injection throttle valves
Q1E21V123A,B&C	D-175039/2	Charging pump discharge
Q1E21V182A,B&C	D-175039/2	Charging pump suction
Q1N12V002A&B	D-175033/2	Steam to turbine-driven aux. feedwater pump
Q1N12V005A&B	D-175033/2	Steam to turbine-driven aux. feedwater pump
Q1N12V006A&B	D-175033/2	Steam to turbine-driven aux. feedwater pump
Q1N23V001A-H,J&K	D-175007	Aux. feedwater to steam generators
Q1N23V004A&B	D-175007	Aux. feedwater pump suction
Q1N23V005	D-175007	Aux. feedwater pump suction
Q1N23V008	D-175007	Turbine-driven AFW pump recirculation isolation
Q1N23V009A&B	D-175007	Motor-driven AFW pump recirculation isolation
Q1N23V010	D-175007	Turbine-driven AFW pump minimum flow line
Q1N23V015A-E	D-175007	Service water to AFW pump suction
Q1N23V016A&B	D-175007	Service water AFW pump suction
Q1N23V017A-F	D-175007	Aux. feedwater to steam generators
Q1N23V019A&B	D-175007	Motor-driven AFW pump minimum flow line
Q1N23V501	D-170117/2	Aux. feedwater pump suction
Q1N23V502	D-170117/2	Aux. feedwater pump suction
N1N23V002	D-175007	Turbine-driven AFW pump minimum flow line
N1N23V006	D-175007	Motor-driven AFW pump minimum flow line
N1N23V008	D-175007	Motor-driven AFW pump minimum flow line

4

Table V-1 Valve Test Program

System Name: Reactor Coolant System

Revision Number: 4

System Number: Q1B13

(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	1-8090A	2	D-175037/2	F-2	A	1/8	N	M	C	Q	NT	3.1.29	--	Pressurizer Press. Trans. to Dead Weight Press. Gen.	
										LT	--	NO	--		
V026B	1-8090B	2	D-175037/2	F-2	A	1/8	N	M	C	Q	NT	3.1.29	--	Pressurizer Press. Trans. to Dead Weight Press. Gen.	
										LT	--	NO	--		
V031A	1-8010A	1	D-175037/2	D-5	C	6	PR	SA	C	SRV	--	NO	--	Pressurizer Safety Valve	
V031B	1-8010B	1	D-175037/2	D-4	C	6	PR	SA	C	SRV	--	NO	--	Pressurizer Safety Valve	
V031C	1-8010C	1	D-175037/2	D-3	C	6	PR	SA	C	SRV	--	NO	--	Pressurizer Safety Valve	
V037	1-8047	2	D-175037/2	B-10	A	1	D	AO	O	Q*	--	NO	--	Nitrogen to RCS Pressurizer Relief Tank	
										MT	--	NO	10		
										LT	--	NO	--		
V038	1-8046	2	D-175037/2	B-10	AC	3	CK	SA	O	CV	NT	3.1.3	--	Reactor Make-up Water to Pressurizer Relief Tank	4
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Reactor Coolant System

Revision Number: 4

System Number: QiB13

(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	1-8033	2	D-175037/2	B-11	A	1	D	AO	O	Q*	--	NO	--	Nitrogen to RCS Pressurizer	
										MT	--	NO	10	Relief Tank	
										LT	--	NO	--		
V040	1-8028	2	D-175037/2	B-11	A	3	D	AO	C	Q*	--	NO	--	RMW to RCS Pressurizer Relief	
										MT	--	NO	10	Tank	
										LT	--	NO	--		
V054	1-8092	2	D-175037/2	C-6	AC	2	CK	SA	O	CV	NT	3.1.3	--	Charging Pump Relief Valve	4
										LT	--	NO	--	Discharge to RCS Pressurizer	
														Relief Tank	

Table V-1 Valve Test Program

System Name: Containment Isolation System Revision Number: 4

System Number: Q1E14 (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-175010/2	A-2	AC	1	CK	SA	O	CV	NT	3.1.3	--	CTMT Air Sample	4
										LT	--	NO	--		
V002	1-MOV3660	2	D-175010/2	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	1-MOV3318A	2	D-175010/2	C-2	A	1	GL	MO	O	Q*	CS	3.1.28	--	CTMT Diff. Pressure Iso. Valve	4
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Containment Isolation System

Revision Number: 4

System Number: Q1E14

(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	1-MOV3318B	2	D-175010/2	C-2	A	1	GL	MO	0	Q*	CS	3.1.28	--	CTMT Diff. Pressure Iso. Valve	4
												3.1.32			
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
HV3657	None	2	D-175010/2	A-4	A	1	GL	AO	0	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: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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	1-8801A	2	D-175038/1	C-5	B	3	GA	MO	C	Q*	--	NO	--	Boron Injection Tank Discharge	
										MT	--	NO	10		
V004B	1-8801B	2	D-175038/1	D-5	B	3	GA	MO	C	Q*	--	NO	--	Boron Injection Tank Discharge	
										MT	--	NO	10		
V006A	1-8940A	2	D-175038/1	C-8	C	1	CK	SA	O	CV	--	NO	--	Boron Injection Recirculation Pump Discharge	
V006B	1-8940B	2	D-175038/1	D-8	C	1	CK	SA	O	CV	--	NO	--	Boron Injection Recirculation Pump Discharge	
V015	1-8942	2	D-175038/1	D-8	B	1	GL	AO	O	Q*	CS	3.1.38 3.1.32 3.1.33	--	Boron Injection Recirculation Pump Disc to Boron Injection Tank	
										MT	--	NO	10		
V016A	1-8803A	2	D-175038/1	G-7	B	3	GA	MO	C	Q*	CS	3.1.49 3.1.32 3.1.33	--	HHSI Pumps Discharge to Boron Injection Tank	4
										MT	--	NO	10		
V016B	1-8803B	2	D-175038/1	G-7	B	3	GA	MO	C	Q*	CS	3.1.49 3.1.32 3.1.33	--	HHSI Pumps Discharge to Boron Injection Tank	
										MT	--	NO	10		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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	1-8961	2	D-175038/2	E-10	A	3/4	GL	AO	C	Q*	--	NO	--	SIS Acc. Test Line to RWST	
										MT	--	NO	10		
										LT	--	NO	--		
V052	1-8861	2	D-175038/2	D-9	AC	1	CK	SA	C	CV	NT	3.1.35	--	SIS Acc. Tanks fill Line	
										LT	--	NO	--		
V056A	1-8945A	2	D-175038/1	C-6	B	1	GL	AO	O	Q*	CS	3.1.38 3.1.32 3.1.33	--	Boron Inj. Tank Recirculation	
										MT	--	NO	10		
V056B	1-8945B	2	D-175038/1	C-7	B	1	GL	AO	O	Q*	CS	3.1.38 3.1.32 3.1.33	--	Boron Inj. Tank Recirculation	4
										MT	--	NO	10		
V058	1-8947	2	D-175038/2	A-9	AC	1	CK	SA	O	CV	NT	3.1.3	--	Nitrogen Supply to Accumulator Tanks	
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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	1-8860	2	D-175038/2	D-10	A	1	GL	AO	C	Q*	--	NO	--	SIS Acc. Tanks Fill Line	
										MT	--	NO	10		
										LT	--	NO	--		
V115A	1-8368A	2	D-175039/1	G-2	AC	2	CK	SA	O	CV	NT	3.1.3	--	CVCS Seal Inj.-RC Pump	
										LT	--	NO	--		
V115B	1-8368B	2	D-175039/1	G-2	AC	2	CK	SA	O	CV	NT	3.1.3	--	CVCS Seal Inj.-RC Pump	
										LT	--	NO	--		
V115C	1-8368C	2	D-175039/1	G-2	AC	2	CK	SA	O	CV	NT	3.1.3	--	CVCS Seal Inj.-RC Pump	
										LT	--	NO	--		
V119	1-8381	2	D-175039/1	B-11	AC	3	CK	SA	O	CV	NT	3.1.3	--	CVCS Charging Pump Discharge to Reg. HX	
										LT	--	NO	--		
V122A	1-8481A	2	D-175039/2	F-4	C	3	CK	SA	C	CV	--	3.1.42	--	Charging Pump Discharge	

4

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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	1-8481B	2	D-175039/2	G-4	C	3	CK	SA	C	CV	--	3.1.42	--	Charging Pump Discharge	
V122C	1-8481C	2	D-175039/2	H-4	C	3	CK	SA	C	CV	--	3.1.42	--	Charging Pump Discharge	
V210	1-8442	2	D-175039/2	H-8	C	2	CK	SA	C	CV	RR	3.1.41	--	CVCS BA Filter to Charging Pump Suction	
V213	1-8103	2	D-175039/1	D-11	AC	3/4	CK	SA	O	CV	NT	3.1.3	--	Seal Water f .. RC Pumps to Seal Water Heat Exchanger	4
										LT	--	NO	--		
V249A	1-8112	2	D-175039/1	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: 4

System Number: Q1E21

(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	1-8100	2	D-175039/1	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	1-8149A	2	D-175039/1	A-6	A	2	GL	AO	C	Q*	CS	3.1.50 3.1.32 3.1.33	--	RC from Reg. Heat Exchanger Shell Side to CVCS Letdown Heat Exchanger	4
										MT	--	NO	10		
										LT	--	NO	--		
V253B	1-8149B	2	D-175039/1	A-7	A	2	GL	AO	O	Q*	CS	3.1.50 3.1.32 3.1.33	--	RC from Reg. Heat Exchanger Shell Side to CVCS Letdown Heat Exchanger	4
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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	1-8149C	2	D-175039/1	A-7	A	2	GL	AO	C	Q*	CS	3.1.50 3.1.32 3.1.33	--	RC from Reg. Heat Exchanger Shell Side to CVCS Letdown		4
										MT	--	NO	10	Heat Exchanger		
										LT	--	NO	--			
V254	1-8152	2	D-175039/1	A-11	A	3	GL	AO	O	Q*	CS	3.1.19 3.1.32 3.1.33	--	RC from Reg. Heat Exhanger Shell Side to CVCS Letdown		4
										MT	--	NO	10	Heat Exchanger		
										LT	--	NO	--			
V257	1-8107	2	D-175039/2	E-1	A	3	GA	MO	O	Q*	CS	3.1.19 3.1.32 3.1.33	--	CVCS Charging Pump Discharge to Reg. Heat Exchanger		4
										MT	--	NO	10			
										LT	--	NO	--			
V258	1-8108	2	D-175039/2	E-2	A	3	GA	MO	O	Q*	CS	3.1.19 3.1.32 3.1.33	--	CVCS Charging Pump Discharge to Reg. Heat Exchanger		4
										MT	--	NO	10			
										LT	--	NO	--			

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Revision Number: 4

System Number: Q1E21

(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	1-8109A	2	D-175039/2	E-4	B	2	GL	MO	O	Q*	CS	3.1.47 3.1.32 3.1.33	--	Charging Pump Bypass Orifice Line	
										MT	--	NO	15		
V259B	1-8109B	2	D-175039/2	F-4	B	2	GL	MO	O	Q*	CS	3.1.47 3.1.32 3.1.33	--	Charging Pump Bypass Orifice Line	4
										MT	--	NO	15		
V259C	1-8109C	2	D-175039/2	G-4	B	2	GL	MO	O	Q*	CS	3.1.47 3.1.32 3.1.33	--	Charging Pump Bypass Orifice Line	
										MT	--	NO	15		
V263A	1-8116A	2	D-175039/2	F-6	AC	3/4	PR	SA	C	SRV	--	NO	--	SIS RHR HX to Charging Pumps Suction	
										LT	--	NO	--		
V263B	1-8116B	2	D-175039/2	J-6	AC	3/4	PR	SA	C	SRV	--	NO	--	SIS RHR HX to Charging Pumps Suction	
										LT	--	NO	--		
V264	1-8104	2	D-175039/2	H-8	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: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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	1-8106	2	D-175039/2	D-4	B	3	GA	MO	O	Q*	CS	3.1.47 3.1.32 3.1.33	--	Charging Pump Bypass Orifice Disc. to Seal Water Heat	4
										MT	--	NO	15	Exchanger	
V324A	1-8130A	2	D-175039/2	G-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual HX	
										MT	--	NO	15		
V324B	1-8130B	2	D-175039/2	G-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual HX	
										MT	--	NO	15		
V325A	1-8131A	2	D-175039/2	G-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual Heat Exchanger	
										MT	--	NO	15		
V325B	1-8131B	2	D-175039/2	H-6	B	8	GA	MO	O	Q*	--	NO	--	Charging Pump Suction from Residual Heat Exchanger	
										MT	--	NO	15		
V326A	1-8132A	2	D-175039/2	F-3	B	4	GA	MO	O	Q*	CS	3.1.48 3.1.32 3.1.33	--	Charging Pump Disc.	4
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: HHSI CVCS System

Revision Number: 4

System Number: Q1E21

(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														
V326B	1-8132B	2	D-175039/2	G-3	B	4	GA	MO	O	Q*	CS	3.1.48 3.1.32 3.1.33	--	Charging Pump Disc.	
										MT	--	NO	15		
V327A	1-8133A	2	D-175039/2	G-3	B	4	GA	MO	O	Q*	CS	3.1.48 3.1.32 3.1.33	--	Charging Pump Disc.	
										MT	--	NO	15		
V327B	1-8133B	2	D-175039/2	H-3	B	4	GA	MO	O	Q*	CS	3.1.48 3.1.32 3.1.33	--	Charging Pump Disc.	4
										MT	--	NO	15		
V336A	1-LCV115B	2	D-175039/2	G-7	B	8	GA	MO	C	Q*	CS	3.1.51 3.1.32 3.1.33	--	Charging Pump Suction from Refueling Water Storage Tank	
										MT	--	NO	15		
V336B	1-LCV115D	2	D-175039/2	H-7	B	8	GA	MO	C	Q*	CS	3.1.51 3.1.32 3.1.33	--	Charging Pump Suction from Refueling Water Storage Tank	
										MT	--	NO	15		

Table V-1 Valve Test Program

System Name: Reactor Cavity Post LOCA Dilution System

Revision Number: 4

System Number: Q1E22

(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	1-MOV3872A	2	D-175019	D-5	B	2½	GA	MO	C	Q*	--	NO	--	Air from Reactor Cavity Hydrogen Dilution Fan to Reactor	4
										MT	--	NO	20	Cavity Wall	
V001B	1-MOV3872B	2	D-175019	E-5	B	2½	GA	MO	C	Q*	--	NO	--	Air from Reactor Cavity Hydrogen Dilution Fan to Reactor	4
										MT	--	NO	20	Cavity Wall	

Table V-1 Valve Test Program

System Name: Liquid Waste Disposal System

Revision Number: 4

System Number: Q1G21

(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	1-HV7126	2	D-175042/1	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-175004/1	G-9	AC	2	CK	SA	O	CV	NT	3.1.3	--	Containment Sump Recirculation	4
										LT	--	NO	--		
V291	None	2	D-175004/1	H-8	AC	3/4	CK	SA	O	CV	NT	3.1.3	--	Containment Sump Pump Discharge	4
										LT	--	NO	--		
HV3376	None	2	D-175004/1	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: Spent Fuel Pool Cooling & Clean-Up System

Revision Number: 4

System Number: Q1G31

(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-175043	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-175043	B-3	AC	2	CK	SA	O	CV	NT	3.1.3	--	Spent Fuel Pool Clean-up Loop to Refueling Cavity	4
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Main Steam System

Revision Number: 4

System Number: Q1N11

(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	1-HV3369A	2	D-175033/1	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	1-HV3369B	2	D-175033/1	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	1-HV3369C	2	D-175033/1	B-8	B	32	RC	AO	O	CSP*	--	3.1.32	--	Steam Generator Discharge to H.P. Turbine (MSIV)	4
												3.1.33			
										MT	--	NO	5		
V002A	1-HV3370A	2	D-175033/1	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: Aux. Steam System

Revision Number: 4

System Number: Q1N12

(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														
HV3226	None	3	D-175033/2	C-5	B	3	GL	AO	C	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	45		4
V001A	1-HV3235A	2	D-175033/2	E-8	B	3	GL	AO	C	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	10		
V001B	1-HV3235B	2	D-175033/2	D-8	B	3	GL	AO	C	Q*	--	NO	--	Main Steam to Aux. Feedwater Pump Turbine	
										MT	--	NO	10		
V010A	None	3	D-175033/2	E-6	C	4	CK	SA	C	CV	--	3.1.26	--	Main Steam to Aux. Feedwater Pump Turbine	
V010B	None	3	D-175033/2	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: 4

System Number: Q1N21/Q1C22

(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	1-MOV3232A	2	D-175073	G-7	BC	14	CK	MO SA	O	CV	CS	3.1.24 3.1.32 3.1.33	--	Main Feedwater to Steam Generator	
										MT	--	NO	30		
V001B	1-MOV3232B	2	D-175073	E-7	BC	14	CK	MO SA	O	CV	CS	3.1.24 3.1.32 3.1.33	--	Main Feedwater to Steam Generator	
										MT	--	NO	30		
V001C	1-MOV3232C	2	D-175073	B-7	BC	14	CK	MO SA	O	CV	CS	3.1.24 3.1.32 3.1.33	--	Main Feedwater to Steam Generator	4
										MT	--	NO	30		
FCV478	None	3	D-175073	G-6	B	14	GL	AO	O	Q*	CS	3.1.24	--	Main Feedwater Regulator	
												3.1.32			
												3.1.33			
										MT	--	NO	5		

REV 4 10/82

5370-2

Table V-1 Valve Test Program

System Name: Condensate & Demin. Water Transfer and Storage Revision Number: 4

System Number: Q1P11 (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	1-HV3659	2	D-175047	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-175047	H-8	AC	3	CK	SA	O	CV	NT	3.1.3	--	Demin. Water to Reactor Vessel Head Storage Stand	4
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 4

System Number: Q1P16

(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	1-MOV3019A	2	D-175003/1	A-7	B	12	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V010B	1-MOV3019B	2	D-175003/1	C-7	B	12	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V010C	1-MOV3019C	2	D-175003/1	E-7	B	12	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V010D	1-MOV3019D	2	D-175003/1	F-7	B	12	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water to Containment Coolers	
										MT	--	NO	75		
V043A	1-MOV3024A	2	D-175003/1	A-10	B	10	GA	MO	C	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		
V043B	1-MOV3024B	2	D-175003/1	C-10	B	10	GA	MO	C	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 4

System Number: Q1P16

(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	1-MOV3024C	2	D-175003/1	E-10	B	10	GA	MO	C	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		
V043D	1-MOV3024D	2	D-175003/1	F-10	B	10	GA	MO	C	Q*	CS	3.1.52 3.1.32 3.1.33	--	Service Water Discharge from Containment Coolers	
										MT	--	NO	65		
V071	1-MOV3135	2	D-175003/2	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	--		

4

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 4

System Number: Q1P16

(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	1-MOV3134	2	D-175003/2	B-12	A	6	GA	MO	O	Q*	CS	3.1.11	--	Service Water Return from Reactor Coolant Pump	
												3.1.32		Motor Coolers	
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		
V075	None	2	D-175003/2	B-9	AC	6	CK	SA	O	CV	NT	3.1.3	--	Service Water to Reactor Coolant Pump Motor Coolers	4
										LT	--	NO	--		
V081	1-MOV3131	2	D-175003/2	B-12	A	6	GA	MO	O	Q*	CS	3.1.11	--	Service Water Return from Reactor Coolant Pump	4
												3.1.32		Motor Coolers	
												3.1.33			
										MT	--	NO	15		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Service Water System — Revision Number: 4

System Number: Q1P16 — (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	1-MOV3441A	2	D-175003/1	A-9	B	10	GA	MO	O	Q*	CS	3.1.51 3.1.32 3.1.33	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V207B	1-MOV3441B	2	D-175003/1	C-9	B	10	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V207C	1-MOV3441C	2	D-175003/1	E-9	B	10	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	CTMT Coolers Service Water Discharge	4
										MT	--	NO	65		
V207D	1-MOV3441D	2	D-175003/1	F-9	B	10	GA	MO	O	Q*	CS	3.1.52 3.1.32 3.1.33	--	CTMT Coolers Service Water Discharge	
										MT	--	NO	65		
V514	None	3	D-170119/2	--	B	24	B	MO	O	Q*	CS	3.1.53 3.1.32 3.1.33	--	Service Water Supply to Turbine Building - Train B	
										MT	--	NO	75		
V515	None	3	D-170119/2	--	B	24	B	MO	O	Q*	CS	3.1.53 3.1.32 3.1.33	--	Service Water Supply to Turbine Building - Train A	
										MT	--	NO	75		

Table V-1 Valve Test Program

System Name: Service Water System

Revision Number: 4

System Number: Q1P16

(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-170119/2	--	B	24	B	MO	O	Q*	CS	3.1.53 3.1.32 3.1.33	--	Service Water Supply to Turbine Building - Train A	
										MT	--	NO	75		
V517	None	3	D-170119/2	--	B	24	B	MO	O	Q*	CS	3.1.53 3.1.32 3.1.33	--	Service Water Supply to Turbine Building - Train B	4
										MT	--	NO	75		
V518	None	3	D-170119/3	--	B	12	B	MO	O	Q*	--	NO	--	Service Water Supply to Diesel Building - Train B	
										MT	--	NO	75		
V519	None	3	D-170119/3	--	B	12	B	MO	O	Q*	--	NO	--	Service Water to Diesel Building - Train A	
										MT	--	NO	75		
V538	None	3	D-170119/2	--	B	42	B	MO	C	Q*	--	NO	--	Emergency Service Water Recirculation Line to Pond -	
										MT	--	NO	45	Train B	
V539	None	3	D-170119/2	--	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: 4

System Number: Q1P16 — (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-170119/2	--	B	30	B	MO	O	Q*	--	NO	--	Service Water Train B to River	
										MT	--	NO	45		
V546	None	3	D-170119/2	--	B	30	B	MO	O	Q*	--	NO	--	Service Water Train A to River	
										MT	--	NO	45		
V659	None	3	D-170119/3	--	C	6	CK	SA	C	CV	--	3.1.16	--	Unit 1 Service Water Supply to Diesel Gen. 2C	
V660	None	3	D-170119/3	--	C	6	CK	SA	C	CV	--	3.1.16	--	Unit 1 Service Water Supply to Diesel Gen. 1C	
V661	None	3	D-170119/3	--	C	8	CK	SA	C	CV	--	3.1.16	--	Unit 1 Service Water Supply to Diesel Gen. 1-2A	
V536	None	3	D-170119/3	--	B	12	B	MO	O	Q*	--	NO		Service Water from Diesel Bldg. - Train B	
										MT	--	NO	75		
V537	None	3	D-170119/3	--	B	12	B	MO	O	Q*	--	NO		Service Water from Diesel Bldg. - Train A	4
										MT	--	NO	75		

Table V-1 Valve Test Program

System Name: Component Cooling Water System

Revision Number: 4

System Number: Q1P17

(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	1-MOV3052	2	D-175002/2	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-175002/2	C-2	AC	6	CK	SA	O	CV	NT	3.1.3	--	CCW Supply to Reactor Coolant Pumps	4
										LT	--	NO	--		
V097	1-MOV3046	2	D-175002/2	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: 4

System Number: Q1P17 (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	1-MOV3030B	3	D-175002/1	B-5	B	2	GL	MO	C	Q*	--	NO	--	Demin. Water to Component Cooling Water System	
										MT	--	NO	15		
V159	None	2	D-175002/2	E-2	AC	6	CK	SA	O	CV	NT	3.1.3	--	CCW Supply to Excess Letdown Heat Exchanger	4
										LT	--	NO	--		
HV3045	None	2	D-175002/2	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-175002/2	E-6	A	6	GL	AO	O	Q*	CS	3.1.46 3.1.32 3.1.33	--	CCW Return from Excess Letdown Heat Exchanger	4
										MT	--	NO	10		
										LT	--	NO	--		

Table V-1 Valve Test Program

System Name: Component Cooling Water System

Revision Number: 4

System Number: Q1P17

(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-175002/2	E-1	A	6	GL	AO	O	Q*	CS	3.1.46 3.1.32 3.1.33	--	CCW Supply to Excess Letdown Heat Exchanger	4
										MT	--	NO	10		
										LT	--	NO	--		
HV3096A	None	3	D-175002/2	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-175002/2	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-175002/2	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: 4

System Number: Q1P17 (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-175002/2	E-5	A	6	GL	AO	O	Q*	CS	3.1.46 3.1.32 3.1.33	--	CCW Return from Excess Letdown Heat Exchanger	4
										MT	--	NO	10		
										LT	--	NO	--		
RV3028	None	3	D-175002/1	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: Instrument Air System

Revision Number: 4

System Number: Q1P19

(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-175034/3	D-2	AC	2	CK	SA	O	CV	NT	3.1.3	--	Containment Instrument Air Supply	4
										LT	--	NO	--		
HV3611	None	2	D-175034/2	E-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	--		
V004	None	2	D-175034/1	C-10	AC	1/2	CK	SA	C	CV	NT	3.1.29	--	Backup Air Supply to Pressurizer PORVs	4
										LT	--	NO	--		
HV2228	None	2	D-175034/1	C-9	A	3/4	GL	AO	C	Q*	NT	3.1.29	--	Backup Air Supply to Pressurizer PORVs	
										MT	NST	3.1.29	--		
										LT	--	NO	--		

pressure (600 psig). It is assumed for the purpose of the cycling test that the downstream check valves have failed. Venting of the downstream pressure cannot be accomplished under any conditions because of the radiation hazard to plant personnel. | 4

3.1.17.2 Alternate Testing

Once every three (3) months the downstream 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 downstream pressure prohibits quarterly testing, the valve will be full stroked at cold shutdowns. | 4 | 4

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

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 by verifying that the maximum required flowrate passes through the valve. 4

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.

3.1.45 Test Requirements

Exercise valves for operability at least once every three months.

3.1.45.1 Basis for Relief

The Technical Specification requires that these containment purge supply and exhaust valves be closed during modes 1 through 4. Consequently, no exercising of these valves can occur unless the plant is in mode 5 (cold shutdown) or mode 6 (refueling).

3.1.45.2 Alternate Testing

These valves will be full-stroke tested each cold shutdown, if the valves have been opened for purging. If no purging has occurred then the Technical Specifications, which require verification of their closed position once every 31 days, will be met.

3.1.46 Test Requirement

Exercise the valves for operability at least once every three (3) months. 4

3.1.46.1 Basis for Relief

Cycling these valves causes pressure and flow variations in the CCW system which result in the automatic isolation of CCW to reactor coolant pump's thermal barriers and oil coolers. If flow to the RCP's thermal barriers and oil coolers is not quickly re-established the reactor would trip because the RCP's would have to be shutdown to prevent damage to the bearings and/or seals.

3.1.46.2 Alternate Testing

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

3.1.47 Test Requirement

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

3.1.47.1 Basis for Relief

The operability testing of these valves during normal operation could cause damage to the charging pumps. If problems occur with the pressurizer level control or FCV-122 normal charging would isolate. This would result in inadequate cooling and subsequent damage to the charging pumps if the mini-flow valve for the pump was closed.

In addition, cycling of the common mini-flow valve (Q1E21V265) causes pressure transients in the reactor coolant pump seal water return line which can affect reactor coolant pump seal performance.

3.1.47.2 Alternate Testing

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

3.1.48 Test Requirement

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

3.1.48.1 Basis for Relief

The operability testing of these valves during normal operation could cause a loss of system function and put the plant in an unsafe condition. If a safety injection were to occur during testing of these valves and a particular charging pump were to fail to start, the ability to inject water into the RCS could be lost.

3.1.48.2 Alternate Testing

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

3.1.49 Test Requirement 4

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

3.1.49.1 Basis for Relief

The operability testing of these valves during normal operation could put the plant in an unsafe condition. Stroking these valves during power operation will lower the boron concentration of the BIT unless the valves are isolated from the operating charging pump. The charging pumps are isolated by the discharge header isolation valves which could result in the loss of the safety injection function as discussed in Relief Request 3.1.48.

3.1.49.2 Alternate Testing

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

3.1.50 Test Requirement

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

3.1.50.1 Basis for Relief

Cycling of these valves will cause pressure surges in the letdown line which can cause Letdown Orifice Relief Valve 8117 to lift.

3.1.50.2 Alternate Testing

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

3.1.51 Test Requirement

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

3.1.51.1 Basis for Relief

Cycling of these valves causes 2000 ppm borated water to be injected into the RCS from the RWST while the valve is being cycled. This results in small boron transients in the RCS.

3.1.51.2 Alternate Testing

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

3.1.52 Test Requirement

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

3.1.52.1 Basis for Relief

Cycling of these valves can cause a pressure surge in the Service Water System which results in service water automatically isolating to the Turbine Bldg. 4

3.1.52.2 Alternate Testing

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

3.1.53 Test Requirement

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

3.1.53.1 Basis for Relief

Cycling these valves can result in the automatic isolation of all service water to the turbine building on a high flow signal. With the unit at rated load, this could cause the turbine to trip and/or damage major components of the secondary systems.

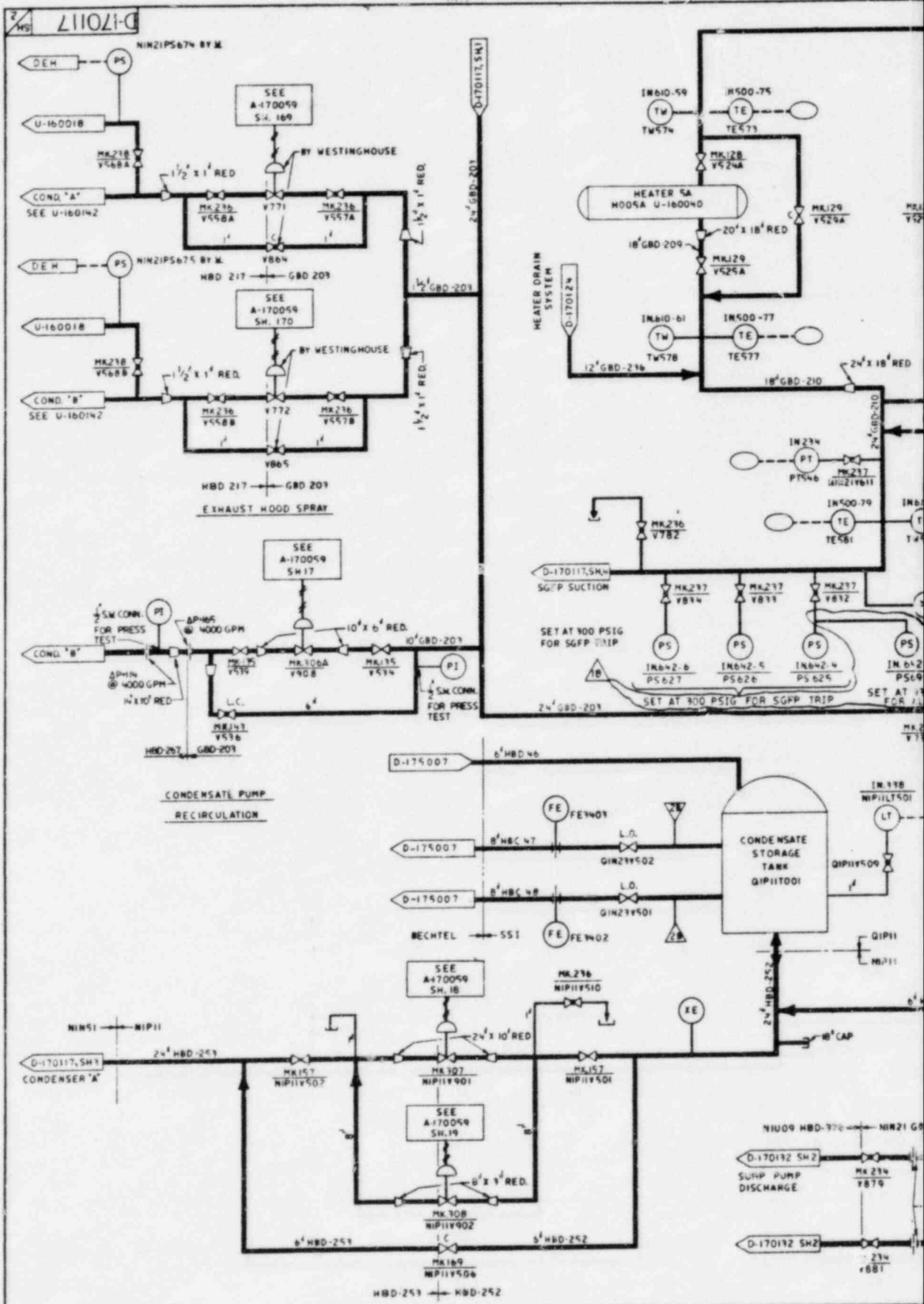
3.1.53.2 Alternate Testing

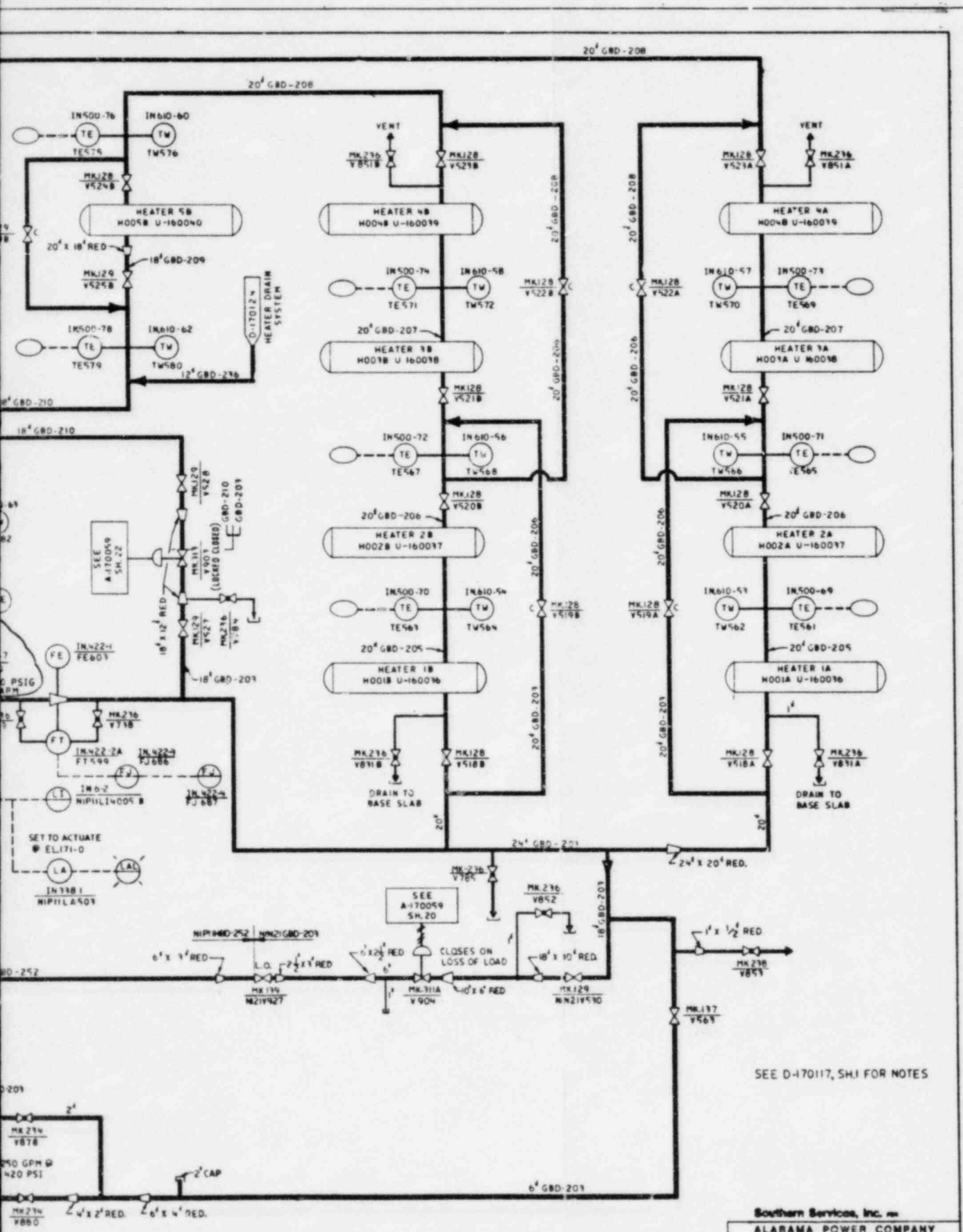
The valves will be full-stroke tested for operability at each cold shutdown.

P & IDs

Drawing Number/Sheet	Revision
D-170117/2	18
D-170119/2	12
D-170119/3	4
D-170119/7	5
D-175002/1	14
D-175002/2	12
D-175003/1	10
D-175003/2	10
D-175004/1	17
D-175007/1	13
D-175009/1	13
D-175009/2	8
D-175010/1	9
D-175010/2	5
D-175012/1	13
D-175019/1	10
D-175022/1	10
D-175033/1	14
D-175033/2	11
D-175034/1	14
D-175034/2	4
D-175034/3	2
D-175035/1	7
D-175037/2	11
D-175038/1	14
D-175038/2	10
D-175038/3	7
D-175039/1	11
D-175039/2	16
D-175041/1	9
D-175042/1	9
D-175043/1	12
D-175047/1	18
D-175073/1	7
D-205012/1	10

4


D-170117
NIN21PS674 BY W.
DEH
PS
U-160018
SEE A-170059 SH. 169
BY WESTINGHOUSE
COND. "A" SEE U-160142
NIN21PS675 BY W.
SEE A-170059 SH. 170
COND. "B" SEE U-160142
HBD 217 — GBD 209
EXHAUST HOOD SPRAY
SEE A-170059 SH 17
S.W. CONN. FOR PRESS TEST
ΔPH65 @ 4000 GPM
CONDENSATE PUMP RECIRCULATION
HBD-267
GBD-209
HEATER DRAIN SYSTEM
D-170124
HEATER 5A H005A U-160040
SGFP SUCTION
SET AT 900 PSIG FOR SGFP TRIP
D-175007
CONDENSATE STORAGE TANK Q1P11T001
BECHTEL — SSI
SEE A-170059 SH. 18
SEE A-170059 SH. 19
CONDENSER "A"
SUMP PUMP DISCHARGE
INC. PCN 5A78-048
INC. PCN 5A81-1046
REVISED PER PCR 79-419 PC
REVISED PER SM-78-2198



REVISED PER SM-1932 & SM-1939	REVISED PER SM-904 AND SM-1107 (REV 1)	ASPED DRAIN VALVE V785	REDRAWN AND UPDATED	DESIGN J SIMS CHECKED MDS APPROVED [illegible] DATE	Southern Services, Inc.

ALABAMA POWER COMPANY

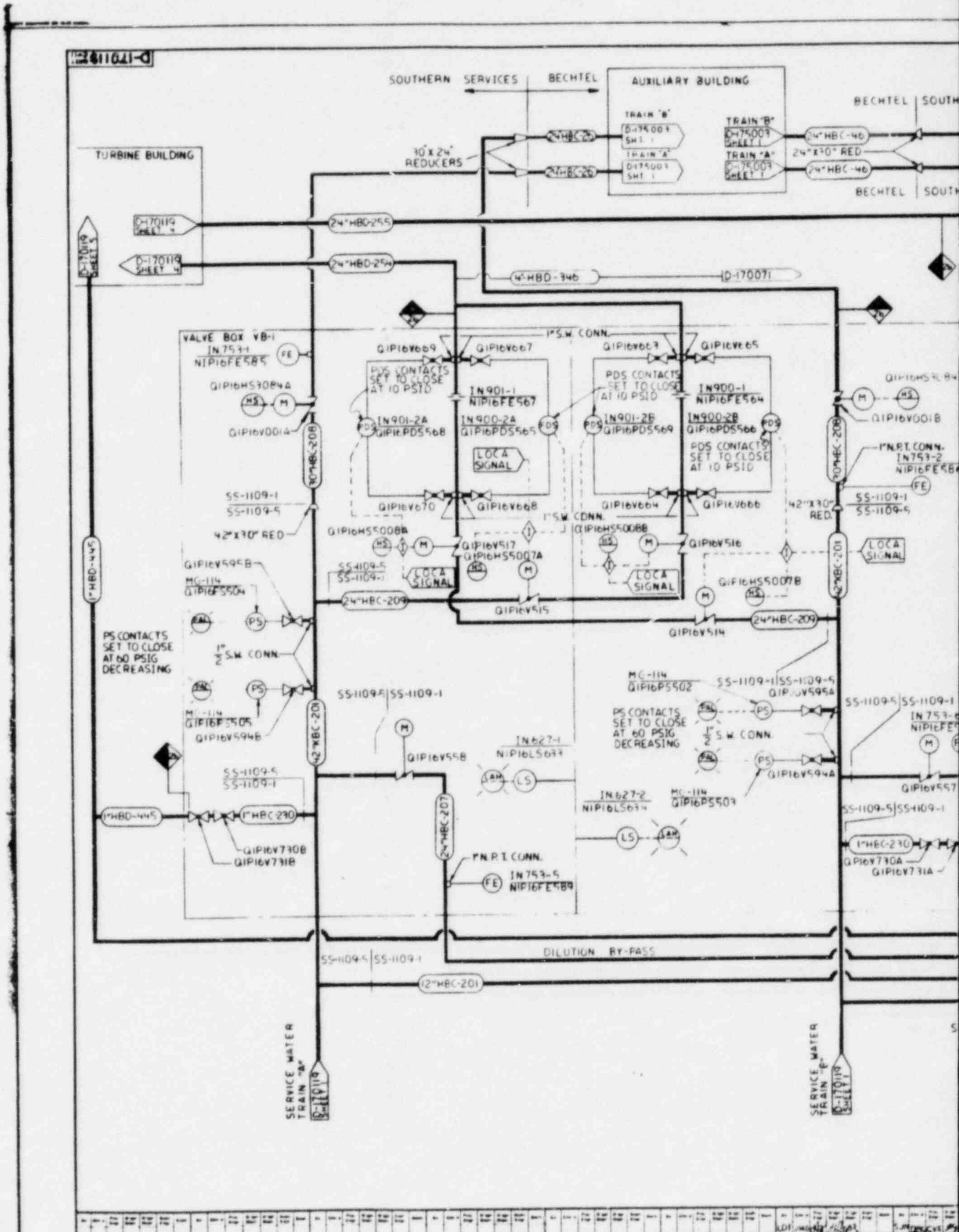
PROJECT FARLEY NUCLEAR PLANT UNIT 1

SUBJECT P&ID - CONDENSATE AND FEEDWATER SYSTEM

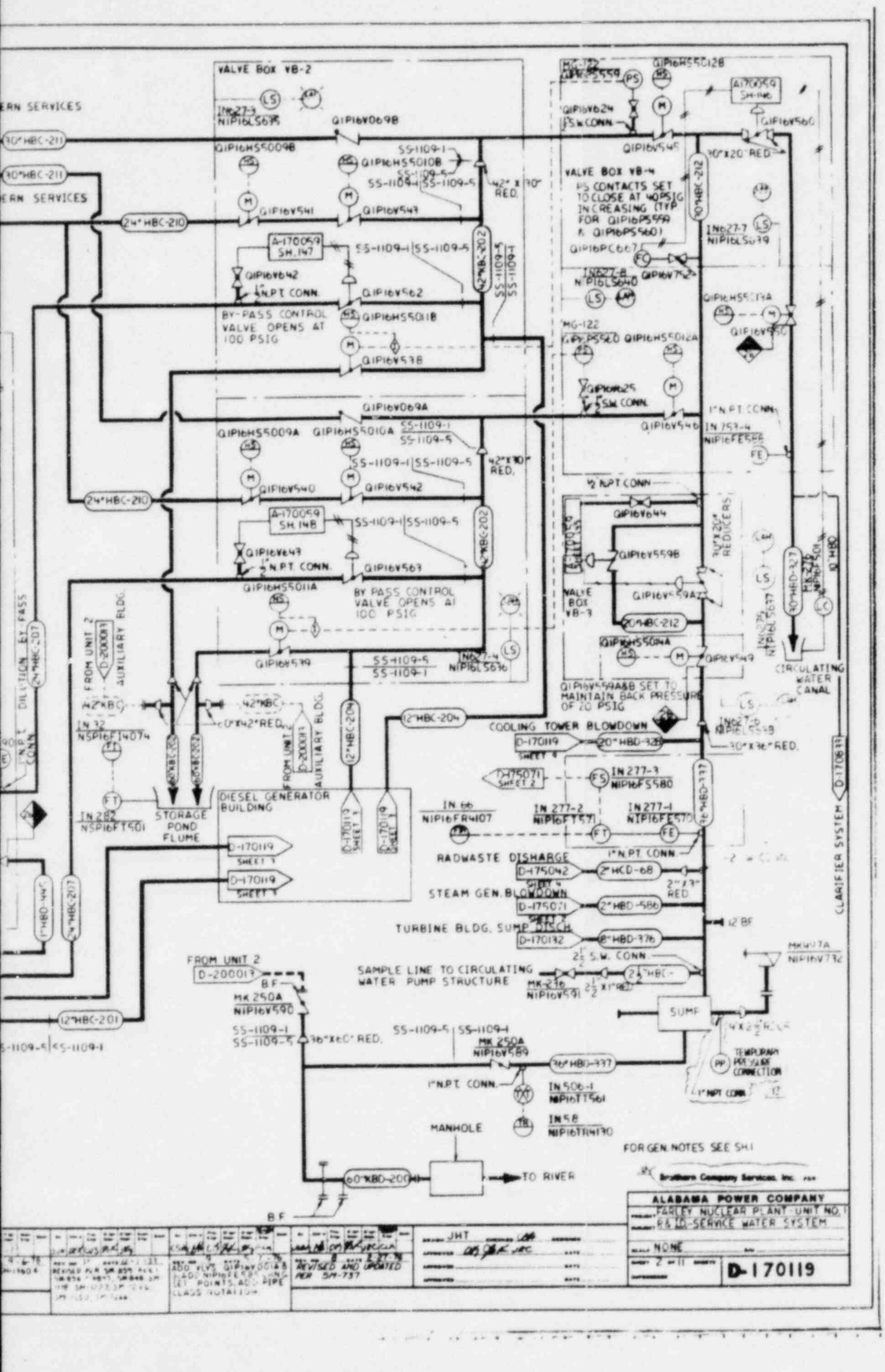
SCALE SCHEMATIC

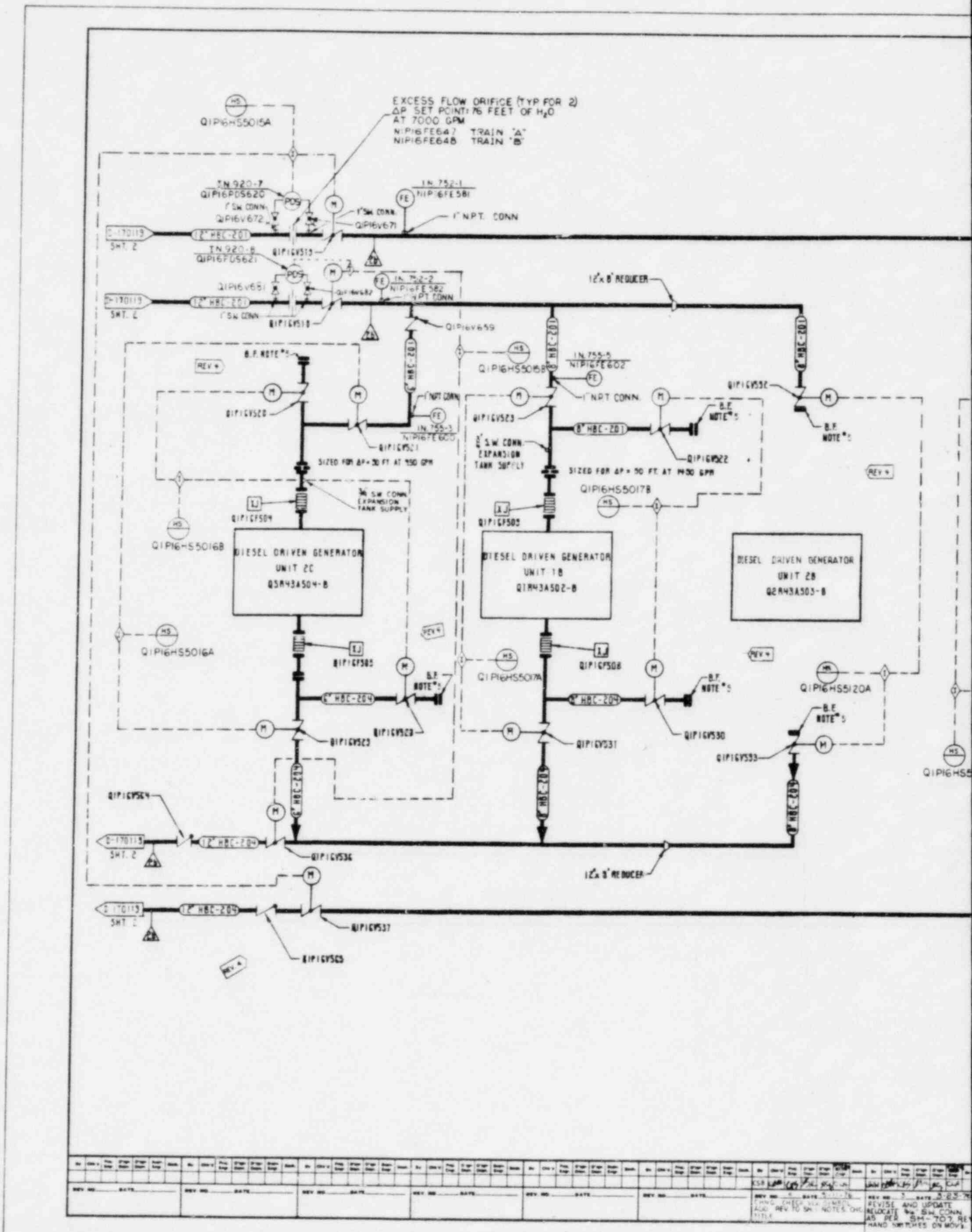
SHEET 2 OF 4 SHEETS

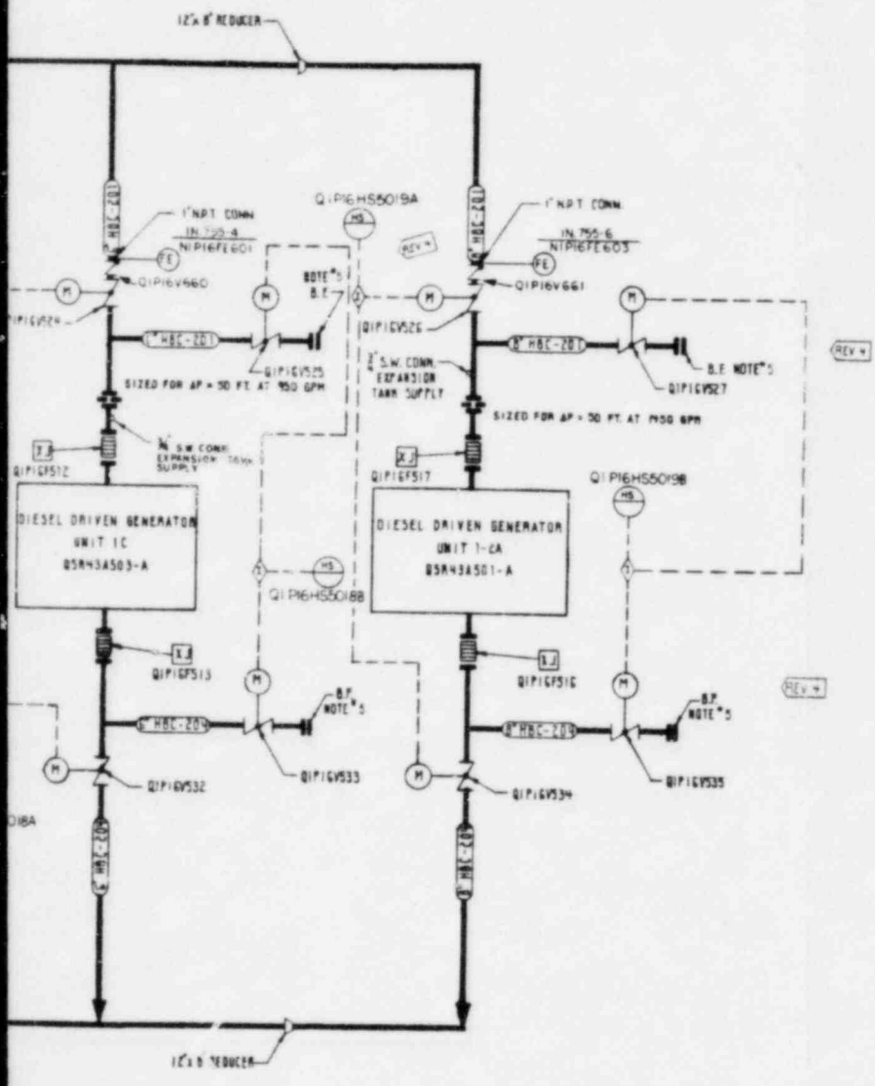
D-170117



SOUTHERN SERVICES
BECHTEL
AUXILIARY BUILDING
TURBINE BUILDING
30"X24" REDUCERS
24"HBD-255
24"HBD-254
4"-HBD-346
D-170071
D-170119 SHEET 4
D-175007 SHEET 1
TRAIN "B"
TRAIN "A"
24"HBC-46
24"X30" RED
VALVE BOX VB-1
1"S.W. CONN.
PDS CONTACTS SET TO CLOSE AT 10 PSID
LOCA SIGNAL
IN901-1
N1P16FE567
IN900-1
N1P16FE564
IN901-2A
Q1P16PDS568
IN900-2A
Q1P16PDS565
IN901-2B
Q1P16PDS569
IN900-2B
Q1P16PDS566
Q1P16V669
Q1P16V667
Q1P16V663
Q1P16V665
Q1P16V670
Q1P16V668
Q1P16V664
Q1P16V666
Q1P16V001A
Q1P16V001B
Q1P16V517
Q1P16V516
Q1P16V515
Q1P16V514
Q1P16HS5007A
Q1P16HS5007B
Q1P16HS5008B
Q1P16HS3084A
30"HBC-208
42"HBC-201
24"HBC-209
24"HBC-207
12"HBC-201
1"HBC-230
1"HBD-445
42"X30" RED
SS-1109-1
SS-1109-5
PS CONTACTS SET TO CLOSE AT 60 PSIG DECREASING
1/2" S.W. CONN.
MG-114
Q1P16PS504
Q1P16PS505
Q1P16PS502
Q1P16PS503
Q1P16V595B
Q1P16V594B
Q1P16V595A
Q1P16V594A
Q1P16V558
Q1P16V557
IN627-1
N1P16LS633
IN627-2
N1P16LS634
1"N.R.I. CONN.
IN753-1
N1P16FE585
IN753-2
IN753-5
N1P16FE589
Q1P16V730B
Q1P16V731B
Q1P16V730A
Q1P16V731A
DILUTION BY-PASS
SERVICE WATER TRAIN "A"
SERVICE WATER TRAIN "B"
D-170119 SHEET 1


VALVE BOX VB-2
VALVE BOX VB-4
VALVE BOX VB-3
PS CONTACTS SET TO CLOSE AT 40 PSIG INCREASING (TYP FOR Q1P16PS558 & Q1P16PS560)
BY-PASS CONTROL VALVE OPENS AT 100 PSIG
BY-PASS CONTROL VALVE OPENS AT 100 PSIG
Q1P16V598A&B SET TO MAINTAIN BACK PRESSURE OF 20 PSIG
COOLING TOWER BLOWDOWN
RADWASTE DISHARGE
STEAM GEN. BLOWDOWN
TURBINE BLDG. SUMP DISCH.
SAMPLE LINE TO CIRCULATING WATER PUMP STRUCTURE
DIESEL GENERATOR BUILDING
STORAGE POND FLUME
AUXILIARY BLDG.
FROM UNIT 2
CIRCULATING WATER CANAL
CLARIFIER SYSTEM
SUMP
MANHOLE
TO RIVER
FOR GEN. NOTES SEE SH.1
Brothers Company Services, Inc.
ALABAMA POWER COMPANY
FARLEY NUCLEAR PLANT - UNIT NO. 1
R & D-SERVICE WATER SYSTEM
NONE
D-170119
REVISED AND UPDATED PER SM-737


EXCESS FLOW ORIFICE (TYP FOR 2)
ΔP SET POINT: 76 FEET OF H2O
AT 7000 GPM
NIPI6FE647 TRAIN "A"
NIPI6FE648 TRAIN "B"
QIPI6HS5015A
QIPI6PDS620
QIPI6V672
QIPI6V671
1" N.P.T. CONN
NIPI6FE581
12" HBC-201
SHT. 2
QIPI6PDS621
QIPI6V651
QIPI6V659
12" x 8" REDUCER
QIPI6HS5015B
NIPI6FE602
1" N.P.T. CONN.
SIZED FOR ΔP = 50 FT AT 950 GPM
SIZED FOR ΔP = 50 FT AT 1950 GPM
QIPI6HS5017B
QIPI6HS5016B
DIESEL DRIVEN GENERATOR
UNIT 2C
Q3R43A504-B
DIESEL DRIVEN GENERATOR
UNIT 1B
Q1R43A502-B
DIESEL DRIVEN GENERATOR
UNIT 2B
Q2R43A503-B
QIPI6HS5016A
QIPI6HS5017A
QIPI6HS5120A
12" HBC-204
12" x 8" REDUCER
REV 4
REVISE AND UPDATE
RELOCATE 3/4" SW CONN
AS PER SH-707 REV
HAND SWITCHES ON MOV'S



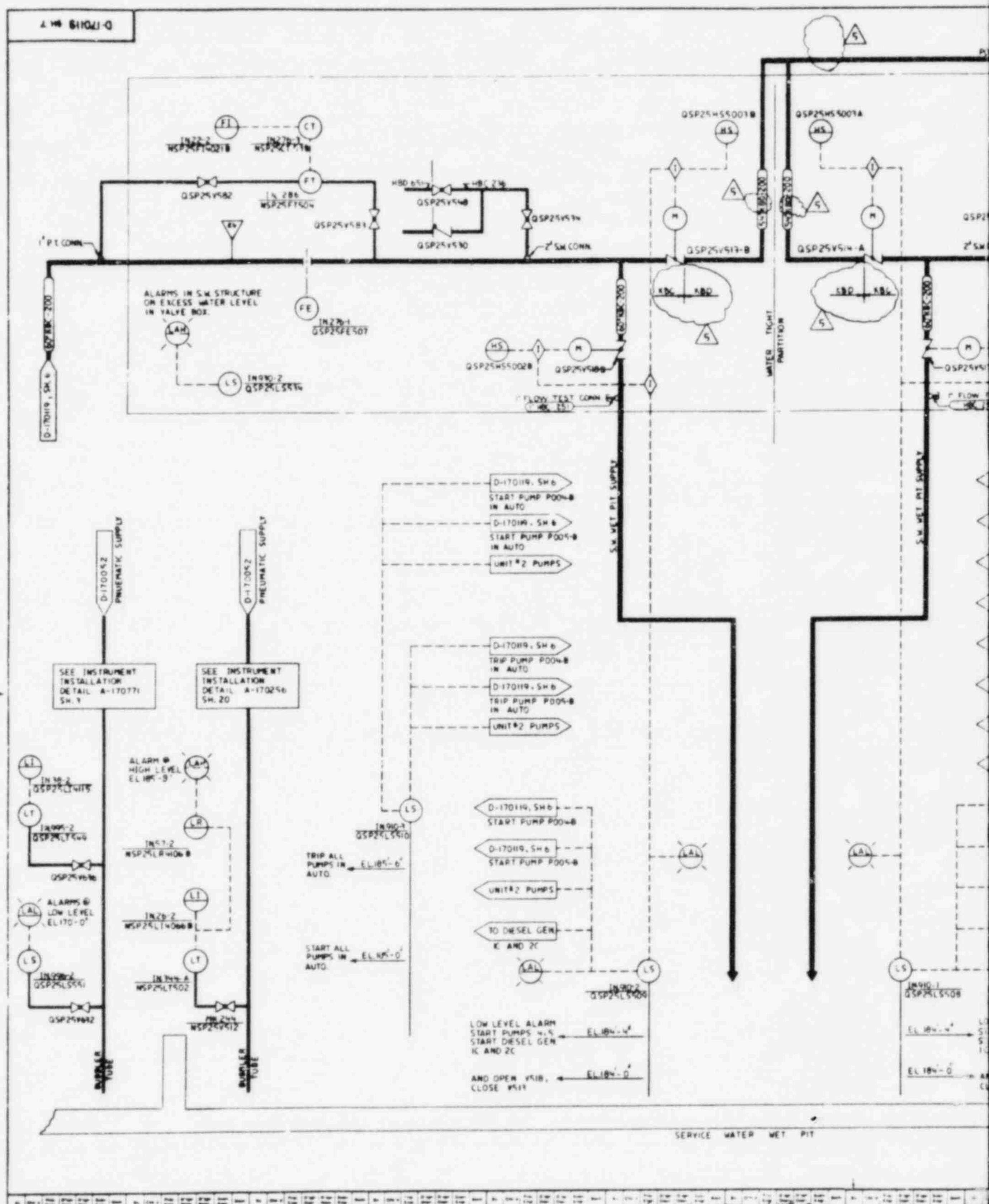
SERVICE WATER SYSTEM
DIESEL GENERATION BLDG.

SOUTHERN SERVICES, INC.

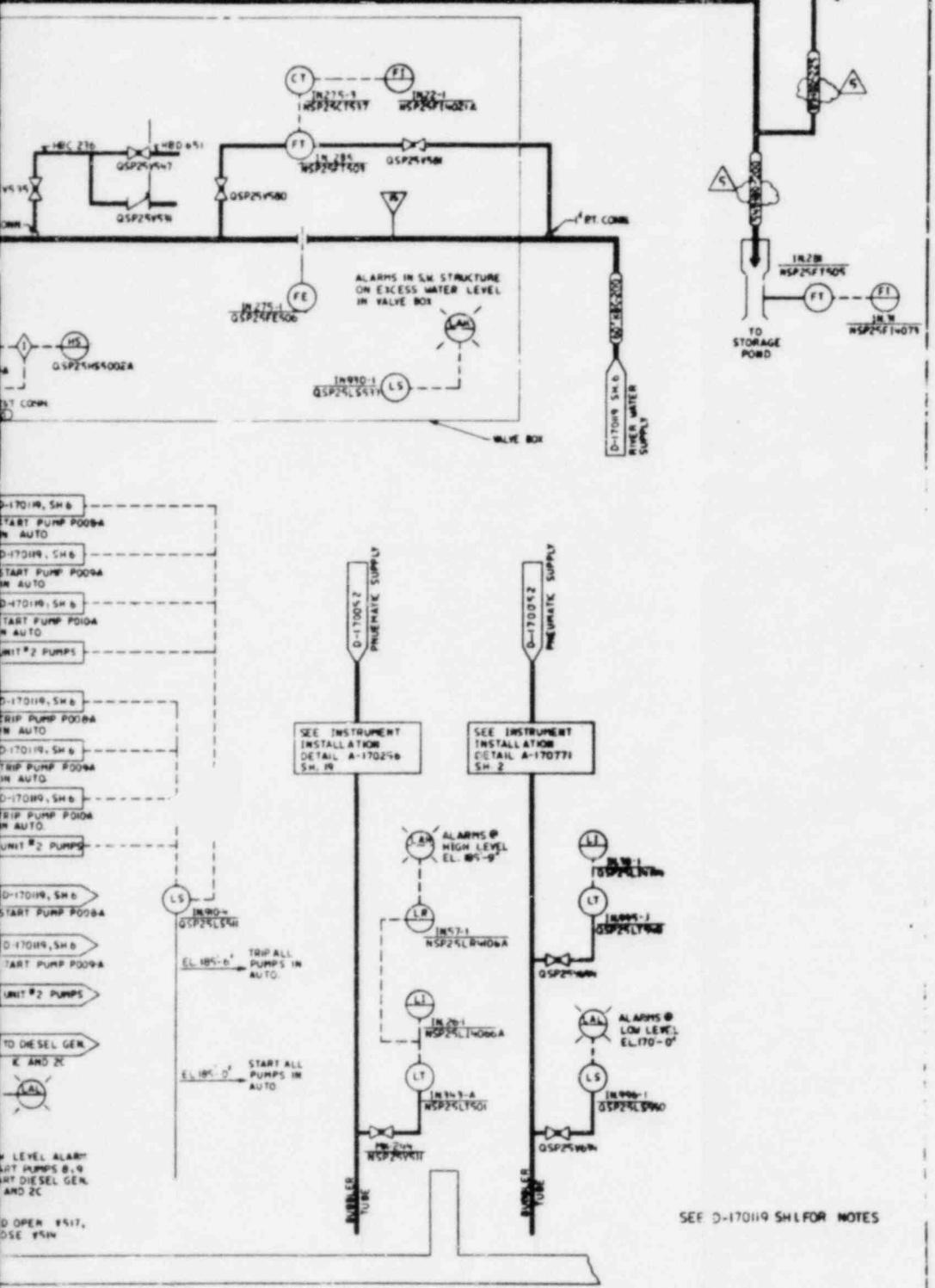
ALABAMA POWER COMPANY

FARLEY NUCLEAR PLANT - UNIT NO. 1

D-170119



D-170119 SH 7
QSP25HS5001B
QSP25HS5001A
QSP25V582
QSP25V583
QSP25V548
QSP25V530
QSP25V534
1" P.T. CONN.
2" S.W. CONN.
QSP25V519-B
QSP25V514-A
ALARMS IN S.W. STRUCTURE ON EXCESS WATER LEVEL IN VALVE BOX.
WATER TIGHT PARTITION
QSP25HS5002B
FLOW TEST CONN
S.W. WET PIT SUPPLY
D-170119, SH 6
START PUMP P004-B IN AUTO
START PUMP P005-B IN AUTO
UNIT #2 PUMPS
TRIP PUMP P004-B IN AUTO
TRIP PUMP P005-B IN AUTO
D-170052 PNEUMATIC SUPPLY
SEE INSTRUMENT INSTALLATION DETAIL A-170771 SH. 7
SEE INSTRUMENT INSTALLATION DETAIL A-170256 SH. 20
ALARM @ HIGH LEVEL EL 185'-9"
ALARMS @ LOW LEVEL EL 170'-0"
TRIP ALL PUMPS IN AUTO.
START ALL PUMPS IN AUTO.
START PUMP P004-B
START PUMP P005-B
TO DIESEL GEN 1C AND 2C
LOW LEVEL ALARM START PUMPS 4,5 START DIESEL GEN 1C AND 2C
AND OPEN V518, CLOSE V519
BUBBLER TUBE
SERVICE WATER WET PIT
REVISED PER PCN S-82-1292
REVISED PER PCN SAF 80 854



	REVISED TPNS FOR IN930-1 & 2. DELETED ALARM ON IN910-1 & 2 AT EL 180'-0" AS SHOWN ON IN939-1 & 2	ISSUED FOR APPROVAL	

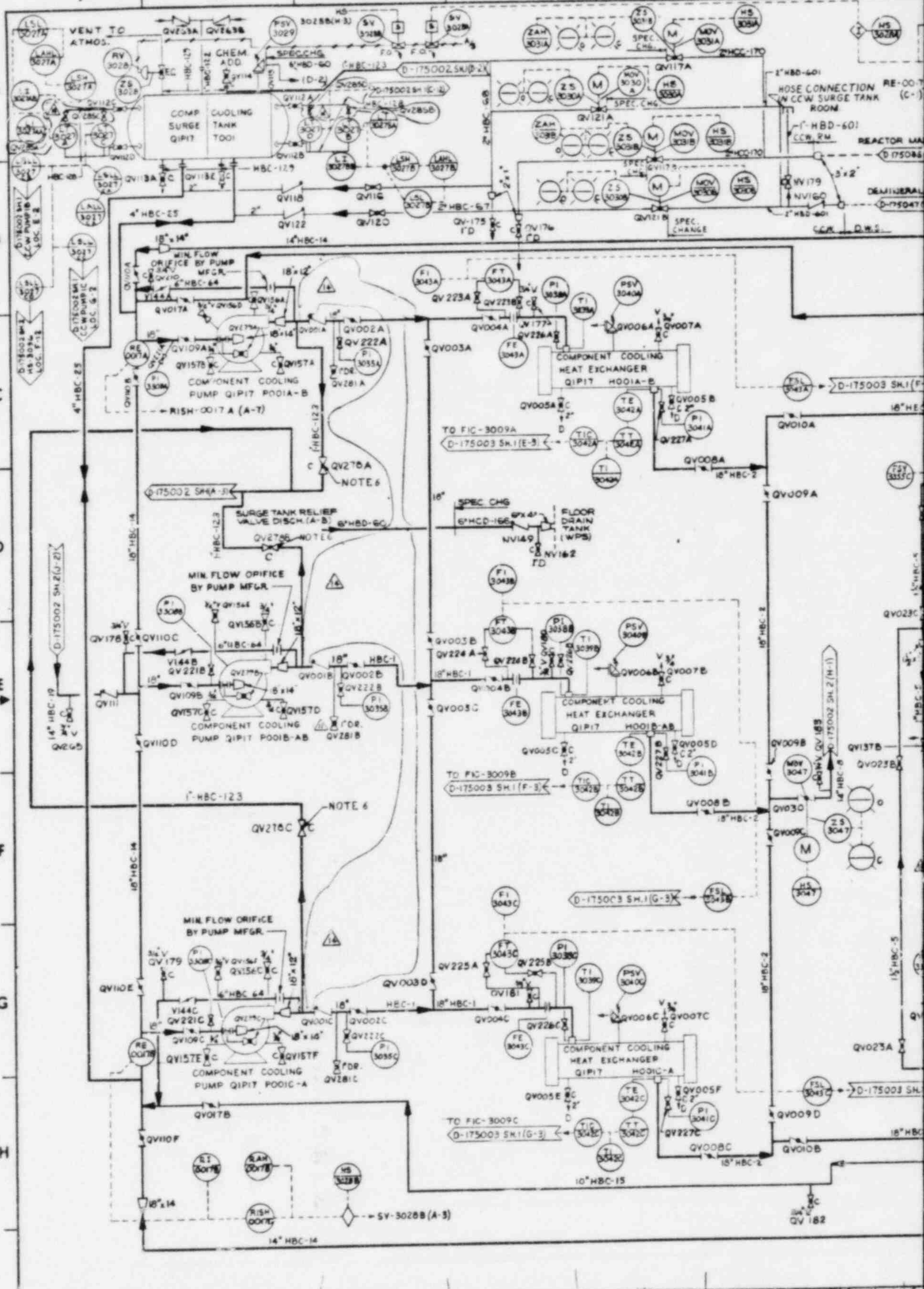
Southern Services, Inc.

ALABAMA POWER COMPANY

FARLEY NUCLEAR PLANT UNIT 1

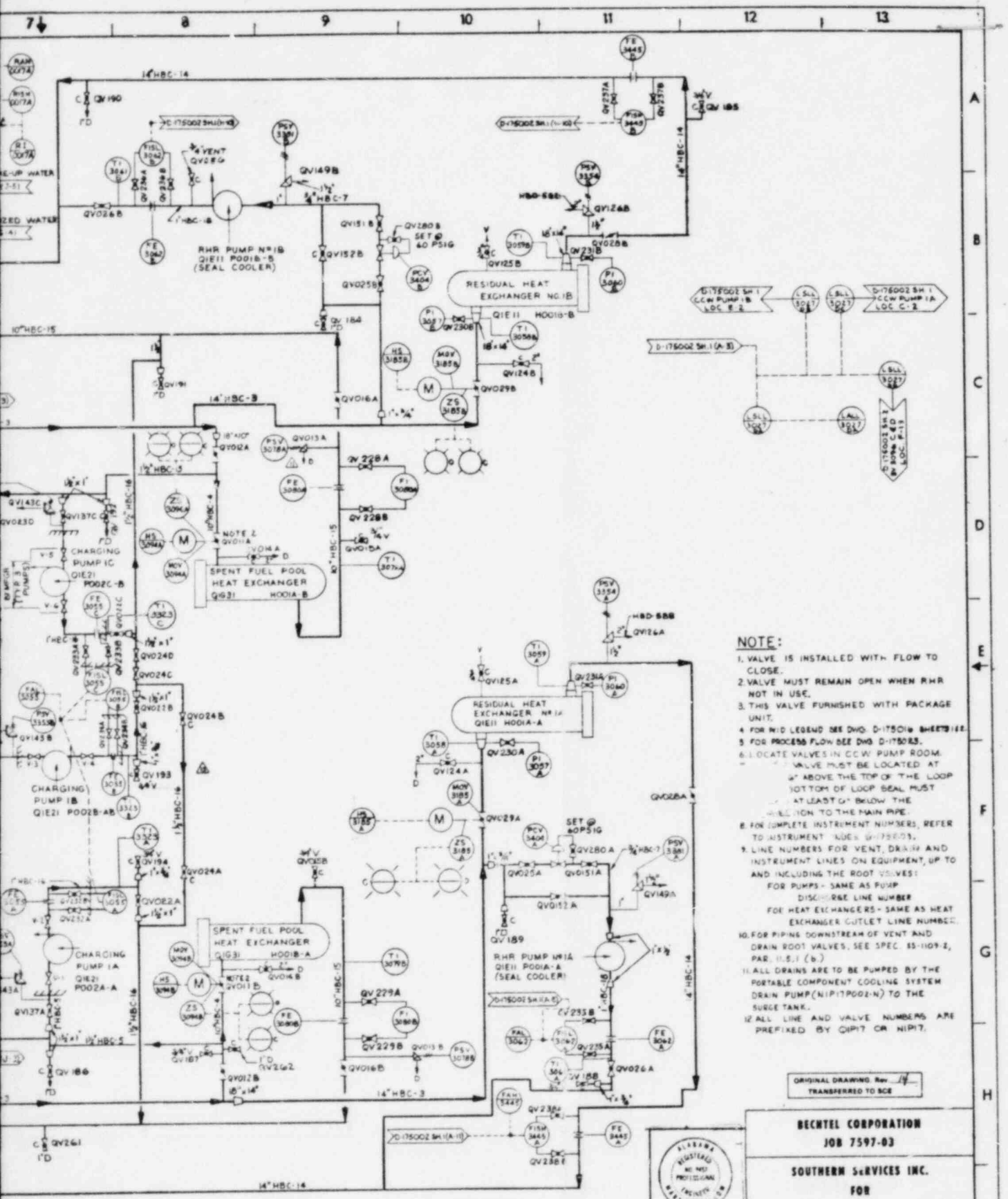
P&ID - RIVER WATER SYSTEM

D-170119



REV. 10 10-24-75	REV. 9 7-1-76	REV 8 10-20-74	REV. 7 7-30-74	REV. 6 5-2-74	REV. 5 2-25-74	REV. 14
INC. BM-1318 & 1424. ADDED NOTES 9, 10 & 11.	INC. BM-1167, 1202, 1291. ADD VENTS QV156 D, E, F, & AS SHOWN	ADD NOTE 7, VALVE QV005, "C" ON VENT & DRAINS AND REVISED AS CIRCLED	ADDED PIPING, VALVES, AND REVISED AS CIRCLED	ADDED DRAINS & REV. VAC. BKR. AND REVISED AS CIRCLED.	REVISED AS CIRCLED	INC. BM-2479 & B-PCN-78-183

1 2 3 4 5 6



NOTE:

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. FOR P&ID LEGEND SEE DWG. D-175010 SHEETS 1&2.
5. FOR PROCESS FLOW SEE DWG. D-175083.
6. LOCATE VALVES IN CCW PUMP ROOM.
   - VALVE MUST BE LOCATED AT 4" ABOVE THE TOP OF THE LOOP SEAL BOTTOM OF LOOP SEAL MUST BE AT LEAST 6" BELOW THE CONNECTION TO THE MAIN PIPE.
8. FOR COMPLETE INSTRUMENT NUMBERS, REFER TO INSTRUMENT INDEX D-175003.
9. 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.
10. FOR PIPING DOWNSTREAM OF VENT AND DRAIN ROOT VALVES, SEE SPEC. SS-1109-2, PAR. 11.5.1 (b.)
11. ALL DRAINS ARE TO BE PUMPED BY THE PORTABLE COMPONENT COOLING SYSTEM DRAIN PUMP(N1P17P002-N) TO THE SURGE TANK.
12. ALL LINE AND VALVE NUMBERS ARE PREFIXED BY G1P17 OR N1P17.

ORIGINAL DRAWING Rev. 14
TRANSFERRED TO SCE

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

P & I DIAGRAM - COMPONENT COOLING WATER SYSTEM

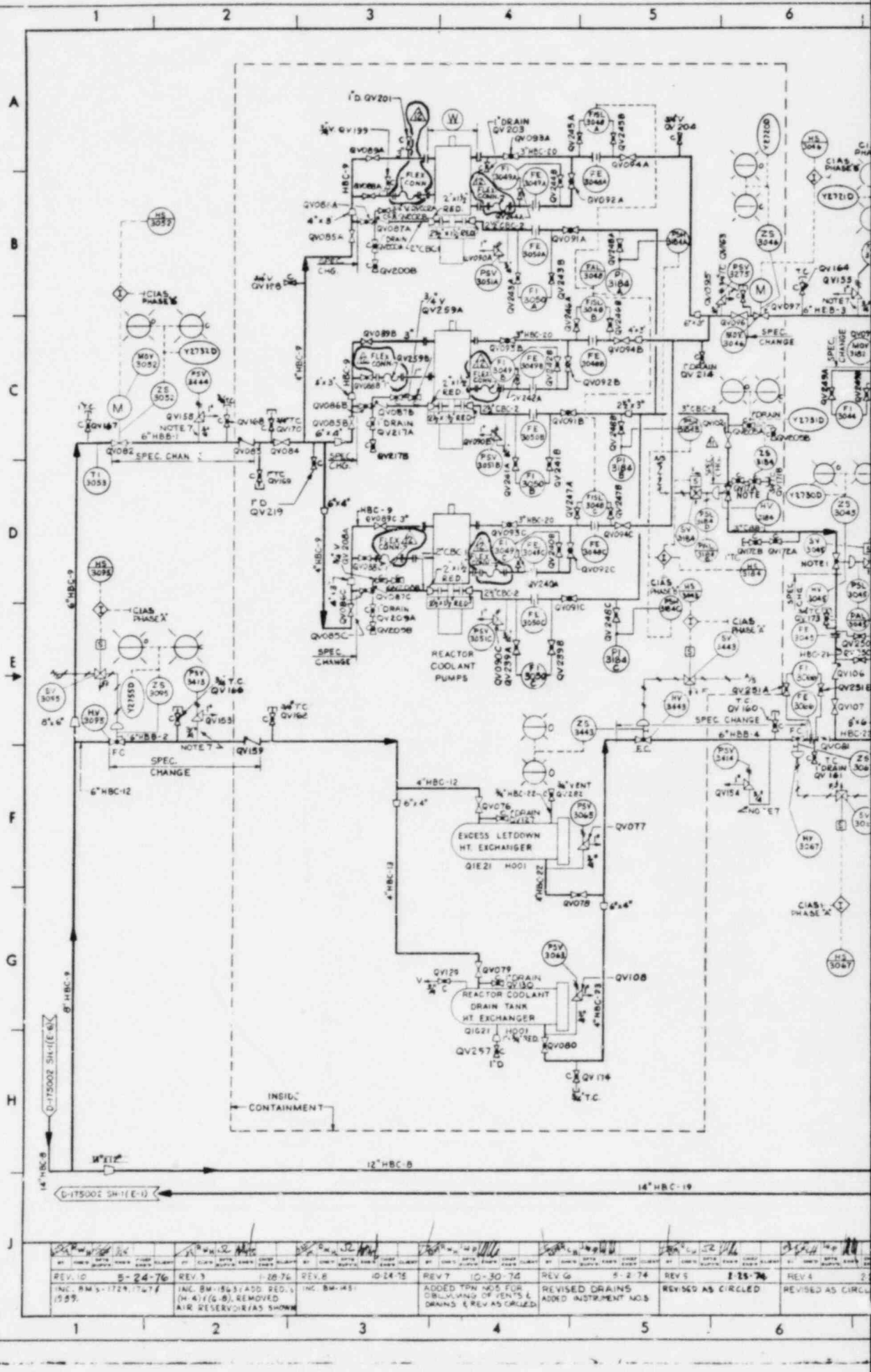
SCALE NO SCALE

DRAWN D.L.B. TRACED N.S. 1/9/74
APPROVED W. Wallace 1/9/74
APPROVED DATE
APPROVED DATE
APPROVED DATE

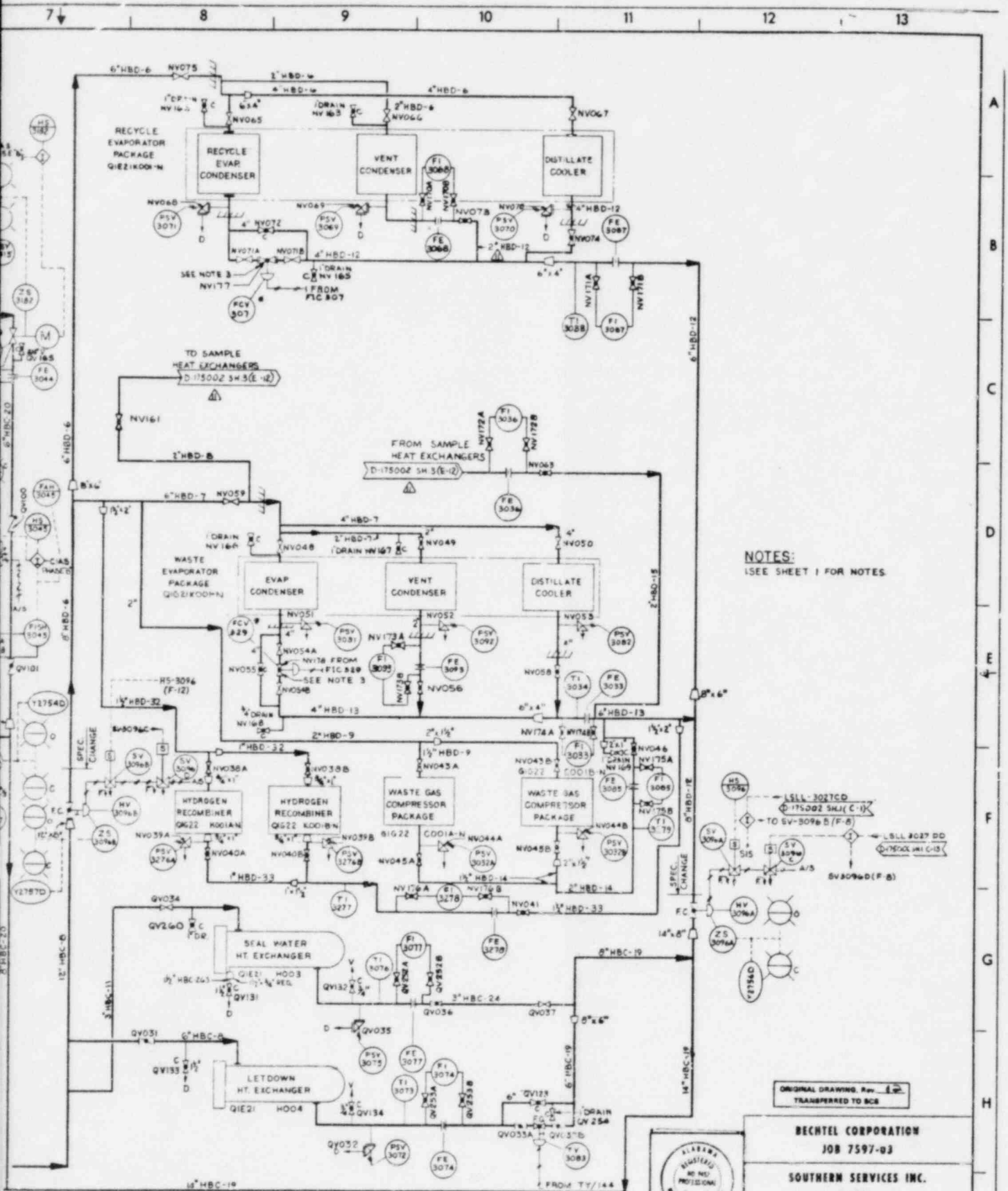
SHEET 1 OF 3 SHEETS

D-175002 REV. 14

REV.	DESCRIPTION
REV. 13 9-29-76	INC. BM-1951 AND ADDED SHEET 3.
REV. 12 5-24-76	INC. BM-1703 & 1955 AND REVISED AS SHOWN.
REV. 11 1-28-76	REV. VALVE (C-1), SFPHX DRAINS & ADDED DRAINS QV181-A,B,C
REV. 0 1-15-72	ISSUED FOR ENGINEERING



REV. 10 5-24-76	REV. 9 1-28-76	REV. 8 10-24-75	REV. 7 10-30-75	REV. 6 5-2-74	REV. 5 2-25-76	REV. 4 2-
INC. BM's-1729, 1747 & 1599.	INC. BM-1843 (ADD RED.'s (H-4) (G-8), REMOVED AIR RESERVOIR AS SHOWN	INC. BM-1451	ADDED TPN NOS. FOR DRAWING OF VENTS & DRAINS & REV AS CIRCLED	REVISED DRAINS ADDED INSTRUMENT NOS	REVISED AS CIRCLED	REVISED AS CIRCL



REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
3	ADDED LINE NOS. ON WDS COMPRESS 045, CHANGED VALVE #'S E-10 & B-10				10-17-72
12	INC. PCN 8-79-482-10				5-9-82
11	INC. BM-1925 REV. 1, BM-1995 (ADDED SHT. 3.				9-28-76
0	ISSUED FOR ENGINEERING				11-3-75

ORIGINAL DRAWING, Rev. 12 TRANSFERRED TO SCS

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

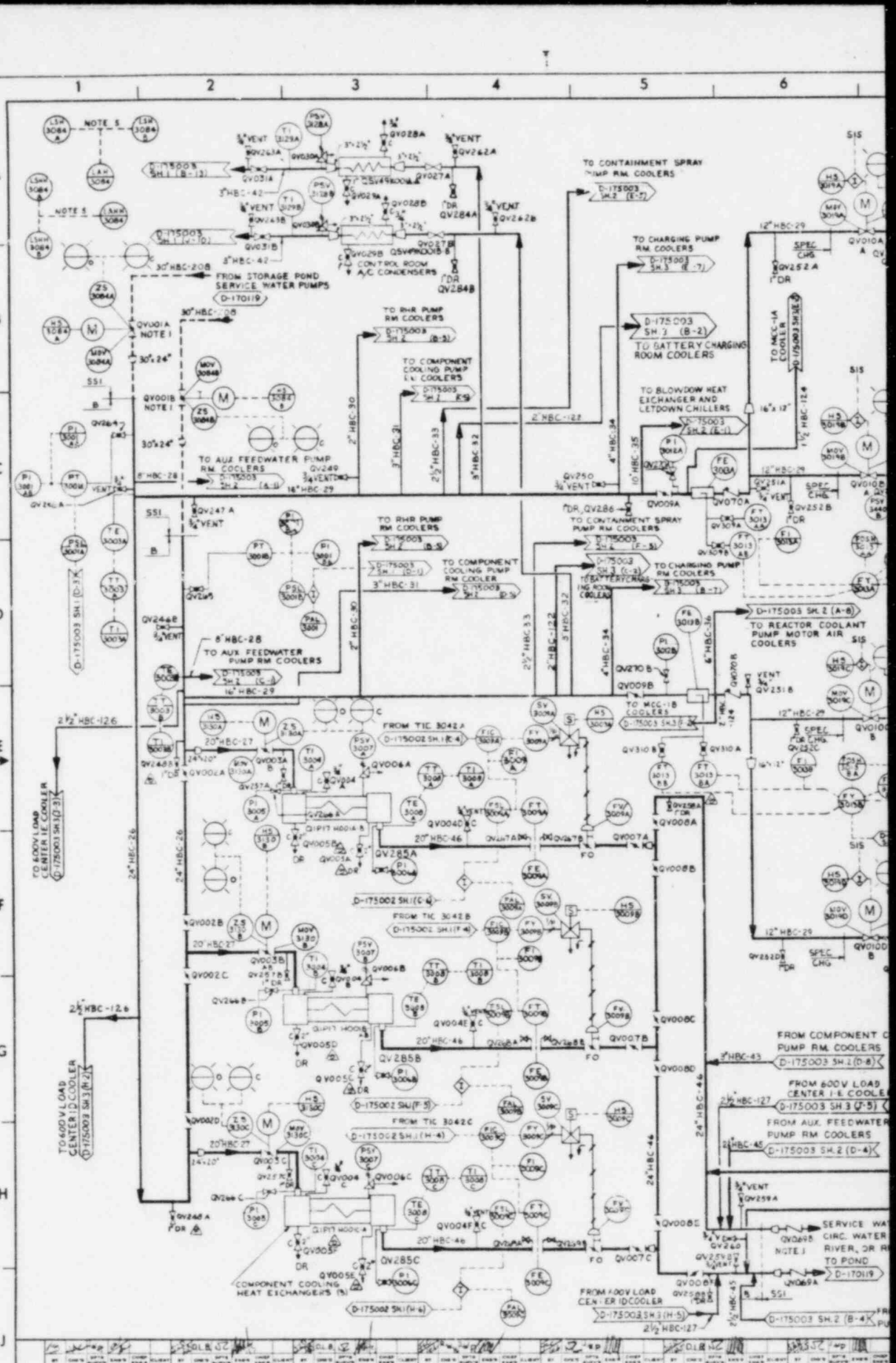
P&I DIAGRAM - COMPONENT COOLING WATER SYSTEM

SCALE NO SCALE

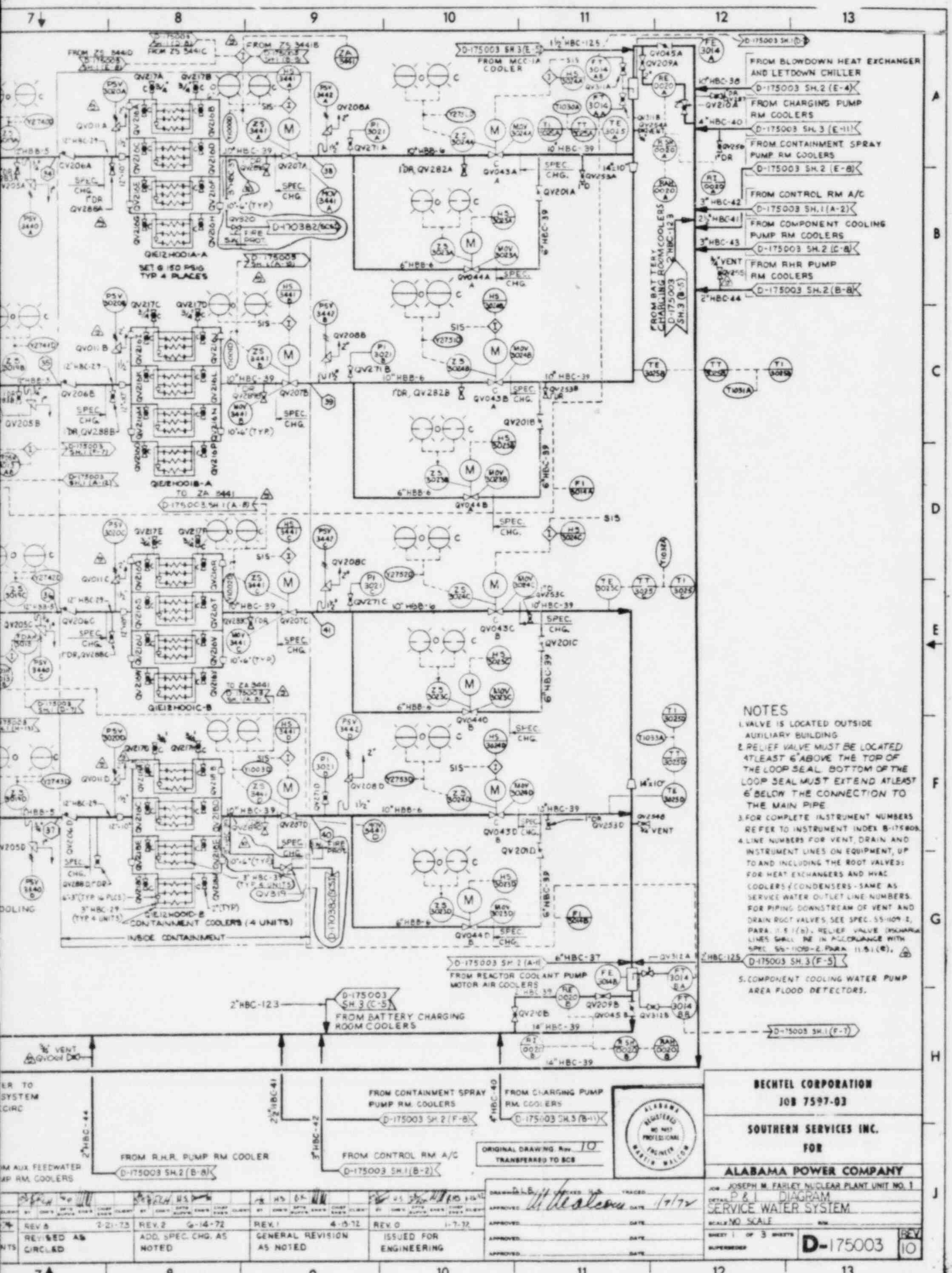
SHEET 2 OF 3 SHEETS

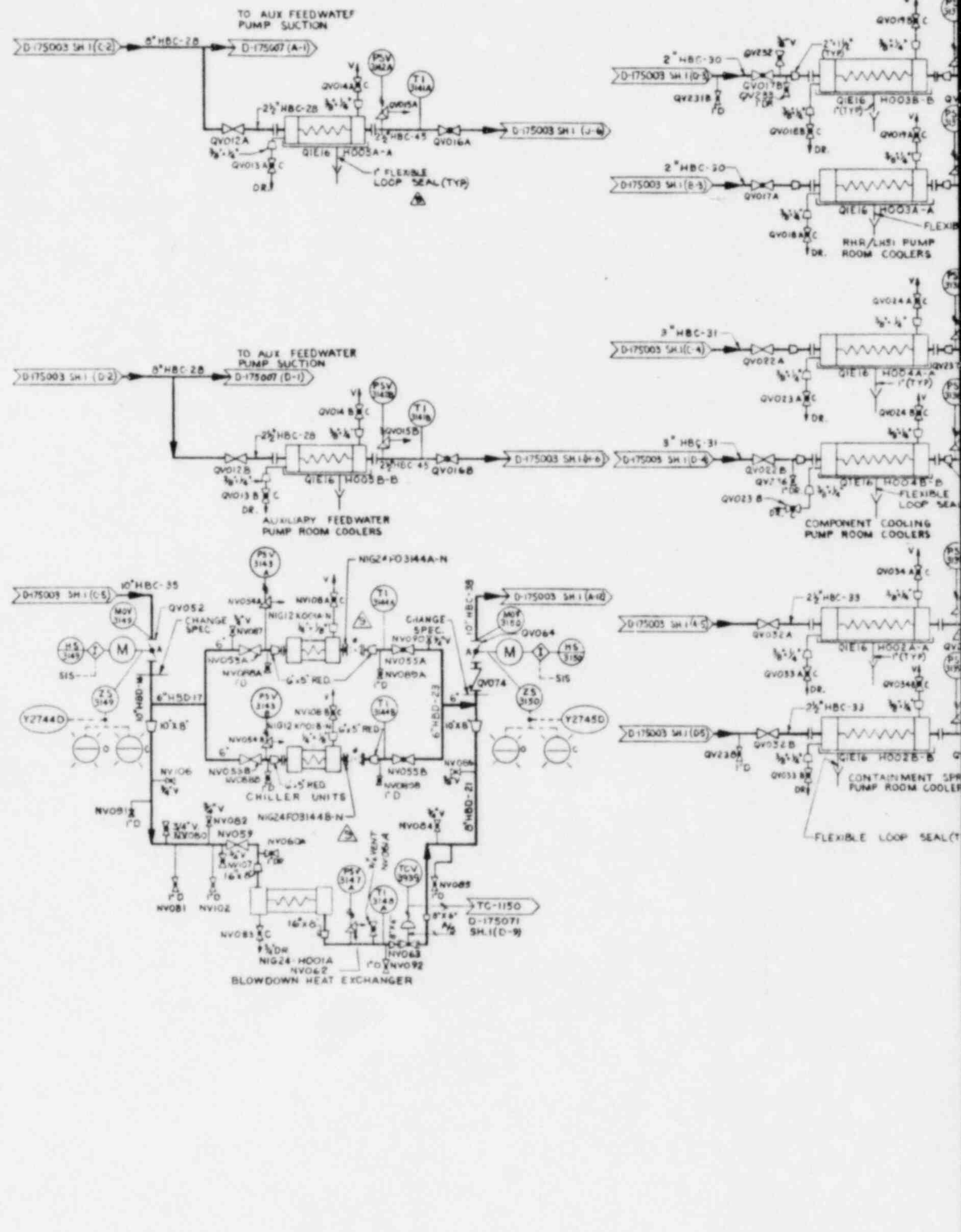
SUPERSEDES

D-175002 REV 12

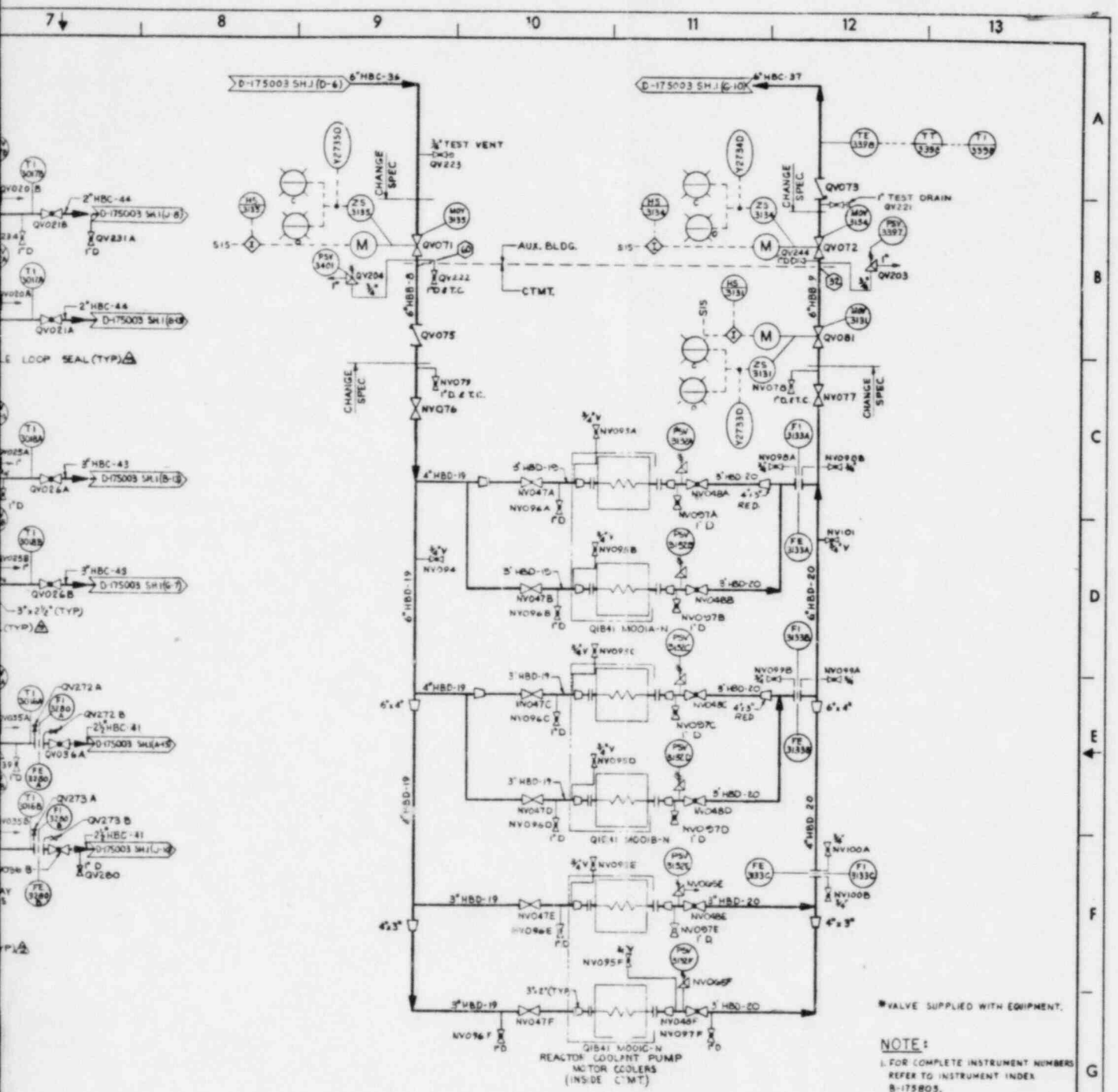


REV.	DESCRIPTION
10	INC. BM-3084 REV. 2.
9	INC. BM-1316, BM-2013, BM-2065, BM-2068, BM-2069, BM-2070, BM-4018, AND BM-2126.
8	INC. BM-1503 REV. 1, ADDED NOTES 4 & 5 AND REVISED PER PHYSICAL
7	INC. BM-1299 REV. 1
6	INC. BM-1064, 1242, ADD. NOTE 3, AS SHOWN.
5	ADDED PIPING AND DRAINS & AS CIRCLED & ADDED NOTE 2
4	REV AS CIRCLED ADDED PIPING & DRAINS


NOTES
1. VALVE IS LOCATED OUTSIDE AUXILIARY BUILDING
2. RELIEF VALVE MUST BE LOCATED ATLEAST 6" ABOVE THE TOP OF THE LOOP SEAL. BOTTOM OF THE LOOP SEAL MUST EXTEND ATLEAST 6" BELOW THE CONNECTION TO THE MAIN PIPE.
3. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-175805.
4. LINE NUMBERS FOR VENT, DRAIN AND INSTRUMENT LINES ON EQUIPMENT, UP TO AND INCLUDING THE ROOT VALVES: FOR HEAT EXCHANGERS AND HVAC COOLERS & CONDENSERS - SAME AS SERVICE WATER OUTLET LINE NUMBERS. FOR PIPING DOWNSTREAM OF VENT AND DRAIN ROOT VALVES, SEE SPEC. SS-1109-2, PARA. 11.5.1(b). RELIEF VALVE DISCHARGE LINES SHALL BE IN ACCORDANCE WITH SPEC. SS-1109-2, PARA. 11.5.1(e).
5. COMPONENT COOLING WATER PUMP AREA FLOOD DETECTORS.
FROM BLOWDOWN HEAT EXCHANGER AND LETDOWN CHILLER
FROM CHARGING PUMP RM COOLERS
FROM CONTAINMENT SPRAY PUMP RM COOLERS
FROM CONTROL RM A/C
FROM COMPONENT COOLING PUMP RM COOLERS
FROM RHR PUMP RM COOLERS
FROM BATTERY CHARGING ROOM COOLERS
FROM REACTOR COOLANT PUMP MOTOR AIR COOLERS
FROM R.H.R. PUMP RM COOLER
CONTAINMENT COOLERS (4 UNITS)
INSIDE CONTAINMENT
ORIGINAL DRAWING Rev. 10 TRANSFERRED TO BCB
BECHTEL CORPORATION
JOB 7597-03
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P & I DIAGRAM
SERVICE WATER SYSTEM
SCALE NO SCALE
SHEET 1 OF 3 SHEETS
D-175003
REV 10
REV. 8 2-21-73 REVISED AS CIRCLED
REV. 2 6-14-72 ADD. SPEC. CHG. AS NOTED
REV. 1 4-15-72 GENERAL REVISION AS NOTED
REV. 0 1-7-72 ISSUED FOR ENGINEERING



REV. 10 1-28-82	REV. 9 6-10-77	REV. 8 10-27-76	REV. 7 4-25-76	REV. 6 6-26-75	REV. 5 10-14-74	REV. 4
BM-1777 WAS INC. IN REV. 7 BUT NOT LISTED IN REVISION BLOCK	INC. BM-2320 ON REV-B. INC. BM-2661 REV-E I BM-2767 REV. 1.	ADDED FLG. CONN. TO COOLING COILS & CHILLER UNITS ADDED VALVE NOS.	INC. RCI M-772, BM-1797 REMOVED WALL SYMBOLS, RELOCATED COOLERS ON SH. 3.	INC. BM-1109, ADD. NOTE 1, ADD. VALVE NO'S. AS SHOWN.	REVISED VALVE NUMBERS	DELETED ONE BLOW[...] HEAT EXCH. ADDED PIPING VENTS & DR[...]



*VALVE SUPPLIED WITH EQUIPMENT.

NOTE:
1. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-175805.

ORIGINAL DRAWING, Rev. 10
TRANSFERRED TO SCR

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

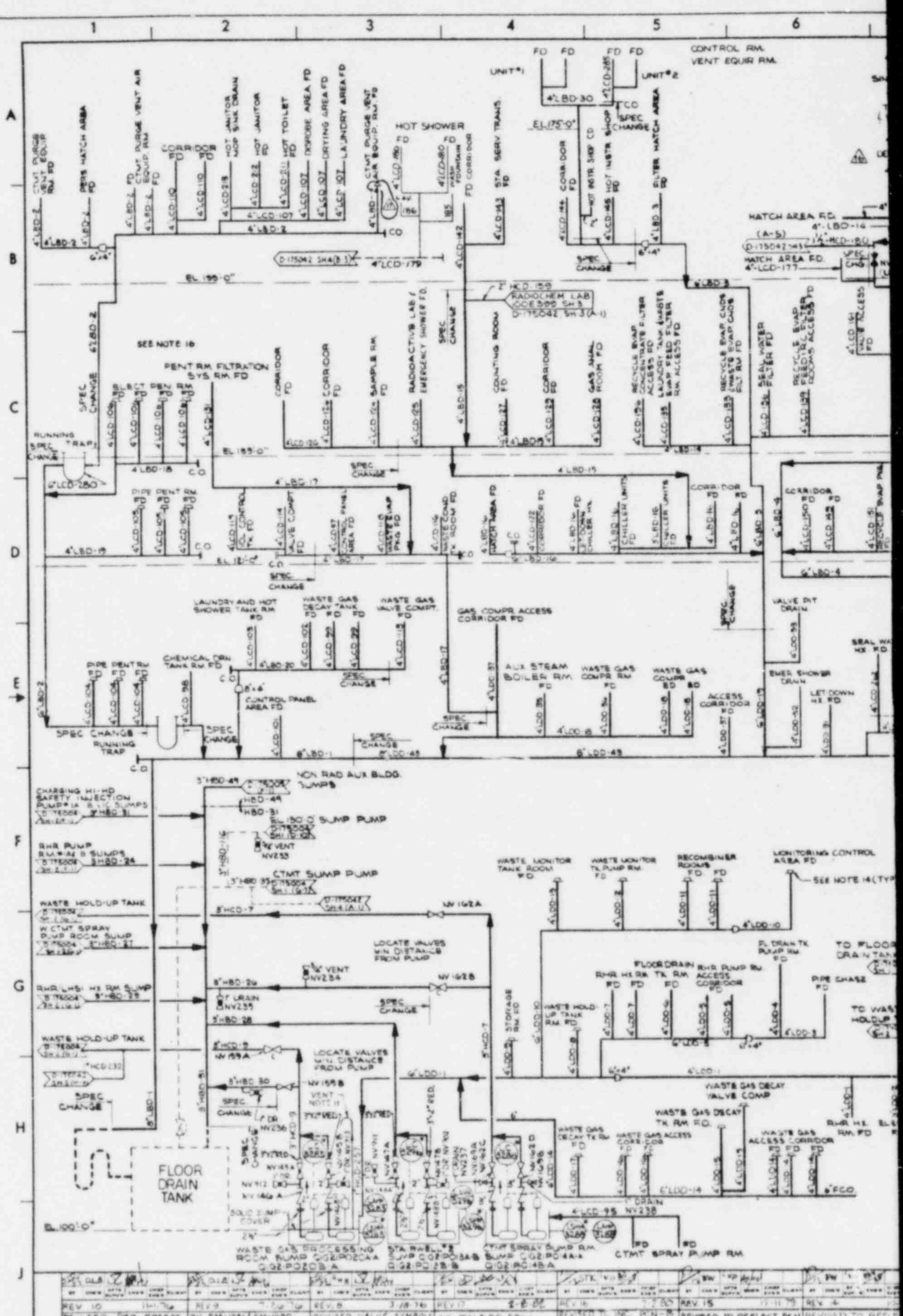
DETAIL: P&I DIAGRAM
SERVICE WATER SYSTEM

SCALE: NONE

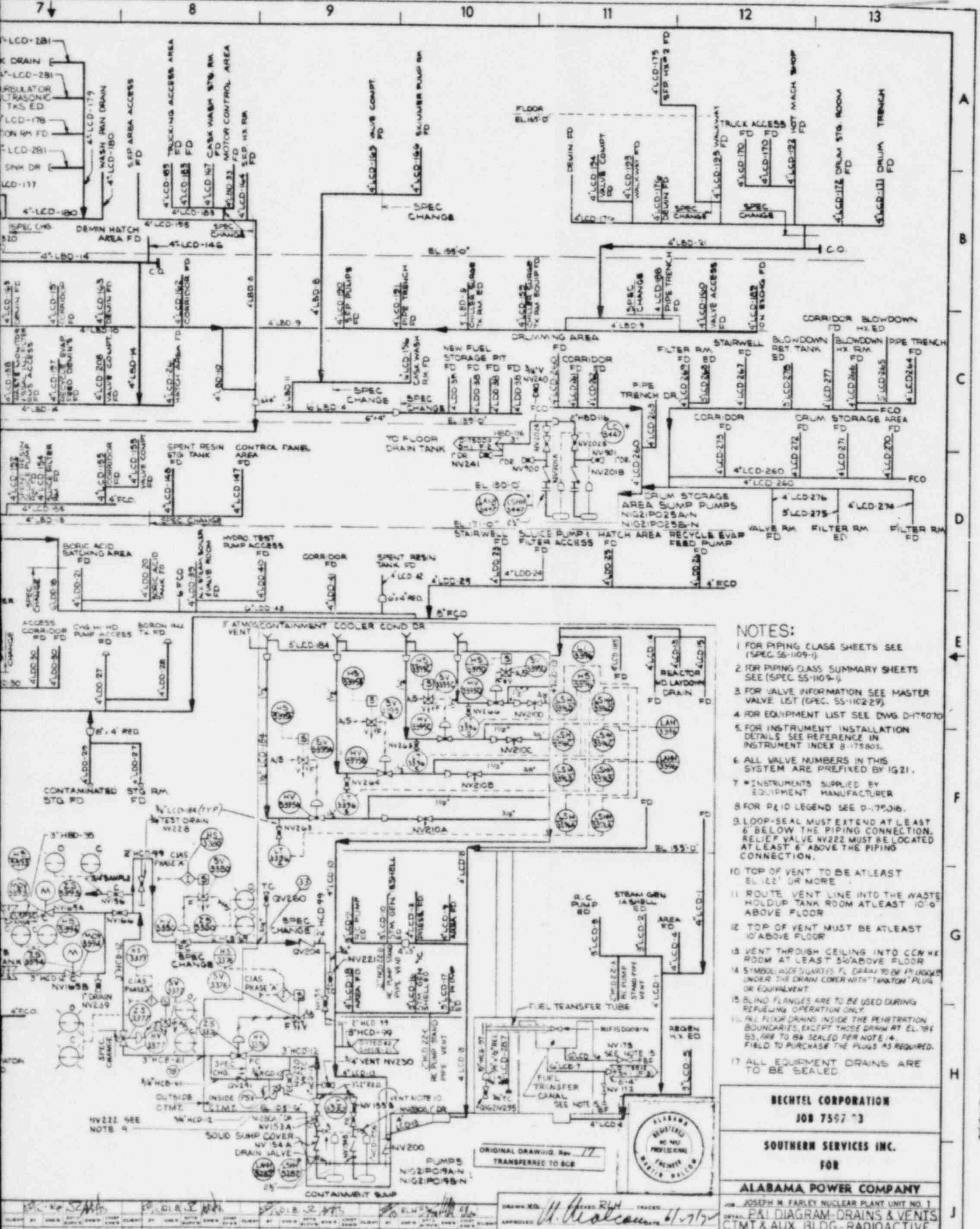
SHEET 2 OF 3 SHEETS
SUPERSEDES

D-175003 REV. 10

REV.	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
REV. 3	REV. AS CIRCLED & DELETED AUX. FDW. PUMP CONNS. AT C-2 & D-4				2-21-73
REV. 2	REV. AS NOTED				6-14-72
REV. 1	GENERAL REVISION AS NOTED				4-19-72
REV. 0	ISSUED FOR ENGINEERING	D.L.B.	M.S.	H. Wolcow	1-7-72



CONTROL RM. VENT EQUIR RM.
UNIT #1
UNIT #2
HOT SHOWER
EL. 195'-0"
SEE NOTE 16
PENT RM FILTRATION SYS RM FD
RADIOCHEM LAB
RUNNING TRAP
SPEC CHANGE
HATCH AREA FD
CORRIDOR FD
PIPE PENT RM FD
LAUNDRY AND HOT SHOWER TANK RM FD
WASTE GAS DECAY TANK FD
WASTE GAS VALVE COMPT FD
GAS COMPR ACCESS CORRIDOR FD
CHEMICAL DRN TANK RM FD
CONTROL PANEL AREA FD
AUX STEAM BOILER RM FD
WASTE GAS COMPR RM FD
ACCESS CORRIDOR
VALVE PIT DRAIN
EMER SHOWER DRAIN
LET DOWN HX FD
NON RAD AUX BLDG SUMPS
EL 180'-0" SUMP PUMP
CTMT SUMP PUMP
RHR PUMP
WASTE HOLD-UP TANK
WASTE MONITOR TANK ROOM FD
WASTE MONITOR TK PUMP RM FD
RECOMBINER ROOMS FD
MONITORING CONTROL AREA FD
SEE NOTE 14 (TYP)
LOCATE VALVES MIN DISTANCE FROM PUMP
FLOOR DRAIN TANK
FLOOR DRAIN RHR HX RM
RHR PUMP RM ACCESS CORRIDOR
PIPE CHASE
WASTE GAS DECAY VALVE COMP
WASTE GAS DECAY TK RM FD
WASTE GAS ACCESS CORRIDOR
EL 100'-0"
WASTE GAS PROCESSING ROOM SUMP
CTMT SPRAY PUMP RM
REV. 10
REV. 9
REV. 8
REV. 17
REV. 16
REV. 15
REV. 14



NOTES:

1. FOR PIPING CLASS SHEETS SEE (SPEC. SS-1109-1).
2. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. SS-1109-1).
3. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. SS-1102-29).
4. FOR EQUIPMENT LIST SEE DWG D-175070
5. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX B-175803.
6. ALL VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY 1G21.
7. *INSTRUMENTS SUPPLIED BY EQUIPMENT MANUFACTURER
8. FOR P&ID LEGEND SEE D-175016.
9. LOOP-SEAL MUST EXTEND AT LEAST 6" BELOW THE PIPING CONNECTION. RELIEF VALVE NV222 MUST BE LOCATED AT LEAST 6" ABOVE THE PIPING CONNECTION.
10. TOP OF VENT TO BE ATLEAST EL 122' OR MORE
11. ROUTE VENT LINE INTO THE WASTE HOLDUP TANK ROOM ATLEAST 10'-0" ABOVE FLOOR
12. TOP OF VENT MUST BE ATLEAST 10' ABOVE FLOOR
13. VENT THROUGH CEILING INTO CCW HX ROOM AT LEAST 5'-0" ABOVE FLOOR
14. SYMBOL ⊠ DESIGNATES FL. DRAIN TO BE PLUGGED UNDER THE DRAIN COVER WITH "TANATOM" PLUG OR EQUIVALENT
15. BLIND FLANGES ARE TO BE USED DURING REFUELING OPERATION ONLY.
16. ALL FLOOR DRAINS INSIDE THE PENETRATION BOUNDARIES, EXCEPT THOSE DRAIN AT EL.78'6 53, ARE TO BE SEALED PER NOTE 14. FIELD TO PURCHASE THE PLUGS AS REQUIRED.
17. ALL EQUIPMENT DRAINS ARE TO BE SEALED

ORIGINAL DRAWING, Rev 17 TRANSFERRED TO SCB

REV	DESCRIPTION
REV 12, 7-26-78	INC. BM-3043.
REV 12, 6-1-77	INC. BM-2723, ADDED LINE CALLOUT 4"LCD-143.
REV 11, 3-24-77	REV. PER PHYSICAL. INC. BM-2457, BM-2584, BM-2646
REV 0, 6-27-72	ISSUED FOR ENGINEERING

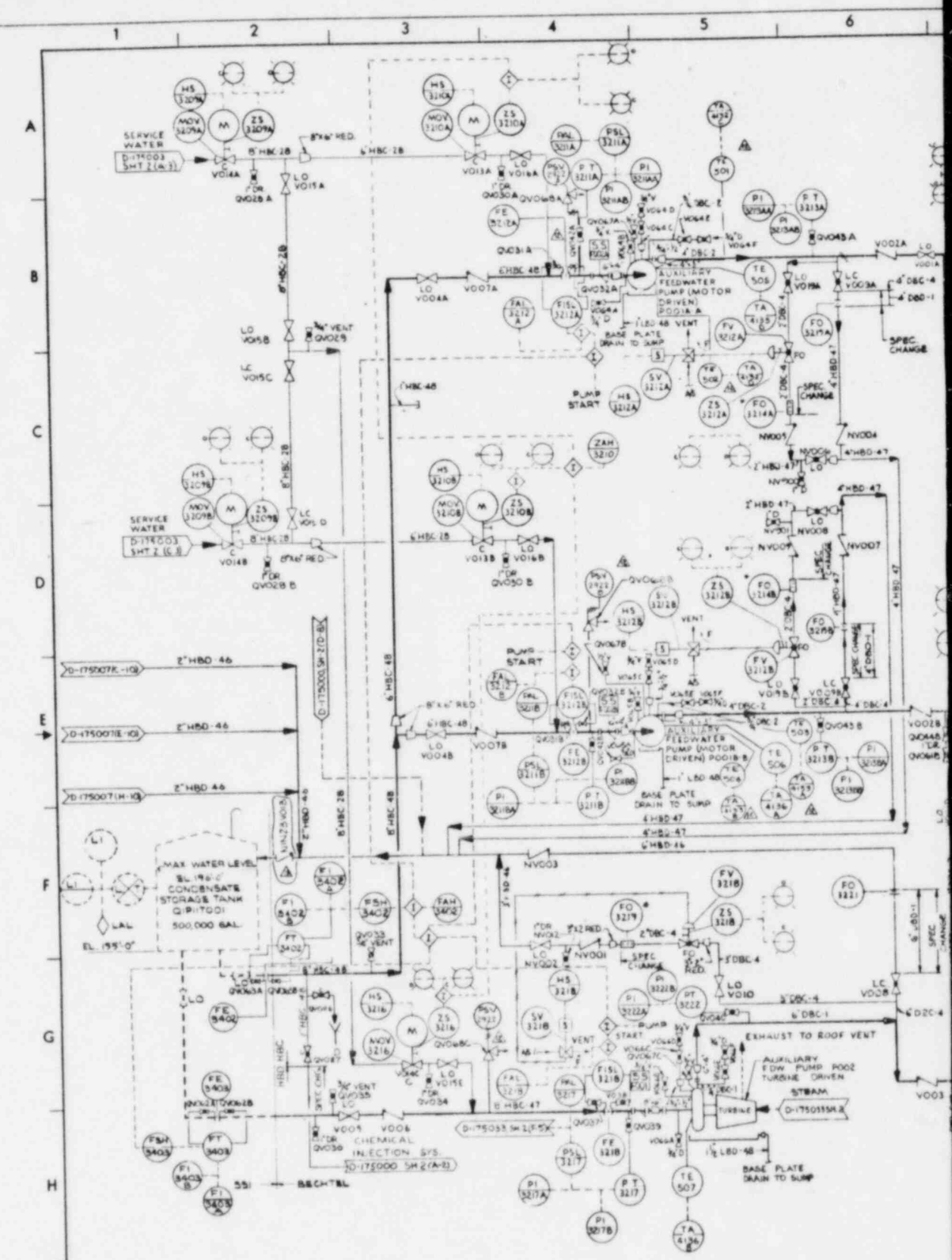
DRAWN: RLH
APPROVED: M. Malcom 6/-7/72

BECHTEL CORPORATION
JOB 7597-3

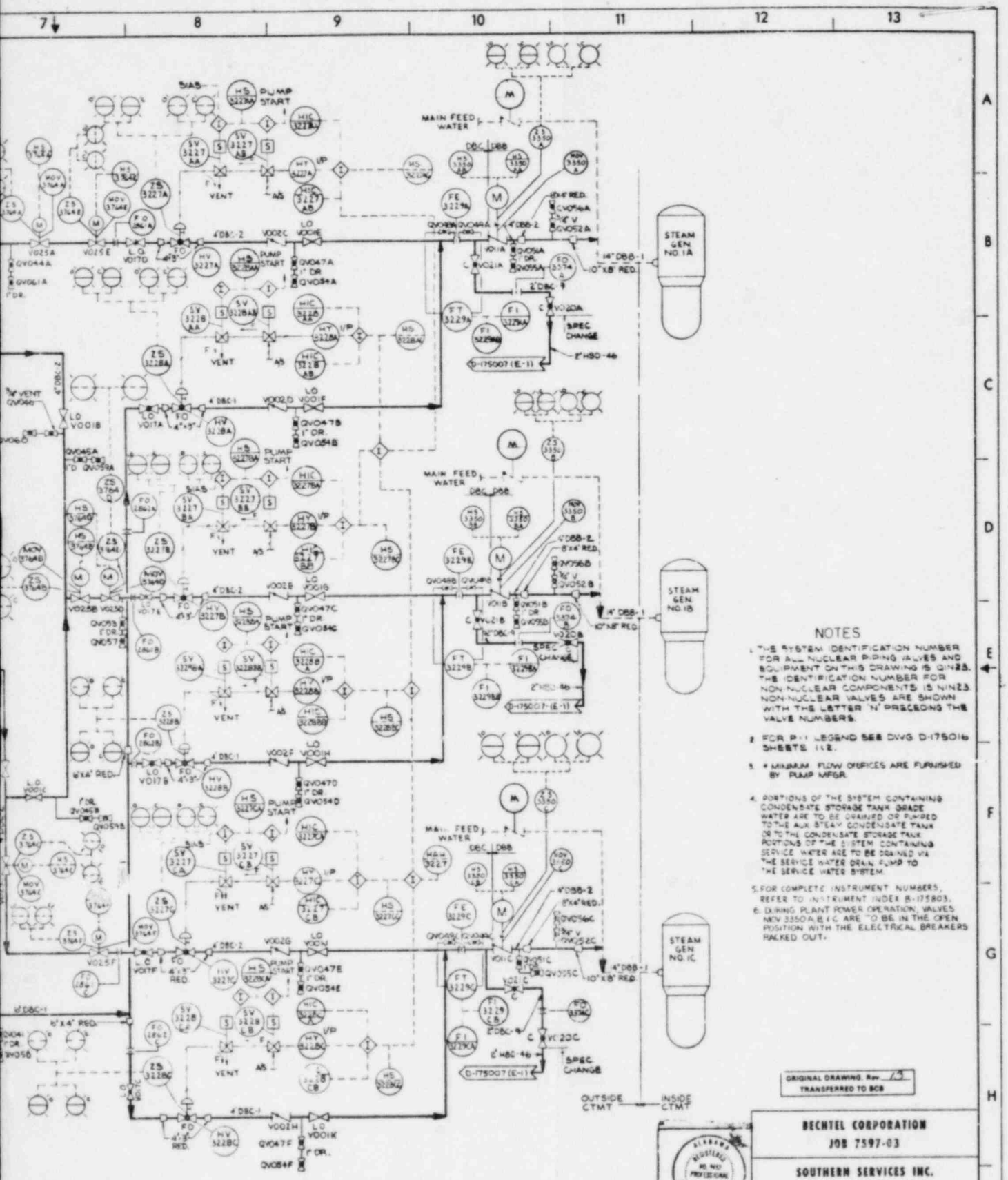
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

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

D-175004 REV 17



REV. 10 12-2-76 ADDED NV0006 & NV0007 PER FIELD INSTALL'T INC. BM-2215 BM-2295 & BM-2300	REV. 9 8-9-76 INC. BM-1967 BM-1968 & BM-2015 REV-1 & BM-2004 ON REV. 6.	REV. 8 2-25-76 RELOCATED V015 B&P, ADDED FLOW ORIFICES AS SHOWN.	REV. 7 5-8-75 REINSTATED MOV ON QV031 A B/C, ADD. NOTE 16 AS SHOWN.	REV. 6 5-23-75 DELETE MOV FROM QV031 A B/C, ADDED VENTS, DRAINS AND AS SHOWN	REV. 5 5-23-74 ADDED DRAINS, VENTS & REVISED AS CIRCLED.	REV 4 ADDED 1" HBC LINE @ (G-2)



NOTES

1. THE SYSTEM IDENTIFICATION NUMBER FOR ALL NUCLEAR PIPING VALVES AND EQUIPMENT ON THIS DRAWING IS QIN23. THE IDENTIFICATION NUMBER FOR NON-NUCLEAR COMPONENTS IS NIN23. NON-NUCLEAR VALVES ARE SHOWN WITH THE LETTER 'N' PRECEDING THE VALVE NUMBERS.
2. FOR P&I LEGEND SEE DWG D-175016 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 OR TO THE CONDENSATE STORAGE TANK. PORTIONS OF THE SYSTEM CONTAINING SERVICE WATER ARE TO BE DRAINED VIA THE SERVICE WATER DRAIN PUMP TO THE SERVICE WATER SYSTEM.
5. FOR COMPLETE INSTRUMENT NUMBERS, REFER TO INSTRUMENT INDEX B-175803.
6. DURING PLANT POWER OPERATION, VALVES MOV 3350 A,B,&C ARE TO BE IN THE OPEN POSITION WITH THE ELECTRICAL BREAKERS RACKED OUT.

ORIGINAL DRAWING, Rev. 13 TRANSFERRED TO BCB

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

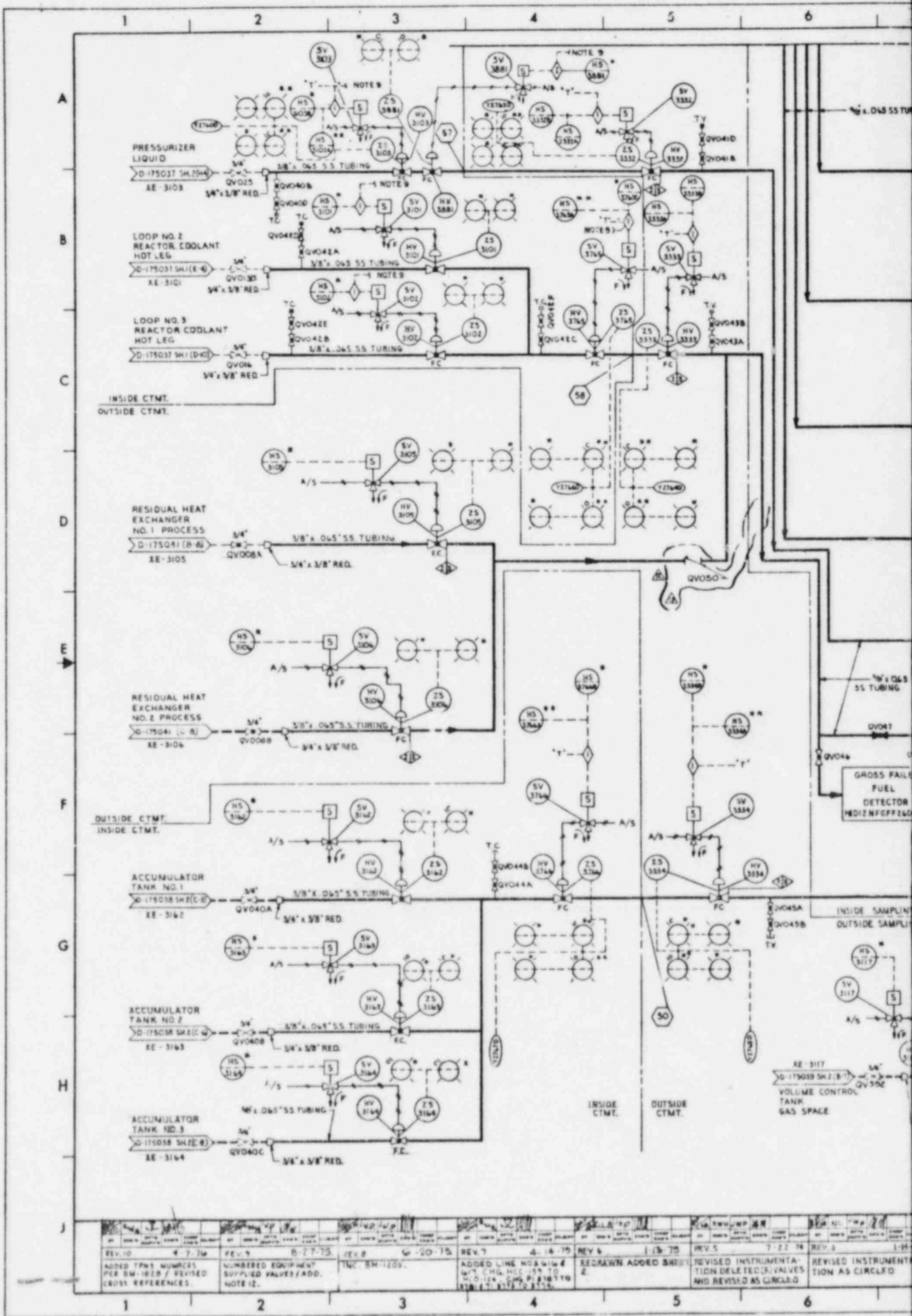
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

P&I DIAGRAM
AUX. FEEDWATER SYSTEM

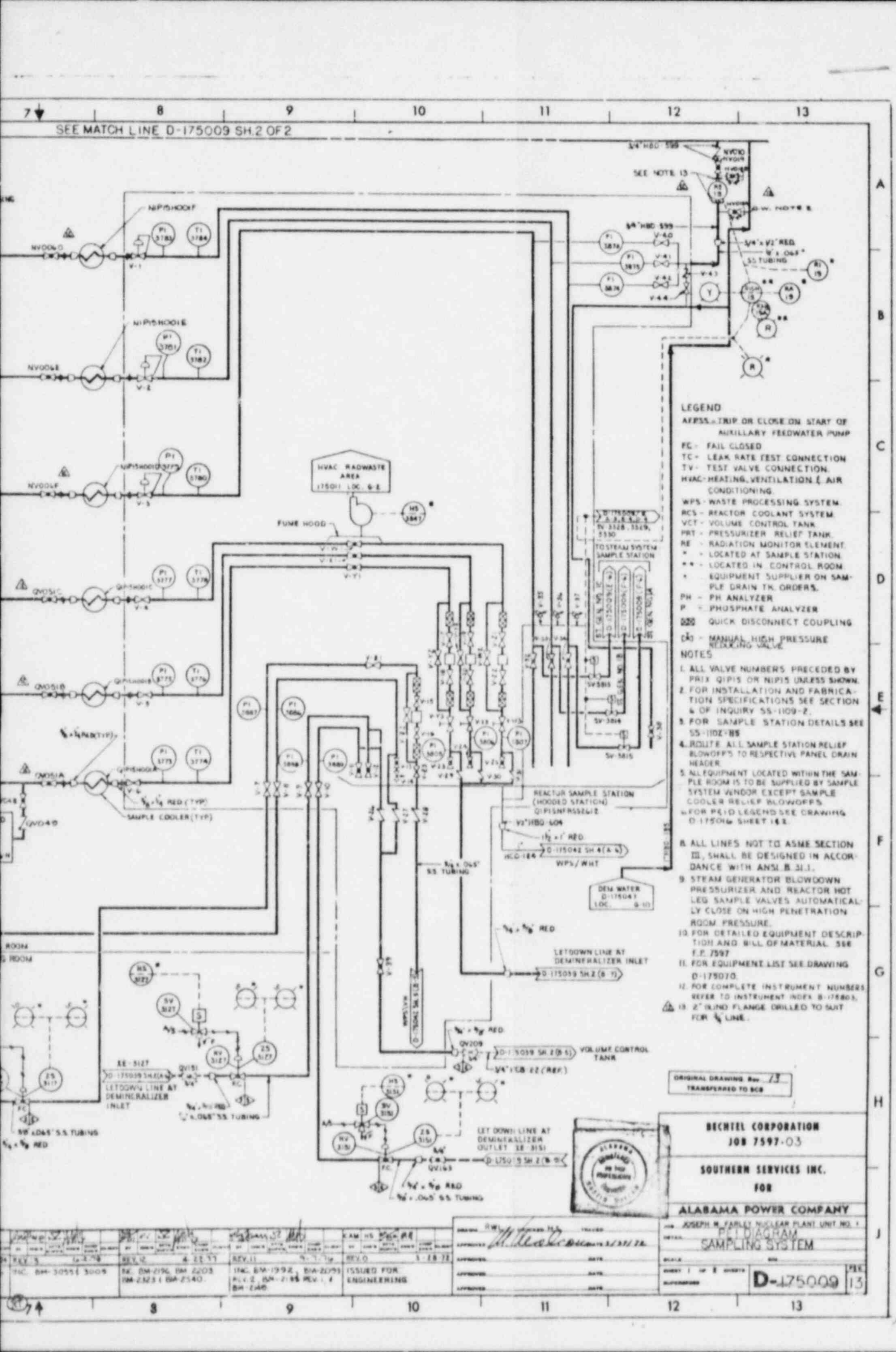
SCALE NONE

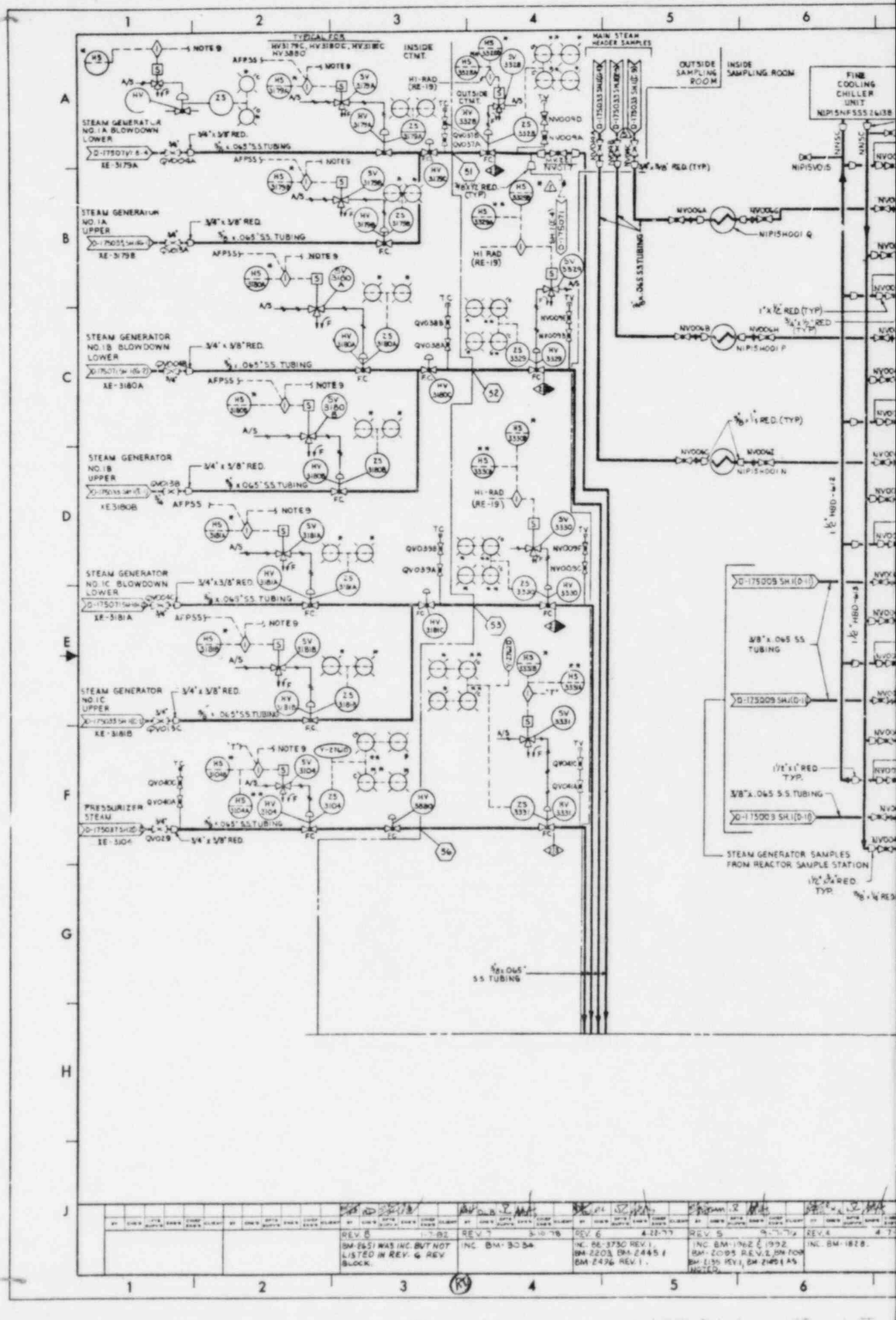
D-175007 REV. 13

REV.	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
REV. 13	INCORPORATED PCN-B-78-088 REV. 1				1-12-80
REV. 12	INC. BM-2653 REV. 3, INC. BM-3042 ADDENDUM 501, 502, 503, 504				6-3-78
REV. 11	INC. BM-2588, BM-2772, BM-2741 REV. 1, BM-2700 ADDED NOTE 6.				6-10-77
REV. 0	ISSUED FOR ENGINEERING	RDM		W. S. Malcom	2-29-72

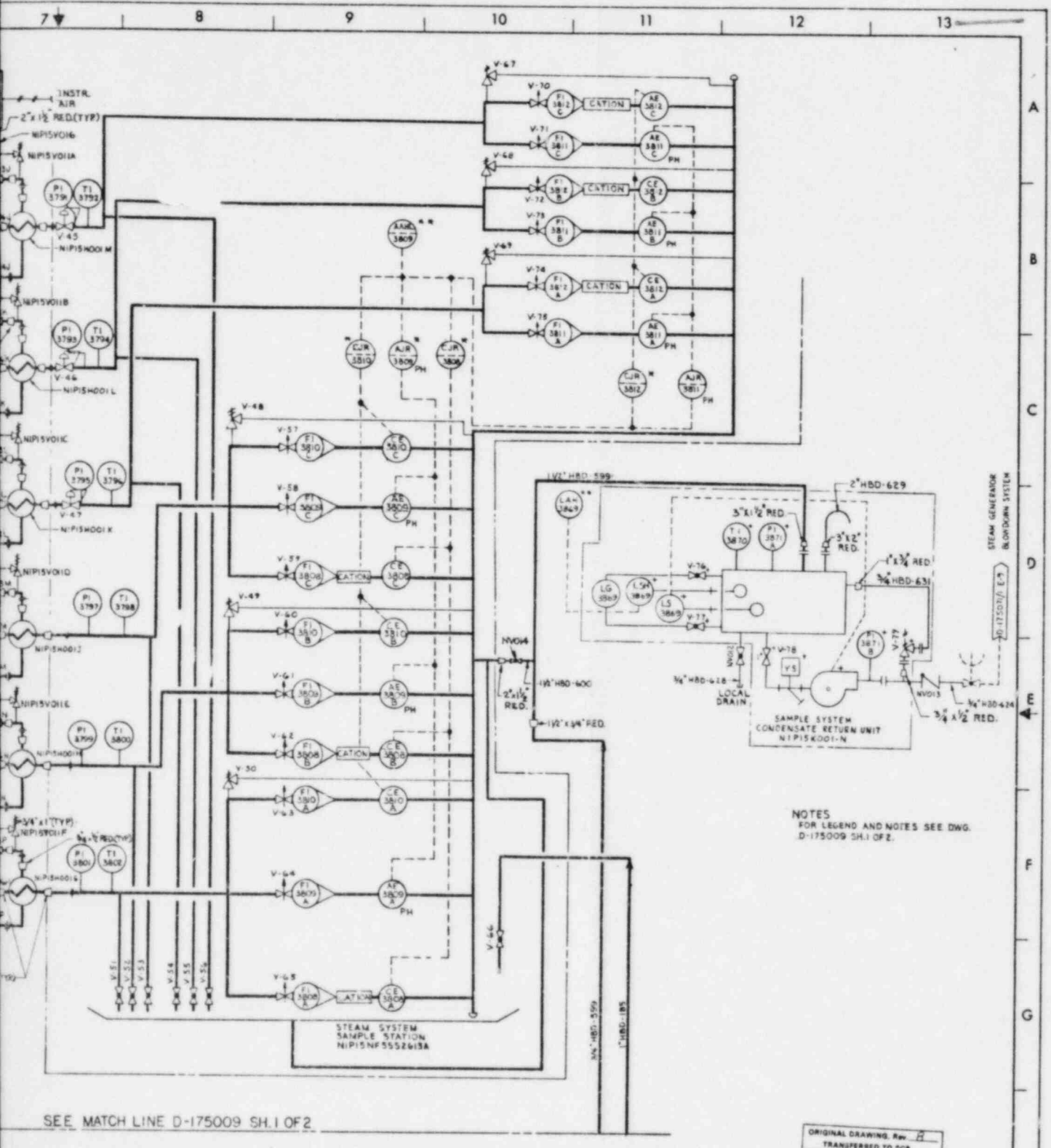


REV. 10 4-7-76	REV. 9 8-27-75	REV. 8 6-20-75	REV. 7 4-14-75	REV. 6 1-13-75	REV. 5 7-22-74	REV. 4 1-14-
ADDED TPNS NUMBERS PER BM-1828 / REVISED CROSS REFERENCES.	NUMBERED EQUIPMENT SUPPLIED VALVES / ADD. NOTE 12.	INC. BM-1205.	ADDED LINE NOS & SIZE & CHG. HCC-159 TO HCC-124. CHG. PI 3107 TO	REDRAWN ADDED BM-1 2.	REVISED INSTRUMENTATION DELETED (S) VALVES AND REVISED AS CIRCLED	REVISED INSTRUMENT TION AS CIRCLED


SEE MATCH LINE D-175009 SH.2 OF 2
SEE NOTE 13
NIPISHOOF
NIPISHOOIE
NIPISHOOIF
NV004G
NV004E
NV004F
NV005C
NV005B
NV005A
HVAC RADWASTE AREA (17501 LOC. G-E)
FUME HOOD
TO STEAM SYSTEM SAMPLE STATION
REACTOR SAMPLE STATION (HOODED STATION) QIPISNPRSS26I2
SAMPLE COOLER (TYP)
LETDOWN LINE AT DEMINERALIZER INLET
VOLUME CONTROL TANK
DEM WATER D-175047 LOC. B-10
LET DOWN LINE AT DEMINERALIZER OUTLET XE-3151
WPS/WHT
QV209
QV151
QV153
LEGEND
AFPSS - TRIP OR CLOSE ON START OF AUXILLARY FEEDWATER PUMP
FC - FAIL CLOSED
TC - LEAK RATE TEST CONNECTION
TV - TEST VALVE CONNECTION.
HVAC - HEATING, VENTILATION & AIR CONDITIONING.
WPS - WASTE PROCESSING SYSTEM.
RCS - REACTOR COOLANT SYSTEM.
VCT - VOLUME CONTROL TANK.
PRT - PRESSURIZER RELIEF TANK.
RE - RADIATION MONITOR ELEMENT.
* - LOCATED AT SAMPLE STATION.
** - LOCATED IN CONTROL ROOM.
• - EQUIPMENT SUPPLIER ON SAMPLE DRAIN TK. ORDERS.
PH - PH ANALYZER
P - PHOSPHATE ANALYZER
QUICK DISCONNECT COUPLING
MANUAL HIGH PRESSURE REDUCING VALVE
NOTES
1. ALL VALVE NUMBERS PRECEDED BY PRIX QIPIS OR NIPIS UNLESS SHOWN.
2. FOR INSTALLATION AND FABRICATION SPECIFICATIONS SEE SECTION 6 OF INQUIRY SS-1109-Z.
3. FOR SAMPLE STATION DETAILS SEE SS-1102-BS
4. ROUTE ALL SAMPLE STATION RELIEF BLOWOFFS TO RESPECTIVE PANEL DRAIN HEADER.
5. ALL EQUIPMENT LOCATED WITHIN THE SAMPLE ROOM IS TO BE SUPPLIED BY SAMPLE SYSTEM VENDOR EXCEPT SAMPLE COOLER RELIEF BLOWOFFS.
6. FOR P&ID LEGEND SEE DRAWING D-175046 SHEET 1 & 2.
8. ALL LINES NOT TO ASME SECTION III, SHALL BE DESIGNED IN ACCORDANCE WITH ANSI B 31.1.
9. STEAM GENERATOR BLOWDOWN PRESSURIZER AND REACTOR HOT LEG SAMPLE VALVES AUTOMATICALLY CLOSE ON HIGH PENETRATION ROOM PRESSURE.
10. FOR DETAILED EQUIPMENT DESCRIPTION AND BILL OF MATERIAL SEE E.P. 7597
11. FOR EQUIPMENT LIST SEE DRAWING D-175070.
12. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-175803.
13. 2" BLIND FLANGE DRILLED TO SUIT FOR ¾" LINE.
ORIGINAL DRAWING Rev. 13 TRANSFERRED TO SCE
BECHTEL CORPORATION
JOB 7597-03
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P&I DIAGRAM
SAMPLING SYSTEM
D-175009
REV. 13
ISSUED FOR ENGINEERING



REV. 8	REV. 7	REV. 6	REV. 5	REV. 4
1-7-82	5-10-78	4-22-77	9-7-76	4-7-
BM-1651 WAS INC. BUT NOT LISTED IN REV. 6 REV. BLOCK.	INC. BM-3034	INC. 66-3730 REV. 1, BM-2203, BM-2445 & BM-2476 REV. 1.	INC. BM-1962 & 1932. BM-2095 REV. 2, BM-NOR BM-1755 REV. 1, BM-2405 & AS NOTED.	INC. BM-1828.



NOTES
FOR LEGEND AND NOTES SEE DWG. D-175009 SH.1 OF 2.

SEE MATCH LINE D-175009 SH.1 OF 2

ORIGINAL DRAWING, Rev. A TRANSFERRED TO SCB

BECHTEL CORPORATION
JOB 7597-03

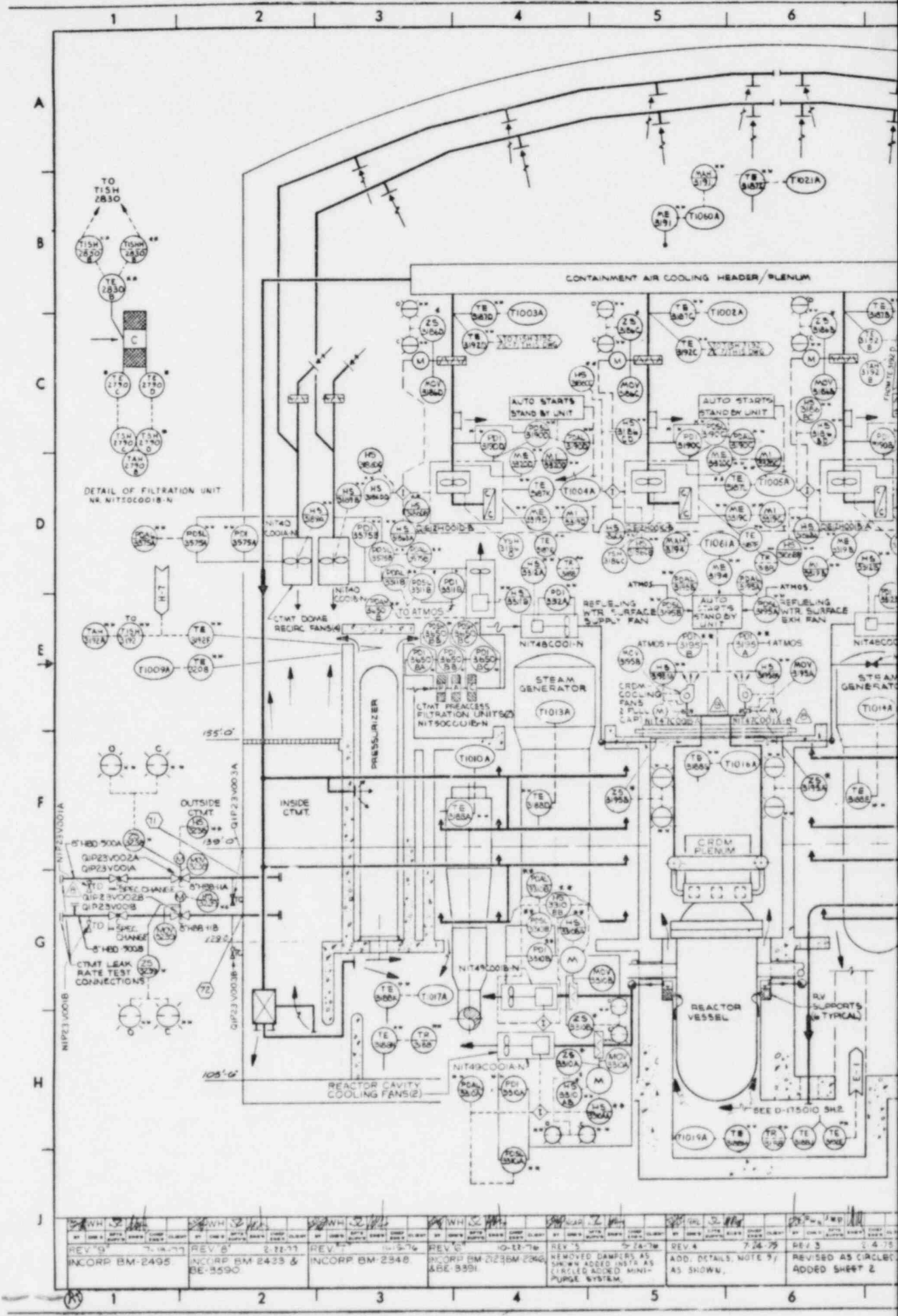
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P&I DIAGRAM
SAMPLING SYSTEM
SCALE NONE

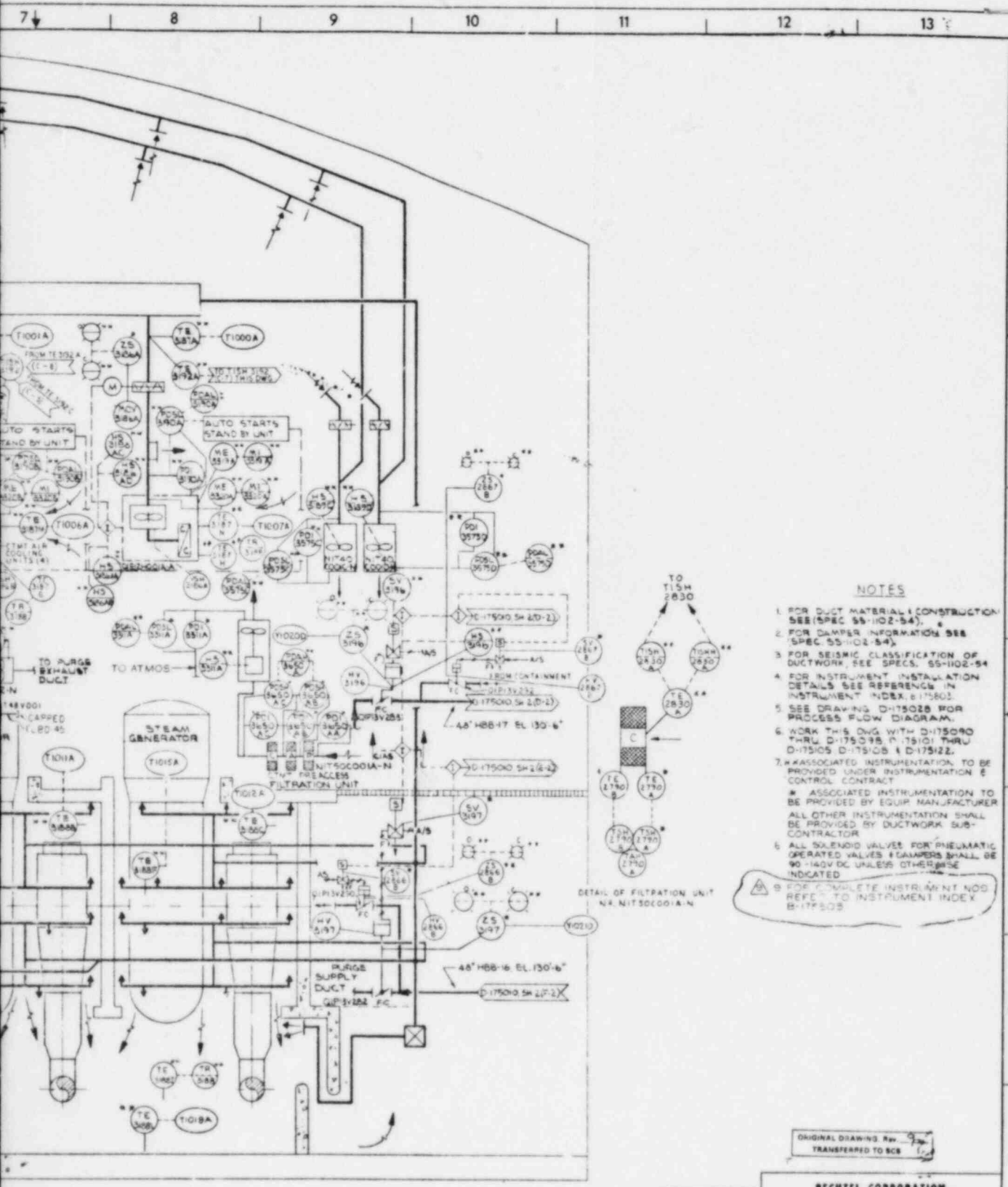
D-175009 REV. 8

REV.	DATE	DESCRIPTION
3	5-27-75	REV. CONDENSATE RETURN UNIT (NUMBERED EQUIPMENT SUPPLIED VALVES.
2	5-20-75	ADD SH.2 (LIT REV.) ORIGINAL RETURN UNIT REMOVED GAUGE & ADD SAMPLE CONN. NP-2115 SHOWN.
1	4-14-75	ADDED LINE NOS 612, 613, 614 & 615, CHG. REQ. 1"x¾" TO 1½"x¾"
0	1-13-75	ISSUED FOR ENGINEERING

DRAWN MWF CHECKED G.L.B TRACED
APPROVED M. M. Malcom 1/11/75
APPROVED DATE
APPROVED DATE
APPROVED DATE



REV.	DESCRIPTION
REV "9" 7-14-77	INCORP BM-2495
REV. 8 2-22-77	INCORP BM-2435 & BE-3590
REV. 7 11-5-76	INCORP BM-2348
REV. 6 10-22-76	INCORP BM-2123BM-2366 & BE-3391
REV. 5 5-24-76	REMOVED DAMPERS AS SHOWN ADDED INSTR. AS CIRCLED ADDED MINI-PURGE SYSTEM.
REV. 4 7-24-75	ADD. DETAILS, NOTE 9, AS SHOWN.
REV. 3 2-4-75	REVISED AS CIRCLED ADDED SHEET 2



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-175803.
5. SEE DRAWING D-175028 FOR PROCESS FLOW DIAGRAM.
6. WORK THIS DWG WITH D-175090 THRU D-175098, D-175101 THRU D-175105 D-175108 & D-175122.
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 COMPLETE INSTRUMENT NOS. REFER TO INSTRUMENT INDEX B-175803

ORIGINAL DRAWING Rev. 9 TRANSFERRED TO SCS

BECHTEL CORPORATION
JOB 7597-03

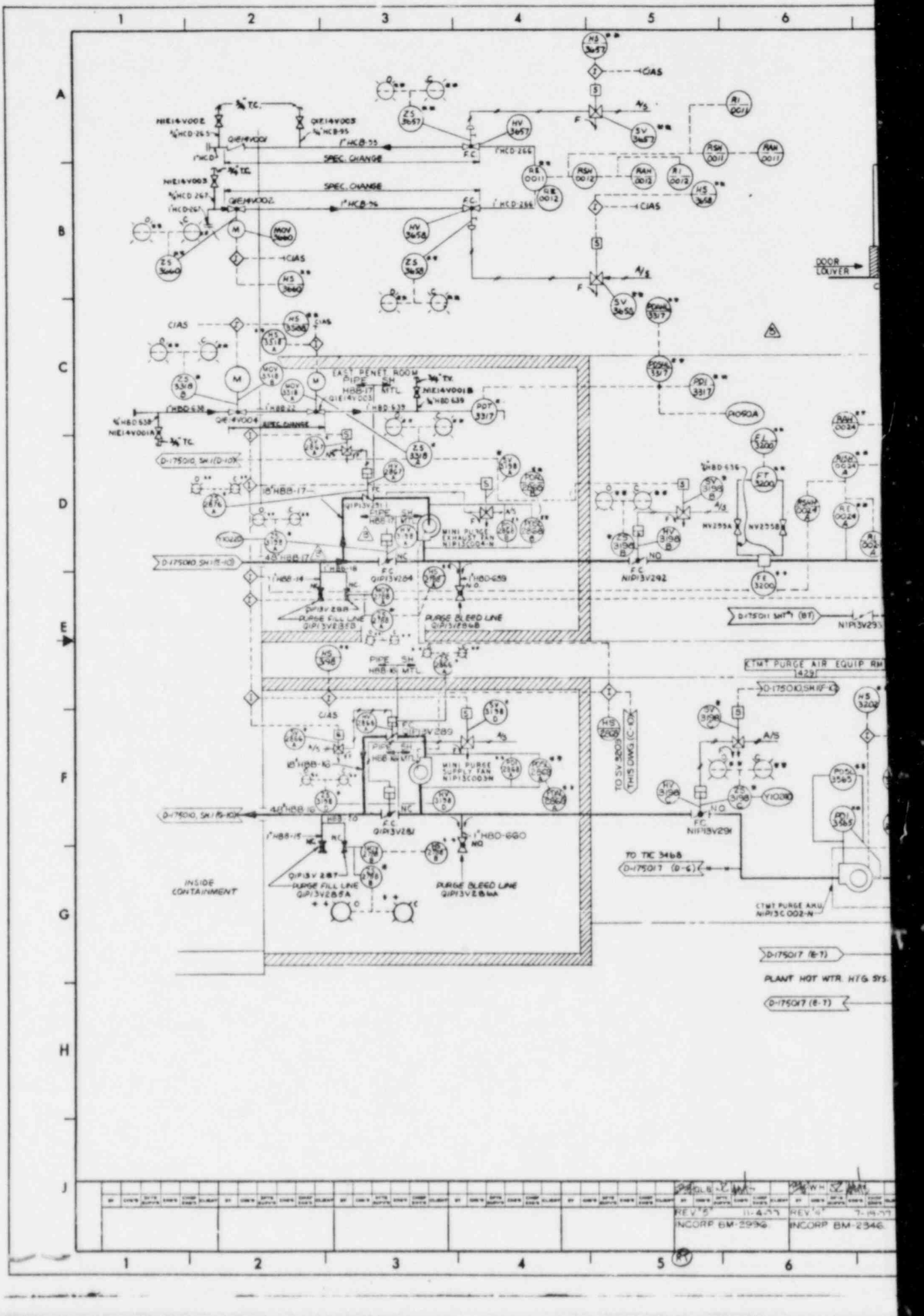
SOUTHERN SERVICES, INC.
FOR
ALABAMA POWER COMPANY

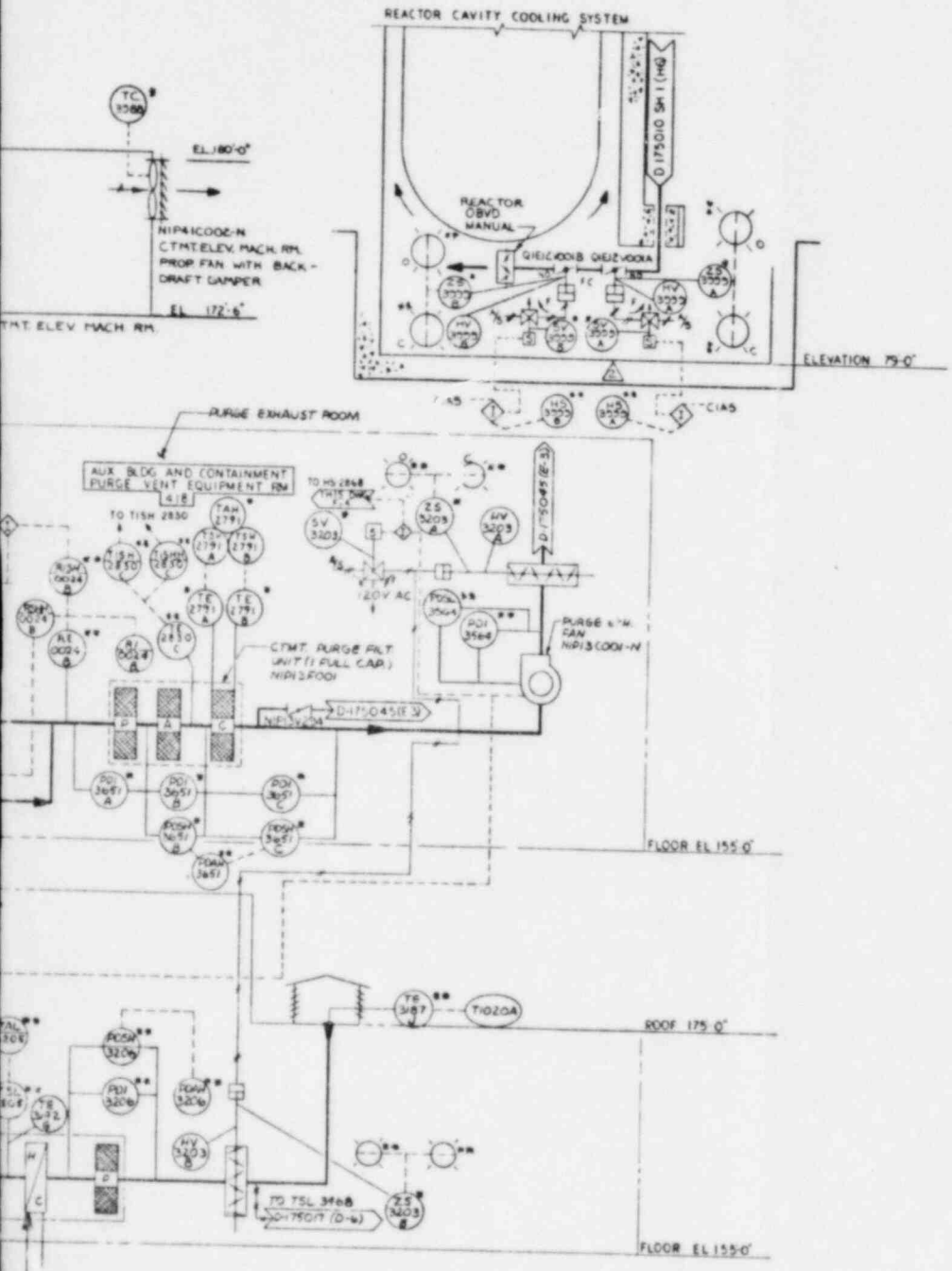
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P&I DIAGRAM
CONTAINMENT COOLING & PURGE SYSTEMS
SCALE NONE

SHEET 1 OF 2 SHEETS
D-175010 REV 9

REV.	BY	DATE	DESCRIPTION
3		11-5-75	REVISED AS NOTED
1		3-8-73	ADDED LEAK RATE TEST, REVISED INSTR.
Q		5-15-72	ISSUED FOR ENGINEERING
A		6-5-70	ISSUED FOR APPROVAL

DRAWN [illegible] TRACED [illegible]
APPROVED [illegible] DATE 6/15/70
APPROVED DATE
APPROVED DATE
APPROVED DATE


INSIDE CONTAINMENT
PURGE FILL LINE
PURGE BLEED LINE
MINI PURGE EXHAUST FAN
MINI PURGE SUPPLY FAN
CTMT PURGE AHU
TO TIC 3468
PLANT HOT WTR. HTG. SYS.
REV "B" 11-4-77
INCORP BM-2936
REV "C" 7-19-79
INCORP BM-2346



NOTE:

1. FOR GENERAL NOTES AND REFERENCES SEE DWG. D-175010, SH. 1.

ORIGINAL DRAWING Rev. 5
TRANSFERRED TO BCR

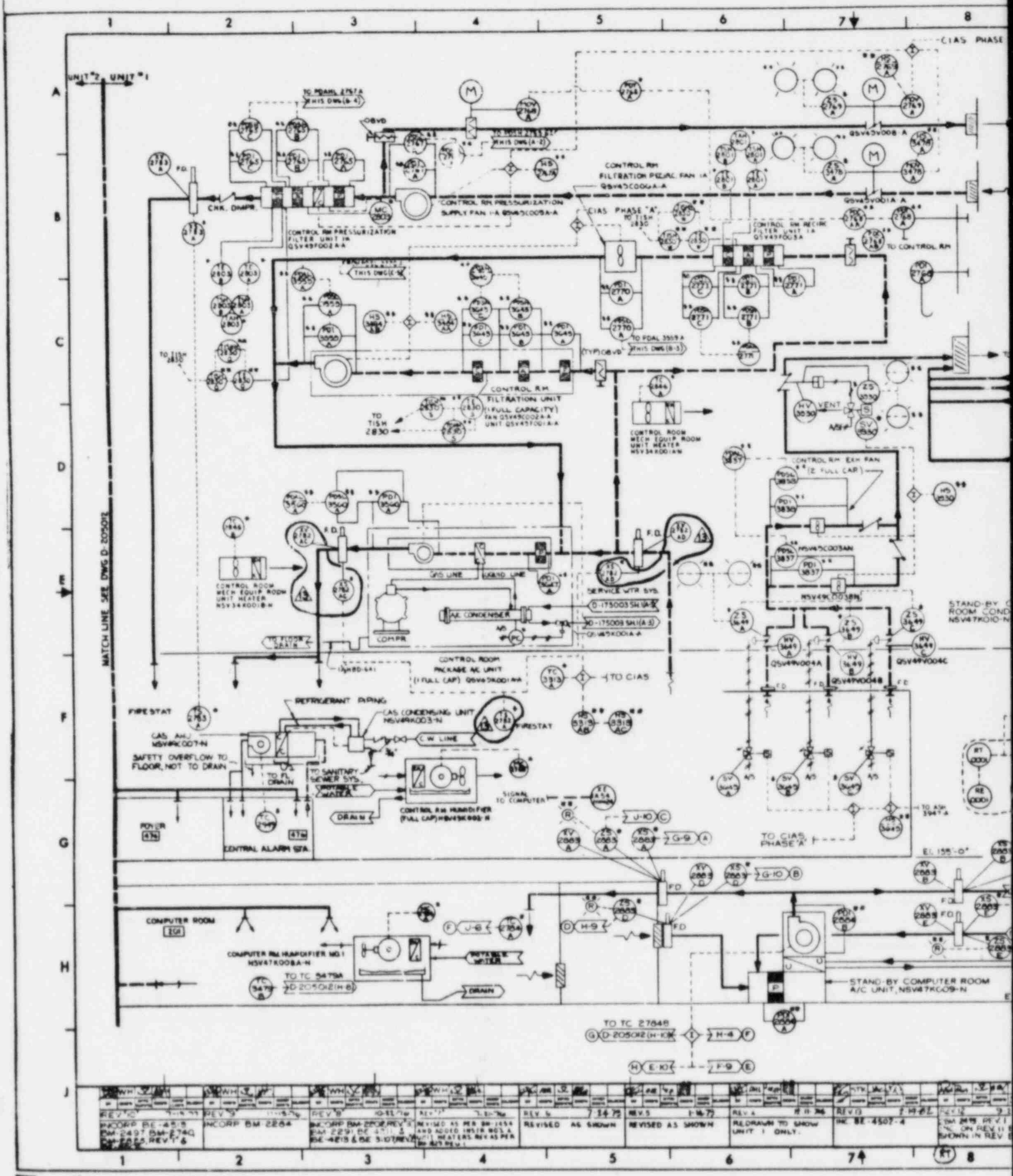
BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

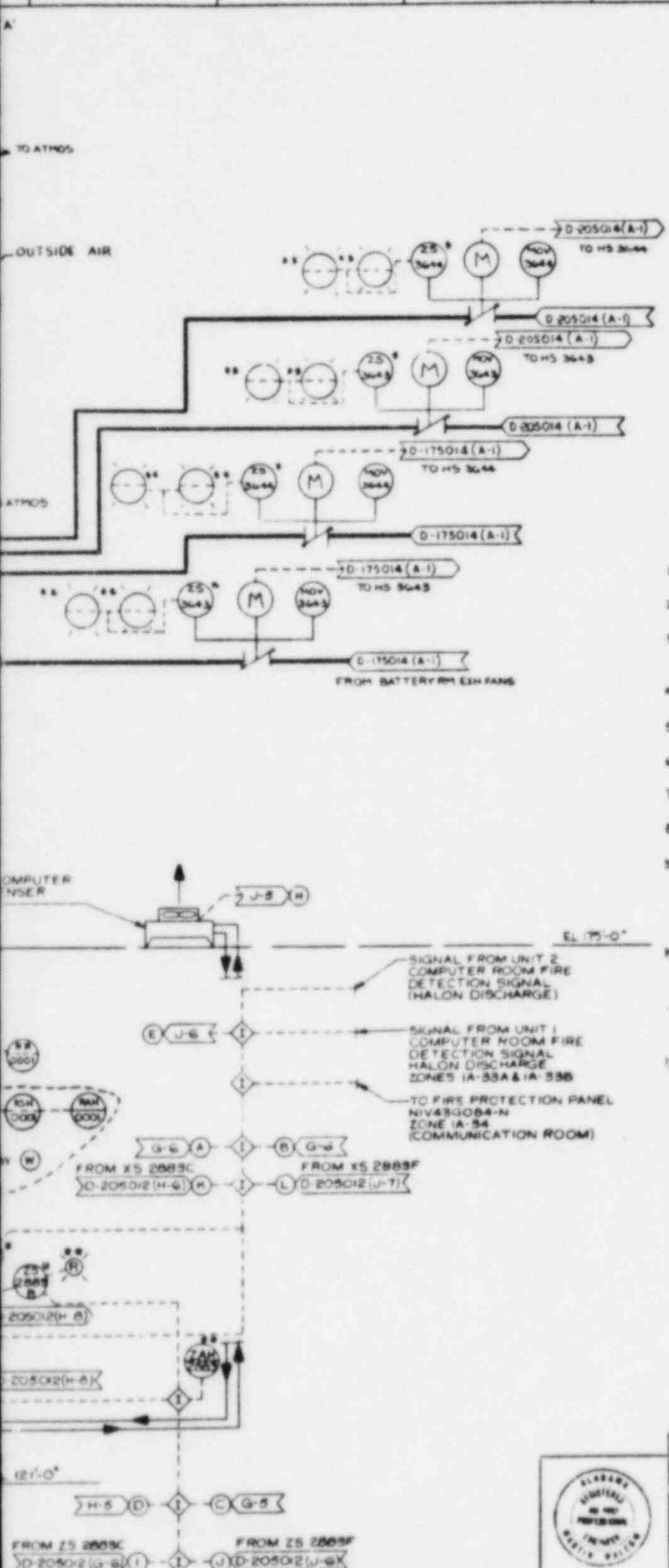
P & I DIAGRAM
CONTAINMENT COOLING & PURGE SYS
SCALE NONE
SHEET 2 OF 2 SHEETS
D-175010
REV. 5

REV.	DESCRIPTION	BY	CHKD	APPD	DATE
3	INCORP. BM-2282 & AS CIRCLED				1-3-77
2	REVISED AS PER BM-1355 AND ADDED LINE & INSTR. NUMBERS & MINI-PURGE BYPASS				5-24-76
1	REVISED AS SHOWN				7-24-75
0	ISSUED FOR ENGINEERING				2-4-75

DRAWN R.W.H. TRACED
APPROVED [signature] DATE 4/1/75
APPROVED DATE
APPROVED DATE
APPROVED DATE



UNIT #2 UNIT #1
MATCH LINE SEE DWG D-205012
CHK. DMPR.
CONTROL RM PRESSURIZATION FILTER UNIT 1A Q5V45F002A-A
CONTROL RM PRESSURIZATION SUPPLY FAN 1-A Q5V45C005A-A
CONTROL RM FILTRATION PRZ/RC FAN 1A Q5V45C006A-A
CIAS PHASE "A"
CONTROL RM RECIRC FILTER UNIT 1A
TO CONTROL RM
CIAS PHASE
THIS DWG
TO TISH 2830
CONTROL RM FILTRATION UNIT (1 FULL CAPACITY)
CONTROL ROOM MECH EQUIP ROOM UNIT HEATER
CONTROL RM EXH FAN (2 FULL CAP)
VENT
GAS LINE
LIQUID LINE
A/C CONDENSER
COMPR.
SERVICE WTR SYS.
D-175003 SH.1(A-5)
TO FLOOR DRAIN
CONTROL ROOM PACKAGE A/C UNIT (1 FULL CAP)
TO CIAS
FIRESTAT
REFRIGERANT PIPING
CAS CONDENSING UNIT
CAS AHU
SAFETY OVERFLOW TO FLOOR, NOT TO DRAIN
TO FL DRAIN
C.W. LINE
TO SANITARY SEWER SYS.
POTABLE WATER
DRAIN
CONTROL RM HUMIDIFIER
SIGNAL TO COMPUTER
POWER
CENTRAL ALARM STA.
TO CIAS PHASE 'A'
STAND-BY CONTROL ROOM COND
COMPUTER ROOM
COMPUTER RM HUMIDIFIER NO. 1
TO TC 3479A
D-205012(H-8)
STAND-BY COMPUTER ROOM A/C UNIT, N5V47KC09-N
TO TC 2784B
D-205012(H-10)
REV. "C" INCORP BE-4513 BM-2497 BM-2740 BM-2825 REV. "F" 6
REV. "D" INCORP BM 2284
REV. "B" INCORP BM-2202 REV. C BM 2291 BE-4511
REVISED AS PER BM-1454 AND ADDED 185IR NOS. A UNIT HEATERS REV. AS PER
REV. 6 REVISED AS SHOWN
REV. 5 REVISED AS SHOWN
REV. 4 REDRAWN TO SHOW UNIT 1 ONLY.
REV. 3 INC. BE-4507-4



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, SS-1102-74, SS-1102-100)
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REF IN INSTRUMENT INDEX B-175803.
5. FOR PROCESS FLOW DIAGRAM SEE DWG. D-175046
6. WORK THIS DWG WITH D-175110, D-175115, D-175118 AND D-175121.
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 AND CONTROL CONTRACT.
   * ASSOCIATED INSTRUMENTATION TO BE PROVIDED BY EQUIP. MFGR.
10. ALL SOLENOID VALVES FOR PNEUMATIC OPERATED VALVES & DAMPERS SHALL BE 90-140VDC UNLESS INDICATED.
11. ROOM SMOKE DETECTOR XE 3948, XAH 3948 SHALL BE PROVIDED BY SOUTHERN SERVICES INC.
12. LOW PRESSURE SIDE OF PDIS A PDSLS OF FANS CAN ALSO BE VENTED TO ATMOSPHERE.

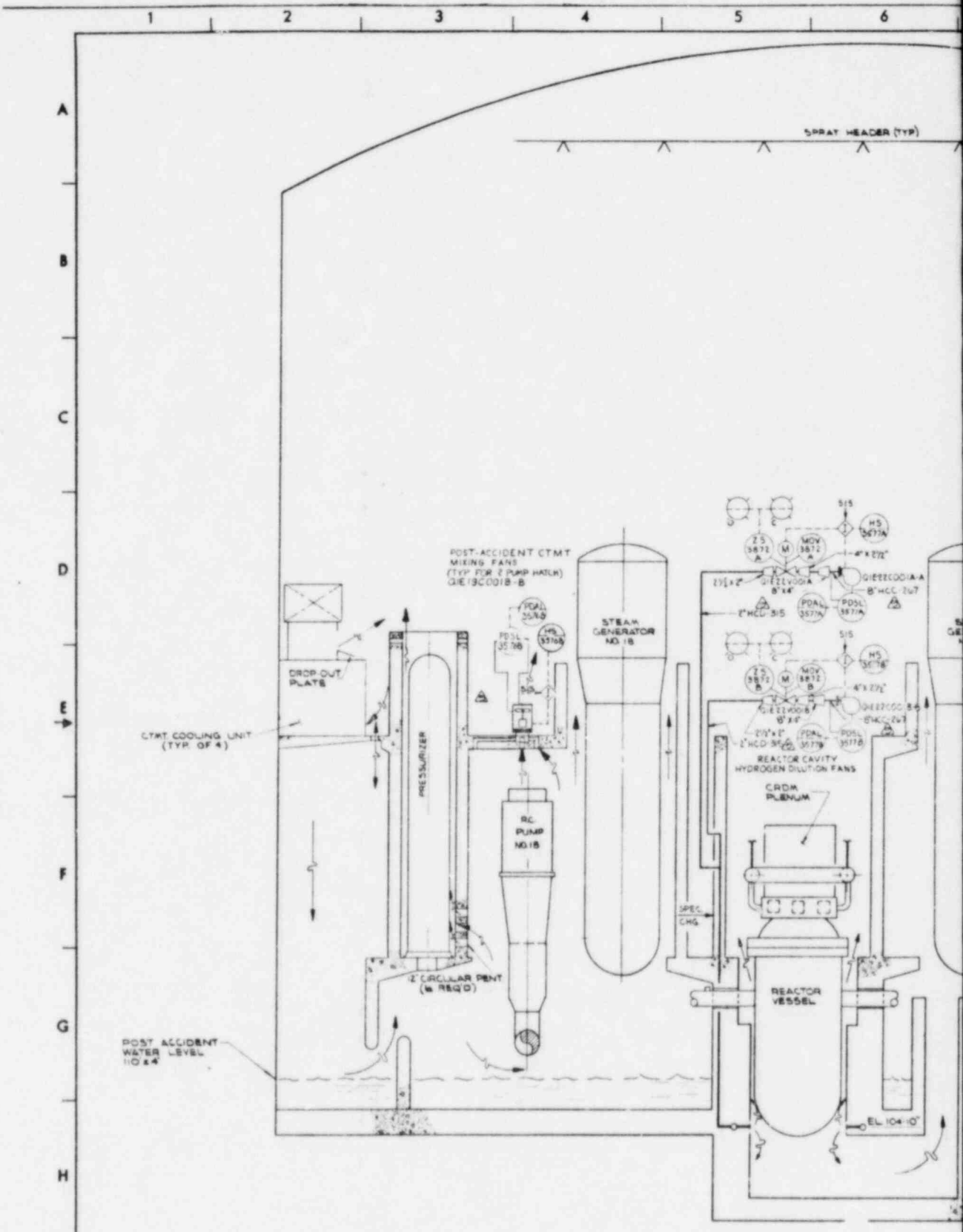
BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
HVAC P&I DIAGRAM
CONTROL RM. & COMPUTER RM.

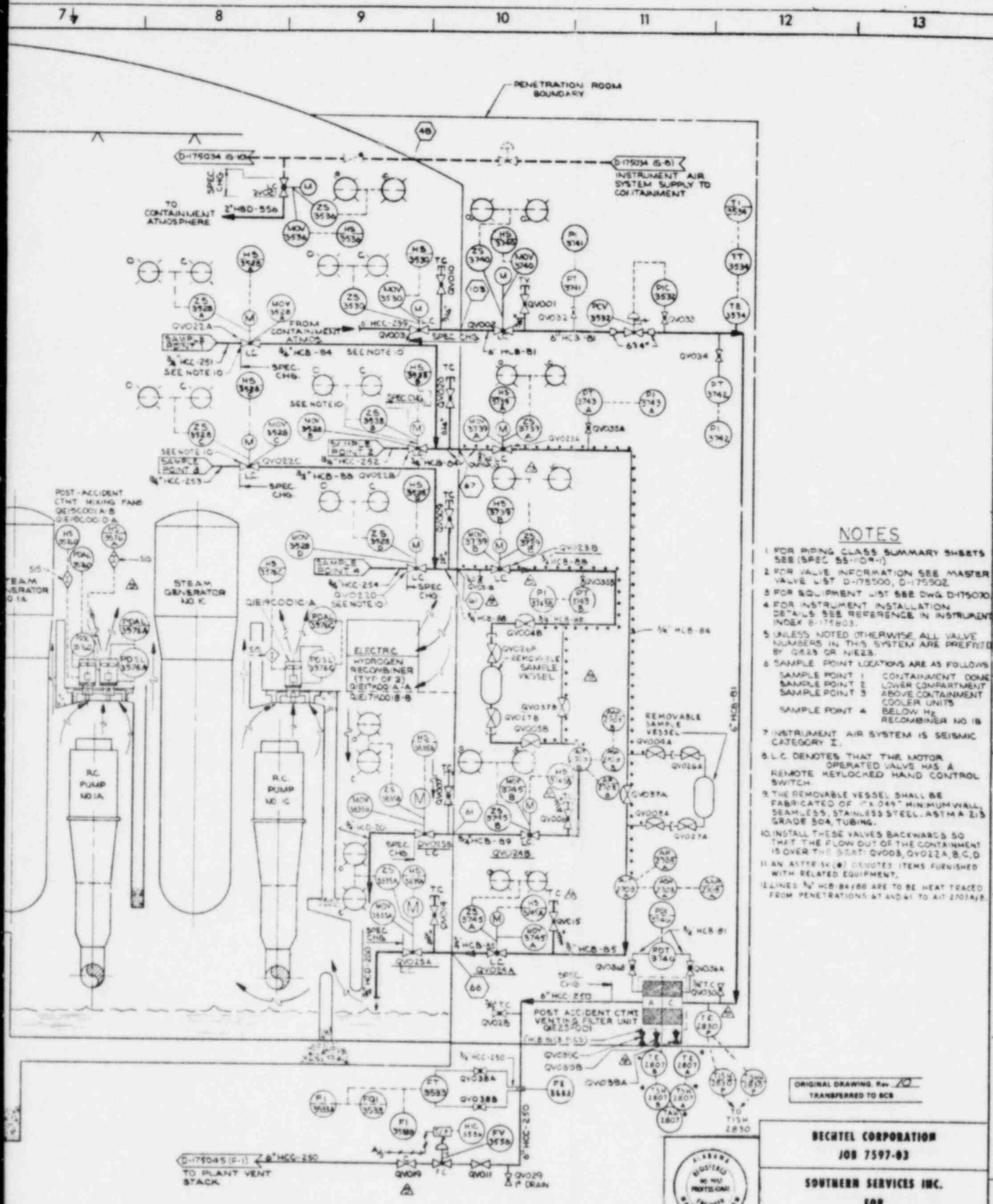
9-7-72

D-175012 REV. 13



REV. 8 1-26-77	REV. 8 2-13-76	REV. 7 11-7-75	REV. 6 5-10-75	REV. 5 7-12-74	REV. 4 11-5-73
INC. BM-2157 BM-2788 BM-2855 BM-2861 BM-2910 BM-2408.	INC. BM-1991 ADDED PANEL NUMBER. INC. BM 1407 REV. 3	INC BM-1339 REV. 0 NOTE #13, FV 3556 (AS SHOWN	REV. 6 SAMPLE FANS (A/B) ACID SAMPLE VESSEL VALVES, INSTRUMENTS & NOTES (#13) REV. AS SHOWN.	ADDED ORIGINAL TEST CONNS AND REVISED AS CIRCLED	REVISED AS CIRCLED

REV. 3 8-2-73
CHGD. SOLENOID TO MATCH OPERATOR REV. INSTRUMENTS AS CIRCLED.



NOTES

1. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC SS-1109-1).
2. FOR VALVE INFORMATION SEE MASTER VALVE LIST D-175500, D-175502.
3. FOR EQUIPMENT LIST SEE DWG D-175070.
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX D-175803.
5. UNLESS NOTED OTHERWISE, ALL VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY QE23 OR N223.
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 H2 RECOMBINER NO. 1B

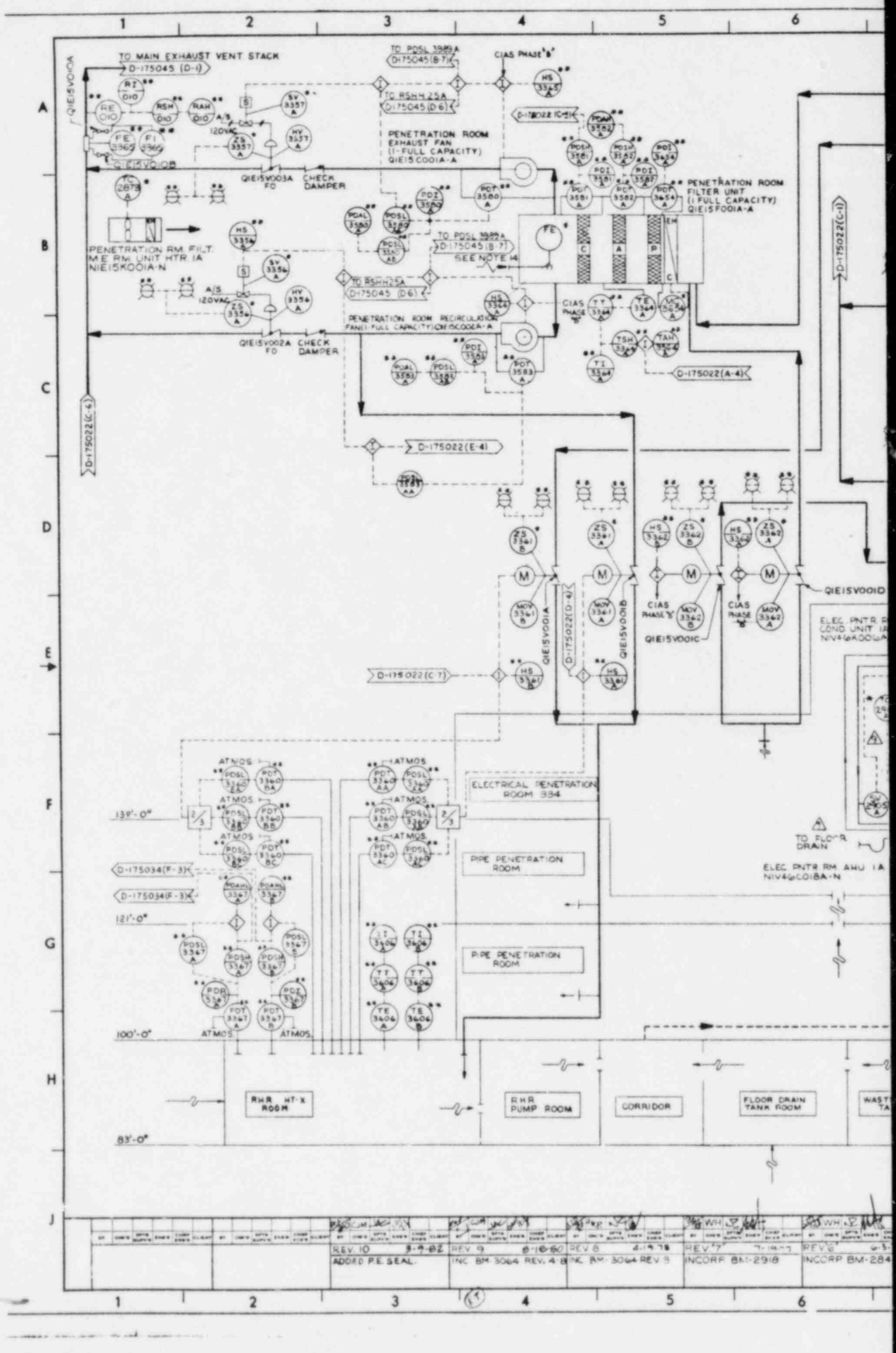
7. INSTRUMENT AIR SYSTEM IS SEISMIC CATEGORY I.
8. L.C. DENOTES THAT THIS MOTOR OPERATED VALVE HAS A REMOTE KEYLOCKED HAND CONTROL SWITCH.
9. THE REMOVABLE VESSEL SHALL BE FABRICATED OF .74 .049" MINIMUM WALL SEAMLESS, STAINLESS STEEL, ASTM A 213 GRADE 304, TUBING.
10. INSTALL THESE VALVES BACKWARDS 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-84/88 ARE TO BE HEAT TRACED FROM PENETRATIONS #7 AND #1 TO AIT 2703A/B.

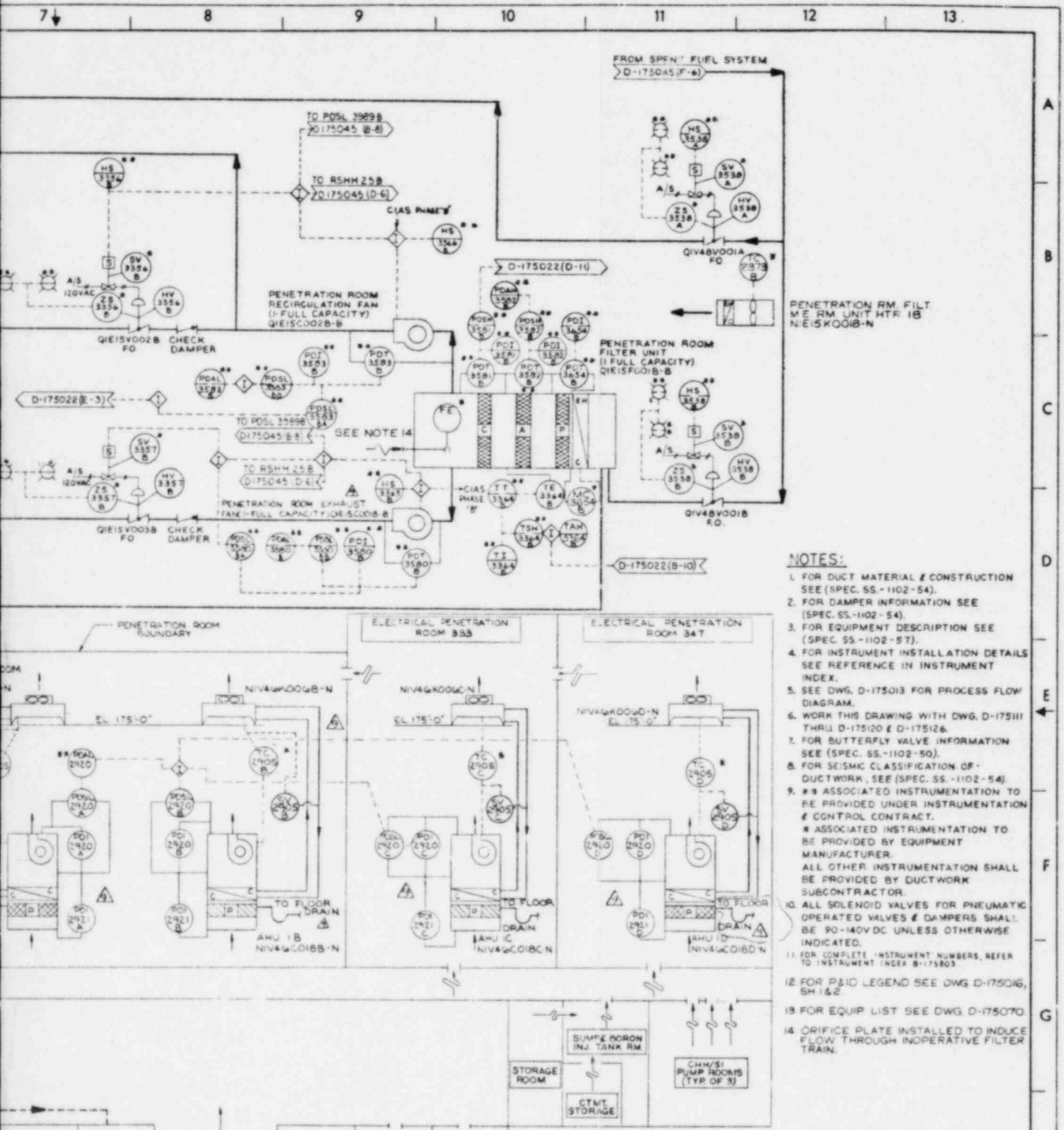
REV.	DESCRIPTION	DATE	BY
2	REV. 2 6-20-75 REMOVE HOLDS AT COORDINATES (8-10 & 8-9) REVISED AS SHOWN	6-20-75	
10	REV. 10 INC. 8M-2102 REVT IN REV. 9 BUT NOT LISTED IN REV. BLOCK.	1-25-82	
0	REV. 0 ISSUED FOR ENGINEERING	8-16-72	
A	REV. A ISSUED FOR INFO. & COMMENTS	7-12-72	

DRAWN RDM CHECKED RLH TRACED
APPROVED [signature] DATE 8-24-72
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-03
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
POST ACCIDENT CTMT. COMBUSTIBLE GAS CTRL. SYS. P&ID
SCALE NONE
SHEET OF SHEETS
SUPERSEDES
D-175019 10

ALABAMA REGISTERED NO 9757 PROFESSIONAL ENGINEER


TO MAIN EXHAUST VENT STACK
D-175045 (D-1)
QIEISV001A
QIEISV001B
TO PDSL 3989A
D175045(B-7)
CIAS PHASE 'B'
TO RSHH 25A
D175045 (D-6)
PENETRATION ROOM EXHAUST FAN (1-FULL CAPACITY) QIEI5C001A-A
QIEISV003A FO
CHECK DAMPER
PENETRATION ROOM FILTER UNIT (1 FULL CAPACITY) QIEI5F001A-A
PENETRATION RM. FILT. ME RM. UNIT HTR. 1A NIEI5K001A-N
TO PDSL 3989A
D175045 (B-7)
SEE NOTE 14
TO RSHH 25A
D-175045 (D-6)
PENETRATION ROOM RECIRCULATION FAN(1-FULL CAPACITY) QIEI5C002A-A
QIEISV002A FO
CHECK DAMPER
D-175022(A-4)
D-175022(C-4)
D-175022(E-4)
D-175022(C-1)
QIEISV001D
QIEISV001A
D-175022(D-4)
QIEISV001B
CIAS PHASE 'A'
CIAS PHASE 'B'
QIEISV001C
D-175022(C-7)
ELEC PNTR R
COND UNIT 1A
NIV46A001A-A
ATMOS.
ELECTRICAL PENETRATION ROOM 354
PIPE PENETRATION ROOM
PIPE PENETRATION ROOM
TO FLOOR DRAIN
ELEC PNTR RM AHU 1A
NIV46C018A-N
D-175034(F-3)
D-175034(F-3)
139'-0"
121'-0"
100'-0"
83'-0"
RHR HT-X ROOM
RHR PUMP ROOM
CORRIDOR
FLOOR DRAIN TANK ROOM
REV. 10 3-9-82
ADDED P.E. SEAL.
REV. 9 8-16-80
INC. BM 3064 REV. 4
REV. 8 4-19-78
INC. BM-3064 REV. 5
REV. 7 7-19-77
INCORP BM-2918
REV. 6
INCORP BM-284



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-175013 FOR PROCESS FLOW DIAGRAM.
6. WORK THIS DRAWING WITH DWG. D-175111 THRU D-175120 & D-175126.
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 COMPLETE INSTRUMENT NUMBERS, REFER TO INSTRUMENT INDEX B-175803.
12. FOR P&ID LEGEND SEE DWG. D-175016, SH. 1 & 2.
13. FOR EQUIP. LIST SEE DWG. D-175070.
14. ORIFICE PLATE INSTALLED TO INDUCE FLOW THROUGH INOPERATIVE FILTER TRAIN.

ORIGINAL DRAWING Rev. 10
TRANSFERRED TO DCS

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

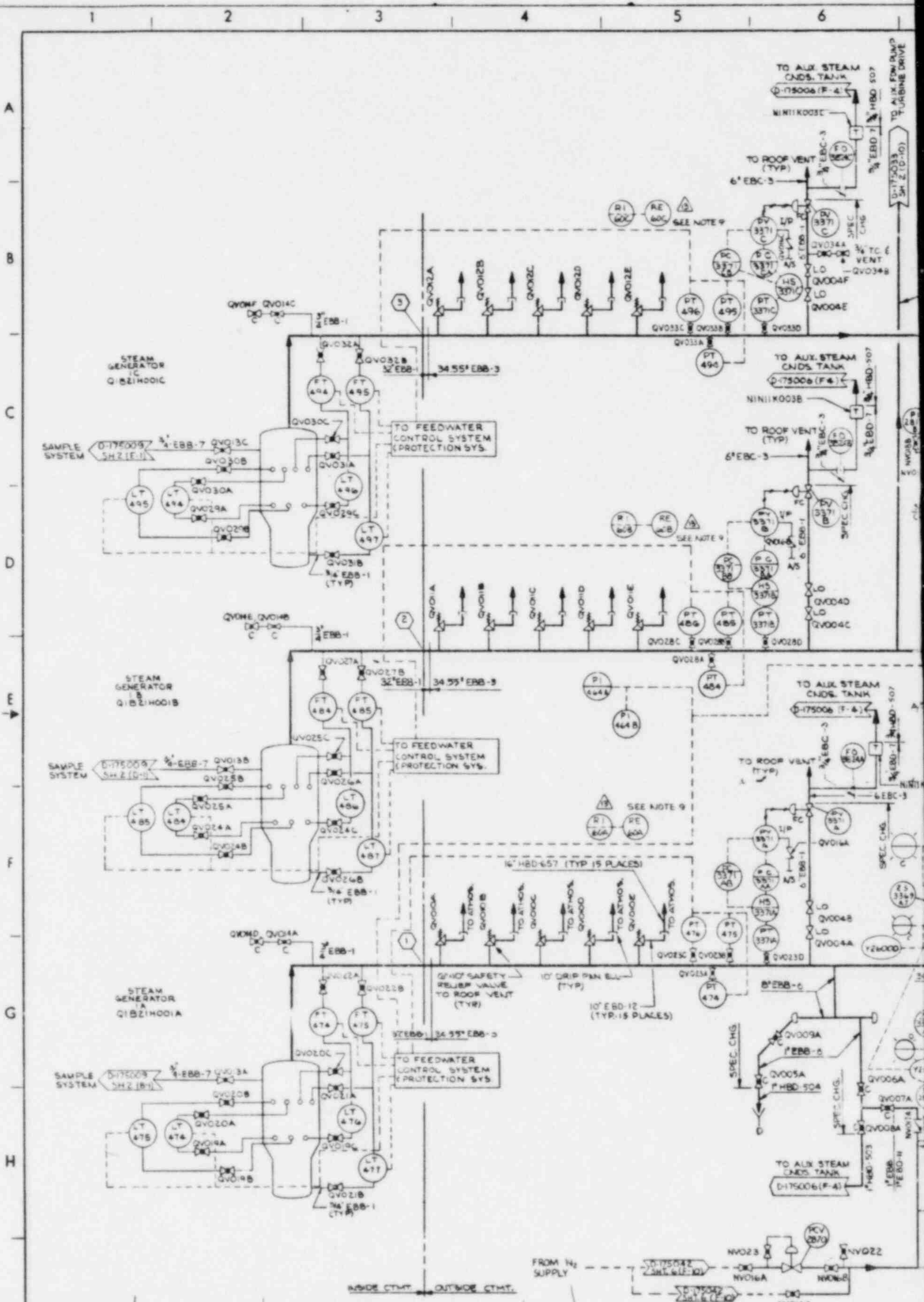
HVAC P&I DIAGRAM
PENETRATION FILTRATION SYS.

SCALE NONE

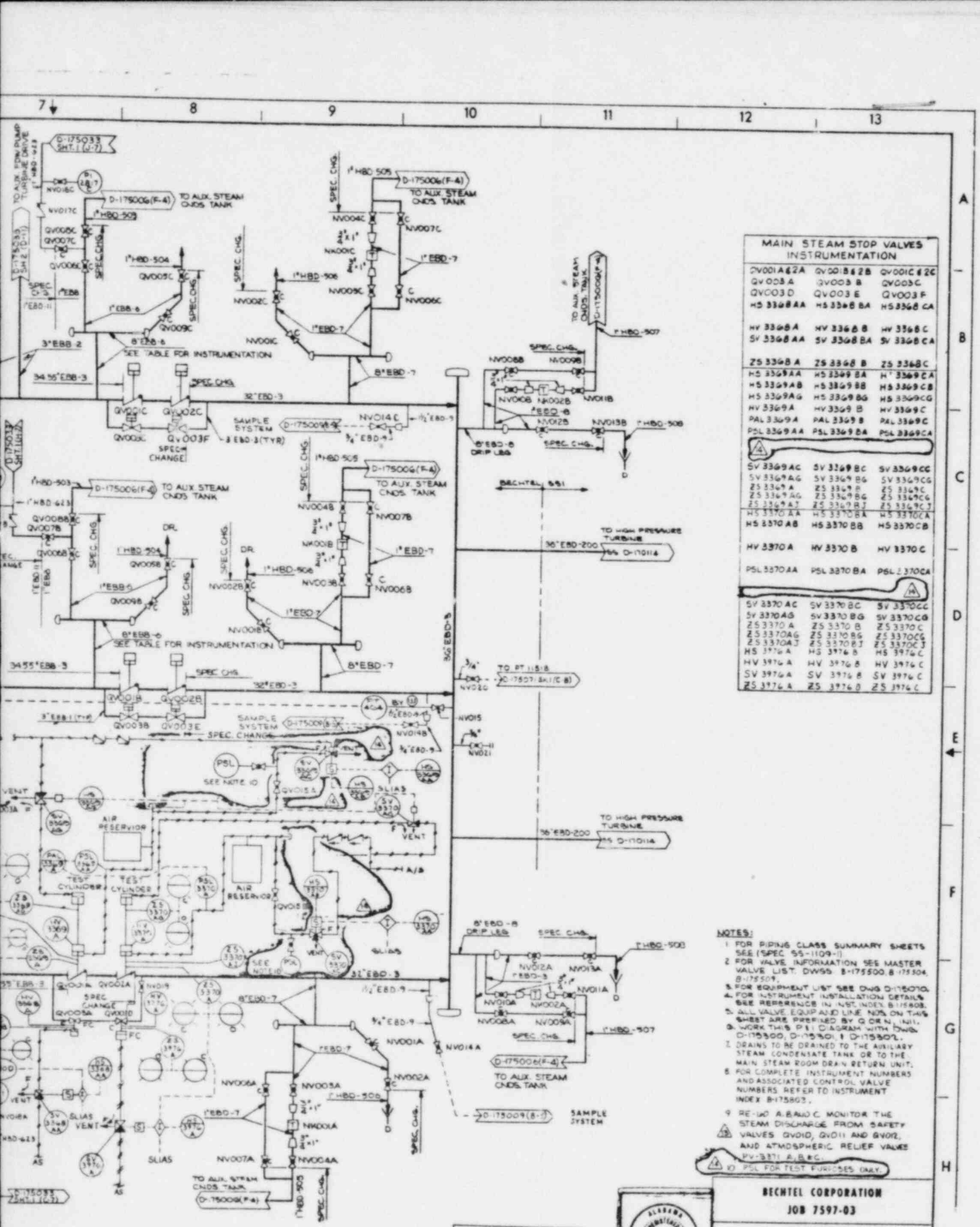
D-175022 REV. 10

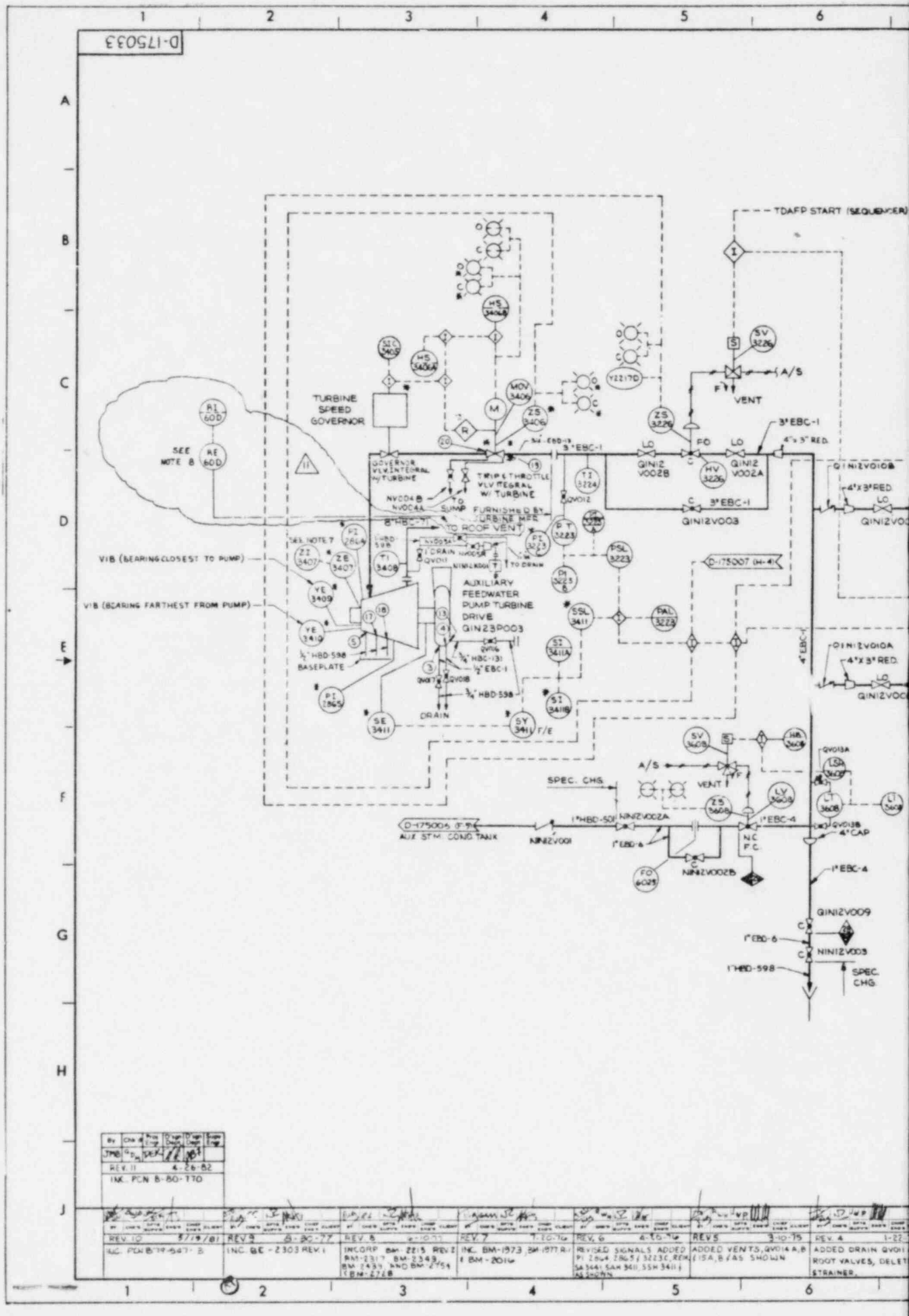
REV'S	INCORP BM-2209 REV.	ADDED PEN. RM. FLT. M.E. RM. UNIT HTRS. 1A & 1B PER BM-2218 & INCORP. BM-2209	REVISED AS PER BM-1218 AND AS CIRCLED	REDRAWN & ISSUED FOR ENGINEERING
	5-7-77	6-8-76	6-8-76	4-5-74
	REV 4	REV 3	REV 3	REV 2

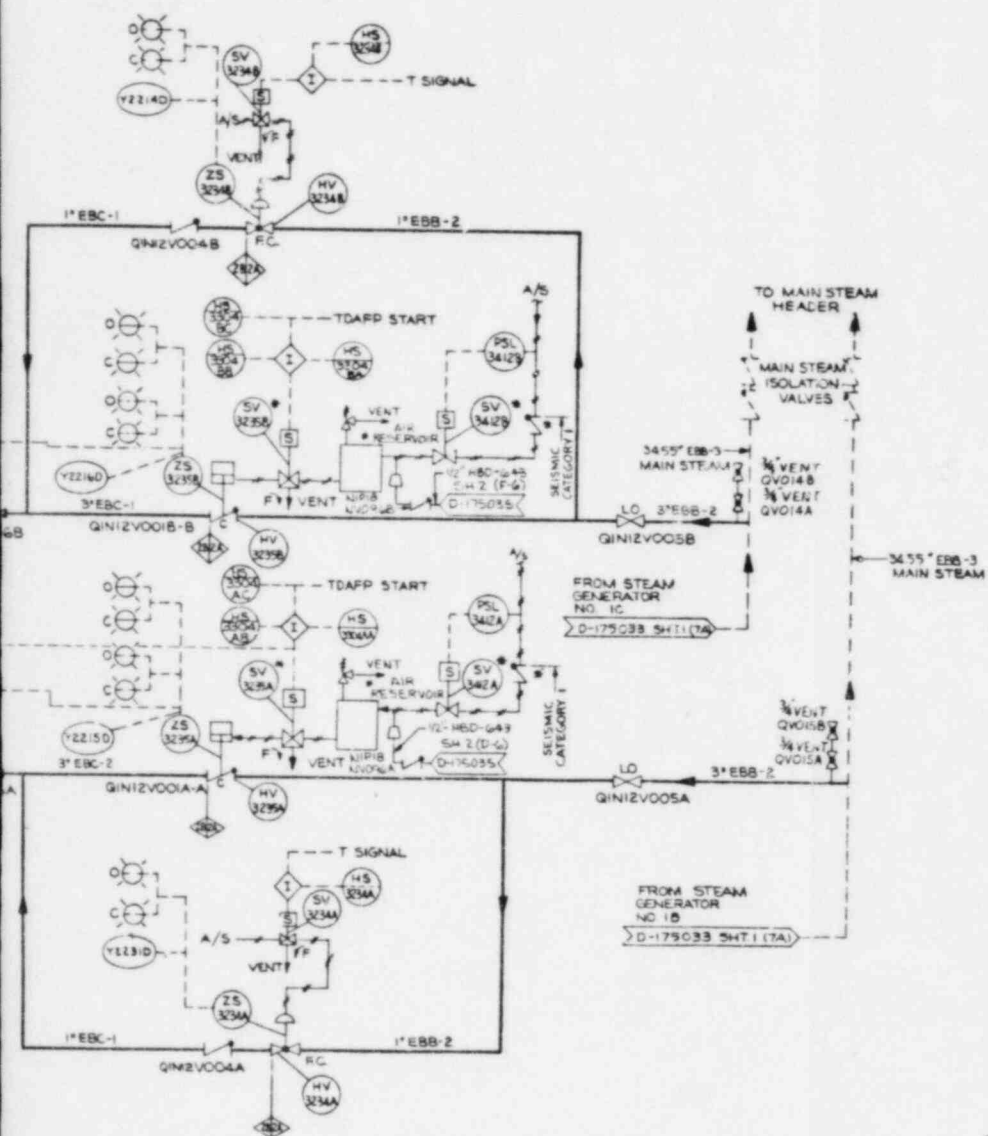
DRAWN D.L.B. TRACED
APPROVED [signature] DATE 4-2-74
APPROVED DATE
APPROVED DATE
APPROVED DATE



REV. 10 6-3-77	REV. 9 7-20-76	REV. 8 5-17-76	REV. 7 11-11-75	REV. 6 8-29-75	REV. 5	REV. 4
INCORPORATED BM-2286, BM-2393, BM-2566 AND BM-2711 REV. 1.	INC. BM-1796, BM-1574, BM-1949 REV. 1, BM-2033 & BM-2039	INC. BM-1642, REVISED INSTRUMENTATION, DELETED [illegible] AS SHOWN INC. BE-2237	INC. BM-1328, BM-1583, REVISED AS NOTED INC. BM-1903 REV. 2 & BM-1358	ADDED N2 SUPPLY, & 1½" EBD-9/RED.'s AS SHOWN.	ADDED ROOT VALVES AND REVISED AS CIRCLED.	INC. PCN B-80-694-3


MAIN STEAM STOP VALVES INSTRUMENTATION
QV001A & 2A | QV001B & 2B | QV001C & 2C
QV003A | QV003B | QV003C
QV003D | QV003E | QV003F
HS 3368AA | HS 3368BA | HS 3368CA
HV 3368A | HV 3368B | HV 3368C
SV 3368AA | SV 3368BA | SV 3368CA
ZS 3368A | ZS 3368B | ZS 3368C
HS 3369AA | HS 3369BA | HS 3369CA
HS 3369AB | HS 3369BB | HS 3369CB
HS 3369AG | HS 3369BG | HS 3369CG
HV 3369A | HV 3369B | HV 3369C
PAL 3369A | PAL 3369B | PAL 3369C
PSL 3369AA | PSL 3369BA | PSL 3369CA
SV 3369AC | SV 3369BC | SV 3369CC
SV 3369AG | SV 3369BG | SV 3369CG
ZS 3369A | ZS 3369B | ZS 3369C
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 3370A | HV 3370B | HV 3370C
PSL 3370AA | PSL 3370BA | PSL 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 3376A | HS 3376B | HS 3376C
HV 3376A | HV 3376B | HV 3376C
SV 3376A | SV 3376B | SV 3376C
ZS 3376A | ZS 3376B | ZS 3376C
NOTES:
1. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC SS-1109-I)
2. FOR VALVE INFORMATION SEE MASTER VALVE LIST DWGS B-175500, B-175504, B-175509.
3. FOR EQUIPMENT LIST SEE DWG D-175010.
4. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INST. INDEX B-175803.
5. ALL VALVE EQUIP AND LINE NOS ON THIS SHEET ARE PREFIXED BY Q OR N, UNLESS OTHERWISE NOTED.
6. WORK THIS P & I DIAGRAM WITH DWGS D-175500, D-175501 & D-175502.
7. DRAINS 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-175803.
9. RE-LIFT A, B AND C MONITOR THE STEAM DISCHARGE FROM SAFETY VALVES QV001D, QV011 AND QV012, AND ATMOSPHERIC RELIEF VALVES PV-3371 A, B & C.
10. PSL FOR TEST PURPOSES ONLY.
ORIGINAL DRAWING, Rev. 14 TRANSFERRED TO SCB
BECHTEL CORPORATION
JOB 7597-03
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-175033
REV. 14
INC. PCN-B-80-710-7
REVISED KEY BLOCKS AS SHOWN.
NC. BM-2711 REV. 2, & EBM-3014, NC. BM (94 SEC.)
ISSUED FOR ENGINEERING
REV. 0 1-5-73


D-175033
TDAFP START (SEQUENCER)
TURBINE SPEED GOVERNOR
SEE NOTE 8
GOVERNOR VLV INTEGRAL W/ TURBINE
TRIP & THROTTLE VLV INTEGRAL W/ TURBINE
TO SUMP
FURNISHED BY TURBINE MFR
TO ROOF VENT
VIB (BEARING CLOSEST TO PUMP)
VIB (BEARING FARTHEST FROM PUMP)
AUXILIARY FEEDWATER PUMP TURBINE DRIVE
QIN23P003
BASEPLATE
DRAIN
F/E
A/S
VENT
SPEC. CHG.
AUX STM. COND. TANK
NC
FC
QIN12V009
NIN12V003
SPEC. CHG.
REV. 11 4-26-82
INC. PCN B-80-770
REV. 9 6-30-77
INC. BE-2303 REV. 1
REV. 8
INCORP. BM-2215 REV. 1 BM-2317 BM-2343, BM-2439 AND BM-2754 (BM-2768)
REV. 7
INC. BM-1973 BM-1977 R-1 & BM-2016
REV. 6 4-10-76
REVISED SIGNALS ADDED
REV. 5 3-10-75
ADDED VENTS, QV014 A,B (15A, B/A5 SHOWN
REV. 4
ADDED DRAIN QV01 ROOT VALVES, DELET STRAINER.



NOTE:

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 QIN12.
4. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-175803.
5. THE FOLLOWING PRESSURE INSTRUMENTS DETECT HIGH ENERGY LINE FAILURES AND ACTIVATE PAH-2850 IN THE MAIN CONTROL ROOM.

INSTRUMENT NO.	TRAIN
QIN12PSH2850A	A
B	A
C	A
D	B
E	B
F	B

6. ◯ INDICATES CONNECTION NUMBERS ON THE AUXILIARY FEEDWATER PUMP (SEE U-262033)
7. PORTABLE INSTRUMENT MAY BE USED.
8. RE 60 D MONITORS THE STEAM DISCHARGE FROM THE AUX. FEED PUMP TURBINE DRIVE.

11

ORIGINAL DRAWING Rev. 10
TRANSFERRED TO BCS

BECHTEL CORPORATION
JOB 7597-03

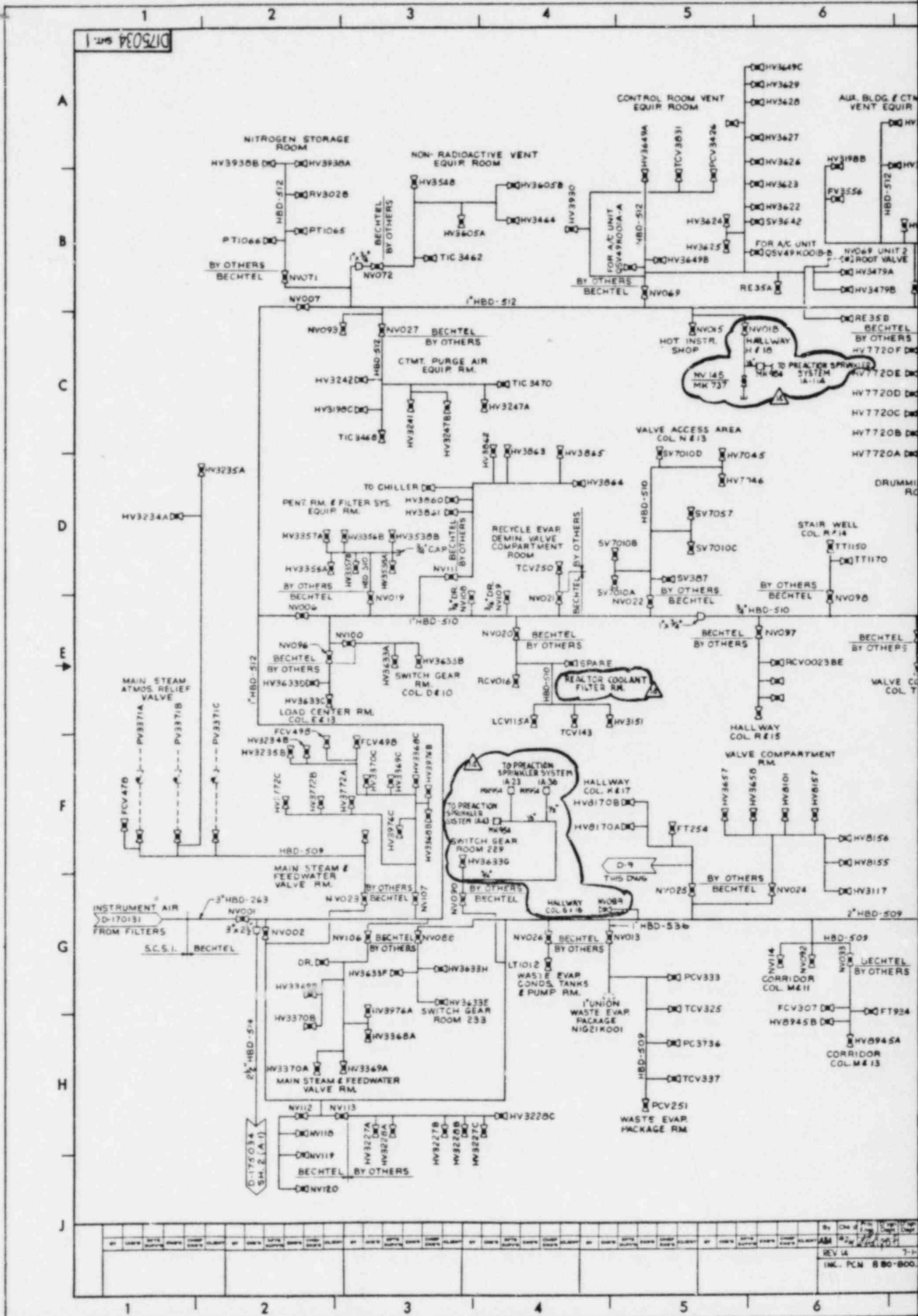
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

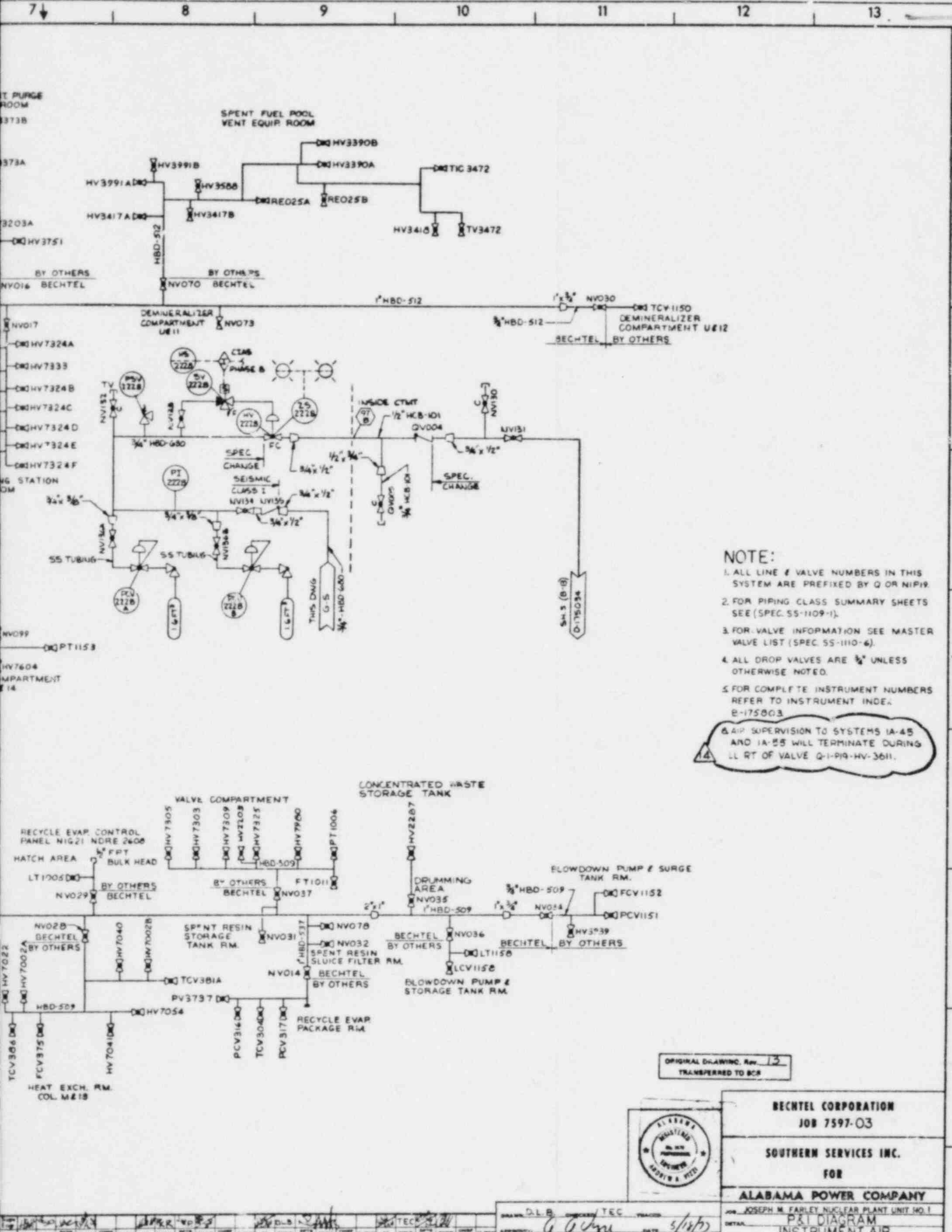
DETAIL P & I DIAGRAM
MAIN STEAM AND AUXILIARY STEAM SYSTEMS

SHEET 2 OF 2 SHEETS
D-175033
REV. 11

REV.	BY	DATE	DESCRIPTION
REV. 2		5-28-74	INSTRUMENTATION
REV. 1		1-9-74	ADDED 3 CHECK VALVES GEN1V001A & B ADDED COMPUTER I/O TAG NOS.
REV. 1		3-13-73	REVISED AS CIRCLED
REV. 0		1-5-73	ISSUED FOR ENGINEERING

DRAWN TJG TRACED RLH
APPROVED M. Mole DATE 1/8/73
APPROVED DATE
APPROVED DATE
APPROVED DATE


D175034 SHT. 1
CONTROL ROOM VENT EQUIP ROOM
NITROGEN STORAGE ROOM
NON-RADIOACTIVE VENT EQUIP ROOM
HOT INSTR. SHOP
HALLWAY
TO PREACTION SPRINKLER SYSTEM
CTMT. PURGE AIR EQUIP. RM.
VALVE ACCESS AREA
PENT. RM. & FILTER SYS. EQUIP. RM.
RECYCLE EVAP. DEMIN. VALVE COMPARTMENT ROOM
STAIR WELL
SWITCH GEAR RM.
LOAD CENTER RM.
REACTOR COOLANT FILTER RM.
MAIN STEAM ATMOS. RELIEF VALVE
VALVE COMPARTMENT RM.
SWITCH GEAR ROOM 229
MAIN STEAM & FEEDWATER VALVE RM.
INSTRUMENT AIR
D-170131
FROM FILTERS
S.C.S.I.
BECHTEL
BY OTHERS
WASTE EVAP. CONDS. TANKS & PUMP RM.
1" UNION WASTE EVAP. PACKAGE
SWITCH GEAR ROOM 233
WASTE EVAP. PACKAGE RM.
CORRIDOR
D-175034 SH. 2 (A.1)
REV 14
INC. PCN



SPENT FUEL POOL VENT EQUIP. ROOM
HV3390B
HV3390A
TIC 3472
HV3991B
HV3991A
HV3588
RE025A
RE025B
HV3417A
HV3417B
HV3418
TV3472
HBD-512
HV3751
BY OTHERS
BECHTEL
NV016
NV070
1" HBD-512
1"x¾"
NV030
TCV 1150
DEMINERALIZER COMPARTMENT UE11
NV073
¾" HBD-512
DEMINERALIZER COMPARTMENT UE12
NV017
HV7324A
HV7333
HV7324B
HV7324C
HV7324D
HV7324E
HV7324F
¾" HBD-680
SPEC. CHANGE
¾"x½"
INSIDE CTMT
½" HCB-101
QV004
NV130
NV131
SPEC. CHANGE
SEISMIC CLASS I
NV134
NV135
SS TUBING
THIS DWG G-5
¾" HBD-680
SH. 3 (B-8) D-175034
NV099
PT1153
HV7604
COMPARTMENT
CONCENTRATED WASTE STORAGE TANK
VALVE COMPARTMENT
HV7305
HV7303
HV7309
HV2103
HV7325
HV7980
PT1006
HV2287
RECYCLE EVAP. CONTROL PANEL N1G21 NDRE 2608
HATCH AREA
¾" FPT BULK HEAD
LT1005
NV029
HBD-509
BY OTHERS
BECHTEL
NV037
FT1011
DRUMMING AREA
NV035
1" HBD-509
2"x1"
1"x¾"
¾" HBD-509
BLOWDOWN PUMP & SURGE TANK RM.
FCV1152
NV034
PCV1151
HV3939
NV028
HV7040
HV7002B
SPENT RESIN STORAGE TANK RM.
NV031
NV078
NV032
SPENT RESIN SLUICE FILTER RM.
NV036
LT1158
LCV1158
BLOWDOWN PUMP & STORAGE TANK RM.
NV014
TCV381A
PV3737
HV7054
HV7022
HV7002A
TCV386
FCV375
HV7041
PCV316
TCV304
PCV317
RECYCLE EVAP. PACKAGE RM.
HEAT EXCH. RM. COL. M&18

NOTE:

1. ALL LINE & VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY Q OR N1P19.
2. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. SS-1109-1).
3. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. SS-1110-6).
4. ALL DROP VALVES ARE ¾" UNLESS OTHERWISE NOTED.
5. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX E-175803.
6. AIR SUPERVISION TO SYSTEMS IA-45 AND IA-55 WILL TERMINATE DURING LLRT OF VALVE Q-1-P19-HV-3611.

ORIGINAL DRAWING, Rev. 13 TRANSFERRED TO BCR

BECHTEL CORPORATION
JOB 7597-03

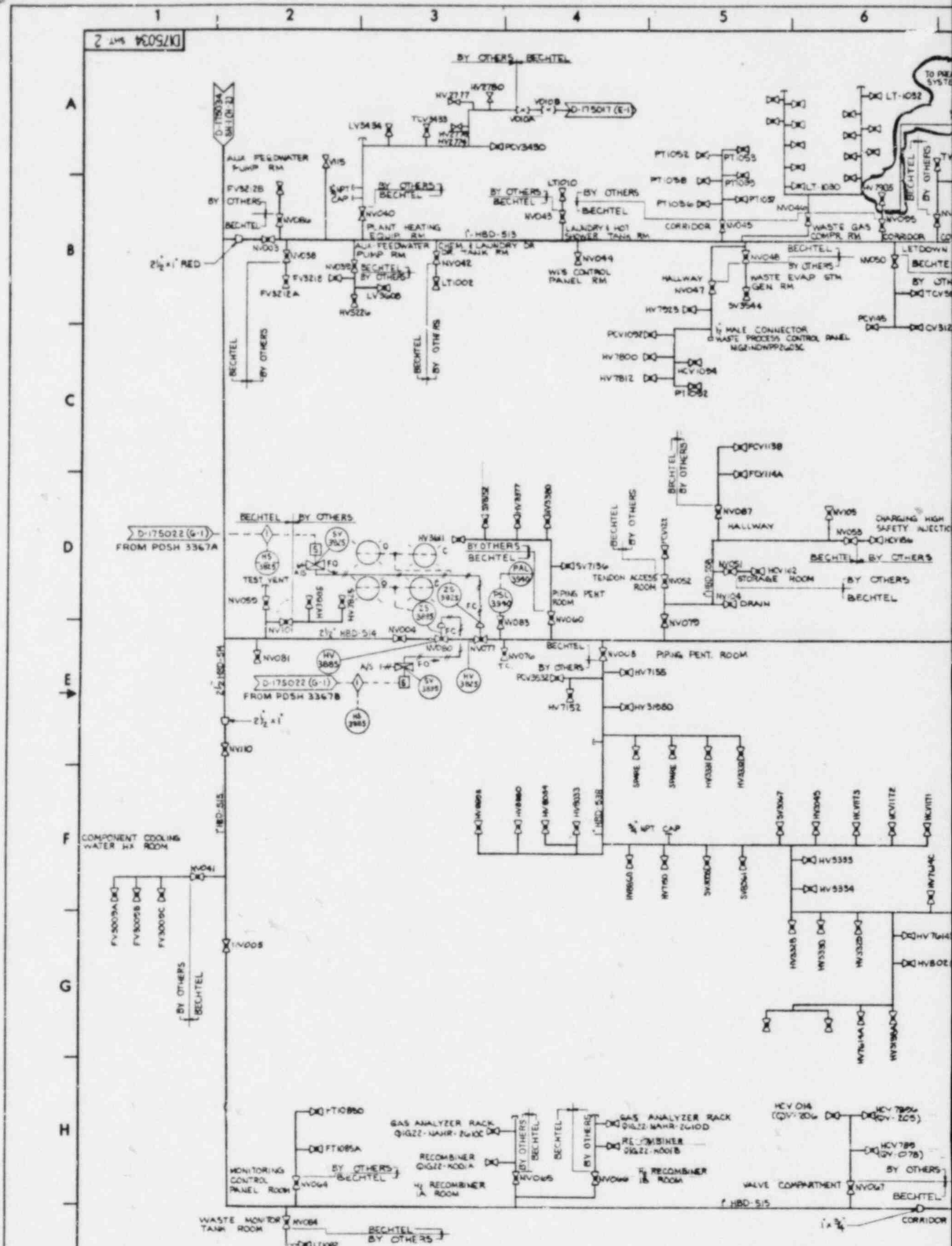
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P&I DIAGRAM INSTRUMENT AIR

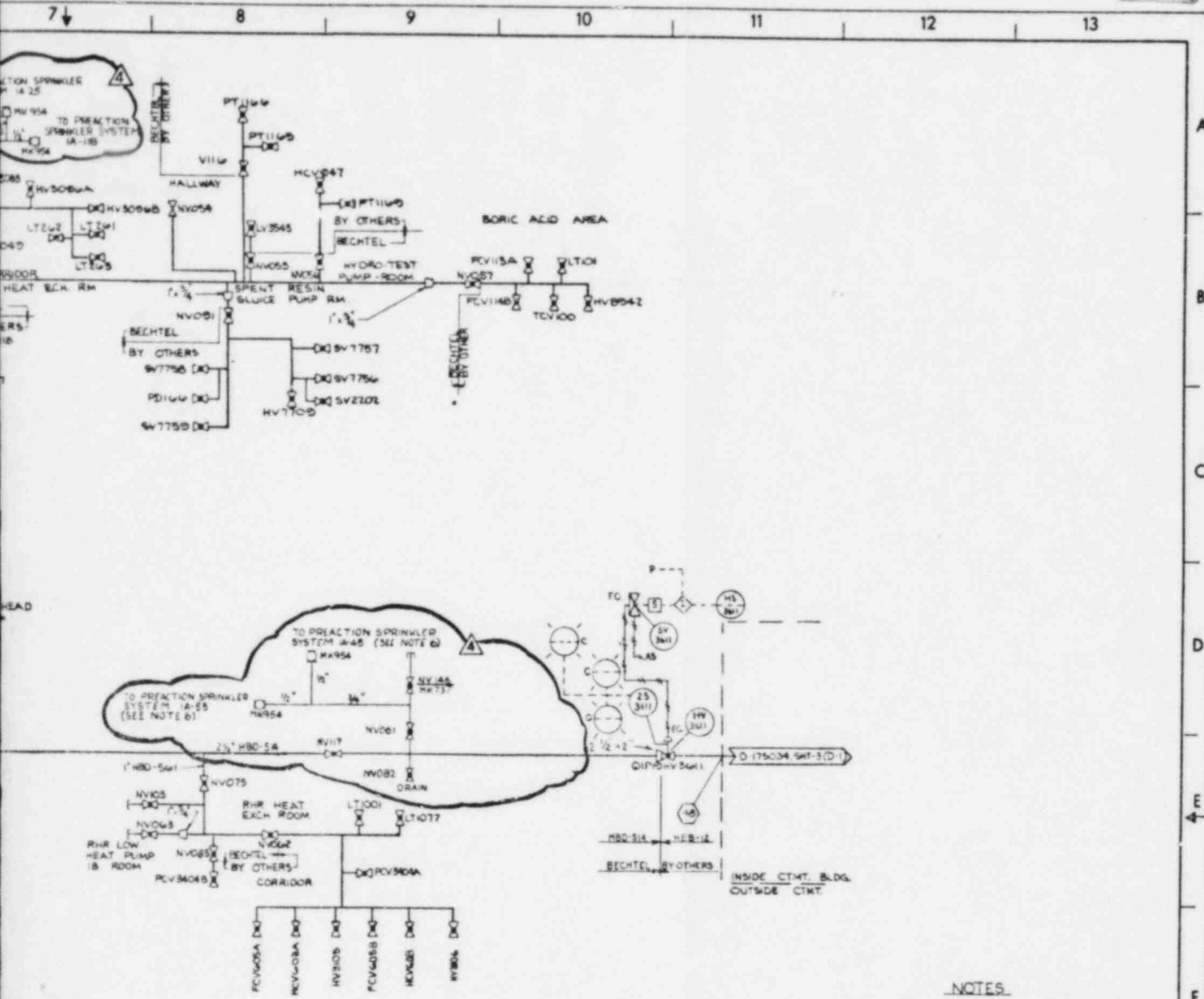
SHEET 1 OF 3 SHEETS

D-175034 REV. 14

REV	DATE	DESCRIPTION
REV 13	3-7-81	INC. PCN B80-645-9 & PCN B78-116-20
REV 12	7-2-80	ADDED VALVE HV-2787 AS BUILT.
REV 11	5-10-78	INC. BM 3023
REV 10	5-19-77	D-175034 SH 1 OF 1 REDRAWN SHOWING AS BUILTS PER BM-2281 NOW D-175034 SH 1 OF 3 & INC. BM-2181, 2188, 2189 & BE-3709 REV. 2



D175034 SHT 2
BY OTHERS BECHTEL
D-175017 (E-1)
AUX FEEDWATER PUMP RM
PLANT HEATING EQUIP RM
CHEM & LAUNDRY DR TANK RM
LAUNDRY & HOT SHOWER TANK RM
W/S CONTROL PANEL RM
CORRIDOR
WASTE GAS COMPR RM
LETDOWN
HALLWAY
WASTE EVAP STM GEN RM
1/2 MALE CONNECTOR WASTE PROCESS CONTROL PANEL
2 1/2 x 1" RED
1"-HBD-513
D-175022 (G-1)
FROM PDSH 3367A
TEST VENT
TENDON ACCESS ROOM
PIPING PENT ROOM
STORAGE ROOM
DRAIN
CHARGING HIGH SAFETY INJECTION
2 1/2"-HBD-514
PIPING PENT. ROOM
D-175022 (G-1)
FROM PDSH 3367B
2 1/2 x 1"
3/4" NPT CAP
COMPONENT COOLING WATER HX ROOM
GAS ANALYZER RACK
RECOMBINER
H2 RECOMBINER 1A ROOM
H2 RECOMBINER 1B ROOM
MONITORING CONTROL PANEL ROOM
VALVE COMPARTMENT
WASTE MONITOR TANK ROOM
1"-HBD-515
CORRIDOR
BECHTEL
REV 4
INC PER PCN



NOTES

1. SEE D-175034 SH-1 FOR NOTES

ORIGINAL DRAWING, Rev. 3
TRANSFERRED TO BCB

BECHTEL CORPORATION
JOB 7597-03

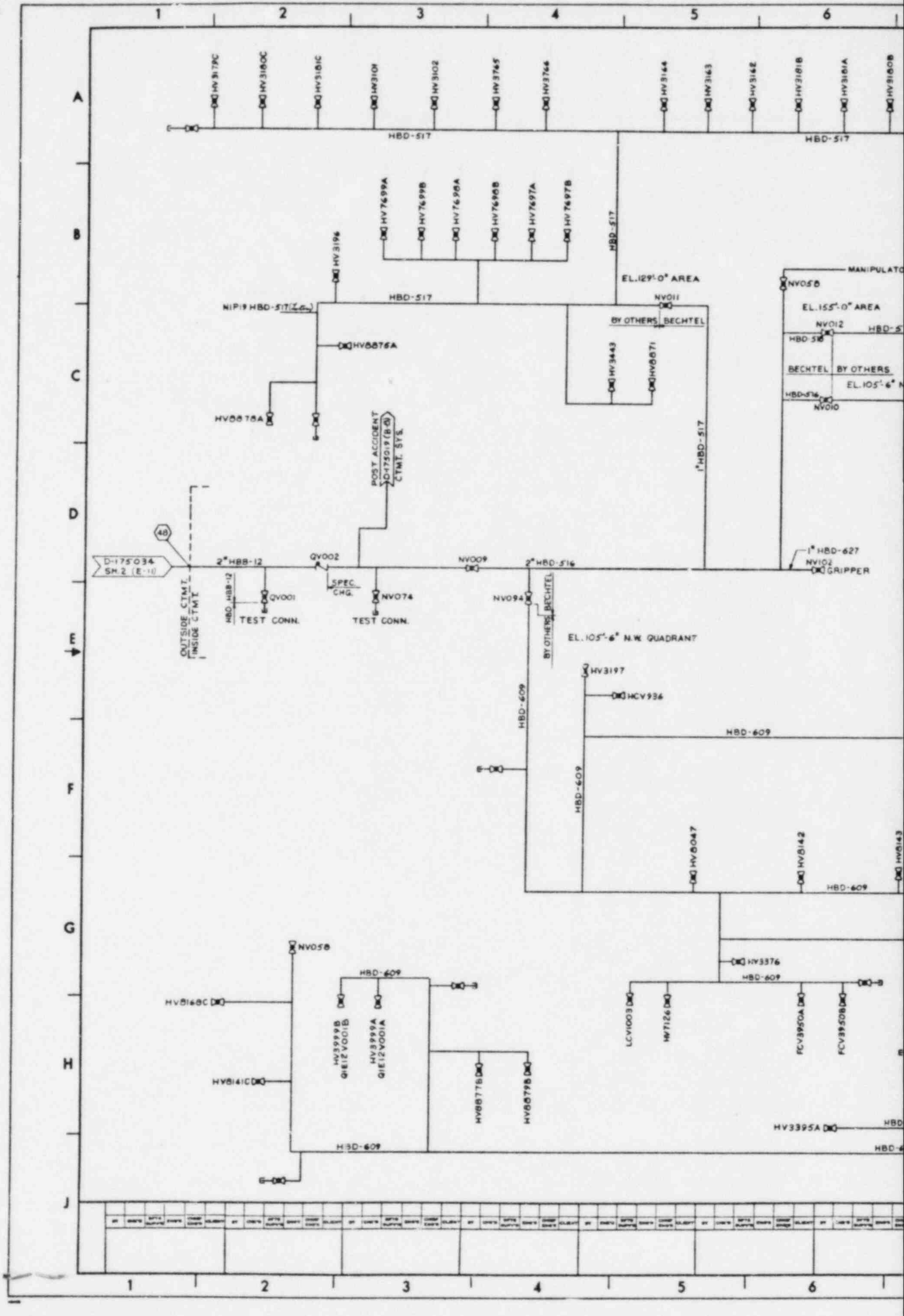
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P & I DIAGRAM
INSTRUMENT AIR

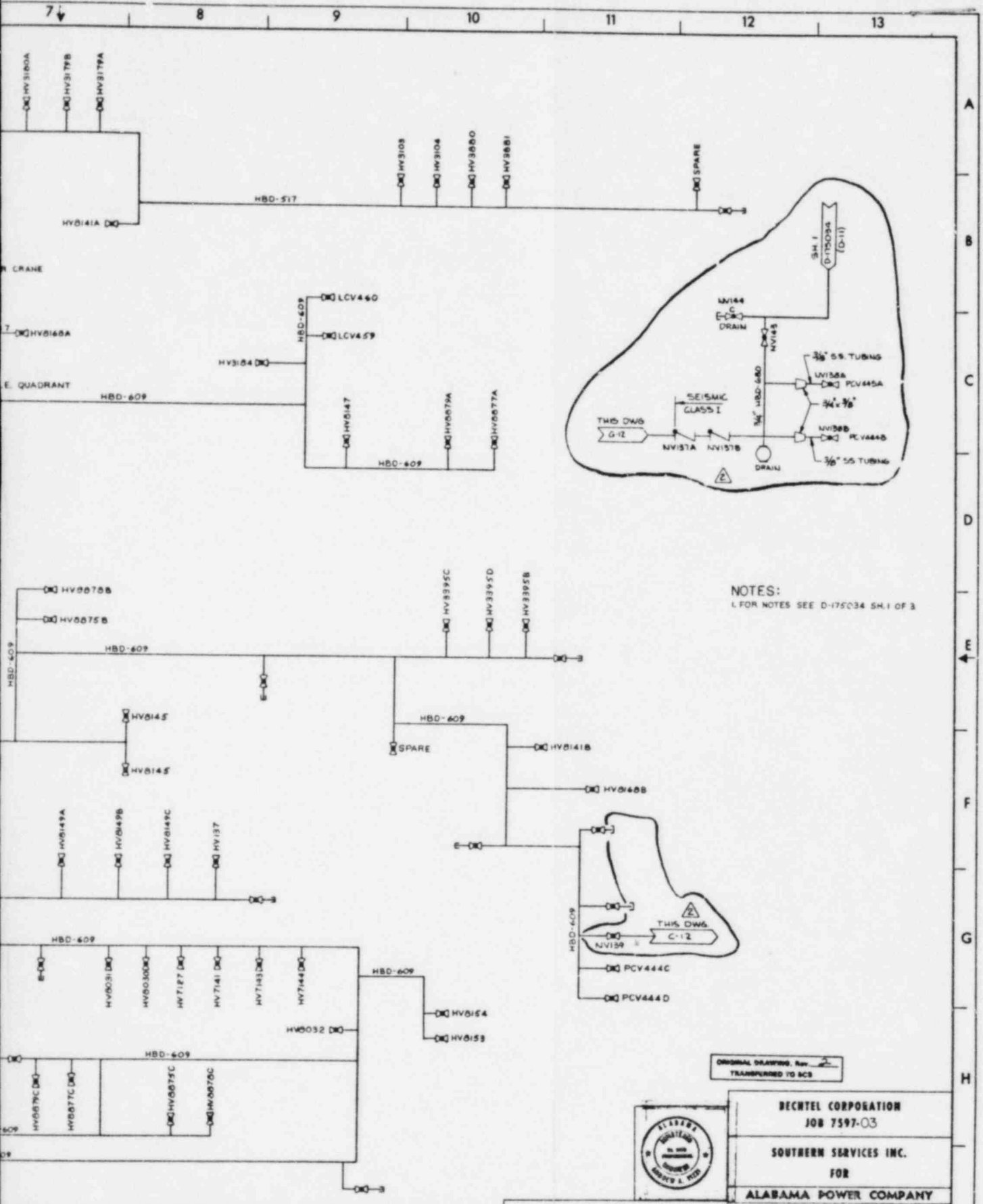
SHEET 2 OF 3 SHEETS
D-175034
REV 4

DRAWN DAS CHECKED TEC TRACED
APPROVED DATE 5/2/77
APPROVED DATE
APPROVED DATE
APPROVED DATE

REV	DESCRIPTION	DATE
REV 3	BM 1968 REV 1 WAS INC IN REV 1, BUT NOT LISTED IN REVISION BLOCK.	1-29-82
REV 2	INC PCN B-78-115-19, PCN	5-7-81
REV 1	INC. BM-3066. AS BUILT. INC BM-1968 REV 1	7-2-80
REV 0	D-175034 SH 2 OF 3 ADDED TO SHOW AS BUILT CONDITIONS AS PER BM 2281 & BM-2187	5-19-77



HBD-517
HV3172C
HV3180C
HV3181C
HV3101
HV3102
HV3765
HV3766
HV3164
HV3163
HV3162
HV3181B
HV3181A
HV3180B
HV7699A
HV7699B
HV7698A
HV7698B
HV7697A
HV7697B
HV3196
NIP19 HBD-517
HV8876A
HV8878A
EL.129'-0" AREA
NV011
BY OTHERS
BECHTEL
HV3443
HV6871
1" HBD-517
MANIPULATOR
NV058
EL.155'-0" AREA
NV012
HBD-516
EL.105'-6"
NV010
POST ACCIDENT
D-175019 (B-6)
CTMT. SYS.
D-175034
SH.2 (E-11)
48
2" HBB-12
QV002
SPEC. CHG.
QV001
TEST CONN.
NV074
NV009
2" HBD-516
NV094
OUTSIDE CTMT.
INSIDE CTMT.
1" HBD-627
NV102
GRIPPER
EL.105'-6" N.W. QUADRANT
HV3197
HCV936
HBD-609
HV8047
HV8142
HV8143
NV058
HV8168C
HV8141C
HV3999B
Q1E12V001B
HV3999A
Q1E12V001A
HV8877B
HV8879B
HV3376
LCV1003
HV7126
FCV3950A
FCV3950B
HV3395A



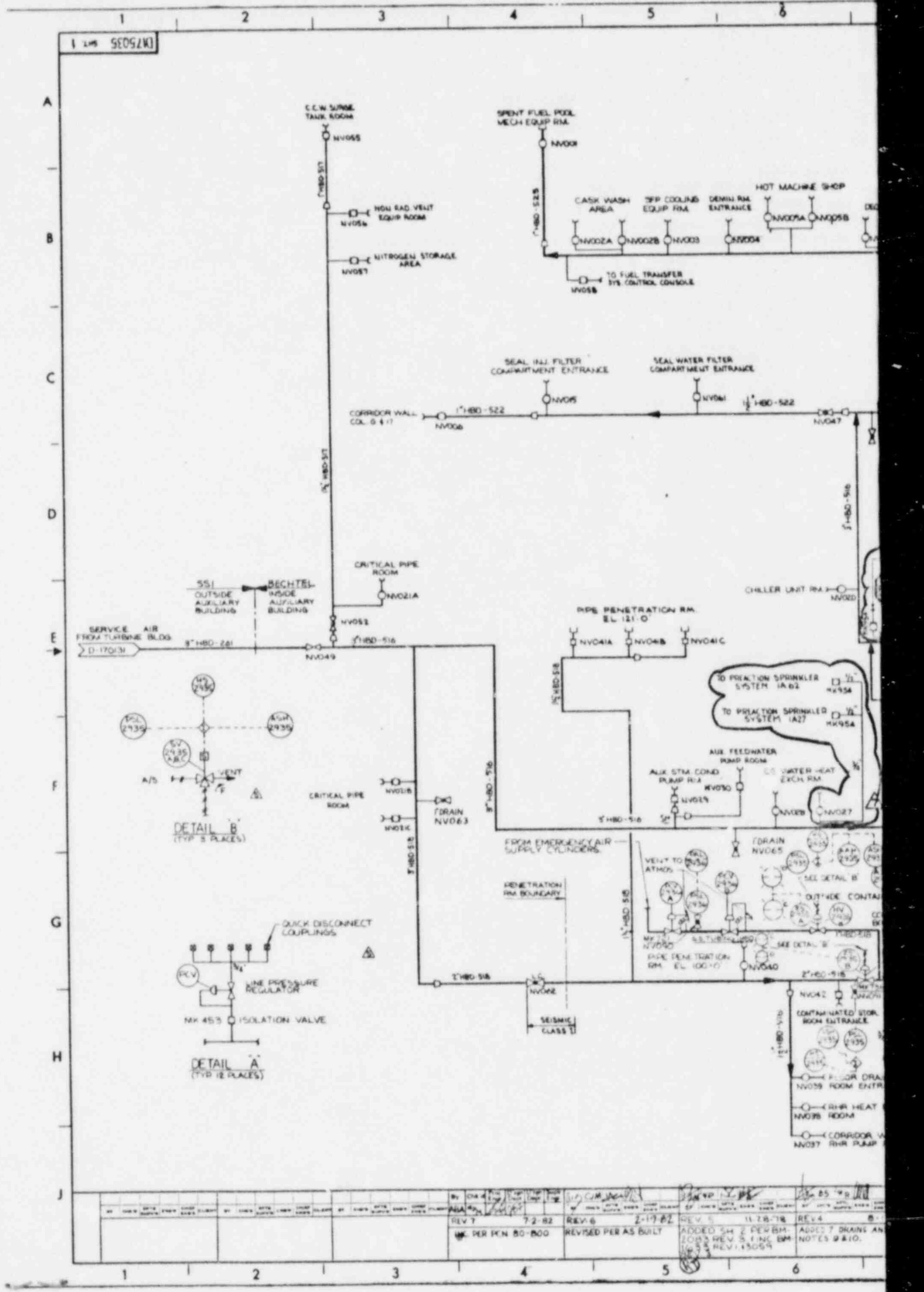
NOTES:
1. FOR NOTES SEE D-175034 SH.1 OF 3.

ORIGINAL DRAWING, Rev. 2
TRANSFERRED TO BCS

REV	DESCRIPTION	BY	CHKD	APPD	DATE
2	INC PCN 3 80-643-9				5-7-81
1	BM-2563 INCORP ON REV. 0. AS BUILT.	D.L.B.			7-2-80
0	D-175034 SH. 3 OF 3 ADDED TO SHOW AS BUILT CONDITIONS AS PER BM 2281, INC. BM-2563.	TEC			5-19-77

DRAWN D.L.B. CHECKED TEC TRACED
APPROVED A. C. Lizza DATE 5/2/77
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-03
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO.1
DETAIL P&I DIAGRAM
INSTRUMENT AIR
SCALE NONE
SHEET 3 OF 3 SHEETS
SUPERSEDES
D-175034 REV 2


DM75035 SHT 1
C.C.W. SURGE TANK ROOM
NV055
NON RAD. VENT EQUIP ROOM
NV056
NITROGEN STORAGE AREA
NV057
SPENT FUEL POOL MECH EQUIP RM.
NV001
CASK WASH AREA
SFP COOLING EQUIP RM.
DEMIN RM. ENTRANCE
HOT MACHINE SHOP
NV002A
NV002B
NV003
NV004
NV005A
NV005B
TO FUEL TRANSFER SYS. CONTROL CONSOLE
NV058
SEAL INJ. FILTER COMPARTMENT ENTRANCE
SEAL WATER FILTER COMPARTMENT ENTRANCE
CORRIDOR WALL COL. G & 17
NV006
1" HBD-522
NV015
NV061
1½" HBD-522
NV047
CRITICAL PIPE ROOM
NV021A
SSI OUTSIDE AUXILIARY BUILDING
BECHTEL INSIDE AUXILIARY BUILDING
NV053
SERVICE AIR FROM TURBINE BLDG.
D-170131
3" HBD-281
NV049
2" HBD-516
PIPE PENETRATION RM. EL. 121'-0"
NV041A
NV041B
NV041C
CHILLER UNIT RM.
NV020
TO PREACTION SPRINKLER SYSTEM IA62
MK954
TO PREACTION SPRINKLER SYSTEM IA27
MK954A
AUX. FEEDWATER PUMP ROOM
AUX STM. COND. PUMP RM.
NV030
NV029
CS WATER HEAT EXCH RM.
NV028
NV027
DETAIL "B" (TYP 3 PLACES)
CRITICAL PIPE ROOM
NV021B
NV021C
F.DRAIN NV063
FROM EMERGENCY AIR SUPPLY CYLINDERS
F.DRAIN NV065
VENT TO ATMOS
SEE DETAIL "B"
OUTSIDE CONTAINMENT
PENETRATION RM. BOUNDARY
PIPE PENETRATION RM. EL. 100'-0"
NV040
QUICK DISCONNECT COUPLINGS
PCV
LINE PRESSURE REGULATOR
MK 453
ISOLATION VALVE
DETAIL "A" (TYP 12 PLACES)
NV062
SEISMIC CLASS I
NV042
CONTAMINATED STOR. ROOM ENTRANCE
FLOOR DRAIN ROOM ENTRANCE
NV039
RHR HEAT EXCH ROOM
NV038
CORRIDOR W. RHR PUMP
NV037
REV 7 7-2-82 PER PCN 80-800
REV 6 2-19-82 REVISED PER AS BUILT
REV 5 11-28-78 ADDED SH 2 PER BM-2083 REV. 5 INC. BM-1633 REV. 1 3059
REV 4 ADDED 7 DRAINS AND NOTES 9 & 10.

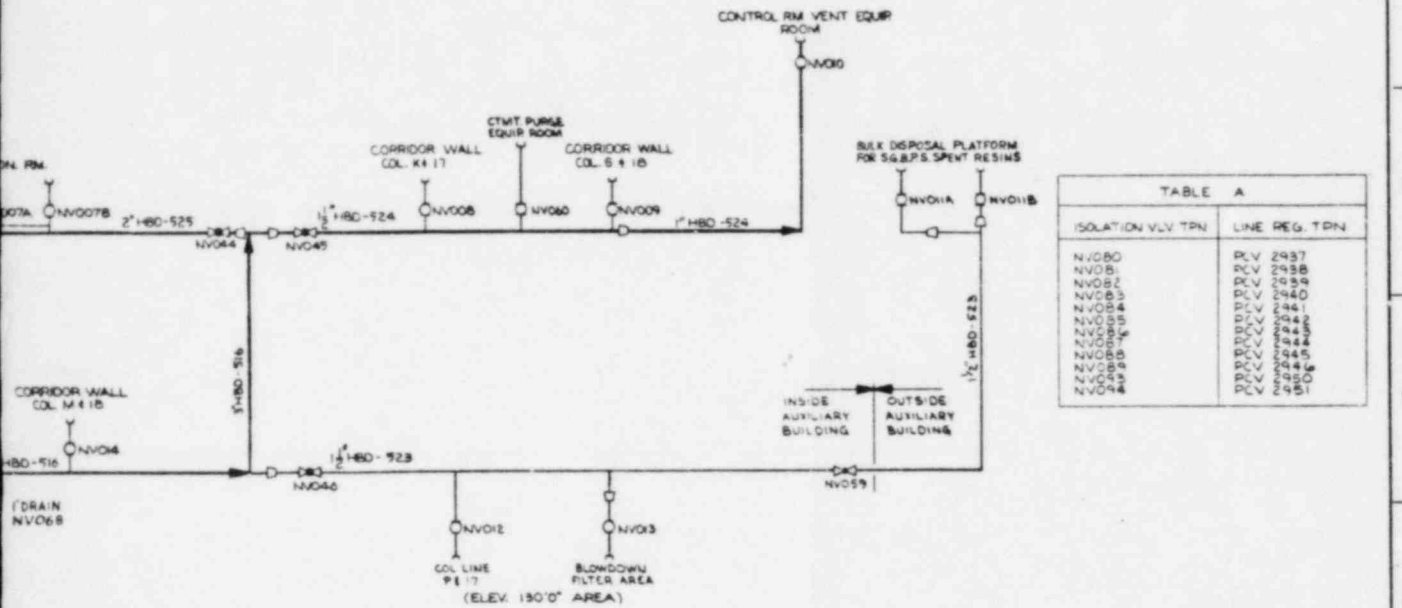
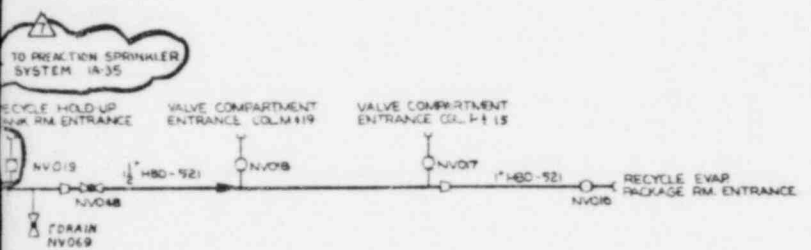
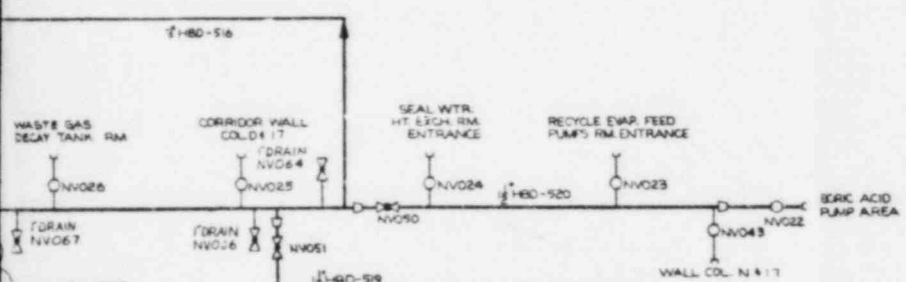
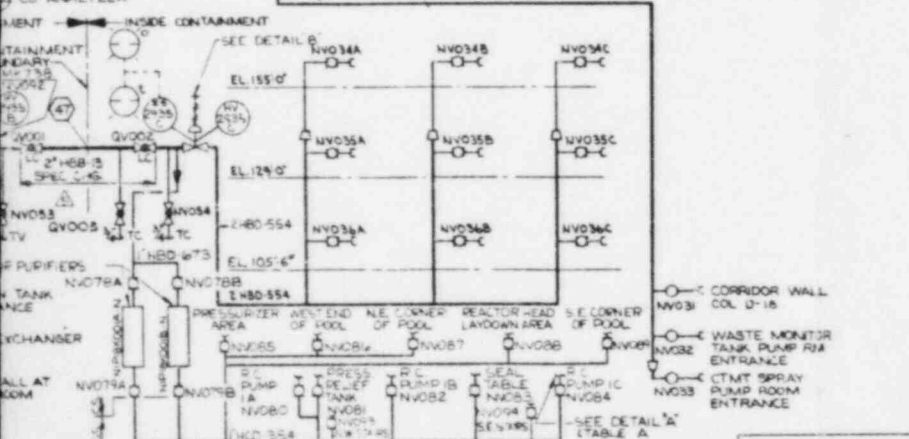


TABLE A	
ISOLATION VLV TPN	LINE REG. TPN
NV080	PCV 2937
NV081	PCV 2938
NV082	PCV 2939
NV083	PCV 2940
NV084	PCV 2941
NV085	PCV 2942
NV086	PCV 2943
NV087	PCV 2944
NV088	PCV 2945
NV089	PCV 2946
NV094	PCV 2950
NV095	PCV 2951







NOTES:

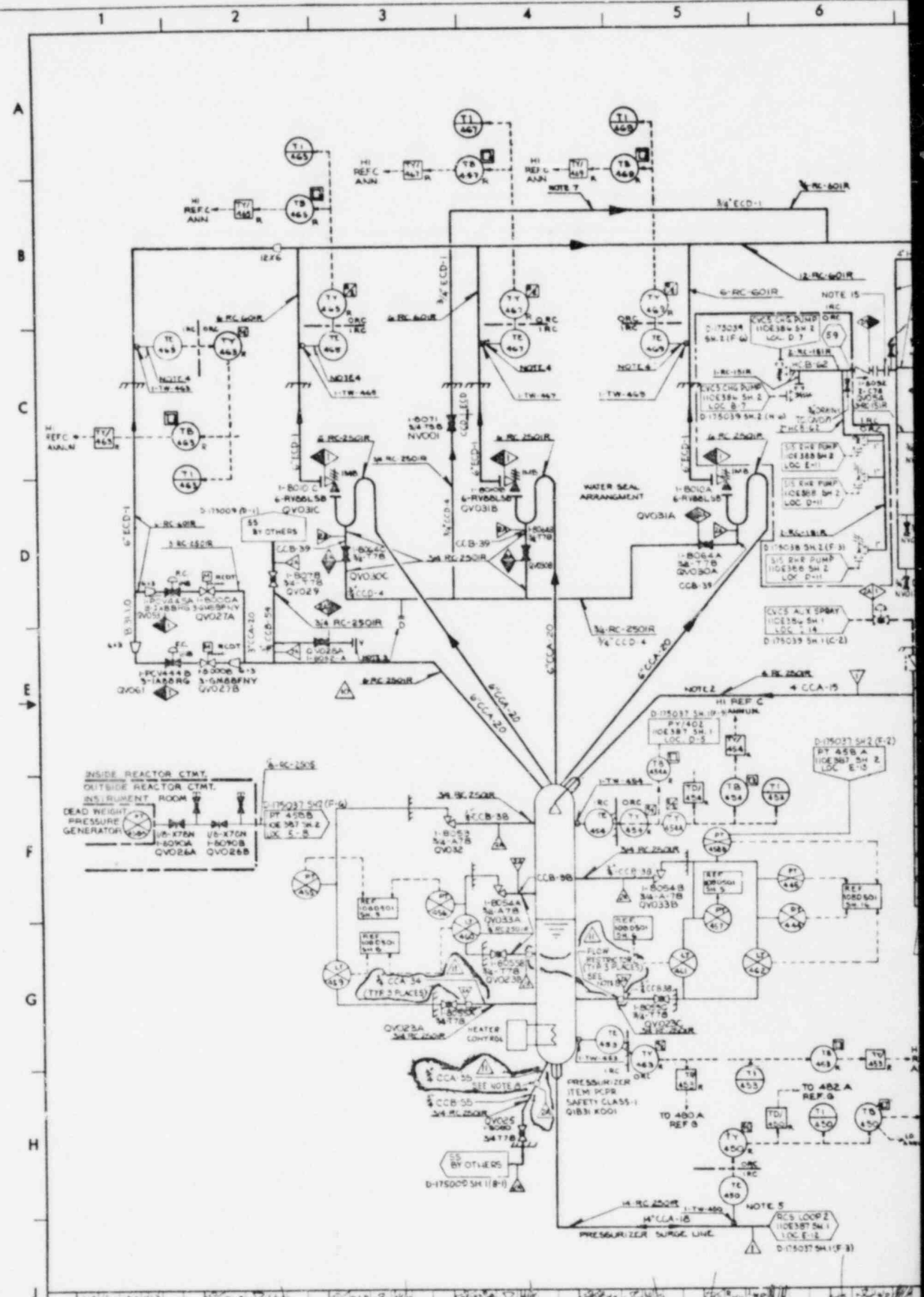
1. ALL BALL VALVES 1"
2. ALL HOSE CONN. ARE 1" THREAD CONN.
3. ALL TEST VENTS & TEST CONN. ARE ¾"
4. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. SS-M02-40 & SS-M10-6).
5. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. SS-M09-1).
6. ALL VALVE & LINE NOS. IN THIS SYS. ARE PREFIXED BY QI OR NIPIB.
7. INDIVIDUAL HOSE STATION TAKE-OFFS ARE 1"
8. SYSTEM IS UNINSULATED
9. FOR EQUIPMENT LIST SEE DWG. 175070
10. FOR P&I D. LEGEND SEE DWG D-175016 SHEET 142
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. VALVE NV07C A ¾" GLOBE VALVE IS TO BE F.E.I. INSTALLED AS A VENT VALVE IN THE AIR SUPPLY LINE TO THE FUEL TRANSFER SYSTEM CONTROL PANEL JUST DOWNSTREAM OF THE (P) SUPPLIED FILTER REGULATOR LUBRICATOR.

ORIGINAL DRAWING, Rev. 6 TRANSFERRED TO BCB

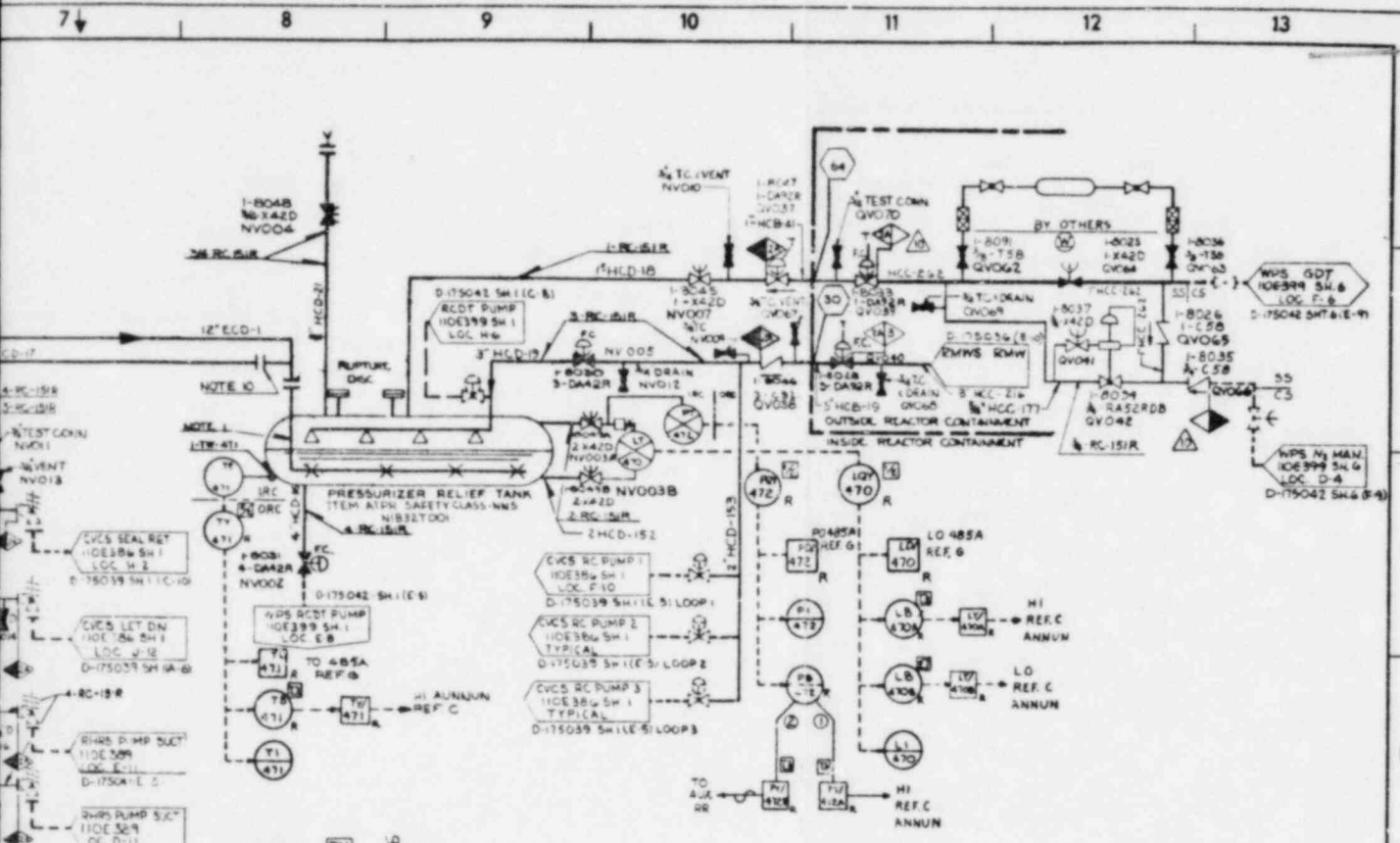
REV. 3 11-4-75	REV. 2 5-11-73	REV. 1 2-13-73	REV. 0 1-17-73
ADDED 3 REDUCERS & CALLED OUT EL 105'6"	REVISED AS CIRCLED	REVISED AS CIRCLED.	ISSUED FOR ENGINEERING

BECHTEL CORPORATION
JOB 7597.07
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
DETAIL P&I DIAGRAM SERVICE AIR
SCALE NONE
SHEET 1 OF 2 SHEETS
SUPERSEDES
D-175035
REV. 7

DRAWN RJH TRACED
APPROVED DATE 11/16/73
APPROVED DATE
APPROVED DATE
APPROVED DATE



REV. 10 7-6-81	REV. 9 6-28-77	REV. 8 2-22-77	REV. 7 7-26-76	REV. 6 5-15-76	REV. 5 3-10-75	REV. 4
INC. BM-2815 & PCN 879-421-4	INC. BM-2828.	INCORPORATED BM-2006 REV. 1 BM-2228 AND BM-2428 REV. 1	BM-1826 INCORP. (B-W) S-NCB-19 WAS 3" HCB-40 AND AS SHOWN.	ADD. NOTE 15, W.T. INC. BM-1715 AND REV. PER WEST-INGHOUSE REV. 10	BM 59 WAS INC. ON REV. 2 AND ADDED NOTE 14 AND AS NOTED.	BM-59 WAS INC. ON REV. 2 AND ADDED NOTE 14 AND AS NOTED. INC. BM-891 AND REVISED AS CIRC NODED DOUBLE VALV



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 151 PIPE TO BE MACHINED TO FIT. LOCATE CONNECTION CLOSE TO PRT.
11. SEE SHEET 1 FOR GENERAL NOTES.
12. SEE DWG D-175044 FOR (W) SYSTEM LEGEND.
13. DRAIN ALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAIN.
14. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX D-175808.
15. FLANGED CONN TO FACILITATE BLIND FLANGE FOR LOCAL LEAK RATE TEST.
16. LINES HCC-177 AND HCC-262 HAVE BEEN DOWN GRADED FROM ASME CLASS B SEISMIC CATEGORY I TO NNS SEISMIC CATEGORY II BY FSAR AMENDMENT 78. VALVE AND LINE NUMBERS HAVE NOT BEEN CHANGED. FLAG (△) DESIGNATES NNS CLASSIFICATION.

REFERENCES:
1. ALPHA REFERENCES ON LEGEND D-175044.

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG. 1OE 387 SH 2

ORIGINAL DRAWING, Rev. 11 TRANSFERRED TO BCB

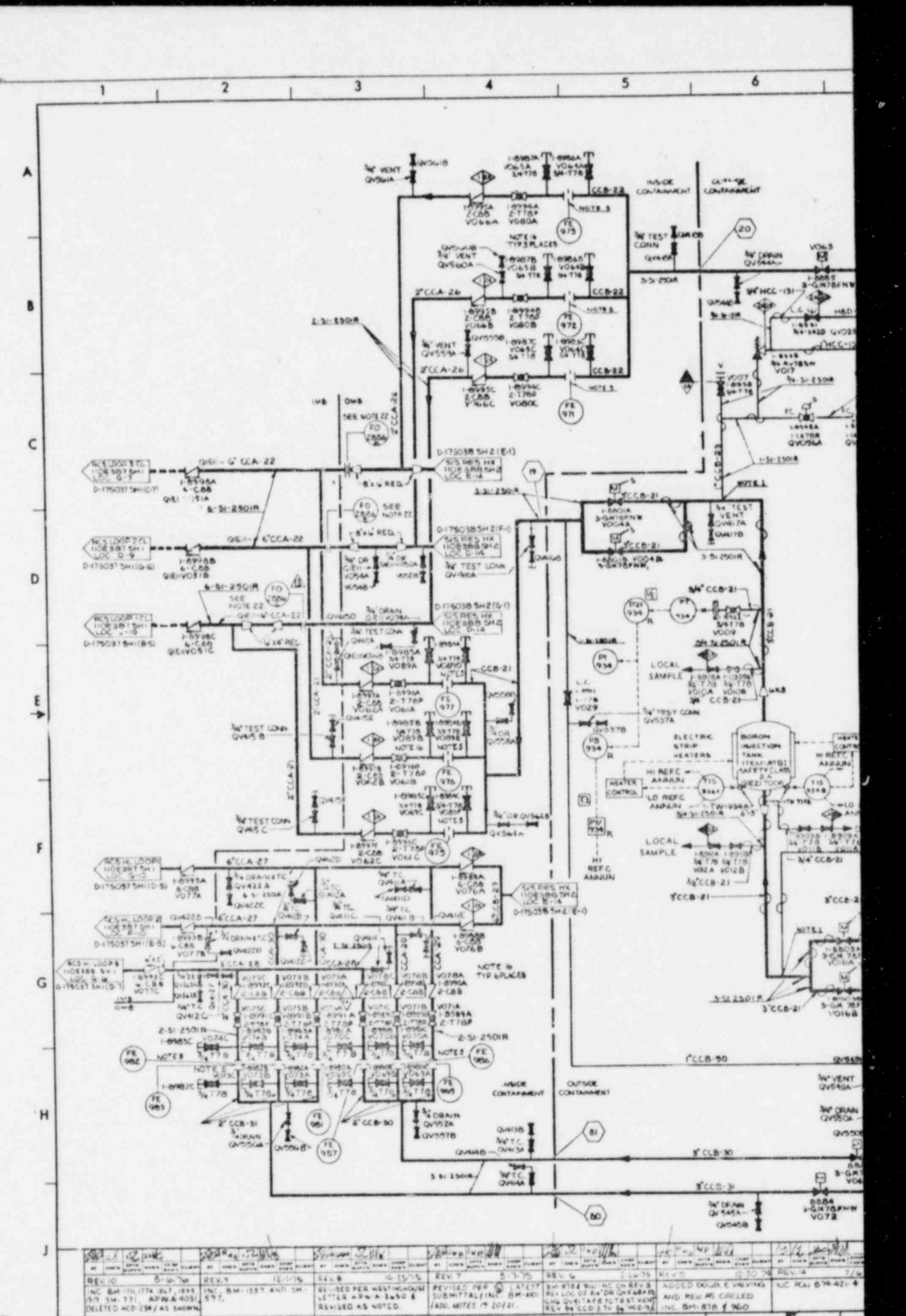
REV	DESCRIPTION	DATE
REV 3	REVISED PER REV. 8, WESTINGHOUSE LATEST SUBMITTAL.	6-1-74
REV 2	ADDED VENTS| DRAINS TEST CONNECTIONS REVISED AS CALLED (INC. BM 283)	4-18-74
REV 1	INC. BM 2855	3-29-82
REV. 0	ISSUED FOR ENGINEERING	10-5-72

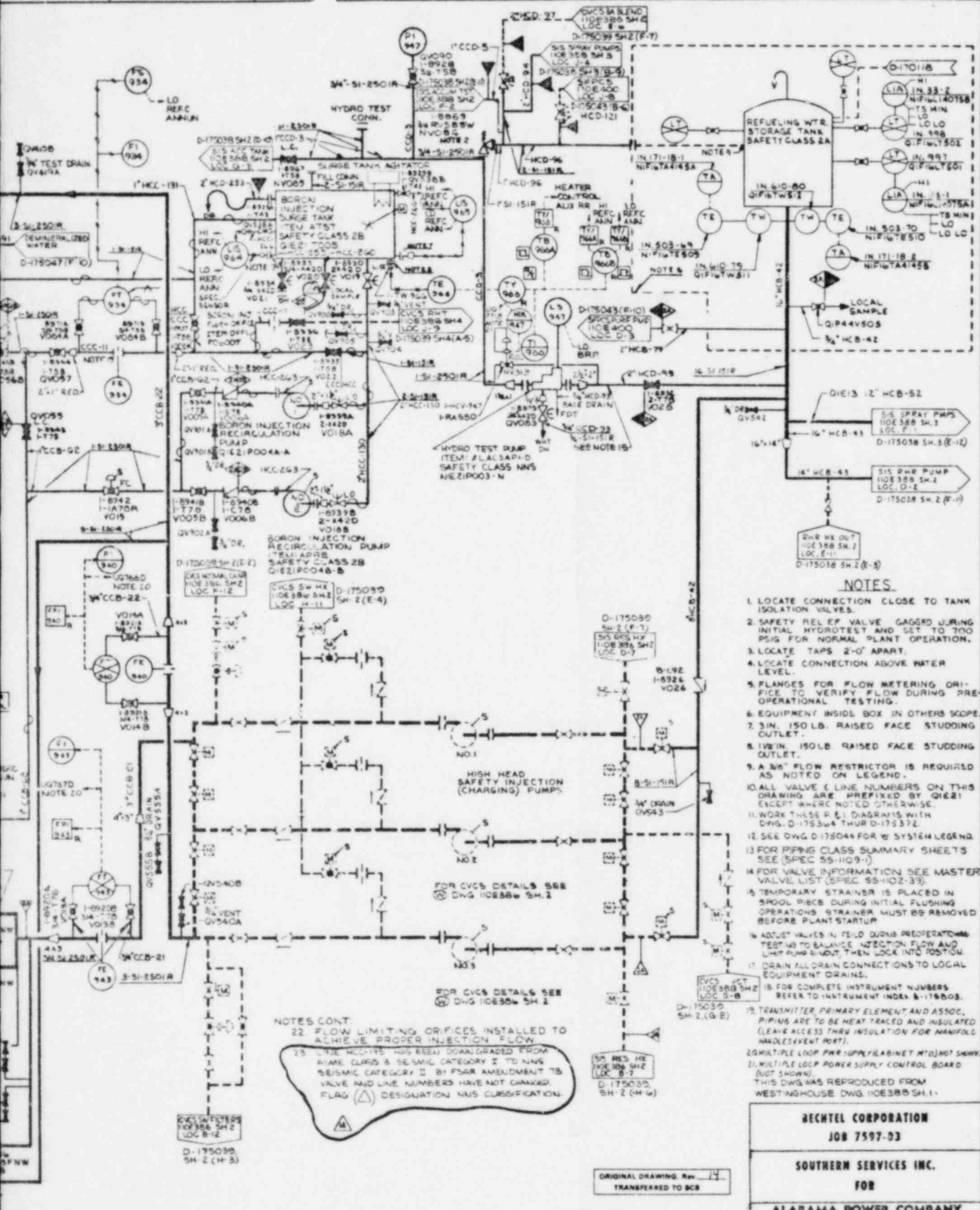
DRAWN TJ TRACED
APPROVED [signature] DATE 10/6/72
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
DETAIL P & I DIAGRAM
REACTOR COOLANT SYSTEM
SCALE
SHEET 2 OF 3 SHEETS
D-175037
REV 11


INSIDE CONTAINMENT
OUTSIDE CONTAINMENT
BORON INJECTION TANK
LOCAL SAMPLE
ELECTRIC STRIP HEATERS
HEATER CONTROL
HI REFC ANNUN
LO REFC ANNUN
NOTE 16 TYP 6 PLACES
REV. 10 8-16-76
REV. 9 12-1-75
REV. 8 10-15-75
REV. 7 5-7-75
REV. 6 2-14-75
REV. 5 10-30-74
REV. 4 7-8-74



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 ON THIS DRAWING ARE PREFIXED BY Q1E21 EXCEPT WHERE NOTED OTHERWISE.
11. WORK THESE P & I DIAGRAMS WITH DWG. D-175364 THUR D-175372.
12. SEE DWG D-175044 FOR W 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 NUMBERS REFER TO INSTRUMENT INDEX D-176803.
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 PWR SUPPLY (CABINET MTD) NOT SHOWN.
21. MULTIPLE LOOP POWER SUPPLY CONTROL BOARD (NOT SHOWN).

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG. 110E388 SH. 1.

NOTES CONT:

22. FLOW LIMITING ORIFICES INSTALLED TO ACHIEVE PROPER INJECTION FLOW.
23. LINE HCC-145 HAS BEEN DOWNGRADED FROM ASME CLASS 3 SEISMIC CATEGORY I TO NNS SEISMIC CATEGORY II BY FSAR AMENDMENT 78. VALVE AND LINE NUMBERS HAVE NOT CHANGED. FLAG (△) DESIGNATION NNS CLASSIFICATION.

ORIGINAL DRAWING, Rev. 14 TRANSFERRED TO BCB

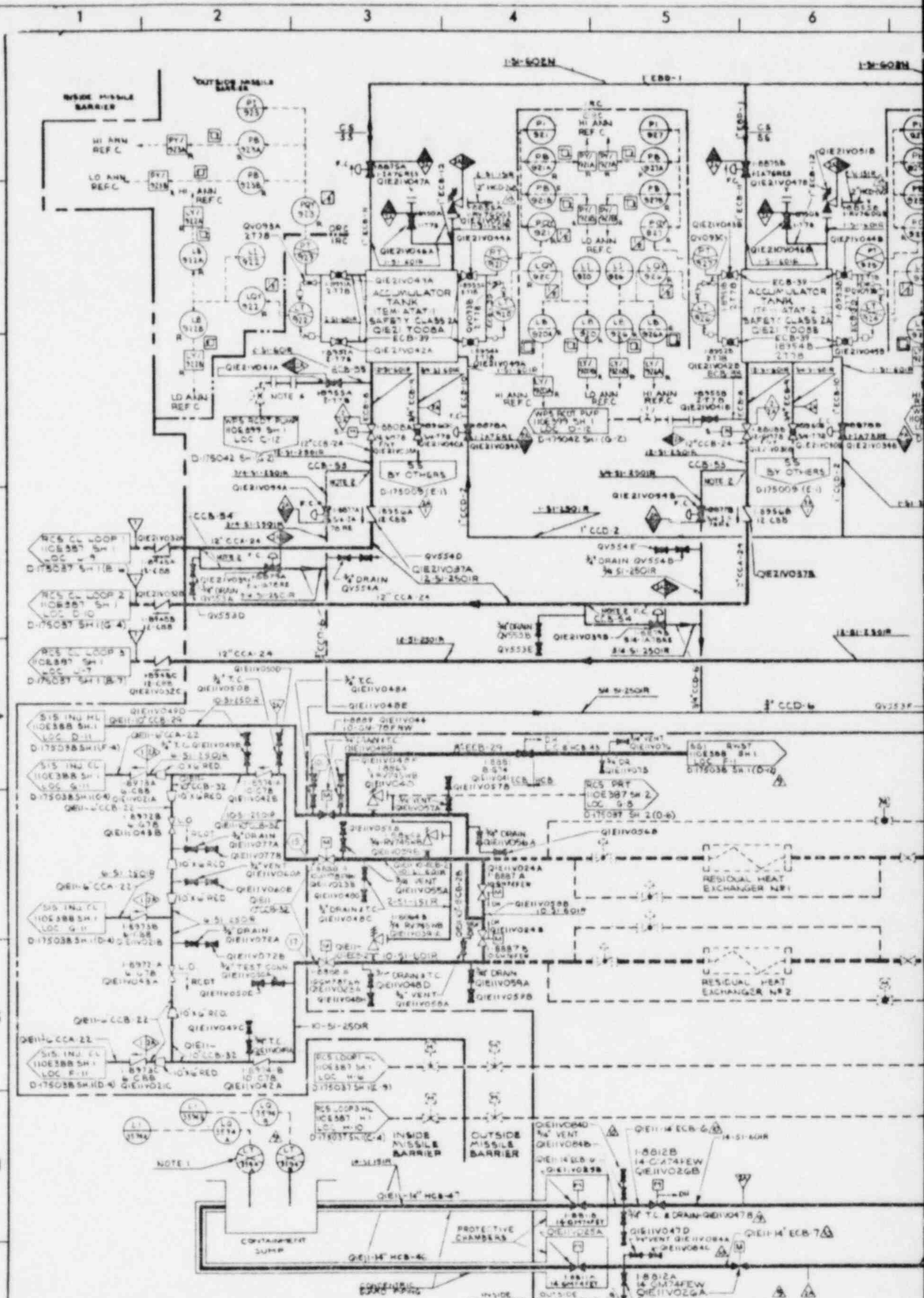
BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

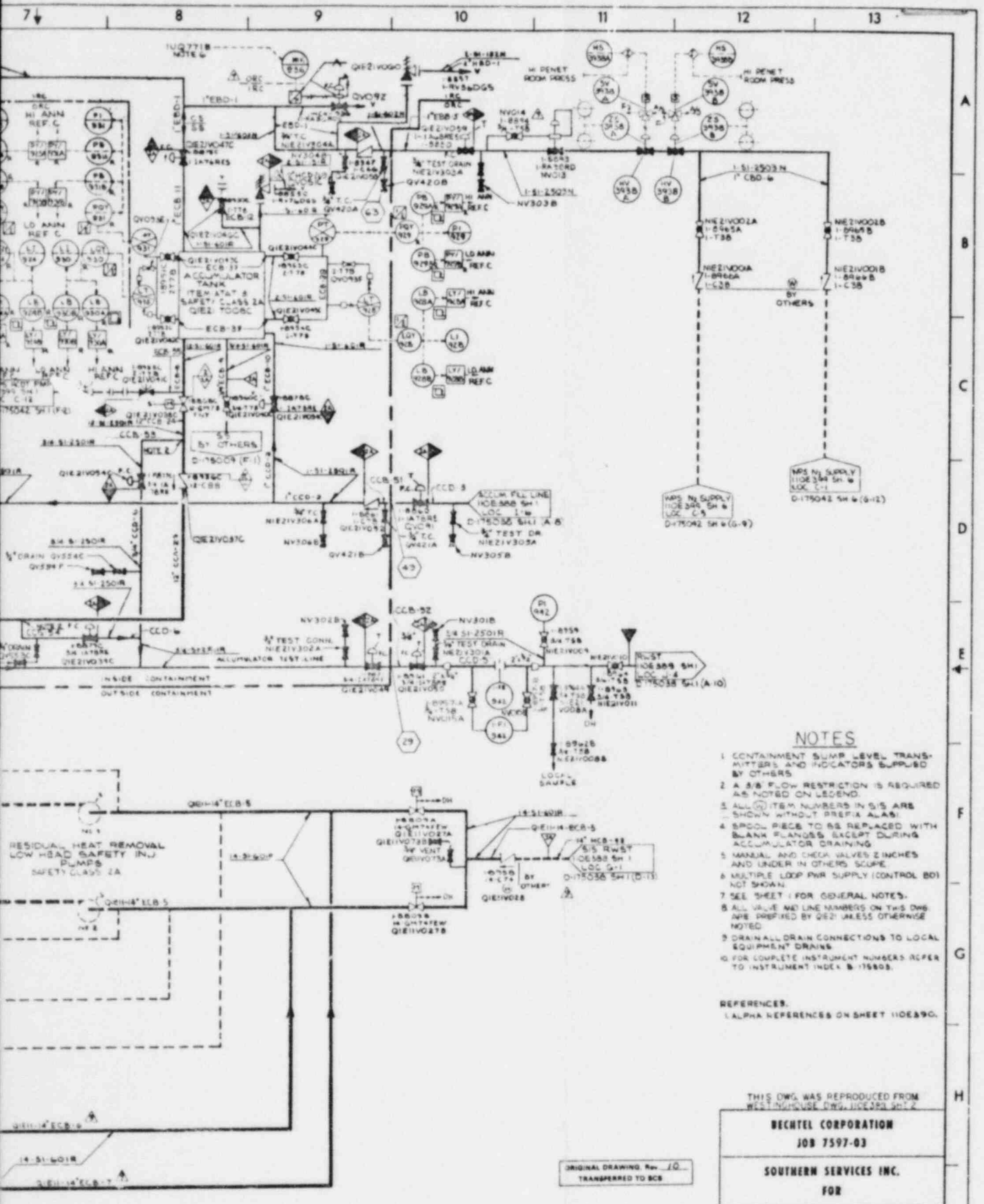
JOB: JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
TITLE: P & I DIAGRAM SAFETY INJECTION SYSTEM

DRAWN EJS CHECKED RLH TRACED
APPROVED DATE 10/6/7
SHEET 1 OF 3 SHEETS
D-175038 REV 14

REV. 13	REV. 12 4-13-78	REV. 11 3-4-77	REV. 0 10-6-72
INC. BM-2934 REV. 2	REVISED PER WESTINGHOUSE LETTER APW-A-4660, & INC. BM-2745	INCORPORATED BM-2413 AND BM-2460. ADDED LINE NO. AND REVISED LINE BREAK DIRECTION	ISSUED FOR ENGINEERING



REV. 10 8-9-76	REV. 9 5-4-76	REV. 8 12-1-75	REV. 7 10-23-75	REV. 6 2-28-75	REV. 5 11-30-74	REV. 4
INC. BM-2056 & BM-2120	INC. BMS-1768 REV. 1, 1916, 1895, 1914, REVISED ZONE LOCATIONS & AS SHOWN.	INC. BM-1551 AS SHOWN.	INC. BM-1372 AND REVISED AS NOTED.	BM 876&831 WAS INC. ON REV. 5. ADDED VALVES QV008B & QV047C & D. INC. BM-1041 ADDED NOTE 10	ADDED DOUBLE VALVING & REVISED AS CIRCLED. INC. BM-876&831	REVISED PER REV. B, WESTINGHOUSE LATEST SUBMITTAL.



NOTES

1. CONTAINMENT SUMP LEVEL TRANSMITTERS AND INDICATORS SUPPLIED BY OTHERS.
2. A 3/8 FLOW RESTRICTION IS REQUIRED AS NOTED ON LEGEND.
3. ALL (S) ITEM NUMBERS IN SIS ARE SHOWN WITHOUT PREFIX 1A-SI.
4. SPOOL PIECE TO BE REPLACED WITH BLANK FLANGES EXCEPT DURING ACCUMULATOR DRAINING.
5. MANUAL AND CHECK VALVES 2 INCHES AND UNDER IN OTHERS SCOPE.
6. MULTIPLE LOOP PWR SUPPLY (CONTROL BD) NOT SHOWN.
7. SEE SHEET 1 FOR GENERAL NOTES.
8. ALL VALVE AND LINE NUMBERS ON THIS DWG ARE PREFIXED BY QIE21 UNLESS OTHERWISE NOTED.
9. DRAIN ALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAINS.
10. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX 8-175808.

REFERENCES.
ALPHA REFERENCES ON SHEET 11DE&PD.

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG. 11DE3PD SH 2

ORIGINAL DRAWING Rev. 10 TRANSFERRED TO BCB

REV.	DESCRIPTION
9	ADDED TEST CONNS. VENTS & DRAINS AND REVISED AS CIRCLED
8	REVISED AS SHOWN
7	REVISED PER REV. 7 WESTINGHOUSE LATEST SUBMITTAL
0	ISSUED FOR ENGINEERING

BECHTEL CORPORATION
JOB 7597-03

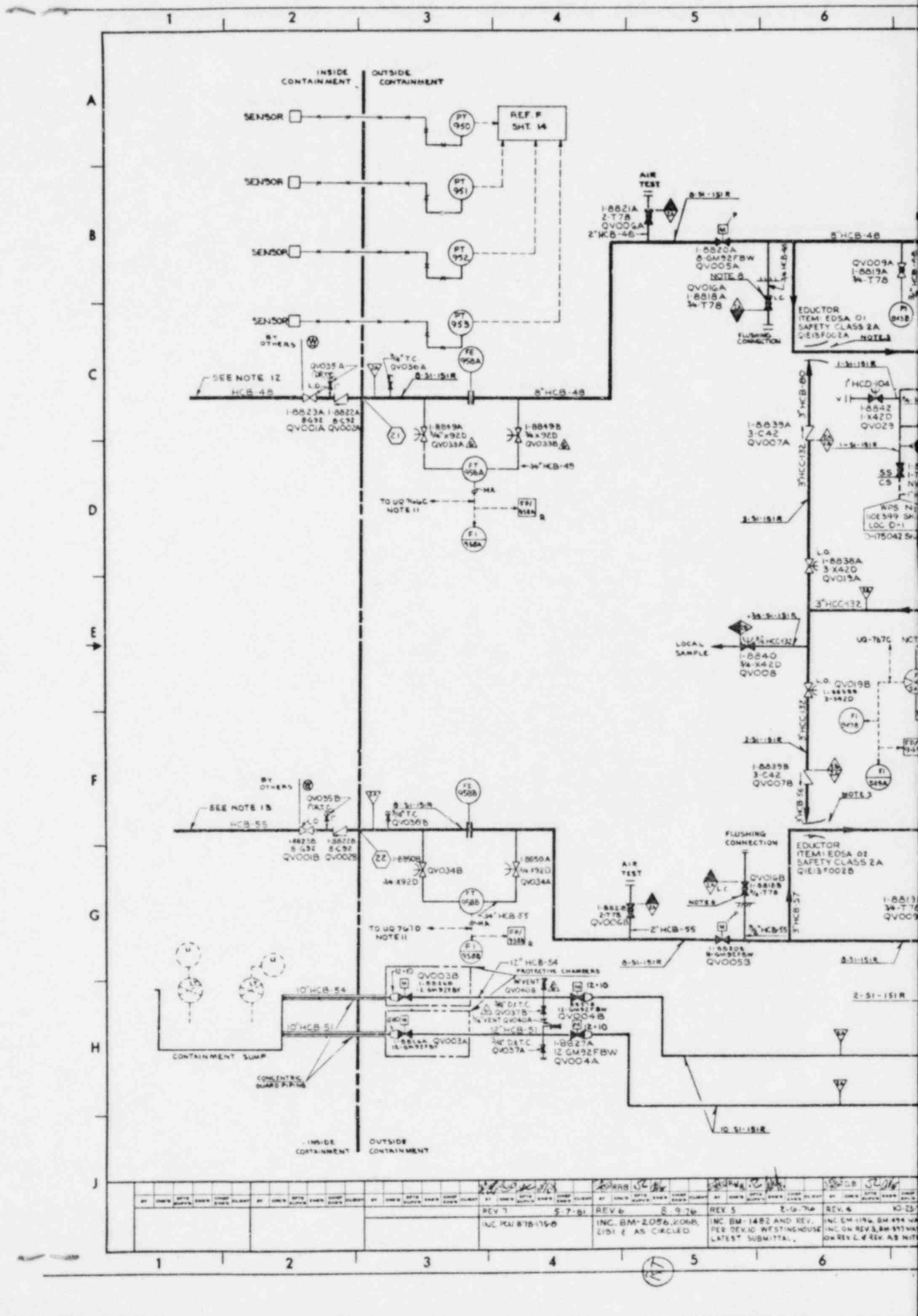
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

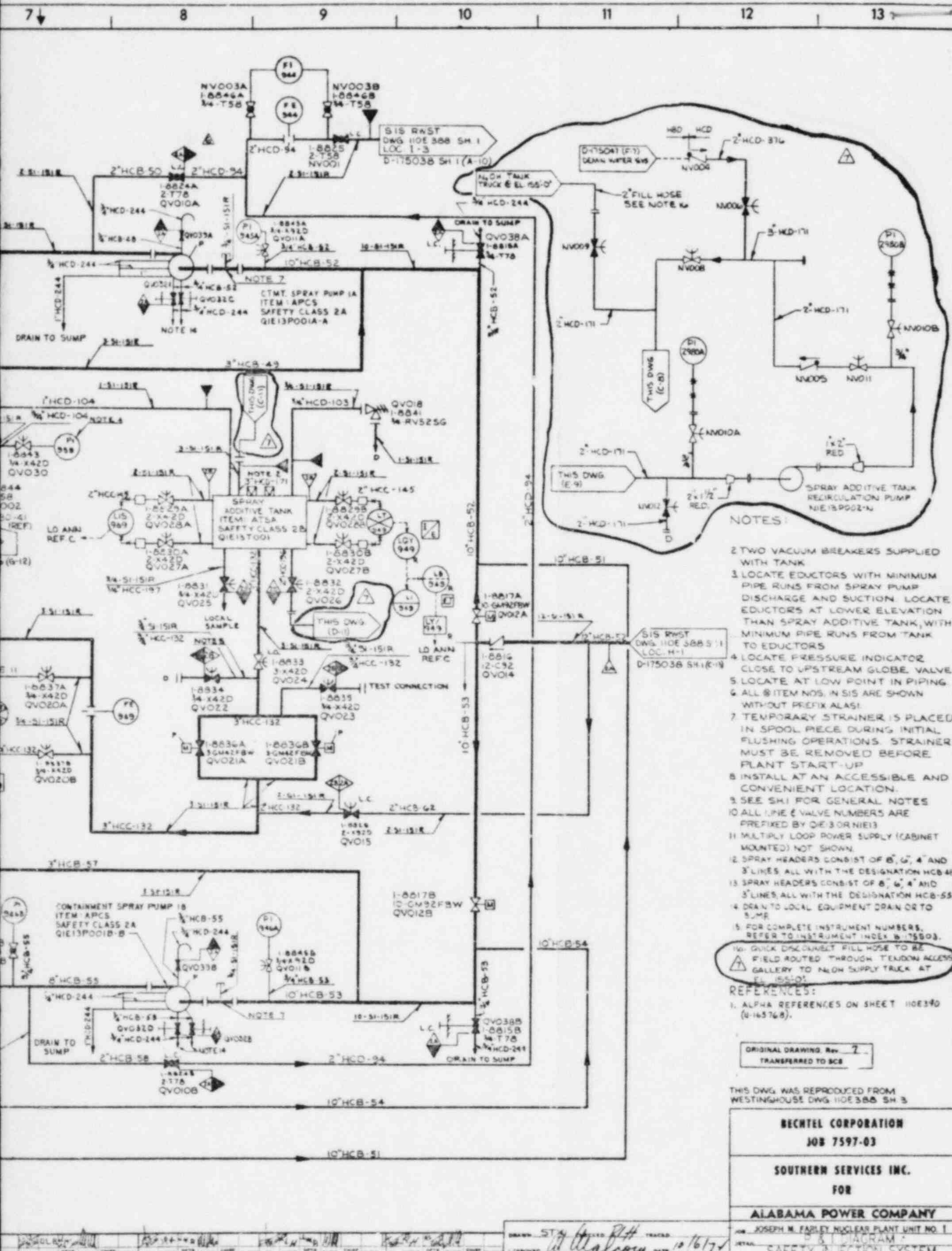
P&I DIAGRAM
SAFETY INJECTION SYSTEM

SHEET 2 OF 3 SHEETS

D-175038 REV 10



INSIDE CONTAINMENT
OUTSIDE CONTAINMENT
SENSOR
PT 950
PT 951
PT 952
PT 953
REF. F SHT. 14
FE 958A
FT 958A
FI 958A
SEE NOTE 12
HCB-48
8"HCB-48
1-8823A 1-8822A
QV001A QV002A
QV035A
QV036A
1-8849A
QV033A
1-8849B
QV033B
TO UQ 746C NOTE 11
BY OTHERS
AIR TEST
1-8821A 2-T78 QV006A
2"HCB-48
1-8820A 8-GM92FBW QV005A
QV016A 1-8818A
NOTE 8
FLUSHING CONNECTION
EDUCTOR ITEM: EDSA 01 SAFETY CLASS 2A
QV009A 1-8819A
1-8839A 3-C42 QV007A
1-8842 QV029
1-8838A QV019A
3"HCC132
LOCAL SAMPLE
1-8840 QV008
QV019B
1-8839B 3-C42 QV007B
NOTE 3
SEE NOTE 13
HCB-55
QV001B QV002B
QV035B
QV036B
FE 958B
FT 958B
FI 958B
1-8850B QV034B
1-8850A QV034A
TO UQ 761D NOTE 11
FLUSHING CONNECTION
EDUCTOR ITEM: EDSA 02 SAFETY CLASS 2A
AIR TEST
QV016B
QV006B
2"HCB-55
QV0053
10"HCB-54
10"HCB-51
12"HCB-54
12"HCB-51
PROTECTIVE CHAMBERS
QV003B
QV003A
QV040B
QV037B
QV037A
QV004B
1-8827A 12 GM92FBW QV004A
CONTAINMENT SUMP
CONCENTRIC GUARD PIPING
2-51-151R
10-51-151R
INSIDE CONTAINMENT
OUTSIDE CONTAINMENT
REV 7 5-7-81 INC PCN 878-175-B
REV 6 8-9-76 INC. BM-2056,2068, 2181 & AS CIRCLED
REV. 5 INC. BM-1482 AND REV. PER REV.10 WESTINGHOUSE LATEST SUBMITTAL.
REV. 4



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 ALA51.
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 QIE13 OR NIE13.
11. MULTIPLY LOOP POWER SUPPLY (CABINET MOUNTED) NOT SHOWN.
12. SPRAY HEADERS CONSIST OF 8", 6", 4" AND 3" LINES ALL WITH THE DESIGNATION HCB-49.
13. SPRAY HEADERS CONSIST OF 8", 6", 4" AND 3" 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-175503.
16. ⚠7 QUICK DISCONNECT FILL HOSE TO BE FIELD ROUTED THROUGH TENDON ACCESS GALLERY TO NaOH SUPPLY TRUCK AT EL. 155'-0".

REFERENCES:

1. ALPHA REFERENCES ON SHEET 110E390 (U-165768).

ORIGINAL DRAWING Rev. 7 TRANSFERRED TO SCB

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG 110E388 SH 3

REV. 3 5-8-74	REV. 1 11-14-73	REV. 1 4-19-73	REV. 0 10-6-72
ADDED TEST CONNS., NOTES & REVISED AS CIRCLED. INC. BM-494	REVISED AS SHOWN INC. BM-593	REVISED PER REV. 7 WESTINGHOUSE LATEST SUBMITTAL	ISSUED FOR ENGINEERING

DRAWN ST CHECKED TRACED
APPROVED DATE 10/6/75
APPROVED DATE
APPROVED DATE
APPROVED DATE

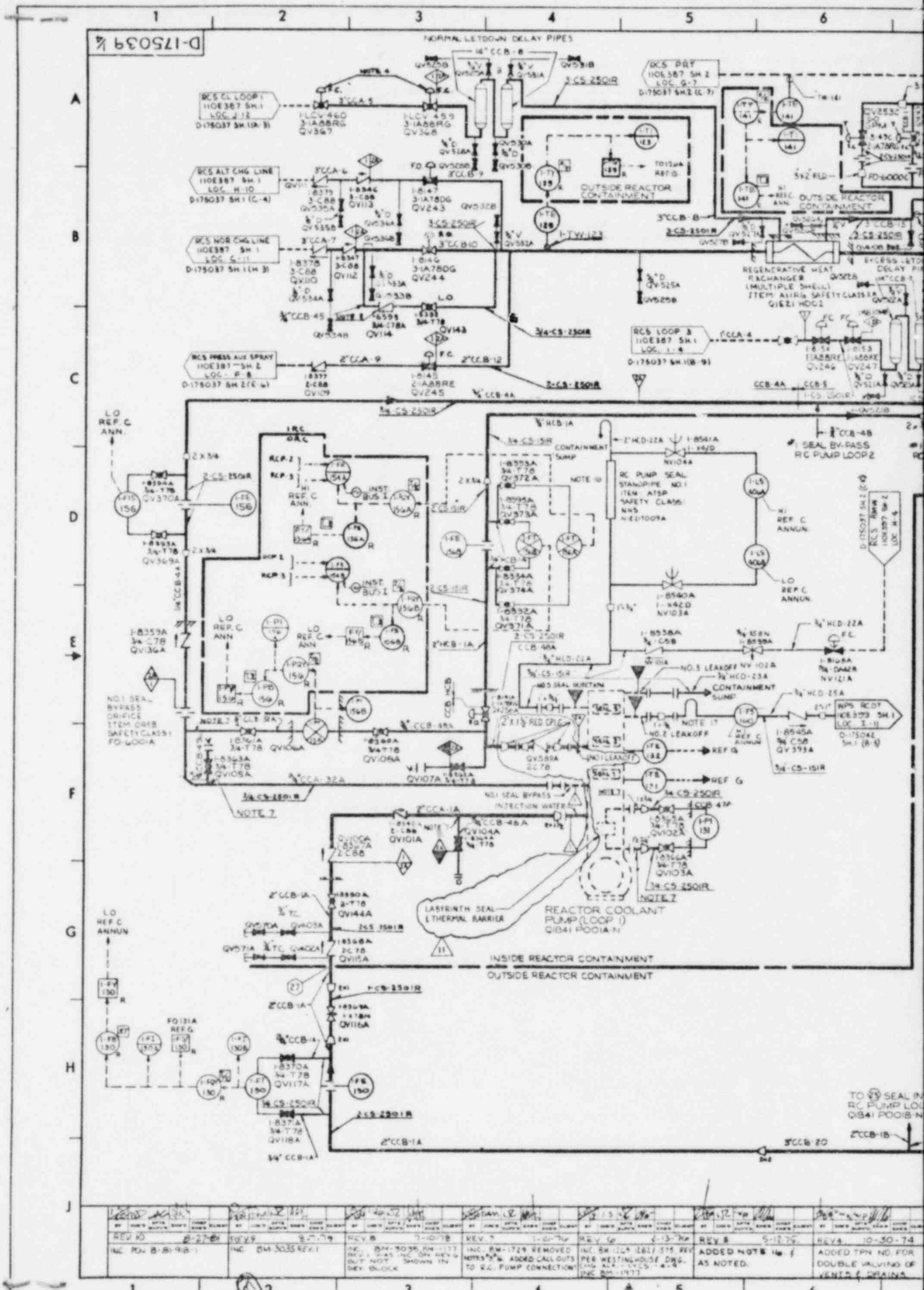
BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

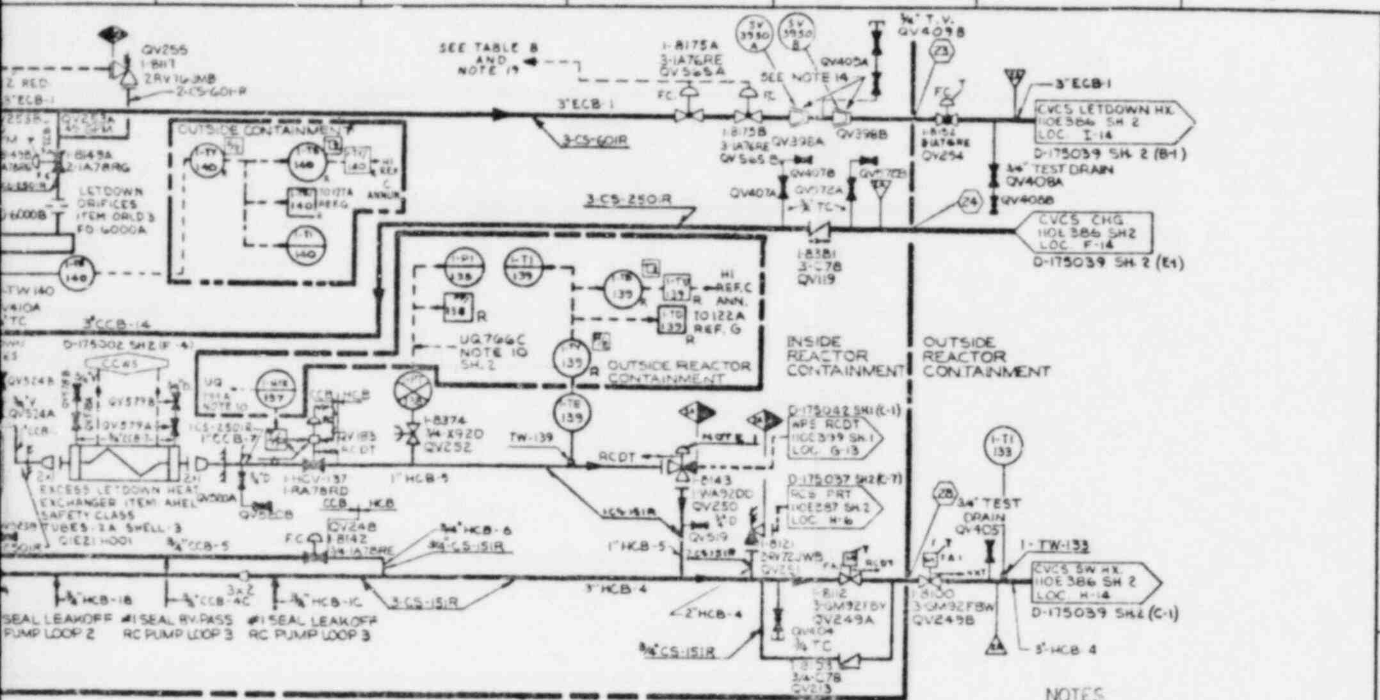
JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
DETAIL P & I DIAGRAM - SAFETY INJECTION SYSTEM (CONTAINMENT SPRAY)

SHEET 3 OF 3 SHEETS
SUPERSEDES

D-175038 REV 7



D-175039 ¼
NORMAL LETDOWN DELAY PIPES
RCS CL LOOP 1
RCS ALT CHG LINE
RCS NOR CHG LINE
RCS PRESS AUX SPRAY
RCS PRT
RCS LOOP 3
OUTSIDE REACTOR CONTAINMENT
REGENERATIVE HEAT EXCHANGER (MULTIPLE SHELL)
CONTAINMENT SUMP
RC PUMP SEAL STANDPIPE NO. 1
SEAL BY-PASS RC PUMP LOOP 2
NO. 3 LEAKOFF
NO. 2 LEAKOFF
NO. 1 LEAKOFF
NO. 1 SEAL BYPASS INJECTION WATER
NO. 1 SEAL BYPASS ORIFICE
LABYRINTH SEAL & THERMAL BARRIER
REACTOR COOLANT PUMP (LOOP 1) Q1B41 P001A-N
INSIDE REACTOR CONTAINMENT
OUTSIDE REACTOR CONTAINMENT
REF G
NOTE 7
TO SEAL INJ RC PUMP LOOP Q1B41 P001B-N
REV 10 8-27-81 INC PCN 8-81-918-1
REV 9 INC BM 3035 REV 1
REV 8 7-10-78
REV 7 INC. BM-1729 REMOVED NOTES ADDED CALL OUTS TO R.C. PUMP CONNECTION
REV 6 PER WESTINGHOUSE DWG.
REV 5 5-12-76 ADDED NOTE AS NOTED
REV 4 10-30-74 ADDED TPN NO. FOR DOUBLE VALVING OF VENTS & DRAINS



NOTE:
REACTOR COOLANT PUMP SHOWN FOR LOOP NO. 1 TYPICAL FOR ALL LOOPS EXCEPT FOR INSTRUMENT AND VALVE IDENTIFICATION NUMBERS, SEE NOTE 8 FOR VALVE IDENTIFICATION NUMBERS AND TABLE FOR INSTRUMENTATION IDENTIFICATION NUMBERS.

NOTES (CONT'D)

17. RUN PIPING HORIZONTAL OR UPWARD TO LOOP RISING 6" ABOVE RCP NO. 2 SEAL LEAKOFF CONNECTION. AFTER LOOP, RUN PIPING HORIZONTAL OR DOWNWARD THROUGH RUN TO RCDT.
18. LOCATE BOTTOM OF STANDPIPE 28'-4½" ± 0.5 FEET ABOVE CONN. TO R. #3 SEAL.
19. SENSOR LOCATIONS ARE SHOWN ON D-175143, D-175146 & D-175147.

NOTES

1. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
2. SPECIAL SPRING LOADED CHECK VALVE.
4. PRESSURIZER LOW LEVEL SIGNAL CLOSES THESE VALVES.
5. ALL (Q) ITEM NO'S. IN CVCS ARE SHOWN WITHOUT PREFIX ALACS
6. FOR LEGEND SEE DWG. D-175044
7. A 3/8" FLOW RESTRICTOR IS REQUIRED AS NOTED ON LEGEND.
8. ALL VALVES & LINE IDENTIFICATIONS IN PUMP CIRCUITS FOR PUMPS 1B & 1C ARE NUMBERED THE SAME AS PUMP 1A (SHOWN) SUFFIX A ON VALVE OR LINE NUMBER SIGNIFIES PUMP 1A CIRCUITRY, SUFFIX B FOR PUMP 1B AND SUFFIX C FOR PUMP 1C.
9. ALL VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY (Q OR N, 1E21)
10. MULTIPLE LOOP PWR SUPPLY (CONTROL BOARD) NOT SHOWN
11. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC SS-1102-39)
12. FOR EQUIPMENT LIST SEE DWG D-175070
13. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX B-175805.
14. VALVES QV398A & QV398B ARE EXCESS FLOW CHECK VALVES TO BE PROVIDED BY BECHTEL
15. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC SS-1109-1)
16.

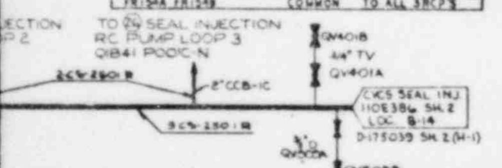
REFERENCES
1. FOR ALPHA REFERENCES SEE DWG. D-175044.

TABLE A
REACTOR COOLANT PUMP INSTRUMENTATION

RCP #1A	RCP #1B	RCP #1C
FE-130	FE-127	FE-124
FI-130 A	FI-127 A	FI-124 A
FI-130 B	FI-127 B	FI-124 B
FT-130	FT-127	FT-124
FQY-130	FQY-127	FQY-124
FD/130	FD/127	FD/124
FB-130	FB-127	FB-124
FY/130	FY/127	FY/124
TE-131	TE-128	TE-125
TE-132	TE-129	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-407A	LS-408A
LS-406B	LS-407B	LS-408B
PI-131	PI-128	PI-125
FO-131A	FO-129A	FO-127A
FS-160	FS-159	FS-158
FR-154A FR-154B	COMMON TO ALL 3 RCP'S	

TABLE B
ROOM PRESSURE SENSING INSTRUMENTATION

INSTRUMENTS	TRAIN
Q1G41PSH 2852 A	A
B	A
C	A
D	B
E	B
F	A
G	B
Q1G41PSH 2852 H	B
Q1G41PSH 2851 A	A
B	A
C	B
D	A
E	B
Q1G41PSH 2851 F	B



THIS DRAWING WAS REPRODUCED FROM WESTINGHOUSE DWG. 110E386 SH 1

ORIGINAL DRAWING, Rev. 10 TRANSFERRED TO SCB

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

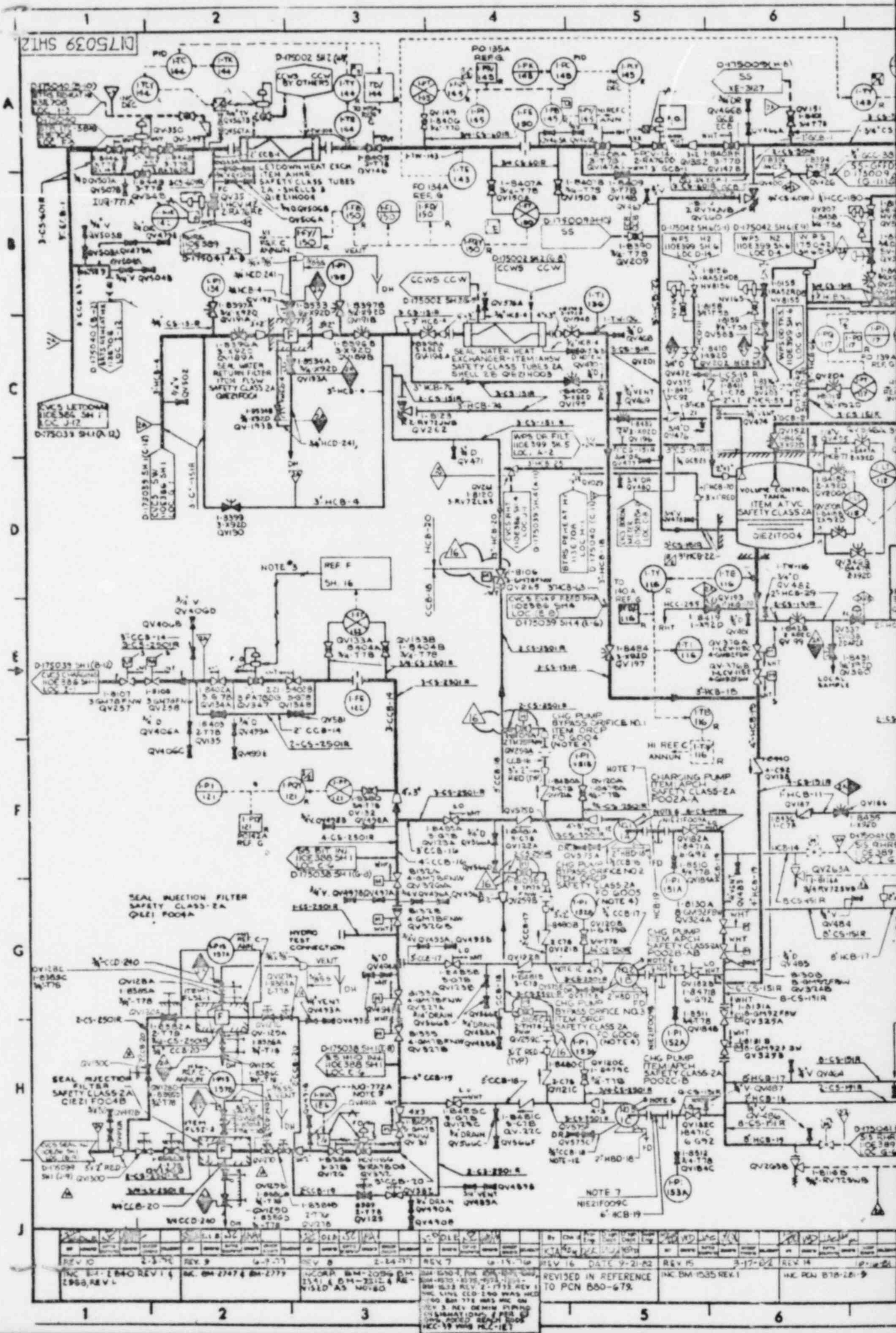
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P & I DIAGRAM
CHEM & VOL CONTROL SYSTEM

SHEET 1 OF 4 SHEETS

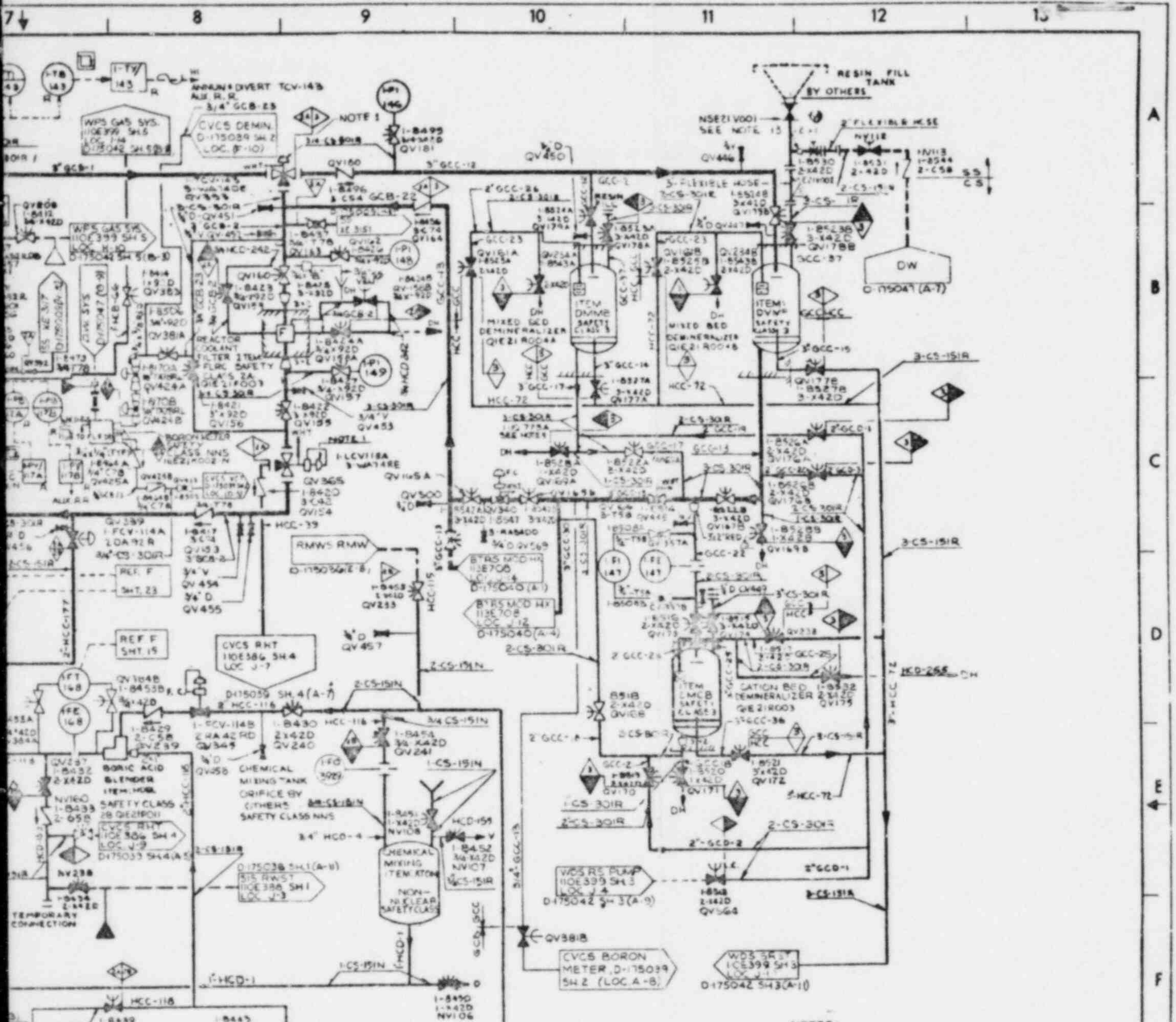
D-175039 REV. 11

REV.	DATE	DESCRIPTION
REV. 3	6-25-74	ADDED VENTS & DRNS. REVISED NOTES, GENERAL UPDATE
REV. 2	12-5-73	REVISED AS CIRCLED TO INCORPORATE DCN'S & ADDT'L INFO.
REV. 11	6-29-82	INC PER PCN B80-833
REV. 0	10-31-72	ISSUED FOR ENGINEERING

DRAWN TJ APPROVED DATE 11/2/71



D175039 SH12
SEAL WATER HEAT EXCHANGER
VOLUME CONTROL TANK
ITEM ATVC
SAFETY CLASS 2A
CHARGING PUMP
SEAL INJECTION FILTER
SAFETY CLASS-2A
HYDRO TEST CONNECTION
NOTE 7
REV 16 DATE 9-21-82
REVISED IN REFERENCE TO PCN 880-679



NOTES:

1. VALVE FAILS WITH FLOW, TO VOLUME CONTROL TANK.
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 (S) NUMBERS IN CVCS ARE SHOWN WITHOUT PREFIXS ALACS.
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. MULTIPLE LOOP POWER (CABINET MTD) NOT SHOWN.
9. MULTIPLE LOOP POWER SUPPLY (CONTROL BOARD) SHOWN
10.
11. FOR COMPLETE INSTRUMENT & ASSOCIATED CONTROL VALVE NUMBERS, REFER TO INSTRUMENT INDEX B-175805
12. DRAIN FROM VALVE TO BE PIPED TO THE NEAREST EQUIPMENT DRAIN.
13. NSEZIV001 IS A 4"-125# KNIFE GATE VALVE.
14. PORTIONS OF THE BORON RECYCLE SYS WHICH WERE ORIGINALLY DESIGNED TO ASME CLASS 3 SEISMIC CATEGORY I REQUIREMENTS HAVE BEEN DOWNGRADED TO NNS SEISMIC CATEGORY II BY FSAR AMENDMENT 73. VOLTE EQUIP AND LINE NUMBERS HAVE NOT BEEN CHANGED. FLAG (△) DESIGNATES NNS CLASSIFICATION.
15. LINES HCC-39, 72, 127, 129, 180, AND 266 ARE DOWNGRADED TO NNS PER NOTE 14.

REFERENCE

D FOR ALPHA REFERENCES SEE DWG D-175044

THIS DRAWING WAS REPRODUCED FROM WESTINGHOUSE DWG 110E386 SHT 2

ORIGINAL DRAWING, Rev 15 TRANSFERRED TO SCS

BECHTEL CORPORATION
JOB 7597-03

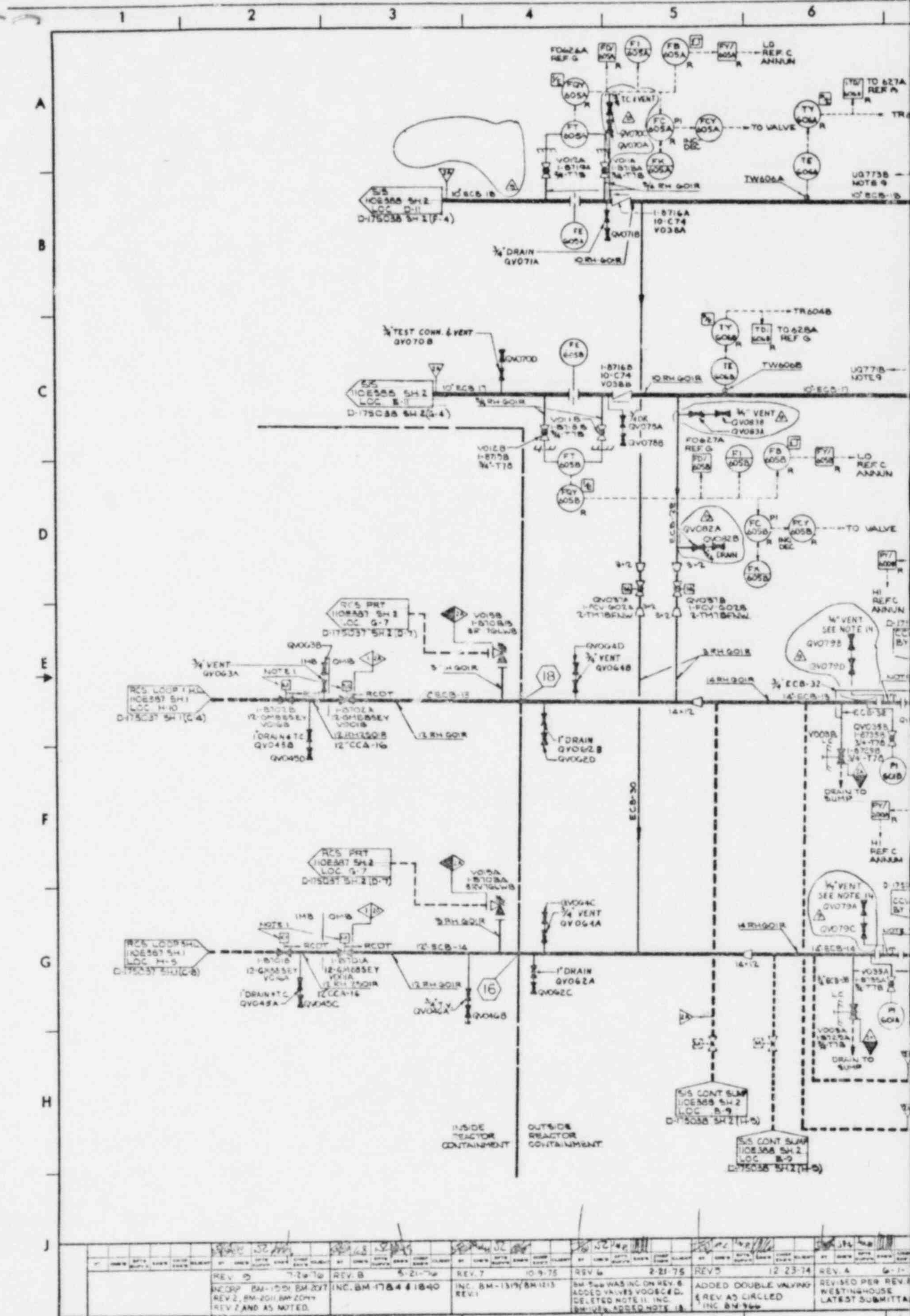
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

JOB JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

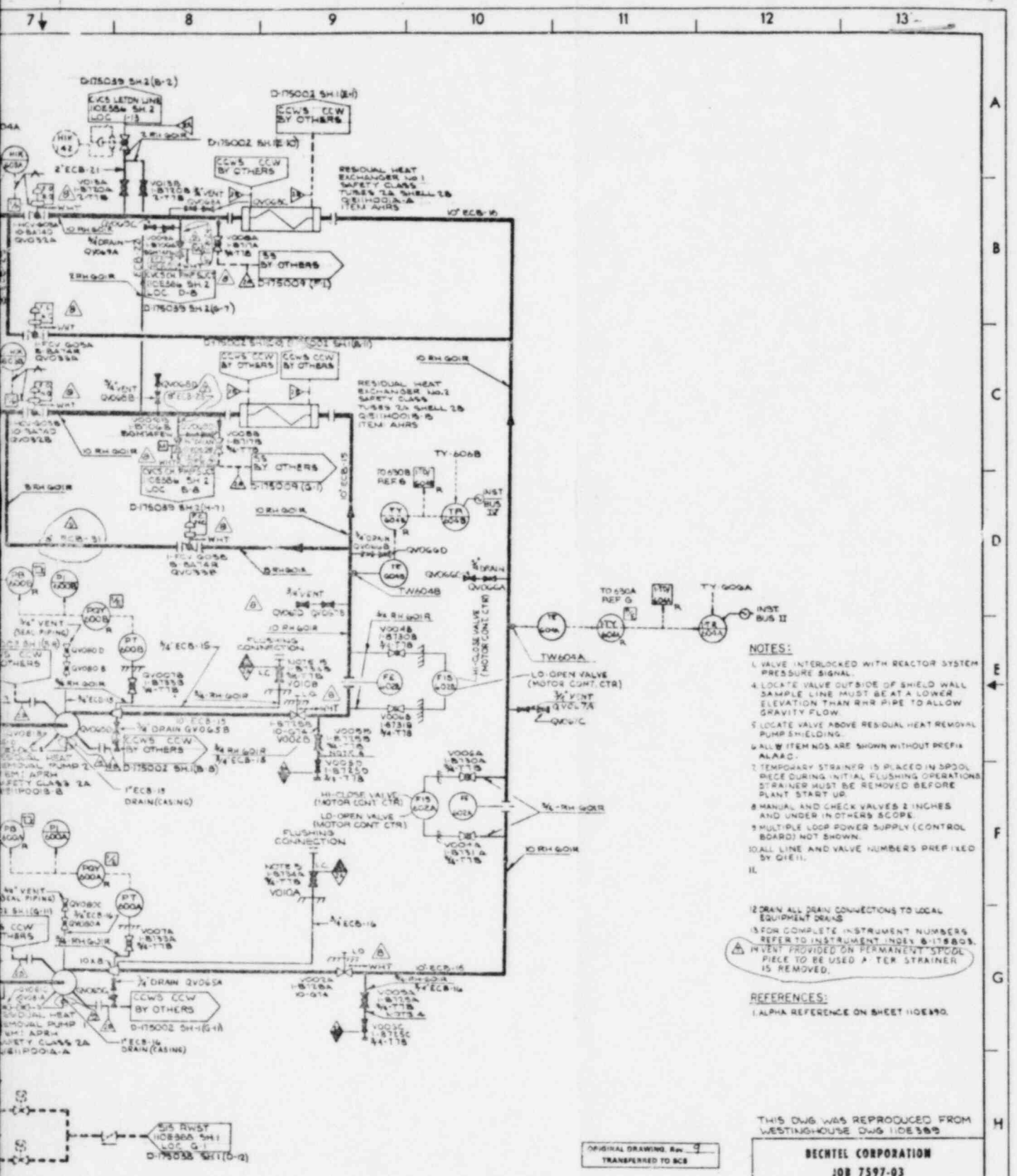
P. & I. DIAGRAM
CHEM. & VOL. CONTROL SYSTEM

SHEET 2 OF 4 SHEETS

D-175039 REV 16



TO VALVE
TW606A
3/4" DRAIN QV071A
3/4" TEST CONN. & VENT QV070B
TR604B
TW606B
TO VALVE
LO REF C ANNUN
3/4" VENT
RCS PRT 110E887 SH 2 LOC G-7
RCS LOOP 1 HL 110E887 SH 1 LOC H-10
RCS LOOP 3 HL 110E887 SH 1 LOC H-5
3/4" VENT QV063A
1" DRAIN QV062B QV062D
1" DRAIN QV062A QV062C
RCDT
18
16
14×12
ECB-30
DRAIN TO SUMP
HI REF C ANNUN
S/S CONT SUMP 110E388 SH 2
INSIDE REACTOR CONTAINMENT
OUTSIDE REACTOR CONTAINMENT
REV. 9
REV. 8
REV. 7
REV 6
REV 5
REV. 4
INCORP BM-1551, BM-2017 REV 2, BM-2011, BM-2044 REV 2 AND AS NOTED.
INC. BM-1784 & 1840
INC. BM-1319/BM-1213 REV. 1
ADDED DOUBLE VALVING & REV AS CIRCLED INC. BM-966
REVISED PER REV. WESTINGHOUSE LATEST SUBMITTAL



NOTES:

1. VALVE INTERLOCKED WITH REACTOR SYSTEM PRESSURE SIGNAL.
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 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 AND CHECK VALVES 2 INCHES AND UNDER IN OTHERS SCOPE.
9. MULTIPLE LOOP POWER SUPPLY (CONTROL BOARD) NOT SHOWN.
10. ALL LINE AND VALVE NUMBERS PREFIXED BY GIE11.
11.
12. DRAIN ALL DRAIN CONNECTIONS TO LOCAL EQUIPMENT DRAINS
13. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX 8-175805.
14. VENT PROVIDED ON PERMANENT SPOOL PIECE TO BE USED AFTER STRAINER IS REMOVED.

REFERENCES:

1. ALPHA REFERENCE ON SHEET 11 OE390.

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG 11 OE389

ORIGINAL DRAWING Rev 9 TRANSFERRED TO BCB

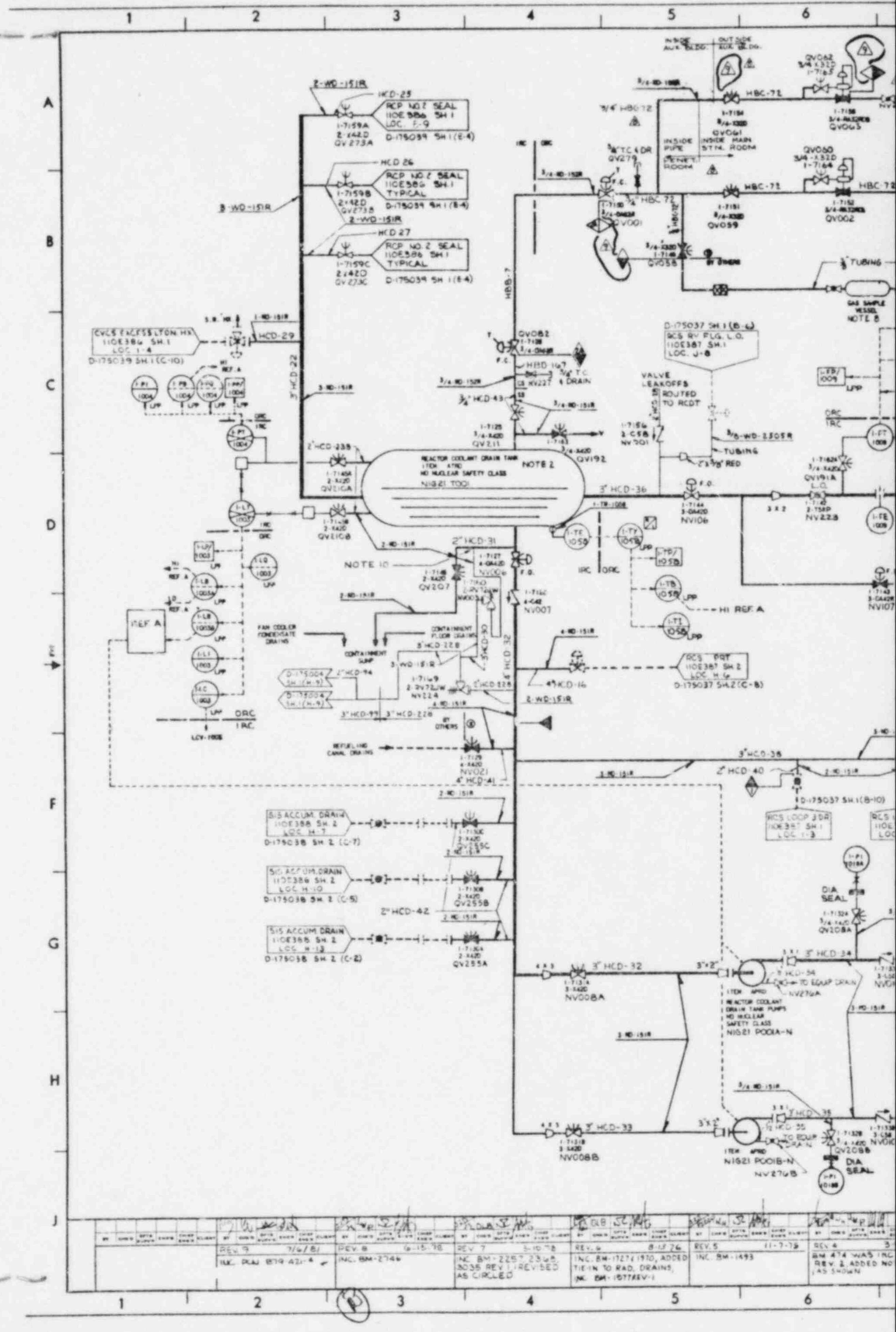
NO.	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
REV. 3	REVISED AS NOTED				2-14-74
REV. 2	REVISED PER REV. 7 WESTINGHOUSE LATEST SUBMITTAL				6-7-73
REV. 1	REVISED LINE NUMBERS AS CIRCLED				12-16-72
REV. 0	ISSUED FOR ENGINEERING				11-3-72

BECHTEL CORPORATION
JOB 7597-03

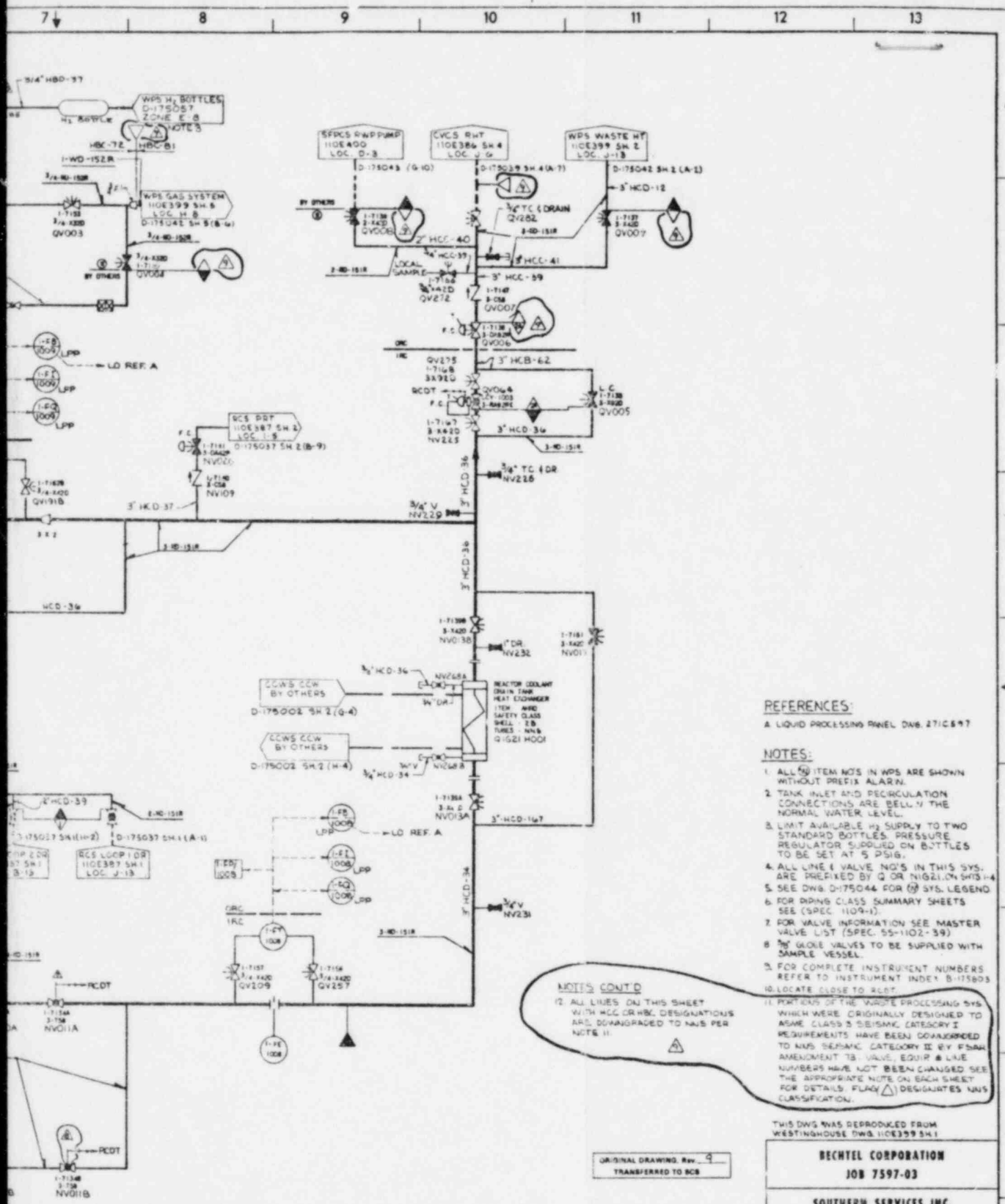
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

P&I DIAGRAM
RESIDUAL HEAT REMOVAL SYS.

D-175041 REV. 9



2-WD-151R
HCD-25
RCP NO.2 SEAL
110E386 SH.1
LOC. F-9
D-175039 SH.1 (E-4)
HCD 26
RCP NO.2 SEAL
110E386 SH.1
TYPICAL
D-175039 SH.1 (E-4)
HCD 27
RCP NO.2 SEAL
110E386 SH.1
TYPICAL
D-175039 SH.1 (E-4)
3-WD-151R
3" HCD-22
HCD-29
CVCS EXCESS LTDN HX
110E386 SH.1
LOC. J-4
D-175039 SH.1 (C-10)
REACTOR COOLANT DRAIN TANK
NO NUCLEAR SAFETY CLASS
N1G21 T001
NOTE 2
3" HCD-36
2" HCD-31
NOTE 10
REF. A
CONTAINMENT SUMP
CONTAINMENT FLOOR DRAINS
FAN COOLER CONDENSATE DRAINS
REFUELING CANAL DRAINS
HBD-7
HBC-72
HBC-71
INSIDE AUX. BLDG.
OUTSIDE AUX. BLDG.
INSIDE PIPE PENET. ROOM
INSIDE MAIN STM. ROOM
3/8" TUBING
GAS SAMPLE VESSEL
NOTE 8
D-175037 SH.1 (B-6)
RCS RV FLG. L.O.
110E387 SH.1
LOC. J-8
VALVE LEAKOFFS ROUTED TO RCDT
TUBING
RCS PRT
110E387 SH.2
LOC. H-6
D-175037 SH.2 (C-8)
2-WD-151R
4" HCD-16
HI REF A
3" HCD-38
2" HCD-40
D-175037 SH.1 (B-10)
RCS LOOP 3 DR
110E387 SH.1
LOC. I-3
SIS ACCUM. DRAIN
110E388 SH.2
LOC. H-7
D-175038 SH.2 (C-7)
SIS ACCUM. DRAIN
110E386 SH.2
LOC. H-10
D-175038 SH.2 (C-5)
2" HCD-42
SIS ACCUM. DRAIN
110E388 SH.2
LOC. H-13
D-175038 SH.2 (C-2)
3" HCD-32
NV008A
3" HCD-34
REACTOR COOLANT DRAIN TANK PUMPS
NO NUCLEAR SAFETY CLASS
N1G21 P001A-N
DIA SEAL
3" HCD-33
NV008B
N1G21 P001B-N
NV276B
DIA SEAL
REV. 9 7/6/81 INC. PCN 839 42-4
REV. 8 6-15-78 INC. BM-2746
REV. 7 3-10-78 INC. BM-2257, 2368, 3036 REV. 1 (REVISED AS CIRCLED
REV. 6 8-17-76 INC. BM-1727 (1970, ADDED TIE-IN TO RAD. DRAINS, INC. BM-1577 REV-1
REV. 5 11-7-75 INC. BM-1493
REV. 4 BM 474 WAS INC. REV. 2 ADDED NO... AS SHOWN



REFERENCES:

A. LIQUID PROCESSING PANEL DWG. 27IC697

NOTES:

1. ALL (5) ITEM NO'S IN WPS ARE SHOWN WITHOUT PREFIX ALARN.
2. TANK INLET AND RECIRCULATION CONNECTIONS ARE BELOW THE NORMAL WATER LEVEL.
3. LIMIT AVAILABLE H_2 SUPPLY TO TWO STANDARD BOTTLES. PRESSURE REGULATOR SUPPLIED ON BOTTLES TO BE SET AT 5 PSIG.
4. ALL LINE & VALVE NO'S IN THIS SYS. ARE PREFIXED BY Q OR NIG21.0 (4 SHTS 1-4
5. SEE DWG. D-175044 FOR (5) SYS. LEGEND
6. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. 1109-1).
7. FOR VALVE INFORMATION SEE MASTER VALVE LIST (SPEC. 55-1102-39)
8. 3/8" GLOBE VALVES TO BE SUPPLIED WITH SAMPLE VESSEL.
9. FOR COMPLETE INSTRUMENT NUMBERS REFER TO INSTRUMENT INDEX B-175803
10. LOCATE CLOSE TO RCDT.
11. PORTIONS OF THE WASTE PROCESSING SYS WHICH WERE ORIGINALLY DESIGNED TO ASME CLASS 3 SEISMIC CATEGORY I REQUIREMENTS HAVE BEEN DOWNGRADED TO NNS SEISMIC CATEGORY II BY PSAR AMENDMENT 78. VALVE, EQUIP & LINE NUMBERS HAVE NOT BEEN CHANGED SEE THE APPROPRIATE NOTE ON EACH SHEET FOR DETAILS. FLAG (△) DESIGNATES NNS CLASSIFICATION.

NOTES CONT'D

12. ALL LINES ON THIS SHEET WITH HCC OR HBC DESIGNATIONS ARE DOWNGRADED TO NNS PER NOTE 11. △

THIS DWG WAS REPRODUCED FROM WESTINGHOUSE DWG. 1105E399 SH. 1

ORIGINAL DRAWING, Rev. 9
TRANSFERRED TO BCB

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

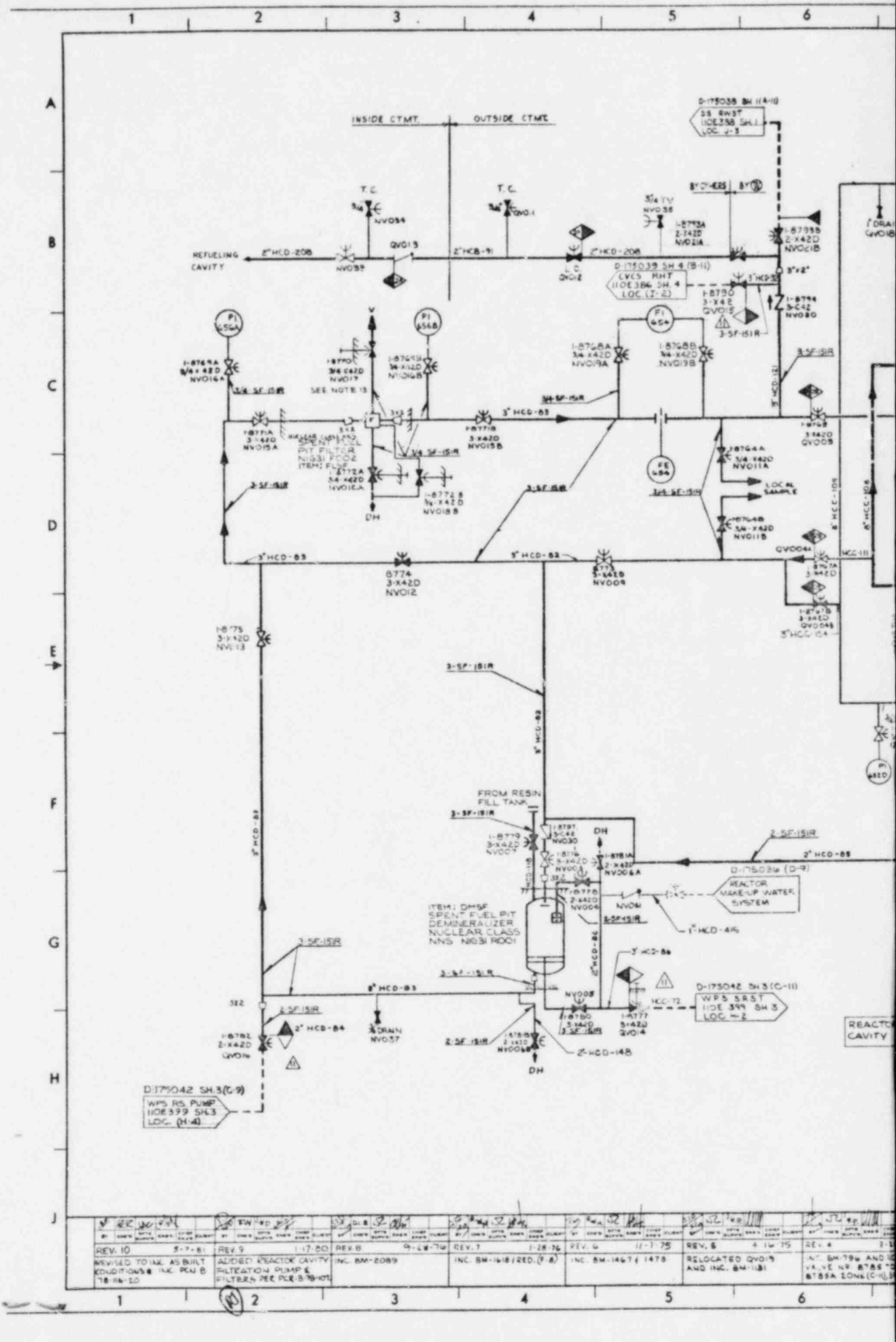
P & I DIAGRAM
WASTE PROCESSING SYSTEM

DRAWN R.W.W. CHECKED R.L.H. TRACED
APPROVED M. Heslcom DATE 11/10/74
APPROVED DATE
APPROVED DATE
APPROVED DATE

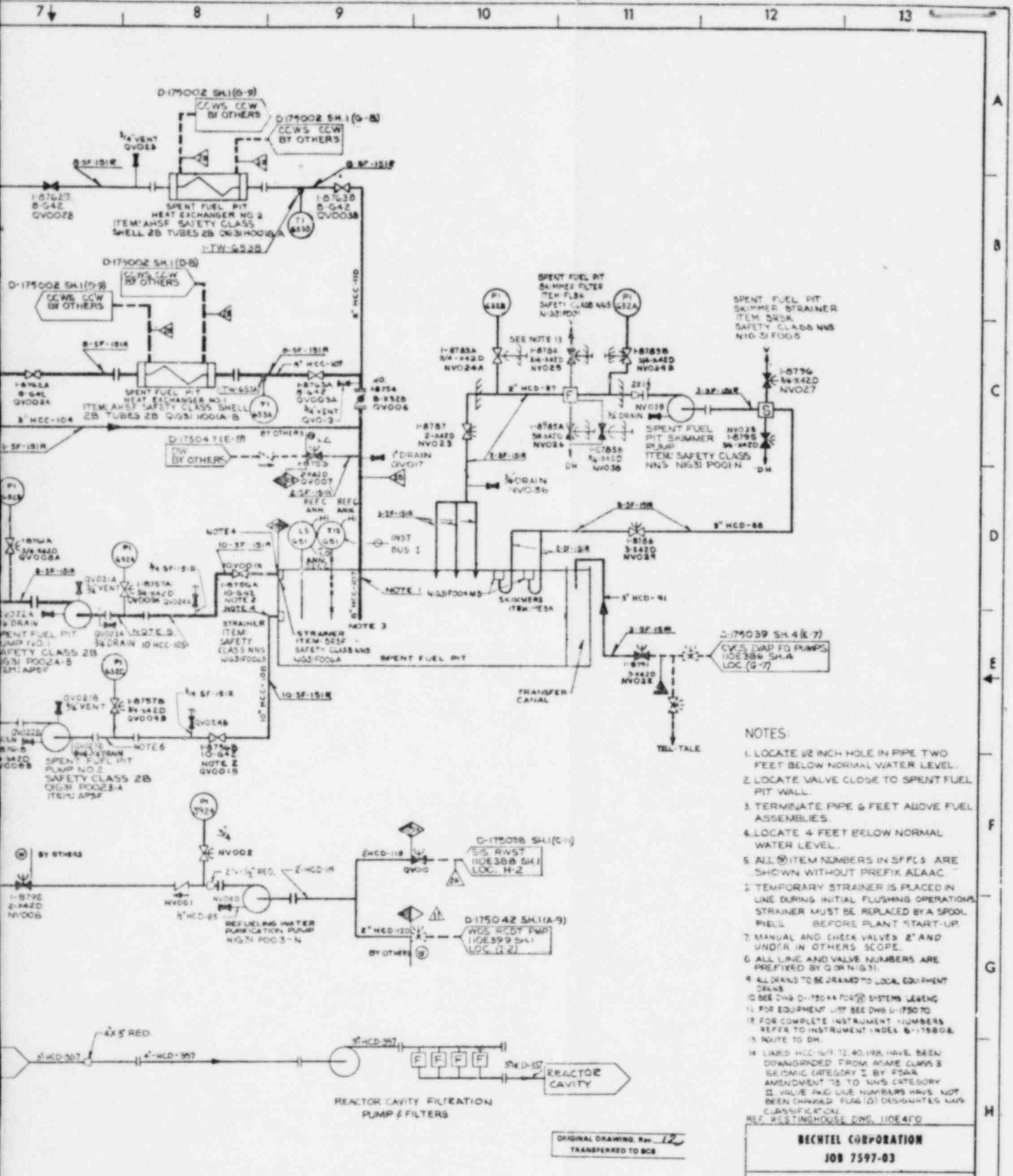
SCALE NONE
SHEET 1 OF 1 SHEETS
SUPERSEDES

D-175042 REV. 9

REV.	BY	DATE	CHKD	APPD	DESCRIPTION
3		6-8-74			REVISED PER REV. 7, WESTINGHOUSE LATEST SUBMITTAL.
2		11-6-73			REVISED AS CIRCLED VG. BM-474
1		4-13-73			REVISED PER REV. 6 WESTINGHOUSE LATEST SUBMITTAL.
0		11-10-72			ISSUED FOR ENGINEERING



REV. 10 5-7-81	REV. 9 1-17-80	REV. 8 9-28-76	REV. 7 1-28-76	REV. 6 11-1-75	REV. 5 4-16-75	REV. 4
REVISED TO INC. AS BUILT CONDITIONS & INC. PCN 8 78-86-20	ADDED REACTOR CAVITY FILTRATION PUMP & FILTERS PER PCR 8-78-107	INC. BM-2089	INC. BM-1618 (RED. (7-8)	INC. BM-1467 & 1478	RELOCATED QV019 AND INC. BM-1131	INC. BM-796 AND VICE VERSA 8786 8785A ZONE (C-11),



ORIGINAL DRAWING, Rev. 12
TRANSFERRED TO BCB

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY

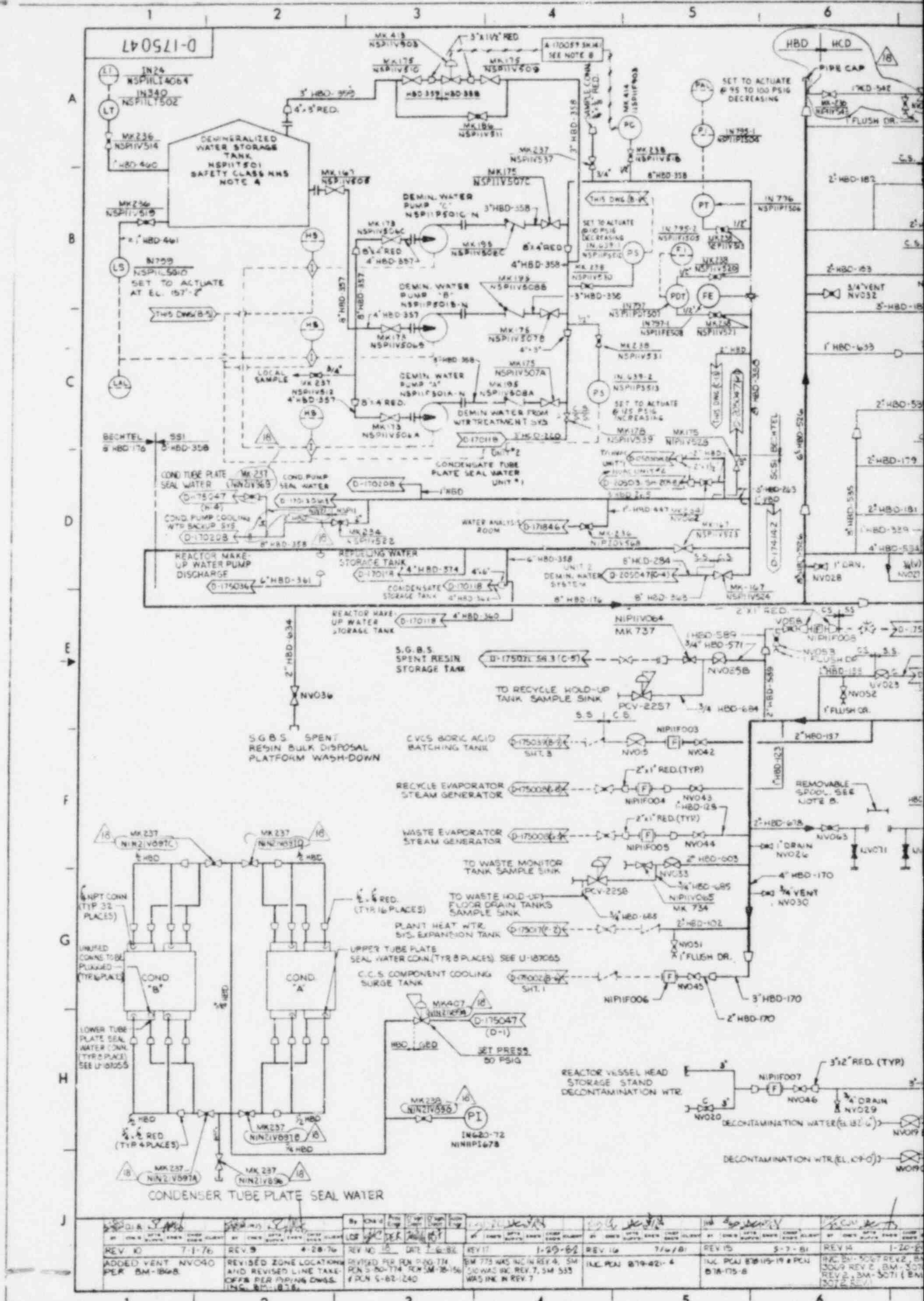
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

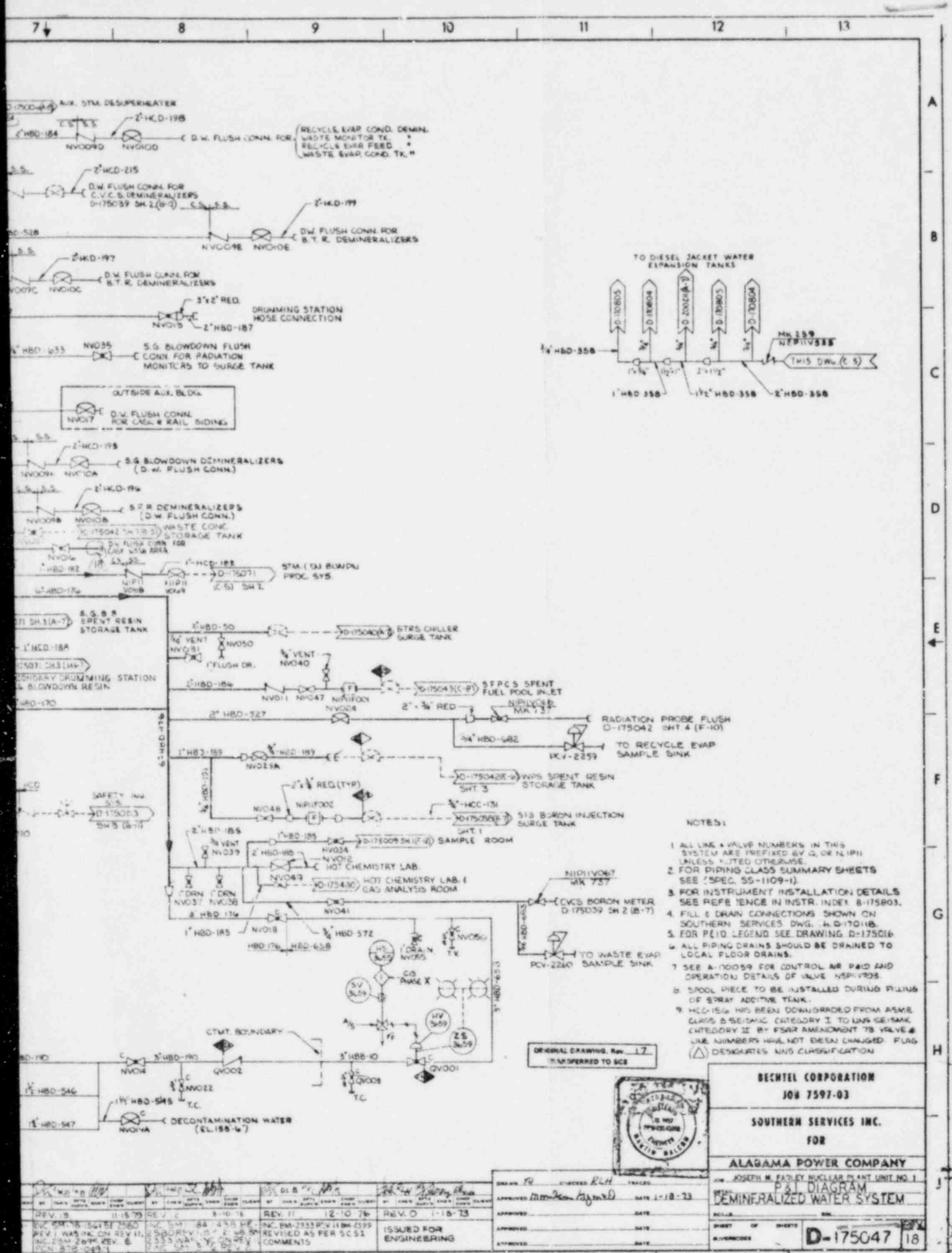
P&I DIAGRAM
SPENT FUEL POOL COOLING SYS.

D-175043 REV 12

REV	DESCRIPTION	DATE
REV. 3	REVISED PER (M) LATEST COMMENTS & AS NOTED	3-7-74
REV. 12	SM-959 WAS INC. ON REV. 4 BUT NOT LISTED IN REV. BLOCK.	1-5-82
REV. 11	AC PEN. B-1-42-4	7/6/81
REV. 0	ISSUED FOR ENGINEERING	10-18-72

DRAWN FAT TRACED Right
APPROVED [illegible] DATE 10/18/72
APPROVED DATE
APPROVED DATE


D-175047
DEMINERALIZED WATER STORAGE TANK NSPIITS01 SAFETY CLASS NNS NOTE 4
DEMIN. WATER PUMP "C"
DEMIN. WATER PUMP "B"
DEMIN. WATER PUMP "A"
SET TO ACTUATE AT EL. 157'-2"
LOCAL SAMPLE
DEMIN WATER FROM WTR TREATMENT SYS.
CONDENSATE TUBE PLATE SEAL WATER UNIT #1
COND. TUBE PLATE SEAL WATER
COND. PUMP SEAL WATER
COND. PUMP COOLING WTR BACKUP SYS.
WATER ANALYSIS ROOM
REACTOR MAKE-UP WATER PUMP DISCHARGE
REFUELING WATER STORAGE TANK
CONDENSATE STORAGE TANK
REACTOR MAKE-UP WATER STORAGE TANK
S.G.B.S. SPENT RESIN STORAGE TANK
TO RECYCLE HOLD-UP TANK SAMPLE SINK
S.G.B.S. SPENT RESIN BULK DISPOSAL PLATFORM WASH-DOWN
CVCS BORIC ACID BATCHING TANK
RECYCLE EVAPORATOR STEAM GENERATOR
WASTE EVAPORATOR STEAM GENERATOR
TO WASTE MONITOR TANK SAMPLE SINK
TO WASTE HOLD-UP FLOOR DRAIN TANKS SAMPLE SINK
PLANT HEAT WTR. SYS. EXPANSION TANK
C.C.S. COMPONENT COOLING SURGE TANK
REMOVABLE SPOOL. SEE NOTE 8.
COND "B"
COND "A"
UPPER TUBE PLATE SEAL WATER CONN. (TYP 8 PLACES) SEE U-187065
SET PRESS 50 PSIG
REACTOR VESSEL HEAD STORAGE STAND DECONTAMINATION WTR.
DECONTAMINATION WATER
CONDENSER TUBE PLATE SEAL WATER
REV. 10 7-1-76 ADDED VENT NV040 PER BM-1848.
REV. 9 4-28-76 REVISED ZONE LOCATIONS AND REVISED LINE TAKE-OFFS PER PIPING DWGS. INCL. BM-1836.
REV. 17 1-29-82
REV. 16 7/6/81 INC. PCN 879-421-4
REV. 15 3-7-81
REV. 14 1-20-81



NOTES:

1. ALL LINE & VALVE NUMBERS IN THIS SYSTEM ARE PREFIXED BY Q, OR N.PI.P.II UNLESS NOTED OTHERWISE.
2. FOR PIPING CLASS SUMMARY SHEETS SEE (SPEC. SS-1109-I).
3. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTR. INDEX B-175803.
4. FILL & DRAIN CONNECTIONS SHOWN ON SOUTHERN SERVICES DWG. # D-170118.
5. FOR P&ID LEGEND SEE DRAWING D-175016
6. ALL PIPING DRAINS SHOULD BE DRAINED TO LOCAL FLOOR DRAINS.
7. SEE A-100059 FOR CONTROL AIR P&ID AND OPERATION DETAILS OF VALVE NSPIV703.
8. SPOOL PIECE TO BE INSTALLED DURING FILLING OF SPRAY ADDITIVE TANK.
9. HCD-1516 HAS BEEN DOWNGRADED FROM ASME CLASS 2 SEISMIC CATEGORY I TO UNS SEISMIC CATEGORY II BY FSAR AMENDMENT 78 VALVE & LINE NUMBERS HAVE NOT BEEN CHANGED. FLAG (△) DESIGNATES UNS CLASSIFICATION

ORIGINAL DRAWING, Rev. 17 TRANSFERRED TO SCS

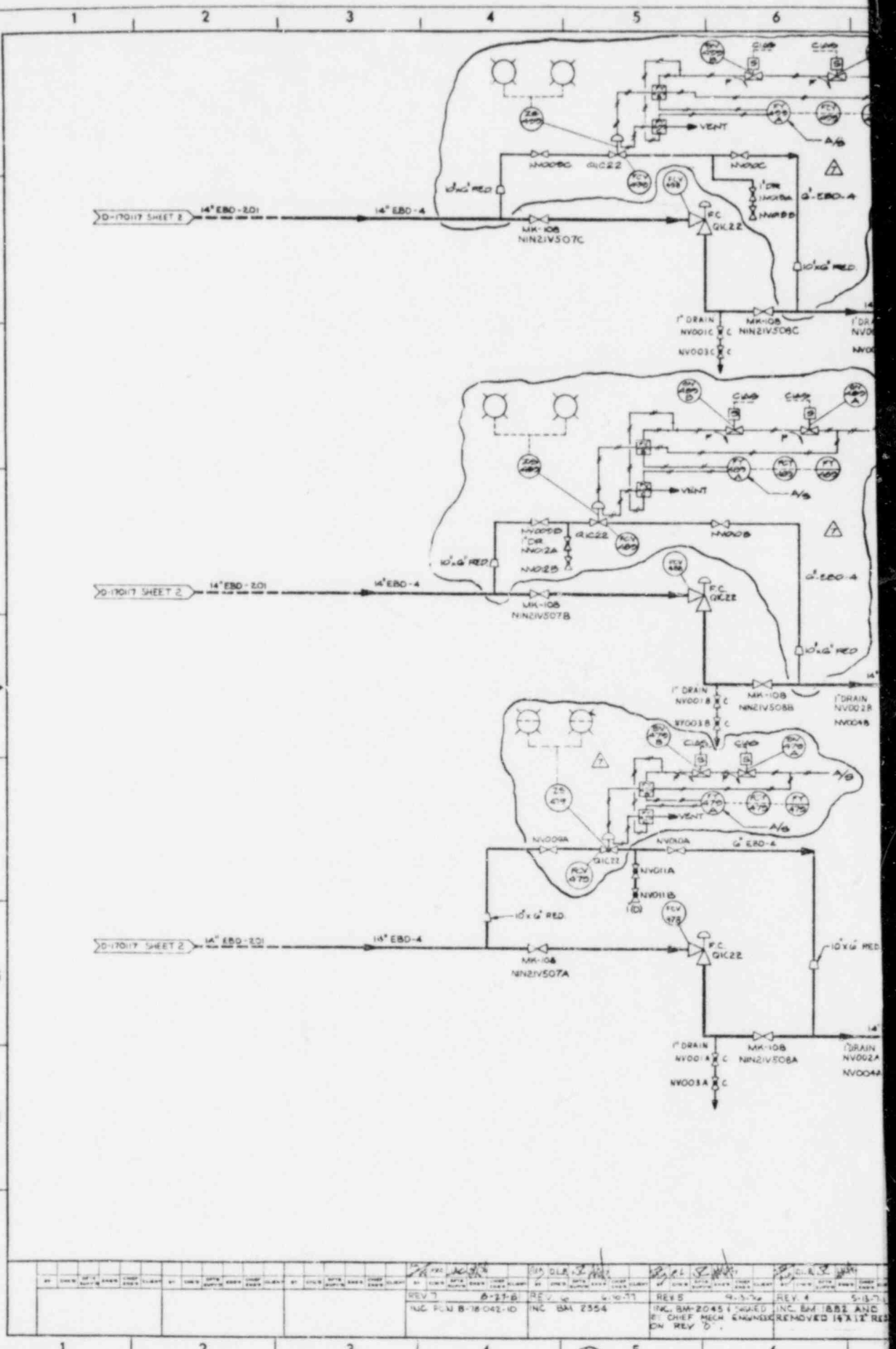
REV.	DATE	DESCRIPTION
REV. B	11-15-79	
REV. C	8-10-76	
REV. D	12-10-76	
REV. 0	1-18-73	ISSUED FOR ENGINEERING

BECHTEL CORPORATION
JOB 7597-03

SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1

P & I DIAGRAM
DEMINERALIZED WATER SYSTEM

D-175047 18


1
2
3
4
5
6
A
B
C
D
E
F
G
H
J
D-170117 SHEET 2
14" EBD-2.01
14" EBD-4
MK-108
NIN2IV507C
NIN2IV507B
NIN2IV507A
NIN2IV508C
NIN2IV508B
NIN2IV508A
F.C.
GK22
VENT
A/B
1" DRAIN
NV001C
NV003C
NV001B
NV003B
NV001A
NV003A
10"xG" RED.
G"-EBD-4
REV 7 8-27-8
NC FCN 8-18042-10
REV 6 4-10-79
NC BM 2354
REV 5 4-3-79
REV 4 5-18-7
INC. BM-2045 & ISSUED
E. CHIEF MECH. ENGINEER
ON REV 5.
INC. BM 1882 AND
REMOVED 14"x12" RED

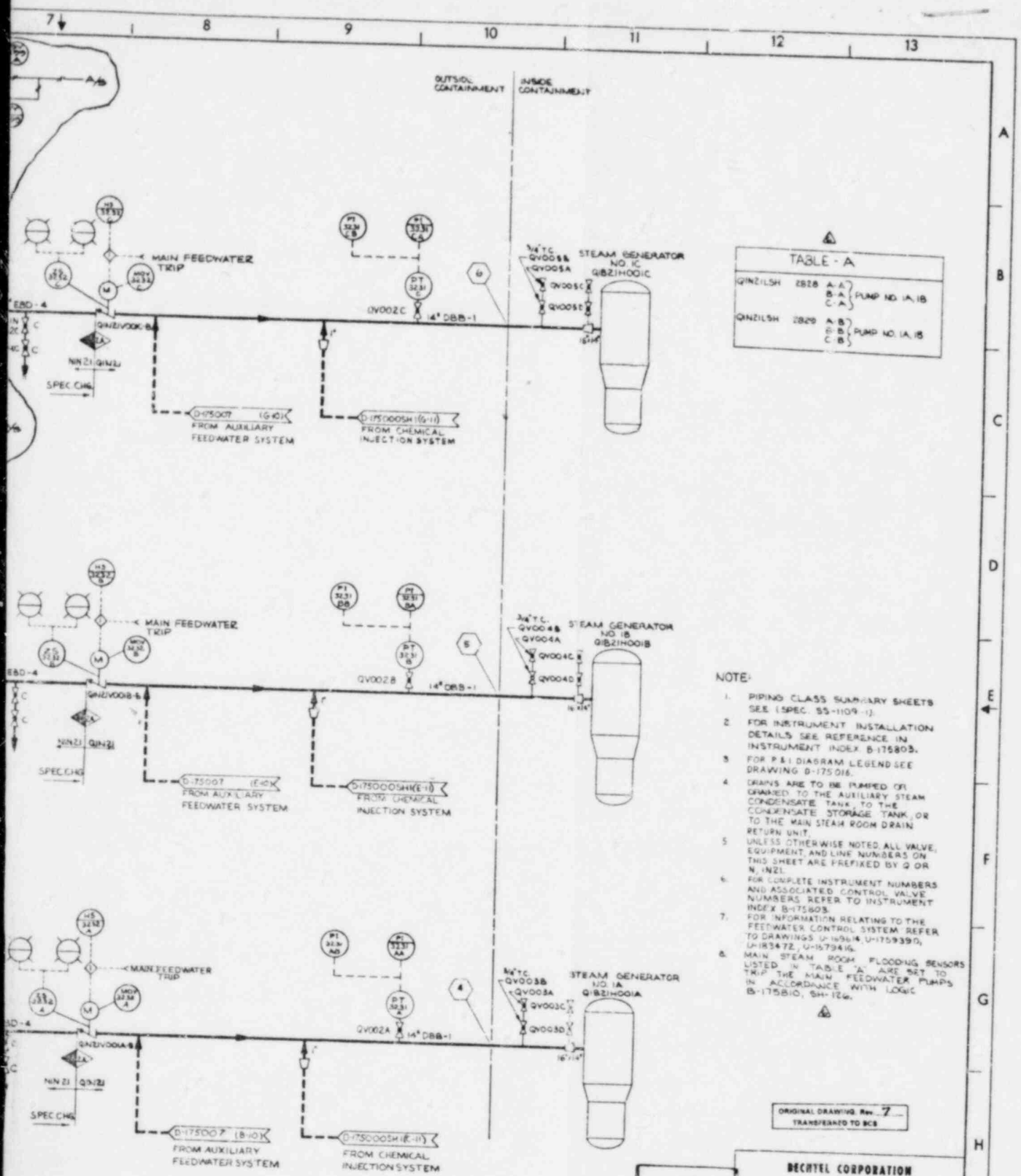


TABLE - A			
QIN21LSH	2828	A-A, B-A, C-A	PUMP NO. 1A, 1B
QIN21LSH	2829	A-B, B-B, C-B	PUMP NO. 1A, 1B

NOTE:

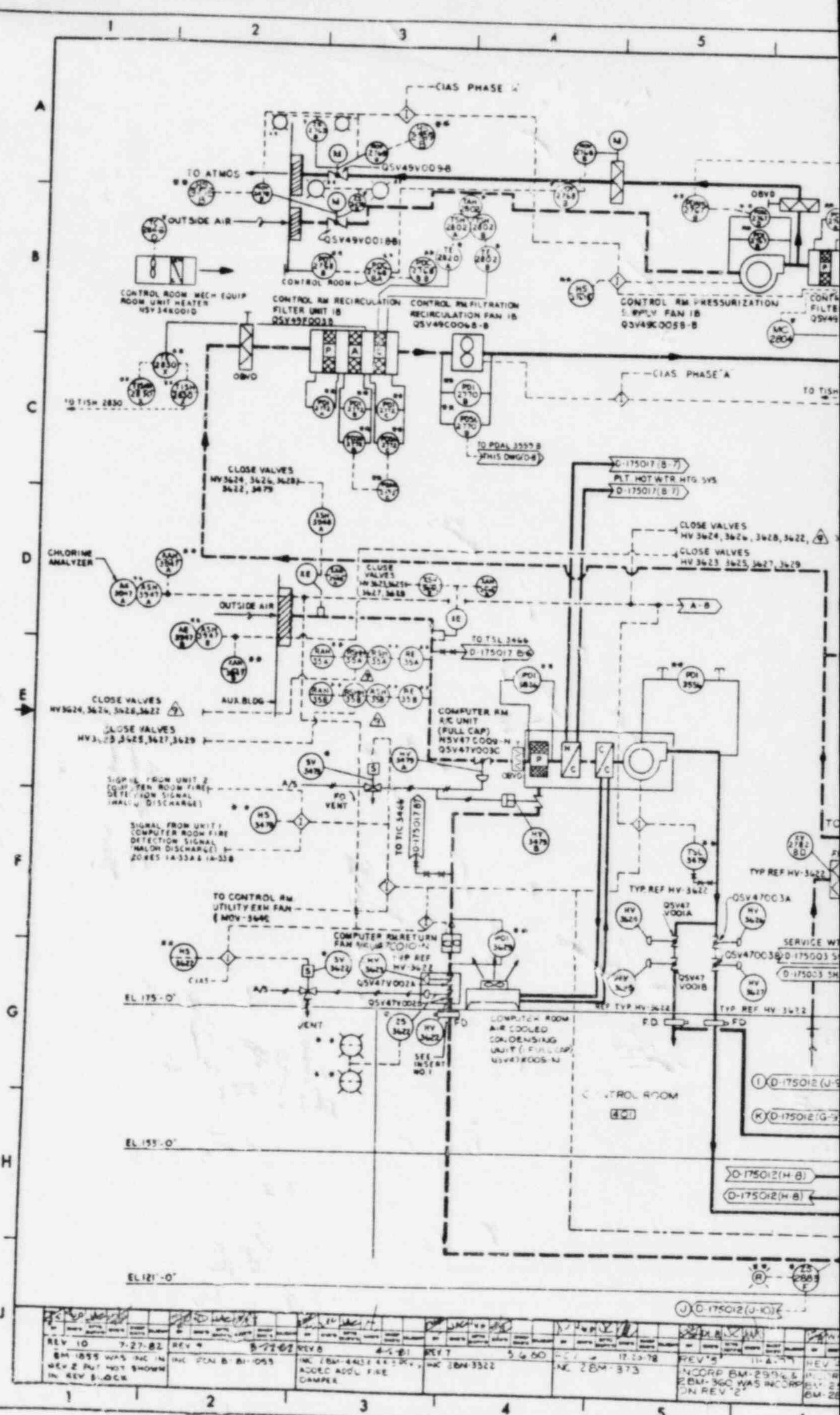
1. PIPING CLASS SUMMARY SHEETS SEE (SPEC. SS-1109-1).
2. FOR INSTRUMENT INSTALLATION DETAILS SEE REFERENCE IN INSTRUMENT INDEX B-175803.
3. FOR P & I DIAGRAM LEGEND SEE DRAWING B-175016.
4. DRAINS ARE TO BE PUMPED OR DRAINED TO THE AUXILIARY STEAM CONDENSATE TANK, TO THE CONDENSATE STORAGE TANK, OR TO 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 N, IN21.
6. FOR COMPLETE INSTRUMENT NUMBERS AND ASSOCIATED CONTROL VALVE NUMBERS, REFER TO INSTRUMENT INDEX B-175803.
7. FOR INFORMATION RELATING TO THE FEEDWATER CONTROL SYSTEM, REFER TO DRAWINGS U-190614, U-159390, U-183472, U-157946.
8. MAIN STEAM ROOM FLOODING SENSORS LISTED IN TABLE "A" ARE SET TO TRIP THE MAIN FEEDWATER PUMPS IN ACCORDANCE WITH LOGIC B-175810, SH-126.

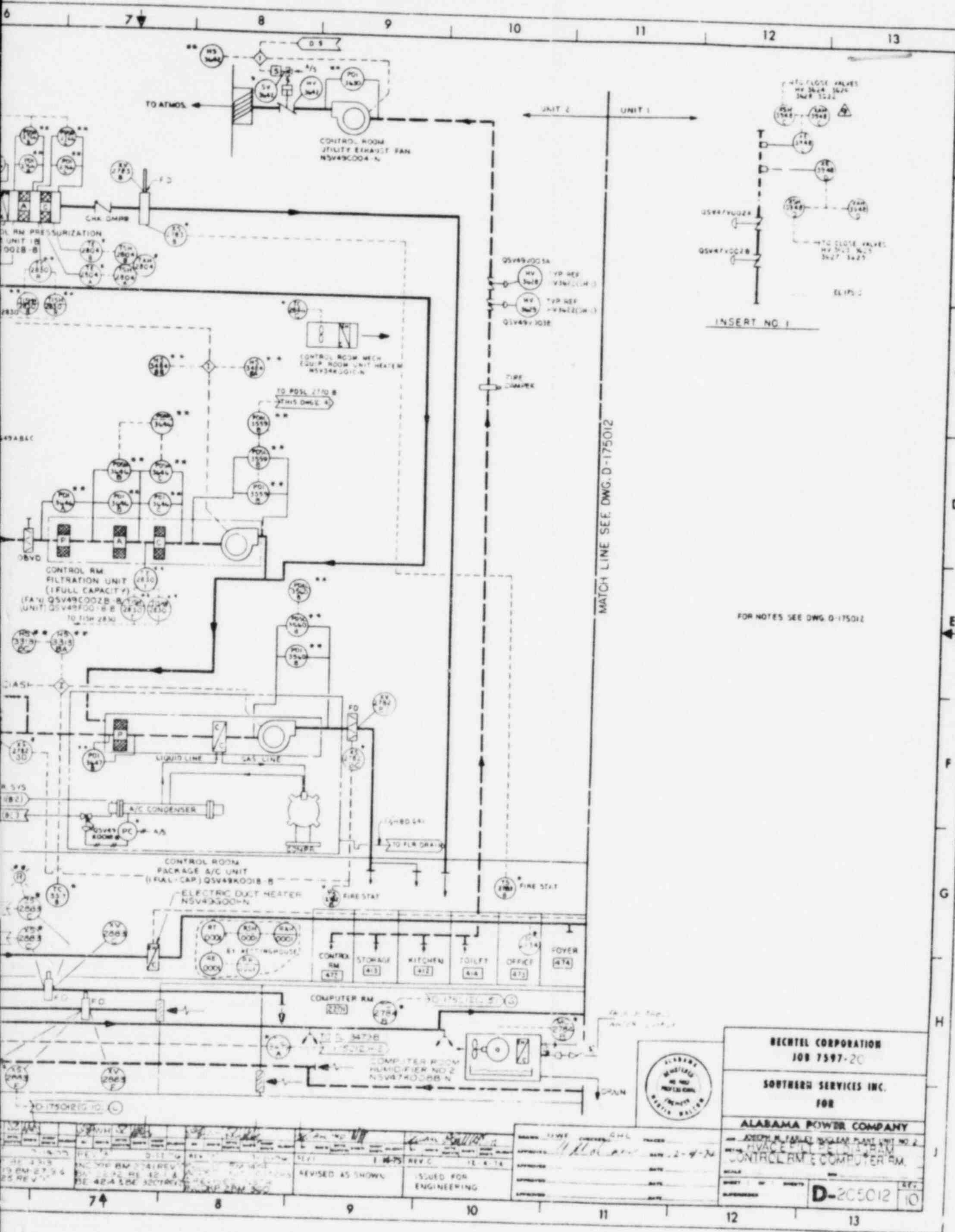
ORIGINAL DRAWING Rev. 7
TRANSFERRED TO BCB

REV.	DESCRIPTION
3	INC. BM-1489 / REVD. NOTE 4.
2	NC BM-14-B ADDED VALVES QV003A & B, QV004A & B, QV005A & B REVISED AS NOTED.
1	ADDED DRAINS AND ROOT VALVES AND REVISED AS CIRCLED.
0	ISSUED FOR ENGINEERING

DRAWN P.M. Reft TRACED
APPROVED M. Wolcott 8/3/73
APPROVED DATE
APPROVED DATE
APPROVED DATE

BECHTEL CORPORATION
JOB 7597-03
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT UNIT NO. 1
P & I DIAGRAM
MAIN FEEDWATER SYSTEM
SCALE: NONE
SHEET OF SHEETS
SUPERSEDES
D-175073
REV. 7


CIAS PHASE 'A'
TO ATMOS
OUTSIDE AIR
QSV49V009-B
QSV49V001-B
CONTROL ROOM MECH EQUIP ROOM UNIT HEATER
CONTROL RM RECIRCULATION FILTER UNIT 1B
CONTROL RM FILTRATION RECIRCULATION FAN 1B
CONTROL RM PRESSURIZATION SUPPLY FAN 1B
TO TISH 2830
CHLORINE ANALYZER
CLOSE VALVES
OUTSIDE AIR
AUX BLDG
PLT HOT WTR HTG SYS
COMPUTER RM A/C UNIT (FULL CAP)
COMPUTER ROOM AIR COOLED CONDENSING UNIT
SIGNAL FROM UNIT 1 COMPUTER ROOM FIRE DETECTION SIGNAL (HALON DISCHARGE)
TO CONTROL RM UTILITY EXH FAN
COMPUTER RM RETURN FAN
SERVICE WTR
EL 175'-0"
EL 155'-0"
EL 121'-0"
CONTROL ROOM
SEE INSERT NO.1
VENT
FO VENT
REV 10 7-27-82
REV 9
REV 8
REV 7
INCORP BM-2996 & 2BM-360 WAS INCORP ON REV 2


TO ATMOS.
CONTROL ROOM UTILITY EXHAUST FAN NSV49C004-N
UNIT 2
UNIT 1
INSERT NO. 1
MATCH LINE SEE DWG. D-175012
CONTROL RM. FILTRATION UNIT (1 FULL CAPACITY)
CONTROL ROOM PACKAGE A/C UNIT
LIQUID LINE
GAS LINE
A/C CONDENSER
ELECTRIC DUCT HEATER
FIRE STAT
CONTROL RM
STORAGE
KITCHEN
TOILET
OFFICE
FOYER
COMPUTER RM
COMPUTER ROOM HUMIDIFIER NO. 2
DRAIN
FOR NOTES SEE DWG. D-175012
REVISED AS SHOWN
ISSUED FOR ENGINEERING
BECHTEL CORPORATION
JOB 7597-20
SOUTHERN SERVICES INC.
FOR
ALABAMA POWER COMPANY
HVAC FLOW DIAGRAM
CONTROL RM. & COMPUTER RM.
D-205012
10