

DRAWING NO. A-18172  
SHEET 1

SYSTEM EVALUATION DOCUMENT

FOR

GEORGIA POWER COMPANY

FOR

EDWIN I. BATH UNIT 1

FOR THE

REACTOR RECIRCULATION SYSTEM (B31)

REV. NO.	DATE	BY	DESCRIPTION	CHK	SUPVR.	PROJ. ENGR.
D	8-29-86	A/C	ISSUED PER REA HT-4619	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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## REVISION STATUS SHEET

SHEET 2

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## I. SYSTEM OPERATION

The Reactor Recirculation System ensures adequate core cooling during power operations by supplying coolant flow past the reactor fuel bundles. This flow is provided by recirculating that portion of the core flow which is not boiled while passing through the core. The flow rate can be varied as one means of controlling reactor power.

The system consists of two (2) loops external to the Reactor Pressure Vessel (RPV). Each external loop contains one variable speed motor-driven recirculation pump, two motor operated gate valves, and a motor generator set to control the recirculation pump speed. Suction is from the reactor vessel annulus and discharge is to the reactor vessel jet pumps.

The Reactor Recirculation System has seven (7) modes of operation: Normal, LPCI Injection, Recirculation Pump Trips, Reactor Water Sample, RPV Bottom Drain, Recirculation Pump Seal Purge, and Shutdown Cooling Mode.

The function of each mode (and therefore the components of each subsystem) are safety related or non-safety related as indicated in Table 1, and further described in Section II.

The general safety design criteria which are applicable to components in one or more modes are indicated in Section V, and further discussed in Section II. Electrical design considerations are covered under the support systems listed in Section III.

## II. DESCRIPTION OF OPERATIONAL MODES

## A. Normal Operation Mode

During normal operation, the reactor recirculation system ensures adequate core cooling and reactivity control by maintaining forced circulation of water past the fuel bundles. The recirculated coolant consists of saturated water from the steam separators and dryers that has been subcooled by incoming feedwater. This water passes down the annulus between the RPV wall and the core shroud. A portion of the coolant flows from the RPV through the two external recirculation loops to become the driving flow for the jet pumps.

The recirculation flow rate is controlled by varying the output frequency of the associated motor generators, thus varying the speed of the associated recirculation pump.

Reactor power can be partially controlled by varying the recirculation flow rate without requiring control rod movement. This power change is accomplished by utilizing the large negative power coefficient found in the BWR design. The void coefficient present in the reactor core is a function of the recirculation flow rate. An increase in core flow sweeps some of the voids from the moderator and causes an increase in reactivity. A decrease in core flow results in the formation of more voids which decreases core reactivity. In the event of a power failure to the recirculation pumps the system has enough inertia to ensure that adequate circulation can be maintained to prevent damage to the fuel assemblies in the RPV core.

The Reactor Recirculation System is also designed to provide automatic load following capability over the range of approximately 70 to 100% rated power.

If feedwater flow is below 20 percent, the recirculation pump speed is automatically limited. Therefore, automatic protection against recirculation pump cavitation due to NPSH loss is provided by the 20 percent feedwater flow limiter.

The recirculation flow is monitored by sensing elements on each loop. This flow rate is transmitted to the Neutron Monitoring System (C51) so that the neutron flux/recirculation flow relationship can be calculated. If this calculated relationship deviates from the normal operational value as determined through analysis, the Neutron Monitoring System will initiate a SCRAM signal.

## II. DESCRIPTION OF OPERATIONAL MODES

### A. Normal Operation Mode

The Normal Operational Mode is safety related with the following safety functions:

- o Reactor Coolant Pressure Boundary (RCPB) Integrity

An example of a safety design basis event is the startup of an idle recirculation pump.

### B. LPCI Injection Mode

During this mode, portions of the Reactor Recirculation System piping are included in the LPCI flow paths.

Upon the receipt of a LPCI injection signal (High Drywell Pressure/Reactor Low Level 1), the reactor recirculation pumps are tripped (Reactor Low Level 2) and the discharge isolation valves (B31-F031A,B) close to avoid LPCI flow out of a possible break in a recirculation line and to assure that LPCI flow is directed through the jet pumps.

The LPCI Injection Mode is safety related with the following safety functions:

- o Reactor Core Cooling Geometry
- o Reactor Coolant Pressure Boundary (RCPB) Integrity
- o Reactor Coolant Inventory
- o High Energy Line Break Mitigation

An example of a safety design basis event is a Loss of Coolant Accident (LOCA).

### C. Recirculation Pump and/or Motor Generator Trips Mode

The main recirculation pumps and motor generators have various trips associated with them, some of which have safety significance. The recirculation pump is designed to have sufficient inertia so that it gradually coasts down after a trip, thus smoothing any flow transients caused by cutting off recirculation flow.

Safety related trips occur with the following events:

- Reactor Low Water Level (Level 2)
- Reactor High Pressure Trip
- Turbine Stop Valve Closure - (If the reactor Turbine Control Valve Fast Closure - power is > 30% of rated)

## II. DESCRIPTION OF OPERATIONAL MODES

C. The safety related trips serve to reduce reactor power in case of a reactor scram failure by increasing the void coefficient in the moderator (water).

Non-safety related trips of the recirculation pumps and/or motor generators serve to protect the equipment. These trips are listed on the Reactor Recirculation System Logic Diagrams.

The Recirculation Pump or Motor Generator Trips mode is safety related with the following safety functions:

- o Reactivity Control
- o Reactor Coolant Pressure Boundary Integrity

An example of a safety design basis event is tripping two recirculation pumps.

### D. Reactor Water Sample Mode

A connection off of the recirculation piping is provided for use in the event that the Reactor Water Cleanup System is out of service. The sample line is connected into an active portion of the recirculation system to ensure that a representative sample of reactor water is obtained. The sample line valves automatically close on receipt of a containment isolation signal.

The Reactor Water Sample Mode is safety related with the following safety functions:

- o Reactor Coolant Pressure Boundary Integrity
- o Containment Isolation

An example of a safety design basis event is a Loss of Coolant Accident.

### E. Reactor Vessel Bottom Drain Mode

A drain line is connected to the bottom head of the reactor vessel to permit flushing the bottom of the reactor to the radwaste system during plant shutdown. This drain is also piped to the main suction line of the reactor water cleanup system. The valve in this line is normally open to permit flow to pass from the bottom of the reactor vessel to the cleanup system continuously during reactor operation. This is done to keep the drain line flushed out and to provide temperature readout of the coolant in the bottom of the reactor vessel by means of an installed thermocouple.

## II. DESCRIPTION OF OPERATIONAL MODES

E. The Reactor Vessel Bottom Drain Mode is safety related with the following safety function:

- o Reactor Coolant Pressure Boundary Integrity

F. Recirculation Pump Seal and Purge Mode

The recirculation pump seals are cooled by injection water supplied by the CRD (C11) System. The pumps and the MG Sets are cooled by the RBCCW (P42) System. The pump seals are provided with a purge system to keep the seals clean by maintaining a net flow of clean water out of the seal area, along the pump shaft, and into the recirculation system. A flow of (3) three to (5) five gpm is continuously drawn from the control rod drive hydraulic system at all times.

The Recirculation Pump Seal and Purge Mode is safety related with the following safety function:

- o Reactor Coolant Pressure Boundary (RCPB) Integrity.

G. Shutdown Cooling Mode

The Shutdown Cooling Mode is an integral part of the RHR System (E11). Reactor coolant is pumped from one of the recirculation loops by one or both RHR Pumps and is discharged through the RHR heat exchangers where it is cooled by the RHRSW flow. The reactor coolant is then returned to the RPV via the recirculation loop.

This mode contains no individual components from the Reactor Recirculation System except the segment of recirculation pipe where the RHR system ties in, flow elements N013A,B which serve as pressure boundaries, and recirculation pump discharge isolation valves F031A,B which are closed.

The Shutdown Cooling Mode is safety related with the following safety functions:

- o Reactivity Control
- o Reactor Core Cooling Geometry
- o Reactor Coolant Pressure Boundary Integrity
- o Reactor Coolant Inventory

An example of a safety design basis event is a Shutdown Cooling (RHR) Malfunction Decreasing Temperature.

### III. SUPPORT SYSTEMS

The following systems, in whole or in part, are required to support the operation of the Reactor Recirculation System. For detailed information pertaining to the functionally nuclear safety related portions of these systems, the respective system evaluation documents for each system should be consulted.

- |   |       |
|---|-------|
| A. Nuclear Boiler System                        | - B21 |
| B. Residual Heat Removal System                 | - E11 |
| C. Reactor Building Closed Cooling Water System | - P42 |
| D. Control Rod Drive System                     | - C11 |
| E. Neutron Monitoring System                    | - C51 |
| F. Reactor Protection System                    | - C71 |
| G. Battery System                               | - R42 |
| H. Diesel Generator                             | - R43 |
| I. Uninterruptible Power                        | - R44 |

The following system supports the Reactor Recirculation System in a non-safety manner by providing Net Positive Suction Head (NPSH) for the recirculation pumps:

- |                     |       |
|---------------------|-------|
| A. Feedwater System | - N21 |
|---------------------|-------|

## SYSTEM EVALUATION DOCUMENT

## IV. REFERENCE DOCUMENTS

DWG NO.	REV.	TITLE
H-16063	16	Nuclear Boiler System P&ID, Sheet 2
H-16066	16	Reactor Recirculation System P&ID, Sheet 1
H-16067	1	Reactor Recirculation System P&ID, Sheet 2
H-16068	2	Reactor Recirculation System P&ID, Sheet 3
H-16076	7	Reactor Recirculation System M.G. Sets P&ID
H-17860	13	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 1
H-17861	7	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 2
H-17862	13	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 3
H-17863	7	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 4
H-17864	19	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 5
H-17865	10	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 6
H-17866	15	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 7
H-17867	7	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 8
H-17868	11	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 9
H-17869	2	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 10
H-17870	3	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 11
H-17814	13	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 12
H-19913	0	Reactor Recirculation System Logic Diagram, Sht 1
H-19914	0	Reactor Recirculation System Logic Diagram, Sht 2
H-19915	0	Reactor Recirculation System Logic Diagram, Sht 3
H-19916	0	Reactor Recirculation System Logic Diagram, Sht 4
H-19917	0	Reactor Recirculation System Logic Diagram, Sht 5
S-19908	A	Operation and Maintenance Instruction Manual Vol. II - Reactor Recirculation System

Unit 1 FSAR, Rev. 3, 3.7, 4.3, and 7.9

Technical Specifications, Amend 124, 3/4.6

10CFR50 Appendix A, General Design Criteria No.

1, 2, 4, 12, 13, 14, 15, 30, 31, 32, 55

## SYSTEM EVALUATION DOCUMENT

## IV. REFERENCE DOCUMENTS

Central File for the Environmental Qualification of Safety Related Equipment, Section B (HNP-1), Rev. 19.  
Review of Plant Systems per Supplement 1 NUREG-0737, Comparison to NRC Regulatory Guide 1.97 (Rev. 2) HNP-1  
SCSI Calculation # SNH 86-003, Rev. 0 "Unit 1 Path 1 & 2 Safe Shutdown Equipment List"  
Bechtel Electrical Calculation #76, Rev. 0 "Unit 1 Path 3 Safe Shutdown Equipment List".

TABLE I

SHEET NO. II

ROLE OF SYSTEM OPERATION		PROVIDE THE CAPABILITY TO PREVENT OR MITIGATE THE CONSEQUENCES OF ACCIDENTS WHICH COULD RESULT IN POTENTIAL OFF-SITE EXPOSURE EXCEEDING 100FRIOD LIMITS	
		Yes	No
A. Normal operation		Yes	Yes
B. UPCI Injection		Yes	Yes
C. Recirculation Pump Trips	MA	Yes	Yes
D. Reactor Water Sample		Yes	No
E. Reactor Vessel Bottom Drain		Yes	No
F. Recirc Pump Seal & Purge		Yes	No
G. Shutdown Cooling		Yes	Yes



## ----- COMPONENT EVALUATION - SECTION 7 -----

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	RFL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY		SEIS. 3-2/1	ENVMT. H/I	SPEC REV.	DBS REF	MODES/REMARKS
			CLASS N/P	CLASS G/R/P					
32	F009B	EFCV For FT-H014B	S P	A	I	I	H-16066		Mode A Containment Isolation
33	F009C	EFCV For FT-H014C	S P	A	I	I	H-16066		Mode A Containment Isolation
34	F009D	EFCV For FT-H014D	S P	A	I	I	H-16066		Mode A Containment Isolation
35	F010A	EFCV For FT-H014A	S P	A	I	I	H-16066		Mode A Containment Isolation
36	F010B	EFCV For FT-H014B	S P	A	I	I	H-16066		Mode A Containment Isolation
37	F010C	EFCV For FT-H014C	S P	A	I	I	H-16066		Mode A Containment Isolation
38	F010D	EFCV For FT-H014D	S P	A	I	I	H-16066		Mode A Containment Isolation
39	F011A	EFCV For FT-H024A	S P	A	I	I	H-16066		Mode A Containment Isolation
40	F011B	EFCV For FT-H024B	S P	A	I	I	H-16066		Mode A Containment Isolation
41	F011C	EFCV For FT-H024C	S P	A	I	I	H-16066		Mode A Containment Isolation
42	F011D	EFCV For FT-H024D	S P	A	I	I	H-16066		Mode A Containment Isolation
43	F012A	EFCV For FT-H024B	S P	A	I	I	H-16066		Mode A Containment Isolation
44	F012B	EFCV For FT-H024B	S P	A	I	I	H-16066		Mode A Containment Isolation
45	F012C	EFCV For FT-H024C	S P	A	I	I	H-16066		Mode A Containment Isolation
46	F012D	EFCV For FT-H024D	S P	A	I	I	H-16066		Mode A Containment Isolation
47	F013A	Seal Wtr A Iso Check Valve	S P	A	I	I	H-16066		Mode F Containment Isolation
48	F013B	Seal Wtr B Iso Check Valve	S P	A	I	I	H-16066		Mode F Containment Isolation
49	F014A	Seal Wtr A Iso Gate Valve	S P	A	I	I	H-16066		Mode F RCPB
50	F014B	Seal Wtr B Iso Gate Valve	S P	A	I	I	H-16066		Mode F RCPB
51	F015A	Seal Wtr Relief Valve	N	B		I	H-16066		
52	F015B	Seal Wtr Relief Valve	N	B		I	H-16066		
53	F016A	Seal Wtr A Iso Gate Valve	N	B		I	H-16066		
54	F016B	Seal Wtr B Iso Gate Valve	N	B		I	H-16066		
55	F017A	Seal Wtr A Iso Check Valve	S P	B	I	I	H-16066		Mode F Containment Isolation
56	F017B	Seal Wtr B Iso Check Valve	S P	B	I	I	H-16066		Mode F Containment Isolation
57	F019	Sample Line Iso Globe Valve	S A	A	I	H	Y	H-16066	Mode D RCPB Containment Isolation, RG 1.97
58	F019X	Sol Vlv for F019	S A	Z	I	H		H-16066	Mode D Containment Isolation
59	F020	Sample Line Iso Globe Valve	S A	B	I	H	Y	H-16066	Mode D RCPB Containment Isolation, RG 1.97
60	F021	Sample Line Test Globe Valve	S P	B	I	I		H-16066	Mode D RCPB Containment Isolation
61	F022	Sample Line Test Globe Valve	S P	B	I	I		H-16066	Mode D RCPB
62	F023A	CO01A Suction Iso Gate Valve	S P	A	I	I	Y	H-16066	Modes A,B RCPB, App R

NO.	REF.	DESCRIPTION	CLASS	SIZE	ENDS	SPEC.	REQ.	NOTE S/R BLOCKS
34	RP1	F0018 Section Iso Gate Valve	S P	A	I	I	H-1606	Nodes A,B RCPB, App A
35	RP2	F0234 Slot Leakoff Globe	S P	A	I	I	H-1606	Node A RCPB
36	RP2A	F0234 Slot Leakoff Globe	S P	A	I	I	H-1606	Node A RCPB
35	RP2B	F0234 Slot Leakoff Globe	S P	A	I	I	H-1606	Node A RCPB
65	F0234	F0234 Casing Vent Globe	S P	A	I	I	H-1606	Node A RCPB
66	F0234	F0234 Casing Vent Globe	S P	A	I	I	H-1606	Node A RCPB
67	F0234	F0234 Casing Vent Globe	S P	A	I	I	H-1606	Node A RCPB
68	F0234	F0234 Casing Vent Globe	S P	A	I	I	H-1606	Node A RCPB
69	F0234	F0234 Casing Vent Globe	S P	A	I	I	H-1606	Node A RCPB
70	F0278	F0234 Casing w/o Globe	S P	A	I	I	H-1606	Node A RCPB
71	F0278	F0234 Casing w/o Globe	S P	A	I	I	H-1606	Node A RCPB
72	F0278	F0234 Casing w/o Globe	S P	A	I	I	H-1606	Node A RCPB
73	F0278	F0234 Casing w/o Globe	S P	A	I	I	H-1606	Node A RCPB
74	F0279	RPV Brain Globe Valve	S P	A	I	I	H-1606	Node A RCPB
75	F030	RPV Brain Globe Valve	S P	A	I	I	H-1606	Node A RCPB
76	F031A	C001A outlet Iso Gate Valve	S A	A	H	H	H-1606	Nodes A,B,G RPV Contain Inventory
77	F031B	C001B outlet Iso Gate Valve	S A	A	H	H	H-1606	Nodes A,B,G RPV Contain Inventory
78	F031A	F031A Slot Leakoff Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
79	F031B	F031B Slot Leakoff Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
80	F031A	F031A Casing Vent Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
81	F031B	F031B Casing Vent Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
82	F031A	F031A Casing Vent Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
83	F031B	F031B Casing Vent Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
84	F034A	F031A Casing Brain Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
85	F034B	F031B Casing Brain Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
86	F031A	F031A Casing Brain Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
87	F031B	F031B Casing Brain Globe	S P	A	I	I	H-1606	Nodes A, B RCPB
88	F039A	F031A Iso Globe Valve	S P	A	I	I	H-1606	Nodes A, B RCPB
89	F039B	F031B Iso Globe Valve	S P	A	I	I	H-1606	Nodes A, B RCPB
90	F039C	F031A Iso Globe Valve	S P	A	I	I	H-1606	Nodes A, B RCPB
91	F039D	F031B Iso Globe Valve	S P	A	I	I	H-1606	Nodes A, B RCPB
92	F039A	RPV for dP1 RP124	S P	A	I	I	H-1606	Node A Containment Isolation
93	F040B	RPV for dP1 RP124	S P	A	I	I	H-1606	Node A Contained Isolation

## SYSTEM ---- 671 REACTOR RECIRC SYSTEM

TABLE 1

No.	No.	COMPONENT	CLASS	SIZE	ITEM#	CLASS	SIZE	ITEM#	CLASS	SIZE	ITEM#
94	4040C	EFCV for 401 4015A	S P			S P			S P		
95	4040D	EFCV for 401 4015B	S P			S P			S P		
96	4041A	11-4014A 150 Globe Valve	S P			S P			S P		
97	4041B	11-4024B 150 Globe Valve	S P			S P			S P		
98	4041C	11-4014C 150 Globe Valve	S P			S P			S P		
99	4041D	11-4024D 150 Globe Valve	S P			S P			S P		
100	4042A	11-4014A 150 Globe Valve	S P			S P			S P		
101	4042B	11-4024B 150 Globe Valve	S P			S P			S P		
102	4042C	11-4014C 150 Globe Valve	S P			S P			S P		
103	4042D	11-4024D 150 Globe Valve	S P			S P			S P		
104	4051A	Loop A Brain Globe Valve	S P			S P			S P		
105	4051B	Loop B Brain Globe Valve	S P			S P			S P		
106	4052A	Loop A Brain Globe Valve	S P			S P			S P		
107	4052B	Loop B Brain Globe Valve	S P			S P			S P		
108	4053A	EFCV Spare	S P			S P			S P		
109	4053C	EFCV Spare	S P			S P			S P		
110	4053D	EFCV Spare	S P			S P			S P		
111	4053E	EFCV Spare	S P			S P			S P		
112	4053F	EFCV Spare	S P			S P			S P		
113	4053G	EFCV Spare	S P			S P			S P		
114	4053H	EFCV Spare	S P			S P			S P		
115	4056A	Globe Valve Spare	S P			S P			S P		
116	4056B	Globe Valve Spare	S P			S P			S P		
117	4056C	Globe Valve Spare	S P			S P			S P		
118	4056D	Globe Valve Spare	S P			S P			S P		
119	4056E	Globe Valve Spare	S P			S P			S P		
120	4056F	Globe Valve Spare	S P			S P			S P		
121	4056G	Globe Valve Spare	S P			S P			S P		
122	4056H	Globe Valve Spare	S P			S P			S P		
123	4057A	EFCV (SPARE) Loop A	S P			S P			S P		
124	4057B	EFCV (SPARE) Loop B	S P			S P			S P		

## UNIFORM EVALUATION - SECTION V

SYSTEM ----- 831 REACTOR RECIRC SYSTEM

ITEM	REF.	MATERIAL	FUNCTIONAL DESCRIPTION		CLASS	SIZE	SWING	SWING	SPEC.	SPEC.	SPEC.	SPEC.
			N	P								
125	40506	Globe Valve Spare Loop A	S	P	A	1	1	1	H-16066	Node A RCP		
126	40528	Globe Valve Spare Loop B	S	P	A	1	1	1	H-16066	Node A RCP		
127	40539	Sample Line Iso Globe Valve	S	P	A	1	1	1	H-16066	Node B RCP		
128	40600	Sample Line West Globe Valve	S	P	A	1	1	1	H-16066	Node D RCP		
129	40611	Sample Line West Slide Valve	S	P	A	1	2	2	H-16066	Node D RCP		
130	20678	F1-4002A Test Globe Valve	S	P	A	1	2	2	H-16066	Nodes A,F RCP		
131	40638	F1-4002B Test Globe Valve	S	P	A	1	2	2	H-16066	Nodes A,F RCP		
132	40639	F1-4002A Test Globe Valve	S	P	A	1	2	2	H-16066	Nodes A,F RCP		
133	40638	F1-4002B Test Globe Valve	S	P	A	1	2	2	H-16066	Nodes A,F RCP		
134	40644	Seal 2 Test Globe	S	P	O	1	2	2	H-16066	Node E RCP		
135	40645	Seal 3 Test Globe	S	P	O	1	2	2	H-16066	Node F RCP		
136	40650	Seal 4 Test Globe	S	P	O	1	2	2	H-16066	Node F RCP		
137	40658	Seal 5 Test Globe	S	P	O	1	2	2	H-16066	Node F RCP		
138	40664	Fluid Drive & Check Valve	W			1	2	2	H-16076			
139	40648	Fluid Drive B Check Valve	W			1	2	2	H-16076			
140	40674	Seal 6R & Test Globe Vlv	S	P	A	1	2	2	H-16066			
141	40638	Seal 6R & Test Globe Vlv	S	P	A	1	2	2	H-16066			
142	40674	Seal 6R & Test Globe Vlv	S	P	A	1	2	2	H-16066			
143	40698	Seal 6R & Test Globe Vlv	S	P	A	1	2	2	H-16066			
144	41538	F100 A1 outlet check Valve	W			1	2	2	H-16076			
145	41538	F100 B1 outlet check Valve	W			1	2	2	H-16076			
146	41544	F100 A2 outlet check Valve	W			1	2	2	H-16076			
147	41548	F100 B2 outlet check Valve	W			1	2	2	H-16076			
148	41554	F100 A1 outlet check Valve	W			1	2	2	H-16076			
149	41558	F100 B1 outlet check Valve	W			1	2	2	H-16076			
150	41564	F100 A2 outlet gate Valve	W			1	2	2	H-16076			
151	41568	F100 B2 outlet gate Valve	W			1	2	2	H-16076			
152	41578	F100 A2 outlet gate Valve	W			1	2	2	H-16076			
153	41582	F100 B2 outlet gate Valve	W			1	2	2	H-16076			
154	41598	F100 A1 outlet gate Valve	W			1	2	2	H-16076			
155	41606	F100 B1 outlet gate Valve	W			1	2	2	H-16076			

ITEM	REF.	COMPONENT	FUNCTION	CLASS	STATUS	CLASS	STATUS	SPEC.	DOC.	BRIEF STATE MARKS
349	891	Pump A5 Section Seal Valve		N		I				B-16076
350	890	Pump B5 Section Seal Valve		N		I				B-16076
351	81606	Pump A2 Section Seal Valve		N		I				B-16076
352	81607	Pump B2 Section Seal Valve		N		I				B-16076
353	81608	Pump A7 Section Seal Valve		N		I				B-16076
354	81609	Pump B7 Section Seal Valve		N		I				B-16076
355	81610	Pump A8 Section Seal Valve		N		I				B-16076
356	81611	Pump B8 Section Seal Valve		N		I				B-16076
357	81612	Pump A9 Section Seal Valve		N		I				B-16076
358	81613	Pump B9 Section Seal Valve		N		I				B-16076
359	81614	Pump A10 Section Seal Valve		N		I				B-16076
360	81615	Pump B10 Section Seal Valve		N		I				B-16076
361	81616	Pump A11 Section Seal Valve		N		I				B-16076
362	81617	Pump B11 Section Seal Valve		N		I				B-16076
363	81618	Aux Pump A Relief Valve		N		I				B-16076
364	81619	Aux Pump B Relief Valve		N		I				B-16076
365	81620	BL A10 Pressure Relief Valve		N		I				B-16076
366	81621	BL B10 Pressure Relief Valve		N		I				B-16076
367	81622	BL Set A Lube PV		N		I				B-16076
368	81623	BL Set B Lube PV		N		I				B-16076
369	81624	Aux Pump A outlet Check Valve		N		I				B-16076
370	81625	Aux Pump B outlet Check Valve		N		I				B-16076
371	81626	011 Fluid B line A Gate		S		I				B-16076
372	81627	011 Fluid B line B Gate		S		I				B-16076
373	81628	Pump Header Sample Gate Valve		N		I				B-16076
374	81629	Pump Header Sample Gate Valve		N		I				B-16076
375	81630	Pump Seal Gravity Press 1/5		N		I				B-16076
376	81631	Recirc Pump A Seal		S	A	I				B-16076
377	81632	Recirc Pump B Seal		S	A	I				B-16076
378	81633	Recirc Pump A Seal		S	A	I				B-16076
379	81634	Recirc Pump B Seal		S	A	I				B-16076
380	81635	Recirc Pump A Seal		S	A	I				B-16076
381	81636	Recirc Pump B Seal		S	A	I				B-16076
382	81637	Recirc Pump A Seal		S	A	I				B-16076
383	81638	Recirc Pump B Seal		S	A	I				B-16076
384	81639	Recirc Pump A Seal		S	A	I				B-16076
385	81640	Recirc Pump B Seal		S	A	I				B-16076
386	81641	Recirc Pump A Seal		S	A	I				B-16076
387	81642	Recirc Pump B Seal		S	A	I				B-16076
388	81643	Recirc Pump A Seal		S	A	I				B-16076
389	81644	Recirc Pump B Seal		S	A	I				B-16076
390	81645	Recirc Pump A Seal		S	A	I				B-16076
391	81646	Recirc Pump B Seal		S	A	I				B-16076
392	81647	Recirc Pump A Seal		S	A	I				B-16076
393	81648	Recirc Pump B Seal		S	A	I				B-16076
394	81649	Recirc Pump A Seal		S	A	I				B-16076
395	81650	Recirc Pump B Seal		S	A	I				B-16076
396	81651	Recirc Pump A Seal		S	A	I				B-16076

NO.	REF.	CONF ID	CONF ID	CLASS	91.5	1600B,	SPEC	1606
30.0	801			S A	0001	CLASS	0001.	
80.	80.			N P	60P	3-2/1	B/2	B/1
205.0	205.0	FUNCTIONAL DESCRIPTION	FUNCTIONAL DESCRIPTION					
307	8609	Recirc Pump dP1 4/5						
122	8609	Recirc Pump dP1 4/5						
129	8610	Recirc Pump dP1 4/5						
130	8610	Recirc Pump dP1 4/5						
191	8610C	Recirc Pump dP1 4/5						
192	8610D	Recirc Pump dP1 4/5						
193	8615	Speed Broad Limiter						
194	8616A	Speed Lim And Signal Gen						
195	8616B	Speed Lim And Signal Gen						
196	8617A	Converter						
197	8617B	Converter						
198	8617A	Function Generator						
199	8617B	Function Generator						
200	8619A	Signal Failure Alarm						
201	8619B	Signal Failure Alarm						
202	8620A	Error Signal Line Network						
203	8620B	Error Signal Line Network						
204	8621A	Speed Limiter						
205	8621B	Speed Limiter						
206	8632	Control Amplifier						
207	8633	Controller						
208	8634	Pump Unit						
209	8634B	Pump Unit						
210	8625A	Control Amplifier						
211	8625B	Control Amplifier						
212	8630A	8V/1 Converter						
213	8630B	8V/1 Converter						
214	8601A	Rotor Ring & Cool outlet H		S P	0	1		
215	8601B	Rotor Ring & Cool outlet H		S P	0	1		
216	8602A	Seal leak loop A/F5		S P	0	1		
217	8602B	Seal leak loop B/F5		S P	0	1		

ROD SAFETY MARKS

ROD SAFETY MARKS

## CONTINUATION EVALUATION - SECTION V

S55H8 ----- 61) REACTOR RECIRC SYSTEM

## S4611

			CLASS	S415.	UNWELL	S416.			
			ITEM	ITEM	ITEM	ITEM			
210	801A	801	COUPON N	S A	SHAL	SHC	866		
211	80036		INJECTION INSCRIPTION	H P	GFP	H/2	0/0	R1	MONITOR
212	80130								
213	80036		Seal Cool Pitch A H	S P	S	I	I	B-16066	Pressure Boundary for P42 System
214	80036		Seal Cool Pitch B H	S P	S	I	I	B-16066	Pressure Boundary for P42 System
215	80036		HC-A tube flow Supply Ht PT	H		I	I	B-16076	
216	80036		HC-B tube flow Supply Ht PT	H		I	I	B-16076	
217	80036		Seal Cool Pitch F5	S P	S	I	I	B-16066	Pressure Boundary for P42 System
218	80036		Seal Cool Pitch F5	S P	S	I	I	B-16066	Pressure Boundary for P42 System
219	80036		HC-A tube flow Bisch Ht PT	H		I	I	B-16076	
220	80036		HC-B tube flow Supply Ht PT	H		I	I	B-16076	
221	80036		Seal Press Loop A PT	H		I	I	B-16066	
222	80036		Seal Press Loop B PT	H		I	I	B-16066	
223	80036		Seal Press Loop A PT	H		I	I	B-16066	
224	80036		Seal Press Loop B PT	H		I	I	B-16066	
225	80036		Control Seal leak loop A FS	H		I	I	B-16066	
226	80036		Control Seal leak loop B FS	H		I	I	B-16066	
227	80036		Seal Press Loop A PT	H		I	I	B-16066	
228	80036		Seal Press Loop B PT	H		I	I	B-16066	
229	80036		Seal Press Loop A PT	H		I	I	B-16066	
230	80036		Seal Press Loop B PT	H		I	I	B-16066	
231	80036		Control Seal leak loop A FS	H		I	I	B-16066	
232	80136		Recirc Flow Temp A H	S P	A	I	I	B-16066	Nodes A,G ROP
233	80136		Recirc Flow Temp B H	S P	A	I	I	B-16066	Nodes A,G ROP
234	80136		Recirc Flow Temp A LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
235	80136		Recirc Flow Temp B LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
236	80136		Recirc Flow Temp A LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
237	80136		Recirc Flow Temp B LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
238	80136		Recirc Pump C001A DPT	H		I	I	B-16066	
239	80136		Recirc Pump C001B DPT	H		I	I	B-16066	
240	80236		Recirc Pump C001A Sect II	S P	A	I	I	B-16066	Node A ROP
241	80236		Recirc Pump C001B Sect II	S P	A	I	I	B-16066	Node A ROP
242	80236		Recirc Flow Loop B LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
243	80236		Recirc Flow Loop B LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
244	80236		Recirc Flow Loop B LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
245	80236		Recirc Flow Loop B LT	S A	I	I	I	B-16066	Node A Reactivity Control Trip Signal Input to 2C51
246	80236		Recirc Pump C001A Sect II	S P	A	I	I	B-16066	Node A ROP
247	80236		Recirc Pump C001B Sect II	S P	A	I	I	B-16066	Node A ROP
248	80236		A Loop Section PT	S P	A	I	I	B-16066	

SECTION VIII  
ELECTRIC SYSTEM

CIRCUIT EVALUATION - SECTION V

DRAWING NO.: A-10172  
SHEET : 20

TABLE I  
EQUIPMENT LIST

ITEM	REF.	DESCRIPTION	CLASS	SIZE	FUNCTION	CLASS	SIZE	FUNCTION	REF.
249	80548	8 Lamp Surface PI	S-A	8	Rec At: Blk & Thread Ring H	S-A	4	Thread	805
250	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
251	805762	2m At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
252	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
253	805762	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
254	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
255	805762	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
256	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
257	805762	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
258	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
259	805762	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
260	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
261	805762	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
262	805761	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
263	805762	Rec At: Blk & Thread Ring H	N-P	8	Rec At: Blk & Thread Ring H	N-P	4	Thread	805
264	805761	Rec At: Motor A Oil Low 15	N-P	8	Rec At: Motor A Oil Low 15	N-P	4	Motor	805
265	805762	Rec At: Motor B Oil Low 15	N-P	8	Rec At: Motor B Oil Low 15	N-P	4	Motor	805
266	805761	Rec At: Motor A Oil Low 15	N-P	8	Rec At: Motor A Oil Low 15	N-P	4	Motor	805
267	805762	Rec At: Motor B Oil Low 15	N-P	8	Rec At: Motor B Oil Low 15	N-P	4	Motor	805
268	805761	Rec At: Motor A Oil Low 15	N-P	8	Rec At: Motor A Oil Low 15	N-P	4	Motor	805
269	805762	Rec At: Motor B Oil Low 15	N-P	8	Rec At: Motor B Oil Low 15	N-P	4	Motor	805
270	805114	Rec At: Pump A 305	N-P	8	Rec At: Pump A 305	N-P	4	Pump	805
271	805418	Rec At: Pump B 305	N-P	8	Rec At: Pump B 305	N-P	4	Pump	805
272	805508	Rec At: Blk No 2 Seal Cav H	S-P	8	Rec At: Blk No 2 Seal Cav H	S-P	4	Seal	805
273	805408	Rec At: Blk No 2 Seal Cav H	S-P	8	Rec At: Blk No 2 Seal Cav H	S-P	4	Seal	805
274	805514	Rec At: Blk No 3 Seal Cav H	S-P	8	Rec At: Blk No 3 Seal Cav H	S-P	4	Seal	805
275	805518	Rec At: Blk No 3 Seal Cav H	S-P	8	Rec At: Blk No 3 Seal Cav H	S-P	4	Seal	805
276	805528	Brake Blk A Windy PBS A H	N-P	8	Brake Blk A Windy PBS A H	N-P	4	Wind	805
277	805528	Brake Blk B Windy PBS A H	N-P	8	Brake Blk B Windy PBS A H	N-P	4	Wind	805
278	805728	Brake Blk C Windy PBS A H	N-P	8	Brake Blk C Windy PBS A H	N-P	4	Wind	805
279	805738	Brake Blk D Windy PBS A H	N-P	8	Brake Blk D Windy PBS A H	N-P	4	Wind	805

NO.	REF.	COMPONENT	FUNCTIONAL DESCRIPTION	SAFETY		CLASS	SPEC.	SPEC.	MARKS
				CLASS	SAFETY	FUNCTION	WHL.	WHL.	MARKS
280	N054A	Brine Mtr & Windg PHG A II		3	2				B-16067
281	N054B	Brine Mtr & Windg PHG B II		3	2				B-16067
282	N055A	Brine Mtr & Windg PHG B II		3	2				B-16067
283	N055B	Brine Mtr & Windg PHG B II		3	2				B-16067
284	N056A	Brine Mtr & Windg PHG C II		3	2				B-16067
285	N056B	Brine Mtr & Windg PHG C II		3	2				B-16067
286	N057A	Brine Mtr & Windg PHG C II		3	2				B-16067
287	N057B	Brine Mtr & Windg PHG C II		3	2				B-16067
288	N060A	Generator Winding PHG A II		3	2				B-16067
289	N060B	Generator Winding PHG A II		3	2				B-16067
290	N061A	Generator Winding PHG A II		3	2				B-16067
291	N061B	Generator Winding PHG A II		3	2				B-16067
292	N062A	Generator Winding PHG B II		3	2				B-16067
293	N062B	Generator Winding PHG B II		3	2				B-16067
294	N063A	Generator Winding PHG B II		3	2				B-16067
295	N063B	Generator Winding PHG B II		3	2				B-16067
296	N064A	Generator Winding PHG C II		3	2				B-16067
297	N064B	Generator Winding PHG C II		3	2				B-16067
298	N065A	Generator Winding PHG C II		3	2				B-16067
299	N065B	Generator Winding PHG C II		3	2				B-16067
300	N070A	Reactor A115 P1		5 A	8		1	1	B-16063
301	N070B	Reactor A115 P2		5 A	8		1	1	B-16063
302	N101A	S901A "Fluid Drive Inlet" PS		3	2				B-16076
303	N101B	S901B "Fluid Drive Inlet" PS		3	2				B-16076
304	N102A	S901A "Fluid Drive Inlet" PS		3	2				B-16076
305	N102B	S901B "Fluid Drive Inlet" PS		3	2				B-16076
306	N103A	S901A "Fluid Drive Inlet" PS		3	2				B-16076
307	N103B	S901B "Fluid Drive Inlet" PS		3	2				B-16076
308	N104A	S901A "Fluid Drive Inlet" PS		3	2				B-16076
309	N104B	S901B "Fluid Drive Inlet" PS		3	2				B-16076
310	N105A	S901A "Fluid Drive Inlet" PS		3	2				B-16076

08/29/86

DRAWING NO : A-18172  
SHEET : 22

## ----- COMPONENT EVALUATION - SECTION V -----

SYSTEM ---- 851 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY		SEIS. CLASS 3-2/1	EVNMNT QUAL. H/Z	SPEC REQ.	DWS REF	MDES/REMARKS
			S N	A P					
			GRP						
311	N105B	SO01B Fluid Drive Inlet PS	N	Z		Z	H-16076		
312	N106A	Lo Lube Alarm PS	N	Z		Z	H-16076		
313	N106B	Lo Lube Alarm PS	N	Z		Z	H-16076		
314	N107A	SO01A Fluid Drive Inlet RO	N			Z	H-16076		
315	N107B	SO01B Fluid Drive Inlet RO	N			Z	H-16076		
316	N108A	SO01A Fluid Drive Inlet RO	N			Z	H-16076		
317	N108B	SO01B Fluid Drive Inlet RO	N			Z	H-16076		
318	N111A	SO01A Hi Lube Alarm IS	N	Z		Z	H-16076		
319	N111B	SO01B Hi Lube Alarm IS	N	Z		Z	H-16076		
320	N112A	SO01A Hi Lube Temp Trip IS	N	Z		Z	H-16076		
321	N112B	SO01B Hi Lube Temp Trip IS	N	Z		Z	H-16076		
322	N113A	Lo Lube Temp Alarm IS	N	Z		Z	H-16076		
323	N113B	Lo Lube Temp Alarm IS	N	Z		Z	H-16076		
324	N113C	MG A Fluid Drive Intake RO	N			Z	H-16076		
325	N113D	MG B Fluid Drive Intake RO	N			Z	H-16076		
326	N114A	Oil Mist Eliminator MG Set A	N	Z		Z	H-16076		
327	N114B	Oil Mist Eliminator MG Set B	N	Z		Z	H-16076		
328	N601A	Recirc Pump CO01A TT	N	Z		Z	H-16066		
329	N601B	Recirc Pump CO01B TT	N	Z		Z	H-16066		
330	N601C	Recirc Pump CO01A TT	Y	Z		Z	H-16066		
331	N601D	Recirc Pump CO01B TT	N	Z		Z	H-16066		
332	N679A	Reactor ATTS PIS	S A	Z	I	Z	H-16063	Rx Press Low Sig to RHR SDC. See EII SED Mode C	
333	N679D	Reactor ATTS PIS	S A	Z	I	Z	H-16063	Rx Press Low Sig to RHR SDC. See EII SED Mode C	
334	N752A	Converter Brng Impeller IE	N	Z		Z	H-16067		
335	N752B	Converter Brng Impeller It	N	Z		Z	H-16067		
336	N753A	Converter Brng Impeller I'	N	Z		Z	H-16067		
337	N753B	Converter Brng Impeller IE	N	Z		Z	H-16067		
338	N754A	Converter Brng Runner IE	N	Z		Z	H-16067		
339	N754B	Converter Brng Runner IE	N	Z		Z	H-16067		
340	N755A	Converter Brng Runner IE	N	Z		Z	H-16067		
341	N755B	Converter Brng Runner IE	N	Z		Z	H-16067		

REV D

## COMPONENT EVALUATION - SECTION V

DRAWING NO.: A 13172  
SHEET : 23

SYSTEM ----- 831 REACTOR RECIRC SYSTEM

NO.	REF.	FUNCTIONAL DESCRIPTION	COMPONENT	SAFETY CLASS		SIS. CLASS	ENVIRON.	SPEC. REQ.	DMS REF.	NOTES/REMARKS
				S A	N P					
342	8756A	Converter Oil Cooler H	Convter oil Coles H	N	I	I	I	I	H-16067	
343	8756B	Convter oil Coles H	Convter oil Coles H	N	I	I	I	I	H-16067	
344	8757A	Brv Mrg Brng output End H	Brv Mrg Brng output End H	H	I	I	I	I	H-16067	
345	8757B	Brv Mrg Brng output End L	Brv Mrg Brng output End L	N	I	I	I	I	H-16067	
346	8758A	Brv Mrg Brng output End H	Brv Mrg Brng output End H	H	I	I	I	I	H-16067	
347	8758B	Brv Mrg Brng output End L	Brv Mrg Brng output End L	N	I	I	I	I	H-16067	
348	8759A	Gen Brng Input Shaft End H	Gen Brng Input Shaft End H	N	I	I	I	I	H-16067	
349	8759B	Gen Brng Input Shaft End L	Gen Brng Input Shaft End L	N	I	I	I	I	H-16067	
350	8760A	Sen Brng Collector End H	Sen Brng Collector End H	N	I	I	I	I	H-16067	
351	8760B	Sen Brng Collector End L	Sen Brng Collector End L	N	I	I	I	I	H-16067	
352	8801A	Seal Press Loop A PI	Seal Press Loop A PI	N	I	I	I	I	H-16066	
353	8801B	Seal Press Loop B PI	Seal Press Loop B PI	N	I	I	I	I	H-16066	
354	8802A	Seal Press Loop A PI	Seal Press Loop A PI	H	I	I	I	I	H-16066	
355	8802B	Seal Press Loop B PI	Seal Press Loop B PI	H	I	I	I	I	H-16066	
356	8804A	Recirc Pump A Seal Flow Fl	Recirc Pump A Seal Flow Fl	H	I	I	I	I	H-16066	
357	8804B	Recirc Pump B Seal Flow Fl	Recirc Pump B Seal Flow Fl	H	I	I	I	I	H-16066	
358	8805	Seal Supply From CDD PI	Seal Supply From CDD PI	H	I	I	I	I	H-16066	
359	8102A	S001A Lube oil Filter H	S001A Lube oil Filter H	H	I	I	I	I	H-16076	
360	8102B	S001B Lube oil Filter H	S001B Lube oil Filter H	H	I	I	I	I	H-16076	
361	8103A	S001A Lube oil Pump H	S001A Lube oil Pump H	H	I	I	I	I	H-16076	
362	8103B	S001B Lube oil Pump H	S001B Lube oil Pump H	H	I	I	I	I	H-16076	
363	8401	Recirc Pump IR	Recirc Pump IR	N	I	I	I	I	H-16066	
364	8402R	Seal Press Loop A PI	Seal Press Loop A PI	N	I	I	I	I	H-16066	
365	8402B	Seal Press Loop B PI	Seal Press Loop B PI	N	I	I	I	I	H-16066	
366	8403A	Seal Press Loop A PI	Seal Press Loop A PI	N	I	I	I	I	H-16066	
367	8403B	Seal Press Loop B PI	Seal Press Loop B PI	N	I	I	I	I	H-16066	
368	8612A	Recirc Pump A dPI	Recirc Pump A dPI	N	I	I	I	I	H-16066	
369	8612B	Recirc Pump B dPI	Recirc Pump B dPI	N	I	I	I	I	H-16066	
370	8613	Recirc Pump DsCh Fl	Recirc Pump DsCh Fl	N	I	I	I	I	H-16066	
371	8614	Recirc Pump DsCh Fl	Recirc Pump DsCh Fl	N	I	I	I	I	H-16066	
372	8617	Recirc Pump C001A DsCh fl	Recirc Pump C001A DsCh fl	N	I	I	I	I	H-16066	

08/27/86

DRAWING NO : A-18172

SHEET : 24

## ----- COMPONENT EVALUATION - SECTION V -----

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY		SEIS. 3:2:1	ENVIRN. H/Z	SPEC REQ.	DWG REF	NOTES/REMARKS
			CLASS N P	QUAL GRP					
373	R619A	Recirc Pump & MG Set A PEI	N	Z	Z	Z		H-17864	
374	R619B	Recirc Pump & MG Set B PEI	N	Z	Z	Z		H-17906	
375	R620	Master Speed Controller	N	Z	Z	Z		H-16068	
376	R621A	MG Set M/A Transfer Station	N	Z	Z	Z		H-16063	
377	R621B	MG Set M/A Transfer Station	N	Z	Z	Z		H-16068	
378	R622A	MG Set Speed Controller	N	Z	Z	Z		H-16068	
379	R622B	MG Set Speed Controller	S	Z	Z	Z		H-16068	
380	R623A	MG Set A VI	N	Z	Z	Z		H-16067	
381	R623B	MG Set B VI	N	Z	Z	Z		H-16067	
382	R624A	MG Set A Power Meter	N	Z	Z	Z		H-16067	
383	R624B	MG Set B VI Power Meter	N	Z	Z	Z		H-16067	
384	R625	MG Brng And Oil TR	N	Z	Z	Z		H-16067	
385	R626	MG Winding TR	N	Z	Z	Z		H-16067	
386	R627A	MG Set A Ammeter	N	Z	Z	Z		H-16067	
387	R627B	MG Set B Ammeter	N	Z	Z	Z		H-16067	
388	R628A	Temp Relay Ammeter	N	Z	Z	Z		H-16067	
389	R628B	Temp Relay Ammeter	N	Z	Z	Z		H-16067	
390	R650	Recirc Pump Suction TR	N	Z	Z	Z		H-16066	
391	R660A	Recirc Pump A SI	N	Z	Z	Z		H-17864	
392	R660B	Recirc Pump B SI	N	Z	Z	Z		H-17906	

REV 00

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO.1 A-16172 REV.1-0  
SHEET NO.1 25

RPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	E.I. DWG. I			MODE/REMARKS	TAG NUMBER ON ELEMENTARY
		ITI REF.	EQUIPMENT/H	CODE		
B31ACB 1A	15001A FG SET A GEN FIELDIN	IN	13121	INIH17861		
B31ADS 1A	15001A DRIVE MOTOR	IN	13121	INIH178601		
B31ADS 2A	150C1A DRIVE MOTOR	IN	13121	INIH178601		
B31ADS 3A	1LOCKOUT_BUS POWER AVAIL	IN	13121	INIH178611		
B31ADS 4A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 5A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 6A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 7A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 8A	IC005A DC AUX LUBE OIL	IN	13121	INIH178621		
B31ADS 9A	IC005A DC AUX LUBE OIL	IN	13121	INIH178621		
B31ADS 10A	IF023A PUMP SUCTION ISOL	IN	13121	ITIH178651APP R		
B31ADS 11A	IF023A PUMP SUCTION ISOL	IN	13121	ITIH178651APP R		
B31ADS 12A	IF031A PUMP DISCH ISOL	IS	13121	ITIH178651 MODE A,B/RED INDICATES F031A NOT FULLY CLOSED		
B31ADS 13A	IF031A PUMP DISCH ISOL	IS	13121	ITIH178651 MODE A,B/GREEN INDICATES F031A NOT FULLY OPEN		
B31ADS 14A	IGEN_FIELD_BKR TRIPPED	IN	13121	INIH178611		
B31ADS 15A	IRECIRC FLOW LIMITED	IN	13121	INIH178621		
B31ADS 16A	15001A MG SET A LOCKOUT	IN	13121	INIH178601		
B31ADS 17A	15001A MG SET A LOCKOUT	IN	13121	INIH178601		
B31ADS 20A	IGEN FIELD BKR CLOSED	IN	13121	INIH178611		
B31ADS 21A	IGEN FIELD BKR TRIPPED	IN	13121	INIH178611		
B31ADS 22A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO.: A-18172 REV.1-0  
SHEET NO.: 26

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	401 OHG. ETC REF.	EQUIPMENT/TYPE CODE	10 P&ID/ ART ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY	
						1	2
B31ADS 23A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 25A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 26A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 27A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 28A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 29A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 30A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 31A	IGEN FIELD BKR CLOSED	IN	13121	INIH178611			
B31ADS 32A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 33A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 34A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611			
B31ADS 35A	IC001A GEN DRIVE MOTOR	IN	13121	INIH178601			
B31ADS 35C	IC001A GEN DRIVE MOTOR	IN	13121	INIH178601			
B31ADS 36A	IRHR ABNORM COND OR TEST	IN	13121	ITIH178651 MODE A,B/CLEAR IND P031A RHR ABNORMAL COND OR TEST			
B31AF 1A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611			
B31AF 2A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611			
B31AF 3A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611			
B31AF 4A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611			
B31AF 5A	IM2A ELECT PROTECTION	IN	13121	INIH178631			
B31AF 6A	IM2A ELECT PROTECTION	IN	13121	INIH178631			
B31AF 7A	IS001A ELECT PROTECTION	IN	13121	INIH178601			

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV.1-0  
SHEET NO. I 27

NPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT	EQUIPMENT	101 DWG.	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
				101 REF.		
B31AF 8A	18001A ELECT PROTECTION	PN	1 13121	INIH178601		
B31AF 9A	1C002A ELECT PROTECTION	IN	1 13121	INIH178611		
B31AF 10A	1C002A ELECT PROTECTION	IN	1 13121	INIH178611		
B31AF 11A	1C003A ELECT PROTECTION	PN	1 13121	INIH178611		
B31AF 12A	1C003A ELECT PROTECTION	IN	1 13121	INIH178611		
B31AF 13A	1C005A ELECT PROTECTION	IN	1 13121	INIH178621		
B31AF 14A	1C005A ELECT PROTECTION	IN	1 13121	INIH178621		
B31AF 17A	IVR1A ELECT PROTECTION	IN	1 13121	INIH178631		
B31AF 18A	IVR1A ELECT PROTECTION	IN	1 13121	INIH178631		
B31AF 19A	IVR1A ELECT PROTECTION	PN	1 13121	INIH178631		
B31AF 20A	IVR1A ELECT PROTECTION	IN	1 13121	INIH178631		
B31AF 21A	1M4A,R623A,MT1A ELEC PROT	1 13121		INIH178631		
B31AF 22A	1M4A,R623A,MT1A ELEC PROT	1 13121		INIH178631		
B31AF 23A	IVR1A ELECT PROTECTION	IN	1 13121	INIH178631		
B31AF 24A	IVR1A ELECT PROTECTION	IN	1 13121	INIH178631		
B31AF 25A	1GEN FLD GR DET ELEC PROT	1 13121		INIH178621		
B31AF 26A	1GEN FLD GR DET ELEC PROT	1 13121		INIH178621		
B31AF 27A	1125 VDC ELECT PROT	IN	1 13121	INIH178601		
B31AF 28A	1125 VDC ELECT PROT	IN	1 13121	INIH178601		
B31AF 29A	1125 VDC ELECT PROT	IN	1 13121	INIH178601		
B31AF 30A	1125 VDC ELECT PROT	IN	1 13121	INIH178601		

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO. A-10172 REV. 1-0  
SHEET NO. 1 28

NPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	TAG NUMBER ON ELEMENTARY	
		CODE	MODE/REMARKS
031AK 31A	IPFAET K=103A BACKUP PROTIN	I 31121	INIH1786621
031AK 32A	IR6604,B ELECT PROT	I 31121	INIH1786641
031AK 38A	IF031A JOGGING CIRCUIT	I 31121	INIH178669 IN MOD A,B/120 VAC PROTECTION TO POS1A JOGGING CIRCUIT
031AK 7001A	FMG SET A SPEED CONT BYS	I 31121	INIH178664
031AK 7002	IN615 ELECT PROTECTION	I 31121	INIH1786641
031AK 2A	IK616A SPEED LIMITER NO JIN	I 31121	INIH1786641
031AK 1A1	18001A AUX TO FIELD SKR	I 31121	INIH1786621
031AK 1A	18001A AUX TO FIELD SKR	I 31121	INIH1786621
031AK 2A	IF031A AND LOW PW FLON	I 31121	INIH1786621
031AK 3A	18001A GENERATOR LOCKOUT	I 31121	INIH1786611
031AK 4A	ICOC3A PUMP START	I 31121	INIH1786621
031AK 5A	IFULL10 OR SCOOP TUBE LOCKIN	I 31121	INIH1786611
031AK 6A	IC003A AC CIRC LUBE OIL	I 31121	INIH1786611
031AK 7A	IC002A AC CIRC LUBE OIL	I 31121	INIH1786611
031AK 8A	18001A GEN LOSS OF FIELD	I 31121	INIH1786631
031AK 9A	18001A GEN OVERCURRENT	I 31121	INIH1786631
031AK 10A	18001A GEN OVERCURRENT	I 31121	INIH1786601
031AK 11A	IFIELD SKR CONT EXC. TRANSIN	I 31121	INIH1786621
031AK 12A	IFIELD APP. UNDERVOLT AUX IN	I 31121	INIH1786621
031AK 13A	18001A GEN AUX LOCKOUT	I 31121	INIH1786601
031AK 14A	IAC AUX CIRCUIT SIGNAL FAIL	I 31121	INIH1786621

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV.1-0  
SHEET NO. 29

MPL NUMBER		COMPONENT FUNCTIONAL DESCRIPTION	100000G. 1 ITE REF. 1 EQUIPMENT/HIS CODE 100 PAID/1 ITE ELEM 1	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AK	15A	1GENERATOR/PUMP MOTOR	IN 1 13121 INIH178631		
B31AK	16A	18001A GEN NEUT OVERVOLT	IN 1 13121 INIH178631		
B31AK	17A	1EXCITATION TRANSFER	IN 1 13121 INIH178621		
B31AK	18A	1CO001A PMP START SEQ TIME	IN 1 13121 INIH178621		
B31AK	19A	1GEN WINDING OVERTEMP	IN 1 13121 INIH178621		
B31AK	20A	1MOTOR WINDING OVERTEMP	IN 1 13121 INIH178621		
B31AK	21A	1RECIRC A RUNBACK	IN 1 13121 INIH178621		
B31AK	22A	18001A GEN OVERCURRENT	IN 1 13121 INIH178631		
B31AK	23A	1FEEDWATER INTERLOCK	IN 1 13121 INIH178621		
B31AK	24A	1FIELD EXC OVERCURRENT	IN 1 13121 INIH178631		
B31AK	25A	1EXC FIELD OVERCURRENT	IN 1 13121 INIH178611		
B31AK	26A	1GEN LOSS OF FIELD AUX	IN 1 13121 INIH178611		
B31AK	27A	1INCOMPLETE START UP SEQ	IN 1 13121 INIH178621		
B31AK	28A	1GEN FIELD GROUND DETECT	IN 1 13121 INIH178621		
B31AK	29A	1CO003A DC AUX LUBE OIL	IN 1 13121 INIH178621		
B31AK	30A	1FLUID OR HI OIL TEPP AUXIN	IN 1 13121 INIH178601		
B31AK	31A	1CO002A AC CIRC LUBE OIL	IN 1 13121 INIH178611		
B31AK	32A	1CO003A AC CIRC LUBE OIL	IN 1 13121 INIH178611		
B31AK	33A	1SCOOP TUBE LOCK	IN 1 13121 INIH178621		
B31AK	34A	1CO003A LUBE OIL PRESS	IN 1 13121 INIH178621		
B31AK	35A	1CO004A AC CIRC LUBE OIL	IN 1 13121 INIH178611		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONBNT IDENTIFICATION SHEETDRAWING NO. I A-16172 REV. F 0  
SHEET NO. 1 30

MPL NUMBER	COMPY / FUNCT. / DESCRIPTION	REF. / EQUIPMENT / CODE	DWG. / REF. / P/N / ELEM.	MODE/REMARKS		TAG NUMBER -ON ELEMENTARY
				MODE	REMARKS	
B31AK 36A	IC004A AC CIRC LUBE OIL	IN 1 13121	INH178611			
B31AK 37A	OPERATIONAL SPARE	IN 1 13121	INH178601			
B31AK 38A	IC002A AC CIRC LUBE OIL	IN 1 13121	INH178611			
B31AK 39A	IC003A AC CIRC LUBE OIL	IN 1 13121	INH178611			
B31AK 40A	IC004A AC CIRC LUBE OIL	IN 1 13121	INH178611			
B31AK 41A	DC CONTROL_PWR TRANSFER	IN 1 13121	INH178601			
B31AK 42A	NORMAL DC CONT PWR U/V	IN 1 13121	INH178601			
B31AK 43A	IATNS	IN 1 13121	INH178611			
B31AK 43C	IATNS	IN 1 13121	INH178611			
B31AK 44A	IF031A PUMP DISCH 380V	IS 1 11121	ITIH178651 MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT			
B31AK 45A	IF031A PUMP DISCH 180V	IS 1 11121	ITIH178651 MODE A,B/CONTROLS F031A JOGGING CKT/MG DRIVE MTR CKT			
B31AK 46A	IF031A JOGGING CIRCUIT	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 47A	IF031A BED TIMER	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 48A	IF031A AUX TIMER	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 49A	IF031A JOGGING CIRCUIT	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 50A	IF031A JOGGING CIRCUIT	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 51A	IF031A JOGGING CIRCUIT	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 52A	IF031A JOGGING CIRCUIT	IS 1 11121	ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT			
B31AK 53A	18001A GEN OVERCURRENT	IN 1 13121	INCH178631			
B31AK 54A	IC001A GEN PUMP MOTOR	IN 1 13121	INH178601			
B31AK 55A	IC001A GEN PUMP MOTOR	IN 1 13121	INH178601			

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. E A-16172 REV. 1-0  
SHEET NO. 31

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	101 DNG.			MODE/REMARKS	TAG NUMBER ON ELEMENTARY
		ITI REF.	EQUIPMENT HT	CODE	ITI P&ID/ ITI ELEM	
B31AM 1A	150C1A GEN FIELD AMMETER	IN	1 3121	INIH178631		
B31AM 2A	1DC EXC FIELD VOLTMETER	IN	1 3121	INIH178631		
B31AM 3A	1DOSA GEN AMMETER	IN	1 3121	INIH178631		
B31AM 4A	1AC FIELD VOLTMETER	IN	1 3121	INIH178631		
B31AMT 1A	TELEKATT METER TRANS	IN	1 3121	INIH178631		
B31AR 3A	1PUMP PWR SIGNAL TO COMP	IN	1 3121	INIH178631		
B31AR 4A	1GEN NEUT GROUNDDING	IN	1 3121	INIH178631		
B31AR 5A	15001A GEN FIELD AMMETER	IN	1 3121	INIH178631		
B31AR 6A	15001A GEN FIELD AMMETER	IN	1 3121	INIH178631		
B31AR 7A	1LOCKOUT BUS POWER AVAIL	IN	1 3121	INIH178611		
B31AR 8A	1MG SET A SPEED CONT SYS	IN	1 3121	INIH178641		
B31AS 1A	15001A MG SET A	IN	1 3121	INIH178621		
B31AS 2	1CO01A PUMP VIBRATION	IN	1 3121	INIH178611		
B31AS 3A	1SCOOP TUBE BRAKE	IN	1 3121	INIH178611		
B31AS 4A	1CO02A AC CIRC LUBE OIL	IN	1 3121	INIH178611		
B31AS 5A	1CO03A AC CIRC LUBE OIL	IN	1 3121	INIH178611		
B31AS 6A	1CO04A AC CIRC LUBE OIL	IN	1 3121	INIH178611		
B31AS 7A	1RECIRC A RUNBACK	IN	1 3121	INIH178621		
B31AS 8A	1FO23A PUMP SUCTION ISOL	IN	1 3121	SYIH178651APP R		
B31AS 9A	1TO31A PUMP DISCH ISOL	IS	1 3121	SYIH178651 MODE A,B/F031A MANUAL OPEN AND CLOSE CONTROL		
B31AS 11A	1FIELD GROUND RELAY TEST	IN	1 3121	INIH178621		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO.E A-16172 REV.1-0  
SHEET NO.1 32

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	SIZE DWG. # STD REF. #	EQUIPMENT/HMI CODE SEE P&ID/I IRI ELEM #	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AB_12A	13001A MG SET A TRIP TESTPM	I 13121 INH17862#			
B31AB_7001A	1C002A AC CIRC LUBE OIL	IN I 13121 INH17861#		A#	IPB/A1
B31AB_7002A	1C003A AC CIRC LUBE OIL	IN I 13121 INH17861#			IPB/A2
B31AC_7003A	1C004A AC CIRC LUBE OIL	IN I 13121 INH17861#			IPB/A3
B31AB_7004A	1C005A DC AUX LUBE OIL	IN I 13121 INH17862#			IC5/1A
B31AB_7005A	1FLUID OR CASE BREATHER	IN I 13121 INH17862#			S/A4
B31AT_1A	1REGULATOR REF VOLTAGE	IN I 13121 INH17863#			
B31AT_2A	1METERING POTENTIAL	IN I 13121 INH17863#			
B31AT_3A	1GEN NEUTRAL GROUNDING	IN I 13121 INH17863#			
B31AT_4A	1REGULATOR POWER SUPPLY	CH I 13121 INH17863#			
B31AT_5A	1REGULATOR POWER SUPPLY	IN I 13121 INH17863#			
B31AVR_1A	1VOLTAGE REGULATOR	IN I 13121 INH17863#			

REPORT DATE 1 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET SHEET NO. 1 33

DRAWING NO. 1 A-10172 REV. 1-0

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	TAG NUMBER OR ELEMENTARY	FOR DNG, SET REF.	MODE/REMARKS
			EQUIPMENT/TEST CODE	
0318C8 18	I80018 MG SET 8 GEN FIELDN	I 3321 INH179031		
0318D3 18	I80018 DRIVE MOTOR	I 3321 INH179028		
0318D5 28	I80018 DRIVE MOTOR	I 3321 INH179028		
0318D5 58	LOCKOUT BUS POWER AVAIL	I 3321 INH179031		
0318D5 68	I-0028 AC CIRC LUBE OIL	I 3321 INH179028		
0318D5 58	I0028 AC CIRC LUBE OIL	I 3321 INH179031		
0318D5 68	I0038 AC CIRC LUBE OIL	I 3321 INH179031		
0318D5 78	I0038 AC CIRC LUBE OIL	I 3321 INH179031		
0318D5 88	I0038 DC AUX LUBE OIL	I 3321 INH179041		
0318D8 95	I0038 DC AUX LUBE OIL	I 3321 INH179041		
0318D5 108	IPO238 PUMP SUCTION ISOL	I 3321 INH179071		
0318D5 118	IPO238 PUMP SUCTION ISOL	I 3321 INH179071		
0318D5 128	IPO318 PUMP DISCH ISOL	I 3321 INH179071 MODE A,B/RED INDICATED PO318 NOT FULLY CLOSED		
0318D5 130	IPO318 PUMP DISCH ISOL	I 3321 INH179071 MODE A,B/GREEN INDICATES PO318 NOT FULLY OPEN		
0318D5 148	GEN FIELD BKR TRIPPED	I 3321 INH179031		
0318D5 158	RECINC FLOW LIMITED	I 3321 INH179041		
0318D5 168	I80018 MG SET 8 LOCKOUT	I 3321 INH179021		
0318D5 198	I80018 MG SET 8 LOCKOUT	I 3321 INH179021		
0318D5 238	GEN FIELD BKR CLOSED	I 3321 INH179031		
F318D5 218	GEN FIELD BKR TRIPPED	I 3321 INH179031		
0318D5 241	I0048 AC CINC UP OIL	I 3321 INH179031		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-10172 REV. F-0  
SHEET NO. 1 34

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT TYPE	E&I Dwg.		MODE/REMARKS	TAG NUMBER OR ELEMENTARY
			CODE	E&I P&ID/ E&I ELEM		
B31808 238	IC0048 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 258	IC0028 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 268	IC0028 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 278	IC0038 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 288	IC0038 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I S		
B31808 298	IC0048 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 308	IC0048 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 318	IGEN FIELD BKR CLOSED	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 328	IC0028 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 338	IC0038 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 348	IC0048 AC CIRC LUBE OIL	IN	I 3121	INIH179031		
			I	I I I I I		
B31808 358	IC0018 GEN DRIVE MOTOR	IN	I 3121	INIH179021		
			I	I I I I I		
B31808 35D	IC0018 GEN DRIVE MOTOR	IN	I 3121	INIH179021		
			I	I I I I I		
B31808 368	IRHR ABNORM COND OR TEST	IS	I 3121	ZYIH179071 MODE A,B/CLEAR IND F0310 RHR ABNORMAL COND OR TEST		
			I	I I I I I		
B318F 18	IGEN FLD BKR ELECT PROT	IN	I 3121	INIH179031		
			I	I I I I I		
B318F 28	IGEN FLD BKR ELECT PROT	IN	I 3121	INIH179031		
			I	I I I I I		
B318F 38	IGEN FLD BKR ELECT PROT	IN	I 3121	INIH179031		
			I	I I I I I		
B318F 48	IGEN FLD BKR ELECT PROT	IN	I 3121	INIH179031		
			I	I I I I I		
B318F 58	IM2B ELECT PROTECTION	IN	I 3121	INIH179051		
			I	I I I I I		
B318F 68	IM2B ELECT PROTECTION	IN	I 3121	INIH179051		
			I	I I I I I		
B318F 78	Z30018 ELECT PROTECTION	IN	I 3121	INIH179021		
			I	I I I I I		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-12172 REV. F-0  
SHEET NO. 1 35

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	FOR DWG. I			MODE/REMARKS	TAG NUMBER ON ELEMENTARY
		ITE REF.	EQUIPMENT/ITE	CODE		
8318F 88	150018 ELECT PROTECTION	IN	I 13121	INIH179021		
8318F 98	1C0028 ELECT PROTECTION	IN	I 13121	INIH179031		
8318F 108	1C0028 ELECT PROTECTION	IN	I 13121	INIH179031		
8318F 118	1C0038 ELECT PROTECTION	IN	I 13121	INIH179031		
8318F 128	1C0038 ELECT PROTECTION	IN	I 13121	INIH179031		
8318F 138	1C0058 ELECT PROTECTION	IN	I 13121	INIH179041		
8318F 148	1C0058 ELECT PROTECTION	IN	I 13121	INIH179041		
8318F 178	1VR18 ELECT PROTECTION	IN	I 13121	INIH179051		
8318F 188	1VR18 ELECT PROTECTION	IN	I 13121	INIH179051		
8318F 198	1VR18 ELECT PROTECTION	IN	I 13121	INIH179051		
8318F 208	1VR18 ELECT PROTECTION	IN	I 13121	INIH179051		
8318F 218	1H48,R6238,MT18 ELEC PROT	IN	I 13121	INIH179051		
8318F 228	1H48,R6238,MT18 ELEC PROT	IN	I 13121	INIH179051		
8318F 238	1VR18 ELECT PROTECTION	IN	I 13121	INIH179051		
8318F 248	1VR18 ELECT PROTECTION	IN	I 13121	INIH179051		
8318F 258	1GEN FLD GR DET ELEC PROT	IN	I 13121	INIH179041		
8318F 268	1GEN FLD GR DET ELEC PROT	IN	I 13121	INIH179041		
8318F 278	1125 VDC ELECT PROT	IN	I 13121	INIH179021		
8318F 288	1125 VDC ELECT PROT	IN	I 13121	INIH179021		
8318F 298	1125 VDC ELECT PROT	IN	I 13121	INIH179021		
8318F 308	1125 VDC ELECT PROT	IN	I 13121	INIH179021		

E.I. MATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO. I-A-10172 REV.1-0  
SHEET NO. 1 36

NPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	100 DIAG. ITE REF.	EQUIPMENTITE CODE	ITE PA10/ ITE ELEM/	TAG NUMBER 'ON ELEMENTARY	MODE/REMARKS
FIELD IN H11-P612						
8318F 318	IP68ET X-102A BACKUP PROTEIN	13121	INH179041			
8318F 348	1P0318 JUGGING CIRCUIT	13121	INH179042			
8318F 70018	INC SET & SPEED CONT_205	13121	INH179061			
8318J 28	IK6168 SPEED LIMITER NO 1EN	13121	INH179061			
8318K 181	150018 AUX TO FIELD BAR IN	13121	INH179041			
8318K 18	150018_AUX_TO_FIELD_BAR IN	13121	INH179041			
8318K 28	1P0318 AND LOW PH FLOW IN	13121	INH179041			
8318K 38	150018 GENERATOR LOCKOUT IN	13121	INH179021			
8318K 48	IC0018_PUMP_START	13121	INH179001			
8318K 58	IFLIQUID OR SCOOP TUBE LOCK IN	13121	INH179031			
8318K 68	IC0038_AC CIRC LUBE OIL IN	13121	INH179031			
8318K 78	IC0028_AC CIRC LUBE OIL IN	13121	INH179021			
8318K 88	150018 GEN LOSS OF FIELD IN	13121	INH179031			
8318K 98	150018 GEN OVERCURRENT IN	13121	INH179081			
8318K 108	150008_GEN OVERCURRENT IN	13121	INH179021			
8318K 118	FIELD BAR CONT EXC TRANSFER	13121	INH179041			
8318K 128	FIELD APP.,UNDERVOLT AUX IN	13121	INH179041			
8318K 138	150018_GEN AUX LOCKOUT	13121	INH179021			
8318K 148	IAC AUX CONT SIGNAL FAIL	13121	INH179041			
8318K 158	GENERATOR/PUMP MOTOR IN	13121	INH179081			
8318K 168	150018_GEN NEUT OVERVOLT IN	13121	INH179051			

REPORT DATE : 09/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 2  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONET IDENTIFICATION SHEETDRAWING NO. E A-18172 REV. 1 C  
SHEET NO. 1 37

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT#	CODE	101 DNG.	111 REP.	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
				101 P&ID#	111 ELEM #		
8318K 178	EXCITATION TRANSFER	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 188	IC0018 PMP START SEQ TIMEIN	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 198	IGEN WINDING OVERTEMP	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 208	IMOTOR WINDING OVERTEMP	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 218	IRECIRC & RUNBACK	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 228	IS0018 GEN OVERCURRENT	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 238	IFEEDWATER INTERLOCK	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 248	IFIELD EXC OVERCURRENT	IN	1 13121	INIH179051			
			1	1 13121	1		
8318K 258	IEXC FIELD OVERCURRENT	IN	1 13121	INIH179051			
			1	1 13121	1		
8318K 268	IGEN LOSS OF FIELD AUX	IN	1 13121	INIH179051			
			1	1 13121	1		
8318K 278	IINCOMPLETE START UP SEQ	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 288	IGEN FIELD GROUND DETECT	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 298	IC0058 DC AUX LUBE OIL	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 308	IFLUID DR HI OIL TEMP AUXIN	IN	1 13121	INIH179021			
			1	1 13121	1		
8318K 318	IC0028 AC CIRC LUBE OIL	IN	1 13121	INIH179031			
			1	1 13121	1		
8318K 328	IC0038 AC CIRC LUBE OIL	IN	1 13121	INIH179031			
			1	1 13121	1		
8318K 338	IS000P TUBE LOCK	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 348	EC0058 LUBE OIL PRESS	IN	1 13121	INIH179041			
			1	1 13121	1		
8318K 358	IC0048 AC CIRC LUBE OIL	IN	1 13121	INIH179031			
			1	1 13121	1		
8318K 368	IC0048 AC CIRC LUBE OIL	IN	1 13121	INIH179031			
			1	1 13121	1		
8318K 378	IOPERATIONAL SPARE	IN	1 13121	INIH179021			
			1	1 13121	1		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. E A-1G172 REV. 1 G  
SHEET NO. 1 38

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	1001 DWG. # AT&T REF. #	EQUIPMENT TYPE CODE RE: PAID/# AT&T ELEM #	NOTE/REMARKS	TAG NUMBER ON ELEMENTARY
8318K 388	IC0028 AC CIRC LUBE OIL	IN 1 13121 1N1H17903#			
8318K 398	IC0038 AC CIRC LUBE OIL	IN 1 13121 1N1H17903#			
8318K 408	IC0048 AC CIRC LUBE OIL	IN 1 13121 1N1H17903#			
8318K 418	1DC CONTROL PHR TRANSFER	IN 1 13121 1N1H17902#			
8318K 420	1NORMAL DC CCXT PHR U/V	PN 1 13121 1N1H17902#			
8318K 438	1ATHS	IN 1 13121 1N1H17903#			
8318K 430	1ATHS	PN 1 13121 1N1H17903#			
8318K 448	IF0318 PUMP DISCH ISOL	IS 1 13121 1T1H17907# MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT			
8318K 458	IF0318 PUMP DISCH ISOL	IS 1 13121 1T1H17907# MODE A,B/CONTROLS F0318 JOGGING CKT/MG DRIVE MTR CKT			
8318K 468	IF0318 JOGGING CIRCUIT	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 478	IF0318 SEQ TIMER	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 488	IF0318 AUX_TIMER	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 498	IF0318 JOGGING CIRCUIT	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 508	IF0318 JOGGING CIRCUIT	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 518	IF0318 JOGGING CIRCUIT	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 528	IF0318 JOGGING CIRCUIT	IS 1 13121 1T1H17870# MODE A,B/CONTROLS F0318 JOGGING CIRCUIT			
8318K 538	I30018 GEN OVERCURRENT	PN 1 13121 1N1H17905#			
8318K 548	ICOC18 GEN PUMP MOTOR	PN 1 13121 1N1H17902#			
8318K 558	ICOC18 GEN PUMP MOTOR	IN 1 13121 1N1H17904#			
8318M 18	I30018 GEN FIELD AMPMETER	IN 1 13121 1N1H17905#			
8318M 28	1DC ENC FIELD VOLTMETER	IN 1 13121 1N1H17905#			

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV. E 0  
SHEET NO. 39

NPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	SUS DMG, STL REF., EQUIPMENT/H CODE	SUS F&ID/ SUS ELEM	NODE/REMARKS	TAG NUMBER ON ELEMENTARY		
B318H 38	I50018 GEN AMMETER	IN 1 13121 INIH17901					
B318H 48	IAC FIELD VOLTMETER	IN 1 13121 INIH179051					
B318H T 18	TELEHATT METER TRANS	IN 1 13121 INIH179051					
B318R 38	IPUMP PWR SIGNAL TO COMP	IN 1 13121 INIH179051					
B318R 48	IGEN NEUT GROUNDDING	IN 1 13121 INIH179051					
B318R 58	I80018 GEN FIELD AMMETER	IN 1 13121 INIH179051					
B318R 68	I80018 GEN FIELD AMMETER	IN 1 13121 INIH179051					
B318R 78	BLOCKOUT BUS POWER AVAIL	IN 1 13121 INIH179051					
B318R 88	IMG SET B SPEED CONT SYS	IN 1 13121 INIH179061					
B318S 18	I50018 MG SET B	IN 1 13121 INIH179041					
B318S 2	IC0018 PUMP VIBRATION	IN 1 13121 INIH179051					
B318S 38	ISCOOP TUBE BRAKE	IN 1 13121 INIH179051					
B318S 48	IC0028 AC CIRC LUBE OIL	IN 1 13121 INIH179051					
B318S 58	IC0038 AC CIRC LUBE OIL	IN 1 13121 INIH179051					
B318S 68	IC0048 AC CIRC LUBE OIL	IN 1 13121 INIH179051					
B318S 78	IRECINC B RUNBACK	IN 1 13121 INIH179041					
B318S 88	IF023B PUMP SUCTION ISOL	IN 1 13121 INIH179071					
B318S 98	IF031B PUMP DISCH ISOL	IN 1 13121 INIH179071		MODE A,B/F031B MANUAL OPEN AND CLOSE CONTROL			
B318S 118	FIELD GROUND RELAY TEST	IN 1 13121 INIH179041					
B318S 128	I50018 MG SET B TRIP TESTIN	IN 1 13121 INIH179041					
B318S 70018	IC0028 AC CIRC LUBE OIL	IN 1 13121 INIH179051					PB/51

REPORT / DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO.1 A-10172 REV.1-0  
SHEET NO.1 40

COMPONENT FUNCTIONAL DESCRIPTION	TAG NO. ITE REF.	EQUIPMENT CODE	TAG NO./ ITE ELEM #	MODE/REMARKS		TAG NUMBER 10N ELEMENTARY
				10B/22	10B/03	
83183 70028	IC9038 AC CIRC LUBE OIL	2N	13221 INIH179031			IC9/18
83183 70038	IC0048 AC CIRC LUBE OIL	2N	13221 INIH179031			IC9/18
83183 70048	IC0058 DC AUX LUBE OIL	2N	13221 INIH179041			IC9/18
83183 70058	FLUID OR CASE BREATHER	2N	13221 INIH179041			IC9/18
83187 18	REGULATOR REF VOLTAGE	EN	13221 INIH179051			IC9/18
83187 28	METERING POTENTIAL	EN	13221 INIH179051			IC9/18
83187 38	NEUTRAL GROUNDING	EN	13221 INIH179051			IC9/18
83187 48	REGULATOR POWER SUPPLY	EN	13221 INIH179051			IC9/18
83187 58	REGULATOR POWER SUPPLY	EN	13221 INIH179051			IC9/18
83187 18	VOLTAGE REGULATOR	EN	13221 INIH179051			IC9/18

DRAWING NO. A-18172  
SHEET 1

SYSTEM EVALUATION DOCUMENT

FOR

GEORGIA POWER COMPANY

FOR

EDWIN I. HATCH UNIT 1

FOR THE

REACTOR RECIRCULATION SYSTEM (B31)

REV. NO.	DATE	BY	DESCRIPTION	CHK	SUPVR.	PROJ. ENGR.
0	8-29-86	A/C	ISSUED PER REA HT-4619	<i>J.W. 8/29/86</i>	<i>A.C. 8/29/86</i>	<i>W.M. Gandy</i>

**REVISION STATUS SHEET**

SHEET 2

## I. SYSTEM OPERATION

The Reactor Recirculation System ensures adequate core cooling during power operations by supplying coolant flow past the reactor fuel bundles. This flow is provided by recirculating that portion of the core flow which is not boiled while passing through the core. The flow rate can be varied as one means of controlling reactor power.

The system consists of two (2) loops external to the Reactor Pressure Vessel (RPV). Each external loop contains one variable speed motor-driven recirculation pump, two motor operated gate valves, and a motor generator set to control the recirculation pump speed. Suction is from the reactor vessel annulus and discharge is to the reactor vessel jet pumps.

The Reactor Recirculation System has seven (7) modes of operation: Normal, LPCI Injection, Recirculation Pump Trips, Reactor Water Sample, RPV Bottom Drain, Recirculation Pump Seal Purge, and Shutdown Cooling Mode.

The function of each mode (and therefore the components of each subsystem) are safety related or non-safety related as indicated in Table 1, and further described in Section II.

The general safety design criteria which are applicable to components in one or more modes are indicated in Section V, and further discussed in Section II. Electrical design considerations are covered under the support systems listed in Section III.

## II. DESCRIPTION OF OPERATIONAL MODES

## A. Normal Operation Mode

During normal operation, the reactor recirculation system ensures adequate core cooling and reactivity control by maintaining forced circulation of water past the fuel bundles. The recirculated coolant consists of saturated water from the steam separators and dryers that has been subcooled by incoming feedwater. This water passes down the annulus between the RPV wall and the core shroud. A portion of the coolant flows from the RPV through the two external recirculation loops to become the driving flow for the jet pumps.

The recirculation flow rate is controlled by varying the output frequency of the associated motor generators, thus varying the speed of the associated recirculation pump.

Reactor power can be partially controlled by varying the recirculation flow rate without requiring control rod movement. This power change is accomplished by utilizing the large negative power coefficient found in the BWR design. The void coefficient present in the reactor core is a function of the recirculation flow rate. An increase in core flow sweeps some of the voids from the moderator and causes an increase in reactivity. A decrease in core flow results in the formation of more voids which decreases core reactivity. In the event of a power failure to the recirculation pumps the system has enough inertia to ensure that adequate circulation can be maintained to prevent damage to the fuel assemblies in the RPV core.

The Reactor Recirculation System is also designed to provide automatic load following capability over the range of approximately 70 to 100% rated power.

If feedwater flow is below 20 percent, the recirculation pump speed is automatically limited. Therefore, automatic protection against recirculation pump cavitation due to NPSH loss is provided by the 20 percent feedwater flow limiter.

The recirculation flow is monitored by sensing elements on each loop. This flow rate is transmitted to the Neutron Monitoring System (C51) so that the neutron flux/recirculation flow relationship can be calculated. If this calculated relationship deviates from the normal operational value as determined through analysis, the Neutron Monitoring System will initiate a SCRAM signal.

## II. DESCRIPTION OF OPERATIONAL MODES

### A. Normal Operation Mode

The Normal Operational Mode is safety related with the following safety functions:

- o Reactor Coolant Pressure Boundary (RCPB) Integrity

An example of a safety design basis event is the startup of an idle recirculation pump.

### B. LPCI Injection Mode

During this mode, portions of the Reactor Recirculation System piping are included in the LPCI flow paths.

Upon the receipt of a LPCI injection signal (High Drywell Pressure/Reactor Low Level 1), the reactor recirculation pumps are tripped (Reactor Low Level 2) and the discharge isolation valves (B31-F031A,B) close to avoid LPCI flow out of a possible break in a recirculation line and to assure that LPCI flow is directed through the jet pumps.

The LPCI Injection Mode is safety related with the following safety functions:

- o Reactor Core Cooling Geometry
- o Reactor Coolant Pressure Boundary (RCPB) Integrity
- o Reactor Coolant Inventory
- o High Energy Line Break Mitigation

An example of a safety design basis event is a Loss of Coolant Accident (LOCA).

### C. Recirculation Pump and/or Motor Generator Trips Mode

The main recirculation pumps and motor generators have various trips associated with them, some of which have safety significance. The recirculation pump is designed to have sufficient inertia so that it gradually coasts down after a trip, thus smoothing any flow transients caused by cutting off recirculation flow.

Safety related trips occur with the following events:

- Reactor Low Water Level (Level 2)
- Reactor High Pressure Trip
- Turbine Stop Valve Closure - (If the reactor
- Turbine Control Valve Fast Closure - power is > 30% of rated)

## II. DESCRIPTION OF OPERATIONAL MODES

C. The safety related trips serve to reduce reactor power in case of a reactor scram failure by increasing the void coefficient in the moderator (water).

Non-safety related trips of the recirculation pumps and/or motor generators serve to protect the equipment. These trips are listed on the Reactor Recirculation System Logic Diagrams.

The Recirculation Pump or Motor Generator Trips mode is safety related with the following safety functions:

- o Reactivity Control
- o Reactor Coolant Pressure Boundary Integrity

An example of a safety design basis event is tripping two recirculation pumps.

### D. Reactor Water Sample Mode

A connection off of the recirculation piping is provided for use in the event that the Reactor Water Cleanup System is out of service. The sample line is connected into an active portion of the recirculation system to ensure that a representative sample of reactor water is obtained. The sample line valves automatically close on receipt of a containment isolation signal.

The Reactor Water Sample Mode is safety related with the following safety functions:

- o Reactor Coolant Pressure Boundary Integrity
- o Containment Isolation

An example of a safety design basis event is a Loss of Coolant Accident.

### E. Reactor Vessel Bottom Drain Mode

A drain line is connected to the bottom head of the reactor vessel to permit flushing the bottom of the reactor to the radwaste system during plant shutdown. This drain is also piped to the main suction line of the reactor water cleanup system. The valve in this line is normally open to permit flow to pass from the bottom of the reactor vessel to the cleanup system continuously during reactor operation. This is done to keep the drain line flushed out and to provide temperature readout of the coolant in the bottom of the reactor vessel by means of an installed thermocouple.

## II. DESCRIPTION OF OPERATIONAL MODES

E. The Reactor Vessel Bottom Drain Mode is safety related with the following safety function:

- o Reactor Coolant Pressure Boundary Integrity

F. Recirculation Pump Seal and Purge Mode

The recirculation pump seals are cooled by injection water supplied by the CRD (C11) System. The pumps and the MG Sets are cooled by the RBCCW (P42) System. The pump seals are provided with a purge system to keep the seals clean by maintaining a net flow of clean water out of the seal area, along the pump shaft, and into the recirculation system. A flow of (3) three to (5) five gpm is continuously drawn from the control rod drive hydraulic system at all times.

The Recirculation Pump Seal and Purge Mode is safety related with the following safety function:

- o Reactor Coolant Pressure Boundary (RCPB) Integrity.

G. Shutdown Cooling Mode

The Shutdown Cooling Mode is an integral part of the RHR System (E11). Reactor coolant is pumped from one of the recirculation loops by one or both RHR Pumps and is discharged through the RHR heat exchangers where it is cooled by the RHRSW flow. The reactor coolant is then returned to the RPV via the recirculation loop.

This mode contains no individual components from the Reactor Recirculation System except the segment of recirculation pipe where the RHR system ties in, flow elements N013A,B which serve as pressure boundaries, and recirculation pump discharge isolation valves F031A,B which are closed.

The Shutdown Cooling Mode is safety related with the following safety functions:

- o Reactivity Control
- o Reactor Core Cooling Geometry
- o Reactor Coolant Pressure Boundary Integrity
- o Reactor Coolant Inventory

An example of a safety design basis event is a Shutdown Cooling (RHR) Malfunction Decreasing Temperature.

### III. SUPPORT SYSTEMS

The following systems, in whole or in part, are required to support the operation of the Reactor Recirculation System. For detailed information pertaining to the functionally nuclear safety related portions of these systems, the respective system evaluation documents for each system should be consulted.

- |   |       |
|---|-------|
| A. Nuclear Boiler System                        | - B21 |
| B. Residual Heat Removal System                 | - E11 |
| C. Reactor Building Closed Cooling Water System | - P42 |
| D. Control Rod Drive System                     | - C11 |
| E. Neutron Monitoring System                    | - C51 |
| F. Reactor Protection System                    | - C71 |
| G. Battery System                               | - R42 |
| H. Diesel Generator                             | - R43 |
| I. Uninterruptible Power                        | - R44 |

The following system supports the Reactor Recirculation System in a non-safety manner by providing Net Positive Suction Head (NPSH) for the recirculation pumps:

- |                     |       |
|---------------------|-------|
| A. Feedwater System | - N21 |
|---------------------|-------|

## SYSTEM EVALUATION DOCUMENT

## IV. REFERENCE DOCUMENTS

DWG NO.	REV.	TITLE
H-16063	16	Nuclear Boiler System P&ID, Sheet 2
H-16066	16	Reactor Recirculation System P&ID, Sheet 1
H-16067	1	Reactor Recirculation System P&ID, Sheet 2
H-16068	2	Reactor Recirculation System P&ID, Sheet 3
H-16076	7	Reactor Recirculation System M.G. Sets P&ID
H-17860	13	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 1
H-17861	7	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 2
H-17862	13	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 3
H-17863	7	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 4
H-17864	19	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 5
H-17865	10	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 6
H-17866	15	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 7
H-17867	7	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 8
H-17868	11	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 9
H-17869	2	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 10
H-17870	3	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 11
H-17814	13	Reactor Recirculation Pump and M.G. Set Elementary Diagrams, Sht 12
H-19913	0	Reactor Recirculation System Logic Diagram, Sht 1
H-19914	0	Reactor Recirculation System Logic Diagram, Sht 2
H-19915	0	Reactor Recirculation System Logic Diagram, Sht 3
H-19916	0	Reactor Recirculation System Logic Diagram, Sht 4
H-19917	0	Reactor Recirculation System Logic Diagram, Sht 5
S-19108	A	Operation and Maintenance Instruction Manual Vol. II - Reactor Recirculation System

Unit 1 FSAR, Rev. 3, 3.7, 4.3, and 7.9  
 Technical Specifications, Amend 124, 3/4.6  
 10CFR50 Appendix A, General Design Criteria No.  
 1, 2, 4, 12, 13, 14, 15, 30, 31, 32, 55

## SYSTEM EVALUATION DOCUMENT

## IV. REFERENCE DOCUMENTS

Central File for the Environmental Qualification of Safety Related Equipment, Section B (HNP-1), Rev. 19.  
Review of Plant Systems per Supplement 1 NUREG-0737, Comparison to NRC Regulatory Guide 1.97 (Rev. 2) HNP-1  
SCSI Calculation # SNH 86-003, Rev. 0 "Unit 1 Path 1 & 2 Safe Shutdown Equipment List"  
Bechtel Electrical Calculation #76, Rev. 0 "Unit 1 Path 3 Safe Shutdown Equipment List".

TABLE I

SHEET NO. 11

HOME OF SYSTEM OPERATION		FORM PART OF THE REACTOR COOLANT PRESSURE BOUNDARY		PROVIDE THE CAPABILITY TO SHUTDOWN THE REACTOR AND MAINTAIN IT IN A SAFE SHUTDOWN CONDITION OFF-SITE EXPOSURE EXCEEDING LOCFR100 LIMITS	
A. Normal operation		Yes		Yes	
B.	LPCI Injection	Yes		Yes	Yes
C.	Recirculation Pump Trips	No		Yes	Yes
D.	Reactor Water Sample	Yes		No	Yes
E.	Reactor Vessel Bottom Drain	Yes		No	No
F.	Recirc Pump Seal & Purge	Yes		No	No
G.	Shutdown Cooling	Yes		Yes	Yes

B.31

SYSTEM ---- 8.21 REACTOR ELECTRIC SYSTEM  
----- COMPONENT EVALUATION - SECTION V -----

DRAWING NO : A-10172  
SHEET : 12

ITEM	REF.	REF.	FUNCTIONAL DESCRIPTION	CLASS	CLASS	SH15. - 100981	SH/C	P%	R/H	NODES & RIB MARKS	
										S/A	H/P
<hr/>											
1	0001A		Reactor Recirc Pump A	S P	A	I	I	I	I	H-16066	Nodes A,C RCPB, Reactivity Control on Pump Trip
2	0001B		Reactor Recirc Pump B	S P	A	I	I	I	I	H-16074	Nodes A,C RCPB, Reactivity Control on Pump Trip
3	0002A		Spiral tube oil Circ Pump A1	S P	A	I	I	I	I	H-16075	
4	0002B		Spiral tube oil Circ Pump B1	S P	A	I	I	I	I	H-16076	
5	0003A		Spiral tube oil Circ Pump A2	S P	A	I	I	I	I	H-16076	
6	0003B		Spiral tube oil Circ Pump B2	S P	A	I	I	I	I	H-16076	
7	0004A		Spiral tube oil Circ Pump A3	S P	A	I	I	I	I	H-16076	
8	0004B		Spiral tube oil Circ Pump B3	S P	A	I	I	I	I	H-16076	
9	0005A		Spiral tube oil Circ Pump C	S P	A	I	I	I	I	H-16076	
10	0005B		Spiral tube oil Circ Pump D	S P	A	I	I	I	I	H-16076	
11	0002A		Pump A Seal Water HV	S P	A	I	I	I	I	H-16066	
12	0002B		Pump B Seal Water HV	S P	A	I	I	I	I	H-16066	
13	0002A		tube oil filter	S P	A	I	I	I	I	H-16076	
14	0002B		tube oil filter	S P	A	I	I	I	I	H-16076	
15	0002A		Emergency tube oil filter	S P	A	I	I	I	I	H-16076	
16	0002B		Emergency tube oil filter	S P	A	I	I	I	I	H-16076	
17	0001A		Seal Water A Vent Globe Valve	S P	A	I	I	I	I	H-16066	Nodes F RCPB
18	0001B		Seal Water A Vent Globe Valve	S P	A	I	I	I	I	H-16066	Nodes F RCPB
19	0002A		Seal Water B Vent Globe Valve	S P	A	I	I	I	I	H-16066	Nodes F RCPB
20	0002B		Seal Water B Vent Globe Valve	S P	A	I	I	I	I	H-16066	Nodes F RCPB
21	0003A		FFCV for PI 40072A	S P	A	I	I	I	I	H-16066	Nodes A,F Containment Isolation
22	0003B		FFCV for PI 40052B	S P	A	I	I	I	I	H-15946	Nodes A,F Containment Isolation
23	0004A		FFCV for PI 40062A	S P	A	I	I	I	I	H-16066	Nodes A,F Containment Isolation
24	0004B		FFCV for PI 40062B	S P	A	I	I	I	I	H-16066	Nodes A,F Containment Isolation
25	10005A		PI 40052A Iso Globe Valve	S P	A	I	I	I	I	H-16066	Nodes A,F RCPB
26	10005B		PI 40052B Iso Globe Valve	S P	A	I	I	I	I	H-16066	Nodes A,F RCPB
27	10006A		PI 40062A Iso Globe Valve	S P	A	I	I	I	I	H-16066	Nodes A,F RCPB
28	10006B		PI 40062B Iso Globe Valve	S P	A	I	I	I	I	H-16066	Nodes A,F RCPB
29	10007A		Seal Water A Iso Gate Valve	S P	A	I	I	I	I	H-16066	
30	10007B		Seal Water B Iso Gate Valve	S P	A	I	I	I	I	H-16066	
31	10009A		FFCV for PI 40114A	S P	A	I	I	I	I	H-16066	Nodes A Containment Isolation

## ----- COMPONENT EVALUATION - SECTION V -----

SYSTEM ---- B51 REACTOR RECIRC SYSTEM

SEQ NO.	BPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY		SEIS. 3-2/1	EQUIP. H/F	SPEC REV.	PMS REV.	MOTES/REMARKS
			S	A					
32	F009B	EFCV For FT-H014B	S	P	A	1	Z	H-16066	Mode A Containment Isolation
33	F009C	EFCV For FT-H014C	S	P	A	1	Z	H-16066	Mode A Containment Isolation
34	F009D	EFCV For FT-H014D	S	P	A	1	Z	H-16066	Mode A Containment Isolation
35	F010A	EFCV For FT-H014A	S	P	A	1	Z	H-16066	Mode A Containment Isolation
36	F010B	EFCV For FT-H014B	S	P	A	1	Z	H-16066	Mode A Containment Isolation
37	F010C	EFCV For FT-H014C	S	P	A	1	Z	H-16066	Mode A Containment Isolation
38	F010D	EFCV For FT-H014D	S	P	A	1	Z	H-16066	Mode A Containment Isolation
39	F011A	EFCV For FT-H024A	S	P	A	1	Z	H-16066	Mode A Containment Isolation
40	F011B	EFCV For FT-H024B	S	P	A	1	Z	H-16066	Mode A Containment Isolation
41	F011C	EFCV For FT-H024C	S	P	A	1	Z	H-16066	Mode A Containment Isolation
42	F011D	EFCV For FT-H024D	S	P	A	1	Z	H-16066	Mode A Containment Isolation
43	F012A	EFCV For FT-H024B	S	P	A	1	Z	H-16066	Mode A Containment Isolation
44	F012B	EFCV For FT-H024B	S	P	A	1	Z	H-16066	Mode A Containment Isolation
45	F012C	EFCV For FT-H024C	S	P	A	1	Z	H-16066	Mode A Containment Isolation
46	F012D	EFCV For FT-H024D	S	P	A	1	Z	H-16066	Mode A Containment Isolation
47	F015A	Seal Wtr A Iso Check Valve	S	P	A	1	Z	H-16066	Mode F Containment Isolation
48	F015B	Seal Wtr B Iso' Check Valve	S	P	A	1	Z	H-16066	Mode F Containment Isolation
49	F014A	Seal Wtr A Iso Gate Valve	S	P	A	1	Z	H-16066	Mode F RCPB
50	F014B	Seal Wtr B Iso Gate Valve	S	P	A	1	Z	H-16066	Mode F RCPB
51	F015A	Seal Wtr Relief Valve	R	B		Z		H-16066	
52	F015B	Seal Wtr Relief Valve	R	B		Z		H-16066	
53	F016A	Seal Wtr A Iso Gate Valve	R	B		Z		H-16066	
54	F016B	Seal Wtr B Iso Gate Valve	R	B		Z		H-16066	
55	F017A	Seal Wtr A Iso Check Valve	S	P	B	1	Z	H-16066	Mode F Containment Isolation
56	F017B	Seal Wtr B Iso Check Valve	S	P	B	1	Z	H-16066	Mode F Containment Isolation
57	F019	Sample Line Iso Globe Valve	S	A	A	1	H	Y	H-16066 Mode D RCPB Containment Isolation, RG 1.97
58	F019X	Sol Vlv for F019	S	A	Z	1	H		H-16066 Mode D Containment Isolation
59	F020	Sample Line Iso Globe Valve	S	A	B	1	H	Y	H-16066 Mode D RCPB Containment Isolation, RG 1.97
60	F021	Sample Line Test Globe Valve	S	P	B	1	Z		H-16066 Mode D RCPB Containment Isolation
61	F022	Sample Line Test Globe Valve	S	P	B	1	Z		H-16066 Mode D RCPB
62	F023A	CODIA Suction Iso Gate Valve	S	P	A	1	Z	Y	H-16066 Modes A,B RCPB, App R

THE HIVE

A NEW TESTAMENT

S/N	REF.	REF.	COMPONENT	DESCRIPTION	CLASS	QUAL.	CLASS	QUAL.	SPEC	H&G	H&F	WELD MARKS	
												1	2
6.5	F0238		C0018	Suction Isol Gate Valve	S P	A	S P	A		H-16066		Nodes A,B RCPB, App R	
6.4	F023A		F023A	Stem leakoff Globe	S P	B	S P	B		H-16066		Node A RCPB	
6.5	F0248		F0238	Stem leakoff Globe	S P	B	S P	B		H-16066		Node A RCPB	
6.6	F025A		F025A	Casing Vent Globe	S P	A	S P	A		H-16066		Node A RCPB	
6.7	F025B		F025B	Casing Vent Globe	S P	A	S P	A		H-16066		Node A RCPB	
6.8	F026A		F025A	Casing Vent Globe	S P	A	S P	A		H-16066		Node A RCPB	
6.9	F026B		F025B	Casing Vent Globe	S P	A	S P	A		H-16066		Node A RCPB	
7.0	F027A		F025A	Casing Brain Globe	S P	A	S P	A		H-16066		Node A RCPB	
7.1	F027B		F025B	Casing Brain Globe	S P	A	S P	A		H-16066		Node A RCPB	
7.2	F028A		F025A	Casing Brain Globe	S P	A	S P	A		H-16066		Node A RCPB	
7.3	F028B		F025B	Casing Brain Globe	S P	A	S P	A		H-16066		Node A RCPB	
7.4	F029		RTV	Brain Globe Valve	S P	A	S P	A		H-16066		Node E RCPB	
7.5	F030		RTV	Brain Globe Valve	S P	A	S P	A		H-16066		Node F RCPB	
7.6	F031A		C0018	Outlet Isol Gate Valve	S A	A	S A	A		H-16066		Nodes A,B,C D E F G H I J K L M N O P Q R S T Inventory	
7.7	F031B		C0018	Outlet Isol Gate Valve	S A	A	S A	A		H-16066		Nodes A,B,C D E F G H I J K L M N O P Q R S T Inventory	
7.8	F032A		F031A	Stem leakoff Globe	S P	B	S P	B		H-16066		Nodes A,B RCPB	
7.9	F032B		F031B	Stem leakoff Globe	S P	B	S P	B		H-16066		Nodes A,B RCPB	
8.0	F033A		F032A	Casing Vent Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.1	F034B		F032B	Casing Vent Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.2	F035A		F033A	Casing Vent Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.3	F035B		F033B	Casing Vent Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.4	F036A		F033A	Casing Brain Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.5	F036B		F033B	Casing Brain Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.6	F037A		F033A	Casing Brain Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.7	F037B		F033B	Casing Brain Globe	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.8	F038A		F033A	Casing Brain Valve	S P	A	S P	A		H-16066		Nodes A,B RCPB	
8.9	F038B		F033B	Casing Brain Valve	S P	A	S P	A		H-16066		Nodes A,B RCPB	
9.0	F039C		F033A	Casing Brain Valve	S P	A	S P	A		H-16066		Nodes A,B RCPB	
9.1	F039D		F033B	Casing Brain Valve	S P	A	S P	A		H-16066		Nodes A,B RCPB	
9.2	F040A		DP1-8015A	Isol Globe Valve	S P	A	S P	A		H-16066		Nodes A,B Containment Isolation	
9.3	F040B		DP1-8015B	Isol Globe Valve	S P	A	S P	A		H-16066		Nodes A,B Containment Isolation	

## SYSTEM - 8.7.1 REACTOR ELECTRIC SYSTEM

NUMBER	REF.	COMPONENT	CLASS	SE.IV	FRONT	SPC	BW,	WIRE S/SHAKES
94	041C	EFCV for 4P1 4015A	S P	A	I		H-16064	Node A Containment Isolation
95	0400	EFCV for 4P1 4015B	S P	A	I		H-16065	Node A Containment Isolation
96	041A	F1 4013A Iso Globe Valve	S P	A	I		H-16066	Node A RCPB
97	041B	F1 4023B Iso Globe Valve	S P	A	I		H-16067	Node A RCPB
98	041C	F1 4014C Iso Globe Valve	S P	A	I		H-16066	Node A RCPB
99	041D	F1 4024D Iso Globe Valve	S P	A	I		H-16066	Node A RCPB
100	042A	F1 4014A Iso Globe Valve	S P	A	I		H-16066	Node A RCPB
101	042B	F1 4024B Iso Globe Valve	S P	A	I		H-16067	Node A RCPB
102	043C	F1 4014C Iso Globe Valve	S P	A	I		H-16066	Node A RCPB
103	043D	F1 4024D Iso Globe Valve	S P	A	I		H-16066	Node A RCPB
104	051A	Loop A Brain Globe Valve	S P	A	I		H-16064	Node A RCPB
105	051B	Loop B Brain Globe Valve	S P	A	I		H-16065	Node A RCPB
106	052A	Loop A Brain Globe Valve	S P	A	I		H-16066	Node A RCPB
107	052B	Loop B Brain Globe Valve	S P	A	I		H-16066	Node A RCPB
108	053B	EFCV Spare	S P	A	I		H-16066	Node A RCPB
109	055C	EFCV Spare	S P	A	I		H-16066	Node A RCPB
110	055D	EFCV Spare	S P	A	I		H-16066	Node A RCPB
111	055E	EFCV Spare	S P	A	I		H-16065	Node A RCPB
112	055F	EFCV Spare	S P	A	I		H-16066	Node A RCPB
113	055G	EFCV Spare	S P	A	I		H-16066	Node A RCPB
114	055H	EFCV Spare	S P	A	I		H-16066	Node A RCPB
115	056A	Globe Valve Spare	S P	A	I		H-16064	Node A RCPB
116	056B	Globe Valve Spare	S P	A	I		H-16066	Node A RCPB
117	056C	Globe Valve Spare	S P	A	I		H-16066	Node A RCPB
118	056D	Globe Valve Spare	S P	A	I		H-16066	Node A RCPB
119	056E	Globe Valve Spare	S P	A	I		H-16065	Node A RCPB
120	056F	Globe Valve Spare	S P	A	I		H-16066	Node A RCPB
121	056G	Globe Valve Spare	S P	A	I		H-16066	Node A RCPB
122	056H	Globe Valve Spare	S P	A	I		H-16066	Node A RCPB
123	057A	EFCV (SPARE) Loop A	S P	A	I		H-16066	Node A RCPB
124	057B	EFCV (SPARE) Loop B	S P	A	I		H-16066	Node A RCPB

## SYSTEM ---- 031 REACTOR ELECTRIC SYSTEM

No.	NPI	No.	FUNCTIONAL DESCRIPTION	COMPONENT	CLASS	S15.	EQUIP.	SPEC.	ING.	MATERIALS	
										QUAL.	GRP
125	1056A			Globe Valve Spare Loop A	S P	A	I	I	I		
126	1056B			Globe Valve Spare Loop B	S P	A	I	I	I		
127	1057			Sample Line Ice Globe Valve	S P	A	I	I	I		
128	1058A			Sample Line Vent Globe Valve	S P	A	I	I	I		
129	1058A			Sample Line Vent Globe Valve	S P	A	I	I	I		
130	1062A			PI-M02A Test Globe Valve	S P	A	I	I	I		
131	1062B			PI-M02B Test Globe Valve	S P	A	I	I	I		
132	1063A			PI-M02A Test Globe Valve	S P	A	I	I	I		
133	1063B			PI-M02B Test Globe Valve	S P	A	I	I	I		
134	1064A			Seal A Test Globe	S P	B	I	I	I		
135	1064B			Seal B Test Globe	S P	B	I	I	I		
136	1065A			Seal A Test Globe	S P	B	I	I	I		
137	1065B			Seal B Test Globe	S P	B	I	I	I		
138	1066A			Fluid Drive A Check Valve	H		I	I	I		
139	1066B			Fluid Drive B Check Valve	H		I	I	I		
140	1067A			Seal Mir A Test Globe Vlv	S P	A	I	I	I		
141	1067B			Seal Mir B Test Globe Vlv	S P	A	I	I	I		
142	1067C			Seal Mir A Test Globe Vlv	S P	A	I	I	I		
143	1067D			Seal Mir B Test Globe Vlv	S P	A	I	I	I		
144	1067E			Pump A1 outlet check valve	H		I	I	I		
145	1067F			Pump B1 outlet check valve	H		I	I	I		
146	1154A			Pump A2 outlet check valve	H		I	I	I		
147	1154B			Pump B2 outlet check valve	H		I	I	I		
148	1155A			Pump A1 outlet check valve	H		I	I	I		
149	1155B			Pump B1 outlet check valve	H		I	I	I		
150	1156A			Pump A2 outlet gate valve	H		I	I	I		
151	1156B			Pump B2 outlet gate valve	H		I	I	I		
152	1157A			Pump A2 outlet gate valve	H		I	I	I		
153	1157B			Pump B2 outlet gate valve	H		I	I	I		
154	1158A			Pump A1 outlet gate valve	H		I	I	I		
155	1158B			Pump B1 outlet gate valve	H		I	I	I		

SYSTEM ----- B11  
REACTOR REACTIV SYSTEM

## SALV1

NO.	REF.	FUNCTIONAL DESCRIPTION	CLASS	SIZE	FUNCTION	CLASS	SIZE	FUNCTION	CLASS	SIZE	FUNCTION
340	B11	Pump A5 Suction Gate Valve	S A	1/4IN	Pump A7 Suction Gate Valve	S A	1/4IN	Pump B1 Suction Gate Valve	S A	1/4IN	Pump B7 Suction Gate Valve
360.	B60.	Pump A7 Suction Gate Valve	N P	SEP	Pump B7 Suction Gate Valve	N P	SEP	Pump A1 Suction Gate Valve	N P	SEP	Pump B1 Suction Gate Valve
370.											
156	F159A	Air Pump A5 Relief Valve	N		Air Pump A7 Relief Valve	N		Air Pump B1 Relief Valve	N		Air Pump B7 Relief Valve
157	F159B	Pump B5 Suction Gate Valve	N		Pump A7 Suction Gate Valve	N		Pump B1 Suction Gate Valve	N		Pump B7 Suction Gate Valve
158	F160A	Pump A7 Suction Gate Valve	N		Pump B7 Suction Gate Valve	N		Pump A1 Suction Gate Valve	N		Pump B1 Suction Gate Valve
159	F160B	Pump B7 Suction Gate Valve	N		Pump A1 Suction Gate Valve	N		Pump B1 Suction Gate Valve	N		Pump B7 Suction Gate Valve
160	F161A	Pump A1 Suction Gate Valve	N		Pump B1 Suction Gate Valve	N		Pump A1 Suction Gate Valve	N		Pump B1 Suction Gate Valve
161	F161B	Pump B1 Suction Gate Valve	N		Air Pump A Relief Valve	N		Air Pump B Relief Valve	N		Air Pump B Relief Valve
162	F162A	Air Pump A Relief Valve	N		Air Pump B Relief Valve	N		Air Pump B Relief Valve	N		Air Pump B Relief Valve
163	F162B	NG A10 Pressure Relief Valve	N		NG A10 Pressure Relief Valve	N		NG B10 Pressure Relief Valve	N		NG B10 Pressure Relief Valve
164	F163A	NG A10 Pressure Relief Valve	N		NG B10 Pressure Relief Valve	N		NG Set A tube PV	N		NG Set A tube PV
165	F163B	NG B10 Pressure Relief Valve	N		NG Set B tube PV	N		NG Set B tube PV	N		NG Set B tube PV
166	F164A	NG Set A outlet check Valve	N		NG Set B outlet check Valve	N		NG Set B outlet check Valve	N		NG Set B outlet check Valve
167	F164B	Air Pump A outlet check Valve	N		Air Pump B outlet check Valve	N		Air Pump B outlet check Valve	N		Air Pump B outlet check Valve
168	F165A	011 Fluid B1ive A Gate	N		011 Fluid B1ive A Gate	N		011 Fluid B1ive B Gate	N		011 Fluid B1ive B Gate
169	F165B	011 Fluid B1ive B Gate	N		011 Fluid B1ive B Gate	N		Pump Header Sample Gate Valve	N		Pump Header Sample Gate Valve
170	F166A	Pump Header Sample Gate Valve	N		Pump Header Sample Gate Valve	N		Pump Header Sample Gate Valve	N		Pump Header Sample Gate Valve
171	F166B	Pump Seal Cavity Press E/5	N		Pump Seal Cavity Press E/5	N		Pump Seal Cavity Press E/5	N		Pump Seal Cavity Press E/5
172	F4001A	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
173	F2001B	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
174	F400	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
175	F400A	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
176	F400B	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
177	F400C	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
178	F400D	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal	S A	1	Recirc Pump B Seal
179	F400A	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT
180	F400B	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT
181	F400C	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT
182	F400D	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT	S A	1	Recirc Pump Flow Summer FT
183	F400A	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal
184	F400B	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal
185	F400C	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal
186	F400D	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal	S A	1	Recirc Pump A Seal

## CONFIRMATION FORMULATION - SECTION V

SYSTEM ---- 6.21

REC16 REC16 SIGN

## SALUT

## COMPONENT

## FUNCTIONAL DESCRIPTION

## CLASS

## SALUT

## CLASS

## SALUT

REF	NO.	NO.	FUNCTIONAL DESCRIPTION	CLASS	CLASS	SALUT	REPORT	SPCS	PWS
167	6609A		Recirc Pump dpt U/S	N	I	I	I	H-16166	
168	6609B		Recirc Pump dpt U/S	N	I	I	I	H-16166	
169	6610A		Recirc Pump El U/S	S A	I	I	I	H-16166	
170	6610B		Recirc Pump El U/S	S A	I	I	I	H-16166	
171	6610C		Recirc Pump El U/S	S A	I	I	I	H-16166	
172	6610D		Recirc Pump El U/S	S A	I	I	I	H-16166	
173	6615		Speed Broad Limiter	N	I	I	I	H-16166	
174	6616A		Speed Line And Signal Gen	N	I	I	I	H-16166	
175	6616B		Speed Line And Signal Gen	N	I	I	I	H-16166	
176	2617A		Converter	N	I	I	I	H-16166	
177	6617B		Convertr	N	I	I	I	H-16166	
178	6615B		Function Generator	N	I	I	I	H-16166	
179	6618		Function Generator	N	I	I	I	H-16166	
200	6619A		Signal Failure Alert	N	I	I	I	H-16166	
201	6619B		Signal Failure Alert	N	I	I	I	H-16166	
202	6620A		Error Signal Line Network	N	I	I	I	H-16166	
203	6620B		Error Signal Line Network	N	I	I	I	H-16166	
204	6621A		Speed Limiter	N	I	I	I	H-16166	
205	6621B		Speed Limiter	N	I	I	I	H-16166	
206	6632		Control Amplifier	N	I	I	I	H-16166	
207	6633		Controller	N	I	I	I	H-16166	
208	6634A		PROG Unit	N	I	I	I	H-16166	
209	6634B		PROG Unit	N	I	I	I	H-16166	
210	6635A		Control Amplifier	N	I	I	I	H-16166	
211	6635B		Control Amplifier	N	I	I	I	H-16166	
212	6636A		HW/I Converte	N	I	I	I	H-16166	
213	6640B		HW/I Converte	N	I	I	I	H-16166	
214	8001F		Motor Brng A Cool outlet If	S P	D	I	I		
215	8001G		Motor Brng B Cool outlet If	S P	D	I	I		
216	8002A		Seal leak Loop A F5	N	I	I	I	H-16166	
217	8002B		Seal leak Loop B F5	N	I	I	I	H-16166	

## COMPONENT EVALUATION - SECTION V

SYSTEM 831 REACTOR RECIRC SYSTEM

SHEET 19

NAME	REF.	WPL.	COMPONENT	FUNCTIONAL DESCRIPTION	CLASS	SEI'S	ENVIRI	REF.	REF.	REF'S/BLANK'S
No.	No.				S A	Q/A/Q	CLASS	00A/I	SFC	
					N P	GEP	3-2/1	M/I	R-9.	R-1
216	8003A		Seal cool Disc A PT		S P	0	1	I	H-16066	Pressure Boundary for P42 System
219	8003B		Seal cool Disc B PT		S P	0	1	I	H-16066	Pressure Boundary for P42 System
270	8003C		HC A tube Pump Supply Hdr PT		N			I	H-16076	
221	8003D		HC B tube Pump Supply Hdr PT		N			I	H-16076	
222	8003A		Seal cool Disc F5		S P	0	1	I	H-16066	Pressure Boundary for P42 System
223	8003B		Seal Cool Disc F5		S P	0	1	I	H-16066	Pressure Boundary for P42 System
224	8004C		HC A tube Pump Disc Hdr PT		N			I	H-16076	
225	8004D		HC B tube Pump Supply Hdr PT		N			I	H-16076	
226	8005A		Seal Press Loop A PI		N		I	I	H-16066	
227	8005B		Seal Press Loop B PI		N		I	I	H-16066	
228	8004A		Seal Press Loop A PI		N		I	I	H-16066	
229	8004B		Seal Press Loop B PI		N		I	I	H-16066	
230	8007A		Comb 01 Seal leak loop A FS		N		I	I	H-16066	
231	8007B		Control Seal leak loop B FS		N		I	I	H-16066	
232	8012A		Recirc Flow loop A HI		S P	A	I	I	H-16066	Nodes A,G RCPB
233	8012B		Recirc Flow loop B HI		S P	A	I	I	H-16066	Nodes A,G RCPB
234	8014A		Recirc Flow loop A HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
235	8014B		Recirc Flow loop A HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
246	8014C		Recirc Flow loop A HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
247	8014D		Recirc Flow loop A HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
238	8015A		Recirc Pump C001A DPI		N		I	I	H-16066	
239	8015B		Recirc Pump C001B DPI		N		I	I	H-16066	
240	8023A		Recirc Pump C001A Suct II		S P	A	I	I	H-16066	Node A RCPB
241	8023B		Recirc Pump C001B Suct II		S P	A	I	I	H-16066	Node A RCPB
242	8024A		Recirc Flow loop B HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
243	8024B		Recirc Flow loop B HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
244	8024C		Recirc Flow loop B HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
245	8024D		Recirc Flow loop B HI		S A	I	I	I	H-16066	Node A Reactivity Control Trip Signal Input to 2CS1
246	8025A		Recirc Pump C001A Suct II		S P	A	I	I	H-16066	Node A RCPB
247	8025B		Recirc Pump C001B Suct II		S P	A	I	I	H-16066	Node A RCPB
248	8026A		A loop Suction PI		S P	A	I	I	H-16066	Node A RCPB

SHEET - - - 011  
REACTOR RECIRC SYSTEM

COMBINE RE EVALUATION - SECTION V

DRAWING NO : A-1112  
SHEET : 20

NAME	REF.	COMPONENT	CLASS	SHS.	FORMAT	SPC	1995	NOTE(S) & MARKS
S1.0	REF. #	FUNCTIONAL DESCRIPTION	S-A	SHS.	FORMAT	SPC	1995	
NO.	NO.		W-P	GEP	J-2/J	R/J	R/J	
249	00528	B Loop Suction Pk	S-P	A	I	I	H-16066	Node A RCP
250	0057A1	Recirc Mtr A Thrust Brg H	N	I	I	I	H-16066	
251	0057A2	Recirc Mtr B Thrust Brg H	N	I	I	I	H-16066	
252	0057B1	Recirc Mtr A Thrust Brg H	N	I	I	I	H-16066	
253	0057B2	Recirc Mtr B Thrust Brg H	N	I	I	I	H-16066	
254	0057C1	Recirc Mtr Up Guide Brg H	N	I	I	I	H-16066	
255	0057C2	Recirc Mtr Up Guide Brg H	N	I	I	I	H-16066	
256	0057D1	Recirc Mtr A Windg Phs A H	N	I	I	I	H-16066	
257	0057D2	Recirc Mtr B Windg Phs A H	N	I	I	I	H-16066	
258	0057E1	Recirc Mtr A Windg Phs B H	N	I	I	I	H-16066	
259	0057E2	Recirc Mtr B Windg Phs B H	N	I	I	I	H-16066	
260	0057F1	Recirc Mtr A Windg Phs C H	N	I	I	I	H-16066	
261	0057F2	Recirc Mtr B Windg Phs C H	N	I	I	I	H-16066	
262	0057G1	Recirc Mtr Low Guide Brg H	N	I	I	I	H-16066	
263	0057G2	Recirc Mtr Low Guide Brg H	N	I	I	I	H-16066	
264	0057H	Recirc Motor A Oil Low LS	N	I	I	I	H-16066	
265	00538	Recirc Motor B Oil Low LS	N	I	I	I	H-16066	
266	0057A	Recirc Motor A Oil Hi LS	N	I	I	I	H-16066	
267	0057B	Recirc Motor B Oil Hi LS	N	I	I	I	H-16066	
268	0057A	Recirc Motor A Oil Lo LS	N	I	I	I	H-16066	
269	0040B	Recirc Motor B Oil Lo LS	N	I	I	I	H-16066	
270	0041A	Recirc Pump A WS5	N	I	I	I	H-16066	
271	0041B	Recirc Pump B WS5	N	I	I	I	H-16066	
272	0050A	Recirc Mtr No 2 Seal Cav H	S-P	S	I	I	H-16066	Node A RCP
273	0050B	Recirc Mtr No 2 Seal Cav H	S-P	S	I	I	H-16066	Node A RCP
274	0051A	Recirc Mtr No 1 Seal Cav H	S-P	S	I	I	H-16066	Node A RCP
275	0051B	Recirc Mtr No 1 Seal Cav H	S-P	S	I	I	H-16066	Node A RCP
276	0052A	Brake Mtr A Windg PHS A H	N	I	I	I	H-16067	
277	0052B	Brake Mtr B Windg PHS A H	N	I	I	I	H-16067	
278	0053A	Brake Mtr A Windg PHS A H	N	I	I	I	H-16067	
279	0053B	Brake Mtr B Windg PHS A H	N	I	I	I	H-16067	

## SYSTEM ---- 051 REACTOR RECIRC SYSTEM

SEQ NO.	REF. NO.	FUNCTIONAL DESCRIPTION	SAFETY		SEIS.	ENVIRONMENT	SPEC. REQ.	DOC.	REMARKS
			CLASS	QUAL.					
289	N054A	Drive Motor A Winding PHS B IE	N	I	I	I	I	H-16067	
291	N054B	Drive Motor B Winding PHS B IE	N	I	I	I	I	H-16067	
292	N055A	Drive Motor A Winding PHS B IE	N	I	I	I	I	H-16067	
293	N055B	Drive Motor B Winding PHS B IE	N	I	I	I	I	H-16067	
294	N056A	Drive Motor A Winding PHS C IE	N	I	I	I	I	H-16067	
295	N056B	Drive Motor B Winding PHS C IE	N	I	I	I	I	H-16067	
296	N057A	Drive Motor A Winding PHS C IE	N	I	I	I	I	H-16067	
297	N057B	Drive Motor B Winding PHS C IE	N	I	I	I	I	H-16067	
298	N060A	Generator Winding PHS A IE	N	I	I	I	I	H-16067	
299	N060B	Generator Winding PHS A IE	N	I	I	I	I	H-16067	
300	N061A	Generator Winding PHS A IE	N	I	I	I	I	H-16067	
301	N061B	Generator Winding PHS A IE	N	I	I	I	I	H-16067	
302	N062A	Generator Winding PHS B IE	N	I	I	I	I	H-16067	
303	N062B	Generator Winding PHS B IE	N	I	I	I	I	H-16067	
304	N063A	Generator Winding PHS B IE	N	I	I	I	I	H-16067	
305	N063B	Generator Winding PHS B IE	N	I	I	I	I	H-16067	
306	N064A	Generator Winding PHS C IE	N	I	I	I	I	H-16067	
307	N064B	Generator Winding PHS C IE	N	I	I	I	I	H-16067	
308	N079A	Reactor A115 PI	S A	B	I	I	I	H-16063	
301	N079D	Reactor A115 PI	S A	B	I	I	I	H-16063	
302	N101A	S001A Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
303	N101B	S001B Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
304	N102A	S001A Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
305	N102B	S001B Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
306	N103A	S001A Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
307	N103B	S001B Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
308	N104A	S001A Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
309	N104B	S001B Fluid Drive Inlet PS	N	I	I	I	I	H-16076	
310	N105A	S001A Fluid Drive Inlet PS	2	I	I	I	I	H-16076	

## SYSTEM ---- 831 REACTOR RECIRC SYSTEM

SEQ NO.	NPL NO.	FUNCTIONAL DESCRIPTION	SAFETY CLASS		SEIS. CLASS		SPEC REF.	NOTE/S/REMARKS
			S A	N P	GRP	3-2/1		
311	81058	5001B Fluid Drive Inlet PS	N	I	I	I	H-16076	
312	81064	To Tube Alar <del>s</del> PS	N	I	I	I	H-16076	
313	81068	To Tube Alar <del>s</del> PS	N	I	I	I	H-16076	
314	8107A	SG01A Fluid Drive Inlet R0	N	I	I	I	H-16076	
315	8107B	5001B Fluid Drive Inlet R0	N	I	I	I	H-16076	
316	8109A	SG01A Fluid Drive Inlet R0	N	I	I	I	H-16076	
317	8109B	SG01B Fluid Drive Inlet R0	N	I	I	I	H-16076	
318	8111A	SG01A Hi Tube Alar <del>s</del> IS	N	I	I	I	H-16076	
319	8111B	SG01B Hi Tube Alar <del>s</del> IS	N	I	I	I	H-16076	
320	8112A	SG01A Hi Tube Temp Trip IS	N	I	I	I	H-16076	
321	8112B	SG01B Hi Tube Temp Trip IS	N	I	I	I	H-16076	
322	8113A	To Tube Temp Alar <del>s</del> IS	N	I	I	I	H-16076	
323	8113B	To Tube Temp Alar <del>s</del> IS	N	I	I	I	H-16076	
324	8113C	MG A Fluid Drive Intake R0	N	I	I	I	H-16076	
325	8113D	MG B Fluid Drive Intake R0	N	I	I	I	H-16076	
326	8114A	Oil Mist Eliminator MG Set A	N	I	I	I	H-16076	
327	8114B	Oil Mist Eliminator MG Set B	N	I	I	I	H-16076	
328	8601A	Recirc Pump C001A II	N	I	I	I	H-16066	
329	8601B	Recirc Pump C001B II	N	I	I	I	H-16066	
330	8601C	Recirc Pump C001A II	N	I	I	I	H-16066	
331	8601D	Recirc Pump C001B II	N	I	I	I	H-16066	
332	8679A	Reactor A115 P15	S A	I	I	I	H-16063	See C1 SED Mode C
333	8679B	Reactor A115 P15	S A	I	I	I	H-16063	See C1 SED Mode C
334	8752A	Converter Brng Impeller II	N	I	I	I	H-16067	
335	8752B	Converter Brng Impeller II	N	I	I	I	H-16067	
336	8753A	Converter Brng Impeller II	N	I	I	I	H-16067	
337	8753B	Converter Brng Impeller II	N	I	I	I	H-16067	
338	8754A	Converter Brng Runner II	N	I	I	I	H-16067	
339	8754B	Converter Brng Runner II	N	I	I	I	H-16067	
340	8755A	Converter Brng Runner II	N	I	I	I	H-16067	
341	8755B	Converter Brng Runner II	N	I	I	I	H-16067	

SYSTEM ---- 8.31 REACTOR RECIRC SYSTEM

----- COMPONENT EVALUATION - SECTION V -----

DRAWING NO : A 12172  
SHEET : 23

SEQ NO.	REF. NO.	REF. NO.	DESCRIPTION	CONTINUATION		CLASS S-A N-P	MATERIAL 68P	SAFETY CLASS SFSI 5-2/1	EQUIPMENT ITEM REF. NO.	SPEC REF	DMS	REMARKS
				FUNCTIONAL DESCRIPTION	CLASS SFSI 5-2/1							
342	R756A		Converter Oil Cooler H	N	I	I		I		H-16067		
343	R756B		Converter Oil Cooler H	N	I	I		I		H-16067		
344	R757A		Brv Mtr Bring Output End H	N	I	I		I		H-16067		
345	R757B		Brv Mtr Bring 2nd output End H	N	I	I		I		H-16067		
346	R758A		Brv Mtr Bring Output End H	N	I	I		I		H-16067		
347	R758B		Brv Mtr Bring Output End H	N	I	I		I		H-16067		
348	R759A		Gen Bring Input Shaft End H	N	I	I		I		H-16067		
349	R759B		Gen Bring Input Shaft End H	N	I	I		I		H-16067		
350	R760A		Gen Bring Collector End H	N	I	I		I		H-16067		
351	R760B		Gen Bring Collector End H	N	I	I		I		H-16067		
352	R001A		Seal Press Loop A PI	N	I	I		I		H-16066		
353	R261B		Seal Press Loop B PI	N	I	I		I		H-16066		
354	R002A		Seal Press Loop A PI	N	I	I		I		H-16066		
355	R002B		Seal Press Loop B PI	N	I	I		I		H-16066		
356	R004A		Recirc Pump A Seal Flow F1	N	I	I		I		H-16066		
357	R004B		Recirc Pump B Seal Flow F1	N	I	I		I		H-16066		
358	R005		Seal Supply From ORB PI	N	I	I		I		H-16066		
359	R102A		S001A tube oil filter II	N	I	I		I		H-16066		
360	R102B		S001B tube oil filter II	N	I	I		I		H-16076		
361	R103A		S001A tube oil pump II	N	I	I		I		H-16076		
362	R103B		S001B tube oil pump II	N	I	I		I		H-16076		
363	R401		Recirc Pump IR	N	I	I		I		H-16066		
364	R607A		Seal Press Loop A PI	N	I	I		I		H-16066		
365	R607B		Seal Press Loop B PI	N	I	I		I		H-16066		
366	R607A		Seal Press Loop A PI	N	I	I		I		H-16066		
367	R623B		Seal Press Loop B PI	N	I	I		I		H-16066		
368	R617A		Recirc Pump A 671	N	I	I		I		H-16066		
369	R617B		Recirc Pump B 671	N	I	I		I		H-16066		
370	R613		Recirc Pump Disc II	N	I	I		I		H-16066		
371	R614		Recirc Pump Disc II	N	I	I		I		H-16066		
372	R617		Recirc Pump C001A Disc II	N	I	I		I		H-16066		

## SYSTEM 031 REACTOR RECIRC SYSTEM

ITEM	REF.	NAME	FUNCTIONAL DESCRIPTION	CLASS	GRADE	SETS	ENVIRN.	SPEC.	BRC.	NOTE'S
349	R619A	Recirc Pump & MC Set A PFI		N	I	I	I		H-17064	
354	R619B	Recirc Pump & MC Set B PFI		N	I	I	I		H-17066	
360.	R619			N	P	GPP	J-211	H/2	RF	
373	R621A	Master Speed Controller		N	I	I	I		H-16062	
375	R621B	MC Set R/A Transfer Station		N	I	I	I		H-16063	
376	R621A	MC Set R/A Transfer Station		N	I	I	I		H-16063	
377	R621B	MC Set R/A Transfer Station		N	I	I	I		H-16063	
378	R622A	MC Set Speed Controller		N	I	I	I		H-16062	
379	R622B	MC Set Speed Controller		N	I	I	I		H-16062	
390	R623A	MC Set A VI		N	I	I	I		H-16067	
391	R623B	MC Set B VI		N	I	I	I		H-16067	
392	R624A	MC Set A Power Meter		N	I	I	I		H-16067	
393	R624B	MC Set B VI Power Meter		N	I	I	I		H-16067	
394	R625	MC Breg And Oil TR		N	I	-	-		H-16067	
395	R626	MC Winding IR		N	I	I	I		H-16067	
396	R627A	MC Set A Ammeter		N	I	I	I		H-16067	
397	R627B	MC Set B Ammeter		N	I	I	I		H-16067	
398	R628A	Temp Relay Ammeter		N	I	I	I		H-16067	
399	R628B	Temp Relay Ammeter		N	I	I	I		H-16067	
390	R630	Recirc Pump Suction TR		N	I	I	I		H-16066	
391	R630A	Recirc Pump A 51		N	I	I	I		H-17064	
392	R630B	Recirc Pump B 51		N	I	I	I		H-17066	

REV 00

E.I. WATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPARTMENT IDENTIFICATION SHEET

DRAWING NO.: A-16172 REV. 1-0  
SHEET NO.: 25

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	TAG NO.		MODE/REMARKS	TAG NUMBER ON ELEPENTARY
		ITE REF.	EQUIPMENTITE CODE		
851A08 1A	15001A MG SET A GEN FIELDIN	I 35028	INIH178611		
851A08 1B	15001A DRIVE MOTOR	I 35021	INIH178601		
851A08 2A	15001A DRIVE MOTOR	I 35028	INIH178601		
351A08 3A	LOCKOUT BUS POWER AVAIL	I 35028	INIH178611		
851A08 4A	1C002A AC CIRC LUBE OIL	I 35028	INIH178611		
851A08 5A	1C002A AC CIRC LUBE OIL	I 35028	INIH178611		
851A08 6A	1C003A AC CIRC LUBE OIL	I 35028	INIH178611		
851A08 7A	1C003A AC CIRC LUBE OIL	I 35028	INIH178611		
851A08 8A	1C005A DC AUX LUBE OIL	I 35028	INIH178621		
851A08 9A	1C005A DC AUX LUBE OIL	I 35021	INIH178621		
851A08 10A	1F0023A PUMP SUCTION 180L	I 35028	INIH178651APP R		
851A08 11A	1F0023A PUMP SUCTION 180L	I 35028	INIH178651APP R		
851A08 12A	1F003A PUMP DISCH 180L	I 35028	INIH178651MODE A,B/RED INDICATES POS1A NOT FULLY CLOSED		
851A08 13A	1F003A PUMP DISCH 180L	I 35028	INIH178651MODE A,B/GREEN INDICATES POS1A NOT FULLY OPEN		
851A08 16A	IGEA FIELD SHK TRIPPED	I 35021	INIH178611		
851A08 19A	INRINC FLOW LIMITED	I 35028	INIH178621		
851A08 18A	15001A MG SET A LOCKOUT	I 35028	INIH178601		
851A08 19A	15001A MG SET A LOCKOUT	I 35028	INIH178601		
851A08 20A	IGEA FIELD SHK CLOSED	I 35021	INIH178611		
851A08 21A	IGEN FIELD SHK TRIPPED	I 35021	INIH178611		
851A08 22A	1C004A AC CIRC LUBE CIL	I 35021	INIH178611		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV.1-0  
SHEET NO.1 26

HPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	101 DWG. #			MODE/REMARKS	TAG NUMBER ON ELEMENTARY
		171 REF.	171 EQUIPMENT/HI	171 CODE		
B31ADS 23A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 25A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 26A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 27A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 28A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 29A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 30A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 31A	IGEN FIELD BKR CLOSED	IN	13121	INIH178611		
B31ADS 32A	IC002A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 33A	IC003A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 34A	IC004A AC CIRC LUBE OIL	IN	13121	INIH178611		
B31ADS 35A	IC001A GEN DRIVE MOTOR	IN	13121	INIH178601		
B31ADS 35C	IC001A GEN DRIVE MOTOR	IN	13121	INIH178601		
B31ADS 36A	IRHR ABNORM COND OR TEST	IN	13121	171H178651 MODE A,B/CLEAR IND F031A RHR ABNORMAL COND OR TEST		
B31AF 1A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611		
B31AF 2A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611		
B31AF 3A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611		
B31AF 4A	IGEN FLD BKR ELECT PROT	IN	13121	INIH178611		
B31AF 5A	IM2A ELECT PROTECTION	IN	13121	INIH178631		
B31AF 6A	IM2A ELECT PROTECTION	IN	13121	INIH178631		
B31AF 7A	IS001A ELECT PROTECTION	IN	13121	INIH178601		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV.1-0  
SHEET NO.1 27

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT/HI CODE	101 DWG. # 111 REF. # 121 P&ID/ 131 ELEM	NOTE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AF 8A	IC001A ELECT PROTECTION	IN	13121 INIH178601		
B31AF 9A	IC002A ELECT PROTECTION	IN	13121 INIH178611		
B31AF 10A	IC002A ELECT PROTECTION	IN	13121 INIH178611		
B31AF 11A	IC003A ELECT PROTECTION	IN	13121 INIH178611		
B31AF 12A	IC003A ELECT PROTECTION	IN	13121 INIH178611		
B31AF 13A	IC005A ELECT PROTECTION	IN	13121 INIH178621		
B31AF 14A	IC005A ELECT PROTECTION	IN	13121 INIH178621		
B31AF 17A	IVR1A ELECT PROTECTION	IN	13121 INIH178631		
B31AF 18A	IVR1A ELECT PROTECTION	IN	13121 INIH178631		
B31AF 19A	IVR1A ELECT PROTECTION	IN	13121 INIH178631		
B31AF 20A	IVR1A ELECT PROTECTION	IN	13121 INIH178631		
B31AF 21A	IMRA,R623A,HT1A ELEC PROT	IN	13121 INIH178631		
B31AF 22A	IMRA,R623A,HT1A ELEC PROT	IN	13121 INIH178631		
B31AF 23A	IVR1A ELECT PROTECTION	IN	13121 INIH178631		
B31AF 24A	IVR1A ELECT PROTECTION	IN	13121 INIH178631		
B31AF 25A	IGEN FLD GR DET ELEC PROT	IN	13121 INIH178621		
B31AF 26A	IGEN FLD GR DET ELEC PROT	IN	13121 INIH178621		
B31AF 27A	1125 VDC ELECT PROT	IN	13121 INIH178601		
B31AF 28A	1125 VDC ELECT PROT	IN	13121 INIH178601		
B31AF 29A	1125 VDC ELECT PROT	IN	13121 INIH178601		
B31AF 30A	1125 VDC ELECT PROT	IN	13121 INIH178601		

## SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO. J-A-16112 Rev. 1  
SHEET NO. 1 28

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	101 OHM S18 REF.	EQUIPMENT/SITE CODE 101 PAID/1 THE ELE	TAG NUMBER ON ELEMENTARY
		MODE/REMARKS		
031AF 31A	SPARET R-103A BACKUP PROTEIN	13321 INH178621		
031AF 32A	ER6004B ELECT PROT	13321 INH178621		
031AF 36A	PROTA JOGGING CIRCUIT	13321 INH178621		
031AF 7001A	PROG SET & SPEED CONT BYS	13321 INH178621		
031AF 7002	PRO615 ELECT PROTECTION	13321 INH178621		
031AJ 2A	PRO616A SPCTD LIMITER NO.1RN	13321 INH178621		
031AK 1A	PRO601A AUX TO FIELD BYR	13321 INH178621		
031AK 2A	PRO61A AND LOW PW FLOW	13321 INH178621		
031AK 3A	PRO601A GENERATOR LOCKOUT	13321 INH178621		
031AK 4A	PRO601A PUMP START	13321 INH178621		
031AK 5A	PROFLID ON SCOOP TUBE LOCKIN	13321 INH178621		
031AK 6A	EC002A AC CIRC LUBE OIL	13321 INH178621		
031AK 7A	EC002A EC CIRC LUBE OIL	13321 INH178621		
031AK 8A	PRO601A GEN LOSS OF FIELD	13321 INH178621		
031AK 9A	PRO601A GEN OVERCURRENT	13321 INH178621		
031AK 10A	PRO601A GEN OVERCURRENT	13321 INH178621		
031AK 11A	PROFIELD BYR CONT EXC. TRANSIN	13321 INH178621		
031AK 12A	PROFIELD APP. UNDERVLT AUS BYN	13321 INH178621		
031AK 15A	PRO601A GEN AUS LOCKOUT	13321 INH178621		
031AK 16A	PROAC AUX CHT SIGNAL FAIL	13321 INH178621		

E.I. WATCH NUCLEAR PLANT UNIT A0.1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO.1 A-10172 4E  
SHEET NO.1 29

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT/TYPE CODE	SUS DNG. REF.	CODE/REMARKS	TAG NUMBER ON ELEVENTH
					SUS ELEM.
831AK 15A	GENERATOR/PUMP MOTOR	IN	13522	ININ178631	
831AK 16A	15001A GEN HEAT OVERVOLT	IN	13522	ININ178631	
831AK 17A	INCITATION TRANSFER	IN	13522	ININ178621	
831AK 18A	15001A PMP START SEQ TIMEIN	IN	13522	ININ178621	
831AK 19A	IGEN WINDING OVERTEMP	IN	13522	ININ178621	
831AK 20A	MOTOR WINDING OVERTEMP	IN	13522	ININ178621	
831AK 21A	RECIRC A RUMBACK	IN	13522	ININ178621	
831AK 22A	15001A GEN OVERCURRENT	IN	13522	ININ178631	
831AK 23A	FEEDWATER INTERLOCK	IN	13522	ININ178621	
831AK 24A	FIELD FRC OVERCURRENT	IN	13522	ININ178631	
831AK 25A	IEFC FIELD OVERCURRENT	IN	13522	ININ178631	
831AK 26A	IGEN LOSS OF FIELD AUX	IN	13522	ININ178631	
831AK 27A	INCOMPLETE START UP SEQ	IN	13522	ININ178621	
831AK 28A	IGEN FIELD GROUND DETECT	IN	13522	ININ178621	
831AK 29A	IC005A DC AUX LUBE OIL	IN	13522	ININ178621	
831AK 30A	SPFLUID OR HI OIL TEPP AUREN	IN	13522	ININ178601	
831AK 31A	IC002A AC CIRC LUBE OIL	IN	13522	ININ178611	
831AK 32A	IC003A AC CIRC LUBE OIL	IN	13522	ININ178611	
831AK 33A	ABCOUP TUBE LOCK	IN	13522	ININ178621	
831AK 34A	IC005A LUBE OIL PRESS	IN	13522	ININ178621	
831AK 35A	IC004A AC CIRC LUBE OIL	IN	13522	ININ178611	

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV. E 0  
SHEET NO. 1 30

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT/H CODE	E&I P&ID/H E&I ELEM H	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
					DWG. # ITE REF. # E&I P&ID/H
B31AK 36A	EC004A AC CIRC LUBE OIL	IN	13121 INIH178611		
B31AK 37A	OPERATIONAL SPARE	IN	13121 INIH178601		
B31AK 38A	EC002A AC CIRC LUBE OIL	IN	13121 INIH178611		
B31AK 39A	EC003A AC CIRC LUBE OIL	IN	13121 INIH178611		
B31AK 40A	EC004A AC CIRC LUBE OIL	IN	13121 INIH178611		
B31AK 41A	DC CONTROL PWR TRANSFER	IN	13121 INIH178601		
B31AK 42A	NORMAL DC CONT PWR U/V	IN	13121 INIH178601		
B31AK 43A	IATMS	IN	13121 INIH178611		
B31AK 43C	IATMS	IN	13121 INIH178611		
B31AK 44A	IF031A PUMP DISCH ISOL	IS	13121 ITIH178691 MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT		
B31AK 45A	IF031A PUMP DISCH ISOL	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CKT/MG DRIVE MTR CKT		
B31AK 46A	IF031A JOGGING CIRCUIT	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 47A	IF031A BED TIMER	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 48A	IF031A AUX TIMER	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 49A	IF031A JOGGING CIRCUIT	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 50A	IF031A JOGGING CIRCUIT	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 51A	IF031A JOGGING CIRCUIT	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 52A	IF031A JOGGING CIRCUIT	IS	13121 ITIH178691 MODE A,B/CONTROLS F031A JOGGING CIRCUIT		
B31AK 53A	18001A GEN OVERCURRENT	IN	13121 INIH178631		
B31AK 54A	EC001A GEN PUMP MOTOR	IN	13121 INIH178601		
B31AK 55A	EC001A GEN PUMP MOTOR	IN	13121 INIH178621		

E.I. WATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET 1

DRAWING NO. A-10172 REV. 1-0  
SHEET NO. 3 /

EQUIPMENT TAG NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	TAG NUMBER ON ELEMENTARY	
		ITEM REF.	ITEM REMARKS
831A8 1A	15001A GEN FIELD AMMETER SN	83128	INH178631
831A8 8		8	8
831A8 7A	150C ENC FIELD VOLTMETER SN	83128	INH178631
831A8 3A	15001A GEN AMMETER SN	83128	INH178631
831A8 4A	1AC FIELD VOLTMETER SN	83128	INH178631
831A8 1A	1TELEMEAT METER TRANS SN	83128	INH178631
831A8 3A	1PUPP PAR SIGNAL TO COMP SN	83128	INH178631
831A8 6A	15001A NEUT GROUNDING SN	83128	INH178631
831A8 5A	15001A GEN FIELD AMMETER SN	83128	INH178631
831A8 6A	15001A GEN FIELD AMMETER SN	83128	INH178631
831A8 7A	1BLOCKOUT SUB POWER AVAIL SN	83128	INH178631
831A8 8A	1HG SET A SPEED CONT ATG SN	83128	INH178641
831A8 1A	15001A MG SET A SN	83128	INH178621
831A8 2	1C001A PUMP VIBRATION SN	83128	INH178611
831A8 3A	18CCOP TUBE BRAKE SN	83128	INH178611
831A8 4A	1C002A AC CIRC LUBE OIL SN	83128	INH178611
831A8 5A	1C003A AC CIRC LUBE OIL SN	83128	INH178611
831A8 6A	1C008A AC CIRC LUBE OIL SN	83128	INH178611
831A8 7A	1RECIRC A HIGHBACK SN	83128	INH178621
831A8 8A	1F023A PUMP SUCTION ISOL SN	83128	INH178651APP R
831A8 9A	1F031A PUMP DISCH ISOL	83	ITEM178651MODE A, N/F031A MANUAL OPEN AND CLOSE CONTROL
831A8 11A	1FIELD GROUND RELAY TEST SN	83128	INH178621

REPORT DATE : 08/29/86

E.I. MATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO. 1-A-10172 REV. 1  
SHEET NO. 32

COMPONENT FUNCTIONAL DESCRIPTION	TAG REF. ITEM CODE	TAG NUMBER ON EQUIPMENT	TAG DATA	
			MODE/REMARKS	ITEM FLEM
831AB 12A	IC000A MG SET A TRIP TESTN	I 35621 INH176621		
831AB 7001A	IC002A AC CIRC LUBE OIL	I 35621 INH176610		IPB/A1
831AB 7002A	IC003A AC CIRC LUBE OIL	I 35621 INH176610		IPB/A2
831AB 7003A	IC004A AC CIRC LUBE OIL	I 35621 INH176610		IPB/A3
831AB 7004A	IC005A DC AUX LUBE OIL	I 35621 INH176621		IC5/A1
831AB 7005A	SFLUID OR CASE BREATHER	I 35621 INH176621		IPB/A4
831AT 1A	INSULATOR W/F VOLTAGE	I 35621 INH176611		
831AT 2A	INTERFERING POTENTIAL	I 35621 INH176631		
831AT 3A	IGBT NEUTRAL GROUNDING	I 35621 INH176631		
831AT 4A	REGULATOR POWER SUPPLY	I 35621 INH176631		
831AT 5A	REGULATOR POWER SUPPLY	I 35621 INH176631		
831ATM 1A	VOLTAGE REGULATOR	I 35621 INH176631		

REPORT DATE : 08/28/66

E.I. WATCH NUCLEAR PLANT UNIT NO. 1  
DRAWING NO. A-10172 REV. E-0  
SHEET NO. 33  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	TOP DRAW. EQUIPMENT CODE	TOP DRAW. REF. #	TAG NUMBER ON ELEMENTARY
031605 10	180018 MG SET 8 GEN FIELDN	13021	INH179031	
031605 10	180018 DRIVE MOTOR	13021	13021	
031605 20	180018 DRIVE MOTOR	13021	INH179021	
031605 30	BLOCKOUT BUS POWER AVAIL.	13021	INH179031	
031605 40	1C0028 AC CIRC LUBE OIL	13021	INH179021	
031605 50	1C0028 AC CIRC LUBE OIL	13021	INH179031	
031605 60	1C0038 AC CIRC LUBE OIL	13021	INH179031	
031605 70	1C0038 AC CIRC LUBE OIL	13021	INH179031	
031605 80	1C0058 DC AUX LUBE OIL	13021	INH179041	
031605 90	1C0058 DC AUX LUBE OIL	13021	INH179041	
031605 100	1P0238 PUMP SUCTION 180L	13021	INH179071	
031605 110	1P0238 PUMP SUCTION 180L	13021	INH179071	
031605 120	1P0318 PUMP DISCH 180L	13021	INH179071 MODE A,B/RED INDICATES P0318 NOT FULLY CLOSED	
031605 130	1P0318 PUMP DISCH 180L	13021	INH179071 MODE A,B/GREEN INDICATES P0318 NOT FULLY OPEN	
031605 140	1GEN FIELD BM TRAPPED	13021	INH179031	
031605 150	1RECINC FLOW LIMITED	13021	INH179041	
031605 160	180018 MG SET 8 LOCKOUT	13021	INH179021	
031605 170	1GEN FIELD BM CLOSED	13021	INH179031	
031605 180	1GEN FIELD BM TRAPPED	13021	INH179031	
031605 190	1C0048 AC CIRC LUBE OIL	13021	INH179031	
031605 200	1C0048 AC CIRC LUBE OIL	13021	INH179031	

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO.: A-18172 REV. E-0  
SHEET NO.: 34

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT/ITE CODE	I01 Dwg. I I11 REF. I I21 P&ID/I I31 ELEM I		MODE/REMARKS	TAG NUMBER OR ELEMENTARY
			I	I		
B318D8 238	IC0048 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 258	IC0028 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 268	IC0028 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 278	IC0038 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 288	IC0038 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 298	IC0048 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 308	IC0048 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 318	IGEN FIELD BKR CLOSED	IH	I	I3121	IINIH179031	
B318D8 328	IC0028 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 338	IC0038 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 348	IC0048 AC CIRC LUBE OIL	IH	I	I3121	IINIH179031	
B318D8 358	IC0018 GEN DRIVE MOTOR	IH	I	I3121	IINIH179021	
B318D8 359	IC0018 GEN DRIVE MOTOR	IH	I	I3121	IINIH179021	
B318D8 368	IMHR ABNORM COND OR TEST	I	I	I1121	IITIH179071	MODE A,B/CLEAR IND F0318 RHR ABNORMAL COND OR TEST
B318F 18	IGEN FLD BKR ELECT PROT	IH	I	I3121	IINIH179031	
B318F 28	IGEN FLD BKR ELECT PROT	IH	I	I3121	IINIH179031	
B318F 38	IGEN FLD BKR ELECT PROT	IH	I	I3121	IINIH179031	
B318F 48	IGEN FLD BKR ELECT PROT	IH	I	I3121	IINIH179031	
B318F 58	IM28 ELECT PROTECTION	IH	I	I3121	IINIH179051	
B318F 68	IM28 ELECT PROTECTION	IH	I	I3121	IINIH179051	
B318F 78	IS0018 ELECT PROTECTION	IH	I	I3121	IINIH179021	

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 3  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV. F-0  
SHEET NO. I 35

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT/H CODE	1001 DWG. I STL REF. I SERIAL NO. I SERIAL ELEM. I		NOTE/REMARKS	TAG NUMBER ON ELEMENTARY
831BF 88	EC001B ELECT PROTECTION	IN	1	13121	SMH179021	
			1	1	1	
831BF 98	EC002B ELECT PROTECTION	IN	1	13121	SMH179031	
			1	1	1	
831BF 108	EC002B ELECT PROTECTION	IN	1	13121	SMH179031	
			1	1	1	
831BF 118	EC003B ELECT PROTECTION	IN	1	13121	SMH179031	
			1	1	1	
831BF 128	EC003B ELECT PROTECTION	IN	1	13121	SMH179031	
			1	1	1	
831BF 138	EC005B ELECT PROTECTION	IN	1	13121	SMH179041	
			1	1	1	
831BF 148	EC005B ELECT PROTECTION	IN	1	13121	SMH179041	
			1	1	1	
831BF 178	IVR1B ELECT PROTECTION	IN	1	13121	SMH179051	
			1	1	1	
831BF 188	IVR1B ELECT PROTECTION	IN	1	13121	SMH179051	
			1	1	1	
831BF 198	IVR1B ELECT PROTECTION	IN	1	13121	SMH179051	
			1	1	1	
831BF 208	IVR1B ELECT PROTECTION	IN	1	13121	SMH179051	
			1	1	1	
831BF 218	1MAB, P633B, HT1B ELECT PROT	IN	1	13121	SMH179051	
			1	1	1	
831BF 228	1MAB, P633B, HT1B ELECT PROT	IN	1	13121	SMH179051	
			1	1	1	
831BF 238	IVR1B ELECT PROTECTION	IN	1	13121	SMH179051	
			1	1	1	
831BF 248	IVR1B ELECT PROTECTION	IN	1	13121	SMH179051	
			1	1	1	
831BF 258	IGEA FLD SR DET ELECT PROT	IN	1	13121	SMH179061	
			1	1	1	
831BF 268	IGEA FLD SR DET ELECT PROT	IN	1	13121	SMH179061	
			1	1	1	
831BF 278	1125 VDC ELECT PROT	IN	1	13121	SMH179021	
			1	1	1	
831BF 288	1125 VDC ELECT PROT	IN	1	13121	SMH179021	
			1	1	1	
831BF 308	1125 VDC ELECT PROT	IN	1	13121	SMH179021	
			1	1	1	

REF ID: A7141008 / 24 / 2014

SYSTEM EVALUATION DOCUMENT FOR PLANT 4811 - 1

DRAWING NO. 1

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT/HARDWARE		REF.
		CODE	ITEM	
15316F	518	1P0311 K-1024 BACKUP PROTEIN	1	15316F
15316F	548	1P0318 JOGGING CIRCUIT	1	15316F
15318F	70018	1MC SET & SPZD CONT 895 IN	1	15318F
15318F	20	1MC168 SPEED LIMITER NO LIM	1	15318F
15318K	181	180018 AUX TO FIELD BAR	1N	15318K
15318K	18	180018 AUX TO FIELD BAR	1N	15318K
15318K	28	1F0318 AND LOW FM FLDN	1N	15318K
15318K	38	180018 GENERATOR LOCKOUT	1N	15318K
15318K	48	1C0018 PUMP START	1N	15318K
15318K	58	1FL1010 AC1000 TUNE LOCMIN	1N	15318K
15318K	68	1C0038 MC CINC LUBE OIL	1N	15318K
15318K	78	1C0038 AC CIRC LUBE OIL	1N	15318K
15318K	88	180018 SEM LOSS OF FIELD IN	1N	15318K
15318K	98	180018 SEM LOSS OF FIELD IN	1N	15318K
15318K	108	180018 SEM LOSS OF FIELD IN	1N	15318K
15318K	118	1F1810 SEM CONT REC 1AENG	1N	15318K
15318K	128	1F1810 APP UNDERVOLT AUE IN	1N	15318K
15318K	138	180018 SEM SU LOCKOUT	1N	15318K
15318K	148	180018 SEM SU LOCKOUT	1N	15318K
15318K	158	180018 SEM SU LOCKOUT	1N	15318K
15318K	168	1AC CONN 3100W 3AEL 3H	1N	15318K
15318K	178	15318 GEN REACT OVERUL	1N	15318K

1 TAG NUMBER  
2 04  
3 ELEMENTARY

REPORT DATE 1 08/07/95

SYSTEM EVALUATION DOCUMENT ELET: NUCLEAR PLANT UNIT NO. 1  
EQUIPMENT IDENTIFICATION SHEET

Drawing No. 4-10172 Rev. 0  
SHEET NO. 27

E&I NUMBER	DESCRIPTION	FUNCTIONAL DESCRIPTION	TAG NUMBER ON EQUIPMENT	TAG NUMBER ON EQUIPMENT	
				CODE	REMARKS
8318K .175	EXCITATION TRANSFER	IN	1 3522 INH179051	AC 240	
8318K .188	IC0018 PHASE START BSY TIMING	IN	1 3521 INH179051	371 REF.	
8318K .198	IC21N WINDING OVERTEMP	IN	1 3522 INH179051		
8318K .208	MOTOR WINDING OVERTEMP	IN	1 3522 INH179051		
8318K .218	RECIRC & BUNBACK	IN	1 3522 INH179051		
8318K .228	IC0018 GEN OVERCURRENT	IN	1 3522 INH179051		
8318K .238	FLOWWATER INTERLOCK	IN	1 3522 INH179051		
8318K .248	FIELD ENC OVERCURRENT	IN	1 3522 INH179051		
8318K .258	ITAC FIELD OVERCURRENT	IN	1 3522 INH179051		
8318K .268	IGEN LOSS OF FIELD AUX	IN	1 3522 INH179051		
8318K .278	INCOMPLETE START UP TED IN	IN	1 3522 INH179051		
8318K .288	IGEN FIELD GROUND DETECT IN	IN	1 3522 INH179051		
8318K .298	IC0038 DC AUX LUBE OIL	IN	1 3522 INH179051		
8318K .308	HYFLUID DR HI OIL TEMP ALARM	IN	1 3522 INH179051		
8318K .318	IC0028 AC CIRC LUBE OIL	IN	1 3522 INH179051		
8318K .328	IC0038 AC CIRC LUBE OIL	IN	1 3522 INH179051		
8318K .338	1600UF TUBE LOCK	IN	1 3522 INH179051		
8318K .348	IC0058 LUBE OIL PRESS	IN	1 3522 INH179051		
8318K .358	IC0048 AC CIRC LUBE OIL	IN	1 3522 INH179051		
8318K .368	IC0048 AC CIRC LUBE OIL	IN	1 3522 INH179051		
8318K .378	OPERATIONAL SPARE	IN	1 3522 INH179051		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEETDRAWING NO. I A-18172 REV. I 0  
SHEET NO. I 38

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT#	SHEET DWG. REF.	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
J31BK 388	EC028 AC CIRC LUBE OIL	IN 1 13021	I NH1H179031		
B31BK 398	EC0038 AC CIRC LUBE OIL	IN 1 13021	I NH1H179031		
B31BK 408	EC0048 AC CIRC LUBE OIL	IN 1 13021	I NH1H179031		
B31BK 418	IDC CONTROL PWR TRANSFER	IN 1 13021	I NH1H179021		
B31BK 426	NORMAL DC CONT PWR U/V	IN 1 13021	I NH1H179021		
B31BK 438	SATNS	IN 1 13021	I NH1H179031		
B31BK 439	SATNS	IN 1 13021	I NH1H179031		
B31BK 448	IF0318 PUMP DISCH ISOL	IS 1 13021	I YI1H179071 MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT		
B31BK 458	IF0318 PUMP DISCH ISOL	IS 1 13021	I YI1H179071 MODE A,B/CONTROLS F0318 JOGGING CKT/MG DRIVE MTR CKT		
B31BK 468	IF0318 JOGGING CIRCUIT	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 478	IF0318 SEQ TIME	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 488	IFG318 AUX TIMER	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 498	IF0318 JOGGING CIRCUIT	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 508	IF0318 JOGGING CIRCUIT	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 518	IF0318 JOGGING CIRCUIT	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 528	IF0318 JOGGING CIRCUIT	IS 1 13021	I YI1H178701 MODE A,B/CONTROLS F0318 JOGGING CIRCUIT		
B31BK 538	IS0018 GEN OVERCURRENT	IN 1 13021	I NH1H179051		
B31BK 548	EC0018 GEN PUMP MOTOR	IN 1 13021	I NH1H179021		
B31BK 558	EC0018 GEN PUMP MOTOR	IN 1 13021	I NH1H179061		
B31BK 18	IS0018 GEN FIELD AMPMETER	IN 1 13021	I NH1H179051		
B31BK 28	IDC ENC FIELD VOLTMETER	IN 1 13021	I NH1H179051		

REPORT DATE : 08/24/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO.: A-10172 REV. 1-0  
SHEET NO.: 39

HPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	TAG NUMBER ON ELEMENTARY	BUS DWG.	MODE/REMARKS
			ITS REF.	
8318H 38	180018 GEN AMMETER	IN 1 03021 INIH179051		
8318H 48	1AC FIELD VOLTMETER	IN 1 03021 INIH179051		
8318H 18	1TELEATT METER TRANS	IN 1 03121 INIH179051		
8318H 38	1PUPP PHR SIGNAL TO COMP	IN 1 03121 INIH179051		
8318H 48	1GEN HEAT GROUNDOING	IN 1 03021 INIH179051		
8316D 50	180018 GEN FIELD AMMETER	IN 1 03021 INIH179051		
8318H 68	180018 GEN FIELD AMMETER	IN 1 03021 INIH179051		
8318H 78	1LOCKOUT BUS POWER AVAIL	IN 1 03021 INIH179031		
8318H 88	1MG SET B SPEED CONTL STS	IN 1 03021 INIH179061		
8318S 18	180018 MG SET B	IN 1 03021 INIH179041		
8318S 2	1C0018 PUMP VIBRATION	IN 1 03021 INIH179031		
8318S 38	1SC00P TUBE BRAKE	IN 1 03021 INIH179031		
8318S 48	1C0028 AC CIRC LUBE OIL	IN 1 03021 INIH179031		
9318S 58	1C0038 AC CIRC LUBE OIL	IN 1 03021 INIH179031		
8318S 68	1C0048 AC CIRC LUBE OIL	IN 1 03021 INIH179031		
3318S 78	1RECING B RUNBACK	IN 1 03021 INIH179031		
8318S 88	1F0218 PUMP SUCTION ISOL	IN 1 03021 INIH179071		
8318S 98	1F0318 PUMP DISCH ISOL	IN 1 03021 INIH179041		
8318S 118	1FIELD GROUND RELAY TEST	IN 1 03021 INIH179041		
8318S 128	180018 MG MET B TAIP TEST	IN 1 03021 INIH179041		
8318S 70018	1C0028 AC CIRC LUBE OIL	IN 1 03021 INIH179031		

PS/01

REPORT DATE: 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1  
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET

DRAWING NO. I-A-10172 REV. -0  
SHEET NO. 1

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	ITEM NUMBER	REF.	TAG NUMBER	ION ELEMENTARY
				MODE/REMARKS	
83189 70028	IC0039 AC CIRC LUBE OIL	PN	13021	INIH179031	IPB/02
83189 70038	IC0048 AC CIRC LUBE OIL	PN	13021	INIH179031	IPB/03
83189 70048	IC0058 DC AUX LUBE OIL	PN	13021	INIH179041	ICS/10
83189 70058	LIQUID DR CASE BREATHER	PN	13021	INIH179041	IS/04
83187 18	REGULATOR REF VOLTAGE	SN	13021	INIH179051	
83187 28	ANCHORING POTENTIAL	PN	13021	INIH179051	
83187 38	IGER NEUTRAL GROUNDING	PN	13021	INIH179051	
83187 48	REGULATOR POWER SUPPLY	SN	13021	INIH179051	
83187 58	REGULATOR POWER SUPPLY	SN	13021	INIH179051	
83189 18	VOLTAGE REGULATOR	PN	13021	INIH179051	