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			

REACTOR RECIRCULATION SYSTEM (B31) DRAWING NO. A-18172

REVISION STATUS SHEET SHEET 2

SHEET	LATEST REV	SHEET	LATEST REV	SHEET	LATEST REV	SHEET	LATEST REV	SHEET	LATEST REV
1	0								
2	0								
3	0								
4	0								
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37	0								
38	0								
39	0								
40	0								

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:

- 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:

- Reactor Core Cooling Geometry
- Reactor Coolant Pressure Boundary (RCPB) Integrity
- Reactor Coolant Inventory
- 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 autosatically 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 1 SHEET NO. 11

B31

MODE 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	PROVIDE THE CAPABILITY TO PREVENT OR MITIGATE THE CONSEQUENCES OF ACCIDENTS WHICH COULD RESULT IN POTENTIAL OFF-SITE EXPOSURE EXCEED'G 10CFR100 LIMITS
A. Normal Operation	Yes	Yes	No
B. LPCI Injection	Yes	Yes	Yes
C. Recirculation Pump Trips	NA	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

REV 0

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFI NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 3-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	DRG REF	MODES/REMARKS
1	C001A	Reactor Recirc Pump A	S	P	A	1	Z		H-16066	Modes A,C RCPB, Reactivity Control on Pump Trip
2	C001B	Reactor Recirc Pump B	S	P	A	1	Z		H-16066	Modes A,C RCPB, Reactivity Control on Pump Trip
3	C002A	S001A Lube Oil Circ Pump A1	N				Z		H-16076	
4	C002B	S001B Lube Oil Circ Pump B1	N				Z		H-16076	
5	C003A	S001A Lube Oil Circ Pump A2	N				Z		H-16076	
6	C003B	S001B Lube Oil Circ Pump B2	N				Z		H-16076	
7	C004A	S001A Lube Oil Circ Pump A3	N				Z		H-16076	
8	C004B	S001B Lube Oil Circ Pump B3	N				Z		H-16076	
9	C005A	S001A Lube Oil Circ Pump C	N				Z		H-16076	
10	C005B	S001B Lube Oil Circ Pump D	N				Z		H-16076	
11	D002A	Pump A Seal Water FCV	N		B		Z		H-16066	
12	D002B	Pump B Seal Water FCV	N		B		Z		H-16066	
13	D003A	Lube Oil Filter	N				Z		H-16076	
14	D003B	Lube Oil Filter	N				Z		H-16076	
15	D004A	Emergency Lube Oil Filter	N				Z		H-16076	
16	D004B	Emergency Lube Oil Filter	N				Z		H-16076	
17	F001A	Seal Water A Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
18	F001B	Seal Water B Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
19	F002A	Seal Water A Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
20	F002B	Seal Water B Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
21	F003A	EFCV For FI-N005A	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
22	F003B	EFCV For FI-N005B	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
23	F004A	EFCV For FI-N006A	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
24	F004B	EFCV For FI-N006B	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
25	F005A	FI-N005A Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
26	F005B	FI-N005B Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
27	F006A	FI-N006A Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
28	F006B	FI-N006B Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
29	F008A	Seal Water A Iso Gate Valve	N		B		Z		H-16066	
30	F008B	Seal Water B Iso Gate Valve	N		B		Z		H-16066	
31	F009A	EFCV For FI-N014A	S	P	A	1	Z		H-16066	Mode A Containment Isolation

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S A N P	QUAL GRP	SEIS. CLASS 3-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	DWG REF	MODES/REMARKS
32	F009B	EFCV For FI-N014B	S P	A	1	Z		H-16066	Mode A Containment Isolation
33	F009C	EFCV For FI-N014C	S P	A	1	Z		H-16066	Mode A Containment Isolation
34	F009D	EFCV For FI-N014D	S P	A	1	Z		H-16066	Mode A Containment Isolation
35	F010A	EFCV For FI-N014A	S P	A	1	Z		H-16066	Mode A Containment Isolation
36	F010B	EFCV For FI-N014B	S P	A	1	Z		H-16066	Mode A Containment Isolation
37	F010C	EFCV For FI-N014C	S P	A	1	Z		H-16066	Mode A Containment Isolation
38	F010D	EFCV For FI-N014D	S P	A	1	Z		H-16066	Mode A Containment Isolation
39	F011A	EFCV For FI-N024A	S P	A	1	Z		H-16066	Mode A Containment Isolation
40	F011B	EFCV For FI-N024B	S P	A	1	Z		H-16066	Mode A Containment Isolation
41	F011C	EFCV For FI-N024C	S P	A	1	Z		H-16066	Mode A Containment Isolation
42	F011D	EFCV For FI-N024D	S P	A	1	Z		H-16066	Mode A Containment Isolation
43	F012A	EFCV For FI-N024A	S P	A	1	Z		H-16066	Mode A Containment Isolation
44	F012B	EFCV For FI-N024B	S P	A	1	Z		H-16066	Mode A Containment Isolation
45	F012C	EFCV For FI-N024C	S P	A	1	Z		H-16066	Mode A Containment Isolation
46	F012D	EFCV For FI-N024D	S P	A	1	Z		H-16066	Mode A Containment Isolation
47	F013A	Seal Wtr A Iso Check Valve	S P	A	1	Z		H-16066	Mode F Containment Isolation
48	F013B	Seal Wtr B Isol 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	N	B		Z		H-16066	
52	F015B	Seal Wtr Relief Valve	N	B		Z		H-16066	
53	F016A	Seal Wtr A Iso Gate Valve	N	B		Z		H-16066	
54	F016B	Seal Wtr B Iso Gate Valve	N	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	F019E	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	CD01A Suction Iso Gate Valve	S P	A	1	Z	Y	H-16066	Modes A,B RCPB, App R

08/27/96

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COMPONENT EVALUATIONS - SECTION V

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S	SAFETY CLASS A/P	QUAL GRP	SEIS. CLASS 1/2/1	ENVIRN QUAL. H/Z	SPEC Rev.	DWG REF	NOTES/REMARKS
63	F023B	C001B Suction Iso Gate Valve	S	P	A	1	Z	Y	H-16066	Modes A,B RCPB, App R
64	F024A	F023A Stem Leakoff Globe	S	P	B	1	Z		H-16066	Mode A RCPB
65	F024B	F023B Stem Leakoff Globe	S	P	B	1	Z		H-16066	Mode A RCPB
66	F025A	F023A Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
67	F025B	F023B Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
68	F026A	F023A Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
69	F026B	F023B Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
70	F027A	F023A Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
71	F027B	F023B Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
72	F028A	F023A Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
73	F028B	F023B Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
74	F029	RPV Drain Globe Valve	S	P	A	1	Z		H-16066	Mode E RCPB
75	F030	RPV Drain Globe Valve	S	P	A	1	Z		H-16066	Mode E RCPB
76	F031A	C001A Outlet Iso Gate Valve	S	A	A	1	H		H-16066	Modes A,B,G RPV Coolant Inventory
77	F031B	C001B Outlet Iso Gate Valve	S	A	A	1	H		H-16066	Modes A,B,G RPV Coolant Inventory
78	F033A	F031A Stem Leakoff Globe	S	P	B	1	Z		H-16066	Modes A, B RCPB
79	F033B	F031B Stem Leakoff Globe	S	P	B	1	Z		H-16066	Modes A, B RCPB
80	F034A	F031A Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
81	F034B	F031B Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
82	F035A	F031A Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
83	F035B	F031B Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
84	F036A	F031A Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
85	F036B	F031B Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
86	F037A	F031A Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
87	F037B	F031B Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
88	F039A	dPT-N015A Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
89	F039B	dPT-N015B Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
90	F039C	dPT-N015A Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
91	F039D	dPT-N015B Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
92	F040A	EFCV for dPT-N015A	S	P	A	1	Z		H-16066	Mode A Containment Isolation
93	F040B	EFCV for dPT-N015B	S	P	A	1	Z		H-16066	Mode A Containment Isolation

SYSTEM ---- 831 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S A N P	QUAL GRP	SEIS. CLASS 3/2/1	ENVIRN QUAL. N/Z	SPEC REQ.	DWG REF	MODES/REMARKS
94	F040C	EFCV For dPI N015A	S P	A	1	Z		H-16066	Mode A Containment Isolation
95	F040D	EFCV For dPI N015B	S P	A	1	Z		H-16066	Mode A Containment Isolation
96	F041A	FI-N014A Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
97	F041B	FI-N024B Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
98	F041C	FI-N014C Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
99	F041D	FI-N024D Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
100	F042A	FI-N014A Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
101	F042B	FI-N024B Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
102	F042C	FI-N014C Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
103	F042D	FI-N024D Iso Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
104	F051A	Loop A Drain Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
105	F051B	Loop B Drain Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
106	F052A	Loop A Drain Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
107	F052B	Loop B Drain Globe Valve	S P	A	1	Z		H-16066	Mode A RCPB
108	F055B	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
109	F055C	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
110	F055D	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
111	F055E	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
112	F055F	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
113	F055G	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
114	F055H	EFCV Spare	S P	A	1	Z		H-16066	Mode A RCPB
115	F056A	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
116	F056B	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
117	F056C	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
118	F056D	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
119	F056E	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
120	F056J	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
121	F056G	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
122	F056H	Globe Valve Spare	S P	A	1	Z		H-16066	Mode A RCPB
123	F057A	EFCV (SPARE) Loop A	S P	A	1	Z		H-16066	Mode A RCPB
124	F057B	EFCV (SPARE) Loop B	S P	A	1	Z		H-16066	Mode A RCPB

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 3-2/1	ENVIRN QUAL. H/Z	SPEC REV.	DWG REF	MODES/REMARKS
125	F050A	Globe Valve Spare Loop A	S	P	A	1	Z		H-16866	Mode A RCPB
126	F050B	Globe Valve Spare Loop B	S	P	A	1	Z		H-16866	Mode A RCPB
127	F059	Sample Line Iso Globe Valve	S	P	A	1	Z		H-16866	Mode D RCPB
128	F060	Sample Line Vent Globe Valve	S	P	A	1	Z		H-16866	Mode D RCPB
129	F061	Sample Line Vent Globe Valve	S	P	A	1	Z		H-16866	Mode D RCPB
130	F062A	PI-N005A Test Globe Valve	S	P	A	1	Z		H-16866	Modes A,F RCPB
131	F062B	PI-N005B Test Globe Valve	S	P	A	1	Z		H-16866	Modes A,F RCPB
132	F063A	PI-N005A Test Globe Valve	S	P	A	1	Z		H-16866	Modes A,F RCPB
133	F063B	PI-N005B Test Globe Valve	S	P	A	1	Z		H-16866	Modes A,F RCPB
134	F064A	Seal A Test Globe	S	P	B	1	Z		H-16866	Mode F RCPB
135	F064B	Seal B Test Globe	S	P	B	1	Z		H-16866	Mode F RCPB
136	F065A	Seal A Test Globe	S	P	B	1	Z		H-16866	Mode F RCPB
137	F065B	Seal B Test Globe	S	P	B	1	Z		H-16866	Mode F RCPB
138	F066A	Fluid Drive A Check Valve	N				Z		H-16876	
139	F066B	Fluid Drive B Check Valve	N				Z		H-16876	
140	F069A	Seal Wtr A Test Globe Vlv	S	P	A	1	Z		H-16866	
141	F069B	Seal Wtr B Test Globe Vlv	S	P	A	1	Z		H-16866	
142	F070A	Seal Wtr A Test Globe Vlv	S	P	A	1	Z		H-16866	
143	F070B	Seal Wtr B Test Globe Vlv	S	P	A	1	Z		H-16866	
144	F153A	Pump A1 Outlet Check Valve	N				Z		H-16876	
145	F153B	Pump B1 Outlet Check Valve	N				Z		H-16876	
146	F154A	Pump A2 Outlet Check Valve	N				Z		H-16876	
147	F154B	Pump B2 Outlet Check Valve	N				Z		H-16876	
148	F155A	Pump A1 Outlet Check Valve	N				Z		H-16876	
149	F155B	Pump B1 Outlet Check Valve	N				Z		H-16876	
150	F156A	Pump A1 Outlet Gate Valve	N				Z		H-16876	
151	F156B	Pump B1 Outlet Gate Valve	N				Z		H-16876	
152	F157A	Pump A2 Outlet Gate Valve	N				Z		H-16876	
153	F157B	Pump B2 Outlet Gate Valve	N				Z		H-16876	
154	F158A	Pump A1 Outlet Gate Valve	N				Z		H-16876	
155	F158B	Pump B1 Outlet Gate Valve	N				Z		H-16876	

SYSTEM ---- 831 REACTOR RECIRC SYSTEM

SEQ NO.	EPL No.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRN QUAL. N/Z	SPEC REQ.	DWG REF	NOTES/REMARKS
156	F154A	Pump A3 Suction Gate Valve	N				Z		H-16076	
157	F154B	Pump B3 Suction Gate Valve	N				Z		H-16076	
158	F160A	Pump A2 Suction Gate Valve	N				Z		H-16076	
159	F160B	Pump B2 Suction Gate Valve	N				Z		H-16076	
160	F161A	Pump A1 Suction Gate Valve	N				Z		H-16076	
161	F161B	Pump B1 Suction Gate Valve	N				Z		H-16076	
162	F162A	Aux Pump A Relief Valve	N				Z		H-16076	
163	F162B	Aux Pump B Relief Valve	N				Z		H-16076	
164	F163A	MG A Lo Pressure Relief Vlv	N				Z		H-16076	
165	F163B	MG B Lo Pressure Relief Vlv	N				Z		H-16076	
166	F164A	MG Set A Lube PCV	N				Z		H-16076	
167	F164B	MG Set B Lube PCV	N				Z		H-16076	
168	F165A	Aux Pump A Outlet Check Valv	N				Z		H-16076	
169	F165B	Aux Pump B Outlet Check Valv	N				Z		H-16076	
170	F167A	Oil Fluid Drive A Gate	N				Z		H-16076	
171	F167B	Oil Fluid Drive B Gate	N				Z		H-16076	
172	F300IA	Pump Header Sample Gate Vlv	N				Z		H-16076	
173	F300IB	Pump Header Sample Gate Vlv	N				Z		H-16076	
174	N400	Pump Seal Cavity Press E/S	N		Z		Z		H-16066	
175	N406A	Recirc Pump A SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
176	N406B	Recirc Pump B SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
177	N406C	Recirc Pump B SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
178	N406D	Recirc Pump B SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
179	N407A	Recirc Pump Flow Summer FY	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
180	N407B	Recirc Pump Flow Summer FY	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
181	N407C	Recirc Pump Flow Summer FY	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
182	N407D	Recirc Pump Flow Summer FY	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
183	N408A	Recirc Pump A SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
184	N408B	Recirc Pump A SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
185	N408C	Recirc Pump A SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
186	N408D	Recirc Pump A SURI	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51

SYSTEM --- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFI NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRN. QUAL. N/I	SPEC REQ.	DWG REF	NOTES/REMARKS
187	K609A	Recirc Pump dPT E/S	N		I		I		H-16066	
188	K609B	Recirc Pump dPT E/S	N		I		I		H-16066	
189	K610A	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
190	K610B	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
191	K610C	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
192	K610D	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
193	K615	Speed Demand Limiter	N		I		I		H-16063	
194	K616A	Speed Lim And Signal Gen	N		I		I		H-16063	
195	K616B	Speed Lim And Signal Gen	N		I		I		H-16063	
196	K617A	Converter	N		I		I		H-16063	
197	K617B	Converter	N		I		I		H-16063	
198	K618A	Function Generator	N		I		I		H-16063	
199	K618B	Function Generator	N		I		I		H-16063	
200	K619A	Signal Failure Alarm	N		I		I		H-16063	
201	K619B	Signal Failure Alarm	N		I		I		H-16063	
202	K620A	Error Signal Lim Network	N		I		I		H-16063	
203	K620B	Error Signal Lim Network	N		I		I		H-16063	
204	K621A	Speed Limiter	N		I		I		H-16063	
205	K621B	Speed Limiter	N		I		I		H-16063	
206	K632	Control Amplifier	N		I		I		H-16063	
207	K633	Controller	N		I		I		H-16063	
208	K634A	PROP Unit	N		I		I		H-16063	
209	K634B	PROP Unit	N		I		I		H-16063	
210	K635A	Control Amplifier	N		I		I		H-16063	
211	K635B	Control Amplifier	N		I		I		H-16063	
212	K640A	MV/I Converter	N		I		I		H-16066	
213	K640B	MV/I Converter	N		I		I		H-16066	
214	N001A	Motor Brng A Cool Outlet TE	S	P	D	1	I		H-16066	Pressure Boundary for P42 System
215	N001B	Motor Brng B Cool Outlet TE	S	P	D	1	I		H-16066	Pressure Boundary for P42 System
216	N002A	Seal Leak Loop A FS	N		I		I		H-16066	
217	N002B	Seal Leak Loop B FS	N		I		I		H-16066	

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ No.	MFL No.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S	SAFETY CLASS A	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRN QUAL. N/Z	SPEC REQ.	DWG REF	MODES/REMARKS
216	N003A	Seal Cool Disch A TE	S	P	D	1	Z		H-16866	Pressure Boundary for P42 System
217	N003B	Seal Cool Disch B TE	S	P	D	1	Z		H-16866	Pressure Boundary for P42 System
220	N003C	MG A Lube Pump Supply Hdr PX	N				Z		H-16876	
221	N003D	MG B Lube Pump Supply Hdr PX	N				Z		H-16876	
222	N004A	Seal Cool Disch FS	S	P	D	1	Z		H-16866	Pressure Boundary for P42 System
223	N004B	Seal Cool Disch FS	S	P	D	1	Z		H-16866	Pressure Boundary for P42 System
224	N004C	MG A Lube Pump Disch Hdr PX	N				Z		H-16876	
225	N004D	MG B Lube Pump Supply Hdr PX	N				Z		H-16876	
226	N005A	Seal Press Loop A PI	N		Z		Z		H-16866	
227	N005B	Seal Press Loop B PI	N		Z		Z		H-16866	
228	N006A	Seal Press Loop A PI	N		Z		Z		H-16866	
229	N006B	Seal Press Loop B PI	N		Z		Z		H-16866	
230	N007A	Control Seal Leak Loop A FS	N		Z		Z		H-16866	
231	N007B	Control Seal Leak Loop B FS	N		Z		Z		H-16866	
232	N013A	Recirc Flow Loop A FE	S	P	A	1	Z		H-16866	Modes A,G RCPB
233	N013B	Recirc Flow Loop B FE	S	P	A	1	Z		H-16866	Modes A,G RCPB
234	N014A	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
235	N014B	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
236	N014C	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
237	N014D	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
238	N015A	Recirc Pump C001A DPT	N		Z		Z		H-16866	
239	N015B	Recirc Pump C001B DPT	N		Z		Z		H-16866	
240	N023A	Recirc Pump C001A Suct TE	S	P	A	1	Z		H-16866	Mode A RCPB
241	N023B	Recirc Pump C001B Suct TE	S	P	A	1	Z		H-16866	Mode A RCPB
242	N024A	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
243	N024B	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
244	N024C	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
245	N024D	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16866	Mode A Reactivity Control Trip Signal Input to 2C51
246	N025A	Recirc Pump C001A Suct TE	S	P	A	1	Z		H-16866	Mode A RCPB
247	N025B	Recirc Pump C001B Suct TE	S	P	A	1	Z		H-16866	Mode A RCPB
248	N026A	A Loop Suction PX	S	P	A	1	Z		H-16866	Mode A RCPB

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ No.	MPL No.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S	SAFETY CLASS A	QUAL REF	SEIS. CLASS 1/2/I	ENVIRN QUAL. M/I	SPEC Rev.	DWG ID	MODES/REMARKS
249	MO56B	B Loop Suction PX	S	P	A	1	I		H-16066	Mode A RCPB
250	MO57A1	Recirc Mtr A Thrust Brng TE	N		I		I		H-16066	
251	MO57A2	Recirc Mtr A Thrust Brng TE	N		I		I		H-16066	
252	MO57B1	Recirc Mtr B Thrust Brng TE	N		I		I		H-16066	
253	MO57B2	Recirc Mtr B Thrust Brng TE	N		I		I		H-16066	
254	MO57C1	Recirc Mtr Upr Guide Brng TE	N		I		I		H-16066	
255	MO57C2	Recirc Mtr Upr Guide Brng TE	N		I		I		H-16066	
256	MO57D1	Recirc Mtr A Windg Phs A TE	N		I		I		H-16066	
257	MO57D2	Recirc Mtr B Windg Phs A TE	N		I		I		H-16066	
258	MO57E1	Recirc Mtr A Windg Phs B TE	N		I		I		H-16066	
259	MO57E2	Recirc Mtr B Windg Phs B TE	N		I		I		H-16066	
260	MO57F1	Recirc Mtr A Windg Phs C TE	N		I		I		H-16066	
261	MO57F2	Recirc Mtr B Windg Phs C TE	N		I		I		H-16066	
262	MO57G1	Recirc Mtr Low Guide Brng TE	N		I		I		H-16066	
263	MO57G2	Recirc Mtr Low Guide Brng TE	N		I		I		H-16066	
264	MO38A	Recirc Motor A Oil Low LS	N		I		I		H-16066	
265	MO38B	Recirc Motor B Oil Low LS	N		I		I		H-16066	
266	MO39A	Recirc Motor A Oil Hi LS	N		I		I		H-16066	
267	MO39B	Recirc Motor B Oil Hi LS	N		I		I		H-16066	
268	MO40A	Recirc Motor A Oil Lo LS	N		I		I		H-16066	
269	MO40B	Recirc Motor B Oil Lo LS	N		I		I		H-16066	
270	MO41A	Recirc Pump A VBS	N		I		I		H-16066	
271	MO41B	Recirc Pump B VBS	N		I		I		H-16066	
272	MO50A	Recirc Mtr No 2 Seal Cav TE	S	P	B	1	I		H-16066	Mode A RCPB
273	MO50B	Recirc Mtr No 2 Seal Cav TE	S	P	B	1	I		H-16066	Mode A RCPB
274	MO51A	Recirc Mtr No 1 Seal Cav TE	S	P	B	1	I		H-16066	Mode A RCPB
275	MO51B	Recirc Mtr No 1 Seal Cav TE	S	P	B	1	I		H-16066	Mode A RCPB
276	MO52A	Drive Mtr A Windg PHS A TE	N		I		I		H-16067	
277	MO52B	Drive Mtr B Windg PHS A TE	N		I		I		H-16067	
278	MO53A	Drive Mtr A Windg PHS A TE	N		I		I		H-16067	
279	MO53B	Drive Mtr B Windg PHS A TE	N		I		I		H-16067	

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

SYSTEM ---- 631 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVMNT QUAL. N/I	SPEC REV.	DWG REF	MODES/REMARKS
280	N054A	Drive Mtr A Windg PMS B IE	N		I		I		H-16067	
281	N054B	Drive Mtr B Windg PMS B IE	N		I		I		H-16067	
282	N055A	Drive Mtr A Windg PMS B IE	N		I		I		H-16067	
283	N055B	Drive Mtr B Windg PMS B IE	N		I		I		H-16067	
284	N056A	Drive Mtr A Windg PMS C IE	N		I		I		H-16067	
285	N056B	Drive Mtr B Windg PMS C IE	N		I		I		H-16067	
286	N057A	Drive Mtr A Windg PMS C IE	N		I		I		H-16067	
287	N057B	Drive Mtr B Windg PMS C IE	N		I		I		H-16067	
288	N060A	Generator Winding PMS A IE	N		I		I		H-16067	
289	N060B	Generator Winding PMS A IE	N		I		I		H-16067	
290	N061A	Generator Winding PMS A IE	N		I		I		H-16067	
291	N061B	Generator Winding PMS A IE	N		I		I		H-16067	
292	N062A	Generator Winding PMS B IE	N		I		I		H-16067	
293	N062B	Generator Winding PMS B IE	N		I		I		H-16067	
294	N063A	Generator Winding PMS B IE	N		I		I		H-16067	
295	N063B	Generator Winding PMS B IE	N		I		I		H-16067	
296	N064A	Generator Winding PMS C IE	N		I		I		H-16067	
297	N064B	Generator Winding PMS C IE	N		I		I		H-16067	
298	N065A	Generator Winding PMS C IE	N		I		I		H-16067	
299	N065B	Generator Winding PMS C IE	N		I		I		H-16067	
300	N079A	Reactor ATTS PI	S	A	B	1	I		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
301	N079B	Reactor ATTS PI	S	A	B	1	I		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
302	N101A	5001A Fluid Drive Inlet PS	N		I		I		H-16076	
303	N101B	5001B Fluid Drive Inlet PS	N		I		I		H-16076	
304	N102A	5001A Fluid Drive Inlet PS	N		I		I		H-16076	
305	N102B	5001B Fluid Drive Inlet PS	N		I		I		H-16076	
306	N103A	5001A Fluid Drive Inlet PS	N		I		I		H-16076	
307	N103B	5001B Fluid Drive Inlet PS	N		I		I		H-16076	
308	N104A	5001A Fluid Drive Inlet PS	N		I		I		H-16076	
309	N104B	5001B Fluid Drive Inlet PS	N		I		I		H-16076	
310	N105A	5001A Fluid Drive Inlet PS	N		I		I		H-16076	

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

SYSTEM ---- 831 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 3-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	DWG REF	MODES/REMARKS
311	N105B	S001B 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	S001A Fluid Drive Inlet RO	N				Z		H-16076	
315	N107B	S001B Fluid Drive Inlet RO	N				Z		H-16076	
316	N108A	S001A Fluid Drive Inlet RO	N				Z		H-16076	
317	N108B	S001B Fluid Drive Inlet RO	N				Z		H-16076	
318	N111A	S001A Hi Lube Alarm TS	N		Z		Z		H-16076	
319	N111B	S001B Hi Lube Alarm TS	N		Z		Z		H-16076	
320	N112A	S001A Hi Lube Temp Trip TS	N		Z		Z		H-16076	
321	N112B	S001B Hi Lube Temp Trip TS	N		Z		Z		H-16076	
322	N113A	Lo Lube Temp Alarm TS	N		Z		Z		H-16076	
323	N113B	Lo Lube Temp Alarm TS	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 C001A TT	N		Z		Z		H-16066	
329	N601B	Recirc Pump C001B TT	N		Z		Z		H-16066	
330	N601C	Recirc Pump C001A TT	Y		Z		Z		H-16066	
331	N601D	Recirc Pump C001B TT	Y		Z		Z		H-16066	
332	N679A	Reactor ATTS PIS	S	A	Z	1	Z		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
333	N679D	Reactor ATTS PIS	S	A	Z	1	Z		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
334	N752A	Converter Brng Impeller TE	N		Z		Z		H-16067	
335	N752B	Converter Brng Impeller TE	N		Z		Z		H-16067	
336	N753A	Converter Brng Impeller TE	N		Z		Z		H-16067	
337	N753B	Converter Brng Impeller TE	N		Z		Z		H-16067	
338	N754A	Converter Brng Runner TE	N		Z		Z		H-16067	
339	N754B	Converter Brng Runner TE	N		Z		Z		H-16067	
340	N755A	Converter Brng Runner TE	N		Z		Z		H-16067	
341	N755B	Converter Brng Runner TE	N		Z		Z		H-16067	

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVMNT QUAL. M/Z	SPEC REQ.	DWG REF	MODES/REMARKS
342	N756A	Converter Oil Cooler IE	N		2		2		H-16067	
343	N756B	Converter Oil Cooler IE	N		2		2		H-16067	
344	N757A	Drv Mtr Brng Output End IE	N		2		2		H-16067	
345	N757B	Drv Mtr Brng Output End IE	N		2		2		H-16067	
346	N758A	Drv Mtr Brng Output End IE	N		2		2		H-16067	
347	N758B	Drv Mtr Brng Output End IE	N		2		2		H-16067	
348	N759A	Gen Brng Input Shaft End IE	N		2		2		H-16067	
349	N759B	Gen Brng Input Shaft End IE	N		2		2		H-16067	
350	N760A	Gen Brng Collector End IE	N		2		2		H-16067	
351	N760B	Gen Brng Collector End IE	N		2		2		H-16067	
352	R001A	Seal Press Loop A PI	N		2		2		H-16066	
353	R001B	Seal Press Loop B PI	N		2		2		H-16066	
354	R002A	Seal Press Loop A PI	N		2		2		H-16066	
355	R002B	Seal Press Loop B PI	N		2		2		H-16066	
356	R004A	Recirc Pump A Seal Flow FI	N		B		2		H-16066	
357	R004B	Recirc Pump B Seal Flow FI	N		B		2		H-16066	
358	R005	Seal Supply From CRD PI	N		B		2		H-16066	
359	R102A	S001A Lube Oil Filter II	N		2		2		H-16076	
360	R102B	S001B Lube Oil Filter II	N		2		2		H-16076	
361	R103A	S001A Lube Oil Pump II	N		2		2		H-16076	
362	R103B	S001B Lube Oil Pump II	N		2		2		H-16076	
363	R601	Recirc Pump FR	N		2		2		H-16066	
364	R602A	Seal Press Loop A PI	N		2		2		H-16066	
365	R602B	Seal Press Loop B PI	N		2		2		H-16066	
366	R603A	Seal Press Loop A PI	N		2		2		H-16066	
367	R603B	Seal Press Loop B PI	N		2		2		H-16066	
368	R612A	Recirc Pump A dPI	N		2		2		H-16066	
369	R612B	Recirc Pump B dPI	N		2		2		H-16066	
370	R613	Recirc Pump Disch FI	N		2		2		H-16066	
371	R614	Recirc Pump Disch FR	N		2		2		H-16066	
372	R617	Recirc Pump C001A Disch FI	N		2		2		H-16066	

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

SYSTEM ---- 831 REACTOR RECIRC SYSTEM

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

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 25

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AC8 1A	>S001A MG SET A GEN FIELD	EN	EN:H17861		
B31AD8 1A	:S001A DRIVE MOTOR	EN	EN:H17860		
B31AD8 2A	:SVC1A DRIVE MOTOR	EN	EN:H17860		
B31AD8 3A	:LOCKOUT BUS POWER AVAIL	EN	EN:H17861		
B31AD8 4A	:C002A AC CIRC LUBE OIL	EN	EN:H17861		
B31AD8 5A	:C002A AC CIRC LUBE OIL	EN	EN:H17861		
B31AD8 6A	:C003A AC CIRC LUBE OIL	EN	EN:H17861		
B31AD8 7A	:C003A AC CIRC LUBE OIL	EN	EN:H17861		
B31AD8 8A	:C005A DC AUX LUBE OIL	EN	EN:H17862		
B31AD8 9A	:C005A DC AUX LUBE OIL	EN	EN:H17862		
B31AD8 10A	:F023A PUMP SUCTION ISOL	EN	TY:H17865	:APP R	
B31AD8 11A	:F023A PUMP SUCTION ISOL	EN	TY:H17865	:APP R	
B31AD8 12A	:F031A PUMP DISCH ISOL	EN	TY:H17865	:MODE A,B/RED INDICATES F031A NOT FULLY CLOSED	
B31AD8 13A	:F031A PUMP DISCH ISOL	EN	TY:H17865	:MODE A,B/GREEN INDICATES F031A NOT FULLY OPEN	
B31AD8 14A	:GEN FIELD BKR TRIPPED	EN	EN:H17861		
B31AD8 15A	:RECIRC FLOW LIMITED	EN	EN:H17862		
B31AD8 18A	:S001A MG SET A LOCKOUT	EN	EN:H17860		
B31AD8 19A	:S001A MG SET A LOCKOUT	EN	EN:H17860		
B31AD8 20A	:GEN FIELD BKR CLOSED	EN	EN:H17861		
B31AD8 21A	:GEN FIELD BKR TRIPPED	EN	EN:H17861		
B31AD8 22A	:C004A AC CIRC LUBE OIL	EN	EN:H17861		

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	SO: DWG. TC: REF. ID: P&ID/ AR: ELEP	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AD8 23A	C004A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 25A	C002A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 26A	C002A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 27A	C003A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 28A	C003A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 29A	C004A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 30A	C004A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 31A	GEA FIELD BKR CLOSED	EN	3EZ	NH17861	
B31AD8 32A	C002A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 33A	C003A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 34A	C004A AC CIRC LUBE OIL	EN	3EZ	NH17861	
B31AD8 35A	C001A GEN DRIVE MOTOR	EN	3EZ	NH17[illegible]0	
B31AD8 35C	C001A GEN DRIVE MOTOR	EN	3EZ	NH17860	
B31AD8 36A	RHR ABNORM COND OR TEST	ES	1EZ	NH17865	MODE A,B/CLEAR IND F031A RHR ABNORMAL COND OR TEST
B31AF 1A	GEN FLD BKR ELECT PROT	EN	3EZ	NH17861	
B31AF 2A	GEN FLD BKR ELECT PROT	EN	3EZ	NH17861	
B31AF 3A	GEN FLD BKR ELECT PROT	EN	3EZ	NH17861	
B31AF 4A	GEN FLD BKR ELECT PROT	EN	3EZ	NH17861	
B31AF 5A	M2A ELECT PROTECTION	EN	3EZ	NH17863	
B31AF 6A	M2A ELECT PROTECTION	EN	3EZ	NH17863	
B31AF 7A	C001A ELECT PROTECTION	EN	3EZ	NH17860	

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	NODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AF 8A	B001A ELECT PROTECTION	BN 3Z	N1H17860		
B31AF 9A	C002A ELECT PROTECTION	BN 3Z	N1H17861		
B31AF 10A	C002A ELECT PROTECTION	BN 3Z	N1H17861		
B31AF 11A	C003A ELECT PROTECTION	BN 3Z	N1H17861		
B31AF 12A	C003A ELECT PROTECTION	BN 3Z	N1H17861		
B31AF 13A	C005A ELECT PROTECTION	BN 3Z	N1H17862		
B31AF 14A	C005A ELECT PROTECTION	BN 3Z	N1H17862		
B31AF 17A	VR1A ELECT PROTECTION	BN 3Z	N1H17863		
B31AF 18A	VR1A ELECT PROTECTION	BN 3Z	N1H17863		
B31AF 19A	VR1A ELECT PROTECTION	BN 3Z	N1H17863		
B31AF 20A	VR1A ELECT PROTECTION	BN 3Z	N1H17863		
B31AF 21A	M4A,R623A,MT1A ELEC PROT	BN 3Z	N1H17863		
B31AF 22A	M4A,R623A,MT1A ELEC PROT	BN 3Z	N1H17863		
B31AF 23A	VR1A ELECT PROTECTION	BN 3Z	N1H17863		
B31AF 24A	VR1A ELECT PROTECTION	BN 3Z	N1H17863		
B31AF 25A	GEN FLD GR DET ELEC PROT	BN 3Z	N1H17862		
B31AF 26A	GEN FLD GR DET ELEC PROT	BN 3Z	N1H17862		
B31AF 27A	125 VDC ELECT PROT	BN 3Z	N1H17860		
B31AF 28A	125 VDC ELECT PROT	BN 3Z	N1H17860		
B31AF 29A	125 VDC ELECT PROT	BN 3Z	N1H17860		
B31AF 30A	125 VDC ELECT PROT	BN 3Z	N1H17860		

REPORT DATE : 08/29/86

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

DRAWING NO.: A-18172 REV.: 0
SHEET NO.: 28

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	O: DWG. T: REF. E: PAID/ R: ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AF 31A	PEAKET X-103A BACKUP PROT	IN	I:Z: I:H17862:		
B31AF 32A	R660A,B ELECT PROT	IN	I:Z: I:H17864:		
B31AF 34A	F031A JOGGING CIRCUIT	IB	I:Z: I:H17869:	MODE A,B/120 VAC PROTECTION TO F031A JOGGING CIRCUIT	
B31AF 7001A	MG SET A SPEED CONT SYS	IN	I:Z: I:H17864:		F11A IN H11-P612
B31AF 7002	K615 ELECT PROTECTION	IN	I:Z: I:H17864:		F12 IN H11-P622
B31AJ 2A	K616A SPEED LIMITER NO 1	IN	I:Z: I:H17864:		
B31AK 1A1	B001A AUX TO FIELD BKR	IN	I:Z: I:H17862:		
B31AK 1A	B001A AUX TO FIELD BKR	IN	I:Z: I:H17862:		
B31AK 2A	F031A AND LOW FW FLOW	IN	I:Z: I:H17862:		
B31AK 3A	B001A GENERATOR LOCKOUT	IN	I:Z: I:H17861:		
B31AK 4A	C001A PUMP START	IN	I:Z: I:H17862:		
B31AK 5A	FLUID DR SCOOP TUBE LOCK	IN	I:Z: I:H17861:		
B31AK 6A	C003A AC CIRC LUBE OIL	IN	I:Z: I:H17861:		
B31AK 7A	C002A AC CIRC LUBE OIL	IN	I:Z: I:H17861:		
B31AK 8A	B001A GEN LOSS OF FIELD	IN	I:Z: I:H17863:		
B31AK 9A	B001A GEN OVERCURRENT	IN	I:Z: I:H17863:		
B31AK 10A	B001A GEN OVERCURRENT	IN	I:Z: I:H17860:		
B31AK 11A	FIELD BKR CONT EXC TRANS	IN	I:Z: I:H17862:		
B31AK 12A	FIELD APP,UNDERVOLT AUX	IN	I:Z: I:H17862:		
B31AK 13A	B001A GEN AUX LOCKOUT	IN	I:Z: I:H17860:		
B31AK 14A	AC AUX CONT SIGNAL FAIL	IN	I:Z: I:H17862:		

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DO: DWG, T: REF, E: P&ID/ R: ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AK 15A	GENERATOR/PUMP MOTOR	N Z	N:H17863		
B31AK 16A	B001A GEN NEUT OVERVOLT	N Z	N:H17863		
B31AK 17A	EXCITATION TRANSFER	N Z	N:H17862		
B31AK 18A	C001A PMP START SEQ TIME	N Z	N:H17862		
B31AK 19A	GEN WINDING OVERTEMP	N Z	N:H17862		
B31AK 20A	MOTOR WINDING OVERTEMP	N Z	N:H17862		
B31AK 21A	RECIRC A RUNBACK	N Z	N:H17862		
B31AK 22A	B001A GEN OVERCURRENT	N Z	N:H17863		
B31AK 23A	FEEDWATER INTERLOCK	N Z	N:H17862		
B31AK 24A	FIELD EXC OVERCURRENT	N Z	N:H17863		
B31AK 25A	EXC FIELD OVERCURRENT	N Z	N:H17861		
B31AK 26A	GEN LOSS OF FIELD AUX	N Z	N:H17861		
B31AK 27A	INCOMPLETE START UP SEQ	N Z	N:H17862		
B31AK 28A	GEN FIELD GROUND DETECT	N Z	N:H17862		
B31AK 29A	C005A DC AUX LUBE OIL	N Z	N:H17862		
B31AK 30A	FLUID OR HI OIL TEMP AUX	N Z	N:H17860		
B31AK 31A	C002A AC CIRC LUBE OIL	N Z	N:H17861		
B31AK 32A	C003A AC CIRC LUBE OIL	N Z	N:H17861		
B31AK 33A	SCOOP TUBE LOCK	N Z	N:H17862		
B31AK 34A	C005A LUBE OIL PRESS	N Z	N:H17862		
B31AK 35A	C004A AC CIRC LUBE OIL	N Z	N:H17861		

REPORT DATE : 08/29/86

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

DRAWING NO.: A-18172 REV.: 0
SHEET NO.: 30

MPL NUMBER		COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AK	36A	C004A AC CIRC LUBE OIL	3N	H17861		
B31AK	37A	OPERATIONAL SPARE	3N	H17860		
B31AK	38A	C002A AC CIRC LUBE OIL	3N	H17861		
B31AK	39A	C003A AC CIRC LUBE OIL	3N	H17861		
B31AK	40A	C004A AC CIRC LUBE OIL	3N	H17861		
B31AK	41A	DC CONTROL PWR TRANSFER	3N	H17860		
B31AK	42A	NORMAL DC CONT PWR U/V	3N	H17860		
B31AK	43A	ATMS	3N	H17861		
B31AK	43C	ATMS	3N	H17861		
B31AK	44A	F031A PUMP DISCH ISOL	8S	Y1H17865	MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT	
B31AK	45A	F031A PUMP DISCH ISOL	8S	Y1H17865	MODE A,B/CONTROLS F031A JOGGING CKT/MG DRIVE MTR CKT	
B31AK	46A	F031A JOGGING CIRCUIT	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	47A	F031A SEQ TIMER	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	48A	F031A AUX TIMER	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	49A	F031A JOGGING CIRCUIT	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	50A	F031A JOGGING CIRCUIT	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	51A	F031A JOGGING CIRCUIT	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	52A	F031A JOGGING CIRCUIT	8S	Y1H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK	53A	B001A GEN OVERCURRENT	3N	H17863		
B31AK	54A	C001A GEN PUMP MOTOR	3N	H17860		
B31AK	55A	C001A GEN PUMP MOTOR	3N	H17862		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 31

MPL NUMBER		COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	TY	IN	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AM	1A	2C01A GEN FIELD AMMETER					H17863		
B31AM	2A	DC EXC FIELD VOLTMETER					H17863		
B31AM	3A	2 001A GEN AMMETER					H17863		
B31AM	4A	AC FIELD VOLTMETER					H17863		
B31AMT	1A	TELEWATT METER TRANS					H17863		
B31AR	3A	PUMP PWR SIGNAL TO COMP					H17863		
B31AR	4A	GEN NEUT GROUNDING					H17863		
B31AR	5A	2G001A GEN FIELD AMMETER					H17863		
B31AR	6A	2G001A GEN FIELD AMMETER					H17863		
B31AR	7A	LOCKOUT BUS POWER AVAIL					H17861		
B31AR	8A	MG SET A SPEED CONT SYS					H17864		
B31AS	1A	2G001A MG SET A					H17862		
B31AS	2	2C001A PUMP VIBRATION					H17861		
B31AS	3A	SCOOP TUBE BRAKE					H17861		
B31AS	4A	2C002A AC CIRC LUBE OIL					H17861		
B31AS	5A	2C003A AC CIRC LUBE OIL					H17861		
B31AS	6A	2C004A AC CIRC LUBE OIL					H17861		
B31AS	7A	RECIRC A RUNBACK					H17862		
B31AS	8A	F023A PUMP SUCTION ISOL					H17865	APP R	
B31AS	9A	F031A PUMP DISCH ISOL					H17865	MODE A,B/F031A MANUAL OPEN AND CLOSE CONTROL	
B31AS	11A	FIELD GROUND RELAY TEST					H17862		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 32

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	IT	IM	IE	IR	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31A8 12A	3001A MG SET A TRIP TEST	EN	I	3	I	Z	I	N	H17862	
B31A9 7001A	C002A AC CIRC LUBE OIL	EN	I	3	I	Z	I	N	H17861	PB/A1
B31A9 7002A	C003A AC CIRC LUBE OIL	EN	I	3	I	Z	I	N	H17861	PB/A2
B31AC 7003A	C004A AC CIRC LUBE OIL	EN	I	3	I	Z	I	N	H17861	PB/A3
B31A9 7004A	C005A DC AUX LUBE OIL	EN	I	3	I	Z	I	N	H17862	CS/1A
B31A9 7005A	FLUID DR CASE BREATHER	EN	I	3	I	Z	I	N	H17862	B/A4
B31AT 1A	REGULATOR REF VOLTAGE	EN	I	3	I	Z	I	N	H17863	
B31AT 2A	METERING POTENTIAL	EN	I	3	I	Z	I	N	H17863	
B31AT 3A	GEN NEUTRAL GROUNDING	EN	I	3	I	Z	I	N	H17863	
B31AT 4A	REGULATOR POWER SUPPLY	EN	I	3	I	Z	I	N	H17863	
B31AT 5A	REGULATOR POWER SUPPLY	EN	I	3	I	Z	I	N	H17863	
B31AYR 1A	VOLTAGE REGULATOR	EN	I	3	I	Z	I	N	H17863	

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 33

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	IT	IE	IR	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER OR ELEMENTARY
B318C8 10	B0018 MG SET B GEN FIELD	BN	3	Z	N	H	17903		
B318D8 10	B0018 DRIVE MOTOR	BN	3	Z	N	H	17902		
B318D8 20	B0018 DRIVE MOTOR	BN	3	Z	N	H	17902		
B318D8 30	LOCKOUT BUS POWER AVAIL	BN	3	Z	N	H	17903		
B318D8 40	C0028 AC CIRC LUBE OIL	BN	3	Z	N	H	17903		
B318D8 50	C0028 AC CIRC LUBE OIL	BN	3	Z	N	H	17903		
B318D8 60	C0038 AC CIRC LUBE OIL	BN	3	Z	N	H	17903		
B318D8 70	C0038 AC CIRC LUBE OIL	BN	3	Z	N	H	17903		
B318D8 80	C0058 DC AUX LUBE OIL	BN	3	Z	N	H	17904		
B318D8 90	C0058 DC AUX LUBE OIL	BN	3	Z	N	H	17904		
B318D8 100	F0238 PUMP SUCTION ISOL	BN	3	Z	N	H	17907		
B318D8 110	F0238 PUMP SUCTION ISOL	BN	3	Z	N	H	17907		
B318D8 120	F0318 PUMP DISCH ISOL	BB	1	Z	Y	H	17907	MODE A,B/RED INDICATES F0318 NOT FULLY CLOSED	
B318D8 130	F0318 PUMP DISCH ISOL	BB	1	Z	Y	H	17907	MODE A,B/GREEN INDICATES F0318 NOT FULLY OPEN	
B318D8 140	GEN FIELD BKR TRIPPED	BN	3	Z	N	H	17903		
B318D8 150	RECIRC FLOW LIMITED	BN	3	Z	N	H	17904		
B318D8 160	B0018 MG SET B LOCKOUT	BP	3	Z	N	H	17902		
B318D8 190	B0018 MG SET B LOCKOUT	BN	3	Z	N	H	17902		
B318D8 200	GEN FIELD BKR CLOSED	BN	3	Z	N	H	17903		
B318D8 210	GEN FIELD BKR TRIPPED	BN	3	Z	N	H	17903		
B318D8 220	C0048 AC CIRC [illegible] OIL	BN	3	Z	N	H	17903		

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	OT	TM	ER	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER OR ELEMENTARY
B318D8 238	CO04B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 258	CO02B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 268	CO02B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 278	CO03B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 288	CO03B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 298	CO04B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 308	CO04B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 318	GEN FIELD BKR CLOSED	EN	E	3	Z	EN1H17903		
B318D8 328	CO02B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 338	CO03B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 348	CO04B AC CIRC LUBE OIL	EN	E	3	Z	EN1H17903		
B318D8 358	CO01B GEN DRIVE MOTOR	EN	E	3	Z	EN1H17902		
B318D8 35D	CO01B GEN DRIVE MOTOR	EN	E	3	Z	EN1H17902		
B318D8 368	RHR ABNORM COND OR TEST	ES	E	1	Z	EY1H17907	MODE A,B/CLEAR IND F0318 RHR ABNORMAL COND OR TEST	
B318F 18	GEN FLD BKR ELECT PROT	EN	E	3	Z	EN1H17903		
B318F 28	GEN FLD BKR ELECT PROT	EN	E	3	Z	EN1H17903		
B318F 38	GEN FLD BKR ELECT PROT	EN	E	3	Z	EN1H17903		
B318F 48	GEN FLD BKR ELECT PROT	EN	E	3	Z	EN1H17903		
B318F 58	M2B ELECT PROTECTION	EN	E	3	Z	EN1H17905		
B318F 68	M2B ELECT PROTECTION	EN	E	3	Z	EN1H17905		
B318F 78	CO01B ELECT PROTECTION	EN	E	3	Z	EN1H17902		

REPORT DATE : 08/29/96

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-15172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 35

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	IT	IE	IR	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B318F 88	S0018 ELECT PROTECTION		N		3	Z	H17902		
B318F 98	C0028 ELECT PROTECTION		N		3	Z	H17903		
B318F 108	C0028 ELECT PROTECTION		N		3	Z	H17903		
B318F 118	C0038 ELECT PROTECTION		N		3	Z	H17903		
B318F 128	C0038 ELECT PROTECTION		N		3	Z	H17903		
B318F 138	C0058 ELECT PROTECTION		N		3	Z	H17904		
B318F 148	C0058 ELECT PROTECTION		N		3	Z	H17904		
B318F 178	VR1B ELECT PROTECTION		N		3	Z	H17905		
B318F 188	VR1B ELECT PROTECTION		N		3	Z	H17905		
B318F 198	VR1B ELECT PROTECTION		N		3	Z	H17905		
B318F 208	VR1B ELECT PROTECTION		N		3	Z	H17905		
B318F 218	M4B,R6238,MT1B ELEC PROT		N		3	Z	H17905		
B318F 228	M4B,R6238,MT1B ELEC PROT		N		3	Z	H17905		
B318F 238	VR1B ELECT PROTECTION		N		3	Z	H17905		
B318F 248	VR1B ELECT PROTECTION		N		3	Z	H17905		
B318F 258	GEA FLD GR DET ELEC PROT		N		3	Z	H17904		
B318F 268	GEA FLD GR DET ELEC PROT		N		3	Z	H17904		
B318F 278	125 VDC ELECT PROT		N		3	Z	H17902		
B318F 288	125 VDC ELECT PROT		N		3	Z	H17902		
B318F 298	125 VDC ELECT PROT		N		3	Z	H17902		
B318F 308	125 VDC ELECT PROT		N		3	Z	H17902		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-16172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 36

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	ID: DWG. T: REF. E: P&ID/ R: ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B318F 318	PBNET X-102A BACKUP PROT	EN 3Z	EN:H17904		
B318F 348	F0318 JOGGING CIRCUIT	EB 11Z	EY:H17870	MODE A,B/120 VAC PROTECTION TO F0318 JOGGING CIRCUIT	
B318F 70018	MG SET B SPEED CONT 89B	EN 3Z	EN:H17906		F118 IN H11-P612
B318J 28	K6168 SPEED LIMITER NO 1	EN 3Z	EN:H17906		
B318K 181	B0018 AUX TO FIELD BKR	EN 3Z	EN:H17904		
B318K 18	B0018 AUX TO FIELD BKR	ER 3Z	EN:H17904		
B318K 28	F0318 AND LOW PR FLOW	EN 3Z	EN:H17904		
B318K 38	B0018 GENERATOR LOCKOUT	EN 3Z	EN:H17903		
B318K 48	C0018 PUMP START	EN 3Z	EN:H17904		
B318K 58	FLUID DR SCOOP TUBE LOCK	EN 3Z	EN:H17903		
B318K 68	C0038 AC CIRC LUBE OIL	EN 3Z	EN:H17903		
B318K 78	C0028 AC CIRC LUBE OIL	EN 3Z	EN:H17903		
B318K 88	B0018 GEN LOSS OF FIELD	EN 3Z	EN:H17905		
B318K 98	B0018 GEN OVERCURRENT	EN 3Z	EN:H17908		
B318K 108	B0018 GEN OVERCURRENT	EN 3Z	EN:H17902		
B318K 118	FIELD BKR CONT EXC TRANS	EN 3Z	EN:H17904		
B318K 128	FIELD APP,UNDERVOLT AUX	EN 3Z	EN:H17904		
B318K 138	B0018 GEN AUX LOCKOUT	EN 3Z	EN:H17902		
B318K 148	AC AUX CONT SIGNAL FAIL	EN 3Z	EN:H17904		
B318K 158	GENERATOR/PUMP MOTOR	EN 3Z	EN:H17908		
B318K 168	B0018 GEN NEUT OVERVOLT	EN 3Z	EN:H17905		

REPORT DATE : 09/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: C
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 37

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IQ	IT	IR	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B318K 178	EXCITATION TRANSFER		N			H17904		
B318K 188	C0018 PMP START SEQ TIME		N			H17904		
B318K 198	GEN WINDING OVERTEMP		N			H17904		
B318K 208	MOTOR WINDING OVERTEMP		N			H17904		
B318K 218	RECIRC B RUNBACK		N			H17904		
B318K 228	B0018 GEN OVERCURRENT		N			H17908		
B318K 238	FEEDWATER INTERLOCK		N			H17904		
B318K 248	FIELD EXC OVERCURRENT		N			H17905		
B318K 258	EXC FIELD OVERCURRENT		N			H17903		
B318K 268	GEN LOSS OF FIELD AUX		N			H17903		
B318K 278	INCOMPLETE START UP SEQ		N			H17904		
B318K 288	GEN FIELD GROUND DETECT		N			H17904		
B318K 298	C0058 DC AUX LUBE OIL		N			H17904		
B318K 308	FLUID DR HI OIL TEMP AUX		N			H17902		
B318K 318	C0028 AC CIRC LUBE OIL		N			H17903		
B318K 328	C0038 AC CIRC LUBE OIL		N			H17903		
B318K 338	B0008P TUBE LOCK		N			H17904		
B318K 348	C0058 LUBE OIL PRESS		N			H17904		
B318K 358	C0048 AC CIRC LUBE OIL		N			H17903		
B318K 368	C0048 AC CIRC LUBE OIL		N			H17903		
B318K 378	OPERATIONAL SPARE		N			H17902		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-19172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 38

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
8318K 388	CO028 AC CIRC LUBE OIL	EN 83Z	EN:H17903		
8318K 398	CO038 AC CIRC LUBE OIL	EN 83Z	EN:H17903		
8318K 408	CO048 AC CIRC LUBE OIL	EN 83Z	EN:H17903		
8318K 418	DC CONTROL PWR TRANSFER	EN 83Z	EN:H17902		
8318K 428	NORMAL DC CCKT PWR U/V	EN 83Z	EN:H17902		
8318K 438	ATMS	EN 83Z	EN:H17903		
8318K 448	ATMS	EN 83Z	EN:H17903		
8318K 448	FO318 PUMP DISCH ISOL	ES 81Z	EY:H17907	MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT	
8318K 458	FO318 PUMP DISCH ISOL	ES 81Z	EY:H17907	MODE A,B/CONTROLS FO318 JOGGING CKT/MG DRIVE MTR CKT	
8318K 468	FO318 JOGGING CIRCUIT	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 478	FO318 SEQ TIMER	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 488	FO318 AUX TIMER	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 498	FO318 JOGGING CIRCUIT	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 508	FO318 JOGGING CIRCUIT	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 518	FO318 JOGGING CIRCUIT	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 528	FO318 JOGGING CIRCUIT	ES 81Z	EY:H17870	MODE A,B/CONTROLS FO318 JOGGING CIRCUIT	
8318K 538	GO018 GEN OVERCURRENT	EN 83Z	EN:H17905		
8318K 548	CO018 GEN PUMP MOTOR	EN 83Z	EN:H17902		
8318K 558	CO018 GEN PUMP MOTOR	EN 83Z	EN:H17904		
8318M 18	GO018 GEN FIELD AMMETER	EN 83Z	EN:H17905		
8318M 28	DC EXC FIELD VOLTMETER	EN 83Z	EN:H17905		

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO DWG, IT REF, IE F&ID/IR ELEM	NODE/REMARKS	TAG NUMBER ON ELEMENTARY
8318M 38	50018 GEN AMMETER	2N 1 13 2	2N H17905		
8318N 48	AC FIELD VOLTMETER	2N 1 13 2	2N H17905		
8318MT 18	TELEMATT METER TRANS	2N 1 13 2	2N H17905		
8318R 38	PUMP PWR SIGNAL TO COMP	2N 1 13 2	2N H17905		
8318R 48	GEN NEUT GROUNDING	2N 1 13 2	2N H17905		
8318R 58	80018 GEN FIELD AMMETER	2N 1 13 2	2N H17905		
8318R 68	80018 GEN FIELD AMMETER	2N 1 13 2	2N H17905		
8318R 78	LOCKOUT BUS POWER AVAIL	2N 1 13 2	2N H17903		
8318R 88	MG SET B SPEED CONT SYS	2N 1 13 2	2N H17906		
83185 18	90018 MG SET B	2N 1 13 2	2N H17904		
83185 2	C0018 PUMP VIBRATION	2N 1 13 2	2N H17903		
83185 38	SCOOP TUBE BRAKE	2N 1 13 2	2N H17903		
83185 48	C0028 AC CIRC LUBE OIL	2N 1 13 2	2N H17903		
83185 58	C0038 AC CIRC LUBE OIL	2N 1 13 2	2N H17903		
83185 68	C0048 AC CIRC LUBE OIL	2N 1 13 2	2N H17903		
83185 78	RECIRC B RUNBACK	2N 1 13 2	2N H17904		
83185 88	F0238 PUMP SUCTION ISOL	2N 1 13 2	2N H17907		
83185 98	F0318 PUMP DISCH ISOL	1B 1 11 2	2Y H17907	NODE A,B/F0318 MANUAL OPEN AND CLOSE CONTROL	
83185 118	FIELD GROUND RELAY TEST	2N 1 13 2	2N H17904		
83185 128	90018 MG SET B TRIP TEST	2N 1 13 2	2N H17904		
83185 70018	C0028 AC CIRC LUBE OIL	2N 1 13 2	2N H17903		PB/81

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 40

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	QD ST RE RI	DWG. REF. &ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B3185 70028	C0038 AC CIRC LUBE OIL	PN	3 2	N1H17903		P8/82
B3185 70038	C0048 AC CIRC LUBE OIL	PN	3 2	N1H17903		P8/83
B3185 70048	C0058 DC AUX LUBE OIL	PN	3 2	N1H17904		C3/18
B3185 70058	FLUID DR CASE BREATHER	PN	3 2	N1H17904		19/84
B318T 18	REGULATOR REF VOLTAGE	PN	3 2	N1H17905		
B318T 28	METERING POTENTIAL	PN	3 2	N1H17905		
B318T 38	GEN NEUTRAL GROUNDING	PN	3 2	N1H17905		
B318T 48	REGULATOR POWER SUPPLY	PN	3 2	N1H17905		
B318T 58	REGULATOR POWER SUPPLY	PN	3 2	N1H17905		
B318VR 18	VOLTAGE REGULATOR	PN	3 2	N1H17905		

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			

REACTOR RECIRCULATION SYSTEM (B31) DRAWING NO. A-18172

REVISION STATUS SHEET SHEET 2

SHEET	LATEST REV	SHEET	LATEST REV	SHEET	LATEST REV	SHEET	LATEST REV	SHEET	LATEST REV
1	0								
2	0								
3	0								
4	0								
5	0								
6	0								
7	0								
8	0								
9	0								
10	0								
11	0								
12	0								
13	0								
14	0								
15	0								
16	0								
17	0								
18	0								
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26	0								
27	0								
28	0								
29	0								
30	0								
31	0								
32	0								
33	0								
34	0								
35	0								
36	0								
37	0								
38	0								
39	0								
40	0								

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 thrcugh 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:

- 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:

- Reactor Core Cooling Geometry
- Reactor Coolant Pressure Boundary (RCPB) Integrity
- Reactor Coolant Inventory
- 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".

B31

MODE 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	PROVIDE THE CAPABILITY TO PREVENT OR MITIGATE THE CONSEQUENCES OF ACCIDENTS WHICH COULD RESULT IN POTENTIAL OFF-SITE EXPOSURE EXCEED'G 10CFR100 LIMITS
A. Normal Operation	Yes	Yes	No
B. LPCI Injection	Yes	Yes	Yes
C. Recirculation Pump Trips	NA	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

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFI NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	P&ID REF	MODES/REMARKS
1	C001A	Reactor Recirc Pump A	S	P	A	1	Z		H-16066	Modes A,C RCPB, Reactivity Control on Pump Trip
2	C001B	Reactor Recirc Pump B	S	P	A	1	Z		H-16066	Modes A,C RCPB, Reactivity Control on Pump Trip
3	C002A	S001A Lube Oil Circ Pump A1	N				Z		H-1[illegible]	
4	C002B	S001B Lube Oil Circ Pump B1	N				Z		H-160[illegible]	
5	C003A	S001A Lube Oil Circ Pump A2	N				Z		H-16076	
6	C003B	S001B Lube Oil Circ Pump B2	N				Z		H-16076	
7	C004A	S001A Lube Oil Circ Pump A3	N				Z		H-16076	
8	C004B	S001B Lube Oil Circ Pump B3	N				Z		H-16076	
9	C005A	S001A Lube Oil Circ Pump C	N				Z		H-16076	
10	C005B	S001B Lube Oil Circ Pump D	N				Z		H-16076	
11	D002A	Pump A Seal Water FCV	N		B		Z		H-16066	
12	D002B	Pump B Seal Water FCV	N		B		Z		H-16066	
13	D003A	Lube Oil Filter	N				Z		H-16076	
14	D003B	Lube Oil Filter	N				Z		H-16076	
15	D004A	Emergency Lube Oil Filter	N				Z		H-16076	
16	D004B	Emergency Lube Oil Filter	N				Z		H-16076	
17	F001A	Seal Water A Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
18	F001B	Seal Water B Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
19	F002A	Seal Water A Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
20	F002B	Seal Water B Vent Globe Vlv	S	P	A	1	Z		H-16066	Mode F RCPB
21	F003A	EFCV For PI-N005A	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
22	F003B	EFCV For PI-N005B	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
23	F004A	EFCV For PI-N006A	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
24	F004B	EFCV For PI-N006B	S	P	A	1	Z		H-16066	Modes A,F Containment Isolation
25	F005A	PI-N005A Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
26	F005B	PI-N005B Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
27	F006A	PI-N006A Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
28	F006B	PI-N006B Iso Globe Valve	S	P	A	1	Z		H-16066	Modes A,F RCPB
29	F008A	Seal Water A Iso Gate Valve	N		B		Z		H-16066	
30	F008B	Seal Water B Iso Gate Valve	N		B		Z		H-16066	
31	F009A	EFCV For FI-N014A	S	P	A	1	Z		H-16066	Mode A Containment Isolation

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 3-2/1	FSRVMNT QUAL. H/Z	SPEC Rev.	DWG REF	MODES/REMARKS
32	F009B	EFCV for FT-N014B	S	P	A	1	Z		H-16066	Mode A Containment Isolation
33	F009C	EFCV For FT-N014C	S	P	A	1	Z		H-16066	Mode A Containment Isolation
34	F009D	EFCV For FT-N014D	S	P	A	1	Z		H-16066	Mode A Containment Isolation
35	F010A	EFCV For FT-N014A	S	P	A	1	Z		H-16066	Mode A Containment Isolation
36	F010B	EFCV For FT-N014B	S	P	A	1	Z		H-16066	Mode A Containment Isolation
37	F010C	EFCV For FT-N014C	S	P	A	1	Z		H-16066	Mode A Containment Isolation
38	F010D	EFCV For FT-N014D	S	P	A	1	Z		H-16066	Mode A Containment Isolation
39	F011A	EFCV For FT-N024A	S	P	A	1	Z		H-16066	Mode A Containment Isolation
40	F011B	EFCV For FT-N024B	S	P	A	1	Z		H-16066	Mode A Containment Isolation
41	F011C	EFCV For FT-N024C	S	P	A	1	Z		H-16066	Mode A Containment Isolation
42	F011D	EFCV For FT-N024D	S	P	A	1	Z		H-16066	Mode A Containment Isolation
43	F012A	EFCV For FT-N024B	S	P	A	1	Z		H-16066	Mode A Containment Isolation
44	F012B	EFCV For FT-N024B	S	P	A	1	Z		H-16066	Mode A Containment Isolation
45	F012C	EFCV For FT-N024C	S	P	A	1	Z		H-16066	Mode A Containment Isolation
46	F012D	EFCV For FT-N024D	S	P	A	1	Z		H-16066	Mode A Containment Isolation
47	F013A	Seal Wtr A Iso Check Valve	S	P	A	1	Z		H-16066	Mode F Containment Isolation
48	F013B	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	N		B		Z		H-16066	
52	F015B	Seal Wtr Relief Valve	N		B		Z		H-16066	
53	F016A	Seal Wtr A Iso Gate Valve	N		B		Z		H-16066	
54	F016B	Seal Wtr B Iso Gate Valve	N		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	CRDIA Suction Iso Gate Valve	S	P	A	1	Z	Y	H-16066	Modes A,B RCPB, App R

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRNT QUAL. H/Z	SPEC REV.	DWG REF	MODES/REMARKS
63	F023B	C001B Suction Iso Gate Valve	S	P	A	1	Z	Y	H-16066	Modes A,B RCPB, App R
64	F024A	F023A Stem Leakoff Globe	S	P	B	1	Z		H-16066	Mode A RCPB
65	F024B	F023B Stem Leakoff Globe	S	P	B	1	Z		H-16066	Mode A RCPB
66	F025A	F023A Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
67	F025B	F023B Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
68	F026A	F023A Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
69	F026B	F023B Casing Vent Globe	S	P	A	1	Z		H-16066	Mode A RCPB
70	F027A	F023A Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
71	F027B	F023B Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
72	F028A	F023A Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
73	F028B	F023B Casing Drain Globe	S	P	A	1	Z		H-16066	Mode A RCPB
74	F029	RPV Drain Globe Valve	S	P	A	1	Z		H-16066	Mode E RCPB
75	F030	RPV Drain Globe Valve	S	P	A	1	Z		H-16065	Mode E RCPB
76	F031A	C001A Outlet Iso Gate Valve	S	A	A	1	H		H-16066	Modes A,B,G RPV Coolant Inventory
77	F031B	C001B Outlet Iso Gate Valve	S	A	A	1	H		H-16066	Modes A,B,G RPV Coolant Inventory
78	F033A	F031A Stem Leakoff Globe	S	P	B	1	Z		H-16066	Modes A, B RCPB
79	F033B	F031B Stem Leakoff Globe	S	P	B	1	Z		H-16066	Modes A, B RCPB
80	F034A	F031A Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
81	F034B	F031B Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
82	F035A	F031A Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
83	F035B	F031B Casing Vent Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
84	F036A	F031A Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
85	F036B	F031B Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
86	F037A	F031A Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
87	F037B	F031B Casing Drain Globe	S	P	A	1	Z		H-16066	Modes A, B RCPB
88	F039A	dPI-N015A Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
89	F039B	dPI-N015B Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
90	F039C	dPI-N015A Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
91	F039D	dPI-N015B Iso Globe Valve	S	P	A	1	Z		H-16066	Mode A RCPB
92	F040A	EFCV for dPI-N015A	S	P	A	1	Z		H-16066	Mode A Containment Isolation
93	F040B	EFCV for dPI-N015B	S	P	A	1	Z		H-16065	Mode A Containment Isolation

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFG NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRNT QUAL. M/Z	SPEC REQ.	DWG. REF	MODES/REMARKS
94	F040C	EFCV For dPI N015A	3	P	A	1	Z		H-16066	Mode A Containment Isolation
95	F040D	EFCV For dPI N015B	3	P	A	1	Z		H-16066	Mode A Containment Isolation
96	F041A	FI-N014A Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
97	F041B	FI-N024B Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
98	F041C	FI-N014C Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
99	F041D	FI-N024D Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
100	F042A	FI-N014A Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
101	F042B	FI-N024B Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
102	F042C	FI-N014C Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
103	F042D	FI-N024D Iso Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
104	F051A	Loop A Drain Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
105	F051B	Loop B Drain Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
106	F052A	Loop A Drain Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
107	F052B	Loop B Drain Globe Valve	3	P	A	1	Z		H-16066	Mode A RCPB
108	F055B	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
109	F055C	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
110	F055D	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
111	F055E	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
112	F055F	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
113	F055G	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
114	F055H	EFCV Spare	3	P	A	1	Z		H-16066	Mode A RCPB
115	F056A	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
116	F056B	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
117	F056C	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
118	F056D	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
119	F056E	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
120	F056F	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
121	F056G	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
122	F056H	Globe Valve Spare	3	P	A	1	Z		H-16066	Mode A RCPB
123	F057A	EFCV (SPARE) Loop A	3	P	A	1	Z		H-16066	Mode A RCPB
124	F057B	EFCV (SPARE) Loop B	3	P	A	1	Z		H-16066	Mode A RCPB

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFL No.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 3-2/1	ENVIRNT QUAL. N/I	SPEC REV.	DWG REF	MODES/REMARKS
125	F050A	Globe Valve Spare Loop A	S	P	A	1	I		H-16066	Mode A RCPB
126	F050B	Globe Valve Spare Loop B	S	P	A	1	I		H-16066	Mode A RCPB
127	F059	Sample Line Iso Globe Valve	S	P	A	1	I		H-16066	Mode D RCPB
128	F060	Sample Line Vent Globe Valve	S	P	A	1	I		H-16066	Mode D RCPB
129	F061	Sample Line Vent Globe Valve	S	P	A	1	I		H-16066	Mode D RCPB
130	F062A	PI-N005A Test Globe Valve	S	P	A	1	I		H-16066	Modes A,F RCPB
131	F062B	PI-N005B Test Globe Valve	S	P	A	1	I		H-16066	Modes A,F RCPB
132	F063A	PI-N005A Test Globe Valve	S	P	A	1	I		H-16066	Modes A,F RCPB
133	F063B	PI-N005B Test Globe Valve	S	P	A	1	I		H-16066	Modes A,F RCPB
134	F064A	Seal A Test Globe	S	P	B	1	I		H-16066	Mode F RCPB
135	F064B	Seal B Test Globe	S	P	B	1	I		H-16066	Mode F RCPB
136	F065A	Seal A Test Globe	S	P	B	1	I		H-16066	Mode F RCPB
137	F065B	Seal B Test Globe	S	P	B	1	I		H-16066	Mode F RCPB
138	F066A	Fluid Drive A Check Valve	N				I		H-16076	
139	F066B	Fluid Drive B Check Valve	N				I		H-16076	
140	F068A	Seal Wtr A Test Globe Vlv	S	P	A	1	I		H-16066	
141	F068B	Seal Wtr B Test Globe Vlv	S	P	A	1	I		H-16066	
142	F069A	Seal Wtr A Test Globe Vlv	S	P	A	1	I		H-16066	
143	F069B	Seal Wtr B Test Globe Vlv	S	P	A	1	I		H-16066	
144	F153A	Pump A3 Outlet Check Valve	N				I		H-16076	
145	F153B	Pump B3 Outlet Check Valve	N				I		H-16076	
146	F154A	Pump A2 Outlet Check Valve	N				I		H-16076	
147	F154B	Pump B2 Outlet Check Valve	N				I		H-16076	
148	F155A	Pump A1 Outlet Check Valve	N				I		H-16076	
149	F155B	Pump B1 Outlet Check Valve	N				I		H-16076	
150	F156A	Pump A3 Outlet Gate Valve	N				I		H-16076	
151	F156B	Pump B3 Outlet Gate Valve	N				I		H-16076	
152	F157A	Pump A2 Outlet Gate Valve	N				I		H-16076	
153	F157B	Pump B2 Outlet Gate Valve	N				I		H-16076	
154	F158A	Pump A1 Outlet Gate Valve	N				I		H-16076	
155	F158B	Pump B1 Outlet Gate Valve	N				I		H-16076	

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MFL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S A N P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRN QUAL. H/Z	SPEC REQ.	PNG REF	NOTES/REMARKS
156	F154A	Pump A3 Suction Gate Valve	N			Z		H-16076	
157	F154B	Pump B3 Suction Gate Valve	N			Z		H-16076	
158	F160A	Pump A2 Suction Gate Valve	N			Z		H-16076	
159	F160B	Pump B2 Suction Gate Valve	N			Z		H-16076	
160	F161A	Pump A1 Suction Gate Valve	N			Z		H-16076	
161	F161B	Pump B1 Suction Gate Valve	N			Z		H-16076	
162	F162A	Aux Pump A Relief Valve	N			Z		H-16076	
163	F162B	Aux Pump B Relief Valve	N			Z		H-16076	
164	F163A	MG A Lo Pressure Relief Vlv	N			Z		H-16076	
165	F163B	MG B Lo Pressure Relief Vlv	N			Z		H-16076	
166	F164A	MG Set A Lube PCV	N			Z		H-16076	
167	F164B	MG Set B Lube PCV	N			Z		H-16076	
168	F165A	Aux Pump A outlet Check Valv	N			Z		H-16076	
169	F165B	Aux Pump B outlet Check Valv	N			Z		H-16076	
170	F167A	Oil Fluid Drive A Gate	N			Z		H-16076	
171	F167B	Oil Fluid Drive B Gate	N			Z		H-16076	
172	F5001A	Pump Header Sample Gate Vlv	N			Z		H-16076	
173	F5001B	Pump Header Sample Gate Vlv	N			Z		H-16076	
174	K600	Pump Seal Cavity Press E/S	N	Z		Z		H-16066	
175	K606A	Recirc Pump B SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
176	K606B	Recirc Pump B SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
177	K606C	Recirc Pump B SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
178	K606D	Recirc Pump B SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
179	K607A	Recirc Pump Flow Summer FT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
180	K607B	Recirc Pump Flow Summer FT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
181	K607C	Recirc Pump Flow Summer FT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
182	K607D	Recirc Pump Flow Summer FT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
183	K608A	Recirc Pump A SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
184	K608B	Recirc Pump A SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
185	K608C	Recirc Pump A SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
186	K608D	Recirc Pump A SURT	S A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51

SYSTEM ---- B31 REACTR RECIRC SYSTEM

SEQ NO.	MFI NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRNT QUAL. H/I	SPEC REQ.	DWG NO.	MODES/REMARKS
187	E609A	Recirc Pump dPT E/S	N		I		I		H-16066	
188	E609B	Recirc Pump dPT E/S	N		I		I		H-16066	
189	E610A	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
190	E610B	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
191	E610C	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
192	E610D	Recirc Pump FT E/S	S	A	I	1	I		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
193	E615	Speed Demand Limiter	N		I		I		H-16068	
194	E616A	Speed Lim And Signal Gen	N		I		I		H-16068	
195	E616B	Speed Lim And Signal Gen	N		I		I		H-16068	
196	E617A	Converter	N		I		I		H-16068	
197	E617B	Converter	N		I		I		H-16068	
198	E618A	Function Generator	N		I		I		H-16068	
199	E618B	Function Generator	N		I		I		H-16068	
200	E619A	Signal Failure Alarm	N		I		I		H-16068	
201	E619B	Signal Failure Alarm	N		I		I		H-16068	
202	E620A	Error Signal Lim Network	N		I		I		H-16068	
203	E620B	Error Signal Lim Network	N		I		I		H-16068	
204	E621A	Speed Limiter	N		I		I		H-16068	
205	E621B	Speed Limiter	N		I		I		H-16068	
206	E632	Control Amplifier	N		I		I		H-16068	
207	E633	Controller	N		I		I		H-16068	
208	E634A	PROP Unit	N		I		I		H-16068	
209	E634B	PROP Unit	N		I		I		H-16068	
210	E635A	Control Amplifier	N		I		I		H-16068	
211	E635B	Control Amplifier	N		I		I		H-16068	
212	E640A	MV/I Con-erter	N		I		I		H-16066	
213	E640B	MV/I Converter	N		I		I		H-16066	
214	N001A	Motor Brng A Cool Outlet TE	S	P	D	1	I		H-16066	Pressure Boundary for P42 System
215	N001B	Motor Brng B Cool Outlet TE	S	P	D	1	I		H-16066	Pressure Boundary for P42 System
216	N002A	Seal Leak Loop A FS	N		I		I		H-16066	
217	N002B	Seal Leak Loop B FS	N		I		I		H-16066	

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ No.	MPL No.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 3-2/1	ENVIRN QUAL. H/Z	SPEC REQ.	DWG REF	MODES/REMARKS
218	N003A	Seal Cool Disch A TE	S	P	B	1	Z		H-16066	Pressure Boundary for P42 System
219	N003B	Seal Cool Disch B TE	S	P	B	1	Z		H-16066	Pressure Boundary for P42 System
220	N003C	MG A Lube Pump Supply Hdr PX	N				Z		H-16076	
221	N003D	MG B Lube Pump Supply Hdr PX	N				Z		H-16076	
222	N004A	Seal Cool Disch FS	S	P	B	1	Z		H-16066	Pressure Boundary for P42 System
223	N004B	Seal Cool Disch FS	S	P	B	1	Z		H-16066	Pressure Boundary for P42 System
224	N004C	MG A Lube Pump Disch Hdr PX	N				Z		H-16076	
225	N004D	MG B Lube Pump Supply Hdr PX	N				Z		H-16076	
226	N005A	Seal Press Loop A PI	N		Z		Z		H-16066	
227	N005B	Seal Press Loop B PI	N		Z		Z		H-16066	
228	N006A	Seal Press Loop A PI	N		Z		Z		H-16066	
229	N006B	Seal Press Loop B PI	N		Z		Z		H-16066	
230	N007A	Control Seal Leak Loop A FS	N		Z		Z		H-16066	
231	N007B	Control Seal Leak Loop B FS	N		Z		Z		H-16066	
232	N013A	Recirc Flow Loop A FE	S	P	A	1	Z		H-16066	Modes A,G RCPB
233	N013B	Recirc Flow Loop B FE	S	P	A	1	Z		H-16066	Modes A,G RCPB
234	N014A	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
235	N014B	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
236	N014C	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
237	N014D	Recirc Flow Loop A FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
238	N015A	Recirc Pump C001A DPI	N		Z		Z		H-16066	
239	N015B	Recirc Pump C001B DPI	N		Z		Z		H-16066	
240	N023A	Recirc Pump C001A Suct TE	S	P	A	1	Z		H-16066	Mode A RCPB
241	N023B	Recirc Pump C001B Suct TE	S	P	A	1	Z		H-16066	Mode A RCPB
242	N024A	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
243	N024B	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
244	N024C	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
245	N024D	Recirc Flow Loop B FT	S	A	Z	1	Z		H-16066	Mode A Reactivity Control Trip Signal Input to 2C51
246	N035A	Recirc Pump C001A Suct TE	S	P	A	1	Z		H-16066	Mode A RCPB
247	N035B	Recirc Pump C001B Suct TE	S	P	A	1	Z		H-16066	Mode A RCPB
248	N036A	A Loop Suction PX	S	P	A	1	Z		H-16066	Mode A RCPB

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S A N r	QUAL GRP	SEIS. CLASS 3-2/1	ENVIRNT QUAL. N/Z	SPEC REV.	DWG REF	MODES/REMARKS
249	N036B	B Loop Suction PX	S P	A	1	Z		H-16066	Mode A RCPB
250	N037A1	Recirc Mtr A Thrust Brng TE	N	Z		Z		H-16066	
251	N037A2	Recirc Mtr B Thrust Brng TE	N	Z		Z		H-16066	
252	N037B1	Recirc Mtr A Thrust Brng TE	N	Z		Z		H-16066	
253	N037B2	Recirc Mtr B Thrust Brng TE	N	Z		Z		H-16066	
254	N037C1	Recirc Mtr Upr Guide Brng TE	N	Z		Z		H-16066	
255	N037C2	Recirc Mtr Upr Guide Brng TE	N	Z		Z		H-16066	
256	N037D1	Recirc Mtr A Wndg Phs A TE	N	Z		Z		H-16066	
257	N037D2	Recirc Mtr B Wndg Phs A TE	N	Z		Z		H-16066	
258	N037E1	Recirc Mtr A Wndg Phs B TE	N	Z		Z		H-16066	
259	N037E2	Recirc Mtr B Wndg Phs B TE	N	Z		Z		H-16066	
260	N037F1	Recirc Mtr A Wndg Phs C TE	N	Z		Z		H-16066	
261	N037F2	Recirc Mtr B Wndg Phs C TE	N	Z		Z		H-16066	
262	N037G1	Recirc Mtr Low Guide Brng TE	N	Z		Z		H-16066	
263	N037G2	Recirc Mtr Low Guide Brng TE	N	Z		Z		H-16066	
264	N038A	Recirc Motor A Oil Low LS	N	Z		Z		H-16066	
265	N038B	Recirc Motor B Oil Low LS	N	Z		Z		H-16066	
266	N039A	Recirc Motor A Oil Hi LS	N	Z		Z		H-16066	
267	N039B	Recirc Motor B Oil Hi LS	N	Z		Z		H-16066	
268	N040A	Recirc Motor A Oil Lo LS	N	Z		Z		H-16066	
269	N040B	Recirc Motor B Oil Lo LS	N	Z		Z		H-16066	
270	N041A	Recirc Pump A VBS	N	Z		Z		H-16066	
271	N041B	Recirc Pump B VBS	N	Z		Z		H-16066	
272	N050A	Recirc Mtr No 2 Seal Cav TE	S P	B	1	Z		H-16066	Mode A RCPB
273	N050B	Recirc Mtr No 2 Seal Cav TE	S P	B	1	Z		H-16066	Mode A RCPB
274	N051A	Recirc Mtr No 1 Seal Cav TE	S P	B	1	Z		H-16066	Mode A RCPB
275	N051B	Recirc Mtr No 1 Seal Cav TE	S P	B	1	Z		H-16066	Mode A RCPB
276	N052A	Drive Mtr A Windg PHS A TE	N	Z		Z		H-16067	
277	N052B	Drive Mtr B Windg PHS A TE	N	Z		Z		H-16067	
278	N053A	Drive Mtr A Windg PHS A TE	N	Z		Z		H-16067	
279	N053B	Drive Mtr B Windg PHS A TE	N	Z		Z		H-16067	

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 3-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	DWG REF	MODES/REMARKS
280	M054A	Drive Mtr A Windg PHS B TE	N		2		2		H-16067	
281	M054B	Drive Mtr B Windg PHS B TE	N		2		2		H-16067	
282	M055A	Drive Mtr A Windg PHS B TE	N		2		2		H-16067	
283	M055B	Drive Mtr B Windg PHS B TE	N		2		2		H-16067	
284	M056A	Drive Mtr A Windg PHS C TE	N		2		2		H-16067	
285	M056B	Drive Mtr B Windg PHS C TE	N		2		2		H-16067	
286	M057A	Drive Mtr A Windg PHS C TE	N		2		2		H-16067	
287	M057B	Drive Mtr B Windg PHS C TE	N		2		2		H-16067	
288	M060A	Generator Winding PHS A TE	N		2		2		H-16067	
289	M060B	Generator Winding PHS A TE	N		2		2		H-16067	
290	M061A	Generator Winding PHS A TE	N		2		2		H-16067	
291	M061B	Generator Winding PHS A TE	N		2		2		H-16067	
292	M062A	Generator Winding PHS B TE	N		2		2		H-16067	
293	M062B	Generator Winding PHS B TE	N		2		2		H-16067	
294	M063A	Generator Winding PHS B TE	N		2		2		H-16067	
295	M063B	Generator Winding PHS B TE	N		2		2		H-16067	
296	M064A	Generator Winding PHS C TE	N		2		2		H-16067	
297	M064B	Generator Winding PHS C TE	N		2		2		H-16067	
298	M065A	Generator Winding PHS C TE	N		2		2		H-16067	
299	M065B	Generator Winding PHS C TE	N		2		2		H-16067	
300	M079A	Reactor ATTS PI	S	A	B	1	2		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
301	M079D	Reactor ATTS PI	S	A	B	1	2		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
302	N101A	S001A Fluid Drive Inlet PS	N		2		2		H-16076	
303	N101B	S001B Fluid Drive Inlet PS	N		2		2		H-16076	
304	N102A	S001A Fluid Drive Inlet PS	N		2		2		H-16076	
305	N102B	S001B Fluid Drive Inlet PS	N		2		2		H-16076	
306	N103A	S001A Fluid Drive Inlet PS	N		2		2		H-16076	
307	N103B	S001B Fluid Drive Inlet PS	N		2		2		H-16076	
308	N104A	S001A Fluid Drive Inlet PS	N		2		2		H-16076	
309	N104B	S001B Fluid Drive Inlet PS	N		2		2		H-16076	
310	N105A	S001A Fluid Drive Inlet PS	N		2		2		H-16076	

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

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S A N P	QUAL GRP	SEIS. CLASS 3-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	DWG REF	MODES/REMARKS
311	N105B	S001B 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	S001A Fluid Drive Inlet RO	N			Z		H-16076	
315	N107B	S001B Fluid Drive Inlet RO	N			Z		H-16076	
316	N108A	S001A Fluid Drive Inlet RO	N			Z		H-16076	
317	N108B	S001B Fluid Drive Inlet RO	N			Z		H-16076	
318	N111A	S001A Hi Lube Alarm IS	N	Z		Z		H-16076	
319	N111B	S001B Hi Lube Alarm IS	N	Z		Z		H-16076	
320	N112A	S001A Hi Lube Temp Trip IS	N	Z		Z		H-16076	
321	N112B	S001B 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 C001A TT	N	Z		Z		H-16066	
329	N601B	Recirc Pump C001B TT	N	Z		Z		H-16066	
330	N601C	Recirc Pump C001A TT	N	Z		Z		H-16066	
331	N601D	Recirc Pump C001B TT	N	Z		Z		H-16066	
332	N679A	Reactor ATTS PIS	S A	Z	1	Z		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
333	N679D	Reactor ATTS PIS	S A	Z	1	Z		H-16063	Rx Press Low Sig to RHR SDC. See E11 SED Mode C
334	N752A	Converter Brng Impeller TE	N	Z		Z		H-16067	
335	N752B	Converter Brng Impeller TE	N	Z		Z		H-16067	
336	N753A	Converter Brng Impeller TE	N	Z		Z		H-16067	
337	N753B	Converter Brng Impeller TE	N	Z		Z		H-16067	
338	N754A	Converter Brng Runner TE	N	Z		Z		H-16067	
339	N754B	Converter Brng Runner TE	N	Z		Z		H-16067	
340	N755A	Converter Brng Runner TE	N	Z		Z		H-16067	
341	N755B	Converter Brng Runner TE	N	Z		Z		H-16067	

SYSTEM ---- B31 REACTOR RECIRC SYSTEM

SEQ NO.	MPL NO.	COMPONENT FUNCTIONAL DESCRIPTION	SAFETY CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVMNT QUAL. H/Z	SPEC REQ.	DWG REF	MODES/REMARKS
342	N756A	Converter Oil Cooler TE	N		Z		Z		H-16067	
343	N756B	Converter Oil Cooler TE	N		Z		Z		H-16067	
344	N757A	Drv Mtr Brng Output End TE	N		Z		Z		H-16067	
345	N757B	Drv Mtr Brng Output End TE	N		Z		Z		H-16067	
346	N758A	Drv Mtr Brng Output End TE	N		Z		Z		H-16067	
347	N758B	Drv Mtr Brng Output End TE	N		Z		Z		H-16067	
348	N759A	Gen Brng Input Shaft End TE	N		Z		Z		H-16067	
349	N759B	Gen Brng Input Shaft End TE	N		Z		Z		H-16067	
350	N760A	Gen Brng Collector End TE	N		Z		Z		H-16067	
351	N760B	Gen Brng Collector End TE	N		Z		Z		H-16067	
352	R001A	Seal Press Loop A PI	N		Z		Z		H-16066	
353	R001B	Seal ress Loop B PI	N		Z		Z		H-16066	
354	R002A	Seal Press Loop A PI	N		Z		Z		H-16066	
355	R002B	Seal Press Loop B PI	N		Z		Z		H-16066	
356	R004A	Recirc Pump A Seal Flow FI	N		B		Z		H-16066	
357	R004B	Recirc Pump B Seal Flow FI	N		B		Z		H-16066	
358	R005	Seal Supply From CRD PI	N		B		Z		H-16066	
359	R102A	S001A Lube Oil Filter TI	N		Z		Z		H-16076	
360	R102B	S001B Lube Oil Filter TI	N		Z		Z		H-16076	
361	R103A	S001A Lube Oil Pump TI	N		Z		Z		H-16076	
362	R103B	S001B Lube Oil Pump TI	N		Z		Z		H-16076	
363	R601	Recirc Pump TR	N		Z		Z		H-16066	
364	R602A	Seal Press Loop A PI	N		Z		Z		H-16066	
365	R602B	Seal Press Loop B PI	N		Z		Z		H-16066	
366	R603A	Seal Press Loop A PI	N		Z		Z		H-16066	
367	R603B	Seal Press Loop B PI	N		Z		Z		H-16066	
368	R612A	Recirc Pump A dPI	N		Z		Z		H-16066	
369	R612B	Recirc Pump B dPI	N		Z		Z		H-16066	
370	R613	Recirc Pump Disch FI	N		Z		Z		H-16066	
371	R614	Recirc Pump Disch FR	N		Z		Z		H-16066	
372	R617	Recirc Pump C001A Disch FI	N		Z		Z		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 CLASS S N	SAFETY CLASS A P	QUAL GRP	SEIS. CLASS 1-2/1	ENVIRNT QUAL. M/Z	SPEC REV.	DWG REF	MODES/REMARKS
373	R619A	Recirc Pmp & MG Set A PEI	N		2		2		H-17864	
374	R619B	Recirc Pmp & MG Set B PEI	N		2		2		H-17906	
375	R620	Master Speed Controller	N		2		2		H-16068	
376	R621A	MG Set M/A Transfer Station	N		2		2		H-16068	
377	R621B	MG Set M/A Transfer Station	N		2		2		H-16068	
378	R622A	MG Set Speed Controller	N		2		2		H-16068	
379	R622B	MG Set Speed Controller	N		2		2		H-16068	
380	R623A	MG Set A VI	N		2		2		H-16067	
381	R623B	MG Set B VI	N		2		2		H-16067	
382	R624A	MG Set A Power Meter	N		2		2		H-16067	
383	R624B	MG Set B VI Power Meter	N		2		2		H-16067	
384	R625	MG Brng And Oil IR	N		2		2		H-16067	
385	R626	MG Winding IR	N		2		2		H-16067	
386	R627A	MG Set A Ammeter	N		2		2		H-16067	
387	R627B	MG Set B Ammeter	N		2		2		H-16067	
388	R628A	Temp Relay Ammeter	N		2		2		H-16067	
389	R628B	Temp Relay Ammeter	N		2		2		H-16067	
390	R650	Recirc Pump Suction TR	N		2		2		H-16066	
391	S660A	Recirc Pump A SI	N		2		2		H-17864	
392	R660B	Recirc Pump B SI	N		2		2		H-17906	

REV 00

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: G
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 25

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO: DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AC8 1A	B001A MG SET A GEN FIELD	IN I 33 Z	IN: H17861		
B31AD8 1A	B001A DRIVE MOTOR	IN I 33 Z	IN: H17860		
B31AD8 2A	B001A DRIVE MOTOR	IN I 33 Z	IN: H17860		
B31AD8 3A	LOCKOUT BUS POWER AVAIL	IN I 33 Z	IN: H17861		
B31AD8 4A	C002A AC CIRC LUBE OIL	IN I 33 Z	IN: H17861		
B31AD8 5A	C002A AC CIRC LUBE OIL	IN I 33 Z	IN: H17861		
B31AD8 6A	C003A AC CIRC LUBE OIL	IN I 33 Z	IN: H17861		
B31AD8 7A	C003A AC CIRC LUBE OIL	IN I 33 Z	IN: H17861		
B31AD8 8A	C005A DC AUX LUBE OIL	IN I 33 Z	IN: H17862		
B31AD8 9A	C005A DC AUX LUBE OIL	IN I 33 Z	IN: H17862		
B31AD8 10A	F023A PUMP SUCTION ISOL	IN I 33 Z	IT: H17865	APP R	
B31AD8 11A	F023A PUMP SUCTION ISOL	IN I 33 Z	IT: H17865	APP R	
B31AD8 12A	F031A PUMP DISCH ISOL	IN I 11 Z	IT: H17865	MODE A,B/RED INDICATES F031A NOT FULLY CLOSED	
B31AD8 13A	F031A PUMP DISCH ISOL	IN I 11 Z	IT: H17865	MODE A,B/GREEN INDICATES F031A NOT FULLY OPEN	
B31AD8 14A	GEN FIELD BKR TRIPPED	IN I 33 Z	IN: H17861		
B31AD8 15A	RECIRC FLOW LIMITED	IN I 33 Z	IN: H17862		
B31AD8 18A	B001A MG SET A LOCKOUT	IN I 33 Z	IN: H17860		
B31AD8 19A	B001A MG SET A LOCKOUT	IN I 33 Z	IN: H17860		
B31AD8 20A	GEN FIELD BKR CLOSED	IN I 33 Z	IN: H17861		
B31AD8 21A	GEN FIELD BKR TRIPPED	IN I 33 Z	IN: H17861		
B31AD8 22A	C004A AC CIRC LUBE OIL	IN I 33 Z	IN: H17861		

REPORT DATE : 08/29/86

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

DRAWING NO.: A-18172 REV.: 0
SHEET NO.: 26

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEP	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AD8 23A	1C004A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 25A	1C002A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 26A	1C002A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 27A	1C003A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 28A	1C003A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 29A	1C004A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 30A	1C004A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 31A	1GEN FIELD BKR CLOSED	8N 3 3Z	2H17861		
B31AD8 32A	1C002A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 33A	1C003A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 34A	1C004A AC CIRC LUBE OIL	8N 3 3Z	2H17861		
B31AD8 35A	1C001A GEN DRIVE MOTOR	8N 3 3Z	2H17860		
B31AD8 35C	1C001A GEN DRIVE MOTOR	8N 3 3Z	2H17860		
B31AD8 36A	1RHR ABNORM COND OR TEST	8S 3 11Z	2H17865	MODE A,B/CLEAR IND F031A RHR ABNORMAL COND OR TEST	
B31AF 1A	1GEN FLD BKR ELECT PROT	8N 3 3Z	2H17861		
B31AF 2A	1GEN FLD BKR ELECT PROT	8N 3 3Z	2H17861		
B31AF 3A	1GEN FLD BKR ELECT PROT	8N 3 3Z	2H17861		
B31AF 4A	1GEN FLD BKR ELECT PROT	8N 3 3Z	2H17861		
B31AF 5A	1M2A ELECT PROTECTION	8N 3 3Z	2H17863		
B31AF 6A	1M2A ELECT PROTECTION	8N 3 3Z	2H17863		
B31AF 7A	1C001A ELECT PROTECTION	8N 3 3Z	2H17860		

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AF 8A	B001A ELECT PROTECTION	EN 3Z	EN:H17860		
B31AF 9A	C002A ELECT PROTECTION	EN 3Z	EN:H17861		
B31AF 10A	C002A ELECT PROTECTION	EN 3Z	EN:H17861		
B31AF 11A	C003A ELECT PROTECTION	EN 3Z	EN:H17861		
B31AF 12A	C003A ELECT PROTECTION	EN 3Z	EN:H17861		
B31AF 13A	C005A ELECT PROTECTION	EN 3Z	EN:H17862		
B31AF 14A	C005A ELECT PROTECTION	EN 3Z	EN:H17862		
B31AF 17A	VR1A ELECT PROTECTION	EN 3Z	EN:H17863		
B31AF 18A	VR1A ELECT PROTECTION	EN 3Z	EN:H17863		
B31AF 19A	VR1A ELECT PROTECTION	EN 3Z	EN:H17863		
B31AF 20A	VR1A ELECT PROTECTION	EN 3Z	EN:H17863		
B31AF 21A	M4A,R623A,MT1A ELEC PROT	EN 3Z	EN:H17863		
B31AF 22A	M4A,R623A,MT1A ELEC PROT	EN 3Z	EN:H17863		
B31AF 23A	VR1A ELECT PROTECTION	EN 3Z	EN:H17863		
B31AF 24A	VR1A ELECT PROTECTION	EN 3Z	EN:H17863		
B31AF 25A	GEN FLD GR DET ELEC PROT	EN 3Z	EN:H17862		
B31AF 26A	GEN FLD GR DET ELEC PROT	EN 3Z	EN:H17862		
B31AF 27A	125 VDC ELECT PROT	EN 3Z	EN:H17860		
B31AF 28A	125 VDC ELECT PROT	EN 3Z	EN:H17860		
B31AF 29A	125 VDC ELECT PROT	EN 3Z	EN:H17860		
B31AF 30A	125 VDC ELECT PROT	EN 3Z	EN:H17860		

REPORT DATE : 08/29/86

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

DRAWING NO.: A-18172 REV.: 0
SHEET NO.: 28

MPL NUMBER		COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	DWG. REF. PAID/ELEP	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AF	31A	PEAET K-103A BACKUP PROT	XN	I	XN:H17862		
B31AF	32A	R660A,B ELECT PROT	XN	I	XN:H17864		
B31AF	34A	F031A JOGGING CIRCUIT	XB	I	XN:H17869	MODE A,B/120 VAC PROTECTION TO F031A JOGGING CIRCUIT	
B31AF	7001A	MG SET A SPEED CONT SYS	XN	I	XN:H17864		F11A IN H11-P612
B31AF	7002	K615 ELECT PROTECTION	XN	I	XN:H17864		F12 IN H11-P612
B31AJ	2A	K616A SPEED LIMITER NO 1	XN	I	XN:H17864		
B31AK	1A1	50G1A AUX TO FIELD BKR	XN	I	XN:H17862		
B31AK	1A	50G1A AUX TO FIELD BKR	XN	I	XN:H17862		
B31AK	2A	F031A AND LOW FW FLOW	XN	I	XN:H17862		
B31AK	3A	50G1A GENERATOR LOCKOUT	XN	I	XN:H17861		
B31AK	4A	C00J1A PUMP START	XB	I	XN:H17862		
B31AK	5A	FLLID DR SCOOP TUBE LOCK	XN	I	XN:H17861		
B31AK	6A	C003A AC CIRC LUBE OIL	XN	I	XN:H17861		
B31AK	7A	C002A AC CIRC LUBE OIL	XN	I	XN:H17861		
B31AK	8A	40G1A GEN LOSS OF FIELD	XN	I	XN:H17863		
B31AK	9A	50G1A GEN OVERCURRENT	XN	I	XN:H17863		
B31AK	10A	50C1A GEN OVERCURRENT	XN	I	XN:H17860		
B31AK	11A	FIELD BKR CONT EXC TRANS	XN	I	XN:H17862		
B31AK	12A	FIELD APP,UNDERVOLT AUX	XN	I	XN:H17862		
B31AK	13A	50G1A GEN AUX LOCKOUT	XN	I	XN:H17860		
B31AK	14A	AC AUX CONT SIGNAL FAIL	XN	I	XN:H17862		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 SE 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 29

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	CODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AK 15A	GENERATOR/PUMP MOTOR	N	3 2	N:M17863	
B31AK 16A	B001A GEN NEUT OVERVOLT	N	3 2	N:M17863	
B31AK 17A	EXCITATION TRANSFER	N	3 2	N:M17862	
B31AK 18A	C001A PMP START SEQ TIME	N	3 2	N:M17862	
B31AK 19A	GEN WINDING OVERTEMP	N	3 2	N:M17862	
B31AK 20A	MOTOR WINDING OVERTEMP	N	3 2	N:M17862	
B31AK 21A	RECIRC A RUNBACK	N	3 2	N:M17862	
B31AK 22A	B001A GEN OVERCURRENT	N	3 2	N:M17863	
B31AK 23A	FEEDWATER INTERLOCK	N	3 2	N:M17862	
B31AK 24A	FIELD EXC OVERCURRENT	N	3 2	N:M17863	
B31AK 25A	EXC FIELD OVERCURRENT	N	3 2	N:M17861	
B31AK 26A	GEN LOSS OF FIELD AUX	N	3 2	N:M17861	
B31AK 27A	INCOMPLETE START UP SEQ	N	3 2	N:M17862	
B31AK 28A	GEN FIELD GROUND DETECT	N	3 2	N:M17862	
B31AK 29A	C005A DC AUX LUBE OIL	N	3 2	N:M17862	
B31AK 30A	FLUID OR HI OIL TEMP AUX	N	3 2	N:M17860	
B31AK 31A	C002A AC CIRC LUBE OIL	N	3 2	N:M17861	
B31AK 32A	C003A AC CIRC LUBE OIL	N	3 2	N:M17861	
B31AK 33A	SCOOP TUBE LOCK	N	3 2	N:M17862	
B31AK 34A	C005A LUBE OIL PRESS	N	3 2	N:M17862	
B31AK 35A	C004A AC CIRC LUBE OIL	N	3 2	N:M17861	

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AK 36A	C004A AC CIRC LUBE OIL	EN 13Z	EN:H17861		
B31AK 37A	OPERATIONAL SPARE	EN 13Z	EN:H17860		
B31AK 38A	C002A AC CIRC LUBE OIL	EN 13Z	EN:H17861		
B31AK 39A	C003A AC CIRC LUBE OIL	EN 13Z	EN:H17861		
B31AK 40A	C004A AC CIRC LUBE OIL	EN 13Z	EN:H17861		
B31AK 41A	DC CONTROL PWR TRANSFER	EN 13Z	EN:H17860		
B31AK 42A	NORMAL DC CONT PWR U/V	EN 13Z	EN:H17860		
B31AK 43A	ATWS	EN 13Z	EN:H17861		
B31AK 43C	ATWS	EN 13Z	EN:H17861		
B31AK 44A	F031A PUMP DISCH 150L	EB 11Z	ET:H17865	MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT	
B31AK 45A	F031A PUMP DISCH 180L	EB 11Z	ET:H17865	MODE A,B/CONTROLS F031A JOGGING CKT/MG DRIVE MTR CKT	
B31AK 46A	F031A JOGGING CIRCUIT	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 47A	F031A SEQ TIMER	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 48A	F031A AUX TIMER	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 49A	F031A JOGGING CIRCUIT	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 50A	F031A JOGGING CIRCUIT	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 51A	F031A JOGGING CIRCUIT	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 52A	F031A JOGGING CIRCUIT	EB 11Z	ET:H17869	MODE A,B/CONTROLS F031A JOGGING CIRCUIT	
B31AK 53A	S001A GEN OVERCURRENT	EN 13Z	EN:H17863		
B31AK 54A	C001A GEN PUMP MOTOR	EN 13Z	EN:H17860		
B31AK 55A	C001A GEN PUMP MOTOR	EN 13Z	EN:H17862		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 31

MPL NUMBER		COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	ID: DWG. / T: REF. / E: P&ID / R: ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31AM	1A	EDC1A GEN FIELD AMMETER	EN	3 Z	EN1H17863	
B31AM	2A	EDC EXC FIELD VOLTMETER	EN	3 Z	EN1H17863	
B31AM	3A	E0001A GEN AMMETER	EN	3 Z	EN1H17863	
B31AM	4A	EAC FIELD VOLTMETER	EN	3 Z	EN1H17863	
B31AMT	1A	ETELEWATT METER TRANS	EN	3 Z	EN1H17863	
B31AR	3A	EPUMP PWR SIGNAL TO COMP	EN	3 Z	EN1H17863	
B31AR	4A	EGEN NEUT GROUNDING	EN	3 Z	EN1H17863	
B31AR	5A	E0001A GEN FIELD AMMETER	EN	3 Z	EN1H17863	
B31AR	6A	E0001A GEN FIELD AMMETER	EN	3 Z	EN1H17863	
B31AR	7A	ELOCKOUT SUB POWER AVAIL	EN	3 Z	EN1H17861	
B31AR	8A	EMG SET A SPEED CONT SYS	EN	3 Z	EN1H17864	
B31AS	1A	E0001A MG SET A	EN	3 Z	EN1H17862	
B31AS	2	EC0001A PUMP VIBRATION	EN	3 Z	EN1H17861	
B31AS	3A	ESCOOP TUBE BRAKE	EN	3 Z	EN1H17861	
B31AS	4A	EC002A AC CIRC LUBE OIL	EN	3 Z	EN1H17861	
B31AS	5A	EC003A AC CIRC LUBE OIL	EN	3 Z	EN1H17861	
B31AS	6A	EC004A AC CIRC LUBE OIL	EN	3 Z	EN1H17861	
B31AS	7A	ERECIRC A RUNBACK	EN	3 Z	EN1H17862	
B31AS	8A	EF023A PUMP SUCTION ISOL	EN	3 Z	EN1H17865	APP R
B31AS	9A	EF031A PUMP DISCH ISOL	EN	1 Z	EN1H17865	MODE A,B/F031A MANUAL OPEN AND CLOSE CONTROL
B31AS	11A	EFIELD GROUND RELAY TEST	EN	3 Z	EN1H17862	

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 32

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IQ	IS	IE	IR	DWG. REF. PGID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31A8 12A	B001A MG SET A TRIP TEST	MN		3	I	N	H17862		
B31A8 T001A	C002A AC CIRC LUBE OIL	MN		3	I	N	H17861		PB/A1
B31A8 T002A	C003A AC CIRC LUBE OIL	MN		3	I	N	H17861		PB/A2
B31A8 T003A	C004A AC CIRC LUBE OIL	MN		3	I	N	H17861		PB/A3
B31A8 T004A	C005A DC AUX LUBE OIL	MN		3	I	N	H17862		C5/1A
B31A8 Y005A	FLUID OR CASE BREATHER	MN		3	I	N	H17862		B/A4
B31AT 1A	REGULATOR REF VOLTAGE	MN		3	I	N	H17863		
B31AT 2A	METERING POTENTIAL	MN		3	I	N	H17863		
B31AT 3A	GEN NEUTRAL GROUNDING	MN		3	I	N	H17863		
B31AT 4A	REGULATOR POWER SUPPLY	MN		3	I	N	H17863		
B31AT 5A	REGULATOR POWER SUPPLY	MN		3	I	N	H17863		
B31AYM 1A	VOLTAGE REGULATOR	MN		3	I	N	H17863		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 33

MPL NUMBER		COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	TG	RE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B31BC8	18	80018 MG SET B GEN FIELD	BN	I	3	Z	BN1H17903		
B31BD5	18	80018 DRIVE MOTOR	BN	I	3	Z	BN1H17902		
B31BD5	28	80018 DRIVE MOTOR	BN	I	3	Z	BN1H17902		
B31BD8	38	LOCKOUT BUS POWER AVAIL	BN	I	3	Z	BN1H17903		
B31BD8	48	C0028 AC CIRC LUBE OIL	BN	I	3	Z	BN1H17903		
B31BD5	58	C0028 AC CIRC LUBE OIL	BN	I	3	Z	BN1H17903		
B31BD8	68	C0038 AC CIRC LUBE OIL	BN	I	3	Z	BN1H17903		
B31BD5	78	C0038 AC CIRC LUBE OIL	BN	I	3	Z	BN1H17903		
B31BD8	88	C0058 DC AUX LUBE OIL	BN	I	3	Z	BN1H17904		
B31BD8	98	C0058 DC AUX LUBE OIL	BN	I	3	Z	BN1H17904		
B31BD5	108	F0238 PUMP SUCTION ISOL	BN	I	3	Z	BN1H17907		
B31BD8	118	F0238 PUMP SUCTION ISOL	BN	I	3	Z	BN1H17907		
B31BD5	128	F0318 PUMP DISCH ISOL	BB	I	1	Z	BY1H17907	MODE A,B/RED INDICATES F0318 NOT FULLY CLOSED	
B31BD5	138	F0318 PUMP DISCH ISOL	BB	I	1	Z	BY1H17907	MODE A,B/GREEN INDICATES F0318 NOT FULLY OPEN	
B31BD5	148	GEN FIELD BKR TRIPPED	BN	I	3	Z	BN1H17903		
B31BD5	158	RECIRC FLOW LIMITED	BN	I	3	Z	BN1H17904		
B31BD5	168	80018 MG SET B LOCKOUT	BN	I	3	Z	BN1H17903		
B31BD5	178	80018 MG SET B LOCKOUT	BN	I	3	Z	BN1H17902		
B31BD8	208	GEN FIELD BKR CLOSED	BN	I	3	Z	BN1H17903		
B31BD5	218	GEN FIELD BKR TRIPPED	BN	I	3	Z	BN1H17903		
B31BD5	228	C0048 AC CIRC LUBE OIL	BN	I	3	Z	BN1H17903		

REPORT DATE : 08/29/86

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

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER OR ELEMENTARY
B318D8 238	CO048 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 258	CO028 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 268	CO028 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 278	CO038 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 288	CO038 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 298	CO048 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 308	CO048 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 318	GEN FIELD BKR CLOSED	4N	53Z	1N1H17903	
B318D8 328	CO028 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 338	CO038 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 348	CO048 AC CIRC LUBE OIL	4N	53Z	1N1H17903	
B318D8 358	CO018 GEN DRIVE MOTOR	4N	53Z	1N1H17902	
B318D8 350	CO018 GEN DRIVE MOTOR	4N	53Z	1N1H17902	
B318D8 368	RHR ABNORM COND OR TEST	0B	61Z	1T1H17907	MODE A,B/CLEAR IND F0318 RHR ABNORMAL COND OR TEST
B318F 18	GEN FLD BKR ELECT PROT	4N	53Z	1N1H17903	
B318F 28	GEN FLD BKR ELECT PROT	4N	53Z	1N1H17903	
B318F 38	GEN FLD BKR ELECT PROT	4N	53Z	1N1H17903	
B318F 48	GEN FLD BKR ELECT PROT	4N	53Z	1N1H17903	
B318F 58	M28 ELECT PROTECTION	4N	53Z	1N1H17905	
B318F 68	M28 ELECT PROTECTION	4N	53Z	1N1H17905	
B318F 78	CO018 ELECT PROTECTION	4N	53Z	1N1H17902	

REPORT DATE : 06/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 35

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	ST	DWG. REF. EI PAIR/ER ELEM	CODE/REMARKS	TAG NUMBER ON ELEMENTARY
B318F 08	50018 ELECT PROTECTION	XN	33Z	XN1H17902		
B318F 98	C0028 ELECT PROTECTION	XN	33Z	XN1H17903		
B318F 108	C0028 ELECT PROTECTION	XN	33Z	XN1H17903		
B318F 118	C0038 ELECT PROTECTION	XN	33Z	XN1H17903		
B318F 128	C0038 ELECT PROTECTION	XN	33Z	XN1H17903		
B318F 138	C0058 ELECT PROTECTION	XN	33Z	XN1H17904		
B318F 148	C0058 ELECT PROTECTION	XN	33Z	XN1H17904		
B318F 178	VR1B ELECT PROTECTION	XN	33Z	XN1H17905		
B318F 18F	VR1B ELECT PROTECTION	XN	33Z	XN1H17905		
B318F 198	VR1B ELECT PROTECTION	XN	33Z	XN1H17905		
B318F 208	VR1B ELECT PROTECTION	XN	33Z	XN1H17905		
B318F 218	M48,M6338,MT1B ELEC PROT	XN	33Z	XN1H17905		
B318F 228	M48,M6338,MT1B ELEC PROT	XN	33Z	XN1H17905		
B318F 238	VR1B ELECT PROTECTION	XN	33Z	XN1H17905		
B318F 248	VR1B ELECT PROTECTION	XN	33Z	XN1H17905		
B318F 258	GEA FLD GR DET ELEC PROT	XN	33Z	XN1H17904		
B318F 268	GEA FLD GR DET ELEC PROT	XN	33Z	XN1H17904		
B318F 278	125 VDC ELECT PROT	XN	33Z	XN1H17902		
B318F 288	125 VDC ELECT PROT	XN	33Z	XN1H17902		
B318F 298	125 VDC ELECT PROT	XN	33Z	XN1H17902		
B318F 308	125 VDC ELECT PROT	XN	33Z	XN1H17902		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 36

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B316F 318	PBNET X-102A BACKUP PROT	XN	XN:H17904		
B316F 348	F0318 JOGGING CIRCUIT	XB	XY:H17870	MODE A,B/120 VAC PROTECTION TO F0318 JOGGING CIRCUIT	
B316F 70018	MG SET B SPEED CONT BYB	XN	XN:H17906		F118 IN H11-P612
B316J 28	K6168 SPEED LIMITER NO 1	XN	XN:H17906		
B316K 181	B0018 AUX TO FIELD BKR	XN	XN:H17904		
B316K 18	B0018 AUX TO FIELD BKR	XN	XN:H17904		
B316K 28	F0318 AND LOW FN FLOW	XN	XN:H17904		
B316K 38	B0018 GENERATOR LOCKOUT	XN	XN:H17902		
B316K 48	C0018 PUMP START	XN	XN:H17904		
B316K 58	FLUID DR SCOOP TUBE LOCK	XN	XN:H17903		
B316K 68	C0038 AC CIRC LUBE OIL	XN	XN:H17903		
B316K 78	C0028 AC CIRC LUBE OIL	XN	XN:H17903		
B316K 88	B0018 GEN LOSS OF FIELD	XN	XN:H17905		
B316K 98	B0018 GEN OVERCURRENT	XN	XN:H17908		
B316K 108	B0018 GEN OVERCURRENT	XN	XN:H17902		
B316K 118	FIELD BKR CONT EXC TRANS	XN	XN:H17904		
B316K 128	FIELD APP,UNDERVOLT AUX	XN	XN:H17904		
B316K 138	B0018 GEN AUX LOCKOUT	XN	XN:H17902		
B316K 148	FAC AUX CONT SIGNAL FAIL	XN	XN:H17904		
B316K 158	GENERATOR/PUMP MOTOR	XN	XN:H17908		
B316F 168	B0018 GEN NEUT OVERVOLT	XN	XN:H17905		

REPORT DATE : 08/29/90

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-1R172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 37

MFL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	NO: DWG. ST: REF. IE: P&ID/ IR: ELEM	MOVE/REMARKS	TAG NUMBER ON ELEMENTARY
B318K 178	#EXCITATION TRANSFER	#N # #3#Z#	#N#H17904#		
B318K 188	#C0018 PMP START DEO TIME	#N # #3#Z#	#N#H17904#		
B318K 198	#GEN WINDING OVERTEMP	#N # #3#Z#	#N#H17904#		
B318K 208	#MOTOR WINDING OVERTEMP	#N # #3#Z#	#N#H17904#		
B318K 218	#RECIRC B RUNBACK	#N # #3#Z#	#N#H17904#		
B318K 228	#B3018 GEN OVERCURRENT	#N # #3#Z#	#N#H17906#		
B318K 238	#FEEDWATER INTERLOCK	#N # #3#Z#	#N#H17904#		
B318K 248	#FIELD EXC OVERCURRENT	#N # #3#Z#	#N#H17905#		
B318K 258	#EXC FIELD OVERCURRENT	#N # #3#Z#	#N#H17903#		
B318K 268	#GEN LOSS OF FIELD AUX	#N # #3#Z#	#N#H17903#		
B318K 278	#INCOMPLETE START UP SEQ	#N # #3#Z#	#N#H17904#		
B318K 288	#GEN FIELD GROUND DETECT	#N # #3#Z#	#N#H17904#		
B318K 298	#C0058 DC AUX LUBE OIL	#N # #3#Z#	#N#H17904#		
B318K 308	#FLUID DR HI OIL TEMP AUX	#N # #3#Z#	#N#H17902#		
18K 318	#C0028 AC CIRC LUBE OIL	#N # #3#Z#	#N#H17903#		
8K 328	#C0038 AC CIRC LUBE OIL	#N # #3#Z#	#N#H17903#		
B318K 338	#BODDP TUBE LOCK	#N # #3#Z#	#N#H17904#		
B318K 348	#C0058 LUBE OIL PRESS	#N # #3#Z#	#N#H17904#		
B318K 358	#C0048 AC CIRC LUBE OIL	#N # #3#Z#	#N#H17903#		
B318K 368	#C0048 AC CIRC LUBE OIL	#N # #3#Z#	#N#H17903#		
B318K 378	#OPERATIONAL SPARE	#N # #3#Z#	#N#H17902#		

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0

SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 38

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B318K 388	CO02B AC CIRC LUBE OIL	IN 33Z	H17903		
B318K 398	CO03B AC CIRC LUBE OIL	IN 33Z	H17903		
B318K 408	CO04B AC CIRC LUBE OIL	IN 33Z	H17903		
B318K 418	DC CONTROL PWR TRANSFER	IN 33Z	H17902		
B318K 428	NORMAL DC CONT PWR U/V	IN 33Z	H17902		
B318K 438	ATWS	IN 33Z	H17903		
B318K 448	ATWS	IN 33Z	H17903		
B318K 458	F0318 PUMP DISCH ISOL	IS 11Z	H17907	MODE A,B/CONTROLS MG DRIVE MOTOR BKR TRIP CKT	
B318K 468	F0318 PUMP DISCH ISOL	IS 11Z	H17907	MODE A,B/CONTROLS F0318 JOGGING CKT/MG DRIVE MTR CKT	
B318K 468	F0318 JOGGING CIRCUIT	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 478	F0318 SEQ TIMER	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 488	F0318 AUX TIMER	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 498	F0318 JOGGING CIRCUIT	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 508	F0318 JOGGING CIRCUIT	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 518	F0318 JOGGING CIRCUIT	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 528	F0318 JOGGING CIRCUIT	IS 11Z	H17870	MODE A,B/CONTROLS F0318 JOGGING CIRCUIT	
B318K 538	GO01B GEN OVERCURRENT	IN 33Z	H17905		
B318K 548	CO01B GEN PUMP MOTOR	IN 33Z	H17902		
B318K 558	CO01B GEN PUMP MOTOR	IN 33Z	H17906		
B318M 18	GO01B GEN FIELD AMPETER	IN 33Z	H17905		
B318M 28	DC EXC FIELD VOLTMETER	IN 33Z	H17905		

REPORT DATE : 08/29/86

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

HPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	IO	TY	IM	IE	IR	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
8318M 38	80018 GEN AMMETER	EN	I	E3	Z	IN	IR	H17905		
8318M 48	AC FIELD VOLTMETER	EN	I	E3	Z	IN	IR	H17905		
8318MT 18	TELEMATT METER TRANS	EN	I	E3	Z	IN	IR	H17905		
8318R 38	PUMP PWR SIGNAL TO COMP	EN	I	E3	Z	IN	IR	H17905		
8318R 48	GEN NEUT GROUNDING	EN	I	E3	Z	IN	IR	H17905		
8318R 58	80018 GEN FIELD AMMETER	EN	I	E3	Z	IN	IR	H17905		
8318R 68	80018 GEN FIELD AMMETER	EN	I	E3	Z	IN	IR	H17905		
8318R 78	LOCKOUT BUS POWER AVAIL	EN	I	E3	Z	IN	IR	H17903		
8318R 88	MG SET B SPEED CONT SYS	EN	I	E3	Z	IN	IR	H17906		
83185 18	80018 MG SET B	EN	I	E3	Z	IN	IR	H17904		
83185 2	C0018 PUMP VIBRATION	EN	I	E3	Z	IN	IR	H17903		
83185 38	SCOOP TUBE BRAKE	EN	I	E3	Z	IN	IR	H17903		
83185 48	C0028 AC CIRC LUBE OIL	EN	I	E3	Z	IN	IR	H17903		
83185 58	C0038 AC CIRC LUBE OIL	EN	I	E3	Z	IN	IR	H17903		
83185 68	C0048 AC CIRC LUBE OIL	EN	I	E3	Z	IN	IR	H17903		
83185 78	RECIRC B RUNBACK	EN	I	E3	Z	IN	IR	H17907		
83185 88	F0238 PUMP SUCTION ISOL	EN	I	E3	Z	IN	IR	H17907		
83185 98	F0318 PUMP DISCH ISOL	EO	I	E1	Z	EY	IR	H17907	MODE A,B/F0318 MANUAL OPEN AND CLOSE CONTROL	
83185 118	FIELD GROUND RELAY TEST	EN	I	E3	Z	IN	IR	H17904		
83185 128	80018 MG SET B TRIP TEST	ER	I	E3	Z	IN	IR	H17904		
83185 70018	C0028 AC CIRC LUBE OIL	EN	I	E3	Z	IN	IR	H17903		PB/81

REPORT DATE : 08/29/86

E.I. HATCH NUCLEAR PLANT UNIT NO. 1 — DRAWING NO.: A-18172 REV.: 0
SYSTEM EVALUATION DOCUMENT ELECTRICAL COMPONENT IDENTIFICATION SHEET — SHEET NO.: 42

MPL NUMBER	COMPONENT FUNCTIONAL DESCRIPTION	EQUIPMENT CODE	QTY	DWG. REF. P&ID/ELEM	MODE/REMARKS	TAG NUMBER ON ELEMENTARY
B318S 70028	CO038 AC CIRC LUBE OIL	PN	03	HN17903		PB/82
B318S 70038	CO048 AC CIRC LUBE OIL	PN	03	HN17903		PB/83
B318S 70048	CO058 DC AUX LUBE OIL	PN	03	HN17904		CS/18
B318S 70058	FLUID DR CASE BREATHER	PN	03	HN17904		S/84
B318T 18	REGULATOR REF VOLTAGE	PN	03	HN17905		
B318T 28	METERING POTENTIAL	PN	03	HN17905		
B318T 38	GEN NEUTRAL GROUNDING	PN	03	HN17905		
B318T 48	REGULATOR POWER SUPPLY	PN	03	HN17905		
B318T 58	REGULATOR POWER SUPPLY	PN	03	HN17905		
B318VR 18	VOLTAGE REGULATOR	PN	03	HN17905		