



**LOUISIANA
POWER & LIGHT**

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February 6, 1984

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Director of Nuclear Reactor Regulation
Attention: Mr. G.W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Waterford SES Unit 3
Docket No. 50-382
Response to Generic Letter 83-28, Item 1.2,
Post-Trip Review - Data and Information Capability

Dear Sir:

The subject Generic Letter, in Item 1.2, requested a report describing the adequacy of equipment for diagnosing the cause of an unscheduled reactor shutdown.

Enclosed please find a description of the Waterford 3 capability for assessing sequence of events and analog variable time history both pre- and post-trip. When used in conjunction with our standard Post Trip Review this capability affords an effective means for diagnosing unscheduled reactor trips.

Should you have any questions or comments in this matter, please contact Mike Meisner at (504) 363-8938.

Yours very truly,

K. W. Cook
Nuclear Support & Licensing Manager

KWC/MJM/ch
Enclosure

cc: W.M. Stevenson, E.L. Blake, J. Wilson, G.L. Constable

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GENERIC LETTER 83-28

1.2 POST TRIP REVIEW - DATA AND INFORMATION CAPABILITY

1. Capability of assessing sequence of events.

- A. Sequence of Events is logged by a program in the Plant Monitoring Computer.
- B. Attachment 1 is a list of computer points monitored by the sequence of events program.
- C. Time discrimination between events is 5 milliseconds.
- D. Sequence of Events hard copy format.

<u>Point I.D.</u>	<u>Point Description</u>	<u>State Message</u>	<u>Date</u>	<u>Time</u>
XSSNNTTT	30 CHARACTERS	8 CHARACTERS	MM/DD/YY	HH:MM:SS.SSS

The hardcopy printout is presented in time order, 1 entry per printed line.

- E. When the first sequence of event file is 90% full it is automatically assigned to a printer device. Once the sequence of events file has been auto-printed the contents of the file are no longer available. The operator may demand either the logging of the SOE's before the Auto-print condition occurs or the display of the SOE contents on one of the utility CRT monitors.
 - F. The power source for the Plant Monitoring Computer is Non-Class IE Static Uninterruptible Power Supply with Primary and Secondary Power coming from Class IE safety related switchgear. The battery will supply power for approximately 20 minutes on a loss of both primary and secondary AC supplies.
2. Capability for assessing the time history of analog variables needed to determine the cause of unscheduled reactor shutdowns, and the functioning of safety related equipment.

A. Post Trip Review File

- 1. Post Trip Review File is logged by a program resident in the Plant Monitoring Computer.

2&3. Attachments 2 and 3 are the parameters monitored. The parameters in Attachment 2 are sampled every 2 secs and data is kept for 30 secs prior to and 30 secs post trip. The parameters in Attachment 3 are sampled every 30 secs and kept for 300 secs prior to trip and 300 secs post trip. The parameters were selected to monitor Reactor Trip parameters and Post Trip Engineered Safety Features Functions. The sampling rate is based on available Plant Monitoring Computer capacity with all other functions operating in a post trip environment.

4. Post Trip Review File hardcopy Format is shown in Attachment 4.
5. Post Trip Review File will be maintained on a disk file with hardcopy capability on demand.
6. The power supply is the Non Class IE Static Uninterruptible power supply for the PMC.

B. Safety Parameter Display System (SPDS)

1. SPDS is a program resident in the Plant Monitoring Computer.
2. The SPDS will monitor approximately 400 parameters, sampled every 1 second and stored for retrieval at a later time. The parameters are selected based on the requirements of NUREG 0737, Supplement 1. The selected parameters as well as a justification for their selection will be detailed in the SPDS Safety Analysis report to be submitted to the NRC in the near future.
3. The SPDS Historical File will store data for 2 hours pre-event and 12 hours post event.
4. Format for display is shown in Attachment 4.
5. At this time it has not been decided whether the Historical File will be assigned to a magnetic tape file or a diskfile.
6. SPDS is a program in the Plant Monitoring Computer which is powered from a non-class IE Statis Uninterruptible power supply.

3. Other data is available from various sources listed below.

- A. Core Protection Calculators (CPCs) store a snapshot of values in memory when a trip is generated. This snapshot information can be dumped to a printer during the post trip evaluation.

B. Control Board Recorders

Pressurizer Pressure 0-300 psia
Pressurizer Level 0-100%
Hot Leg Temperature 50-750°F
Cold Leg Temperature 0-600°F
Reactor Vessel Head Level
Reactor Vessel Plenum Level
Subcooled Margin
Reactor Power 0-200%
Reactor Power 2×10^{-8} -200%
Steam Generator 1 pressure 0-1200 psia
Steam Generator 2 pressure 0-1200 psia
Steam Generator 1 level 0-100% narrow range
Steam Generator 2 level 0-100% narrow range
Containment Pressure -5 to 195 psig
Containment Flood level 0-20 ft

4. There are no changes planned to Data or Information Capability at this time.

SOE LISTING

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>
Conden. Pump A	D02100	BKR-CD-2300A2	SWGR 3A1-9 BRKR On-Off
	D02101	ES-CD-2300A	Mtr. Overcurrent/Overload
	D02107	ES-CD-2304A	Hotwell A Lo Lvl
Conden. Pump B	D02200		SWGR 3B1-9 BRKR On-Off
	D02201	ES-CD-2300B	Mtr. Overcurrent/Overload
	D02207	ES-CD-2304B	Hotwell B Lo Lvl
Conden. Pump C	D02300	BKR-CD-2300C2	SWGR 3A1-10 BRKR On-Off
	D02301	ES-CD-2300C	Mtr. Overcurrent/Overload
	D02307	ES-CD-2304C	Hotwell C Lo Lvl
Steam Gen. Feed Pump/ Turbine A	D08202	ES-FW-2012A	FWPT Manual Trip
	D08204	ES-FW-2134A	FWPT Lube Oil
	D08225	ES-FW-2131A	Recirc. Flow Lo
	D08226	ES-FW-2132A	Main Flow Hi Trip
	D08227	ES-FW-2133A	Suction Pres. Lo
	D08228	ES-FW-2135A	Turb. Exhaust Pres. High
	D08229	ES-FW-2136B	Condensate Pump Trip to cause a FWPT trip
	D08230	ES-FW-2137A	Thrust Bearing Oil Pres. Lo
	D08231	ES-FW-2137A	Overspeed Trip
	D08232	ES-FW-2139A	High Vibration Trip
	D08234	ES-MD-3003A	
Steam Gen. Feed Pump/ Turbine B	D08502	ES-FW-2012B	FWPT Manual Trip
	D08504	ES-FW-2134B	FWPT Lube Oil Pres. Lo
	D08525	ES-FW-2131B	Recirc. Flow Lo
	D08527	ES-FW-2133B	Suction Pres. Lo
	D08528	ES-FW-2135B	Tube Exhaust Pres. High
	D08529	ES-FW-2136B	Condensate Pump Trip to cause a FWPT trip
	D08530	ES-FW-3137B	Thrust Bear Oil Pres. Lo
	D08531	ES-FW-2138B	Overspeed Trip
	D08532	ES-FW-2139B	High Vibration Trip
	D08534	ES-MD-3003B	Oil Drain Tank Lvl Lo
	D08526	ES-FW-2132B	Main Flow High
Em. Fw. Pmp. A	D10100	BKR-FW-8300A2	SWGR 3A3-S-10 BRKR On-Off
	D10102	ES-FW-8300A	Overcurrent/Overload Trip
Em. Fw. Pmp. B	D10200	BKR-FW-8300B2	SWGR 3B3-S-2 BRKR On-Off
	D10202	ES-FW-8300B	Overcurrent/Overload Trip

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>
RCP Mtr. 1A	D13200	BKR-RC-0150A2	SWGR 3A1-7 BRKR On-Off
	D13202	ES-RC-0152	Overcurrent/Overload Trip
RCP Mtr. 2A	D13400	BKR-RC-0160A2	SWGR 3A1-8 BRKR On-Off
	D13402	ES-RC-0162	Overcurrent/Overload Trip
RCP Mtr. 1B	D13600	BKR-RC-0170A2	SWGR 3B1-7 BRKR On-Off
	D13602	ES-RC-0172	Overcurrent/Overload Trip
RCP Mtr. 2B	D13800	BKR-RC-0180A2	SWGR 3B1-8 BRKR On-Off
	D13802	ES-RC-0182	Overcurrent/Overload Trip
CEDMCS Inputs to PMC	D36616	ES-PP-1091	Undervoltage Relay #1 Disconnect
	D36617	ES-PP-1092	Undervoltage Relay #2 Disconnect
	D36618	ES-PP-1093	Undervoltage Relay #3 Disconnect
	D36619	ES-PP-1094	Undervoltage Relay #4 Disconnect
PPS Trips Operator CP-2, 7, 8	D38239	ES-PP-2251	Trip Cir. Brk. #1, #5 Man. Discon. CP-2
	D38240	ES-PP-2252	Trip Cir. Brk. #2, #6 Man. Discon. CP-8
	D38241	ES-PP-2253	Trip Cir. Brk. #7, #3 Man. Discon. CP-2
	D38242	ES-PP-2254	Trip Cir. Brk. #8, #4 Man. Discon. CP-8
	D38243	ES-PP-2255	Trip Cir. Brk. #1, #5 Man. Discon. LCL C.
	D38244	ES-PP-2256	Trip Cir. Brk. #2, #6 Man. Discon. LCL C.
	D38245	ES-PP-2257	Trip Cir. Brk. #7, #3 Man. Discon. LCL C.
	D38246	ES-PP-2258	Trip Cir. Brk. #8, #4 Man. Discon. LCL C.
PPS Set Points and Trips	D38300	ES-PP-1001	SG 1 Lo Lvl Chnl. A
	D38301	ES-PP-1002	SG 1 Lo Lvl Chnl. B
	D38302	ES-PP-1003	SG 1 Lo Lvl Chnl. C
	D38303	ES-PP-1004	SG 1 Lo Lvl Chnl. D
	D38304	ES-PP-1005	SG 2 Lo Lvl Chnl. A
	D38305	ES-PP-1006	SG 2 Lo Lvl Chnl. B
	D38306	ES-PP-1007	SG 2 Lo Lvl Chnl. C
	D38307	ES-PP-1008	SG 2 Lo Lvl Chnl. D
	D38308	ES-PP-1009	SG 1 Pres Lo Chnl. A
	D38309	ES-PP-1010	SG 1 Pres Lo Chnl. B
	D38310	ES-PP-1011	SG 1 Pres Lo Chnl. C
	D38311	ES-PP-1012	SG 1 Pres Lo Chnl. D
	D38312	ES-PP-1013	SG 2 Pres Lo Chnl. A
	D38313		SG 2 Pres Lo Chnl. B
	D38314	ES-PP-1015	SG 2 Pres Lo Chnl. C
	D38315	ES-PP-1016	SG 2 Pres Lo Chnl. D
	D38316	ES-PP-1017	Prz Pres Hi Chnl. A
	D38317	ES-PP-1018	Prz Pres Hi Chnl. B
	D38318	ES-PP-1019	Prz Pres Hi Chnl. C
	D38319	ES-PP-1020	Prz Pres Hi Chnl. D
	D38320	ES-PP-1022	Prz Pres Lo Chnl. A
	D38321	ES-PP-1023	Prz Pres Lo Chnl. B
	D38322	ES-PP-1024	Prz Pres Lo Chnl. C
	D38323	ES-PP-1025	Prz Pres Lo Chnl. D

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>
PPS Setpoints	D38324	ES-PP-1026	LIN Pwr. Hi Chnl. A
and Trips (continued)	D38325	ES-PP-1027	LIN Pwr. Hi Chnl. B
	D38326	ES-PP-1028	LIN Pwr. Hi Chnl. C
	D38327	ES-PP-1029	LIN Pwr. Hi Chnl. D
	D38328	ES-PP-1034	Cont. Pres Hi Chnl. A (RPS)
	D38329	ES-PP-1035	Cont. Pres Hi Chnl. B (RPS)
	D38330	ES-PP-1036	Cont. Pres Hi Chnl. C (RPS)
	D38331	ES-PP-1037	Cont. Pres Hi Chnl. D (RPS)
	D38332	ES-PP-1038	Cont. Pres Hi Chnl. A (ESF)
	D38333	ES-PP-1039	Cont. Pres Hi Chnl. B (ESF)
	D38334	ES-PP-1040	Cont. Pres Hi Chnl. C (ESF)
	D38335	ES-PP-1041	Cont. Pres Hi Chnl. D (ESF)
	D38336	ES-PP-1042	DNBR Lo Chnl. A
	D38337	ES-PP-1043	DNBR Lo Chnl. B
	D38338	ES-PP-1044	DNBR Lo Chnl. C
	D38339	ES-PP-1045	DNBR Lo Chnl. D
	D38340	ES-PP-1046	LPD Hi Chnl. A
	D38341	ES-PP-1047	LPD Hi Chnl. B
	D38342	ES-PP-1048	LPD Hi Chnl. C
	D38343	ES-PP-1049	LPD Hi Chnl. D
	D38344	ES-PP-1050	LOG Pwr. Hi Chnl. A
	D38345	ES-PP-1051	LOG Pwr. Hi Chnl. B
	D38346	ES-PP-1052	LOG Pwr. Hi Chnl. C
	D38347	ES-PP-1053	LOG Pwr. Hi Chnl. D
	D38348	ES-PP-1054	Cont. Pres Hi Hi Chnl. A
	D38349	ES-PP-1055	Cont. Pres Hi Hi Chnl. B
	D38350	ES-PP-1056	Cont. Pres Hi Hi Chnl. C
	D38351	ES-PP-1057	Cont. Pres Hi Hi Chnl. D
	D38352	ES-PP-1058	RWSP Lo Lvl Chnl. A
	D38353	ES-PP-1059	RWSP Lo Lvl Chnl. B
	D38354	ES-PP-1060	RWSP Lo Lvl Chnl. C
	D38355	ES-PP-1061	RWSP Lo Lvl Chnl. D
	D38356	ES-PP-1062	SG 1 Hi Lvl Chnl. A
	D38357	ES-PP-1063	SG 1 Hi Lvl Chnl. B
	D38358	ES-PP-1064	SG 1 Hi Lvl Chnl. C
	D38359	ES-PP-1065	SG 1 Hi Lvl Chnl. D
	D38360	ES-PP-1066	SG 2 Hi Lvl Chnl. A
	D38361	ES-PP-1067	SG 2 Hi Lvl Chnl. B
	D38362	ES-PP-1068	SG 2 Hi Lvl Chnl. C
	D38363	ES-PP-1069	SG 2 Hi Lvl Chnl. D
	D38364	ES-PP-1070	SG 1 Pres > SG 2 Pres Chnl. A
	D38365	ES-PP-1071	SG 1 Pres > SG 2 Pres Chnl. B
	D38366	ES-PP-1072	SG 1 Pres > SG 2 Pres Chnl. C
	D38367	ES-PP-1073	SG 1 Pres > SG 2 Pres Chnl. D
	D38368	ES-PP-1074	SG 2 Pres > SG 1 Pres Chnl. A
	D38369	ES-PP-1075	SG 2 Pres > SG 1 Pres Chnl. B
	D38370	ES-PP-1076	SG 2 Pres > SG 1 Pres Chnl. C
	D38371	ES-PP-1077	SG 2 Pres > SG 1 Pres Chnl. D
	D38372	ES-PP-1151	Spare Chnl. A
	D38373	ES-PP-1152	Spare Chnl. B
	D38374	ES-PP-1153	Spare Chnl. C
	D38375	ES-PP-1154	Spare Chnl. D

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>
PPS Set Points and Trips (continued)	D38376	ES-PP-1155	Spare Chnl. A
	D38377	ES-PP-1156	Spare Chnl. B
	D38378	ES-PP-1157	Spare Chnl. C
	D38379	ES-PP-1158	Spare Chnl. D
	D38380	ES-PP-1159	Spare Chnl. A
	D38381	ES-PP-1160	Spare Chnl. B
	D38382	ES-PP-1161	Spare Chnl. C
	D38383	ES-PP-1162	Spare Chnl. D
	D38384	ES-PP-1163	Spare Chnl. A
	D38385	ES-PP-1164	Spare Chnl. B
	D38386	ES-PP-1165	Spare Chnl. C
	D38387	ES-PP-1166	Spare Chnl. D
	D38388	ES-PP-1167	Spare Chnl. A
	D38389	ES-PP-1168	Spare Chnl. B
	D38390	ES-PP-1169	Spare Chnl. C
	D38391	ES-PP-1170	Spare Chnl. D
	D38392	ES-PP-1171	Spare Chnl. A
	D38393	ES-PP-1172	Spare Chnl. B
	D38394	ES-PP-1173	Spare Chnl. C
	D38395	ES-PP-1174	Spare Chnl. D
RTSG Brkrs	D38501	ES-PP-0182A2	RTSG Trip Cir. Brkr 1 Not Closed/Closed
	D38503	ES-PP-0183A2	RTSG Trip Cir. Brkr 2
	D38505	ES-PP-0184A2	RTSG Trip Cir. Brkr 3
	D38507	ES-PP-0185A2	RTSG Trip Cir. Brkr 4
	D38509	ES-PP-0186A2	RTSG Trip Cir. Brkr 5
	D38511	ES-PP-0187A2	RTSG Trip Cir. Brkr 6
	D38513	ES-PP-0188A2	RTSG Trip Cir. Brkr 7
	D38515	ES-PP-0189A2	RTSG Trip Cir. Brkr 8
ESFAS	D38517	ES-PP-0190A2	RTSG Trip Cir. Brkr 9
	D38600	ES-PP-9900	CSAS Chnl. A in Action
	D38601	ES-PP-9901	MSIS Chnl. A in Action
	D38602	ES-PP-9902	CIAS Chnl. A in Action
	D38603	ES-PP-9903	RAS Chnl. A in Action
	D38604	ES-PP-9904	CCAS Chnl. A in Action
	D38605	ES-PP-9905	EFAS-1 Chnl. B in Action
	D38606	ES-PP-9906	EFAS-2 Chnl. B in Action
	D38607	ES-PP-9907	CSAS Chnl. B in Action
	D38608	ES-PP-9908	MSIS Chnl. B in Action
	D38609		CIAS Chnl. B in Action
	D38610	ES-PP-9910	RAS Chnl. B in Action
	D38611	ES-PP-9911	CCAS Chnl. B in Action
	D38612	ES-PP-9912	EFAS-1 Chnl. A in Action
	D38613	ES-PP-9913	EFAS-2 Chnl. A in Action
	D38618	ES-PP-9940	SIAS Chnl. A in Action
	D38620	ES-PP-9941	SIAS Chnl. B in Action
CVCS Chg. Pump A	D39600	BKR-CH-224X2	SWGR Brkr 3A31-S-5 Off-On
	D39604	PS-CH-0228X	Current Overload Trip
	D39605	PS-CH-0229X	Lube Oil Pres Lo

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>
CVCS Chg. Pump B	D39700	BRK-CH-2422	SWGR 3B31-S-6 Brkr. Off-On
	D39704	PS-CH-0228Z	Overload (Current) Trip
	D39705	PS-CH-0229Z	Lube Oil Pres Lo
CVCS Chg. Pump A/B	D39800	BRK-CH-224Y2	SWGR 3AB31-S-4 Brkr. Off-On
	D39804	ES-CH-0228Y	Current Overload Trip
	D39805	PS-CH-0229Y	Lube Oil Pres Lo
Cont. Spray Pump A	D42400	BKR-CS-7111A2	SWGR 3A3-S-6 Brkr. Off-On
	D42404	ES-CS-7114A	Mtr. Overload Trip
Cont. Spray Pump B	D42500	BRK-CS-7111B2	SWGR 3B3-S-5 Brkr. Off-On
	D42504	ES-SI-6703B	Mtr. Overcurrent/Overload Trip
LPSI Pump A	D43100	BRK-SI-6710A2	SWGR 3A3-S-5 Brkr. Off-On
	D43102	ES-SI-6711A	Mtr. Overcurrent/Overload Trip (Alarm)
LPSI Pump B	D43200	BKR-SI-6710B2	SWGR 3B3-S-4 Brkr. Off-On
	D43202	ES-SI-6711B	Mtr. Overcurrent/Overload Trip (Alarm)
HPSI Pump A	D43400	BKR-SI-6700A2	SWGR 3A3-S-4 Brkr. Off-On
	D43402	ES-SI-6701A	Mtr. Overcurrent/Overload Trip (Alarm)
HPSI Pump B	D43500	BKR-SI-6700B2	SWGR 3B3-S-3 Brkr. Off-On
	D43502	ES-SI-6701B	Mtr. Overcurrent/Overload Trip (Alarm)
HPSI Pump A/B	D43600	BKR-SI-6700C2	SWGR 3AB3-S-3 Brkr. Off-On
	D43604	ES-SI-6703C	Mtr. Overcurrent/Overload Trip (Alarm)
Main Turbine General	D55019	LS-TA-4301	Mn. Turb. Lube Oil Res Lo Trip
Points Reserved for Main Turb. Trips Recorded by SOEs	D55800	PS-TA-4316	Mn. T/G Bearing Oil Pres Lo Trip
	D55802	PS-TA-4307A	EH Fluid Lo Pres Trip
	D55803	PS-TA-4317	Mn. Turb. Thrust Brg. Oil Pres Lo Trip
	D55804	PS-TA-4318	Mn. T/G High Exhaust Pres
	D55807	ES-TA-4360	Overspeed Trip
	D55808	ES-TA-4361	EH Cntrl. D.C. Bus No Pwr Trip
	D55810	ES-TA-4364	High Vibration/High Differ. Expans. < 400 MWe Trip
	D55811	ES-TA-4367	Gen. Seal Oil Differ. Pres Lo-Lo Trip
	D55812	ES-TA-4368A	F.W. Htr. 6A Lvl Hi-Hi Trip
	D55813	ES-TA-4369A	F.W. Htr. 5A Lvl Hi-Hi Trip
	D55814	ES-TA-4370A1	Moist. Sep. RH-A ____ Lvl Trip
	D55815	ES-TA-4371B1	Moist. Sep. RH-B ____ Lvl Trip
	D55827	ES-TA-4368B	F.W. Htr. 6B Lvl Hi-Hi Trip
	D55828	ES-TA-4368C	F.W. Htr. 6C Lvl Hi-Hi Trip
	D55829	ES-TA-4369B	F.W. Htr. 5B Lvl Hi-Hi Trip
	D55830	ES-TA-4369C	F.W. Htr. 5C Lvl Hi-Hi Trip
	D55831	ES-TA-4379A	Moist. Sep. RH-B ____ Lvl Trip
	D55832	ES-TA-4371B2	Moist. Sep. RH-B ____ Lvl Trip
	D55834	ES-TA-4374	High Vib/High Diff Exp. Trip > 400 MWe

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>
Main Generator Trip	D58700	ES-EC-7200	Mn Trans Differ Curr Trip 74-1 Relay
	D58701	ES-EC-7201A	Mn Trans 3A Grnd Rly Trip 74-2 Relay
	D58702	ES-EC-7201B	Mn Trans 3B Grnd Rly Trip 74-3 Relay
	D58703	ES-GN-4623	Field Failure Trip (86G1)
	D58704	ES-EC-7300	SGGI SW. Sta. Intlk Relay
	D58705	ES-GN-4626	Reverse Pwr Trip
	D58707	ES-EC-7202A	Mn Trans 3A Differ Curr Trip
	D58708	ES-EC-7202B	Mn Trans 3B Differ Curr Trip
	D58709	ES-GN-4632	Mn Gen Diff Prot Relay
	D58710	ES-GN-4623	Neg Seq Trip (Mn Gen)
	D58712	ES-EC-7204A	Mn Trans 3A Sudden Gas Press Trip
	D58713	ES-EC-7204B	Mn Trans 3B Sudden Gas Press Trip
	D58714	ES-EC-7301	SW Sta Intlk Relay
	D58715	ES-TA-4363	Trip From CP-15-Gen Loc 86G1/G2
	D58718	ES-EC-7010A1	
	D58719	ES-EC-7010A2	Unit Aux Trn 3A Sudden Gas Press Trip
	D58720	ES-EC-7010B1	Unit Aux Trn 3B Diff Current Trip
	D58721	ES-EC-7010B2	Unit Aux Trn 3B Sudden Gas Press Trip
	D58722	ES-EC-7203	86G2 Station Bus Diff Curr Trip
	D58723	ES-EC-8060	Distance Lockout Relay
	D58724	ES-GN-4622	Manual 86G1 Trip
	D58725	ES-GN-4631	Manual 86G2 Trip
	D58726	ES-GN-4634	86G1 Grnd Trip
	D58727	ES-TA-4355	86G2 Field Failure Trip
	D58728	ES-GN-4627	Turb Trip Relay
System 88	D58826	ES-7A-4300	Turb Exhaust Hood High Temp(Trip Alarm)
Main Turbine Supervisory	D56004	PS-TA-1806	Exh Press Diff/Gen Monitoring Alarm
Startup Transformer	D59200	ES-EC-7000A1	Diff Current Trip (3A)
	D59201	ES-EC-7000A2	Ground Trip (3A)
	D59202	ES-EC-7000A3	Sudden Gas Press Trip (3A)
	D59203	ES-EC-7000A4	Lockout Relay Trip SWGR 3A1
	D59204	ES-EC-7001A	3A Trans to 6.9KV Bus Overcurrent Trip
	D59207	ES-EC-7000B1	3B Diff Current Trip
	D59208	ES-EC-7000B2	3B Ground Trip
	D59209	ES-EC-7000B3	3B Sudden Gas Press Trip
	D59210	ES-EC-7000B4	Lockout Relay Trip SWGR 3B1
	D59211	ES-EC-7001B	3B Trans to 6.9KV Bus Overcurrent Trip
Switching Station	D59349	ES-EC-8050A7	Oil Cir Brkr A BF Operation
	D59379	ES-EC-8050B7	Oil Cir Brkr B BF Operation
	D59360	ES-EC-8050A1B	Pole Disagreement (A)
	D59370	ES-EC-8050B1B	Pole Disagreement (B)

<u>OPERATING SYSTEM</u>	<u>PTID</u>	<u>EBASCO TAG</u>	<u>DESCRIPTION</u>	
6.9 KV Switchgear	D59400	BKR-EC-7000A2	SU Trans 3A WDX to 6.9KV Bus 3A1 FDR B1	
	D59401	BRK-EC-7000B2	SU Trans 3B WDX to 6.9KV Bus 3B1 FDR B1	
	D59402	BRK-EC-7010A2	Unit Aux Trans 3A WDX to 6.9KV-3B1 Aux F Bkr	
	D59403	BKR-EC-7010B2	Unit Aux Trans 3B WDX to 6.9KV-3B1 Aux F Bkr	
	D59404	ES-EC-7000A	6.9KV-3A1 Under V. Trip	
	D59412	ES-EC-7000B	6.9KV-3B1 Under V. Trip	
	D59413	ES-EC-7010B5		
	4.16 KV Switchgear	D59500	BKR-EC-4000A2	SU Trans 3A WDY to 4.16KV-3A2 #2 FDR Bkr
D59501		BKR-EC-4010A2	Aux Trans 3A WDY to 4.16KV-3A2 #1 FDR Bkr	
D59502		ES-EC-4000A5	SU Trans 3A WDY to 4.16KV-3A2 O.C.	
D59503		ES-EC-4010A5	Aux Trans 3A WDY to 4.16KV-3A2 O.C.	
D59506		ES-EC-4029A	4.16KV-3A2 Under V. Relay	
D59516		BRK-EC-4000B2	SU Trans 3B WDY to 4.16KV-3B2 #4 FDR Bkr	
D59517		BKR-EC-4010B2	Unit Aux 3B WDY to 4.16KV-3B2 #1 FDR Bkr	
D59518		ES-EC-4000B5	SU Trans 3B WDY to 4.16KV-3B2 FDR OC	
D59519		ES-EC-4010B5	Unit Aux 3B WDY to 4.16KV-3B2 FDR OC	
D59522		ES-EC-4029B	4.16KV-3B2 Under V.	
Circ. Water Pump A		D62100	BKR-CW-8221A2	SWGR 3A1-5 Brkr Off-On
		D62101	ES-CW-8221A	SWGR 3A1-5 Overcurrent/Overload Trip
Circ. Water Pump B	D62200	BKR-CW-8221B2	SWGR 3B1-5 Brkr Off-On	
	D62201	ES-CW-8221B	SWGR 3B1-5 Overcurrent/Overload Trip	
Circ. Water Pump C	D62300	BKR-CW-8221C2	SWGR 3A1-6 Brkr Off-On	
	D62301	ES-CW-8221C	Mtr. Overcurrent/Overload Trip	
Circ. Water Pump D	D62400	BKR-CW-8221D2	SWGR 3B1-6 Brkr Off-On	
	D62401	ES-CW-8221D	Mtr. Overcurrent/Overload Trip	

ATTACHMENT 2

2 SEC GROUP

A12217	CPC PZR Press CH 1	0 to 3000 psia
C26242	PZR Lv 1	0 to 100 P CNT
A92208	CNTMT Press	0 to 70 psia
A11114	SG 1 Press	0 to 1200 psia
A11108	SG 1 Lv 1	0 to 100 PCNT
C26260	SG 1 FW Flow	0 to 8 MPPH
C26258	SG 1 STM Flow	0 to 8 MPPH
A11214	SG 2 Press	0 to 1200 psia
A11208	SG 2 Lv 1	0 to 100 PCNT
C26261	SG 2 FW Flow	0 to 8 MPPH
C26259	SG 2 STM Flow	0 to 8 MPPH
C26236	Log Power CHC	1 ⁻⁷ to 200%
C26330	Lin Power CHD	0 to 200%
C26413	CET SAT Margin	200 to -2100 °F
A13200	RCPM 1A Amps	0 to 1200 Amps
A13600	RCPM 1B Amps	0 to 1200 Amps
A13400	RCPM 2A Amps	0 to 1200 Amps
A13800	RCPM 2B Amps	0 to 1200 Amps
C48088	CVP Exh Rad	1E -07 to .1 uci/cc
A11300	Mod Demand SBC Value 1	0 to 100%

ATTACHMENT 3

30 SECOND GROUP

Include all points in 2 second group

A12300	PzR Quench Tank Level	0 to 100 PCNT
A12304	PzR Quench Tank Temp	0 to 300 Deg. F
A12301	PzR Quench Tank Press	0 to 150 PSIG
C26237	Boron Concentration	0 to 6000 PPM
C26402	Rx VSL Lv 1 Head	0 to 100 PCNT
C26403	Rx VSL Lv 1 Plenum	0 to 100 PCNT
C26229	EFW Flow SG 1	0 to 800 GPM
C26231	EFW Flow Sg 2	0 to 800 GPM
S43101	LPSI Pump A Flow	0 to 5000 GPM
S43201	LPSI Pump B Flow	0 to 5000 GPM
C26247	HPSI Flow to RCL 1A	0 to 500 GPM
C26248	HPSI Flow to RCL 1B	0 to 500 GPM
C26249	HPSI Flow to RCL 2A	0 to 500 GPM
C26250	HPSI Flow to RCL 2B	0 to 500 GPM
C26245	Charging Flow	0 to 150 GPM
C26246	Letdown Flow	0 to 150 GPM
A61111	IA Dryer Outl Air Press	0 to 125 psig
C26340	CNTMT Hi range Rad	10 to 1E08 R/HR
C48071	Stack Gas Rad	1E-07 to .1 VCI/CC
A59900	3A-DC-S Volts	0 to 150 VDC
A59901	3B-DC-S Volts	0 to 150 VDC
A59902	3AB-DC-S Volts	0 to 150 VDC
A60104	EDG A Freq.	55 to 65 Hz
A60204	EDG B Freq.	55 to 65 Hz
C26238	RCS Loop 1 Th	50 to 750 Deg. F.
C26331	RCS Loop 2 Th	50 to 750 Deg. F.
C26239	RCS Loop 1A Tc	50 to 750 Deg. F.
C26333	RCS Loop 1B Tc	50 to 750 Deg. F.
C26240	RCS Loop 2A Tc	50 to 750 Deg. F.
C26332	RCS Loop 2B Tc	50 to 750 Deg. F.

ATTACHMENT 4

PTID	POINT DESCRIPTION
1. ASSNTTT	
2. ASSNTTT	Point Description
3. ASSNTTT	Point Description

TIME	1	2	3
HH:MM:SS	UNITS	UNITS	UNITS
	XXXXXXXXXQ	XXXXXXXXXQ	XXXXXXXXXQ