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STATUS OF TMI-2 INSTRUMENTS AND ELECTRICAL COMPONENTS

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ABSTRACT

In the Task 1.0 section of the GEND 001 Planning Report, the Instrumentation and Electrical Equipment Survivability Planning Group (IEPG) supplied planning, guidance, and recommendations on collecting survivability data on instruments and electrical equipment involved in the March 28, 1979, accident at the Three Mile Island Unit 2 (TMI-2) Reactor.

GEND 001 recommended collection of further data on the status of all the instruments and electrical equipment it listed. The current report supplies information concerning the operational status of instruments and electrical equipment listed in the Task 1.0 section of GEND 001. This document will be updated in the future as additional information is obtained.

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TABLES

STATUS OF TMI-2 INSTRUMENTS AND ELECTRICAL COMPONENTS

INTRODUCTION

The Three Mile Island Unit 2 (TMI-2) accident subjected the in-containment electrical equipment and instrumentation to the effects of an accident environment. The data obtained from an analysis of the TMI-2 equipment accident-response will be useful in: (a) developing improved and more comprehensive standards for equipment qualification, (b) understanding how equipment designed under existing standards performed, (c) identifying equipment failure modes, and (d) assessing the safety of existing plants using similar equipment.

The Instrumentation and Electrical Equipment Survivability Planning Group (IEPG) was appointed after the March 28, 1979 accident. They developed the planning and guidance needed for the orderly recovery of data pertaining to the survivability of instruments and electrical equipment contained within the TMI-2 reactor building.

The IEPG prepared a report on their findings and recommendations and published them in October 1980 in the GEND 001 Planning Report, Task 1.0 section, entitled "Report of the Instrumentation and Electrical Equipment Survivability Planning Group." The GEND 001 Task 1.0 section lists 228 items (instruments, electrical components, penetrations, and valves) as candidates for further study and possible recovery and analysis. This list of candidates represents a broad sampling of equipment types, generally with samples of a given type taken from several different locations in the reactor building. Some equipment was selected because it was representative of generic classes while others were chosen because they have unique characteristics or were known to behave in an unusual way during some stage of the accident.

The IEPG recommended that the operational status should be determined for all instruments and electrical equipment (I&E) within the reactor building (Recommendation No. 2). The current report updates the status information presented in GEND 001 by supplying information on the operational

status of the TMI-2 instruments and equipment. It also supplies status information on additional instruments and equipment found to be significant since GEND 001 was published. All this information will continue to be updated as additional status information is obtained.

The IEPG also recommended that an I&E data book should be compiled to document preaccident and postaccident operations (Recommendation No. 4). Engineering data has been compiled on the 97 Priority 1 I&E items and the 61 Priority 2 I&E items identified in GEND 001. Data on the 70 Priority 3 I&E items will be collected as they become necessary. These data are available on microfiche at the TMI Technical Integration Office Instrumentation and Electrical Equipment Program.

All of the information that was recommended to be collected by IEPG (Recommendations No. 2 and 4) is expected to be available by the end of the first quarter of FY-83. This information can be accessed by contacting the TMI Technical Integration Office Instrumentation and Electrical Equipment Program.

METHOD

Table 1 of this report lists the operational status of the I&E items in in the same order as they were originally listed in GEND 001. I&E items not listed in GEND 001 but found to be of interest since that report was published are marked with an asterisk (*) in the table. Table 1 contains five types of operational status information: (a) preaccident operational status, (b) postaccident operational status, (c) date that an I&E item was removed from service, (d) date that an I&E item was placed back in service, and (e) whether an I&E item was physically removed. Items (c), (d), and (e) can be found in Remarks column. Other information, such as location and instrument range, may be found in GEND 001.

To obtain the status information, the General Public Utilities (GPU) Out-of-Service Log was surveyed. No physical verification was made of any instrument or its tab designator. On instruments NI-ND-3 and -4, for example, the instruments are shown to be out of service and later placed back in service. It is not known whether the same instruments were repaired and returned to service or if another instrument was placed in service to perform this measurement function. The Out-of-Service Log is assumed to be current, accurate, and maintained by control room operators with up-to-date information.

An explanation of the listing codes for the instruments and equipment appears in Table 2. For example, I&E Tag No. HP-RT-0209 means Health Physics Radiation Transmitter No. 0209.

TABLE 1. TMI UNIT 2 REACTOR BUILDING INSTRUMENT LISTING

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
AH-EP-5037	ASCO	B331A45	3-Way Solenoid Purge Valve	X	X	--	--
AH-EP-5039	ASCO	B331A45	3-Way Solenoid Purge Valve	X	X	--	--
AH-EP-5040	ASCO	B331A45	3-Way Solenoid Purge Valve	X	X	--	--
AH-H-5032[a]	AMI	L15-6731-C	Humidity Sensor RB Ambient Air			134 pp. 31,32	--
AH-H-5090[a]	AMI	L15-6731-C	Humidity Trans. RB Ambient Air			134 pp. 34,35	--
AH-KS-5000	--	--	AH-E-11A Air Cooler Limit Switch	X	X	--	--
AH-KS-5002A	A-B	B02T-ATPW3	AH-E-11C Air Cooler Limit Switch	X	X	--	--
AH-KS-5002B	--	--	AH-E-11C Air Cooler Limit Switch	X	X	--	--
AH-KS-5037	--	--	AH-V2B Valve Limit Switch	X	X	--	--
AH-KS-5039	--	--	AH-V2A Valve Limit Switch	X	X	--	--
AH-KS-5040	--	--	AH-V3A Valve Limit Switch	X	X	--	--
AH-LS-5005	GEM	LS-1950	Air Cooler Plenum Level Switch	X	X	134 p.1	--
AH-LS-5006	GEM	LS-1950	Air Cooler Plenum Level Switch	X	X	134 p.2	--
AH-LS-5008	GEM	LS-1950	Air Cooler Plenum Level Switch	X	X	134 p.4	--
AH-TE-5020	REC		Temp Element 0-200°F RTD	X	X	134 p.16	--
AH-TE-5021	--	--	RB Top Ceiling 0-200°F RTD	X	X	134 p.17	--
AH-TE-5022	--	--	RB Elevation 330 ft 0-200°F RTD	X	X	134 p.18	--
AH-TE-5023	--	--	RB Elevation 330 ft 0-200°F RTD	X	X	134 p.19	--
AH-TS-5024	PENN	A25CN-1	RB Ambient Temp Switch 25-215°F	--	--	134 p.22	--
AH-TS-5084	PENN	T-22	Equipment Hatch Temp Switch 50-90°F	X	X	134 p.29	--
AH-TS-5085	PENN	A-25	Elevator Machine Room Temp Switch 25-215°F	X	X	134 p.29	--
CF-1-PT1	FOX	E11QM-SA01	CF-T-1A Core Fldng Tnk Press 0-800 psig	X	X	40 pp.1,2,3	--
CF-1-PT3	FOX	E11QM-SA01	CF-T-1A Core Fldng Tnk Press 0-800 psig	X	X	40 pp.7,8,9	Working OK Sor. 2302. R24
CF-1-PT4 Removed	FOX	E11QM-SA01	CF-T-1B Core Fldng Tnk Press 0-800 psig	X	X	40 pp.10,11,12	
CF-2-LT1 (failed)	BMC	BYB231-X-A	CF-T-1A Core Fldng Tnk Level 0-14 ft	X		040 p.21	Out of service 4/23/80
CF-2-LT3	BMC	BYB231-X-A	CF-T-1B Core Fldng Tnk Level 0-14 ft	X		40 p.23	--
HP-RT-0209	VICO	B57-2	Radiation Det/X-Mitter (GM)	X	X	--	--
HP-RT-0210	VICO	B57-2	Radiation Det/X-Mitter (GM)	X	X	--	--
HP-RT-0213	VICO	B57-2	Radiation Det/X-Mitter (GM)	X	X	--	--
HP-RT-0214	VICO	B47-1	Radiation Det/X-Mitter (ion)	X	X	--	--
IC-1-TE1	BMC	661999BA1	RC-P-1A Inj Wtr Recrc Flow &	X	X	92 p.1	--
	--	--	Pump Jkt 0-200°F RTD				

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
IC-10-OPT	BMC	BYB230XA	CRD Outlet Hdr Flow 0-200 in. H2O	X	X	92 p.25	--
IC-F1-7566	BART	227	RC-P-1A Seal Flow D-P 0-100 in. H2O	X	X	92 p.47	--
IC-F1-7567	BART	227	RC-P-1B Seal Flow D-P 0-100 in. H2O	X	X	92 p.49	--
IC-RT-1092	VICO	843-20	CRD Letdown Clr 1A Bokev-2Mev (Scintillator)	X	X	--	--
ICD-05	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-16	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-17	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-30	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-37	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-45	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-49	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
ICD-52	BMC		Incore Det Ably 7LD-1B-1TC	X	X	--	--
MU-10-FT1	BRK	8-3630	RC-P-1A Seal Wtr Bleed Off 0-2 gpm	X	X	99 pp.45,46,47	--
MU-10-FT2	BRK	8-3630	RC-P-1A Seal Wtr Bleed Off 0-2 gpm	X	X	99 pp.49,50,51	--
MU-10-FT4	BRK	8-3630	RC-P-1A Seal Wtr Bleed Off 0-2 gpm	X	X	99 pp.57,58,59	--
NI-AMP-1	BMC	PT6623140N	Preamp	X	X	--	--
NI-AMP-2	BMC	PT6623140N	Preamp	X		--	Out of service 8/14/80 @0945
NI-ND-1	W	WL23682A	Prop Counter	X	X		
NI-ND-2	W	WL23682A	Prop Counter	X		--	Back in service 8/14/80 @0945
NI-ND-3	W	WL23635A	Comp Ion Chamber	X		--	Back in service 3/16/81 @1000
NI-ND-4	W	WL23635A	Comp Ion Chamber	X		--	Out of service 4/24/80 @0900
	--	--		--	--	--	Back in service 9/4/80 @1000
NI-ND-5	W	WL23638B	Uncomp Ion Chamber	X	--	--	Out of service 1/15/81 @1515
NI-ND-6	W	WL23636B	Uncomp Ion Chamber	X	X	--	--
NI-ND-7	W	WL23636B	Uncomp Ion Chamber	X	X	--	--
NI-ND-8	W	WL23636B	Uncomp Ion Chamber	X	--	--	Out of service 11/17/80 @1000
NM-PS-1454	SOR	--	N2 Gas to RB; 10-275 psi Diaphragm Pressure Switch	X	X	--	--
NM-PS-4174	SOR		N2 Gas to RB; 0.2-6.0 psi Diaphragm Pressure Switch	X	X	--	--
	--	--					
NM-PS-4175	SOR		N2 Gas to RB; 10-275 psi Diaphragm Pressure Switch	X	X	--	--
	--	--					

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
NS-FS-3977	MAG	3-F503-T-F	Flow Switch 0-100 gpm	X	X	--	--
NS-FS-3978	MAG	3-F503-T-F	Flow Switch 0-100 gpm	X	X	--	--
NS-FS-4023	BRK	3601-10DZ	Rotameter 0-15 gpm	X	X	--	-
NS-FS-4024	BRK	3601-10DZ	Rotameter 0-15 gpm	X	X	--	--
NS-FS-4026	BRK	3601-10DZ	Rotameter 0-15 gpm	X	X	--	--
NS-FS-4027	MAG	3-F503-T-F	Flow Switch 0-100 gpm	X	X	--	--
RC-LS1	BORG	--	RC-P-1A Seal Leakage Lvl Switch Electrode	X	X	146 p.23	--
RC-LS2	BORG	--	RC-P-2A Seal Leakage Lvl Switch Electrode	X	X	146 p.24	--
RC-LS4	BORG	--	RC-P-2B Seal Leakage Lvl Switch Electrode	X	X	146 p.25	--
RC-1-LT1	BMC	BY3B4)X-A	Pressurizer Level 0-400 in. H20	X	--	--	Out of service 9/3/79 @1405
RC-1-LT2	BMC	BY3B4)X-A	Pressurizer Level 0-400 in. H20	X	--	--	Out of service 4/27/79 @0940
RC-1-LT3	BMC	BY3B4)X-A	Pressurizer Level 0-400 in. H20	X	--	--	Out of service 4/27/79 @0940
RC-14A-DPT1	BMC	BY3X41X-A	RC Flow (Hot Leg (A)) 0-818.12 in. H20	X	X	--	--
RC-14A-DPT2	BMC	BY3X41X-A	RC Flow (Hot Leg (A)) 0-818.12 in. H20	X	X	--	--
RC-15A-TE-1	REC	104AFP-2	RC Hot Leg (A) Temp 0-800°F RTD	X	X	--	--
RC-15A-TE-2	REC	104AFP-2	RC-P-1A Cold Leg Temp 0-800°F RTD	X	X	--	--
RC-15A-TE-3	REC	104AFP-2	RC-P-2A Cold Leg Temp 0-800°F RTD	X	X	--	--
RC-2-TE1	REC	104AFP-2	Pressurizer Water Temp 0-700°F Dual RTD	X	X	--	--
RC-2-TE2	REC	104AFP-2	Pressurizer Water Temp 0-700°F Dual RTD	X	X	--	--
RC-20/21TRTS[a]	Speedomax	H(L/N)	RC Pump Brg. Temp.	--	--	146 p.5	--
RC-3A-PT1	REC	1152GP9A	RC Hot Leg (A) Press-Narrow Range 1700-2500 psig	X	X	--	--
RC-3A-PT2	REC	1152GP9A	RC Hot Leg (A) Press-Narrow Range 1700-2500 psig	X	X	--	--
	--	--					
RC-3A-PT3	FOX	E11GH-INM2	RC Hot Leg (A) Press-Wide Range 0-2500 psig	X	--	--	Out of service 5/27/79 @1340
RC-3A-PT4	FOX	E11GH-INM2	RC Hot Leg (A) Press-Wide Range 0-2500 psig	X	X	--	--
RC-3B-PT1	REC	1152GP9A	RC Hot Leg (B) Press Narrow Range 1700-2500 psig	X	X	--	--
RC-4A-TE1	REC	177HW-2	RC Hot Leg (A) Temp 520-620°F Dual RTD	X	X	--	--
RC-4A-TE2	REC	177HW-2	RC Hot Leg (A) Temp 520-620°F Dual RTD	X	X	--	--
RC-4A-TE3	REC	177HW-2	RC Hot Leg (A) Temp 520-620°F Dual RTD	X	X	--	--
RC-4A-TE4	REC	177HW-2	RC Hot Leg (A) Temp 520-620°F Dual RTD	X	X	--	--
RC-4B-TE1	REC	177HW-2	RC Hot Leg (B) Temp 520-620°F Dual RTD	X	X	--	--
RC-4B-TE2	REC	177HW-2	RC Hot Leg (B) Temp 520-620°F Dual RTD	X	X	--	--

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
RC-48-1E3	REC	177HW-2	RC Hot Leg (B) Temp 520-620°F Dual RTD	X	X	--	--
RC-48-TE4	REC	177HW-2	RC Hot Leg (B) Temp 520-620°F Dual RTD	X	X	--	--
RC-56-PS1	BRK	9048-4	RC-P-1A Oil Lift Oischg Press 240-3000 psig	X	X	--	--
RC-56-PS14	BRK	9048-4	RC-P-2B Lift Sys Manifold Press 240-3000 psig	X	X	--	--
RC-56-PS20	BRK	9048-4	RC-P-1B Oil Lift Sys Manifold Press	X	X	--	--
	--	--	240-3000 psig				
RC-57-FS1	M&M	FS4-3	RC-P-1A Thrust Runner Rev. RDT. Ind.	X	X	--	--
RC-58-FS2	M&M	FS4-3	RC-P-1A Oil Flow Thru Cooler	X	X	--	--
RC-58-FS8	M&M	FS4-3	RC-P-1B Oil Flow Thru Cooler	X	X	--	--
RC-59-FS1	M&M	FS1	RC-P-1A Backstop Lube Pump Oil Fl	X	X	--	--
RC-59-FS4	M&M	FS1	RC-P-2A Backstop Lube Pump Oil Fl	X	X	--	--
RC-59-FS8	M&M	FS1	RC-P-1B Backstop Lube Pump Oil Fl	X	X	--	--
RC-5A-TE1	REC	177HW	RC-P-1A Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5A-TE2	REC	177HW	RC-P-1A Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5A-TE3	REC	177HW	RC-P-2A Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5A-TE4	REC	177HW	RC-P-2A Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5B-TE1	REC	177HW	RC-P-1B Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5B-TE2	REC	177HW	RC-P-1B Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5B-TE3	REC	177HW	RC-P-2B Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-5B-TE4	REC	177HW	RC-P-2B Suct Temp 50-650°F Dual RTD	X	X	--	--
RC-60-LS1	SOR	12R2-KK2PB	RC-P-1A Upper Reservoir Hi Level	X	X	--	--
RC-60-LS2	SOR	12R2-KK2PB	RC-P-1A Upper Reservoir Lo Level	X	X	--	--
RC-60-LS8	SOR	12R2-KK2PB	RC-P-1B Upper Reservoir Lo Level	X	X	--	--
RC-62-LS1	WARR	1C1D1	RC-P-1A Motor Air Cooling H2O leakage Det.	X	X	--	--
RC-62-LS2	WARR	1C1D1	RC-P-2A Motor Air Cooling H2O leakage Det.	X	X	--	--
RC-62-LS4	WARR	1C1D1	RC-P-1B Motor Air Cooling H2O leakage Det.	X	X	--	--
RC-65-PCV1	TEK	VA-8	RC-P-1A Oil Lift Sys Press Cont Valve	X	X	--	--
RC-65-PCV2	TEK	VA-8	RC-P-2A Oil Lift Sys Press Cont Valve	X	X	--	--
RC-65-PCV3	TEK	VA-8	RC-P-2B Oil Lift Sys Press Cont Valve	X	X	--	--
RC-66-PI1	ASCO	0-5000	RC-P-1A Oil Lift Sys Pressure	X	X	--	--
RC-66-PI2	ASCO	0-5000	RC-P-2A Oil Lift Sys Pressure	X	X	--	--
RC-66-PI3	ASCO	0-5000	RC-P-2B Oil Lift Sys Pressure	X	X	--	--
RC-67-VS1	RS	366	RC-P-1A Vibration	X	X	--	--

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
RC-67-VS3	RS	366	RC-P-2B Vibration	X	X	--	--
RC-67-VS4	RS	366	RC-P-1B Vibration	X	X	--	--
RC-PR/PS-22[a]	L&N	--	RC Pump Seal Cavity Pressure	X	X	146 p.14	--
RC-UI-7907	IRD	--	Vibration Ind	--	--	--	--
RC-UI-7908	IRD	--	Vibration Ind	X	X	--	--
RC-VE-7889	IRD	--	Eccentricity RC-P-1A	X	X	--	--
RC-VE-7890	IRD	--	Eccentricity RC-P-1A	X	X	--	--
RC-VE-7891	IRD	--	Phase Reference RC-P-1A	X	X	--	--
RC-VE-7899	IRD	--	Eccentricity RC-P-1B	X	X	--	--
RC-VE-7900	IRD	--	Eccentricity RC-P-1B	X	X	--	--
RC-VE-7901	IRD	--	Phase Reference RC-P-1B	X	X	--	--
RC-VE-7904	IRD	--	Eccentricity RC-P-2B	X	X	--	--
RC-VE-7905	IRD	--	Eccentricity RC-P-2B	X	X	--	--
RC-VE-7906	IRD	--	Phase Reference RC-P-2B	X	X	--	--
RR-FT-1027	FOX	E13DM-SAM2	Cooling Coil "C" 0-100 in. H2O	X	X	--	--
RR-FT-1028	FOX	E13DM-SAM2	Cooling Coil "D" 0-100 in. H2O	X	X	--	--
RR-FT-1029	FOX	E13DM-SAM2	Cooling Coil "E" 0-100 in. H2O	X	X	167 p.1-1	--
SP-1A-LT1	BMC	BYB241X-A	Stm Gen RC-H-1A Full Rnge Level	X	X	--	--
	--	--	0-600 in. H2O				
SP-1A-LT2	BMC	BYB841X-A	Stm Gen RC-H-1A Optg Rnge Level	X	X	167 p.1-5	--
	--	--	0-291.51 in. H2O				
SP-1A-LT4[a]	--	ByB841X-A	Start Up Steam Gen Level	--	--	167 p.1-23	--
SP-1A-LT4[a]	--	E5-170	Stm. Gen S.V. Level A	--	--	167 p.1-27	--
SP-1A-LT5[a]	--	ByB841X-A	Start Up Steam Gen Level	--	--	167 p.1-24	--
SP-1B-LT1	BMC	BYB241X-A	Stm Gen RC-H-1A Full Rnge Level	X	X	167 p.1-3	--
			0-600 in. H2O				
SP-1B-LT4[a]		ByB841X-A	Start Up Steam Gen Level	--	--	167 p.1-29	--
SP-1B-LT5[a]		By9841X-A	Start Up Steam Gen Level	--	--	167 p.1-30	--
SP-6A-PT1	FOX	E11GM-SAE1	Stm Gen RC-H-1A Out Press 0-1200 psig	X	X	167 p.1-57	--
SP-6A-PT2	FOX	E11GM-SAE1	Stm Gen RC-H-1A Out Press 0-1200 psig	X	X	167 p.1-59	--
WDL-FR-7100[a]	Taylor	930 J	Leak Clrs. Outlet Flow to RC Drain Hd.	--	--	126 p.78	--
WDL-FS-7107[a]	Digitec	685	RC-P-1A Seal Leak to RC Drain Tk.	--	--	126 p.92	--
WDL-FS-7108[a]	Digitec	685	RC-P-1B Seal Leak to RC Drain Tk.	--	--	126 p.95	--
WDL-FS-7110[a]		TE2E2121A/CRC	Leakage Temp. Dn. Strm. RC-P-2B Gasket Din.	--	--	126 p.102	--
WDL-LG-1205	JERG	--	Drain Tank Level Glass Gauge 0-96 in.H2O	X	X	126 p.13	--
WDL-LI-1316[a]	Sigma	2500	RB Sump Level	--	--	143 p.3	--
WDL-PI-7106[a]	Sigma	2500	Leakage Trans. PMP. Disch. Press.	--	--	126 p.89	--
WDL-LS-1206	MAG	751	High Level Switch	X	X	126 p.14	--

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
WDL-LS-1208	MAG	751	Low Level Switch	X	X	126 p.20	--
WDL-LT-1315	DREX	508-15-6	RB Sump Level 0-54 in. H20	X	X	--	--
WDL-PI-7105[a]	Sigma	2500	Leakage Trans. Pmp. Disch. Press.	--	--	126 p.86	--
WDL-PI-1202-1[a]	Sigma	2500	RC Drain Tank Press WDL-T-3	--	--	126 p.8	--
WDL-PS-1261	SOR	12N-AA4CSS	Pressure Switch 2-6 psig	X	X	126 p.26	--
WDL-PS1203-1	SOR	9N-AA5	Drn Tank Pressure Switch 100-1000 psig	X	X	126 p.10	--
WDL-PS1203-2	SOR	6N-T3-C	Drn Tank Pressure Switch 4-100 psig	X	X	126 p.11	--
WDL-PS1203-3	SOR	4N-AA2	Drn Tank Pressure Switch 1-8 psig	X	X	126 p.12	--
WDL-PT-1202	FOX	E110M-SA02	Drain Tank Bellows 0-750 psig	X	X	126 p.6	--
WDL-TE-1200-1[a]	REC	R1104WC46BXX	RC Drain Tank WDL-T-3	--	--	126 p.1	--
WDL-T-7102[a]	REC	104 WC27B	Leakage Clr. Outlet Hor. Temp.	--	--	126 p.79	--
YM-AMP-7022	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7023	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7024	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7025	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7026	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7027	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7028	--	--	Vibration Element Preamp	X	X	--	--
YM-AMP-7029	--	--	Vibration Element Preamp	X	X	--	--
YM-VE-7018	SOR		Vibration Element Lower Vessel In Core Tubes Ch. 1	X	X	--	--
YM-VE-7019	SOR	--	Vibration Element Lower Vessel In Core Tubes Ch. 2	X	X	--	--
YM-VE-7020	SOR	--	Vibration Element Lower Vessel Shroud	X	X	--	--
YM-VE-7021	SOR	--	Vibration Element Lower Vessel Shroud	X	X	--	--
YM-VE-7022	RM	--	Vibration Element Stm Gen A Upper Tube Sheet	X	X	--	--
YM-VE-7023	RM	--	Vibration Element Stm Gen B Upper Tube Sheet	X	X	--	--
YM-VE-7024	RM	-	Vibration Element Stm Gen A Upper Tube Sheet	X	X	--	--
YM-VE-7025	RM	--	Vibration Element Stm Gen B Upper Tube Sheet	X	X	--	
YM-VE-7026	SOR	--	Vibration Element Stm Gen A Lower Tube Sheet	X	X	--	--
YM-VE-7027	SOR	--	Vibration Element Stm Gen B Lower Tube Sheet	X	X	--	--
YM-VE-7028	SOR	--	Vibration Element Stm Gen A Lower Tube Sheet	X	X	--	--
YM-VE-7029	SOR	--	Vibration Element Stm Gen B Lower Tube Sheet	X	X	--	--
YM-VR-3961	MERC	--	Peak Rec Accelerometer	X	X	--	--
YM-VR-3962	MERC	--	Peak Rec Accelerometer	X	X	--	--

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
2-1A-1	--	--	Lube PP	X	X	--	--
2-1B-1	--	--	Lube PP	X	X	--	--
AH-E-11A	AAF	--	RB Air Cooling Fan-Motor Assembly A	X	X	--	--
AH-E-11C	AAF	--	RB Air Cooling Fan-Motor Assembly C	X	X	--	--
AH-E-52A	--	--	Reac. Vessel Cavity Supply Air Fan A	X	X	--	--
AH-E-52B	--	--	Reac. Vessel Cavity Supply Air Fan B	X	X	--	--
CRDM-ST01	DPSC	--	CR Drive Stator	X	X	--	--
CRDM-ST35	DPSC	--	CR Drive Stator	X	X	--	--
CRDM-ST50	DPSC	--	CR Drive Stator	X	X	--	--
CRDM-AP101	DPSC	--	CR Absolute Position Indicator	X	X	--	--
CRDM-AP135	DPSC	--	CR Absolute Position Indicator	X	X	--	--
CRDM-AP150	DPSC	--	CR Absolute Position Indicator	X	X	--	--
EE-ELPR-1A	W	--	Lighting Panel LPR-1A	X	X	--	--
EE-EPDP-3A	W	--	Power Distribution Panel PDP-3A	X	X	--	--
EE-EPDP-3B	W	--	Power Distribution Panel PDP-3B	X	X	--	--
EE-ERPR-1A	W	--	30 KVA Transformer RPR-1A	X	X	--	--
EE-ERPR-3D	W	--	30 KVA Transformer RPR-30	X	X	--	--
EE-FLPR-30	W	--	Lighting Panel LPR-30	X	X	--	--
EE-FRPR-1A	W	--	Receptacle Panel RPR-1A	X	X	--	--
EE-FRPR-3D	W	--	Receptacle Panel RPR-30	X	X	--	--
RC-P-1A	--	--	Reactor Coolant Pump	X	X	--	--
RC-P-2B	--	--	Reactor Coolant Pump	X	X	--	--
SD-P-13A	CRNE	--	Tendon Access Gallery Sump Pump A	X	X	--	--
SD-P-1	CRNE	--	Steam Gen Secondary Side Drain Pump	X	X	--	--
WDL-P-2A	CRNE	--	Reactor Building Sump Pump A	X	X	--	--
WDL-P-9A	CRNE	--	Leakage Transfer Pump	X	X	--	--
AH-V2A	HNPR	36 in. B'Fly	RB Purge Air (Air Operated)	X	X	138 p.50	--
AH-V2B	HNPR	36 in. B'Fly	RB Purge Air (Air Operated)	X	X	138 p.51	--
AH-V6	VLCR	1 in. Solnd	RB Purge Air	X	X	--	--
AH-V74	VLCR	1/2 in. Solnd	RB Ventilation Damper (3-Way)	X	X	--	--
CA-V1	VLAN	1/2 in. Gate	Pressurizer Steam Space Sampler (Mov)	X	X	--	--
CF-V1A	VLAN	14 in. Gate	Core Flood Tank to Reactor (Mov)	X	X	--	--
DH-V1	VLAN	12 in. Gate	Decay Heat Removal (Mov)	X	X	--	--
DH-V2	VLAN	12 in. Gate	Decay Heat Removal (Mov)	X	X	--	--
MU-V1B	VLAN	2 in. Gate	Letdown Cooler Primary (Mov)	X	X	99 p.20	--

TABLE 1. (continued)

Tag Number	Manufacturing Code	Model	Service/Description	In Service: Before Accident	In Service: After Accident	MTX Maintenance Log	Remarks
MU-V2A	VLAN	2 in. Gate	Letdown Cooler Primary (Mov)	X	X	99 p.20	--
RC-R2	ORES	--	PORV	X	X	--	--
RC-V1	VLAN	2 in. Globe	Pressurizer Spray Line (Mov)	X	X	--	--
RC-V2	VLAN	2 in. Gate	Pressurizer to RC (Mov)	X	X	--	--
WDL-V1118	CRNE	4 in.	RC Drain Header to Drain Tank (Mov)	X	X	--	--
WDL-V271	VLAN	4 in. Gate	RB Sump Discharge	X	X	--	--
R-400	--	--	Pressurizer Heaters Power	X	X	--	--
R-402	--	--	Pressurizer Heaters Power	X	X	--	--
R-405	--	--	BOP Control	X	X	--	--
R-406	--	--	RPS & SFAS	X	X	--	--
R-407	--	--	Pressurizer Heaters Power	X	X	--	--
R-500	--	--	Control	X	X	--	--
R-504	--	--	Control	X	X	--	--
R-506	--	--	Control	X	X	--	--
R-509	--	--	RB Coolant Fans etc.	X	X	--	--
R-514	--	--	LV Power BOP	X	X	--	--
R-515	--	--	BOP Control	X	X	--	--
R-596	--	--	Incore Monitoring Instm	X	X	--	--
R-601	--	--	CRD Instr	X	X	--	--
R-607	--	--	BOP Instr	X	X	--	--
R-608	--	--	RC-P-2B Feeder	X	X	--	--
R-612	--	--	Spare				

a. Instruments not listed in GEND 001 but since found to be of interest.

TABLE 2. TMI UNIT 2 REACTOR BUILDING INSTRUMENT LISTING CODES

Tag Number

First Two Letters in Tag Number Identify the System:

Symbol	System
AH	Air Handling Equipment
CF	Core Flooding
HP	Health Physics
IC	Intermediate Closed Cooling Water
LR	Leak Rate Test
MS	Main Stream
MU	Make-up & Purification
NM	Nuclear Plant Nitrogen Manifold
NI	Nuclear Instrument
NS	Nuclear Services--Closed Cooling Water
RB	Reactor Building Normal Cooling
RC	Reactor Coolant
RR	Reactor Building Emergency Cooling--River Water
SP	Secondary Plant
WDL	Waste Disposal--Liquid
YM	Miscellaneous Instrumentation

Second Two Letters in Tag Number Identify the Function:

Symbol	Function
CV	Control Valve
DPT	Differential Pressure Transmitter
EP	Electric Positioner
FE	Flow Element
FS	Flow Switch
FT	Flow Transmitter
HE	Humidity Element
KS	Position Switch
LG	Level Gauge
LS	Level Switch
LT	Level Transmitter
ND	Nuclear Detector
PI	Pressure Indicator
PS	Pressure Switch
PT	Pressure Transmitter
RA	Radiation Alarm
RI	Radiation Indicator
RT	Radiation Transmitter
SS	Speed Switch
ST	Speed Transmitter
TE	Temperature Element
TI	Temperature Indicator
TS	Temperature Switch

TABLE 2. (continued)

Tag Number

Second Two Letters in Tag Number Identify the Function:

Symbol	System
UI	Multivariable Indicator
VE	Vibration Element
VS	Vibration Switch

Manufacturer Code

Symbol	Company
A-B	Allen-Bradley
AMI	Aminco
ASCO	Automatic Switch Co.
BDV	Barksdale
BING	Bingham Pump
BMC	Bailey
BRK	Brooks
B&W	Babcock & Wilcox
DRES	Dresser Valves
DREX	Drexel Brooks
ELPR	Electro Products
FOX	Foxboro
GEMS	GEMS Sensor Div. De Laval Turbine
IRD	IRD
JERG	Jerguson Gage & Valve
M&M	McDonnell & Miller
MAG	Magnatrol
MNCO	Minco Products
PENN	Penn Controls
REC	Rosemont Engineering Co.
RM	Rockwell
SOR	Static-O-Ring
TEC	Thermo Electric
TEK	Taktro (Applied Power Ind.)
VICO	Victoreen Instrument Div.
VLAN	Velan
VLCR	Valcor
W	Westinghouse
WARR	Warrick

CONCLUSION

In accordance with IEPG Recommendation No. 2, this report indicates the operational status of instrumentation and electrical equipment items originally listed in the Task 1.0 section of GEND 001.

In accordance with IEPG Recommendation No. 4, the Instrumentation and Electrical Program has compiled engineering data on the 97 Priority 1 and 61 Priority 2 I&E items. The data on the Priority 3 I&E items will be collected only as necessary.

The information presented in this report will be updated as additional data are obtained.