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RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards revised response to NUREG-0737 Action Item II.E.4.2 on containment isolation dependability.Encl closes out SER Open Item 84.

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	OELD		1	0	OP LIC BR	34	1	1
	POWER SYS BR	19	1	1	PROC/TST REV	20	1	1
	QA BR	21	1	1	RAD ASSESS BR	22	1	1
	REAC SYS BR	23	1	1	REG FILE	01	1	1
	SIT ANAL BR	24	1	1	STRUCT ENG BR	25	1	1
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June 5, 1981

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket Nos. 50-387
50-388

SUSQUEHANNA STEAM ELECTRIC STATION
REVISED RESPONSE TO CONTAINMENT ISOLATION DEPENDABILITY -
SER OPEN ITEM NO. 84
ER 100450 FILE 841-2, -12 PLA-835

Dear Mr. Schwencer:

Attached is a revised response to NUREG 0737, requirement II.E.4.2. This response completes our action and will allow close out of open item no. 84.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

DPM/mks

Attachment

cc: R. M. Stark - NRC

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X.1.29.3 Statement of Response

(1) Containment isolation signals are actuated by several sensed parameters (refer to Table 3.3.2-1 in the Technical Specifications). This complies with SRP Subsection 6.2.4, Paragraph II-6.

(2) Each process line penetrating containment was reviewed to determine whether it is an essential or non-essential line for purposes of isolation requirements. The classification for each line is given in Table X.1.29-1.

Justification for the classification as an essential or non-essential line was also developed and is provided in Table X.1.29-2. Systems identified as essential are those which may be required to perform an indispensable safety function in the event of an accident. Non-essential systems are those not required during or after an accident. Since instrument lines are not governed by isolation signals but are equipped with a manual isolation valve followed by an excess flow check valve outside the containment, the review of these lines was limited to ensure compatibility with the penetration listing in Table 6.2-12a.

(3) All lines to non-essential systems are provided with isolation capability. All isolation valves in these lines, except the reactor water clean-up system (RWCU) discharge valves (G33-1F042 and 1F104 receive auto-isolation signals (refer to Table X.1.29-1). The isolation function for the RWCU discharge lines is provided by three series check valves (141-1F010A,B, HV-14107A,B and G33-1F039A,B) which prevents back flow from the reactor vessel. The RWCU discharge isolation valves are not closed to prevent the loss of the filter cake in the RWCU filter demineralizer system and injection of resin into the vessel on restart of the RWCU system.

(4) All containment isolation valves, except those listed below, will not automatically open on logic reset. Some valves require corrective action to comply with this requirement. All such actions will be completed prior to fuel load. An overide of any isolation signal will not cause automatic opening of any isolation valve.

a) The following valves in the Liquid Radwaste, Reactor Water Sample, and Reactor Building Chilled Water systems are normally open valves and will close upon a containment isolation signal.

HV-16116	A1 & A2
HV-16108	A1 & A2
HV-18781	A1 & A2 & B1 & B2
HV-18782	A1 & A2 & B1 & B2
HV-18791	A1 & A2 & B1 & B2
HV-18792	A1 & A2 & B1 & B2
B31-1F019	
B31-1F020	

When the containment isolation logic is reset the above valves would have reopened. The logic for these valves will be modified by fuel load to ensure that they will not reopen on logic reset. Table X.1.29-1 reflects the modified configuration of these valves.

b) The RCIC and HPCI turbine steam supply line isolation valves (HV-1F007, HV-1F008, HV-1F002 and HV-1F003) are normally open valves and will close upon a steam line break isolation signal. These valves are essential valves and do not receive a containment isolation signal. Reopening of these valves will occur if the hand switches are not placed in the closed position by the operator prior to actuation of the reset switch and the isolation parameters have cleared.

These valves are equipped with key-locked maintained contact switches to insure that these valves are open during ECCS initiation. If a pipe break condition were detected, then these valves will be automatically closed. After the pipe break problems are cleared, these valves can be reopened to their normal emergency positions by deliberate operator action using the key-locked reset switches for each system.

c) The inboard HPCI and RCIC isolation valves each have a pressure equalization valve (HV-1F100 and HV-1F088) around them. The equalization valves are normally closed and are only used to equalize the pressure around the inboard isolation valve in order to open them. If open, the valves will close upon a steam line break isolation signal. Reopening of these valves will occur if the hand switches are not placed in the closed position by the operator prior to actuation of the reset switch and the isolation parameters have cleared.

As with the HPCI/RCIC isolation valves the equalization valves will reopen upon deliberate manual logic reset using the key-locked reset swithces. These valves must open in order to allow the inboard isolation valves to reopen to their normal emergency positions when the pipe break problems have cleared. If the equalization valve switches are not in the open position the operator must manually open them to equalize the pressure around the inboard HPCI/RCIC valves.

d) The RHR containment isolation valves (HV-1F016 A, B, and HV-1F028A,B) associated with the drywell and suppression pool spray lines will reopen if their handswitches are placed in the open position prior to actuation of the reset switch, the LPCI injection signals are clear, and the LPCI injection valves are closed. These spray line valves are normally closed and are provided key-locked hand switches and receive an isolation signal as described in Tables X.1.29-1 and X.1.29-3. If the valves were open before an LPCI injection event, these valves will automatically close and can not be reopened if the LPCI injection signals still exist or the LPCI injection valves are still open. This is to insure that the LPCI injection function will not be inadvertently jeopardized by opening of the spray line isolation valves. If these spray line valves were closed before the LPCI injection event, the valves will remain closed after reset even after all injection signals are clear and the LPCI injection valve are closed.

As noted in Table X.1.29-1 only the outermost valve is considered a containment isolation valve for these penetrations. The three inboard valves HV-1F021A, HV-1F027A and HV-1F024A are spring return to "AUTO" switches and will not automatically reopen after logic reset and all signals clear. These inboard valves have not been considered containment isolation valves because they can not be leak tested in the "forward" direction. Since these valves effectively function as containment isolation valves, a logic reset will not automatically result in a breach of containment integrity for these penetrations.

(5) The BWR Owners' Group has performed a generic analysis which is summarized as follows. The containment isolation analytical setpoint pressure for Mark I, II, and III containments is approximately 2 psig (drywell pressure). Under normal operating conditions, fluctuations in the atmospheric barometric pressure as well as heat inputs (from such sources as pumps) can result in containment pressure increases on the order of 1 psi. Consequently, the isolation setpoint of 2 psig provides a 1 psi margin above the maximum expected operating pressure. The 1 psi margin to isolation has proved to be a suitable value to minimize the possibility of spurious containment isolation. At the same time, it is such a low value (particularly in view of the small drywell volume of Mark I, II, and III containments) that it provides a very sensitive and positive means of detecting and protecting against breaks and leaks in the reactor coolant system. No change of the setpoint is necessary for these containment types.

PP&L concurs with this position. Therefore, no modifications to the containment isolation pressure setpoint are necessary in response to this requirement.

(6) The design of the containment atmosphere purge values was reviewed against Branch Technical Position CSB6-4. On the basis of this review the following valves will be administratively maintained sealed closed when the reactor is in OPERATIONAL CONDITIONS 1, 2 or 3, except as provided is Technical Specifications 3.6.1.8. Operations Instruction OP-OI-012, "Locked Components", implements the administrative controls for sealed closed valves.

VALVE	P&ID M-157 COORDINATES
HV-15704	C-7
HV-15714	E-7
HV-15721	D-3
HV-15722	D-4
HV-15723	D-2
HV-15724	C-2
HV-15725	C-4

Technical Specification 3.6.1.8 will be revised to require this sealed closed requirement, to be verified once per 92 days per Specification 4.6.1.8.

(7) Two redundant safety grade radiation monitors are installed down stream of the Standby Gas Treatment System. A high radiation level will trip the Standby Gas Treatment System. This signal will be used to close the following containment isolation valves in the vent and purge system: HV-15705, HV-15713, HV-15703, HV-15711, SV-15736A, SV-15737, SV-15767 and SV-15776A.

The radiation setpoint will be set to so that the 10CFR 100 limits are not exceeded. The high radiation alarm for these detectors is annunciated on the control room front row panel 1C653. The radiation level measured by these detectors is recorded on control room backrow panel 1C600.

These modifications will be complete by fuel load.

TABLE # X.1.29-1

CONTAINMENT ISOLATION ACTUATION PROVISIONS

P&ID, SYSTEM	E OR NE	BASIS (1)	PENETR. NO.	VALVE NO.	VALVE ACTUATION	AUTOMATIC ACTUATION SIGNALS (2)	ELECTRICAL SCHEMATIC DIAGRAM	GE ELEM & ACTUATING RELAY	AUTO OPEN ON ISO RESET	VALVE STATUS LOCATION INDICATION SOURCE	VALVE STATUS LOCATION INDICATION LOCAL PNL	VALVE STATUS LOCATION INDICATION CONTROL RM	HAND SWITCH NO.	HAND SWITCH TYPE (14)	POWER SOURCES (3) VALVE MOTOR	POWER SOURCES (3) CONTROL	POWER SOURCES (3) LOGIC	OTHER REMARKS
M-113 REAC BLDG CCW	NE	1.	X-24	HV 11313	AI	Y	E-147 SH 4	B21-131 (K84)	NO	ZS	CB216A	-	11314	E-10AC MOM-MI	1B236	1Y216	RPS A	(10)
				11345	"	Y	15	(K83)	"	"	CB216B	-	11346	"	1B246	1Y226	RPS B	(10)
	NE	1.	X-23	11314	"	Y	3	(K84)	"	"	CB216A	C668	11314	"	1D236	1Y216	RPS A	(10)
				11346	"	Y	14	(K83)	"	"	CB216D	C668	11346	"	1D246	1Y226	RPS B	(10)
M-126 INSTRUM GAS	E	2.	X-41	SV-12654A	RM	-	E-172 SH 6	-	-	-	-	C601	12654A	E-30AB MOM	-	-	-	
				126154	CKV	-	-	-	-	-	-	-	-	-	-	-	-	
	E	2.	X-21	SV-12654B	RM	-	SH 6	-	-	-	-	C601	12654B	E-30AB MOM	-	-	-	
				126152	CKV	-	-	-	-	-	-	-	-	-	-	-	-	
	NE	3.	X-19	SV 12651	AI	Y	SH 5	(K84)	NO	ZS	C201	C601	12651	E-10AB MOM	-	1Y236	RPS A	
				126074	CKV	-	-	-	-	-	-	-	-	-	-	-	-	
	NE	3.	X-93	SV 12661	AI	Y	SH 1	(K84)	NO	ZS	-	C601	12661	E-10AB MOM	-	1Y216	RPS A	
				126072	CKV	-	-	-	-	-	-	-	-	-	-	-	-	
	NE	3.	X-87	SV 12605	AI	Y	SH 5	(K83)	NO	ZS	C201	C601	12605	E-10AB MOM	-	1Y246	RPS B	
				HV 12603	AI	Y	SH 2	(K84)	NO	ZS	C201	C601	12603	E-10AB MOM	1B236	1Y236	RPS A	
	NE	3.	X-218	SV 12671	AI	Y	SH 1	(K84)	NO	ZS	-	C601	12671	E-10AB MOM	-	1Y216	RPS A	
				126070	CKV	-	-	-	-	-	-	-	-	-	-	-	-	
M-139 MSIV LEAKAGE CONTROL SYSTEM	NE	4.	X-7A	E32 1F001B	AC	(4)	E-189 SH 1	E32-18 (K10B)	N/A	ZS	-	C644	139018	CR'940 (KLRN) S.UI	1B227		120VAC DIV 2	
M-141 NUCLEAR BOILER	NE	4.	X-7A	B21-1F028A	AI	B,C,D,E, P,UA	E-170 SH 1	B21-131(K7A-D)	NO	LS		C601	14128A	CR:940 MAINT	(17)	125VDC	RPS A	(5)
				-1F022A	AI	"	SH 7	(K7A-D)	NO	LS	C201	C601	14122A	CR:940 MAINT	(17)	1D614	RPS B	(5) (13)
	NE	4.	X-8	-1F016	AI	"	SH 2	(K56)	NO	ZS	-	C601	14116	CR:940 (KLRN) SRN	1B237		RPS A	(5)
				-1F019	AI	"	SH 3	(K57)	NO	ZS	-	C601	14119	CR'940 (KLRN) SRN	1D274		RPS B	(5)
	E	5.	X-9A	-1F032A	RM	-	E-181 SH 3	B21-96 -	-	ZS	-	C651	14132A	E-10AC MOM-MI	1D217		-	
				-1F010A	CK	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	5.	X-9B	-1F032B	RM	-	E-181 SH 3	B21-96 -	-	ZS	-	C651	14132B	E-10AC MOM-MI	1D217		-	
				-1F010B	CK	-	-	-	-	-	-	-	-	-	-	-	-	-
M-143 REACTOR RECIRC	NE	8.	X-60B	B31-1F019	AI	B,C	E-170 SH 1	B21-131 (K72)	NO	LS	-	C651	14319	CR:940 MAINT	(17)	1C622	RPS A	(6)(7)
				-1F020	AI	B,C	SH 1	(K73)	NO	LS	-	C651	14320	CR:940 MAINT	(17)	1C622	RPS B	(6) (7)

P&ID, SYSTEM	E OR NE	BASIS (1)	PENETR. NO.	VALVE NO.	VALVE ACTUATION	AUTOMATIC ACTUATION SIGNALS (2)	ELECTRICAL SCHEMATIC DIAGRAM	GE ELEM & ACTUATING RELAY	AUTO OPEN ON ISO RESET	VALVE STATUS LOCATION INDICATION			HAND SWITCH		POWER SOURCES (3)			OTHER REMARKS
										SOURCE	LOCAL PNL	CONTROL RM	NO.	TYPE (14)	VALVE MOTOR	CONTROL	LOGIC	
M-144 RWCU	NE	7.	X-14	G33-1F001	AI	A,J,W	E-164 SH 6	B21-131 (K26)	NO	ZS	-	C651	144D1A	CR2940 SRN	1B236		RPS A	
				-1F004	AI	A,J,W	SH 5	B21-131 (K27)	NO	"	-	"	144D4A	CR2940 SRN	1D274		RPS B	
	NE	7.	X-9A	-1F042	RM	-	SH 4	G33-153 -	-	"	-	"	144D42	E-30AC MOM-MI	1B217		-	
				-1F104	RM	-	SH 4	G33-153 -	-	"	-	"	144D40	E-30AC MOM-MI	1D217		-	
M-148 STANDBY LIQUID CONTROL	E	9.	X-42	C41-1F007	CK	-	-	-	-	-	-	-	-	-	-	-	-	
				1F006	RM	-	E-166 SH 4	C41-36 -	-	ZS	-	C601	148D6	CR2940 (KLRO) MAINT	1B236	-	-	
M-149 RCIC	E	6.	X-9A	E51-1F013	AC	I	E-154 SH 7	E51-90 (K2)	NO	ZS	C201	C601	14913A	CR2940 SRA	1D254		125 VDC BUS A	
	E	6.	X-10	-1F088	AI	K	18	(K50)	YES	"	-	"	14988	CR2940 MAINT	(17)		" B	
				-1F007	AI	K	4	(K33)	YES	"	C201	"	14907A	CR2940 (KLPO) MAINT	1B246		" B	
				-1F008	AI	K	3	(K15)	YES	"	"	"	14908A	CR2940 (KLPO) MAINT	1D254		" A	
	E	6.	X-216	-1F019	AC	LFRC	12	(K19)	N/A	"	"	"	14919A	CR2940 SRA	1D254		" A	
				-1F021	CK	-	-	-	-									
	E	6.	X-245	-1F084	AI	FA	E-154 SH 16	(K52)	N/A	"	"	"	14984A	" "	1D264		" A	
				-1F062	AI	FA	17	(K51)	N/A	"	"	"	14962A	" "	1D254		" B	
	E	6.	X-215	-1F059	RM	-	14	-	-	"	"	"	14959A	CR2940 (KLRO) MAINT	1D254		" A	
				-1F040	CK	-	-	-	-									
	E	6.	X-217	-1F060	RM	-	E-154 SH 13	-	-	"	"	"	14960A	" " "	1D254		-	
				-1F028	CK	-	-	-	-									
	E	6.	X-214	-1F031	RM	-	E-154 SH 10	-	-	"	"	"	14931A	CR2940 SRA	1D254		-	
M-151 RHR	NE	10.	X-17	E11-1F023	AI	M,UB,Z	E-153 SH 38	B21-101 (K30)	NO	ZS	C201	C601	15123A	CR2940 (KLRC) SRN	1D274		RPS B	
				-1F022	AI	M,UB,Z	37	B21-101 (K29)	NO	"	"	"	15192A	CR2940 SRN	1B237		RPS A	
	E	11.	X-39A	-1F016A	AC	G	95	E11-66 (K61A)	(15)	"	-	"	15116A	CR2940 (KLRC) MAINT	1B217		125 VDC BUS A	
	E	12.	X-13A	-1F015A	AC	G&T&Z&UB	25	(K66A)	NO	"	-	"	15115A	" "	1B219		"	(8)
				-1F050A	AC	Z	30	(K108)	NO	"	-	"	15115A	CR2940 MAINT	(17)	1Y216	"	(9)
				-1F122A	AC	Z	30	(K108)	NO	"	-	"	15115A	" "	(17)	1Y216	"	(9)
	E	11.	X-205A	-1F028A	AC	G	96	(K61A)	(15)	"	-	"	15128A	CR2940 (KLRC)	1B216		"	
	NE	13.	X-204A	-1F028A	AC	G	96	(61A)	(15)	"	-	"	15128A	CR2940 (KLRC)	1B216			
	E	14.	X-226A	-1F007A	AC	LFRH	26	(K84A)	N/A	"	-	"	15107A	CR2940 SRA	1B219		"	
	E	15.	X-246A	-1F055A	PSV	-	-	-	-	"	-	-	-	-	-		-	
				-15106A	PSV	-	-	-	-	"	-	-	-	-	-		-	
				-1F103A	RM	-	E-153 SH 27	E11-66 -	-	"	-	C601	15113A	CR2940 SRN	1B237		-	
	E	15.	X-246B	-1F055B	PSV	-	-	-	-	"	-	-	-	-	-		-	
				-15106B	PSV	-	-	-	-	"	-	-	-	-	-		-	
				-1F103B	RM	-	E-153 SH 34	E11-66 -	-	"	-	C601	15113B	CR2940 SRN	1B247		-	
				-1F097	PSV	-	-	-	-	"	-	-	-	-	-		-	
	E	16.	X-203A	-1F004A	RM	-	19	E11-66 -	-	"	-	C601	15104A	CR2940 (KLRO)	1B216			
	E	16.	X-203C	-1F004C	RM	-	19	E11-66 -	-	"	-	"	15104C	" "	1B237			

P&ID SYSTEM	E OR NE	BASIS (1)	PENETR. NO.	VALVE NO.	VALVE ACTUATION	AUTOMATIC ACTUATION SIGNALS (2)	ELECTRICAL SCHEMATIC DIAGRAM	GE ELEM & ACTUATING RELAY	AUTO OPEN ON ISO RESET	VALVE STATUS LOCATION INDICATION			HAND SWITCH		POWER SOURCES			OTHER REMARKS
										SOURCE	LOCAL PNL.	CONTROL RM.	NO.	TYPE (14)	VALVE MOTOR	CONTROL	LOGIC	
M-151 RHR (CONT)	E	11.	X-39D	E11-1F016B	AC	G	E-153 SH 9	E11-66 (K61D)	(15)	ZS	-	C601	15116B	CR2940 (KLRC) MAINT	1B226		125 VDC BUS B	
	E	12.	X-13D	-1F015B	AC	G&T&UB&Z	16	(K67D)	NO	-	C201	-	15115B1	CR2940 SRA	1B229		-	
				-1F050B	AC	Z	30	(K10B)	NO	LS	-	-	15150B	CR2940 MAINT	(17)		-	
				-1F122B	AC	Z	30	(K10B)	NO	ZS	-	"	15150B	" "	(17)		-	
	E	12.	X-12	-1F008	AI	M,UB,Z	15	B21-131 (K30)	NO	ZS	C201	-	15108D1	CR2940 SRN	1D274		RPS B	
				-1F009	AI	M,UB,Z	17	B21-131 (K29)	NO	ZS	C201	-	15109U1	CR2940 SRN	1B236		RPS A	
				-1F126	PSV	-	-	-	-	-	-	-	-	-	-		-	
	E	11.	X-205D	-1F028B	AC	G	E-153 SH 12	E11-66 (K61H)	(15)	ZS	C201	C601	15128B	CR2940 (KLRC) MAINT	1B226		125 VDC BUS D	
	NE	13.	X-204D	-1F028B	AC	G	12	(K61D)	(15)	"	C201	-	15128B	CR2940 (KLRC) MAINT	1B226		-	
	E	14.	X-226B	-1F007B	AC	LFRH	93	(K84B)	N/A	-	-	-	15107B	CR2940 SRA	1B229		-	
	E	16.	X-203D	-1F004D	RM	-	19	E11-66 -	-	-	-	-	15104D	CR2940 (KLRO) MAINT	1D247		-	
	E	16.	X-203B	-1F004B	RM	-	10	E11-66 -	-	-	C201	-	15104B1	CR2940 (KLRO) MAINT	1B226		-	
M-152 CORE SPRAY	E	17.	X-16A	E21-1F005A	AC	G&T	E-155 SH 3	E21-35 (K13A)	(16)	ZS	-	C601	15205A	CR2940 SRA	1B217		125 VDC BUS A	
				-1F006A	RM	-	6	E21-35 -	-	-	-	-	15206A	CR2940 (PB)	(17)	1Y216	-	
				-1F037A	RM	-	7	E21-35 -	-	-	-	-	15206A	" "	(17)	1C626	-	
	E	17.	X-16B	-1F005B	AC	G&T	3	E21-35 (K13B)	(16)	-	-	-	15205B	CR2940 SRA	1B227		BUS B	
				-1F006B	RM	-	6	E21-35 -		-	-	-	15206B	CR2940 (PB)	(17)	1Y226	B	
				-1F037B	RM	-	7	E21-35 -		-	-	-	15206B	" "	(17)	1C626	B	
	NE	18.	X-207A	-1F015A	AC	G	5	E21-35 (K10A)	(16)	-	-	-	15215A	CR2940 SRA	1B237		A	
	NE	18.	X-207B	-1F015B	AC	G	5	E21-35 (K10B)	(16)	-	-	-	15215B	" "	1B247		B	
	E	19.	X-208A	-1F031A	AC	LFCS	2	E21-35 (N006A)	N/A	-	-	-	15231A	" "	1B216		A	
	E	19.	X-208B	-1F031B	AC	LFCS	2	E21-35 (N006B)	N/A	-	-	-	15231B	" "	1B226		B	
	E	20.	X-206A	-1F001A	RM	-	4	E21-35 -		-	-	-	15201A	CR2940 (KLRO)	1B216		-	
	E	20.	X-206B	-1F001B	RM	-	4	E21-35 -		-	-	-	15201B	" "	1B226		-	
M-155 HPCI	E	21.	X-11	E41-1F002	AI	L	E-152 SH 16	E41-69 (K44)	YES	ZS	-	C601	15502	CR2940 (KLRO) MAINT	1B237		125 VDC BUS A	
				-1F003	AI	L	13	(K34)	"	-	-	-	15503	CR2940 (KLRO) MAINT	1D264		BUS B	
				-1F100	AI	L		(K36)	"	-	-	-	15521	CR2940 MAINT	(17)		BUS A	
	E	22.	X-211	-1F012	AC	LFHP	10	(K10)	N/A	-	-	-	15512	CR2940 SRA	1D264		BUS B	
				-1F046	CK	-	-	-	-	-	-	-	-	-	-	-	-	
	E	21.	X-244	-1F079	AI	FB	E-152 SH 17	E41-69 (K18A)	N/A	-	-	-	15579	CR2940 SRA	1D254		BUS A	
				-1F075	AI	FB	17	(K18B)	N/A	-	-	-	15575	CR2940 SRA	1D264		BUS B	
	E	21.	X-210	-1F066	RM	-	15	-		-	-	-	15566	CR2940 (KLRO) MAINT	1D274		-	
				-1F049	CK	-	-	-	-	-	-	-	-	-	-	-	-	
	E	23.	X-209	-1F042	AI	L	E-152 SH 14	E41-69 (K34)	NO	-	-	-	15542	CR2940 SRA	1D264		BUS B	
	E	5.	X-9B	-1F006	AC	G	9	(K2)	(16)	-	-	-	15506	CR2940 SRA	1D264		BUS B	

P&ID, SYSTEM	E OR NE	BASIS (1)	PENETR. NO.	VALVE NO.	VALVE ACTUATION	AUTOMATIC ACTUATION SIGNAL(2)	ELECTRICAL SCHEMATIC DIAGRAM	GE ELEM & ACTUATING RELAY	AUTO OPEN ON ISO RESET	VALVE STATUS LOCATION			HAND SWITCH		POWER SOURCE			OTHER REMARKS
										SOURCE	LOCAL PNL.	CONTROL RM.	NO.	TYPE (14)	VALVE MOTOR	CONTROL	LOGIC	
M-187	NE	1.	X-53	HV 18781B1	AI	Y	E-216 SH 11	B21-131 (K83)	NO	ZS	-	C681	18781B	CM2340 MAINT	11Y246	10634	RPS B	(17) (18)
REACTOR	"	"		HV 18782A1	"	Y	23	(K84)	"	"	-	"	18782A	-	11Y236		RPS A	" "
BLDG	"	"	X-86B	HV 18791B2	"	Y	11	(K83)	"	"	-	"	18791B	-	11Y246	10634	RPS B	" "
CHILLED	"	"		HV 18792A2	"	Y	23	(K84)	"	"	-	"	18792A	-	11Y236		RPS A	" "
WATER	"	"	X-86A	HV 18791B1	"	Y	11	(K83)	"	"	-	"	18791B	-	11Y246	10634	RPS B	" "
(CONT)	"	"		HV 18792A1	"	Y	23	(K84)	"	"	-	"	18792A	-	11Y236		RPS A	" "
	"	"	X-56	HV 18781A2	"	Y	11	(K84)	"	"	-	"	18781A	-	11Y236	10634	RPS A	" "
	"	"		HV 18782D2	"	Y	23	(K83)	"	"	-	"	18782B	-	11Y246		RPS B	" "
	"	"	X-55	HV 18781A1	"	Y	11	(K84)	"	"	-	"	18781A	-	11Y236	10634	RPS A	" "
	"	"		HV 18782B1	"	Y	23	(K83)	"	"	-	"	18782B	-	11Y246		RPS B	" "

P&ID, SYSTEM	E OR NE	BASIS (1)	PENETR. NO.	VALVE NO.	VALVE ACTUATION	AUTOMATIC ACTUATION SIGNALS(2)	ELECTRICAL SCHEMATIC DIAGRAM	GE ELEM & ACTUATING RELAY	AUTO OPEN ON ISO RESET	VALVE STATUS LOCATION INDICATION SOURCE	LOCAL PNL	CONTROL RM	HAND SWITCH NO.	TYPE (14)	POWER SOURCES (3) VALVE MOTOR	CONTROL	LOGIC	OTHER REMARKS
M-157	NE	24.	X-26	HV 15711	AI	Y (11)	E-171 SH 19	B21-131 (K83)	NO	2S	-	C601	15711	E-30AB MOM	1Y226		RPS B	(17)
CONTMT				HV 15713	"	Y -	8	(K84)	"	"	-	"	15713	"	1Y216		RPS A	"
ATMOS				HV 15714	"	Y -	3	(K83)	"	"	-	"	15714	"	1Y226		RPS B	"
CONTROL	E	25.	X-60A	SV 15740B	"	Y (12)	4	(K84)	"	"	CB220B	"	15740B	"	1Y216	1D614	RPS A	(13)
				SV 15742B	"	Y "	"	(K84)	"	"	-	"	15742B	"	"	"	"	"
	E	25.	X-60A	SV 15776B	"	Y "	"	(K84)	"	"	-	"	15740B	"	"	"	"	"
				SV 15774B	"	Y "	"	(K84)	"	"	-	"	15742B	"	"	"	"	"
	E	25.	X-60A	SV 15750B	"	Y "	"	(K84)	"	"	-	"	15740B	"	"	"	"	"
				SV 15752B	"	Y "	"	(K84)	"	"	-	"	15742B	"	"	"	"	"
	NE	24.	X-202	HV 15703	"	Y (11)	8	(K84)	"	"	-	"	15703	"	"		"	(17)
				HV 15704	"	Y -	3	(K83)	"	"	-	"	15704	"	1Y226		RPS B	"
				HV 15705	"	Y (11)	19	(K83)	"	"	-	"	15705	"	1Y226		"	"
	E	25.	X-221A	SV 15780B	"	Y 12)	4	(K84)	"	"	CB220B	"	15740B	"	1Y216	1D614	RPS A	(13)
				SV 15782B	"	Y "	"	(K84)	"	"	-	"	15742B	"	"	"	"	"
	E	25.	X-238A	SV 15736B	"	Y "	"	(K84)	"	"	-	"	15740B	"	"	"	"	"
				SV 15734B	"	Y "	"	(K84)	"	"	-	"	15742B	"	"	"	"	"
	E	25.	X-80C	SV 15740A	"	Y "	"	(K83)	"	"	CB220A	"	15740A	"	1Y226	1D624	RPS B	"
				SV 15742A	"	Y "	"	(K83)	"	"	-	"	15742A	"	"	"	"	"
	E	25.	X-80C	SV 15750A	"	Y "	"	(K83)	"	"	-	"	15740A	"	"	"	"	"
				SV 15752A	"	Y "	"	(K83)	"	"	-	"	15742A	"	"	"	"	"
	E	25.	X-80C	SV 15776A	"	Y "	"	(K83)	"	"	-	"	15740A	"	"	"	"	"
				SV 15774A	"	Y "	"	(K83)	"	"	-	"	15742A	"	"	"	"	"
				SV 15767	"	Y -	9	(K83)	"	"	-	"	15767	"	"		RPS A	"
	NE	24.	X-25	HV 15722	"	Y -	3	(K84)	"	"	-	"	15722	"	1Y216		"	(17)
				HV 15723	"	Y -	"	(K83)	"	"	-	"	15723	"	1Y226		RPS B	"
				HV 15721	"	Y (11)	"	(K83)	"	"	-	"	15721	"	1Y226		"	"
	NE	24.	X-201A	HV 15725	"	Y (12)	"	(K84)	"	"	-	"	15725	"	1Y216		RPS A	"
				HV 15724	"	Y -	"	(K83)	"	"	-	"	15724	"	1Y226		RPS B	"
	E	25.	X-238B	SV 15734A	"	Y (12)	4	(K83)	"	"	CB220A	"	15742A	"	1Y226	1D624	"	(13)
				SV 15736A	"	Y "	4	(K83)	"	"	-	"	15740A	"	1Y226	"	"	"
				SV 15737	"	Y "	9	(K83)	"	"	-	"	15737	"	1Y226		"	"
	E	25.	X-221B	SV 15780A	"	Y "	4	(K83)	"	"	CB220A	"	15740A	"	1Y226	1D624	"	"
				SV 15782A	"	Y "	4	(K83)	"	"	-	"	15742A	"	1Y226	"	"	"
	NE	26.	X-243	HV 15766	"	Y -	5	(K84)	"	"	-	"	15766	E-30AC MOM-MI	1B237		RPS A	-
				HV 15768	"	Y -	6	(K83)	"	"	-	"	15768	E-30AC MOM-MI	1D274		RPS B	-
M-161	NE	27.	X-72B	HV 16108A1	AI	Z	E-159 SH 6	B21-131 (K59)	NO	2S	C209	C601	16108A1	E-30AB MOM	1Y236	1Y219	RPS A	(17)
LIQUID				HV 16108A2	"	"	6	(K60)	"	"	"	"	16108A2	"	"	"	RPS B	"
RADWASTE	NE	27.	X-72A	HV 16116A1	"	"	8	(K59)	"	"	"	"	16116A1	"	"	"	RPS A	"
CONTROL				HV 16116A2	"	"	9	(K60)	"	"	"	"	16116A2	"	1Y226	"	RPS B	"
M-187	NE	1.	X-85B	HV 18791A2	AI	Y	E-216 SH 11	B21-131 (K84)	NO	2S	-	C681	18791A	CR2940 MAINT	1Y236	1D634	RPS A	(17) (18)
REACTOR	"	"		HV 18792B2	"	Y	23	(K83)	"	"	-	"	18792B	"	1Y246		RPS B	" "
BLDG	"	"	X-85A	HV 18791A1	"	Y	11	(K84)	"	"	-	"	18791A	"	1Y236	1D634	RPS A	" "
CHILLED	"	"		HV 18792B1	"	Y	23	(K83)	"	"	-	"	18792B	"	1Y246		RPS B	" "
WATER	"	"	X-54	HV 18781D2	"	Y	11	(K83)	"	"	-	"	18781B	"	1Y246	1D634	RPS B	" "
	"	"		HV 18782A2	"	Y	23	(K84)	"	"	-	"	18782A	"	1Y236	"	RPS A	" "