

## 15.9 STATION BLACKOUT (SBO)

### 15.9.0 COPING ASSESSMENT FOR THE SUSQUEHANNA STEAM ELECTRIC STATION DURING A STATION BLACKOUT

10CFR50.63, "Loss of All Alternating Current Power," requires all licensees to assess the capability of their plants to maintain adequate core cooling and appropriate containment integrity during a station blackout (SBO) and to have procedures to cope with such an event. In order to comply with this Nuclear Regulatory Commission rule, a detailed coping assessment for the Susquehanna Steam Electric Station (SSES) was undertaken, based on Regulatory Guide 1.155 (Reference 15.9-1), utilizing the methodology provided by the Nuclear Management and Resources Council (NUMARC) in NUMARC 87-00, Revision 1 (Reference 15.9-2). This assessment concluded that the required SSES SBO coping time was four (4) hours and this coping assessment received NRC review and approval (Reference 15.9-3). Plant specific analysis was used in areas where necessary to more accurately represent SSES and a detailed evaluation of SSES response to an SBO event was performed. The results demonstrate that SSES can successfully cope with an SBO event, using current plant procedures, for the required four (4) hour period.

The preferred method of coping with SBO at SSES is based upon the following criteria as identified by PPL's approach to accident management:

- Extending the time to Reactor Vessel and Primary Containment challenge; and
- Maximizing the availability of plant equipment necessary to cope with and recover from SBO.

Using these criteria will assure that the required four (4) hour SBO coping time (before fuel integrity, or any other acceptance criterion in either 10CFR50.63 or NUMARC 87-00, is challenged) continues to be met.

All Plant equipment (i.e., systems and instrumentation) necessary to cope with SBO, recover from SBO, and ensure Primary Containment isolations were identified and investigated to assure that all items necessary for the equipment to function would be available for at least 4 hours. Instrumentation required for the 4 hour station blackout commitment is listed in Table 15.9-1 for Unit 1 and Table 15.9-2 for Unit 2. In addition, coping beyond 4 hours was analyzed with respect to equipment necessary to cope with and recover from SBO.

15.9.1 REFERENCES

- |        |  |  |
|--------|--|--|
| 15.9-1 | U. S. Nuclear Regulatory Commission, Regulatory Guide 1.155, 'Station Blackout, 'August 1988.  |  |
| 15.9-2 | NUMARC 87-00, Revision 1, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout in Light Water Reactors, Nuclear Management and Resource Council, August, 1991.                             |  |
| 15.9-3 | Letter, George F. Maxwell (NRC) to Harold W. Keiser, "Supplement Safety Evaluation (SSE) on the Station Blackout Rule for Susquehanna Steam Electric Station, Units 1 and 2 (TAC Nos. M68613 and M68614), June 16, 1992. |  |

Table 15.9-1 – Unit 1 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
LI-14201A	LI-14201A	Reactor Vessel Level (Wide Range)	1C601	12/729	CR	1Y11501	Y	I	J-803-4
	LT-14201A		1C225	27/749	I-513	1Y11505	Y	I	M-142-1
	LT-14203A	(Extended Range)	1C224	27/749	I-513	1Y11505	Y	I	J-442-1
LI-14201A1	LI-14201A1	(Extended Range)	1C651	12/729	CR	1Y11501	Y	I	J-803-4
	LT-14201A	(Extended Range)	1C225	27/749	I-513	1Y11505	Y	I	M-142-1
	LT-14203A	(Extended Range)	1C224	27/749	I-513	1Y11505	Y	I	J-442-1
LI-14203A	LI-14203A	(Extended Range)	1C601	12/729	CR	1Y11501	Y	I	J-802-6
	LT-14203A	(Extended Range)	1C224	27/749	I-513	1Y11505	Y	I	M-142-1
	LT-14201A	(Extended Range)	1C225	27/749	I-513	1Y11505	Y	I	J-442-1
UR-14201A	UR-14201A	Reactor Vessel Level/Press.	1C601	12/729	CR	1Y11501	Y	I	J-802-4
	LT-14202A	(Fuel Zone Range)	Local	29/719	I-401	1Y11505	Y	I	M-142-1
	LT-14201A	(Wide Range)	1C225	27/749	I-513	1Y11505	Y	I	J-442-3
	PT-14201A	(Wide Range)	1C225	27/749	I-513	1Y11505	Y	I	J-442-3
LI-14201B	LI-14201B	Reactor Vessel Level (Wide Range)	1C601	12/729	CR	1Y12501	Y	II	J-802-3
	LT-14201B	(Extended Range)	1C225	27/749	I-513	1Y12505	Y	II	M-142-1
	LT-14203B	(Extended Range)	1C224	27/749	I-513	1Y12505	Y	II	
LI-14201B1	LI-14201B1	(Extended Range)	1C651	12/729	CR	1Y12501	Y	II	J-803-4
	LT-14201B	(Extended Range)	1C225	27/749	I-513	1Y12505	Y	II	M-142-1
	LT-14203B	(Extended Range)	1C224	27/749	I-513	1Y12505	Y	II	
LI-14203B	LI-14203B	(Extended Range)	1C601	12/729	CR	1Y12501	Y	II	J-802-6
	LT-14203B	(Extended Range)	1C224	27/749	I-513	1Y12505	Y	II	M-142-1
	LT-14201B	(Extended Range)	1C225	27/749	I-513	1Y12505	Y	II	
UR-14201B	UR-14201B	Reactor Vessel Level/Press.	1C601	12/729	CR	1Y12501	Y	II	J-802-7
	LT-14202B	(Fuel Zone Range)	Local	29/719	I-401	1Y12505	Y	II	M-142-1
	LT-14201B	(Wide Range)	1C225	27/749	I-513	1Y12505	Y	II	M-142-1
	PT-14201B	(Wide Range)	1C225	27/749	I-513	1Y12505	Y	II	M-142-1
PI-14202A	PI-14202A	Reactor Vessel Pressure (Wide Range)	1C601	12/729	CR	1Y11501	Y	I	J-802-3
	PT-14201A	(Wide Range)	1C225	27/749	I-513	1Y11505	Y	I	J-442-3
PI-14202A1	PI-14202A1	Reactor Vessel Pressure (Wide Range)	1C651	12/729	CR	1Y11501	Y	I	J-803-4
	PT-14201A	(Wide Range)	1C225	27/749	I-513	1Y11505	Y	I	J-442-3
PI-14204A	PI-14204A	Reactor Vessel Pressure (Wide Range)	1C601	12/729	CR	1Y11501	Y	I	J-806-6
	PT-14201A	(Wide Range)	1C225	27/729	I-513	1Y11505	Y	I	J-442-3
PI-14202B	PI-14202B	Reactor Vessel Pressure (Wide Range)	1C601	12/729	CR	1Y12501	Y	II	J-802-3
	PT-14201B	(Wide Range)	1C224	27/749	I-513	1Y12505	Y	II	M-142-1
	PT-14203B		1C225	27/749	I-513	1Y12505	Y	II	

Table 15.9-1 – Unit 1 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
PI-14202B1	PI-14202B1	Reactor Vessel Pressure (Wide Range)	1C651	12/729	CR	1Y12501	Y	II	J-803-4
	PT-14201B		1C224	27/749	I-513	1Y12505	Y	II	M-142-1
	PT-14203B		1C225	27/740	I-513	1Y12505	Y	II	
PI-14204B	PI-14204B	Reactor Vessel Pressure (Wide Range)	1C601	12/729	CR	1Y12501	Y	II	J-802-6
	PI-14201B		1C224	27/749	I-513	1Y12505	Y	II	M-142-1
	PI-14203B		1C225	27/749	I-513	1Y12505	Y	II	
PI-E51-1R602	PI-E51-1R602	Reactor Pressure	1C601	12/729	CR	1D61407	Y	II	J-449
	PT-E51-1N007	(RCIC Turbine Steam Supply)	1C017	28/645	I-012	1D64107	Y	II	M-149
PI-E41-1R602	PI-E41-1R602	Reactor Pressure	1C601	12/729	CR	1D62406	Y	II	
	PT-E41-1N013	(HPCI Turbine Steam Supply)	1C014	25/645	I-010	1D62406	Y	II	M-155
TIAH-15751	TIAH-15751	Supp. Pool Temp. Monitoring	1C601	12/729	CR	1Y11501	Y	I	J-802-5
	TX-15751	Supp. Pool Temp. Monitoring	1C690A	12/729	CR	1Y11502	Y	I	J-457-9
	TE-15753	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	E-64-15
	TE-15755	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	E-25-1
	TE-15757	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	M-157-3
	TE-15759	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	
	TE-15763	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	
	TE-15765	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	
	TE-15767	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	
	TE-15769	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y11502	Y	I	
	TE-15751	Supp. Pool Temp. Monitoring	Local	26/683	I-206	1Y11502	Y	I	
	TE-15756	Supp. Pool Temp. Monitoring	Local	26/683	I-206	1Y11502	Y	I	
	TE-15761	Supp. Pool Temp. Monitoring	Local	26/683	I-206	1Y11502	Y	I	
	TE-15764	Supp. Pool Temp. Monitoring	Local	26/683	I-206	1Y11502	Y	I	
TIAH-15752	TIAH-15752	Supp. Pool Temp. Monitoring	1C601	12/729	CR	1Y12501	Y	II	J-802-5
	TX-15752	Supp. Pool Temp. Monitoring	1C609B	12/729	CR	1Y12502	Y	II	M-157-3
	TE-15752	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	J-457-10
	TE-15754	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	E-64-15
	TE-15758	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	E-25-1
	TE-15760	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	
	TE-15762	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	
	TE-15766	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	
	TE-15768	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	
	TE-15770	Supp. Pool Temp. Monitoring	Local	26/692	I-206	1Y12502	Y	II	
UR-15776A	UR-15776A	Suppression Pool Level	1C601	12/729	CR	1Y11501	Y	I	J-802-5
	LT-15766A	(Wide Range)	Local	27/645	I-17	1Y11505	Y	I	M-157-3

Table 15.9-1 – Unit 1 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
	LT-15775A	(Narrow Range)	Local	27/645	I-17	M	Y	I	J-457-2
LI-15775A	LI-15775A	Suppression Pool Level	1C601	12/729	CR	1Y11505	Y	I	J-802-2
	LT-15775A	(Narrow Range)	Local	27/645	I-17	1Y11505	Y	I	M-157-3
									J-457-2
UR-15776B	UR-15776B	Suppression Pool Level	1C601	12/729	CR	1Y21501	Y	II	J-802-6
	LT-15766B	(Wide Range)	Local	25/645	I-10	1Y21505	Y	II	M-157-3
	LT-15775B	(Narrow Range)	Local	25/645	I-10	1Y21505	Y	II	J-457-2A
	LY-15776B		1C661	12/698	C-203	1Y12505	Y	I	J-457-2A
LI-15775B	LI-15775B	Suppression Pool Level	1C601	12/729	CR	1Y12505	Y	II	J-802-8
	LT-15775B	(Narrow Range)	Local	25/645	I-10	1Y12505	Y	II	M-157-3
LI-15776A2	LI-15776A2	Suppression Pool Level	Local	27/645	I-17	N/R	-	-	M-157
UR-15701A	UR-15701A	Drywell Pressure	1C601	12/729	CR	1Y11505	Y	I	J-802-5
	PT-15710A	(LOCA Range)	Local	27/719	I-401	1Y11505	Y	I	M-157-3
	PT-15709A	(Hi Accident Range)	Local	27/719	I-401	1Y11505	Y	I	J-457-3
UR-15701B	UR-15701B	Drywell Pressure	1C601	12/729	CR	1Y12505	Y	II	J-802-6
	PT-15710B	(LOCA Range)	Local	28/719	I-401	1Y12505	Y	II	M-157-3
	PT-15709B	(Hi Accident Range)	Local	28/719	I-401	1Y12505	Y	II	J-457-3A
PI-15702	PI-15702	Drywell Pressure	1C601	12/729	CR	1Y62925	Y	N	M-157-3
	PT-15728A	(Containment/Supp Chamber)	Local	27/683	I-203	1Y62925	Y	N	J-457-3
UR-15701A	UR-15701A	Drywell Temperature	1C601	12/729	CR	1Y11505	Y	I	J-802-5
	TT-15790A	Drywell Temperature	1C661A	12/754	URR	1Y11505	Y	I	M-157-1
	TE-15790A	Drywell Temperature	Local	26/752	I-516	1Y11505	Y	I	J-457-7
UR-15701B	UR-15701B	Drywell Temperature	1C601	12/729	CR	1Y12505	Y	II	J-802-6
	TT-15790B	Drywell Temperature	1C661B	12/698	LRR	1Y12505	Y	II	M-157-3
	TE-15790B	Drywell Temperature	Local	26/752	I-516	1Y12505	Y	II	J-457-7A
TI-15727A	TI-15727A	RHR Heat Ex. Disch. Temp.	1C601	12/729	CR	1Y11501	Y	I	M-151-1
	TT-15727A	RHR Heat Ex. Disch. Temp.	1C661A	12/754	URR	1Y11505	Y	I	J-451-15
	TE-E11-1N027A	RHR Heat Ex. Disch. Temp.	Pipe	29/683	I-201	1Y11505	Y	I	
TI-15727B	TI-15727B	RHR Heat Ex. Disch. Temp.	1C601	12/729	CR	1Y12501	Y	II	J-802-7
	TT-15727B	RHR Heat Ex. Disch. Temp.	1C661B	12/683	LRR	1Y12505	Y	II	M-151-3
	TE-E11-1N027B	RHR Heat Ex. Disch. Temp.	Pipe	29/683	I-201	1Y12505	Y	II	M-151-2
FI-15120A	FI-15120A	Drywell & Wetwell Spray Flow	1C601	12/729	CR	1Y11501	Y	I	J-802-4
	FY-15120A	Drywell Spray	1C661A	12/754	URR	1Y11505	Y	I	M-151-3
	FT-15120A	Drywell Spray	Local	29/749	I-513	1Y11505	Y	I	J-470-2
	FY-15121A	Suppression Pool Spray	1C661A	12/754	URR	1Y11505	Y	I	E-64-15
	FT-15121A	Suppression Pool Spray	Local	27/683	I-203	1Y11505	Y	I	

Table 15.9-1 – Unit 1 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
FI-15120B	FI-15120B	Drywell & Wetwell Spray Flow	1C601	12/729	CR	1Y12501	Y	II	J-802-7
	FY-15120B	Drywell Spray	1C661B	12/698	LRR	1Y12505	Y	II	M-151-1
	FT-15120B	Drywell Spray	Local	25/749	I-509	1Y12505	Y	II	J-470-2
	FY-15121B	Suppression Pool Spray	1C661B	12/698	LRR	1Y12505	Y	II	E-64-15
	FT-15121B	Suppression Pool Spray	Local	25/683	I-200	1Y12505	Y	II	
	PI-15702	Suppression Chamber Press.	1C601	12/729	CR	1Y62925	Y	N	M-157-3
	PT-15702		Local	27/683	I-203	1Y62925	Y	N	J-457-3
PI-E41-1R606	PI-E41-1R606	HPCI Pump Suction Pressure	1C601	12/729	CR	1D62406	Y	II	J-456-3
	PT-E41-1N019		1C014	25/645	I-010	1D62406	Y	II	M-156-1
PI-E41-1R602	PI-E41-1R602	HPCI Steam Supply Pressure	1C601	12/729	CR	1D62406	Y	II	J-455-1
	PT-E41-1N013		1C014	25/645	I-010	1D62406	Y	II	M-155
PI-E41-1R603	PI-E41-1R603	HPCI Turbine Exhaust Press.	1C601	12/729	CR	1D62406	Y	II	J-456-3
	PT-E41-1N016		1C014	25/645	I-010	1D62406	Y	II	M-156-1
PI-E41-1R601	PI-E41-1R601	HPCI Pump Discharge Press.	1C601	12/729	CR	1D62406	Y	II	J-455-1
	PT-E41-1N009		1C014	25/645	I-010	1D62406	Y	II	M-155
FI-E41-1R600-1	FI-E41-1R600-1	HPCI Flow	1C601	12/729	CR	1D62406	Y	II	J-455-2
	FY-E41-1K601		1C601	12/729	CR	1D62406	Y	II	M-155
	FT-E41-1N008		1C014	25/645	I-010	1D62406	Y	II	
SI-E41-1R604	SI-E41-1R604	HPCI Turbine Speed	1C601	12/729	CR	1D62406	Y	II	J-455-2
	SY-15683		TB0078	28/645	I-011	1D62406	Y	II	
	SE-15661		15211	28/645	I-011	1D62406	Y	II	
LI-00812A	LI-00812A	CST 'A' Level	OCB518A	36/670	I-130	1Y62927	Y	N	J-408-2
	LT-00812A		OCB518A	36/670	I-130	1Y62927	Y	N	M-108
LI-00812B	LI-00812B	CST 'B' Level	OCB518B	45/670	-	1Y62927	Y	N	J-408-2
	LT-00812B		OCB518B	45/670	-	1Y62927	Y	N	M-108
LI-00802	LI-00802	RWST Level	OCB517	35/670	I-130	1Y62927	Y	N	J-408-2
	LT-00802		OCB517	35/670	I-130	1Y62927	Y	N	M-108
PI-12649	PI-12649	Containment Instrument Gas	1C601	12/729	CR	1Y12501	Y	I	J-426-3
	PT-12649	Bottle Pressure	Local	25/719	I-408	1Y12501	Y	I	
PI-E51-1R603	PI-E51-1R603	RCIC Turbine Exhaust Press.	1C601	12/729	CR	1D61407	Y	I	J-450-1
	PT-E51-1N008		1C017	28/645	I-012	1D61407	Y	I	M-150
PI-E51-1R602	PI-E51-1R602	RCIC Turbine Inlet Pressure	1C601	12/729	CR	1D61407	Y	I	J-449-1
	PT-E51-1N007		1C017	28/645	I-012	1D61407	Y	I	M-149
PI-E51-1R604	PI-E51-1R604	RCIC Pump Suction Pressure	1C601	12/729	CR	1D61407	Y	I	J-450-1
	PT-E51-1N005		1C017	28/645	I-012	1D61407	Y	I	M-150
PI-E51-1R601	PI-E51-1R601	RCIC Pump Discharge Press.	1C601	12/729	CR	1D61407	Y	I	J-449-1

SSES-FSAR

Table Rev. 1

Table 15.9-1 – Unit 1 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
	PT-E51-1N004		1C017	28/645	I-012	1D61407	Y	I	M-149
FI-E51-1R600-1	FI-E51-1R600-1	RCIC Flow	1C601	12/729	CR	1D61407	Y	I	J-449-2
	FY-E51-1K601		1C601	12/729	CR	1D61407	Y	I	M-149
	FT-E51-1N003		1C017	28/645	I-012	1D61407	Y	I	
SI-15001A	SI-15001A	RCIC Turbine Speed	1C601	12/729	CR	1D61407	Y	I	J-449-2
	EGM		TB0145	28/645	I-012	1D61407	Y	I	M-149
	SE(Not Shown)		1C212	28/645	I-012	1D61407	Y	I	
TI-14185	TI-14185	RCIC Area Temperature	1C614	12/729	CR	1D63401	Y	I	J-450-2
	TY-14185		1C614	12/729	CR	1D63401	Y	I	
	TSH-E51-1N600A	Ambient Temperature	1C614	12/729	CR	1D63401	Y	I	
	TE-E51-1N011A	Ambient Temperature	Local	28/645	I-012	1D63401	Y	I	
	TSH-E51-1N602A	Emerg. Area Cir. Amb. Temp.	1C614	12/729	CR	1D63401	Y	I	
	TSH-E51-1N023A	Emerg. Area Cir. Amb. Temp.	Duct	28/645	I-012	1D63401	Y	I	

Table 15.9-2 – Unit 2 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
LI-24201A	LI-24201A	Reactor Vessel Level	2C601	21/729	CR	2Y11501	Y	I	J-2802-3
	LT-24201A	(Wide Range)	2C225	30/749	II-513	2Y11505	Y	I	M-2142-1
	LT-24203A	(Extended Range)	2C224	33/749	II-513	2Y11505	Y	I	J-2802-3
LI-24201A1	LI-24201A1	(Extended Range)	2C652	21/729	CR	2Y11501	Y	I	J-2803-4
	LT-24201A	(Extended Range)	2C225	30/749	II-513	2Y11505	Y	I	M-2142-1
	LT-24203A	(Extended Range)	2C224	33/749	II-513	2Y11505	Y	I	J-2442-2
LI-24203A	LI-24203A	(Extended Range)	2C601	21/729	CR	2Y11501	Y	I	J-2802-6
	LT-24203A	(Extended Range)	2C224	33/749	II-513	2Y11505	Y	I	M-2142-1
	LT-24201A	(Extended Range)	2C225	30/749	II-513	2Y11505	Y	I	J-2802-6
UR-24201A	UR-24201A	Reactor Vessel Level/Press.	2C601	21/729	CR	2Y11501	Y	I	J-2802-4
	LT-24202A	(Fuel Zone Range)	Local	34/719	II-401	2Y11505	Y	I	M-2142-1
	LT-24201A	(Wide Range)	2C225	30/749	II-513	2Y11505	Y	I	M-2142
	PT-24201A	(Wide Range)	2C225	30/749	II-513	2Y11505	Y	I	M-2142
LI-24201B	LI-24201B	Reactor Vessel Level	2C601	21/729	CR	2Y12501	Y	II	J-2802-3
	LT-24201B	(Wide Range)	2C224	33/749	II-513	2Y12505	Y	II	M-2142
	LT-24203B	(Extended Range)	2C225	30/749	II-513	2Y12505	Y	II	
LI-24201B1	LI-24201B1	(Extended Range)	2C651	21/729	CR	2Y12501	Y	II	J-2803-4
	LT-24201B	(Extended Range)	2C224	33/749	II-513	2Y12505	Y	II	M-2142
	LT-24203B	(Extended Range)	2C225	33/749	II-513	2Y12505	Y	II	
LI-24203B	LI-24203B	(Extended Range)	2C601	21/729	CR	2Y12501	Y	II	J-2802-6
	LT-24203B	(Extended Range)	2C225	30/749	II-513	2Y12505	Y	II	M-2142
	LT-24201B	(Extended Range)	2C224	33/749	II-513	2Y12505	Y	II	
UR-24201B	UR-24201B	Reactor Vessel Level/Press.	2C601	21/729	CR	2Y12501	Y	II	J-2802-7
	LT-24202B	(Fuel Zone Range)	Local	30/719	II-401	2Y12505	Y	II	M-2142
	LT-14201B	(Wide Range)	2C224	33/749	II-513	2Y12505	Y	II	M-2142
	PT-14201B	(Wide Range)	2C224	33/749	II-513	2Y12505	Y	II	J-2802-4
PI-24202A	PI-24202A	Reactor Vessel Pressure	2C601	21/729	CR	2Y11501	Y	II	J-2802-3
	PT-24201A	(Wide Range)	2C225	30/749	II-513	2Y11505	Y	II	M-2142
PI-24202A1	PI-24202A1	Reactor Vessel Pressure	2C651	21/729	CR	2Y11501	Y	I	J-2803-4
	PT-24201A	(Wide Range)	2C225	30/749	II-513	2Y11505	Y	I	M-2142
PI-24204A	PI-24204A	Reactor Vessel Pressure	2C601	21/729	CR	2Y11501	Y	I	J-2802-6
	PT-24201A	(Wide Range)	2C225	30/729	II-513	2Y11505	Y	I	M-2142
PI-24202B	PI-24202B	Reactor Vessel Pressure	2C601	21/729	CR	2Y12501	Y	II	J-2802-3
	PT-24201B	(Wide Range)	2C224	33/749	II-513	2Y12505	Y	II	M-2142



Table 15.9-2 – Unit 2 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
	PT-24203B		2C225	30/749	II-513	2Y12505	Y	II	J-2802-4
PI-24202B1	PI-24202B1	Reactor Vessel Pressure	2C651	21/729	CR	2Y12501	Y	II	
	PT-24201B	(Wide Range)	2C224	33/749	II-513	2Y12505	Y	II	M-2142
	PT-24203B		2C225	30/740	II-513	2Y12505	Y	II	
PI-24204B	PI-24204B	Reactor Vessel Pressure	2C601	21/729	CR	2Y12501	Y	II	J-2802-6
	PI-24201B	(Wide Range)	2C224	33/749	II-513	2Y12505	Y	II	M-2142
	PI-24203B		2C225	30/749	II-513	2Y12505	Y	II	
PI-E51-2R602	PI-E51-2R602	Reactor Pressure	2C601	21/729	CR	2D61407	Y	I	J-2449-1
	PT-E51-2N007	(RCIC Turbine Steam Supply)	2C017	33/645	II-012	2D64107	Y	I	M-2149
PI-E41-2R602	PI-E41-2R602	Reactor Pressure	2C601	21/729	CR	2D62406	Y	II	
	PT-E41-2N013	(HPCI Turbine Steam Supply)	2C014	33/645	II-010	2D62406	Y	II	M-2155
TIAH-25751	TIAH-25751	Supp. Pool Temp. Monitoring	2C601	21/729	CR	2Y11501	Y	I	J-2802-5
	TX-25751	Supp. Pool Temp. Monitoring	2C690A	21/729	CR	2Y11502	Y	I	M-2157
	TE-25753	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	J-2457-9
	TE-25755	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25757	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25759	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25763	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25765	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25767	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25769	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y11502	Y	I	
	TE-25751	Supp. Pool Temp. Monitoring	Local	31/683	II-206	2Y11502	Y	I	
	TE-25756	Supp. Pool Temp. Monitoring	Local	31/683	II-206	2Y11502	Y	I	
	TE-25761	Supp. Pool Temp. Monitoring	Local	31/683	II-206	2Y11502	Y	I	
	TE-25764	Supp. Pool Temp. Monitoring	Local	31/683	II-206	2Y11502	Y	I	
TIAH-25752	TIAH-25752	Supp. Pool Temp. Monitoring	2C601	21/729	CR	2Y12501	Y	II	J-2802-5
	TX-25752	Supp. Pool Temp. Monitoring	2C609B	21/729	CR	2Y12502	Y	II	M-2157
	TE-25752	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	J-2457-10
	TE-25754	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	
	TE-25758	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	
	TE-25760	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	
	TE-25762	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	
	TE-25766	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	
	TE-25768	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	
	TE-25770	Supp. Pool Temp. Monitoring	Local	31/692	II-206	2Y12502	Y	II	

Table 15.9-2 – Unit 2 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
LR-25776A	LR-25776A	Suppression Pool Level	2C601	21/729	CR	2Y11501	Y	I	J-2802-5
	LT-25766A	(Wide Range)	Local	32/645	II-017	2Y11505	Y	I	M-2157-3
	LT-25775A	(Narrow Range)	Local	32/645	II-017	2Y11505	Y	I	J-2457-2
	LY-25776A		2C661	21/754	C-502	2Y11505	Y	I	J-2457-2
LI-25775A	LI-25775A	Suppression Pool Level	2C601	21/729	CR	2Y11505	Y	I	J-2802-3
	LT-25775A	(Narrow Range)	Local	32/645	II-017	2Y11505	Y	I	M-2157-3
LR-25776B	LR-25776B	Suppression Pool Level	2C601	21/729	CR	2Y21505	Y	II	J-2802-6
	LT-25775B	(Narrow Range)	Local	30/645	II-10	2Y21505	Y	II	M-2157-3
	LT-25776B	(Wide Range)	Local	30/645	II-10	2Y21505	Y	II	J-2457-2
LI-25775B	LI-25775B	Suppression Pool Level	2C601	21/729	CR	2Y12505	Y	II	J-2802-8
	LT-25775B	(Narrow Range)	Local	30/645	II-10	2Y12505	Y	II	M-2157-3
LI-25776A2	LI-25776A2	Suppression Pool Level	Local	30/645	II-010	N/R	-	-	M-2157-3
UR-25701A	UR-25701A	Drywell Pressure	2C601	21/729	CR	2Y11505	Y	I	J-2802-5
	PT-25710A	(LOCA Range)	Local	32/719	II-401	2Y11505	Y	I	M-2157
	PT-25709A	(Hi Accident Range)	Local	32/719	II-401	2Y11505	Y	I	J-2457-3
UR-25701B	UR-25701B	Drywell Pressure	2C601	21/729	CR	2Y12505	Y	II	J-2802-6
	PT-25710B	(LOCA Range)	Local	33/719	II-413	2Y12505	Y	II	M-2157
	PT-25709B	(Hi Accident Range)	Local	33/719	II-413	2Y12505	Y	II	J-2457-3A
PI-25702	PI-25702	Drywell Pressure	2C601	21/729	CR	2Y62925	Y	N	M-2157
	PT-25728A1	(Containment/Supp Chamber)	Local	32/719	II-401	2Y62925	Y	N	J-2457-3
UR-25701A	UR-25701A	Drywell Temperature	2C601	21/729	CR	2Y11505	Y	I	J-2802-5
	TT-25790A	Drywell Temperature	2C661A	21/754	URR	2Y11505	Y	I	M-2157
	TE-25790A	Drywell Temperature	Local	31/752	II-516	2Y11505	Y	I	J-2457-7
UR-25701B	UR-25701B	Drywell Temperature	2C601	21/729	CR	2Y12505	Y	II	J-2802-6
	TT-25790B	Drywell Temperature	2C661B	21/698	LRR	2Y12505	Y	II	M-2157
	TE-25790B	Drywell Temperature	Local	31/752	II-516	2Y12505	Y	II	J-2457-7A
TI-25727A	TI-25727A	RHR Heat Ex. Disch. Temp.	2C601	21/729	CR	2Y11501	Y	I	M-2151
	TT-25727A	RHR Heat Ex. Disch. Temp.	2C661A	21/754	URR	2Y11505	Y	I	J-2802-4
TI-25727B	TI-25727B	RHR Heat Ex. Disch. Temp.	2C601	21/729	CR	2Y12501	Y	II	J-2802-7
	TT-25727B	RHR Heat Ex. Disch. Temp.	2C661B	21/683	LRR	2Y12505	Y	II	M-2151
	TE-E11-2N027B	RHR Heat Ex. Disch. Temp.	Pipe	33/683	II-202	2Y12505	Y	II	
FI-25120A	FI-25120A	Drywell & Wetwell Spray Flow	2C601	21/729	CR	2Y11501	Y	I	J-2802-4
	FY-25120A	Drywell Spray	2C661A	21/754	URR	2Y11505	Y	I	M-2151
	FT-25120A	Drywell Spray	Local	33/749	II-513	2Y11505	Y	I	J-2452-2
	FY-25121A	Suppression Pool Spray	2C661A	21/754	URR	2Y11505	Y	I	

Table 15.9-2 – Unit 2 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
	FT-25121A	Suppression Pool Spray	Local	34/683	II-203	2Y11505	Y	I	
FI-25120B	FI-25120B	Drywell & Wetwell Spray Flow	2C601	21/729	CR	2Y12501	Y	II	J-2802-7
	FY-25120B	Drywell Spray	2C661B	21/698	LRR	2Y12505	Y	II	M-2151
	FT-25120B	Drywell Spray	Local	33/749	II-513	2Y12505	Y	II	J-2451-2
	FY-25121B	Suppression Pool Spray	2C661B	21/698	LRR	2Y12505	Y	II	
	FT-25121B	Suppression Pool Spray	Local	30/683	II-200	2Y12505	Y	II	
PI-22649	PI-22649	Containment Instrument Gas	1C601	21/729	CR	2Y121501	Y	II	J-2426-2
	PT-22649	Bottle Pressure	Local	30/719	II-408	2Y12505	Y	II	
PI-25702	PI-25702	Suppression Chamber Press.	2C601	21/729	CR	2Y62925	Y	N	M-2157
	PT-25702		Local	32/683	II-203	2Y62925	Y	N	J-2457-3
PI-E41-2R606	PI-E41-2R606	HPCI Pump Suction Pressure	2C601	21/729	CR	2D62406	Y	II	J-2456-3
	PT-E41-2N019		2C014	30/645	II-010	2D62406	Y	II	M-2156
PI-E41-2R602	PI-E41-2R602	HPCI Steam Supply Pressure	2C601	21/729	CR	2D62406	Y	II	J-2455-1
	PT-E41-2N013		2C014	30/645	II-010	2D62406	Y	II	M-2155
PI-E41-2R603	PI-E41-2R603	HPCI Turbine Exhaust Press.	2C601	21/729	CR	2D62406	Y	II	J-2456-3
	PT-E41-2N016		2C014	30/645	II-010	2D62406	Y	II	M-2156
PI-E41-2R601	PI-E41-2R601	HPCI Pump Discharge Press.	2C601	21/729	CR	2D62406	Y	II	J-2455-1
	PT-E41-2N009		2C014	30/645	II-010	2D62406	Y	II	M-2155
FI-E41-2R600-1	FI-E41-2R600-1	HPCI Flow	2C601	21/729	CR	2D62406	Y	II	J-2455-2
	FY-E41-2K601		2C601	21/729	CR	2D62406	Y	II	M-2155
	FT-E41-2N008		2C014	30/645	II-010	2D62406	Y	II	
SI-E41-2R604	SI-E41-2R604	HPCI Turbine Speed	2C601	21/729	CR	2D62406	Y	II	J-2455-2
	SY-25683		TB0195	33/645	II-011	2D62406	Y	II	
	SE-25661		25211	33/645	II-011	2D62406	Y	II	
LI-00812A	LI-00812A	CST 'A' Level	OCB518A	36/670	I-130	1Y62927	Y	N	J-408-2
	LT-00812A		OCB518A	36/670	I-130	1Y62927	Y	N	M-108
LI-00812B	LI-00812B	CST 'B' Level	OCB518B	45/670	-	1Y62927	Y	N	J-408-2
	LT-00812B		OCB518B	45/670	-	1Y62927	Y	N	M-108
LI-00802	LI-00802	RWST Level	OCB517	35/670	I-130	1Y62927	Y	N	J-408-2
	LT-00802		OCB517	35/670	I-130	1Y62927	Y	N	M-108
PI-E51-2R603	PI-E51-2R603	RCIC Turbine Exhaust Press.	2C601	21/729	CR	2D61407	Y	I	J-2450-1
	PT-E51-2N008		2C017	33/645	II-012	2D61407	Y	I	
PI-E51-2R602	PI-E51-2R602	RCIC Turbine Inlet Pressure	2C601	21/729	CR	2D61407	Y	I	J-2449-1
	PT-E51-2N007		2C017	33/645	II-012	2D61407	Y	I	
PI-E51-2R604	PI-E51-2R604	RCIC Pump Suction Pressure	2C601	21/729	CR	2D61407	Y	I	J-2450-1

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Table Rev. 1

Table 15.9-2 – Unit 2 Station Blackout Instrumentation List

Instrument	Loop Devices	Parameter	Location	Area/Elev.	Room	Power Supply	Bat.	Div.	Drwg.
	PT-E51-2N005		2C017	33/645	II-012	2D61407	Y	I	
PI-E51-2R601	PI-E51-2R601	RCIC Pump Discharge Press.	2C601	21/729	CR	2D61407	Y	I	J-2449-1
	PT-E51-2N004		2C017	33/645	II-012	2D61407	Y	I	
FI-E51-2R600-1	FI-E51-2R600-1	RCIC Flow	2C601	21/729	CR	2D61407	Y	I	J-2449-2
	FY-E51-2K601		2C601	21/729	CR	2D61407	Y	I	
	FT-E51-2N003		2C017	33/645	II-012	2D61407	Y	I	
SI-25001A	SI-25001A	RCIC Turbine Speed	2C601	12/729	CR	2D61407	Y	I	J-2449-2
	EGM		TB0520	33/645	II-012	2D61407	Y	I	
	SE(Not Shown)		25212	33/645	II-012	2D61407	Y	I	
TI-24185	TI-24185	RCIC Area Temperature	2C614	21/729	CR	2D63401	Y	I	J-2450-2
	TY-24185		2C614	21/729	CR	2D63401	Y	I	
	TSH-E51-2N600A	Ambient Temperature	2C614	21/729	CR	2D63401	Y	I	
	TE-E51-2N011A	Ambient Temperature	Local	33/645	II-012	2D63401	Y	I	
	TSH-E51-2N602A	Emerg. Area Cir. Amb. Temp.	2C614	21/729	CR	2D63401	Y	I	
	TSH-E51-2N023A	Emerg. Area Cir. Amb. Temp.	Duct	33/645	II-012	2D63401	Y	I	