

**Table 5-5. SAMA Cost/Benefit Screening Analysis**

Case	SAMA	Bounding Analysis	Bounding Analysis Description	Bounding Analysis Assumptions	Screening Conclusion
1	60, Provide additional battery capacity 61, Use fuel cells instead of batteries 64, Alt. battery charging capability 66, Replace batteries	DCGOOD	Direct current (dc) power improvements	Batteries perfect for 24 hours	All SAMAs screened out
2	25, Procedures for temporary heating, ventilation, and air conditioning (HVAC)	DGHVAC	Emergency diesel generator (EDG) temporary ventilation	Removed EDG dependence on HVAC	Screened out
3	156, Add digital large LOCA protection	NO-A	Large LOCA	Initiating event frequency set to zero	Screened out
4	63, Improved bus cross-tie ability 67, Across unit alternating current (ac) power cross-tie 70, Emphasize steps in offsite power recovery after station blackout (SBO) 73, Install gas turbine generators (GTGs) 74, Install tornado protection on GTG 75, Create river water (RW) backup for diesel generator (DG) cooling 76, Use firewater as backup for DG cooling 77, Connect to alt. offsite power source 78, Underground offsite power lines	NO-LOSP	Loss of offsite power (LOSP)	Initiating event frequency set to zero	All SAMAs screened out
5	81, Redundant spray system during steam generator tube rupture (SGTR) 82, Improve SGTR coping abilities 83, Various SGTR coping features 84, Increase secondary pressure capacity	NOSGTR	SGTR	Initiating event frequency set to zero	All SAMAs screened out

Table 5-5. (contd)

Case	SAMA	Bounding Analysis	Bounding Analysis Description	Bounding Analysis Assumptions	Screening Conclusion
5 (contd)	85, New design steam generators (SGs) 87, Flood SG prior to core damage (CD) 88, Inspect 100% of SG tubes	NOSGTR	SGTR	Initiating event frequency set to zero	All SAMAs screened out
6	140, Replace air compressors	INSTAIR1	More reliable instrument air (IA) compressors	IA compressor failures set to zero	Screened out
7	139, emergency operating procedure (EOP) change to align DGs to more IA compressors	INSTAIR2	EDG backup power for IA system	Removed electric power dependency from IA compressors	Screened out
8	10, Add reactor coolant pump (RCP) seal injection system with DG 11, Add RCP seal inj. system w/o DG 12, Use hydro pump for seal injection	RCPLOCA	RCP seal LOCA	Removed seal LOCA from model	All SAMAs screened out
9	89, Locate residual heat remover (RHR) inside containment 92, Increase frequency of valve leak tests 93, Operator training on interfacing system LOCA (ISLOCA) 94, Relief valves in intermediate cooling water (ICW) system 95, Leak test valves in ISLOCA paths 96, EOP upgrade for ISLOCA identification 97, Ensure ISLOCA releases are scrubbed 98, Redundant/diverse limit switches on cont. isolation valves	ISL	Interfacing system LOCA	Initiating event frequency set to zero	All SAMAs screened out
10	155, Add secondary side guard pipes up to main steam isolation valves (MSIVs)	NOSLB	Main steam line break	Initiating event frequency set to zero	Screened out

**Table 5-5. (contd)**

Case	SAMA	Bounding Analysis	Bounding Analysis Description	Bounding Analysis Assumptions	Screening Conclusion
11	107, Digital feedwater control system upgrade	FW	Main feedwater control system	Main feedwater - induced transient initiating event frequency set to zero	Screened out
12	1, Cap ICW vent and drain telltale pipes 3, Improve loss of ICW procedure 4, Training on loss of ICW 22, Improve ability to cool RHR heat exchangers (HXs)	ICW1	Loss of ICW	Initiating event frequency set to zero	All SAMAs screened out
13	15, Add third ICW pump	ICW2	Additional ICW pump	Added pump to ICW fault tree	Screened out
14	69, Procedure to fix 4-kV breakers	BREAKER	Circuit breaker repair upgrade	Set failure probability of circuit breakers to zero	Screened out
15	57, Training on inadvertent actuations	SPURIOUS	Operator training on spurious actuations	Spurious actuation initiating event frequencies set to zero	Screened out
16	151, Enhance reactor coolant system (RCS) depressurization 152, Improve depressurization procedure	PDSRCD	Improve depressurization capability	Power operated relief valve (PORV) failure probabilities set to zero	All SAMAs screened out
17	129, Emphasize timely swapover to recirculation 138, Automatic swapover to recirculation	PDSHPROA	Improve recirculation capability	Set operator failure probability for recirculation to zero	129 did not screen out 138 screened out
18	114, Connect portable generator to auxiliary feedwater (AFW) turbine driven pump after battery depletion	PDSTDPDC	dc power to emergency feedwater (EFW) turbine-driven pump	Removed dc power dependency for EFW turbine-driven pump	Screened out
19	7, Increase makeup pump lube oil capacity	LOSWTOMU	Makeup pump cooling	Removed cooling water dependency for makeup pumps	Screened out