

Gen IV Light Water Reactor Example

Protection System Function	IEEE Req'd Automatic Function	IEEE Req'd Manual Function	SECY Points 1-3 (D3 Analysis) Diverse Automatic Function	SECY Point 4 Diverse Manual Function	SECY Point 4 Manual Action Credited in D3 Analysis?
Reactor Trip	RPS	1 switch/train	DAS (Note 3)	1 switch	Yes (Note 4)
Containment Isolation Phase A	ESF	2 switches	-	1 switch	Yes
Containment Isolation Phase B	ESF	Note 1	-	-	-
Containment Purge Isolation	ESF	Note 2	-	-	-
Containment Spray Actuation	ESF	2 switches/train	-	-	-
CVCS Isolation	ESF	2 switches	-	-	-
Emergency Core Cooling System (ECCS)	ESF	1 switch/train	DAS	1 switch	-
Emergency Feedwater (EFW) Actuation	ESF	1 switch/train	DAS	1 switch	-
Emergency Feedwater (EFW) Isolation	ESF	2 switches/train	-	1 switch/SG	Yes
Main Feedwater Isolation	ESF	2 switches	-	-	-
Main Steam Line Isolation	ESF	2 switches	-	1 switch/SG	Yes
MCR Isolation	ESF	1 switch/train	-	-	-
Main Steam Depressurization Valve	-	-	-	1 switch/SG	Yes
Safety Depressurization Valve	-	-	-	1 switch	Yes

Note 1: Initiated upon Manual Core Spray actuation

Note 2: Initiated upon Manual Core Spray or Manual Containment Isolation Phase A actuation

Note 3: Also includes Turbine Trip and Main Feedwater Isolation

Note 4: Manual trip required for Steam Generator Tube Rupture. Other scenarios credit DAS automatic signal.