

ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			Standard	Standard With Site- Specific	Site- Specific
Part 1	General and Administrative Information				
--	General Information	Dominion NuStart Entergy		X (2)	
--	Financial Information	Dominion NuStart Entergy		X (2)	
--	Other Information	Dominion NuStart Entergy		X (2)	
Part 2	Final Safety Analysis Report				
FSAR Chapter 1	Introduction and General Description				
1.1	Introduction	Dominion NuStart Entergy		X (2)	
1.2	General Plant Description	GE		X (1)	
1.3	Comparison Tables	GE	X		
1.4	Identification of Agents and Contractors	Dominion NuStart Entergy		X (2)	
1.5	Requirements for Further Technical Information	GE	X		
1.6	Material Incorporated by Reference	GE		X (1)	
1.7	Drawings and Other Detailed Information	GE		X (1)	
1.8	Interfaces for Standard Design	GE	X		
1.9	Conformance with SRP and Codes & Standards	Dominion NuStart Entergy		X (2)	
1.10	Summary of COL Items	GE	X		
1.11	Technical Resolutions	GE		X (1)	

¹ There are 3 types of ESBWR COLA sections:

- Standard sections are identical.
- Standard with site-specific. These sections are identical to the extent possible but also contain some site- and/or applicant-specific information. For the site/applicant-specific information, consistent wording and level-of-detail are used.
 - (1) – Standard section that contains a limited amount of site/applicant-specific information.
 - (2) – Standard section that contains a moderate amount of site/applicant-specific information.
- Site-specific sections are not standard and contain site/applicant-specific information.

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			Standard	Standard With Site- Specific	Site- Specific
Appendices	---	GE		X (1)	
FSAR Chapter 2	Site Characteristics	Dominion NuStart Energy			
2.0	Site Characteristics				X
2.1	Geography and Demography	Dominion NuStart Energy			X
2.2	Nearby Industrial, Transportation, and Military Facilities	Dominion NuStart Energy			X
2.3	Meteorology	Dominion NuStart Energy			X
2.4	Hydrology	Dominion NuStart Energy			X
2.5	Geology, Seismology, and Geotechnical Engineering	Dominion NuStart Energy			X
FSAR Chapter 3	FSAR Chapter 3 – Design of Structures, Components, Equipment, Systems				
3.1	Conformance with NRC General Design Criteria	GE	X		
3.2	Classification of Structures, Systems, and Components	GE	X		
3.3	Wind and Tornado Loadings	GE		X (1)	
3.4	Water Level (Flood) Design	GE		X (1)	
3.5	Missile Protection	GE		X (1)	
3.6	Protection Against Dynamic Effects	GE	X		
3.7	Seismic Design	GE		X (1)	
3.8	Seismic Category I Structures	GE	X		
3.9	Mechanical Systems and Components	GE	X		
3.10	Seismic and Dynamic Qualification	GE	X		
3.11	Environmental Qualification	GE	X		
Appendices	---	GE	X		
FSAR Chapter 4	Reactor				
4.1	Summary Description	GE	X		
4.2	Fuel System Design	GE	X		

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			Standard	Standard With Site- Specific	Site- Specific
4.3	Nuclear Design	GE	X		
4.4	Thermal and Hydraulic Design	GE	X		
4.5	Reactor Materials	GE	X		
Appendices	---	GE	X		
FSAR Chapter 5	Reactor Coolant System and Connected Systems				
5.1	Summary Description	GE	X		
5.2	Integrity of Reactor Coolant Pressure Boundary	GE	X		
5.3	Reactor Vessels	GE	X		
5.4	Component and Subsystem Design	GE	X		
FSAR Chapter 6	Engineered Safety Features				
6.1	Engineered Safety Feature Materials	GE	X		
6.2	Containment Systems	GE	X		
6.3	Emergency Core Cooling Systems	GE	X		
6.4	Control Room Habitability Systems	GE		X (1)	
6.5	Atmosphere Cleanup Systems	GE	X		
6.6	ISI of Class 2 and 3 Components	GE	X		
FSAR Chapter 7	Instrumentation and Controls				
7.1	Introduction	GE	X		
7.2	Reactor Trip System	GE	X		
7.3	Engineered Safety Features Systems	GE	X		
7.4	Safety-Related and Non-Safety Related Shutdown Systems	GE	X		
7.5	Safety-Related and Non-Safety Related Information Systems	GE	X		
7.6	Interlock Systems	GE	X		
7.7	Control Systems	GE	X		
7.8	Diverse Instrumentation and Control Systems	GE	X		
7.9	Data Communication Systems	GE	X		
Appendices	---	GE	X		
FSAR Chapter 8	Electric Power				
8.1	Introduction	GE		X (1)	
8.2	Offsite Power System	Dominion		X (2)	

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			Standard	Standard With Site- Specific	Site- Specific
		NuStart Energy			
8.3	Onsite Power Systems	GE		X (1)	
8A	Miscellaneous Electrical Systems	Dominion NuStart Energy		X (2)	
8B	Realistic Station Blackout Evaluation	GE	X		
FSAR Chapter 9	Auxiliary Systems				
9.1	Fuel Storage and Handling	GE	X		
9.2.1	Plant Service Water System	Dominion NuStart Energy		X (2)	
9.2.2	Reactor Component Cooling Water System	GE	X		
9.2.3	Makeup Water System	Dominion NuStart Energy		X (2)	
9.2.4	Potable and Sanitary Water Systems	Dominion NuStart Energy		X (2)	
9.2.5	Ultimate Heat Sink	Dominion NuStart Energy		X (1)	
9.2.6	Condensate Storage and Transfer System	GE	X		
9.2.7	Chilled Water System	GE	X		
9.2.8	Turbine Component Cooling Water System	GE	X		
9.2.9	COL Information	GE	X		
9.2.10	References	GE	X		
9.3.1	Compressed Air Systems	GE	X		
9.3.2	Process Sampling System	GE	X		
9.3.3	Equipment and Floor Drain System	GE	X		
9.3.4	Chemical and Volume Control System	GE	X		
9.3.5	Standby Liquid Control System	GE	X		
9.3.6	Instrument Air System	GE	X		
9.3.7	Service Air System	GE	X		
9.3.8	High Pressure Nitrogen Supply System	GE	X		
9.3.9	Hydrogen Water Chemistry System	GE	X		
9.3.10	Oxygen Injection System	GE	X		
9.3.11	Zinc Injection System	GE	X		
9.3.12	Auxiliary Boiler System	GE		X (1)	

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			Standard	Standard With Site- Specific	Site- Specific
9.3.13	COL Information	GE	X		
9.3.14	References	GE	X		
9.4.1	Control Room Area Ventilation System	GE		X (1)	
9.4.2	Fuel Building HVAC System (FBHVS)	GE	X		
9.4.3	Radwaste Building Heating, Ventilation and Air Conditioning System	GE	X		
9.4.4	Turbine Building HVAC System	GE	X		
9.4.5	Engineered Safety Feature Ventilation System	GE	X		
9.4.6	Reactor Building HVAC System	GE	X		
9.4.7	Electrical Building HVAC System	GE	X		
9.4.8	Drywell Cooling System	GE	X		
9.4.9	Containment Inerting System	GE	X		
9.4.10	COL Information	GE	X		
9.4.11	References	GE	X		
9.5.1	Fire Protection System	GE		X (1)	
9.5.2	Communications Systems	GE		X (1)	
9.5.3	Lighting System	GE		X (1)	
9.5.4	Diesel Generator Fuel Oil Storage and Transfer System	GE		X (1)	
9.5.5	Diesel Generator Jacket Cooling Water System	GE	X		
9.5.6	Diesel Generator Starting Air System	GE	X		
9.5.7	Diesel Generator Lubrication System	GE	X		
9.5.8	Diesel Generator Combustion Air Intake and Exhaust System	GE	X		
9.5.9	COL Information	GE	X		
9.5.10	References	GE	X		
9A	Fire Hazards Analysis	GE		X (1)	
9B	Summary of Analysis Supporting Fire Protection Design Requirements	GE		X (1)	
FSAR Chapter 10	FSAR Chapter 10 – Steam and Power Conversion Systems				
10.1	Summary Description	GE		X (1)	
10.2	Turbine Generator	GE	X		
10.3	Turbine Main Steam System	GE	X		
10.4	Other Features of Steam and Power Conversion System	GE		X (2)	
10A	Alternative Design for Steam and Power Conversion System	GE	X		

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			Standard	Standard With Site- Specific	Site- Specific
FSAR Chapter 11	Radioactive Waste Management				
11.1	Source Terms	GE	X		
11.2	Liquid Waste Management System	GE	X		
11.3	Gaseous Waste Management System	GE	X		
11.4	Solid Waste Management System	GE	X		
11.5	Process Radiation Monitoring System	GE	X		
FSAR Chapter 12	Radiation Protection				
12.1	Ensuring That Occupational Radiation Exposures Are ALARA	Dominion	X		
12.2	Plant Sources	GE		X (1)	
12.3	Radiation Protection	GE	X		
12.4	Dose Assessment	GE	X		
12.5	Operational Radiation Protection Program	Dominion	X		
12.6	Minimization of Contamination and Radwaste Generation	GE	X		
12A	Calculation of Airborne Radionuclides	GE	X		
FSAR Chapter 13	Conduct of Operations				
13.1	Organizational Structure of Applicant	NuStart		X (1)	
13.2	Training	Dominion	X		
13.3	Emergency Planning	Dominion	X		
13.4	Review and Audit	NuStart	X		
13.5	Plant Procedures	NuStart	X		
13.6	Physical Security	Dominion	X		
FSAR Chapter 14	Initial Test Program				
14.1	Initial Test Program For Preliminary Safety Analysis Reports	GE	X		
14.2	Initial Plant Test Program For Final Safety Analysis Reports	GE		X (1)	
14.3	Selection Of Tier 1 Criteria and Processes	GE	X		
FSAR Chapter 15	Safety Analyses				
15.0	Analytical Approach	GE	X		
15.1	Nuclear Safety Operational Analysis	GE	X		

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			Standard	Standard With Site- Specific	Site- Specific
15.2	Analysis of Anticipated Operational Occurrences	GE	X		
15.3	Analysis of Infrequent Events	GE	X		
15.4	Analysis of Accidents	GE		X (1)	
15.5	Special Event Evaluations	GE	X		
Appendices	---	GE	X		
FSAR Chapter 16	Technical Specifications	GE	X		
FSAR Chapter 17	Quality Assurance				
17.0	Introduction	GE	X		
17.1	Quality Assurance During Design and Construction	GE	X		
17.2	Quality Assurance During the Operations Phase	NuStart	X		
17.3	Quality Assurance Program Document	NuStart	X		
17.4	Reliability Assurance Program During Design Phase	NuStart	X		
17.5	Quality Assurance Program Description	NuStart	X		
17.6	Maintenance Rule Program	NuStart	X		
FSAR Chapter 18	Human Factors Engineering				
18.1	Overview	GE	X		
18.2	HFE Program Management	GE	X		
18.3	Operating Experience Review	GE	X		
18.4	Functional Requirements Analyses and Function Allocation	GE	X		
18.5	Task Analysis	GE	X		
18.6	Staffing and Qualifications	GE	X		
18.7	Human Reliability Analysis	GE	X		
18.8	Human-System Interface Design	GE	X		
18.9	Procedure Development	GE	X		
18.10	Training Program Development	GE	X		
18.11	Human Factors V&V	GE	X		
18.12	Design Implementation	GE	X		
18.13	Human Performance Monitoring	GE	X		
18.14	Inventory of Controls and Instrumentation	GE	X		
Appendices	---	GE		X (1)	

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			Standard	Standard With Site- Specific	Site- Specific
FSAR Chapter 19	PRA and Severe Accidents				
19.1	Introduction	GE	X		
19.2	PRA Results and Insights	GE	X		
19.3	Severe Accidents Evaluations	GE	X		
19.4	PRA Maintenance	GE	X		
19.5	ITAACs, Action Items, & Other Commitments	GE	X		
19.6	Conclusions	GE	X		
FSAR Chapter 20	Construction Impacts on Existing Units	Dominion NuStart Entergy			X
Part 3	Environmental Report				
ER Chapter 1	Introduction	Dominion NuStart Entergy			X
ER Chapter 2	Environmental Description	Dominion NuStart Entergy			X
ER Chapter 3	Plant Description	Dominion NuStart Entergy			X
ER Chapter 4	Environmental Impacts of Construction (North Anna) Environmental Effects of Construction (Grand Gulf, River Bend)	Dominion NuStart Entergy			X
ER Chapter 5	Environmental Impacts of Station Operation (North Anna) Environmental Effects of Station Operations (Grand Gulf, River Bend)	Dominion NuStart Entergy			X
ER Chapter 6	Environmental Measurements and Monitoring Programs	Dominion NuStart Entergy			X
ER Chapter 7	Environmental Impacts of Postulated Accidents Involving Radioactive	Dominion NuStart			X

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			Standard	Standard With Site- Specific	Site- Specific
	Materials	Entergy			
ER Chapter 8	Need for Power	Dominion NuStart Entergy			X
ER Chapter 9	Alternatives to the Proposed Action	Dominion NuStart Entergy			X
ER Chapter 10	Environmental Consequences of the Proposed Action	Dominion NuStart Entergy			X
Part 4	Technical Specifications	GE		X (1)	
Part 5	Emergency Plan	Dominion NuStart Entergy			X
Part 6	Site Redress Plan	Dominion NuStart Entergy		X (2)	
Part 7	Generic DCD Departures Report	Dominion NuStart Entergy		X (1)	
Part 8	Safeguards/Security Plans				
--	Physical Security Plan	Dominion NuStart Entergy		X (1)	
--	Training and Qualification Plan	Dominion NuStart Entergy		X (1)	
--	Safeguards Contingency Plan	Dominion NuStart Entergy		X (2)	
Part 9	Plant-Specific PRA	GE		X (1)	
Part 10	ITAAC	GE		X (1)	