

1.9 COL License Information

Tier 2 presents the ABWR Standard Plant design incorporating the Nuclear Island, Turbine Island and radwaste facility. Although this scope is essentially a total plant, there is a modest amount of information that must be addressed by the COL applicant. The purpose of this section is to identify the Tier 2 sections where descriptions of the COL license information are presented.

The COL license information is summarized in Table 1.9-1 in the order it is presented in Tier 2. An item number has been assigned to each entry to facilitate future identification.

**Table 1.9-1 Summary of ABWR Standard Plant
COL License Information**

Item No.	Subject	Subsection
1.1	Design Process to Establish Detailed Design Documentation	1.1.11.1
1.1a	Plant Design and Aging Management	1.2.3.1
1.2	Not Used	
1.3	SRP Deviations	1.8.4.1
1.4	Experience Information	1.8.4.2
1.5	Emergency Procedures and Emergency Procedures Training Program	1A.3.1
1.6	Review and Modify Procedures for Removing Safety-Related Systems from Service	1A.3.2
1.7	In-plant Radiation Monitoring	1A.3.3
1.8	Reporting Failures of Reactor System Relief Valves	1A.3.4
1.9	Report on ECCS Outages	1A.3.5
1.10	Procedure for Reactor Venting	1A.3.6
1.11	Testing of SRV and Discharge Piping	1A.3.7
1.12	RCIC Bypass Start System Test	1A.3.8
1.13	Station Blackout Procedures	1C.4.1
2.1	Non-Seismic Design Parameters	2.3.1.1
2.2	Seismic Design Parameters	2.3.1.2
2.3	Site Location and Description	2.3.2.1
2.4	Exclusion Area Authority and Control	2.3.2.2
2.5	Population Distribution	2.3.2.3
2.6	Identification of Potential Hazards in Site Vicinity	2.3.2.4
2.7	Evaluation of Potential Accidents	2.3.2.5
2.8	External Impact Hazards	2.3.2.6
2.9	Local Meteorology	2.3.2.7
2.10	Onsite Meteorological Measurements Program	2.3.2.8
2.11	Short-Term Dispersion Estimates for Accidental Atmospheric Releases	2.3.2.9
2.12	Long-Term Diffusion Estimates	2.3.2.10
2.13	Hydrologic Description	2.3.2.11
2.14	Floods	2.3.2.12

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
2.15	Probable Maximum Flood on Streams and Rivers	2.3.2.13
2.16	Ice Effects	2.3.2.14
2.17	Cooling Water Channels and Reservoirs	2.3.2.15
2.18	Channel Division	2.3.2.16
2.19	Flooding Protection Requirements	2.3.2.17
2.20	Cooling Water Supply	2.3.2.18
2.21	Accidental Release of Liquid Effluents in Ground and Surface Waters	2.3.2.19
2.22	Technical Specifications and Emergency Operation Requirement	2.3.2.20
2.23	Basic Geological and Seismic Information	2.3.2.21
2.24	Vibratory Ground Motion	2.3.2.22
2.25	Surface Faulting	2.3.2.23
2.26	Stability of Subsurface Material and Foundation	2.3.2.24
2.27	Site and Facilities	2.3.2.25
2.28	Field Investigations	2.3.2.26
2.29	Laboratory Investigations	2.3.2.27
2.30	Subsurface Conditions	2.3.2.28
2.31	Evacuation and Backfilling for Foundation Construction	2.3.2.29
2.32	Effect of Groundwater	2.3.2.30
2.33	Liquefaction Potential	2.3.2.31
2.34	Response of Soil and Rock to Dynamic Loading	2.3.2.32
2.35	Minimum Soil Bearing Capacity	2.3.2.33
2.36	Earth Pressures	2.3.2.34
2.37	Soil Properties for Seismic Analysis of Buried Pipes	2.3.2.35
2.38	Static and Dynamic Stability of Facilities	2.3.2.36
2.39	Subsurface Instrumentation	2.3.2.37
2.40	Stability of Slopes	2.3.2.38
2.41	Embankments and Dams	2.3.2.39
2.42	CRAC 2 Computer Code Calculations	2.3.3
3.1	Site-Specific Design Basis Wind	3.3.3.1
3.2	Site-Specific Design Basis Tornado	3.3.3.2

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
3.3	Effect of Remainder of Plant Structures, Systems and Components Not Designed for Wind Loads	3.3.3.3
3.4	Effect of Remainder of Plant Structures, Systems and Components Not Designed for Tornado Loads	3.3.3.4
3.5	Flood Elevation	3.4.3.1
3.6	Ground Water Elevation	3.4.3.2
3.7	Flood Protection Requirements for Other Structures	3.4.3.3
3.8	Not Used	
3.9	Protection of Ultimate Heat Sink	3.5.4.1
3.10	Missiles Generated by Other Natural Phenomena	3.5.4.2
3.11	Site Proximity Missiles and Aircraft Hazards	3.5.4.3
3.12	Impact of Failure of Out of ABWR Standard Plant Scope Non-Safety-Related Structures, Systems, and Components Due to Design Basis Tornado	3.5.4.4
3.13	Turbine System Maintenance Program	3.5.4.5
3.14	Maintenance Equipment Missile Prevention Inside Containment	3.5.4.6
3.15	Failure of Structures, Systems, and Components Outside ABWR Standard Plant Scope	3.5.4.7
3.16	Details of Pipe Break Analysis Results and Protection Methods	3.6.5.1
3.17	Not Used	
3.18	Inservice Inspection of Piping in Containment Penetration Areas	3.6.5.3
3.19	Seismic Design Parameters	3.7.5.1
3.20	Pre-Earthquake Planning and Post-Earthquake Actions	3.7.5.2
3.21	Piping Analysis, Modeling of Piping Supports	3.7.5.3
3.22	Assessment of Interaction Due to Seismic Effects	3.7.5.4
3.23	Foundation Waterproofing	3.8.6.1
3.24	Site Specific Physical Properties and Foundation Settlement	3.8.6.2
3.25	Structural Integrity Pressure Results	3.8.6.3
3.26	Identification of Seismic Category I Structures	3.8.6.4
3.27	Reactor Internals Vibration Analysis, Measurement and Inspection Programs	3.9.7.1

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
3.28	ASME Class 2 or 3 or Quality Group Components with 60-Year Design Life	3.9.7.2
3.29	Pump and Valve Testing Program	3.9.7.3
3.30	Audits of Design Specifications and Design Reports	3.9.7.4
3.31	Not Used	3.9.7.5
3.32	Not Used	3.9.7.6
3.33	Not Used	3.9.7.7
3.34	Not Used	3.9.7.8
3.35	Not Used	3.9.7.9
3.36	Not Used	3.9.7.10
3.37	Equipment Qualification	3.10.5.1
3.38	Dynamic Qualification Report	3.10.5.2
3.39	Qualification by Experience	3.10.5.3
3.40	Environmental Qualification Document (EQD)	3.11.6.1
3.41	Environmental Qualification Records	3.11.6.2
3.42	Surveillance, Maintenance, and Experience Information	3.11.6.3
3.43	Radiation Environment Conditions	3I.3.3.1
4.1	Thermal Hydraulic Stability	4.3.5.1
4.2	Power/Flow Operating Map	4.4.7.1
4.3	Thermal Limits	4.4.7.2
4.4	CRD Inspection Program	4.5.3.1
4.5	CRD and FMCRD Maintenance Procedures During Maintenance	4.6.6
5.1	Conversion of Indications	5.2.6.1
5.2	Plant Specific ISI/PSI	5.2.6.2
5.3	Reactor Vessel Water Level Instrumentation	5.2.6.3
5.4	Fracture Toughness Data	5.3.4.1
5.5	Materials and Surveillance Capsule	5.3.4.2
5.6	Plant Specific Pressure-Temperature Information	5.3.4.3
5.7	Testing of Mainsteam Isolation Valves	5.4.15.1
5.8	Analysis of Non-Design Basis Loss of AC Coping Capability	5.4.15.2
5.9	ACIWA Flow Reduction	5.4.15.3

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
5.10	RIP Installation and Verification During Maintenance	5.4.15.4
6.1	Protection Coatings and Organic Materials	6.1.3.1
6.2	Not Used	
6.3	Administrative Control Maintaining Containment Isolation	6.2.7.2
6.4	Not Used	
6.5	Wetwell-to-Drywell Vacuum Breaker Protection	6.2.7.4
6.5a	Containment Penetration Leakage Rate Test (Type B)	6.2.7.5
6.6	ECCS Performance Results	6.3.6.1
6.7	ECCS Testing Requirements	6.3.6.2
6.7a	Limiting Break Results	6.3.6.3
6.8	Toxic Gases	6.4.7.1
6.9	SGTS Performance	6.5.5.1
6.9a	SGTS Exceeding 90 Hours of Operation per Year	6.5.5.2
6.10	PSI and ISI Program Plans	6.6.9.1
6.11	Access Requirement	6.6.9.2
7.1	Cooling Temperature Profiles for Class 1E Digital Equipment	7.3.3.1
7.2	APRM Oscillation Monitoring Logic	7.6.3.1
7.3	Effects of Station Blackout on HVAC	7.8.1
7.4	Electrostatic Discharge on Exposed Equipment Components	7.8.2
7.5	Localized High Heat Spots in Semiconductor Material for Computing Devices	7.8.3
8.1	Diesel Generator Reliability	8.1.4.1
8.2	Periodic Testing of Offsite Equipment	8.2.4.1
8.3	Procedures When a Reserve or Unit Auxiliary Transformer is Out of Service	8.2.4.2
8.4	Offsite Power Systems Design Bases	8.2.4.3
8.5	Offsite Power Systems Scope Split	8.2.4.4
8.6	Capacity of Auxiliary Transformers	8.2.4.5
8.7	Not Used	8.3.4.1
8.8	Diesel Generator Design Details	8.3.4.2

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
8.9	Not Used	8.3.4.3
8.10	Protective Devices for Electrical Penetration Assemblies	8.3.4.4
8.11	Not Used	8.3.4.5
8.12	Not Used	8.3.4.6
8.13	Not Used	8.3.4.7
8.14	Not Used	8.3.4.8
8.15	Offsite Power Supply Arrangements	8.3.4.9
8.16	Not Used	8.3.4.10
8.17	Not Used	8.3.4.11
8.18	Not Used	8.3.4.12
8.19	Load Testing of Class 1E Switchgear and Motor Control Centers	8.3.4.13
8.20	Administrative Controls for Bus Grounding Circuit Breakers	8.3.4.14
8.21	Administrative Controls for Manual Interconnections	8.3.4.15
8.22	Not Used	8.3.4.16
8.23	Common Industrial Standards Referenced in Purchase Specifications	8.3.4.17
8.24	Administrative Control for Switching 125Vdc Standby Charger	8.3.4.18
8.25	Control of Access to Class 1E Power Equipment	8.3.4.19
8.26	Periodic Testing of Voltage Protection Equipment	8.3.4.20
8.27	Diesel Generator Parallel Test Mode	8.3.4.21
8.28	Periodic Testing of Diesel Generator Protective Relaying	8.3.4.22
8.29	Periodic Testing of Diesel Generator Synchronizing Interlocks	8.3.4.23
8.30	Periodic Testing of Thermal Overloads and Bypass Circuitry	8.3.4.24
8.31	Periodic Inspection/Testing of Lighting System	8.3.4.25
8.32	Controls for Limiting Potential Hazards into Cable Chases	8.3.4.26
8.33	Periodic Testing of Class 1E Equipment Protective Relaying	8.3.4.27
8.34	Periodic Testing of CVCF Power Supplies and EPAs	8.3.4.28
8.35	Periodic Testing of Class 1E Circuit Breakers	8.3.4.29

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
8.36	Periodic Testing of Electrical Systems & Equipment	8.3.4.30
8.37	Not Used	8.3.4.31
8.38	Class 1E Battery Installation and Maintenance Requirements	8.3.4.32
8.39	Periodic Testing of Class 1E Batteries	8.3.4.33
8.40	Periodic Testing of Class 1E CVCF Power Supplies	8.3.4.34
8.41	Periodic Testing of Class 1E Battery Chargers	8.3.4.35
8.42	Periodic Testing of Class 1E Diesel Generators	8.3.4.36
9.1	New Fuel Storage Racks Criticality Analysis	9.1.6.1
9.2	Dynamic and Impact Analysis of New Fuel Storage Racks	9.1.6.2
9.3	Spent Fuel Storage Racks Criticality Analysis	9.1.6.3
9.4	Spent Fuel Rack Load Drop Analysis	9.1.6.4
9.5	New Fuel Inspection Stand Seismic Capability	9.1.6.5
9.6	Overhead Load Handling System Information	9.1.6.6
9.7	Spent Fuel Racks Structural Evaluation	9.1.6.7
9.8	Spent Fuel Racks Thermal-Hydraulic Analysis	9.1.6.8
9.9	Spent Fuel Firewater Makeup Procedures and Training	9.1.6.9
9.10	Protection of RHR System Connections to FPC System	9.1.6.10
9.11	HECW System Refrigerator Requirements	9.2.17.1
9.12	Reactor Service Water System Requirements	9.2.17.2
9.12a	Not Used	9.3.12.1
9.13	Not Used	9.3.12.2
9.14	Not Used	9.3.12.3
9.15	Radioactive Drain Transfer System	9.3.12.4
9.16	Service Building HVAC System	9.4.10.1
9.17	Radwaste Building HVAC System	9.4.10.2
9.18	Contamination of the DG Combustion Air Intake	9.5.13.1
9.19	Use of Communication System in Emergencies	9.5.13.2
9.20	Maintenance and Testing Procedures for Communication Equipment	9.5.13.3
9.21	Use of Portable Hand Light in Emergency	9.5.13.4

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
9.22	Vendor Specific Design of Diesel Generator Auxiliaries	9.5.13.5
9.23	Diesel Generator Cooling Water System Design Flow and Heat Removal Requirements	9.5.13.6
9.24	Fire Rating for Penetration Seals	9.5.13.7
9.25	Diesel Generator Requirements	9.5.13.8
9.26	Applicant Fire Protection Program	9.5.13.9
9.27	HVAC Pressure Calculations	9.5.13.10
9.28	Plant Security System Criteria	9.5.13.11
9.29	Not Used	9.5.13.12
9.30	Diesel Fuel Refueling Procedures	9.5.13.13
9.31	Portable and Fixed Emergency Communication Systems	9.5.13.14
9.32	Identification of Chemicals	9.5.13.15
9.33	NUREG/CR-0660 Diesel Generator Reliability Recommendations	9.5.13.16
9.34	Sound-Powered Telephone Units	9.5.13.17
9.35	Fire-Related Administrative Controls	9.5.13.18
9.36	Periodic Testing of Combustion Turbine Generator (CTG)	9.5.13.19
9.37	Operating Procedures for Station Blackout	9.5.13.20
9.38	Quality Assurance Requirements for CTG	9.5.13.21
10.1	Low Pressure Turbine Disk Fracture Toughness	10.2.5.1
10.2	Turbine Design Overspeed	10.2.5.2
10.3	Turbine Inservice Test and Inspection	10.2.5.3
10.4	Procedures to Avoid Steam Hammer and Discharge Loads	10.3.7.1
10.5	MSIV Leakage	10.3.7.2
10.6	Radiological Analysis of the TGSS Effluents	10.4.10.1
11.1	Plant-Specific Liquid Radwaste Information	11.2.5.1
11.2	Compliance With Appendix I to 10CFR50	11.3.11.1
11.3	Plant-Specific Solid Radwaste Information	11.4.3.1
11.4	Calculation of Radiation Release Rates	11.5.6.1
11.5	Compliance with the Regulatory Shielding Design Basis	11.5.6.2
11.6	Provisions for Isokinetic Sampling	11.5.6.3
11.7	Sampling of Radioactive Iodine and Particulates	11.5.6.4

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
11.8	Calibration Frequencies and Techniques	11.5.6.5
12.1	Regulatory Guide 8.10	12.1.4.1
12.2	Regulatory Guide 1.8	12.1.4.2
12.3	Occupational Radiation Exposure	12.1.4.3
12.4	Regulatory Guide 8.8	12.1.4.4
12.5	Compliance with 10CFR20 and 10CFR50 Appendix I	12.2.3.1
12.6	Airborne Radionuclide Concentration Calculation	12.3.7.1
12.7	Operational Considerations	12.3.7.2
12.8	Requirements of 10CFR70.24	12.3.7.3
12.9	Radiation Protection Program	12.5.3.1
12.10	Compliance With Para. 50.34(f)(xxvii) of 10CFR50 and NUREG-0737 Item III.D.3.3	12.5.3.2
13.1	Incorporation of Operating Experience	13.2.3.1
13.2	Emergency Plans	13.3.1.1
13.2a	Review and Audit	13.4.1
13.3	Plant Operating Procedures Development Plan	13.5.3.1
13.4	Emergency Procedures Development	13.5.3.2
13.5	Implementation of the Plan	13.5.3.3
13.6	Procedures Included in Scope of Plan	13.5.3.4
13.7	Submittal of Security Plan	13.6.3
14.1	Other Testing	14.2.13.1
14.2	Test Procedures/Startup Administrative Manual	14.2.13.2
14.3	Not Used	14.2.13.3
15.1	Anticipated Operational Occurrences (AOO)	15.0.5.1
15.2	Operating Limits	15.0.5.2
15.3	Design Basis Accidents	15.0.5.3
15.4	Radiological Effects of MSIV Closure	15.2.10.1
15.5	Mislocated Fuel Bundle Accident	15.4.11.1
15.6	Misoriented Fuel Bundle Accident	15.4.11.2
15.7	Iodine Removal Credit	15.6.7.1
15.8	Not Used	
15.9	Radiological Consequences of Non-Line Break Accidents	15.7.6.1

**Table 1.9-1 Summary of ABWR Standard Plant
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Item No.	Subject	Subsection
16.1	COL Information Required for Plant Specific Technical Specifications	16.1.1
17.1	QA Programs For Construction And Operation	17.0.1.1
17.2	Policy and Implementation Procedures for D-RAP	17.3.13.1
17.3	D-RAP Organization	17.3.13.2
17.4	Provision for O-RAP	17.3.13.3
18.1	HSI Design Implementation Process	18.8.1
18.2	Number of Operators Needing Controls Access	18.8.2
18.3	Automation Strategies and Their Effect on Operator Reliability	18.8.3
18.4	SPDS Integration With Related Emergency Response Capabilities	18.8.4
18.5	Standard Design Features Design Validation	18.8.5
18.6	Remote Shutdown System Design Evaluation	18.8.6
18.7	Local Valve Position Indication	18.8.7
18.8	Operator Training	18.8.8
18.9	Safety System Status Monitoring	18.8.9
18.10	PGCS Malfunction	18.8.10
18.11	Local Control Stations	18.8.11
18.12	As-Built Evaluation of MCR and RSS	18.8.12
18.13	Accident Monitoring Instrumentation	18.8.13
18.14	In-Core Cooling Instrumentation	18.8.14
18.15	Performance of Critical Tasks	18.8.15
18.16	Plant Status and Post-Accident Monitoring	18.8.16
19.1	Post Accident Recovery Procedure for Unisolated CUW Line Break	19.9.1
19.2	Confirmation of CUW Operation Beyond Design Bases	19.9.2
19.3	Event Specific Procedures for Severe External Flooding	19.9.3
19.4	Confirmation of Seismic Capacities Beyond the Plant Design Bases	19.9.4
19.5	Plant Walkdowns	19.9.5
19.6	Confirmation of Loss of AC Power Event	19.9.6
19.7	Procedures and Training for Use of AC-Independent Water Addition System	19.9.7

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Item No.	Subject	Subsection
19.8	Action to Avoid Common-Cause Failures in the Essential Communications Function (ECF) and Other Common-Cause Failures	19.9.8
19.9	Actions to Mitigate Station Blackout Events	19.9.9
19.10	Actions to Reduce Risk of Internal Flooding	19.9.10
19.11	Actions to Avoid Loss of Decay Heat Removal and Minimize Shutdown Risk	19.9.11
19.12	Procedures for Operation of RCIC from Outside the Control Room	19.9.12
19.13	ECCS Test and Surveillance Intervals	19.9.13
19.14	Accident Management	19.9.14
19.15	Manual Operation of MOVs	19.9.15
19.16	High Pressure Core Flooder Discharge Valve	19.9.16
19.17	Capability of Containment Isolation Valves	19.9.17
19.18	Procedures to Ensure Sample Lines and Drywell Purge Lines Remain Closed During Operation	19.9.18
19.19	Procedures for Combustion Turbine Generator to Supply Power to Condensate and Condensate Booster Pumps	19.9.19
19.19a	Actions to Assure Reliability of the Supporting RCW and Service Water Systems	19.9.20
19.19b	Housing of ACIWA Equipment	19.9.21
19.19c	Procedures to Assure SRV Operability During Station Blackout	19.9.22
19.19d	Procedures for Ensuring Integrity of Freeze Seals	19.9.23
19.19e	Procedures for Controlling Combustibles During Shutdown	19.9.24
19.19f	Outage Planning and Control	19.9.25
19.19g	Reactor Service Water Systems Definition	19.9.26
19.19h	Capability of Vacuum Breakers	19.9.27
19.19i	Capability of the Containment Atmospheric Monitoring System	19.9.28
19.19j	Plant Specific Safety-Related Issues and Vendors Operating Guidance	19.9.29
19.20	Long-Term Training Upgrade	19A.3.1

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Item No.	Subject	Subsection
19.21	Long-Term Program of Upgrading of Procedures	19A.3.2
19.22	Purge System Reliability	19A.3.3
19.23	Licensing Emergency Support Facility	19A.3.4
19.24	In-Plant Radiation Monitoring	19A.3.5
19.25	Feedback of Operating, Design and Construction Experience	19A.3.6
19.26	Organization and Staffing to Oversee Design and Construction	19A.3.7
19.27	Develop More Detailed QA Criteria	19A.3.8
19.28	COL Applicant Safety Issues	19B.3.1
19.28a	Testing of Isolators	19B.3.2
19.29	Seismic Capacity	19H.5.1
19.30	PRA Update	19.9.30