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10 CFR 50.4

May 31, 2007

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

UN#07-005

Subject: UniStar Nuclear, Project Nos. 733 (AREVA NP), 746 (UniStar Nuclear), 750 (AmerenUE), and 752 (Amarillo Power)
Response to Regulatory Issue Summary 2007-08
Updated Licensing Submittal Information to Support the Design-Centered Licensing Review Approach

References:
1) NRC Regulatory Issue Summary 2007-08, Updated Licensing Submittal Information to Support the Design-Centered Licensing Review Approach, dated April 16, 2007
2) Letter UN#06-006, from R. M. Krich (UniStar Nuclear) to U.S. NRC, "UniStar Nuclear, NRC Project No. 746, Response to NRC Regulatory Issue Summary 2006-006, New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach," dated July 13, 2006

In Regulatory Issue Summary (RIS) 2007-08 (Reference 1), the NRC stated that it is seeking to obtain updated information from that provided in response to RIS 2006-06, "New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach," (Reference 2) regarding standardization and the schedules for submitting Early Site Permit (ESP), Combined License (i.e., COL), or standard Design Certification (DC) applications. The NRC also requested updated information related to quality assurance activities and construction plans. The response to this RIS is voluntary and the NRC requested that it be submitted within 45 days of the date of the RIS, i.e., by May 31, 2007.

This reply to RIS 2007-08 by UniStar Nuclear is the combined response for the US EPR Design-Centered Working Group (DCWG). The DCWG currently includes Constellation Generation Group, AmerenUE, Amarillo Power, and AREVA NP. As previously indicated in our response to RIS 2006-06 (Reference 2), UniStar Nuclear continues to support and endorse the design-centered review approach proposed by the NRC. To the extent the information is known, Enclosure 1 provides the responses to the bulleted items in the RIS. Specifically, Enclosure 1 addresses the information requested in three areas: Licensing Submittal Information, Site and Environmental Information, and Plant Construction Requirements Information. Enclosure 2 provides the latest revision of the proposed US EPR COL Application Standardization Matrix showing the COL sections/subsections that will be relying on the US EPR DC application, those

D077
D079

COL sections/subsections that will be standardized (i.e., generic) and therefore repeated verbatim in subsequent COL applications, and those COL sections/subsections that are likely to be site-specific.

If you have any questions, please contact me at (410) 864-6441.

Respectfully,

R. M. Krich
UniStar Nuclear Development, LLC

Enclosures:
1) Enclosure 1: Response to NRC Regulatory Issue Summary 2007-08
2) Enclosure 2: Proposed US EPR Combined License (i.e., COL) Application Standardization Matrix

cc: NRC Project Manager, US EPR Combined License Application
NRC Project Manager, US EPR Design Certification Application

ENCLOSURE 1

Response to NRC Regulatory Issue Summary 2007-08

Each of the information requests in NRC Regulatory Issue Summary (RIS) 2007-08, are addressed below. UniStar Nuclear is providing a combined response for the members of the US EPR Design-Centered Working Group (DCWG). The DCWG includes Constellation Generation Group (NRC Project No. 746), AmerenUE (NRC Project No. 750), Amarillo Power (NRC Project No. 752), an as yet unspecified Constellation site, and AREVA NP (NRC Project No. 733). UniStar Nuclear is in the process of developing the first (i.e., reference) Combined License (i.e., COL) application for a possible unit at the Calvert Cliffs Nuclear Power Plant (CCNPP) site (Reference 1) that will reference the AREVA NP US EPR standard design. UniStar Nuclear's response to this RIS provides updated information from that which was provided in our response to RIS 2006-06, "New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach," dated May 31, 2006 (Reference 2) with respect to standardization and the schedules for submitting the US EPR Design Certification (DC) and COL applications as well as quality assurance activities and construction plans.

Licensing Submittal Information:

- Will the applicants be organized into the US EPR DCWGs? If so, what is the membership and who is the single point of contact designated for each DCWG? Have protocols been developed to provide coordinated responses for RAIs with generic applicability to a design center?

Response:

The applicants are organized into a DCWG. The membership includes: AREVA NP, AmerenUE, Amarillo Power, and Constellation Generation Group. As previously provided in our response to RIS 2006-06, the single point of contact for the US EPR DCWG is as follows:

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* Note - new phone and location

A protocol has been developed in that an established procedure governing written communications with the NRC is being implemented for written communications concerning COL applications. Also, UniStar and AREVA will coordinate the responses to NRC Requests for Additional Information (RAIs) regarding DC or COL applications. In that way, coordinated responses for RAIs with generic applicability to our DCWG will be provided. The specific UniStar Nuclear procedure is LS-AN-102, *UniStar Nuclear Written Communications.*

- Which applicant referencing the design will be designated as the R-COL applicant?

Response:

UniStar Nuclear Development (UND), L.L.C. and Constellation Generation Group will be the applicants for the Reference (R)-COL based on an EPR located at the Calvert Cliffs site.

- When (month and year) will each of the COL applications be submitted for review? In addition, what is the design, site location, and the number of units at each site?

Response:

Applicant	Site	Design	COL Submitted - Month/Year	Number of Units
UND/Constellation Generation Group	CCNPP	US EPR	March/ 2008* (Early submittal of ER June/07 (Reference 3))	1
UND/AmerenUE	TBD	US EPR	Third Quarter 2008 (Reference 4)	1
UND/Amarillo Power	TBD	US EPR	Fourth Quarter 2008 (Reference 5)	2
UND/Constellation Generation Group	Undesignated	US EPR	Fourth Quarter 2008	1

* UniStar Nuclear is working to improve this submittal date to end of 2007

- What portions of the COL application (chapters, sections, subsections) will be relying on the DC?
- What portions of the R-COL application (chapters, sections, subsections) will be referenced (i.e., replicated verbatim) in S-COL applications, and what portions of the application are likely to be site-specific?

Response:

The latest revision of the proposed US EPR COL Application Standardization Matrix which details the portions of the COL application (on a section and subsection basis) is provided in Enclosure 2. An "X" in the column with the heading "DCD Pointer" means that section or subsection will be relying on the DC application. A "G" in the column with the heading "Generic (G)/Site-Specific (S)" means the section or subsection will be replicated verbatim in Subsequent(S)-COL applications. A "G/S" in the same column means that part of a section or subsection will be replicated

verbatim in the S-COL applications. An "S" or a "G/S" in the same column means that all or part of a section or subsection will be site-specific, respectively.

- When (month and year) will applicants complete the detailed design information to be verified under those inspections, tests, analyses, and acceptance criteria that are directed at certification information (design acceptance criteria)? Will this information be completed in a design certification amendment application, in the R-COL application, in S-COL applications, in post-COL Final Safety Analysis Report updates, or a combination thereof?

Response:

AREVA NP provided information regarding the design process and design timeline for the US EPR in Reference 6. The NRC responded in Reference 7, noting that the "... proposal can promote a higher degree of standardization for the US EPR for these subject areas by reducing reliance on design acceptance criteria in the design certification rulemaking. Your proposal appears to be consistent with the design-centered review approach described in Regulatory Issue Summary 2006-06, 'New Reactor Standardization Needed to Support the Design-Centered Review Approach.'" AREVA NP is proceeding as outlined in Reference 6.

The goal of the approach outlined in Reference 6 is to close as many of the Design Acceptance Criteria (DAC) items as possible during the NRC review of the design certification application, based on the results of detailed engineering. The areas in which this approach would be applied include detailed piping design and analysis, Instrumentation and Controls (I&C), and Human Factors Engineering (HFE).

AREVA NP proposes to close DAC items during the NRC review of the DC application, through submittal of updates to the DC application to remove DAC items from Tier 1 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and to add the appropriate design information to Tier 1 and Tier 2 of the Design Control Document (DCD). The completion of DAC items during the DC application review would be supported with submittal of topical reports and/or on-site reviews, with the particular completion mechanism to be determined on a case-by-case basis. AREVA NP understands that the details of this approach are subject to further discussion and agreement with the NRC. AREVA NP intends to submit a letter to the NRC, upon submittal of the DC application, outlining in more detail the schedule for availability of detailed design information to support DAC closure.

Completion of DAC items remaining after the US EPR DC rulemaking could be accomplished with a DC amendment. However, it is expected that the scope of remaining DAC will be small, if any, and thus the mechanism or process for completion will be selected at a later date.

Site and Environmental Information

- Do any applicants intend to apply for an ESP prior to submitting their COL applications? If so, when (month and year) would the proposed ESP be submitted to the NRC for review?

Response:

None of the applicants intend to apply for an ESP prior to submitting their COL applications.

- For ESP applicants, is the applicant going to be seeking approval of either "proposed major features of the emergency plans" per 10 CFR 52.17(b)(2)(i), or "proposed complete and integrated emergency plans" per 10 CFR 52.17(b)(2)(ii)?

Response:

Not applicable.

- Do the applicants plan to submit an Environmental Report (ER) or Limited Work Authorization (LWA) request prior to other portions of the COL application, and if so, when (month and year)?

Response:

As previously summarized in our February 16, 2007 letter (Reference 8), UniStar Nuclear is currently planning on the following for the R-COL: 1) Submittal of a request for an LWA as it is defined by the recently approved rule change (i.e., referred to as LWA-2 in our previous letters referenced in our February 16, 2007 letter) in December, 2007, ahead of the submittal of the COL application in March, 2008, and 2) early submittal of the ER by the end of June, 2007. At this time it is expected that the remaining DCWG applications will submit a complete COL application that will include the ER. A decision on whether to submit LWA requests has not been made at this time.

- What scope and schedule do applicants project for site characterization activities, such as core borings and testing of core samples?

Applicant	Site	Site Characterization Scope	Completion Schedule	Laboratory Testing	Completion Schedule
UND/Constellation Generation Group (Reference 9)	CCNPP	1) Standard penetration testing (i.e., borings) 2) Observation wells 3) Test pits and	1) Complete 2) Complete 3) Complete	1) Moisture content (ASTM D 2216) 2) Unit weigh 3) Specific gravity (ASTM D 854) 4) Sieve and hydrometer	1) Complete 2) Complete 3) Complete 4) Complete

		bulk sampling 4) Cone penetrometer tests 5) Electrical resistivity 6) Downhole geophysics testing 7) Split spoon (disturbed sampling) 8) Shelby tubes (undisturbed sampling) 9) Suspension P-S velocity logging	4) Complete 5) Complete 6) Complete 7) Complete 8) Complete 9) Complete	analysis (ASTM D 422 and ASTM D 6913) 5) Atterberg limits (ASTM D 4318) 6) Chemical analysis (pH, chloride, sulfate) 7) Moisture – density (ASTM D 1557) 8) Unconfined compression (ASTM D 2166) 9) Unconsolidated – undrained triaxial compression (ASTM D 2850) 10) Consolidated – undrained compression (ASTM D 4767) 11) Direct shear (ASTM D 3080) 12) Resonant column torsional shear (RCTS) 13) Consolidation test (ASTM D 2435) 14) K_d testing	5) Complete 6) Complete 7) Complete 8) Complete 9) Complete 10) Complete 11) Complete 12) June 2007 (initial samples) 13) Complete 14) June 2007
UND/AmerenUE (Reference 10)	Callaway*	1) Standard penetration testing (i.e., core borings) 2) Observation wells 3) Suspension P-S velocity logging 4) Downhill pressure meter 5) Cross-hole sonic logging 6) Surface reflection survey	1) Complete 2) June 2007 3) Complete 4) Complete 5) Complete 6) Complete	Same as for the CCNPP site	All testing, including RCTS and K_d testing will be completed in August 2007
UND/Amarillo Power	To be determined (TBD)	TBD	TBD	TBD	TBD
UND/Constellation Generation Group	Nine Mile Point*	Same as for CCNPP plus core borings	July-August 2007	Same as for CCNPP without RCTS	July-August 2007

* A final site for the COL application has not yet been determined.

- What interactions have taken place with local and State authorities and other Federal agencies to support licensing new reactors?

Response:

For the CCNPP site: UniStar Nuclear has had a number of meetings with the Maryland Power Plant Research Project (PPRP) staffed by the Maryland Department of Natural Resources. The PPRP is responsible for assessing UniStar Nuclear's application to the Maryland Public Service Commission for a Certificate of Public Convenience and Necessity (CPCN). UniStar Nuclear has also had interactions with the Maryland Department of the Environment, the Maryland Department of Transportation, the Maryland Port Authority Safety Department, Maryland Historical Trust, Calvert County Commissioners, Calvert County Dept. of Economic Development, Calvert County Planning and Zoning, U.S. Coast Guard, and Patuxent River Naval Air Station.

For AmerenUE: AmerenUE and its sub-contractors have held working level meetings or had contact with the State Historical Preservation Office and others within the Missouri Department of Natural Resources, the Army Corps of Engineers, the Missouri Department of Conservation, and the Federal Aviation Administration. More formal meetings between AmerenUE and the Missouri Department of Natural Resources are expected to take place in the next 2 to 4 weeks.

For Amarillo Power: Following site selection, initial interactions with state and local agencies will be conducted.

For the Nine Mile Point site: Initial interaction with the Army Corps of Engineers on wetland permitting for site characterization activities was held on May 24, 2007.

Plant Construction Requirements Information

- Who are the vendors and consultants that are assisting in the preparation of the application? The NRC requests that the potential applicants submit a list of entities that are providing input to and are preparing the COL application under a QA program.

Response:

The US EPR R-COL application being prepared by UniStar Nuclear has support from its primary consultants and advisors: Bechtel, AREVA NP, and Tetra Tech NUS. The activity of writing the COL application itself which is being carried out by UniStar Nuclear employees and consultants from Excel Services is not within the scope of the Quality Assurance (QA) program. Certain information that is input to the COL application is prepared in accordance with a QA program when required.

The US EPR S-COLA for AmerenUE is also being prepared by UniStar Nuclear in conjunction with AmerenUE and its primary consultant and advisor: Paul C. Rizzo Associates.

The US EPR S-COLA for Amarillo Power is also being prepared by UniStar Nuclear in conjunction with Amarillo Power and its primary consultants and advisors: CH2M HILL and Bechtel.

- What information do the applicants have regarding the timing of construction, the ordering of long lead time components, and other commitments to construction? Furthermore, what vendors will be designing, manufacturing, fabricating, and testing safety-related components for eventual plant construction?

Response:

For the CCNPP site: Temporary construction-related activities (clearing, grading, construction of temporary roads, warehouses, utilities, concrete mixing plants, construction support buildings) and excavation for permanent facility structures could begin at the CCNPP site as early as December 2009. Construction of permanent systems, structures, and components (SSCs) which have no reasonable nexus to radiological health and safety or common defense and security could start as early as January 2010. LWA activities for SSCs that have a nexus to radiological health and safety or common defense and security could start as early as January 2011, if an LWA is requested. Safety related construction governed by the issuance of a COL is planned to begin in July 2011.

UniStar Nuclear has secured the following long-lead items:

Reactor Pressure Vessel (RPV):	Integrated Nozzle Belt – Japan Steel Works (JSW) Transition Ring – JSW Core Shells – JSW Head Flange – JSW
Steam Generators (SGs) (4):	Conical Shells – JSW Tubesheets – JSW Primary Heads – JSW

UniStar Nuclear has reserved the remaining long-lead items, such as RPV nozzles and heads and SG elliptical heads and shells, from JSW or AREVA's Chalon facility. Machining of these long-lead items can be performed at Chalon or at the BWX Technologies (BWXT) facility. UniStar Nuclear is also currently in discussions with turbine-generator suppliers.

For AmerenUE: Temporary construction-related activities (clearing, grading, construction of temporary roads, warehouses, utilities, concrete mixing plants,

construction support buildings) and excavation for permanent facility structures could begin by the first quarter of 2011. Construction of permanent systems, structures, and components (SSCs) both safety and non-safety related could start as early as first quarter 2012, provided that the COL is granted by fourth quarter 2011.

The long-lead forging manufacturing contract for the major heavy components has been agreed, with scheduled delivery dates in late 2010 and early 2011.

For Amarillo Power: Temporary construction related activities (clearing, grading, construction of temporary roads, warehouses, utilities, concrete mixing plants, construction support buildings) and excavation for permanent facility structures could begin for the first unit at the Amarillo site as early as September 2010. Construction of permanent systems, structures, and components (SSCs) which have no reasonable nexus to radiological health and safety or common defense and security could start as early as October 2010. LWA activities for SSCs that have a nexus to radiological health and safety or common defense and security could start as early as March 2012, if an LWA is requested. Safety-related construction governed by the issuance of a COL is targeted to begin in September 2012.

Amarillo Power has commenced preliminary negotiations, and will consider issuing a purchase order to a vendor in 2007 for long lead materials such as heavy forgings, to support the construction schedule.

For the undesignated Constellation site: Temporary construction related activities (clearing, grading, construction of temporary roads, warehouses, utilities, concrete mixing plants, construction support buildings) and excavation for permanent facility structures could begin as early as September 2012. Construction of permanent systems, structures, and components (SSCs) which have no reasonable nexus to radiological health and safety or common defense and security could start as early as October 2012. LWA activities for SSCs that have a nexus to radiological health and safety or common defense and security could start as early as March 2014, if an LWA is requested. Safety-related construction governed by the issuance of a COL is targeted to begin in September 2014.

AREVA NP is the vendor responsible for the designing, manufacturing, fabricating, and testing of the Nuclear Steam Supply System (NSSS) safety-related components for eventual plant construction. The remaining safety related SSCs will be under the control of AREVA but will contain some subcontracted work relative to design, fabrication and testing.

References:

1) Letter UN#07-004, from R. M. Krich (UniStar Nuclear) to U.S. NRC, "UniStar Nuclear, NRC Project No. 746, "Notification of Site Selection," dated April 30, 2007
2) Letter UN#06-006, from R. M. Krich (UniStar Nuclear) to U.S. NRC, "UniStar Nuclear, NRC Project No. 746, Response to NRC Regulatory Issue Summary 2006-006, New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach," dated July 13, 2006
3) Letter UN#07-001, from R. M. Krich (UniStar Nuclear) to U.S. NRC, "UniStar Nuclear, Project No. 746, Review of Current Plans," dated February 16, 2007
4) Letter ULNRC-05311 from Charles D. Nasland (AmerenUE) to U.S. NRC, "Ameren Plans for Submitting a Combined Construction Permit and Operating License Application ("COLA")," dated July 12, 2006 (Proprietary)
5) Letter from George R. Chapman (Amarillo Power) to U.S. NRC, "Updated Amarillo Power Plans for Submitting Early Site Permit and Combined Operating License Applications," dated March 15, 2007
6) Letter NRC:06:023, from Ronnie L. Gardner (AREVA NP) to U.S. NRC, "Proposed Approach for Resolution of Design Process and Verification Issues for the U.S. EPR," dated May 24, 2006
7) Letter from Joseph F. Williams (NRC) to Ronnie L. Gardner (AREVA NP), "Proposed Approach for Resolution of Design Process and Verification Issues," dated July 20, 2006
8) Letter UN#07-001, from R. M. Krich (UniStar Nuclear) to U.S. NRC, "UniStar Nuclear, Project No. 746, Review of Current Plans," dated February 16, 2007
9) Letter from George Vanderheyden (UniStar Nuclear) to David B. Matthews (U.S. NRC), "General Description and Plans for Constellation's Geotechnical Investigations at Its Calvert Cliffs Site: Follow-up to January 25, 2006 Meeting," dated February 27, 2006
10) Letter ALNRC 00001, from T. E. Hermann (AmerenUE) to U.S. NRC, "NRC Project #750, AmerenUE – Callaway Plant, Plans for Pursuing Environmental Impact Studies and Site Geotechnical Exploration to Support Combined License – (COLA) Submittal," dated April 5, 2007

ENCLOSURE 2

Proposed US EPR Combined License (i.e., COL) Application Standardization Matrix

Enclosure 2
Response to NRC Regulatory Issue Summary 2007-08
Proposed US EPR COL Application Standardization Matrix

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
1	General and Financial Requirements		
1.0	General Information		S
2.0	Financial Qualifications		S
3.0	Decommissioning Funding		G/S
4.0	Foreign Ownership/Control		S
2	FSAR		
1	Introduction and General Description of the Plant	X	G
1.1	Introduction	X(1)	G/S
1.1.1	Plant Location	0	S
1.1.2	Containment Type	X	G
1.1.3	Reactor Type	X	G
1.1.4	Power Output	X	G
1.1.5	Schedule	0	S
1.1.6	Format and Content	0	G
1.2	General Plant Description	X	G
1.2.1	Site Description	0	S
1.2.2	Plant Description	X(1)	G/S
1.3	Comparisons with Similar Facility Designs	X	G
1.4	Identification of Agents and Contractors	X	G/S
1.4.1	Applicant - Program Manager	0	S
1.4.2	Other Contractors and Participants	X(1)	S
1.5	Requirements for Further Technical Information	X	G
1.6	Material Referenced	X	S
1.7	Drawings and Other Detailed Information	X	G
1.7.1	Electrical and Instrumentation and Control Drawings	X	G/S
1.7.2	Piping and Instrumentation Diagrams	X	G/S
1.8	Interfaces with Standard Designs and Early Site Permits	X(1)	G/S
1.9	Conformance with Regulatory Criteria	X(1)	G
1.9.1	Compliance with Regulatory Guides	X(1)	G/S
1.9.2	Conformance with Standard Review Plan	X(1)	G/S
1.9.3	Generic Issues	X(1)	G/S
1.9.4	Operational Experience (Generic Communications)	X(1)	G/S
1.9.5	Advanced and Evolutionary Light Water Reactor Design Issues	X(1)	G
2	Site Characteristics	0	S
2.1	Geography and Demography	0	S
2.1.1	Site Location and Description	0	S
2.1.2	Exclusion Area Authority and Control	0	S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
2.1.3	Population Distribution	0	S
2.1.4	References	0	S
2.2	Nearby Industrial, Transportation, and Military Facilities	0	S
2.2.1	Locations and Routes	0	S
2.2.2	Descriptions	0	S
2.2.3	Evaluation of Potential Accidents	0	S
2.2.4	References	0	S
2.3	Meteorology	0	S
2.3.1	Regional Climatology	0	S
2.3.2	Local Meteorology	0	S
2.3.3	Onsite Meteorological Measurements Program	0	S
2.3.4	Short-Term Atmospheric Dispersion Estimates for Accident Release	0	S
2.3.5	Long-Term Atmospheric Dispersion Estimates for Accident Release	0	S
2.3.6	References	0	S
2.4	Hydrologic Engineering	0	S
2.4.1	Hydrologic Description	0	S
2.4.2	Floods	0	S
2.4.3	Probable Maximum Flood (PMF) on Streams and Rivers	0	S
2.4.4	Potential Dam Failures, Seismically Induced	0	S
2.4.5	Probable Maximum Surge and Seiche Flooding	0	S
2.4.6	Probable Maximum Tsunami Flooding	0	S
2.4.7	Ice Effects	0	S
2.4.8	Cooling Water Canals and Reservoirs	0	S
2.4.9	Channel Diversions	0	S
2.4.10	Flooding Protection Requirements	0	S
2.4.11	Low Water Considerations	0	S
2.4.12	Groundwater	0	S
2.4.13	Pathways of Liquid Effluents in Ground and Surface Water	0	S
2.4.14	Technical Specification and Emergency Operation Requirements	0	S
2.4.15	References	0	S
2.5	Geology, Seismology, and Geotechnical Engineering	0	S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
2.5.1	Basic Geologic and Seismic Information	0	S
2.5.2	Vibratory Ground Motion	0	S
2.5.3	Surface Faulting	0	S
2.5.4	Stability of Subsurface Materials and Foundations	0	S
2.5.5	Stability of Slopes	0	S
2.5.6	References	0	S
3	Design of Structures, Systems, and Equipment	0	G
3.1	Conformance with NRC General Design Criteria	X	G/S
3.1.1	Overall Requirements	X(1)	G
3.1.2	Protection by Multiple Fission Product Barriers	X	G/S
3.1.3	Protection and Reactivity Control Systems	X	G
3.1.4	Fluid Systems	X	G
3.1.5	Reactor Containment	X	G
3.1.6	Fuel and Reactivity Control	X	G
3.1.7	References	X(1)	G/S
3.2	Classification of Structures, Systems, and Components	X	G/S
3.2.1	Seismic Classification	X(1)	G
3.2.2	System Quality Group Classifications	X(1)	G
3.2.3	References	X(1)	G
3.3	Wind and Tornado Loadings	X(1)	G
3.3.1	Wind Loadings	X	G
3.3.2	Tornado Loadings	X	G
3.3.3	References	X(1)	G/S
3.4	Water Level (Flood) Design	0	S
3.4.1	Flood Protection	X(1)	S
3.4.2	Analysis Procedures	X	G
3.4.3	References	X(1)	G/S
3.5	Missile Protection	X	G
3.5.1	Missile Selection and Description	X(1)	G/S
3.5.2	Structures, Systems, and Components to be Protected from Externally Generated Missiles	X(1)	G/S
3.5.3	Barrier Design Procedures	X	G
3.5.4	References	X(1)	G/S
3.6	Protection Against Dynamic Effects Associated with the Postulated Rupture of Piping	X	G
3.6.1	Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside of Containment	X(1)	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
3.6.2	Determination of Rupture Locations and Dynamic Effects Associated with the Postulated Rupture of Piping	X(1)	G
3.6.3	Leak-Before-Break Evaluation Procedures	X(1)	G
3.6.4	References	X(1)	G/S
3.7	Seismic Design	X	G
3.7.1	Seismic Design Parameters	X	G
3.7.2	Seismic System Analysis	X(1)	G/S
3.7.3	Seismic Subsystem Analysis	X(1)	G/S
3.7.4	Seismic Instrumentation	X(1)	G/S
3.7.5	References	X(1)	G/S
3.8	Design of Category 1 Structures	X	G
3.8.1	Concrete Containment	X(1)	G/S
3.8.2	Steel Containment	X	G
3.8.3	Concrete and Steel Internal Structures of Steel or Concrete Containments	X(1)	G
3.8.4	Other Seismic Category 1 Structures	X(1)	G/S
3.8.5	Foundations	X(1)	G/S
3.8.6	References	X(1)	G/S
3.9	Mechanical Systems and Components	X	G
3.9.1	Special Topics for Mechanical Components	X	G
3.9.2	Dynamic Testing and Analysis of Systems, Components, and Equipment	X(1)	G/S
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Supports, and Core Support Structures	X(1)	G/S
3.9.4	Control Rod Drive Systems	X	G
3.9.5	Reactor Pressure Vessel Internals	X	G
3.9.6	Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves and Dynamic Restraints	X(1)	G/S
3.9.7	References	X(1)	G/S
3.10	Seismic and Dynamic Qualification of Mechanical and Electrical Equipment	X	G
3.10.1	Seismic Qualification Criteria	X	G
3.10.2	Methods and Procedures for Qualifying Mechanical and Electrical Equipment and Instrumentation	X(1)	G
3.10.3	Methods and Procedures of Analysis or Testing of Mechanical and Electrical Equipment and Instrumentation	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
3.10.4	Test And Analysis Results and Experience Database	X(1)	G
3.10.5	References	X(1)	G
3.11	Environmental Qualification of Mechanical and Electrical Equipment	X(1)	G
3.11.1	Equipment Location and Environmental Conditions	X(1)	G/S
3.11.2	Qualification Tests and Analyses	X	G
3.11.3	Qualification Test Results	X	G
3.11.4	Loss of Ventilation	X(1)	G
3.11.5	Estimated Chemical and Radiation Environment	X	G/S
3.11.6	Qualification of Mechanical Equipment	X	G
3.11.7	References	X(1)	G/S
3.12	ASME Code Class 1, 2 and 3 Piping Systems, Piping Supports, and Associated Supports	X(1)	G/S
3.13	Threaded Fasteners (ASME Code Class 1, 2, and 3)	X(1)	G/S
App 3A	Criteria for Distribution System Analysis and Support	X	G
App 3C	Reactor Coolant Loop Analysis Methods	X	G
App 3D	Methodology for Qualifying Safety-Related Electrical and Mechanical Equipment	X(1)	G
App 3D, Attach A	Sample Equipment Qualification Data Package	X	G
App 3D, Attach B	Aging Evaluation Program	X	G
App 3D, Attach C	Effects of Gamma Radiation Doses Below 10^4 Rads on the Mechanical Properties of Materials	X	G
App 3D, Attach D	Accelerated Thermal Aging Parameters	X	G
App 3D, Attach E	Seismic Qualification Techniques	X	G
App 3E	Critical Sections for Safety-Related Category I Structures	X(1)	G/S
4	Reactor	X	G
4.1	Summary Description	X	G
4.2	Fuel System Design	X	G
4.2.1	Design Bases	X	G
4.2.2	Description and Design Drawings	X	G
4.2.3	Design Evaluation	X	G
4.2.4	Testing and Inspection Plan	X(1)	G
4.2.5	References	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
4.3	Nuclear Design	X	G
4.3.1	Design Bases	X	G
4.3.2	Description	X	G
4.3.3	Analytical Methods	X	G
4.3.4	Changes	X	G
4.3.5	References	X	G
4.4	Thermal and Hydraulic Design	X	G
4.4.1	Design Bases	X	G
4.4.2	Description of Thermal and Hydraulic Design of the Reactor Core	X	G
4.4.3	Description of Thermal and Hydraulic Design of the Reactor Coolant System	X	G
4.4.4	Evaluation	X	G
4.4.5	Testing and Verification	X	G
4.4.6	Instrumentation Requirements	X	G
4.4.7	References	X	G
4.5	Reactor Materials	X	G
4.5.1	Control Rod Drive System Structural Materials	X	G
4.5.2	Reactor Internal and Core Support Materials	X	G
4.5.3	References	X	G
4.6	Functional Design of Reactivity Control Systems	X	G
4.6.1	Information for CRDS	X	G
4.6.2	Evaluations of the CRDS	X	G
4.6.3	Testing and Verification of the CRDS	X	G
4.6.4	Information for Combined Performance of Reactivity Systems	X	G
4.6.5	Evaluations for Combined Performance	X	G
4.6.6	References	X	G
5	Reactor Coolant Systems and Connected Systems	X	G
5.1	Summary Description	X	G
5.1.1	Schematic Flow Diagram	X	G
5.1.2	Piping and Instrumentation Diagram	X	G
5.1.3	Elevation Drawing	X	G
5.1.4	References	X	G
5.2	Integrity of Reactor Coolant Pressure Boundary	X	G
5.2.1	Compliance with Codes and Code Cases	X(1)	G/S
5.2.2	Overpressurization Protection	X	G
5.2.3	Reactor Coolant Pressure Boundary Materials	X	G
5.2.4	Inservice Inspection and Testing of Reactor Coolant Pressure Boundary	X(1)	G/S
5.2.5	Reactor Coolant Pressure Boundary Leakage Detection	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
5.2.6	References	X(1)	G/S
5.3	Reactor Vessel	X	G
5.3.1	Reactor Vessel Materials	X(1)	G
5.3.2	Pressure-Temperature Limits, Pressurized Thermal Shock, and Charpy Upper Shelf Energy Data Analysis	X(1)	G/S
5.3.3	Reactor Vessel Integrity	X	G
5.3.4	References	X(1)	G
5.4	Component and Subsystem Design	X	G
5.4.1	Reactor Coolant Pumps	X(1)	G
5.4.2	Steam Generators	X	G
5.4.3	Reactor Coolant Piping	X	G
5.4.4	Reserved	X	G
5.4.5	Reserved	X	G
5.4.6	Reactor Core Isolation Cooling System (BWR)	N/A	N/A
5.4.7	Residual Heat Removal System	X	G
5.4.8	Reactor Water Cleanup System (BWR)	N/A	N/A
5.4.9	Reserved	X	G
5.4.10	Pressurizer	X	G
5.4.11	Pressurizer Relief Tank (PWR)	X	G
5.4.12	Reactor Coolant System High Point Vents	X	G
5.4.13	Safety and Relief Valves	X	G
5.4.14	Component Supports	X	G
5.4.15	References	X(1)	G
6	Engineered Safety Features	X	G
6.1	Engineered Safety Feature Materials	X(1)	G
6.1.1	Metallic Materials	X(1)	G
6.1.2	Organic Materials	X(1)	G
6.1.3	References	X(1)	G
6.2	Containment Systems	X	G
6.2.1	Containment Functional Design	X	G
6.2.2	Containment Heat Removal System	X	G
6.2.3	Secondary Containment Functional Design	X	G
6.2.4	Containment Isolation System	X	G
6.2.5	Combustible Gas Control in Containment	X	G
6.2.6	Containment Leakage Testing	X	G
6.2.7	References	X	G
6.3	Emergency Core Cooling System	X	G
6.3.1	Design Bases	X	G
6.3.2	System Design	X(1)	G
6.3.3	Performance Evaluation	X	G
6.3.4	Tests and Inspections	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
6.3.5	Instrumentation Requirements	X	G
6.3.6	References	X	G
6.4	Habitability Systems	X	G
6.4.1	Design Bases	X	G/S
6.4.2	System Design	X(1)	G/S
6.4.3	System Operational Procedures	X(1)	G/S
6.4.4	Design Evaluations	X(1)	G/S
6.4.5	Testing and Inspection	X	G
6.4.6	Instrumentation Requirements	X	G
6.4.7	References	X(1)	G/S
6.5	Fission Product Removal and Control Systems	X	G
6.5.1	Engineered Safety Feature (ESF) Filter Systems	X	G
6.5.2	Containment Spray Systems	X	G
6.5.3	Fission Product Control Systems	X	G
6.5.4	References	X	G
6.6	Inservice Inspection of Class 2 and 3 Components	X(1)	G/S
6.6.1	Components Subject to Examination	X	G
6.6.2	Accessibility	X	G
6.6.3	Examination Techniques and Procedures	X	G/S
6.6.4	Inspection Intervals	X	G/S
6.6.5	Examination Categories and Requirements	X	G/S
6.6.6	Evaluation of Examination Results	X	G/S
6.6.7	System Pressure Tests	X	G/S
6.6.8	Augmented Inservice Inspection to Protect Against Postulated Piping Failures	X	G/S
6.6.9	References	X	G
6.7	Main Steam Line Isolation Valve Leakage Control System (BWR)	N/A	N/A
6.8	Extra Borating System	X	G
7	Instrumentation and Controls	X	G
7.1	Introduction	X	G
7.1.1	Identification of Safety-Related Systems	X	G
7.1.2	Identification of Safety Criteria	X(1)	G
7.1.3	Plant Control Systems	X	G
7.1.4	References	X	G
7.2	Reactor Trip System	X	G
7.2.1	Description	X	G
7.2.2	Analysis	X	G
7.2.3	References	X	G
7.3	Engineered Safety Feature Systems	X	G
7.3.1	Description	X	G
7.3.2	Analysis	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
7.3.3	References	X	G
7.4	Systems Required for Safe Shutdown	X	G
7.4.1	Description	X	G
7.4.2	Analysis	X	G
7.4.3	References	X	G
7.5	Information Systems Important to Safety	X	G
7.5.1	Description	X	G
7.5.2	Analysis	X	G
7.5.3	References	X	G
7.6	Interlock Systems Important to Safety	X	G
7.6.1	Description	X	G
7.6.2	Analysis	X	G
7.6.3	References	X	G
7.7	Control Systems Not Required for Safety	X	G
7.7.1	Description	X	G
7.7.2	Design Basis Information	X	G
7.7.3	Analysis	X	G
7.7.4	References	X	G
7.8	Diverse I&C Systems	X	G
7.8.1	System Description	X	G
7.8.2	Analysis	X	G
7.8.3	References	X	G
7.9	Data Communication Systems	X	G
7.9.1	System Description	X	G
7.9.2	Design Basis Information	X	G
7.9.3	Analysis	X	G
7.9.4	References	X	G
8	Electric Power	X	G
8.1	Introduction	X(1)	S
8.1.1	Utility Grid Description	X(1)	G
8.1.2	Onsite Power System Description	X	G
8.1.3	Safety-Related Loads	X(1)	G/S
8.1.4	Design Basis	X	G
8.1.5	References	X(1)	G/S
8.2	Offsite Power System	X(1)	G/S
8.2.1	Description	X(1)	G/S
8.2.2	Analysis	X(1)	G/S
8.2.3	References	X(1)	G/S
8.3	Onsite Power Systems	X	G
8.3.1	AC Power Systems	X(1)	G
8.3.2	DC Power Systems	X	G/S
8.3.3	References	X(1)	G/S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
8.4	Station Blackout	X	G/S
8.4.1	Description	X(1)	G/S
8.4.2	Analysis	X	G/S
8.4.3	References	X(1)	G/S
9	Auxiliary Systems	X	G
9.1	Fuel Storage and Handling	X	G
9.1.1	New Fuel Storage	X	G
9.1.2	Spent Fuel Storage	X	G/S
9.1.3	Spent Fuel Pool Cooling and Cleanup System	X	G
9.1.4	Fuel Handling System	X(1)	G
9.1.5	Overhead Heavy Load Handling	X(1)	G
9.1.6	References	X(1)	G/S
9.2	Water Systems	X	G
9.2.1	Station Service Water System (Open, Raw Water Cooling Systems)	X(1)	G/S
9.2.2	Cooling System for Reactor Auxiliaries (Closed Cooling Water Systems)	X	G
9.2.3	Demineralized Water Makeup System	X	G
9.2.4	Potable and Sanitary Water Systems	X(1)	G/S
9.2.5	Ultimate Heat Sink	X	G
9.2.6	Condensate Storage Facilities	X	G
9.2.7	Plant Drainage System	X(1)	G/S
9.2.8	Safety Chilled Water System	X	G
9.2.9	Operational Chilled Water System	X	G
9.2.10	Service Water System (Conventional)	X(1)	G/S
9.2.11	Raw Water Supply System	X(1)	S
9.2.12	Seal Water Supply System	X	G
9.2.13	References	X(1)	G/S
9.3	Process Auxiliaries	X	G
9.3.1	Compressed Air Systems	X	G
9.3.2	Process and Post Accident Sampling Systems	X	G
9.3.3	Equipment and Floor Drainage System	X	G
9.3.4	Chemical and Volume Control System (Including Boron Recovery System) (PWR)	X	G
9.3.5	Standby Liquid Control System (BWR)	N/A	N/A
9.3.6	References	X	G
9.4	Air Conditioning, Heating, Cooling, and Ventilation	X	G
9.4.1	Control Room Area Ventilation System	X	G
9.4.2	Spent Fuel Pool Area Ventilation System	X	G
9.4.3	Auxiliary and Radwaste Area Ventilation System	X	G
9.4.4	Turbine Building Area Ventilation	X	G
9.4.5	Engineered Safety Feature Ventilation System	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
9.4.6	Ventilation / AC System for Switchgear	X	G
9.4.7	Containment Ventilation System	X	G
9.4.8	Radioactive Waste Building Ventilation System	X	G
9.4.9	Diesel Building Ventilation System	X	G
9.4.10	Station Black-Out Diesel Building Ventilation System	X	G
9.4.11	Essential Service Water Pump Building Ventilation System	X	G
9.4.12	Ventilation System for Circulating Water Pump Building	X(1)	G/S
9.4.13	Smoke Confinement System for Nuclear Island	X	G
9.4.14	Access Building Ventilation System	X	G
9.4.15	Main Steam and Feedwater Valve Room Ventilation Systems	X	G
9.4.16	Space Heating System	X	G
9.4.17	References	X(1)	G/S
9.5	Other Auxiliary Systems	X	G
9.5.1	Fire Protection Systems	X(1)	G/S
9.5.2	Communication Systems	X	G
9.5.3	Lighting Systems	X	G
9.5.4	Diesel Generator Fuel Oil Storage and Transfer System	X(1)	G
9.5.5	Diesel Generator Cooling Water System	X	G
9.5.6	Diesel Generator Starting Air System	X	G
9.5.7	Diesel Generator Lubrication System	X(1)	G
9.5.8	Diesel Generator Combustion Air Intake and Exhaust System	X	G
9.5.9	References	X(1)	G
App 9A	Fire Protection Analysis	X(1)	G/S
10	Steam and Power Conversion System	X	G
10.1	Summary Description	X(1)	G/S
10.1.1	General Description	X	G
10.1.2	Protective Features	X(1)	G/S
10.1.3	References	X(1)	G/S
10.2	Turbine-Generator	X(1)	G/S
10.2.1	Design Bases	X(1)	G/S
10.2.2	Description	X(1)	G/S
10.2.3	Turbine Rotor Integrity	X(1)	G/S
10.2.4	References	X(1)	G/S
10.3	Main Steam Supply System	X	G
10.3.1	Design Bases	X	G
10.3.2	Description	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
10.3.3	Evaluation	X	G
10.3.4	Inspection and Testing Requirements	X(1)	G/S
10.3.5	Water Chemistry (PWR)	X	G
10.3.6	Steam and Feedwater System Materials	X	G
10.3.7	References	X(1)	G/S
10.4	Other Features of Steam and Power Conversion System	X	G
10.4.1	Main Condensers	X(1)	G
10.4.2	Main Condenser Evacuation System	X	G
10.4.3	Turbine Gland Sealing System	X	G
10.4.4	Turbine Bypass System	X	G
10.4.5	Circulating Water System	X(1)	G/S
10.4.6	Condensate Cleanup System	X	G
10.4.7	Condensate and Feedwater Systems	X	G
10.4.8	Steam Generator Blowdown System (PWR)	X	G
10.4.9	Auxiliary Feedwater System (PWR)	X	G
10.4.10	References	X(1)	G/S
11	Radioactive Waste Management	X	G
11.1	Source Terms	X	G
11.1.1	Design Basis Reactor Coolant Activity	X	G
11.1.2	Design Basis Secondary Coolant Activity	X	G
11.1.3	Realistic Reactor Coolant and Secondary Coolant Activity	X	G
11.1.4	Core Source Term	X	G
11.1.5	Process Leakage Sources	X	G
11.1.6	References	X	G
11.2	Liquid Waste Management Systems	X	G
11.2.1	Design Bases	X	G
11.2.2	System Description	X(1)	G/S
11.2.3	Radioactive Releases	X(1)	G/S
11.2.4	References	X(1)	G/S
11.3	Gaseous Waste Management System	X	G
11.3.1	Design Bases	X	G
11.3.2	System Description	X	G
11.3.3	Radioactive Releases	X(1)	G/S
11.3.4	References	X(1)	G/S
11.4	Solid Waste Management System	X	G
11.4.1	Design Bases	X	G
11.4.2	System Description	X	G
11.4.3	Radioactive Releases	X(1)	G/S
11.4.4	References	X(1)	G/S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
11.5	Process and Effluent Radiological Monitoring and Sampling Systems	X(1)	G/S
11.5.1	Design Bases	X(1)	G
11.5.2	System Description	X	G
11.5.3	Effluent Monitoring and Sampling	X(1)	G/S
11.5.4	Process Monitoring and Sampling	X	G/S
11.5.5	Post Accident Radiation Monitoring	X	G
11.5.6	References	X(1)	G/S
12	Radiation Protection	X	G
12.1	Ensuring that Occupational Radiation Exposures are As Low As Reasonably Achievable	0	G
12.1.1	Policy Considerations	X(1)	G
12.1.2	Design Considerations	X	G
12.1.3	Operational Considerations	X(1)	G
12.1.4	References	X(1)	G/S
12.2	Radiation Sources	X	G
12.2.1	Contained Sources	X(1)	G/S
12.2.2	Airborne Radioactive Material Sources	X	G
12.2.3	References	X(1)	G/S
12.3	Radiation Protection Design Features	X	G
12.3.1	Facility Design Features	X(1)	G
12.3.2	Shielding	X	G
12.3.3	Ventilation	X	G
12.3.4	Area Radiation and Airborne Radioactivity Monitoring Instrumentation	X	G
12.3.5	Dose Assessment	X	G
12.3.6	References	X	G
12.4	Operational Radiation Protection Program	X(1)	G/S
12.4.1	Organization	0	G
12.4.2	Equipment, Instrumentation, and Facilities	X(1)	G/S
12.4.3	Procedures	X(1)	G/S
12.4.4	References	X(1)	G/S
13	Conduct of Operations	0	G/S
13.1	Organizational Structure of the Applicant	0	G/S
13.1.1	Management and Technical Support Organization	0	G/S
13.1.2	Operating Organization	0	G/S
13.1.3	Qualification of Nuclear Power Plant Personnel	0	G/S
13.2	Training	0	G/S
13.2.1	Plant Staff Training Program	0	G/S
13.2.2	Applicable NRC Documents	0	G
13.3	Emergency Planning	0	G/S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
13.3.1	Combined License Application and Emergency Plan Content	0	G/S
13.3.2	Emergency Plan Considerations for Multi-Unit Sites	0	G/S
13.3.3	Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria	0	G/S
13.4	Operational Program Implementation	0	G/S
13.4.1	Onsite Review	0	G/S
13.4.2	Independent Review	0	G/S
13.4.3	Audit Program	0	G/S
13.5	Plant Procedures	0	G/S
13.5.1	Administrative Procedures	0	G/S
13.5.2	Operating and Maintenance Procedures	0	G/S
13.6	Security	0	G
14	Verification Programs	0	G
14.1	Specific Information to be Addressed for the Initial Plant Test Program	X	G
14.2	Initial Plant Test Program	X	G/S
14.2.1	Summary of Test Program and Objectives	X	G
14.2.2	Organization and Staffing	X(1)	G/S
14.2.3	Test Procedures	X(1)	G/S
14.2.4	Conduct of Test Program	X(1)	G/S
14.2.5	Review, Evaluation, and Approval of Test Results	X(1)	G/S
14.2.6	Test Records	X(1)	G/S
14.2.7	Conformance of Test Program with Regulatory Guides	X(1)	G/S
14.2.8	Utilization of Reactor Operating and Testing Experience in Test Program Development	X(1)	G/S
14.2.9	Trial Use of Plant Operating and Emergency Procedures	X(1)	G/S
14.2.10	Initial Fuel Loading and Initial Criticality	X(1)	G/S
14.2.11	Test Program Schedule	X(1)	G/S
14.2.12	Individual Test Descriptions	X(1)	G/S
14.2.13	References	X(1)	G/S
14.3	Inspections, Tests, Analyses, and Acceptance Criteria	X(1)	G
14.3.1	Selection Process for Tier 1, Section 1.0, Introduction	X	G
14.3.2	Selection Process for Tier 1, Section 2.0, System Based Design Descriptions and ITAAC	X	G
14.3.3	Selection Process for Tier 1, Section 3.0, Non-System Based Design Descriptions and ITAAC	X(1)	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
14.3.4	Selection Process for Tier 1, Section 4.0, Interface Requirements	X(1)	G
14.3.5	Selection Process for Tier 1, Section 5.0, Site Parameters	X(1)	G
14.3.6	References	X(1)	G/S
15	Transient and Accident Analysis	X	G
15.0	Accident Analyses - Introduction	X	G
15.0.1	Classification of Transients and Accidents	X	G
15.0.2	Computer Codes Used in Analysis	X	G
15.0.3	Radiological Consequences of Design Basis Accidents	X	G
15.0.4	References	X	G
15.1	Increase in Heat Removal from the Primary System	X	G
15.1.1	Decrease in Feedwater Temperature as a Result of Feedwater System Malfunctions	X	G
15.1.2	Increase in Feedwater Flow as a Result of Feedwater System Malfunctions	X	G
15.1.3	Increase in Steam Flow as a Result of Steam Pressure Regulator Malfunction	X	G
15.1.4	Inadvertent Opening of a Steam Generator Relief or Safety Valve Steam Bypass Misoperation	X	G
15.1.5	Steam System Piping Failures Inside and Outside of Containment in a PWR	X	G
15.2	Decrease in Heat Removal by the Secondary System	X	G
15.2.1	Loss of External Load that Results in Decreasing Steam Flow	X	G
15.2.2	Turbine Trip (stop valve closure)	X	G
15.2.3	Loss of Condenser Vacuum	X	G
15.2.4	Inadvertent Closure of Main Steam Isolation Valves (BWR)	X	G
15.2.5	Steam Pressure Regulator Failure (closed)	X	G
15.2.6	Loss of Non-Emergency AC Power to the Station Auxiliaries	X	G
15.2.7	Loss of Normal Feedwater Flow	X	G
15.2.8	Feedwater System Piping Breaks Inside and Outside Containment	X	G
15.2.9	References	X	G
15.3	Decrease in Reactor Coolant System Flow Rate	X	G
15.3.1	Single and Multiple Reactor Coolant Pump Trips	X	G
15.3.2	Flow Controller Malfunctions (BWR)	N/A	N/A

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
15.3.3	Reactor Coolant Pump Shaft Seizure	X	G
15.3.4	Reactor Coolant Pump Shaft Break	X	G
15.3.5	References	X	G
15.4	Reactivity and Power Distribution Anomalies	X	G
15.4.1	Uncontrolled Rod Cluster Control Assembly Withdrawal from a Subcritical or Low-Power Startup Condition	X	G
15.4.2	Uncontrolled Control Rod Assembly Withdrawal at the Limiting Power Level	X	G
15.4.3	Control Rod Misoperation (System Malfunction or Operator Error)	X	G
15.4.4	Startup of an Inactive Reactor Coolant Pump at an Incorrect Temperature	X	G
15.4.5	Flow Controller Malfunction Causing an Increase in BWR Core Flow Rate	N/A	N/A
15.4.6	Chemical and Volume Control System Malfunction that Results in a Decrease in the Boron Concentration in the Reactor Coolant	X	G
15.4.7	Inadvertent Loading and Operation of a Fuel Assembly in an Improper Position	X	G
15.4.8	Spectrum of Rod Cluster Ejection Accidents in a PWR	X	G
15.4.9	Spectrum of Rod Drop Accidents	X	G
15.4.10	References	X	G
15.5	Increase in Reactor Coolant Inventory	X	G
15.5.1	Inadvertent Operation of the ECCS System During Power Operation	X	G
15.5.2	Chemical and Volume Control System Malfunction (or Operator Error) that Increases Reactor Coolant Inventory	X	G
15.5.3	References	X	G
15.6	Decrease in Reactor Coolant Inventory	X	G
15.6.1	Inadvertent Opening of a Pressurizer Safety or Relief Valve in a PWR	X	G
15.6.2	Spectrum of Boiling Water Reactor Steam System Piping Failures Outside Containment	N/A	N/A
15.6.3	Loss-of-Coolant Accidents Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary	X	G
15.6.4	References	X	G
15.7	Radioactive Release from a Subsystem or Component	X	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
15.7.1	Postulated Radioactive Releases Attributable to a Liquid Tank Failure	X	G
15.7.2	Design Basis Fuel Handling Accidents in the Containment and Spent Fuel Storage Buildings	X	G
15.7.3	Spent Fuel Cask Drop Accidents	X	G
15.7.4	References	X	G
15.8	Anticipated Transients without SCRAM	X	G
15.8.1	General Background	X	G
15.8.2	Anticipated Transients without SCRAM	X	G
15.8.3	Conclusion	X	G
15.8.4	References	X	C
App 15A	Evaluation Models and Parameters for Analysis of Radiological Consequences of Accidents	X	G
App 15B	Removal of Airborne Activity from the Containment Atmosphere Following a LOCA	X	G
16	Technical Specifications	X(1)	G
17	Quality Assurance and Reliability Assurance	0	G/S
17.1	Quality Assurance During Design and Construction Phase	0	G/S
17.2	Quality Assurance During the Operations Phase	0	G/S
17.3	Quality Assurance Program Description	0	G/S
17.4	Reliability Assurance Program Guidance	0	G
17.4.1	Introduction	0	G
17.4.2	Reliability Assurance Program Scope, Stages, and Goals	X	G
17.4.3	Reliability Assurance Program Implementation	0	G
17.4.4	Reliability Assurance Program Information Needed in COL Application	0	G
17.5	Quality Assurance Program Guidance	0	G
17.5.1	COL Applicant QA Program Responsibilities	0	G
17.5.2	Updated SRP Section 17.5 and the QA Program Description	0	G
17.5.3	Evaluation of the QAPD Against the SRP and QAPD Submittal Guidance	0	G
17.6	Description of Applicant's Program for Implementation of 10 CFR 50.65, the Maintenance Rule	0	G/S
17.6.1	Program Procedures	0	G/S
17.6.2	Monitoring per 10 CFR 50.65 (a) and (a)(2)	0	G/S
17.6.3	Periodic Evaluation per 10 CFR 50.65(a)(3)	0	G/S
17.6.4	Risk Assessment and Management per 10 CFR 50.65(a)(4)	0	G/S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
17.6.5	Maintenance Rule Training and Qualification	0	G/S
17.6.6	Maintenance Rule Program and Operational Reliability Assurance Program Interface	0	G/S
17.6.7	Maintenance Rule Program Implementation	0	G/S
17.7	References	0	G/S
18	Human Factors Engineering	X	G
18.1	Human Factors Engineering Program Management	X	G
18.1.1	Human Factors Engineering Program Goals, Scope, Assumptions, and Constraints	X	G
18.1.2	Human System Interface and Design Team and Organization	X	G
18.1.3	Human Factors Engineering Processes and Procedures	X	G
18.1.4	Human Factors Engineering Issues Tracking	X	G
18.1.5	Human Factors Engineering Technical Program and Milestones	X(1)	G/S
18.1.6	References	X	G
18.2	Operating Experience Review	X	G/S
18.2.1	Combined License Information	0	G/S
18.2.2	References	X(1)	G/S
18.3	Functional Requirements Analysis and Function Allocation	X	G/S
18.4	Task Analysis	X	G
18.4.1	Task Analysis Scope	X	G
18.4.2	Task Analysis Implementation Plan	X	G
18.4.3	Job Design Factors	X	G
18.4.4	References	X	G
18.5	Staffing and Qualifications	X(1)	S
18.6	Human Reliability Analysis	X	G
18.7	Human System Interface Design	X	G
18.7.1	Implementation Plan for the Human System Interface Design	X	G
18.7.2	Safety Parameter Display System (SPDS)	X	G
18.7.3	Operation and Control Centers System	X	G
18.7.4	Human Factors Design for the Non-Human-System Interface Portion of the Plant	X	G
18.7.5	References	X	G
18.8	Procedure Development	X(1)	G
18.9	Training Program Development	X(1)	G
18.10	Verification and Validation	X(1)	G
18.11	Design Implementation	X(1)	G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
18.12	Human Performance Monitoring	X(1)	G
App 18A	Inventory	X	G
App 18A.1	Inventory of Displays, Alarms, and Controls	X	G
App 18A.2	Minimum Inventory of Main Control Room Fixed Displays, Alarms, and Controls	X	G
App 18A.3	Remote Shutdown Workstation Displays, Alarms, and Controls	X	G
App 18A.4	References	X	G
19	PRA and Severe Accident	X	G
19.1	Introduction	X	G
19.1.1	Purpose and Scope	X	G
19.1.2	Regulatory Requirements	X	G
19.1.3	NRC Safety Goals and Compliance	X	G
19.2	PRA Results and Insights	X	G
19.2.1	Introduction	X	G
19.2.2	Uses of PRA	X(1)	G
19.2.3	Evaluation of Full Power Operations	X(1)	G
19.2.4	Evaluation of Other Modes of Operation	X(1)	G/S
19.2.5	Summary of Important Results and Insights	X(1)	G
19.3	Severe Accident Evaluations	X	G
19.3.1	Severe Accident Preventive Features	X(1)	G/S
19.3.2	Severe Accident Mitigative Features	X(1)	G/S
19.3.3	Improvements in Reliability of Core and Containment Heat Removal Systems	X(1)	G/S
19.3.4	Core Melt Stabilization System	X	G
19.3.5	Severe Accident Heat Removal System	X	G
19.4	PRA Maintenance	0	G
19.4.1	Description of PRA Maintenance and Update Program	0	G
19.4.2	Description of Significant Plant, Operation, and Modeling Changes	0	G
19.5	ITAACS, Action Items, and Other Commitments	0	G
19.5.1	ITAACs	0	G
19.5.2	COL Action Items	0	G
19.6	Conclusions	X(1)	G/S
3	Environmental Report		
1	Introduction		G
1.1	The Proposed Action		G/S
1.2	Project Description		G/S
1.2.1	Ownership and Applicant		S
1.2.2	Site Location		S
1.2.3	Reactor Information		G

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
1.2.4	Cooling System Information		G/S
1.2.5	Transmission System Information		S
1.2.6	Pre-application Public Involvement		S
1.2.7	Construction Start Date		S
1.3	Status of Reviews and Approvals		S
2	Environmental Description		S
2.1	Site Location		S
2.2	Land		S
2.2.1	The Site and Vicinity		S
2.2.1.1	The Site		S
2.2.1.2	Vicinity		S
2.2.2	Transmission Corridors and Offsite Areas		S
2.2.3	The Region		S
2.3	Water		S
2.3.1	Hydrology		S
2.3.2	Water Use		S
2.3.3	Water Quality		S
2.3.3.1	Surface Water		S
2.3.3.2	Groundwater		S
2.4	Ecology		S
2.4.1	Terrestrial Ecology		S
2.4.1.1	Site Habitats and Communities		S
2.4.1.2	Transmission Corridor Habitats and Communities		S
2.4.2	Aquatic Ecology		S
2.4.2.1	Surface Water (Chesapeake Bay)		S
2.4.1.2	Transmission Corridor Habitats and Communities		S
2.5	Socioeconomics		S
2.5.1	Demography		S
2.5.2	Community Characteristics		S
2.5.2.1	Economy		S
2.5.2.2	Transportation		S
2.5.2.3	Taxes		S
2.5.2.4	Land Use		S
2.5.2.5	Aesthetics and Recreation		S
2.5.2.6	Housing		S
2.5.2.7	Community Infrastructure and Public Services		S
2.5.2.8	Education		S
2.5.3	Historic Properties		S
2.5.4	Environmental Justice		S
2.6	Geology		S
2.6.1	Geological Conditions		S
2.6.2	Seismological Conditions		S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
2.6.3	Geotechnical Conditions		S
2.6.4	Environmental Impact Evaluation		S
2.7	Meteorology, Air Quality, and Noise		S
2.7.1	General Climate		S
2.7.2	Regional Air Quality		S
2.7.3	Severe Weather		S
2.7.4	Local Meteorology		S
2.7.5	Short-Term Diffusion Estimates		S
2.7.6	Long-Term (Routine) Diffusion Estimates		S
2.7.7	Noise		S
2.8	Related Federal and other Project Activities		S
3	Plant Description		G
3.1	External Appearance and Plant Layout		G
3.2	Reactor Power Conversion System		G
3.3	Plant Water Use - Include Plant Water Use Diagram		G/S
3.4	Cooling System		G/S
3.5	Radioactive Waste Management System		G
3.5.1	Liquid Radioactive Waste Management System		G
3.5.2	Gaseous Radioactive Waste Management System		G
3.5.3	Solid Radioactive Waste Management System		G
3.6	Non-radioactive Waste Systems		G
3.6.1	Effluents Containing Chemicals or Biocides		G/S
3.6.2	Sanitary System Effluents		S
3.6.3	Other Effluents		G/S
3.7	Power Transmission System		S
3.7.1	Switchyard Interfaces		S
3.7.2	Transmission System		S
3.8	Transportation of Radioactive Materials		G/S
4	Environmental Impacts of Construction		S
4.1	Land-Use Impacts		S
4.1.1	The Site and Vicinity		S
4.1.1.1	Site Preparation Activities		S
4.1.1.2	Construction Activities		G
4.1.2	Transmission and Offsite Areas		S
4.1.3	Historic Properties and Cultural Resources		S
4.2	Water-Related Impacts		S
4.2.1	Hydrologic Alterations		S
4.2.1.1	Surface Water		S
4.2.1.2	Ground Water		S
4.2.2	Water Use Impacts		S
4.2.3	Water Quality Impacts		S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
4.3	Ecological Impacts		S
4.3.1	Terrestrial Ecosystems		S
4.3.1.1	The Site and Vicinity		S
4.3.1.2	Transmission Corridors and Offsite Areas		S
4.3.2	Aquatic Ecosystems		S
4.3.2.1	The Site and Vicinity		S
4.3.2.2	Transmission Corridors		S
4.4	Socioeconomic Impacts		S
4.4.1	Physical Impacts		S
4.4.1.1	Noise		S
4.4.1.2	Air		S
4.4.1.3	Traffic		S
4.4.2	Social and Economic Impacts		S
4.4.2.1	Economy		S
4.4.2.2	Traffic		S
4.4.2.3	Taxes		S
4.4.2.4	Off-site Land Use		S
4.4.2.5	Housing		S
4.4.2.6	Community Infrastructure and Public Services		S
4.4.2.7	Education		S
4.4.3	Environmental Justice		S
4.5	Radiation Exposure to Construction Workers		S
4.6	Measures and Controls to Limit Adverse Impacts During Construction		G/S
4.7	Non-radiological Health Impacts		S
5	Environmental Impacts of Station Operation		S
5.1	Land-Use Impacts		S
5.1.1	The Site and Vicinity		S
5.1.2	Transmission Corridors and Offsite Areas		S
5.1.3	Historic Properties		S
5.2	Water-related Impacts		S
5.2.1	Hydrologic Alterations and Plant Water Supply		S
5.2.2	Water Use Impacts		S
5.2.3	Water-Quality Impacts		S
5.2.4	Future Growth		S
5.3	Cooling System Impacts		S
5.3.1	Intake System		S
5.3.1.1	Hydrodynamic Descriptions and Physical Impacts		S
5.3.1.2	Aquatic Ecosystems		S
5.3.2	Discharge System		S
5.3.2.1	Thermal Discharge and Other Physical Impacts		S
5.3.2.2	Aquatic Ecosystems		S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
5.3.3	Heat Dissipation Systems		S
5.3.3.1	Heat Dissipation to the Atmosphere		S
5.3.3.2	Terrestrial Ecosystems		S
5.3.4	Impacts to Members of the Public		S
5.4	Radiological Impacts of Normal Operation		S
5.5	Environmental Impacts of Waste		S
5.6	Transmission System Impacts		S
5.6.1	Terrestrial Ecosystems		S
5.6.2	Aquatic Ecosystems		S
5.6.3	Impacts to Members of the Public		S
5.7	Uranium Fuel Cycle Impacts		G
5.8	Socioeconomic Impacts		S
5.8.1	Physical Impacts		S
5.8.2	Social and Economic Impacts		S
5.8.3	Environmental Justice		S
5.9	Decommissioning		G/S
5.10	Measures and Controls to Limit Adverse Impacts During Operation		G/S
5.11	Transportation of Radioactive Materials		G/S
5.12	Non-radiological Health impacts		G/S
6	Environmental Measurements and Monitoring Programs		S
6.1	Thermal Monitoring		S
6.2	Radiological Monitoring		S
6.3	Hydrological Monitoring		S
6.4	Meteorological Monitoring		S
6.5	Ecological Monitoring		S
6.5.1	Terrestrial Ecology		S
6.5.2	Aquatic Ecology		S
6.6	Chemical Monitoring		S
6.7	Summary of Monitoring Programs		S
7	Environmental Impacts of Postulated Accidents Involving Radioactive Materials		G/S
7.1	Design Basis Accidents		G
7.2	Severe Accidents		G
7.3	Severe Accident Mitigation Alternatives		G
7.4	Transportation Accidents		G/S
8	Need for Power		G/S
9	Alternatives to the Proposed Action		G/S
9.1	No-Action Alternative		G/S
9.2	Energy Alternatives		G/S
9.3	Alternative Sites		S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
9.4	Alternative Plant and Transmission Systems		G/S
10	Environmental Consequences of the Proposed Action		S
10.1	Unavoidable Adverse Environmental Impacts		G/S
10.2	Irreversible and Irretrievable Commitments of Resources		G/S
10.3	Relationship Between Short-Term Uses and Long-Term Productivity of the Human Environment		G/S
10.4	Benefit-Cost Balance		S
10.5	Cumulative Impacts		S
4	Technical Specifications		G/S
1.0	Use and Application		G
2.0	Safety Limits		G
3.0	Limiting Conditions for Operation and Surveillance Requirement Applicability		G
3.1	Reactivity Control Systems		G
3.2	Power Distribution Limits		G
3.3	Instrumentation		G
3.4	Reactor Coolant System		G
3.5	Emergency Core Cooling Systems (ECCS)		G
3.6	Containment Systems		G
3.7	Plant Systems		G/S
3.8	Electrical Power Systems		G/S
3.9	Refueling Operations		G
4.0	Design Features		G/S
5.0	Administrative Controls		G/S
	Technical Specifications Bases		G/S
B 2.0	Safety Limits		G
B 3.0	Limiting Conditions for Operation and Surveillance Requirement Applicability		G
B 3.1	Reactivity Control Systems		G
B 3.2	Power Distribution Limits		G
B 3.3	Instrumentation		G
B 3.4	Reactor Coolant System		G
B 3.5	Emergency Core Cooling Systems (ECCS)		G
B 3.6	Containment Systems		G
B 3.7	Plant Systems		G/S
B 3.8	Electrical Power Systems		G/S
B 3.9	Refueling Operations		G
5	Emergency Plan		G/S
6	LWA Request		G/S
	Site Redress Plan		G/S

Part Chapter Section Sub-Section	TITLE	DCD Pointer (Note 1)	Generic (G)/Site Specific (S) [Note 2]
7	Generic DCD Departures Report		G/S
8	Safeguards/Security Plans		G/S
	Security Assessments		G/S
	Security Plans		G/S
	SGI ITAAC		G/S
9	Proprietary and Sensitive Unclassified Nonsafeguards Information		G/S
10	Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and ITAAC Closure		G/S

Note 1: X = DCD section incorporation by reference w/ no added information required by COLA.
X(1) = DCD section incorporation by reference w/ some added information required by COLA.
0 = DCD section incorporation by reference w/ majority of information required by COLA.

Note 2: G = Generic COL application chapter, section, or subsection. This chapter, section, or subsection is expected to be standardized (i.e., replicated verbatim) in the applicable S-COL application chapter, section, or subsection.
S = Site-specific COL application chapter, section, or subsection.
G/S = Most of this COL application chapter, section, or subsection is expected to be generic and will be standardized in the applicable S-COL application chapter, section, or subsection. However, some site-specific information will be required to be included in this S-COL application chapter, section, or subsection.