



July 17, 2006

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

SUBJECT: Dominion (North Anna), NuStart (Grand Gulf) and Entergy (River Bend) COL Application Projects - NRC Project Nos. 741, 744, 745
Response to RIS 2006-06, New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach

REFERENCE: NRC Regulatory Issue Summary 2006-06, *New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach*; dated May 31, 2006

Dominion Letter: 06-480
Entergy Letter: CNRO-2006-00036

In the reference Regulatory Issue Summary, the Nuclear Regulatory Commission (NRC) indicated that it is developing its resource estimates and project plan for a Design-Centered Review Approach (DCRA) strategy. To support this effort, the NRC identified several specific schedule and standardization information items that would be useful in their preparation efforts.

We support and endorse the DCRA proposed by the NRC. Enclosure 1 provides responses to the NRC information requests. Enclosure 2 provides the ESBWR Standardization Matrix. This represents a joint response for the Dominion-North Anna, NuStart-Grand Gulf, and Entergy-River Bend combined license application (COLA) projects, each intending to reference the General Electric ESBWR standard design. Executive and licensing contacts for each of these projects are identified in the enclosure. If you have any questions regarding this response, please contact Joe Hegner at (804) 273-2770 (joseph_hegner@dom.com) or George Zinke at (601) 368-5381 (gzinke@entergy.com).

Sincerely,

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Enclosures: 1) Joint Dominion, NuStart, Entergy Response to RIS 2006-06
2) ESBWR Standardization Matrix

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Enclosure 1
Joint Dominion (North Anna), NuStart (Grand Gulf), and
Entergy (River Bend) Response to NRC RIS 2006-06, New Reactor Standardization
Needed to Support the Design-Centered Licensing Review Approach

Each RIS 2006-06 information request is addressed below. The information represents a joint response to the request by the Dominion-North Anna, NuStart-Grand Gulf, and Entergy-River Bend combined license application (COLA) projects. Each of these projects is in the process of developing a COLA that will reference the General Electric ESBWR standard design, currently under NRC design certification review. Each COLA project is for a single ESBWR unit.

Information Request #1: Whether applicants for the four designs discussed in this RIS will be organized into design-centered working groups (DCWG); if so, the schedule for such organization and, if a single point of contact is designated for the DCWG, the contact's identity.

Response: The companies identified above have organized with General Electric to form an ESBWR DCWG. The DCWG is supported by the principal contractors, Bechtel Power Corporation (North Anna) and Enercon Services, Inc. (Grand Gulf).¹ The following individuals are identified as the NRC points of contact, as noted for various management levels in the respective organizations.

	Dominion North Anna COLA	NuStart Grand Gulf COLA	Entergy River Bend COLA	General Electric ESBWR DCD
Executive	Eugene Grecheck	Marilyn Kray	Randy Hutchinson	Steven Hucik
Licensing	Joe Hegner	Tom Williamson	George Zinke	David Hinds

Information Request #2: If a design-centered program is followed for a particular design, which applicant referencing the design will be designated as the R-COL applicant. In addition, when will (month and year) each of the COL applications be submitted for review?

Response: As discussed with the NRC in the July 14, 2006, DCWG pre-application meeting, the designation of a reference COL (R-COL) application is not proposed at this time for these projects. The subject COL application projects are working in close cooperation with each other and General Electric to develop standard ESBWR-based COL applications. The projects have developed a joint process for controlling the origination and review of standard application material. The bulk of standardized material is within the scope of General Electric to supply and will be incorporated into the respective COL applications. Administrative controls and tools are used to provide effective control and consistency in the standardized material. Subject to final approvals for filing (regulatory and otherwise), the projects have agreed to simultaneous submittals to the NRC in November 2007 for the lead ESBWR COL applications, namely, North Anna and Grand Gulf, thereby facilitating simultaneous NRC Staff review. The River Bend COL application is scheduled for submittal in May 2008.

¹ Selection of a principal COLA contractor for the River Bend COLA project has not been finalized.

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These dates are, however, dependent on several key assumptions:

- a) design information approved as part of the certified design will be treated by the NRC Staff as final and sufficient for design issues;
- b) the approved DG-1145 (COL application guidance currently being developed) is finalized in a timely fashion and in a manner consistent with stakeholder discussions in recent workshops (the industry is consistently supporting the NRC DG-1145 workshops and providing comments and feedback so that the industry understands the information needs for a complete, high-quality COL application); and
- c) the acceptance criteria of the NRC standard review plan sections will also be revised consistent with the industry's understanding (following the DG-1145 discussions and feedback) of the information needs.

Any changes to the above application submittal schedules will be communicated to the NRC staff in a timely manner.

Information Request #3: Whether applicants implementing the DCRA intend to provide RAI responses within the typical 30-day period.

Response: Based on experience with other licensing actions, we acknowledge that there can be significant variability in the level of effort needed to provide a complete and quality response to an RAI. We also recognize the need for NRC planning purposes to assume a response time to a "typical" RAI. Importantly, the distinct benefit of working with a "standardized" design comes with the need for a sometimes significant consensus process, which will extend, by necessity, any "typical" response period.

Accordingly, we expect to provide responses to most standard-content RAIs within a 45-day period, and most site-specific content within a 30-day period. RAIs requiring substantial new evaluation or analysis, or consisting of a substantial number of questions, obviously will require longer periods. Further, a typical 30- or 45-day period would be contingent on timely, effective pre-request discussions between NRC, applicant, and/or industry representatives so that the information needs included within the RAIs are well understood (similar to the process utilized on the three original ESP application reviews and on recent DC application reviews). At the time of such pre-request discussions, exceptions to the typical response time will be discussed so as to establish a mutually acceptable due date.

Information Request #4: To what degree standardization will be achieved, appropriately documented, and replicated in COL applications. Specifically, what portions of the R-COL application (chapter by chapter, section by section, subsection by subsection) will be standardized (i.e., replicated verbatim) in S-COL applications and what portions of the application are likely to be site-specific.

Enclosure 1
Joint Dominion (North Anna), NuStart (Grand Gulf), and
Entergy (River Bend) Response to NRC RIS 2006-06, New Reactor Standardization
Needed to Support the Design-Centered Licensing Review Approach

Response: We support and endorse the design-centered review approach proposed by the NRC. Standardization is expected to be substantial for the subject ESBWR-based COL applications, particularly in the safety analysis report. The exact scope of standardization is still under review and is somewhat dependent on discussions with NRC staff over the next several months. The current ESBWR standardization matrix is enclosed. This matrix is a living document that may change as the development of actual COL application material progresses. It is being provided here to assist the NRC in its planning efforts and to serve as a basis for discussions with the NRC in future pre-application meetings.

The applications will identify (document) standardized material for which we expect the NRC to apply "one issue, one review, one position" strategy. However, details of the method of identification for the standardized material are currently being determined.

Regarding replication of standardized material, as discussed in response to Request #2, a common process is being used to control the origination, review and finalization of standard application material. This process will ensure that standardized material is consistently incorporated into the lead ESBWR applications (i.e., North Anna and Grand Gulf), as well as the subsequent River Bend application.

Information Request #5: Whether, for each design-centered program, the vendor and applicants intend to submit pre-application topical reports for staff review. If so, how many? For each such report anticipated, please summarize the report scope and content and the proposed submittal schedule.

Response: A number of areas are currently under consideration as candidates for topical reports and other COLA material to be submitted in the pre-application phase. Candidate areas were discussed with the NRC in the pre-application meeting of July 14, 2006. The scope and schedule for these candidate topical reports is not available at this time but will be discussed with the NRC in future pre-application meetings.

Information concerning such submittals will be coordinated with the NRC Staff in advance to facilitate planning and resource allocation.

Question #6: Whether 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?

Applications for ESPs related to the North Anna and Grand Gulf sites were filed in September and October 2003, respectively. The River Bend COL application will not reference an early site permit.

Enclosure 2
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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ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			Standard	Standard With Site- Specific	Site- Specific
Appendices	---	GE		X (1)	
FSAR Chapter 2	Site Characteristics				
2.0	Site Characteristics	Dominion NuStart Entergy			X
2.1	Geography and Demography	Dominion NuStart Entergy			X
2.2	Nearby Industrial, Transportation, and Military Facilities	Dominion NuStart Entergy			X
2.3	Meteorology	Dominion NuStart Entergy			X
2.4	Hydrology	Dominion NuStart Entergy			X
2.5	Geology, Seismology, and Geotechnical Engineering	Dominion NuStart Entergy			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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ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			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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ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			Standard	Standard With Site- Specific	Site- Specific
		NuStart Entergy			
8.3	Onsite Power Systems	GE		X (1)	
8A	Miscellaneous Electrical Systems	Dominion NuStart Entergy		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 Entergy		X (2)	
9.2.2	Reactor Component Cooling Water System	GE	X		
9.2.3	Makeup Water System	Dominion NuStart Entergy		X (2)	
9.2.4	Potable and Sanitary Water Systems	Dominion NuStart Entergy		X (2)	
9.2.5	Ultimate Heat Sink	Dominion NuStart Entergy		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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ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			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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ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			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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Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			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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ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			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

Enclosure 2
ESBWR Standardization Matrix

Part Chapter Section	Title	Lead Organization Preparing Section	Standardization Assessment ¹		
			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)	