

PMFermiCOLPEm Resource

From: Michael K Brandon [brandonm@dteenergy.com]
Sent: Wednesday, August 31, 2011 1:57 PM
To: Muniz, Adrian
Cc: Nicholas A Latzy; Peter W Smith
Subject: Fw: EF3 COLA interface items tables
Attachments: Interface Items Detailed Table.docx

Adrian

As we discussed earlier today, attached is a draft table we developed which provides cross reference information for the system interface discussions in our application. There is no new information here and the materials/document sections referenced are all previously docketed information. We believe the information currently in our application provides the scope and level of detail needed for the staff to complete their review on this topic. If you need any additional information, please advise.

Thanks

Mike Brandon
Licensing - Manager
DTE Energy/MEP/Nuclear Development
313.235.0443

Hearing Identifier: Fermi_COL_Public
Email Number: 872

Mail Envelope Properties (OF936EE61B.50C894A6-ON852578FD.006138C7-852578FD.0062939C)

Subject: Fw: EF3 COLA interface items tables
Sent Date: 8/31/2011 1:56:43 PM
Received Date: 8/31/2011 1:56:46 PM
From: Michael K Brandon

Created By: brandonm@dteenergy.com

Recipients:

"Nicholas A Latzy" <latzyn@dteenergy.com>
Tracking Status: None
"Peter W Smith" <smithpw@dteenergy.com>
Tracking Status: None
"Muniz, Adrian" <Adrian.Muniz@nrc.gov>
Tracking Status: None

Post Office: dteenergy.com

Files	Size	Date & Time
MESSAGE	623	8/31/2011 1:56:46 PM
Interface Items Detailed Table.docx		21962

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Fermi-3 Combined License Application

ESBWR Design Certification Interface Items

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
Tier 1, S4.1	<p>Plant Service Water System</p> <p>The interface requirements are necessary for supporting the post 72-hour cooling function of the PSWS. The volume of water shall be sufficient such that no active makeup shall be necessary to remove 2.02x10⁷ MJ (1.92x10¹⁰ BTU) over a period of seven days. Additionally, the PSWS pumps must have sufficient available net positive suction head at the pump suction location for the lowest probable water level of the heat sink. Consequently, verification of compliance with the interface requirements shall be achieved by inspections, tests, and analyses that are similar to those provided for the certified design. The combined license applicant referencing the certified design shall develop these inspections, tests, and analyses, together with their associated acceptance criteria.</p>	<p>COLA Part 10, Section 2.4.3, ITAAC for Plant Service Water System (Portion Outside the Scope of the Certified Design)</p> <p>Table 2.4.3-1 contains the ITAAC</p>	<p>Also see FSAR Table 1.8-202, which indicates that the Plant Service Water System CDI in DCD is replaced with actual design information in Section 9.2.1, Table 9.2-201, and Figure 9.2-205.</p>
Tier 1, S4.2	<p>Offsite Power</p> <p>A combined license applicant referencing the ESBWR certified design shall develop an ITAAC to verify that the as-built offsite portion of the PPS from the transmission network to the interface with the onsite portions of the PPS satisfy the applicable provisions of GDC 17. Specifically, the ITAAC shall verify:</p>	<p>COLA Part 10, Section 2.4.8, Offsite Power Systems</p> <p>Table 2.4.8-1 contains the ITAAC</p>	<p>Also see FSAR Table 1.10-201, which lists COL Items for Chapter 8, including COL Item 8.2.4-10-A, Interface Requirements, and lists FSAR Section 8.2.2.1 as the section where this is addressed. The interface discussed for COL Item 8.2.4-10-A is the interface protocol between Fermi-3 and the</p>

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
	<p>(1) At least two independent circuits supply electric power from the transmission network to the interface with the onsite portions of the PPS.</p> <p>(2) Each offsite circuit interfacing with the onsite portions of the PPS is adequately rated to supply the load requirements during design basis operating modes (refer to Table 2.13.1-2, Item 9).</p> <p>(3) During steady state operation, the offsite portion of the PPS is capable of supplying voltage at the interface with the onsite portions of the PPS that will support operation of safety-related loads during design basis operating modes.</p> <p>(4) During steady state operation, the offsite portion of the PPS is capable of supplying required frequency at the interface with the onsite portions of the PPS that will support operation of safety-related loads during design basis operating modes.</p> <p>(5) The fault current contribution of the offsite portion of the PPS is compatible with the interrupting capability of the onsite fault current interrupting devices.</p>		<p>transmission system operator and is beyond the interface between the ESBWR standard design features and the switchyard connections. This is explained in FSAR Section 8.2.2.1.</p>
Tier 2, S 1.8.1	<p>Identification of Nuclear Steam Supply System Safety-Related Interfaces</p> <p>Table 1.8-1 cross references the Nuclear Steam Supply System (NSSS) safety-related systems and supporting interface areas with the matching portions of the plant and the associated section(s)/subsection(s) where they are described.</p>	COLA Part 2, FSAR	<p>Section 1.8, Interfaces with Standard Design</p> <p>Incorporates by reference Section 1.8.1 of DCD in its entirety, including Table 1.8-1.</p>

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
	All interface requirements for safety-related systems are addressed in the Design Control Document (DCD).		
Tier 2, S 1.8.2	<p>Identification of Balance of Plant Interfaces Table 1.8-2 cross references the Balance of Plant (BOP) systems and supporting interface areas with the matching portions of the plant and the associated section(s)/subsection(s) where they are described. Except for post-accident main control room atmosphere control, the ESBWR has no safety-related BOP system, i.e., all service/cooling/makeup water and all other heating, ventilation and air conditioning (HVAC) systems are nonsafety-related. Therefore, it is not the intent of Table 1.8-2 to address all of the BOP systems, but Table 1.8-2 does address the major BOP systems.</p> <p>The ESBWR DCD includes designs for the following BOP systems for the purposes of allowing the NRC to evaluate the overall acceptability of the design. The referenced sections indicate whether or not the design of these systems for ESBWR is considered to be a conceptual design.</p>	COLA Part 2, FSAR	<p>Section 1.8, Interfaces with Standard Design</p> <p>Incorporates by reference Section 1.8.2 of DCD, including Table 1.8-2, with the following addition and deletion listed as STD CDI:</p> <p>Addition: “The significant interface requirements for those systems that are beyond the scope of the DCD are identified in DCD Tier 1.”</p> <p>Deletes the second sentence of the second paragraph of this section in the DCD: “The referenced sections indicate whether or not the design of these systems for ESBWR is considered to be a conceptual design.”</p>
Tier 2, S1.8.2.1	<p>1.8.2.1 Circulating Water System The Circulating Water System (CIRC) includes those portions outside the Turbine Building walls as well as the specific design interfaces with the main condenser. The circulating water system is designed to remove heat from the main</p>	COLA Part 2, FSAR	<p>Incorporates by reference Section 1.8.2.1 of DCD in its entirety</p> <p>For Fermi-3 specific design details, see Sections 10.4.5.2.1 through 10.4.5.2.3, 10.4.5.6, and 10.4.5.8;</p>

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
	condenser and transport it to the environment. CIRC is described in Subsection 10.4.5.		Tables 10.4-201 and 10.4-3R; and Figures 10.4-201 and 10.4-202.
Tier 2, S 1.8.2.2	<p>Plant Service Water System</p> <p>The Plant Service Water System (PSWS) is designed to remove heat from the Reactor and Turbine Component Cooling Water Systems (RCCWS and TCCWS). PSWS is described in Subsection 9.2.1.</p>	COLA Part 2, FSAR	<p>Incorporates by reference Section 1.8.2.2 of DCD in its entirety</p> <p>For Fermi-3 specific design details, see Section 9.2.1, Table 9.2-201, and Figure 9.2-205.</p>
Tier 2, S1.8.2.3	<p>Off-site Electrical Power</p> <p>The offsite power transmission system is described in Sections 8.1 and 8.2.</p>	COLA Part 2, FSAR	<p>Incorporates by reference Section 1.8.2.3 of DCD in its entirety</p> <p>See Tier 1, Section 4.2, above, and Sections 8.1 and 8.2 in the FSAR for interface ITAAC and design descriptions of the offsite power system.</p>
Tier 2, S1.8.2.4	<p>Makeup Water System</p> <p>The Makeup Water System (MWS) provides for the production and distribution of demineralized water. MWS is described in Subsection 9.2.3.</p>	COLA Part 2, FSAR	<p>Incorporates by reference Section 1.8.2.4 of DCD in its entirety</p> <p>For Fermi-3 specific design details, see Section 9.2.3 and Table 9.2-202.</p>
Tier 2, S1.8.2.5	<p>Potable and Sanitary Water</p> <p>Potable and Sanitary Water systems are described in Subsection 9.2.4.</p>	COLA Part 2, FSAR	<p>Incorporates by reference Section 1.8.2.5 of DCD in its entirety</p> <p>For Fermi-3 specific design details, see Section 9.2.4, Table 9.2-201, and Table 9.2-202.</p>
Tier 2, S 1.8.2.6	<p>Communications Systems</p> <p>The communications systems of the ESBWR are described in Subsection 9.5.2. Communication links between the on-site Nonsafety-Related</p>	COLA Part 2, FSAR	<p>Incorporates by reference Section 1.8.2.6 of DCD in its entirety</p> <p>For Fermi-3 specific design details,</p>

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
	Distributed Control and Information System (N-DCIS) and other on-site and offsite facilities such as the Technical Support Center, Emergency Operations Facility and the simulator are included in the design.		see Section 9.5.2.
Tier 2, S 1.8.2.7	Station Water System The Station Water System is described in Subsection 9.2.10.	COLA Part 2, FSAR	Incorporates by reference Section 1.8.2.7 of DCD in its entirety For Fermi-3 specific design details, see Section 9.2.10, Table 9.2-204, Table 9.2-205, Figure 9.2-203, and Figure 9.2-204.
Tier 2, S 1.8.2.8	Independent Spent Fuel Storage Installation The Independent Spent Fuel Storage Installation (i.e., building DS on Figure 1.1-1) shall be located outside of the low-trajectory turbine missile strike zone that is defined in Regulatory Guide 1.115. This requirement is discussed in Subsections 3.5.1.1.1.2, 10.1 and 10.2.	COLA Part 2, FSAR	Replaces Section 1.8.2.8 of DCD in its entirety with the following EF3 SUP 1.8-7 : No Fermi 3 ISFSI is currently planned. Any future Fermi 3 ISFSI will be located considering the impacts of external hazards as required by the associated 10 CFR 72 license for the Fermi 3 ISFSI.
		COLA Part 2, FSAR	EF3 SUP 1.8-1 1.8.3 Verification of Site Parameters Chapter 2.0 provides information demonstrating that the site characteristics fall within the ESBWR site parameters specified in the referenced certified design.
		COLA Part 2, FSAR	EF3 SUP 1.8-2 1.8.4 COL Information Items and

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
			<p>Permit Conditions Section 1.10 identifies specific FSAR sections that address the COL Information items from the referenced certified design, and COL Action Items.</p>
		COLA Part 2, FSAR	<p>EF3 SUP 1.8-3 1.8.5 Generic Changes and Departures from the Referenced Certified Design One site-specific departure has been identified from the referenced certified design, which is described in COLA Part 7. (Reference Table 1.8-201)</p>
		COLA Part 2, FSAR	<p>EF3 SUP 1.8-4 1.8.6 Variances from the ESP and ESPA SSAR This supplement is not applicable to Fermi 3.</p>
		COLA Part 2, FSAR	<p>EF3 SUP 1.8-5 1.8.7 Conceptual Design Information The referenced DCD includes conceptual design information (CDI) for certain systems, or portions of systems, that are outside the scope of the standard plant design. Table 1.8-202 identifies systems for which either the CDI in the DCD is adopted as the actual system design</p>

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
			<p>information, or the CDI in the DCD is replaced with site-specific design information, along with cross references to FSAR sections where the CDI is treated. Where there are differences between the conceptual design and the actual design, these differences have been evaluated. The evaluations have concluded that there are no impacts on the safety evaluations provided in the referenced certified design.</p> <p>(Note that the sections of the FSAR listed above for the Fermi-3 specific design of ESBWR DCD interface systems are also listed in Table 1.8-202.)</p>
		COLA Part 2, FSAR	<p>EF3 SUP 1.8-6 1.8.8 Probabilistic Risk Assessment Site- and plant-specific information, including site meteorological data and site-specific population distribution, plant-specific design information that replaced conceptual design information described in the DCD, and the departures listed in Subsection [1.8.5], were reviewed with respect to the design</p>

ESBWR DCD Reference	Interface Item Description	Fermi-3 COLA Reference	Fermi-3 COLA FSAR Section
			certification PRA. The conclusion, which is documented in Section 19.5, is that there is no significant change from the certified design PRA.