

GG COLA Orientation Meeting with NRC Staff- March 6, 2008
GG COLA Tables of Interest

HANDOUT #3

Part 2 - FSAR, Chapter 1

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|---------|---|
| 1.1-201 | Left Margin Annotations |
| 1.1-202 | Cross Reference of SSAR Sections Incorporated by Reference into FSAR Sections |
| 1.8-201 | Departures from the Referenced Certified Design |
| 1.8-202 | Variances from the ESP and ESPA SSAR |
| 1.8-203 | Conceptual Design Information (CDI) |
| 1.9-201 | Conformance with Standard Review Plan |
| 1.9-202 | Conformance with Regulatory Guides |
| 1.9-203 | Conformance with the FSAR Content Guidance in RG 1.206 |

Part 2 – FSAR, Chapter 2

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| 2.0-2R | Limits Imposed on Acceptance Criteria in Section II of SRP by ESBWR Design |
| 2.0-201 | Comparison of ESBWR DCD Site Parameters with Unit 3 Site Characteristics |
| 2.0-202 | Comparison of Unit 3 Site Characteristics to the Grand Gulf ESP Site Characteristics |
| 2.0-203 | Comparison of Unit 3 Design Characteristics with Grand Gulf ESP Controlling Values of Parameters and DBA Source Term Plant Parameters |

Part 3 - Environmental Report, Chapter 3

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| 3.0-201 | Comparison of ESP Plant Parameters Envelope (PPE) Design Parameters to Unit 3 COL Design Characteristics |
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CHAPTER 2 SITE CHARACTERISTICS

2.0 INTRODUCTION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

Replace the last two paragraphs of DCD Section 2.0 with the following.

Comparison of Site Characteristics and ESBWR Site Parameters

GGNS COL
2.0-1-A

The site parameters¹ for the ESBWR standard plant are identified in Table 2.0-1 of the referenced DCD. Table 2.0-201, Comparison of ESBWR DCD Site Parameters with Unit 3 Site Characteristics, lists the ESBWR site parameters and the corresponding Unit 3 site characteristics², and provides the comparison showing that either the Unit 3 site characteristic falls within the ESBWR DCD site parameter, or identifies a departure.

Comparison of Unit 3 Site Characteristics and ESP Site Characteristics and Design Parameters

GGNS SUP 2.0-1 The ESP site characteristics for the Grand Gulf ESP Site are identified in ESP-002 (Reference 2.0-201) Appendix A, Characteristics of the Grand Gulf ESP Site, and controlling parameters and design basis accident (DBA) source terms are in ESP-002 Appendix B, Controlling Values of Parameters and Design Basis Accident Source Term Plant Parameters.

GGNS ESP
PC 3.A

Table 2.0-202, Comparison of Unit 3 Site Characteristics to the Grand Gulf ESP Site Characteristics, lists the ESP site characteristics and the corresponding site characteristics for Unit 3. The table provides the comparison showing that either each Unit 3 value falls within the site characteristic specified in the ESP, or identifies a variance.

GGNS ESP
PC 3.B

Table 2.0-203, Comparison of Unit 3 Design Characteristics with Grand Gulf ESP Controlling Values of Parameters and DBA Source Term Plant Parameters, lists the ESP parameters and the corresponding design values for Unit 3. The table provides the comparison showing that each Unit 3 value falls within the bounding design parameter specified in the ESP, or identifies a variance.

¹10 CFR 52.1 defines site parameters as the postulated physical, environmental and demographic features of an assumed site.

²10 CFR 52.1 defines site characteristics as the actual physical, environmental and demographic features of a site.

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GGNS COL
2.0-2-A
through 2.0-30-A

Information on Unit 3 site characteristics is provided in Sections 2.1 through 2.5 of this chapter, which incorporate by reference sections from the SSAR with appropriate supplements and/or variances. The information addresses the Standard Review Plan (SRP), NUREG-0800 information requirements of the DCD for a COL application, as identified in Table 2.0-2R. In the column identified as "COL Information," the COL Item from the ESBWR DCD is replaced with a sentence identifying the FSAR section which addresses the corresponding COL item.

2.0.1 COL UNIT-SPECIFIC INFORMATION

2.0-1-A Site Characteristics Demonstration

GGNS COL
2.0-1-A

This COL Item is addressed in Section 2.0 and Table 2.0-201.

2.0-2-A through 2.0-30-A Standard Review Plan Conformance

GGNS COL
2.0-2-A
through 2.0-30-A

These COL Items are addressed in Section 2.0 and Table 2.0-2R.

2.0.2 REFERENCES

- 2.0-201 System Energy Resources Inc., Grand Gulf ESP Site, Docket No. 52-009, Early Site Permit No. ESP-002, April 5, 2007 (ADAMS Accession No. ML070780457).

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13.4 OPERATIONAL PROGRAM IMPLEMENTATION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

Replace this section with the following.

- STD COL 13.4-1-A Table 13.4-201 lists each operational program, the regulatory source for the program, the associated implementation milestone(s), and the section of the FSAR in which the operational program is fully described as required by RG 1.206, Combined License Applications for Nuclear Power Plants (LWR edition).
- STD COL 13.4-2-A
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13.4.1 COL INFORMATION

13.4-1-A Operation Programs

- STD COL 13.4-1-A This COL Item is addressed in Section 13.4.

13.4-2-A Implementation Milestones

- STD COL 13.4-2-A This COL Item is addressed in Section 13.4.
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13.4.2 REFERENCES

- 13.4-201 American Society of Mechanical Engineers (ASME), "Boiler and Pressure Vessel Code (B&PVC); Rules for Inservice Inspection of Nuclear Power Plant Components," BPVC Section XI.
- 13.4-202 American Society of Mechanical Engineers (ASME), "Code for the Operation and Maintenance of Nuclear Power Plants," OM Code.

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CHAPTER 4 REACTOR

4.1 SUMMARY DESCRIPTION

This section of the referenced DCD is incorporated by reference with no departures or supplements.

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8.2 OFF-SITE POWER SYSTEMS

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

8.2.1.1 TRANSMISSION SYSTEM

Replace this section with the following.

GGNS COL
8.2.4-1-A

The Entergy Mississippi Inc./Entergy Electric System (EES) supplies off-site ac power from the power grid system to support plant operations. The grid system of Entergy Mississippi Inc./Entergy Electric Systems consists of interconnected hydro-plants, fossil fuel plants, and nuclear plants supplying electric energy over a 500/230/161/115 kV transmission system as shown in Figure 8.2-201.

Entergy Mississippi Inc. is a member of the EES. Other members of the system are Entergy Arkansas Inc., Entergy Louisiana Inc., System Energy Resources Inc. (SERI), New Orleans Public Services Inc., and Entergy Gulf States.

The EES is interconnected with the Southwestern Power Administration, Associated Electric Cooperatives Inc. Missouri Utilities, Union Electric Company, Tennessee Valley Authority, Mississippi Power Company, Central Louisiana Electric Company, Southwestern Electric Power Company, Oklahoma Gas and Electric Company, Empire District Electric Company, and Arkansas Electric Cooperative Corporation.

The off-site power system is designed and constructed with sufficient capacity and capability from the transmission network to support plant operations.

GGNS COL
8.2.4-1-A

GGNS COL
8.2.4-10-A

There are two separate 500 kV transmission lines from the GGNS 500 kV Switching Station connected to the preferred source and the alternate preferred source. The normal preferred source is connected to the unit auxiliary transformers (UATs) and the main transformers, and the alternate preferred source is connected to the RATs located in the Transformer Area. The normal preferred source and the alternate preferred source transmission lines are designed to carry the full output of Unit 3 and the full load of the RATs, respectively. The two 500 kV transmission lines are installed as overhead lines on separate towers and on separate right-of-ways from the GGNS Switching Station to the Transformer Area.

The GGNS 500 kV Switching Station is common to Units 1 and 3. It accommodates three 500 kV overhead lines: one line terminating at the Baxter Wilson Substation, the second line terminating at the Franklin Substation, and the

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8.2.4 COL INFORMATION

8.2.4-1-A Transmission System Description

GGNS COL
8.2.4-1-A

This COL item is addressed in Section 8.2.1.1.

8.2.4-2-A Switchyard Description

GGNS COL
8.2.4-2-A

This COL item is addressed in Sections 8.2.1.2.1.1 and 8.2.1.2.1.2.

8.2.4-3-A Normal Preferred Power

GGNS COL
8.2.4-3-A

This COL item is addressed in Section 8.2.1.2.1.2.

8.2.4-4-A Alternate Preferred Power

GGNS COL
8.2.4-4-A

This COL item is addressed in Section 8.2.1.2.1.2.

8.2.4-5-A Protective Relaying

GGNS COL
8.2.4-5-A

This COL item is addressed in Section 8.2.1.2.1.1.

8.2.4-6-A Switchyard DC Power

GGNS COL
8.2.4-6-A

This COL item is addressed in Section 8.2.1.2.1.1.

8.2.4-7-A Switchyard AC Power

GGNS COL
8.2.4-7-A

This COL item is addressed in Section 8.2.1.2.1.1.

8.2.4-8-A Switchyard Transformer Protection

GGNS COL
8.2.4-8-A

This COL item is not applicable. There are no transformers located in the switchyard.

8.2.4-9-A Stability and Reliability of the Off-site Transmission Power Systems

GGNS COL
8.2.4-9-A

This COL item is addressed in Sections 8.2.2.1 and 8.2.3.

8.2.4-10-A Interface Requirements

GGNS COL
8.2.4-10-A

This COL item is addressed in Sections 8.2.1.1, 8.2.1.2.1.1, and 8.2.2.1.

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9.2 WATER SYSTEMS

9.2.1 PLANT SERVICE WATER SYSTEM

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

9.2.1.2 SYSTEM DESCRIPTION

Summary Description

Replace the Summary Description with the following information.

GGNS CDI	The source of cooling water to the Plant Service Water system (PSWS) is from either the normal power heat sink (NPHS) or the auxiliary heat sink (AHS) depending on plant conditions. The PSWS rejects heat from nonsafety-related RCCWS and TCCWS heat exchangers to the environment via either the NPHS or the AHS. A combination of a natural draft cooling tower and mechanical draft cooling towers is utilized for the NPHS and mechanical draft cooling towers are utilized for the AHS. Table 9.2-201 provides information on the PSWS cooling tower design characteristics.
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GGNS COL 9.2.1-1-A	<p>The materials for the various components of the PSWS are selected to preclude long-term corrosion and fouling of the PSWS based on site water quality.</p> <p>Materials for the mechanical draft cooling towers and accessories contain, to the maximum extent practicable, noncombustible materials as defined in NFPA 220 (Reference 9.2.1-201).</p>
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GGNS CDI	A simplified diagram of the PSWS is shown in DCD Figure 9.2-1.
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Detailed System Description

In the sixth paragraph, replace the last sentence with the following information.

GGNS COL 9.2.1-1-A	Fiberglass reinforced polyester pipe is used for buried PSWS piping to preclude long-term corrosion. Appropriate chemical treatment is added to the NPHS or the
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**Grand Gulf Nuclear Station, Unit 3
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Part 3, Environmental Report**

4.1 LAND-USE IMPACTS

The information for this section is provided in the ESP Application Part 3 – Environmental Report, and associated impacts are not fully resolved in NUREG-1817; the following supplemental information is provided.

4.1.1 THE SITE AND VICINITY

The land-use impacts of Grand Gulf Nuclear Station (GGNS) Unit 3 construction on the site and vicinity were evaluated in NUREG-1817, Subsection 4.1.1. The assessment of the construction impacts on land use, specifically dredge spoils, borrow, and rail service, was unresolved. The following provides additional information to address these unresolved issues. Section 2.2 provides a description of land use at the Unit 3 site.

An estimated 234 acres (ac.) of the 2100-ac. GGNS site would be affected by construction of a new facility. Including the intake structure laydown, an estimated 132 ac. are to be overlain by permanent structures. Acreage not containing permanent structures amounts to 102 ac. and is expected to be reclaimed to the maximum extent possible. Table 4.3-201 describes the Unit 3 plant structures and acreages to be cleared or otherwise disturbed during the new construction. Unit 3 structures and construction laydown areas, as well as the construction disturbance areas proposed in the ESP, are illustrated in Figure 2.1-201.

On-site excavations, grading and dredging activities create construction spoils and borrows. However, it is expected that the grade elevations in the parking, laydown, and batch plant areas can be adjusted to balance the cut and fill volumes as much as possible, resulting in a net excess cut volume of approximately 1.61 million cubic yards. Excess material is anticipated to be disposed in an upland location to the south of the plant area in accordance with appropriate soil management and stormwater control practices. The disposal areas are situated such that they drain into existing site drainage features. Therefore, the land use impact is anticipated to be SMALL due to a small net excess of spoils materials and proper upland disposal.

No rail service is required for the construction of the ESBWR unit at the GGNS site, and no restoration of rail service to the site is currently planned. Consequently, no land use impacts to the site and vicinity are anticipated due to construction or restoration of rail service.

4.1.2 TRANSMISSION CORRIDORS AND OFF-SITE AREAS

The transmission corridor right-of-way (ROW) is described in detail in Section 3.7 and Subsection 2.2.2. The matter of transmission corridor upgrades was an unresolved issue at the time of the ESP. Calculated acreages of land use categories located within the transmission ROW are reported in Section 2.2. NUREG-1817 Subsection 4.1.2 states, "Land use impacts could be MODERATE if the preferred routing of any new transmission lines would convert significant tracts of previously undeveloped land not adjacent to the existing rights-of-way." The impacts of construction of transmission corridors are anticipated to be MODERATE due to the placement of the corridors through previously undisturbed land. Land use impacts are expected to be mitigated by using best management and standard industry practices, and following applicable laws and regulations pertaining to ground-disturbing activities, such as forest and wetlands protection and stormwater controls. Based on the evaluation described in Section 2.2,

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5.1 LAND USE IMPACTS

The information for this section is provided in the Early Site Permit (ESP) Application Part 3 – Environmental Report (ER), Section 5.1, and associated impacts are resolved in NUREG-1817; the following supplemental information is provided.

5.1.1 SITE AND VICINITY

NUREG-1817, Subsection 5.1.1 concluded that land-use impacts in the vicinity of the ESP facility due to operations are SMALL. No new and significant information has been identified.

5.1.2 TRANSMISSION CORRIDORS AND OFF-SITE AREAS

NUREG-1817, Subsection 5.1.2 concluded that the land-use impact from the operation of transmission lines within transmission corridors on off-site and on-site areas, including right-of-way (ROW) and line maintenance, would be SMALL. No new and significant information has been identified.

5.1.3 HISTORIC PROPERTIES

NUREG-1817, Section 5.6 concluded that the impacts of operation of a new unit at GGNS on historic and cultural resources are SMALL. ER Subsection 4.1.3 describes the cultural resource surveys and mitigation procedures conducted prior to plant construction to ensure that impacts to cultural resources and historical properties are minimal. Procedures have been implemented in site-wide operational manuals for activities such as trenching, excavation and ground penetration, environmental reviews and evaluations, and cultural resources protection. These procedures detail immediate stop work orders and notification of appropriate personnel should inadvertent discovery of cultural resources take place during operational activities. No new and significant information has been identified.

5.1.4 REFERENCES

None.