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# COLA FSAR Chapter 1 Overview

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# Objectives

- Provide an overview of COLA Chapter 1 contents (using North Anna Unit 3 COLA as the example)
- Explain the terminology used in the Standard Review Plan (SRP) and Regulatory Guide (RG) conformance tables

# COLA Chapter 1 Outline

- 1.1 - Introduction
- 1.2 - General plant description
- 1.3 - Comparison tables (IBR only)\*
- 1.4 - Identification of agents and contractors
- 1.5 - Requirements for further technical information (IBR only)\*
- 1.6 - Material incorporated by reference
- 1.7 - Drawings and other detailed information
- 1.8 - Interfaces with standard design
- 1.9 - Conformance with SRP, RGs, and Codes/Standards
- 1.10 - Summary of COL items
- 1.11 - Technical resolution of generic items
- 1.12 - Impact of construction activities
- 1A - Response to TMI items
- 1B - Plant shielding (IBR only)\*
- 1C - Industry operating experience
- 1AA - ESP Information (IBR ESP only)\*

\* Not discussed on subsequent slides

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# Chapter 1 – Introduction (1.1)

- Format and content
  - SRP
  - Tables and Figures
  - Proprietary information
  - IBR
  - Left margin annotations
  - Tense
- Type of license
- Description of plant location
- Rated thermal power; electrical output
- Key milestone schedule

# Chapter 1 – General Plant Description (1.2)

- Supplements DCD with plant specific plant information
  - Turbine
  - Main condenser
  - Hydrogen water chemistry

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# Chapter 1 – Identification of Agents and Contractors (1.4)

- GEH
- Bechtel
- Tetra Tech NUS
- MACTEC Engineering and Consulting
- Risk Engineering

# Chapter 1 – Material Incorporated by Reference (1.6)

- COLA Table 1.6-201 lists topical reports incorporated by reference

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**Table 1.6-201 Referenced Topical Reports [NAPS SUP 1.6-1]**

<b>Report No.</b>	<b>Title</b>	<b>Section No.</b>
NEI 03-12, Appendix F	Nuclear Energy Institute, “New Plant Security Program,” NEI 03-12, Appendix F, Revision 2, September 2007	<a href="#">13.6</a>
NEI 06-06	Nuclear Energy Institute, “Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites,” NEI 06-06, Revision 1, September 2007	<a href="#">13.7</a>
NEI 06-13-A	Nuclear Energy Institute, “Technical Report on Template for an Industry Training Program Description,” NEI 06-13-A, Revision 0, October 2006	<a href="#">13BB</a>
NEI 07-02	Nuclear Energy Institute, “Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed under 10 CFR Part 52,” NEI 07-02, Revision 3, September 2007	<a href="#">17.6</a>

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# Chapter 1 – Drawings and Other Detailed Information (1.7)

- COLA Tables list COLA electrical (1.7-201) and mechanical drawings (1.7-202) that supplement the DCD drawings

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# Chapter 1 – Interfaces with Standard Design (1.8)

- Verification of site parameters
- Departures and variances
- Conceptual design information
- Site-specific PRA

# Chapter 1 – Conformance with SRP, RG, and Codes/Standards (1.9)

- RG 1.206 - C.III.1.9.2 – Conformance with SRP (C.III.9.1 for RGs is similar)
  - COL applicants who reference a certified design are not required to re-address conformance with the SRP for those portions of the facility design included in the referenced certified design.
  - COL applicant should address:
    - Site-specific portions of the facility design that are not included in the referenced certified design; and
    - Conformance with the SRP insofar as it pertains to operational aspects of the facility.

# Chapter 1 – Conformance with SRP, RG, and Codes/Standards (1.9) (cont.)

- FSAR Sections 1.9.1/1.9.2 – Conformance with SRPs and RGs
  - “Conforms” means that no exception is being taken to the guidance in the SRP acceptance criteria/RG regulatory position as it applies to:
    - **Site-specific design information,**
    - **Operational aspects of the facility,** or
    - **Siting information** in the FSAR that supplements the SSAR
  - “Conforms” does not apply to guidance related to design that is within the scope of the DCD
  - The term “Not applicable” means that the SRP acceptance criteria/RG regulatory position does not apply to the ESBWR (in general) or COLA unit (specifically)

# COLA SRP Conformance Table: Example

Table 1.9-201 Conformance with Standard Review Plan

[NAPS COL 1.9-3-A]

SRP Section	Title	Rev	Date	Specific Acceptance Criteria	Evaluation
9.4.2	Spent Fuel Pool Area Ventilation System	Rev. 3	Mar-07	II.1, II.2, II.3, II.4	Conforms
9.4.3	Auxiliary and Radwaste Area Ventilation System	Rev. 3	Mar-07	II.1, II.2, II.3	Conforms. Section 9.4 was evaluated against these criteria.
9.4.4	Turbine Area Ventilation System	Rev. 3	Mar-07	II.1, II.2, II.3	Conforms
9.4.5	Engineered Safety Feature Ventilation System	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6	Conforms
9.5.1	Fire Protection Program	Rev. 5	Mar-07	II.1, II.2, II.4	Not applicable. See DCD Table 1.9-21.
				II.3, II.5, II.6	Conforms
				II.7	Exception: The elements of the Fire Protection Program required to be operational prior to receipt of new fuel are those elements necessary to protect buildings storing new fuel and adjacent fire areas that could affect the fuel storage area. Other required elements of the Fire Protection Program will be fully operational prior to initial fuel loading. Refer to Section 13.4.
9.5.2	Communications Systems	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6, II.7, II.8, II.9, II.10, II.11, II.12, II.13, II.14	Conforms
9.5.3	Lighting Systems	Rev. 3	Mar-07	II.1, II.2, II.3, II.4	Conforms
9.5.4	Emergency Diesel Engine Fuel Oil Storage and Transfer System	Rev. 3	Mar-07		Not applicable to the ESBWR
9.5.5	Emergency Diesel Engine Cooling Water System	Rev. 3	Mar-07		Not applicable to the ESBWR

**AC related to RGs 1.174, 1.188, and 1.191: DCD Table states RGs are not applicable**

**AC II.7 states: The...fire protection should be fully implemented prior to fuel receipt at the plant site.**

Exception: The elements of the Fire Protection Program required to be operational prior to receipt of new fuel are those elements necessary to protect buildings storing new fuel and adjacent fire areas that could affect the fuel storage area. Other required elements of the Fire Protection Program will be fully operational prior to initial fuel loading. Refer to Section 13.4.

# COLA RG Conformance Table: Example

North Anna 3  
 Combined License Application  
 Part 2: Final Safety Analysis Report

**Table 1.9-202 Conformance with Regulatory Guides**

[NAPS COL 1.9-3-A]

RG Number	Title	Revision	Date	RG Position	Evaluation
1.114	Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit	Rev. 2	May-89	General	Conforms
1.115	Protection Against Low-Trajectory Turbine Missiles	Rev. 1	Jul-77	General	Conforms
1.116	Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems	Rev. 0	May-77	General	Exception: <a href="#">Section 17.5</a> identifies equivalent QA standards in NQA-1, Subpart 2.8.
1.117	Tornado Design Classification	Rev. 1	Apr-78	General	Conforms
1.118	Periodic Testing of Electric Power and Protection Systems	Rev. 3	Apr-95	General	Conforms. Operational program implementation is described in <a href="#">Section 13.4</a> .
1.121	Bases for Plugging Degraded PWR Steam Generator Tubes	Rev. 0	Aug-76	General	Not applicable

# Chapter 1 – Conformance with RG 1.206 (1.9)

- FSAR Section 1.9.3 addresses conformance with RG 1.206 (C.III.1 and C.III.2)
  - The term “Conforms” means that the information called for in RG 1.206 is either:
    - Already addressed in the DCD or SSAR; or
    - Addressed by adding new information beyond that contained in the DCD or SSAR.
  - The term “Not applicable” means that the information called for in RG 1.206 does not apply to the ESBWR or Unit 3.

# COLA RG 1.206 Conformance Table: Example 1

**Table 1.9-203 Conformance With the FSAR Content Guidance In RG 1.206**

[NAPS COL 1.9-3-A]

Section	Section Title	Conformance Evaluation
C.III.1 3.10.4	Test and Analyses Results and Experience Database	Conforms
C.III.1 3.11	Environmental Qualification of Mechanical and Electrical Equipment	Conforms. There is no other equipment beyond that which has been evaluated in the referenced certified design.
C.III.1 3.11.1	Equipment Location and Environmental Conditions	Conforms

## RG 1.206 Text

### **C.I.3.11 Environmental Qualification of Mechanical and Electrical Equipment**

For electrical equipment other than that evaluated in the referenced certified design, identify the equipment (including I&C and certain accident monitoring equipment specified in RG 1.97 that is within the scope of 10 CFR 50.49 and required to perform safety functions under all normal environmental conditions, AOO, and accident and postaccident environmental conditions. Include the mechanical and electrical equipment associated with systems that are essential to emergency reactor

RG 1.206, Page C.III.1-74

# COLA RG 1.206 Conformance Table: Example 2

**Table 1.9-203 Conformance With the FSAR Content Guidance In RG 1.206**

[NAPS COL 1.9-3-A]

Section	Section Title	Conformance Evaluation
C.III.1 5.2.3.2	Compatibility with Reactor Coolant	Conforms. Addressed in <a href="#">DCD Section 5.2.3</a> .
C.III.1 5.2.3.3	Fabrication and Processing of Ferritic Materials	Conforms
C.III.1 5.2.3.4	Fabrication and Processing of Austenitic Stainless Steels	Conforms
C.III.1 5.2.3.5	Prevention of Primary Water Stress-Corrosion Cracking for Nickel-Based Alloys (PWRs only)	Not applicable. Applies only to PWRs.
C.III.1 5.2.3.6	Threaded Fasteners	Conforms. Addressed in <a href="#">DCD Section 3.9.3.9</a> .
C.III.1 5.2.4.1	Inservice Inspection and Testing Program	Conforms. Addressed in <a href="#">DCD Section 5.2.4</a> and in <a href="#">Section 5.2.4</a> .
C.III.1 5.2.4.2	Preservice Inspection and Testing Program	Conforms. Addressed in <a href="#">DCD Section 5.2.4</a> .
C.III.1	Reactor Coolant Pressure	Conforms

# COLA RG 1.206 Conformance Table: Example 3

Table 1.9-203 Conformance With the FSAR Content Guidance In RG 1.206

[NAPS COL 1.9-3-A]

Section	Section Title	Conformance Evaluation
C.III.1 4.2	Fuel System Design	Conforms
C.III.1 4.3	Nuclear Design	Conforms
C.III.1 4.4	Thermal and Hydraulic Design	Conforms

## RG 1.206 Text

### Chapter 4

#### C.I.4 Reactor

##### C.I.4.1 Summary Description

COL applicants that reference a certified design do not need to include additional information.

##### C.I.4.2 Fuel System Design

COL applicants that reference a certified design do not need to include additional information.

# Chapter 1 – Summary of COL items (1.10)

- Table 1.10-201 is a summary of DCD COL items (example shown below)
- Table 1.10-202 is a summary of ESP COL Action Items (appearance similar to below)

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**Table 1.10-201 Summary of FSAR Sections Where DCD COL Items Are Addressed**  
[NAPS SUP 1.10-1]

<b>Item No.</b>	<b>Subject/Description of Item</b>	<b>FSAR Section</b>
3.11-1-A	Environmental Qualification Document (EQD)	3.11.2.2
4.3-1-A	Variances from Certified Design	4.3
4A-1-A	Variances from Certified Design	4A
5.2-1-H	Preservice and Inservice Inspection Program Plan	5.2.4 and 5.2.4.11

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# Chapter 1 – Technical Resolution of Generic Issues and TMI Items (1.11)

- Tables 1.11-201 and 1.11-202 supplement the DCD tables to provide site specific information
  - T1.11-201: Mostly ESP, SSAR and ER issues
  - T1.11-202: Organizational issues and radiation protection issues

# Chapter 1 – Impact of Construction Activities on Units 1 and 2 (1.12)

**Table 1.12-201 Potential Hazards to Units 1 and 2 from Unit 3 Construction Activities** [NAPS SUP 1.12-1]

Construction Activity	Potential Hazards
Site Exploration, Grading, Clearing, Installation of Drainage and Erosion Control Measures, etc.	Impact on Overhead Power Lines
	Impact on Transmission Towers
	Impact on Underground Conduits, Piping, Tunnels, etc.
	Impact on Site Access and Egress
	Impact on Drainage Facilities and Structures
	Impact on Onsite Transportation Routes

**Table 1.12-203 Managerial and Administrative Controls for Unit 3 Construction Activity Hazards** [NAPS SUP 1.12-1]

Hazard	Control
Impact on overhead power lines	Administrative controls for appropriate standoff and/or installation of temporary support towers
Impact on transmission towers	Administrative controls for appropriate standoff and/or installation of temporary support towers
Impact on underground conduits, piping,	Administrative controls to identify potentially affected SSCs;

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# Chapter 1 – Response to TMI Items (1A)

- COLA addresses three TMI items
  - I.C.5 – Use of industry experience
  - I.F.2 – Quality assurance program
  - II.J.3.1 – Organizational structure

# Chapter 1 – Industry Operating Experience (1C)

## ■ COLA addresses

- One Generic Letter (82-39) - Problems with the Submittals of 10 CFR 73.21 Safeguards Information Licensing Review
- One IE Bulletin (2005-02) – Emergency Preparedness and Response Actions for Security-Based Events

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# Questions?