
AP1000 Design Control Document Revision 16 June 19, 2007

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Licensing and Customer Interface



Meeting Objectives

- Outline Objectives of Revision 16 Changes
- Outline Changes to AP1000 Design Certification Document
- Discuss Licensing basis for NRC Review of Revision16
- Discuss Plan for Review of Revision 16.
- Discuss Significant Changes to DCD.
- Discuss Plan going forwards and action items



Integrated Preparation and Review Process

Existing Design Certification Rule

+ Amendment (DCD Rev. 16)

+R-COLA

= Substantial Standardization

This leads to efficiency in preparation and NRC review and supports Design Centered Review approach

3



Integrated Preparation Effort

- Industry Team (NuStart) Involvement – Preparation and review
 - Technical Reports (AP1000, NEI)
 - Design Certification amendment (DCD Rev. 16)
 - R-COLA
- AP1000 S-COLA preparers are involved through NuStart

4



Chronology

- AP1000 Design Certification Approved December 30, 2005
- AP1000 Technical Reports transmitted to NRC Starting in April, 2006
- NRC Approved Changes to 10 CFR Part 52 April 11, 2007
- Electronic version of DCD Revision 15 submitted April 25 2007
- DCD Revision 16 Delivered on May 29, 2007

5



Objectives of Revision 16 Changes

- Resolve Design Related COL Information Items
- Complete Design Acceptance Criteria Activities
- Include Design Finalization Design Changes
- Include DCWG requested Design Changes.

6



Types of DCD Revisions

- Information added to address COL Information Item closures described in technical reports.
- Design Information Added to Resolve Design Acceptance Criteria Described in Technical Reports.
- Design Changes described in Technical Reports
- Changes to clarify COL Applicant activities
- Editorial changes



Identifying Changes

- Changes are marked with bar marks in margins
- DCD Revision 16 Roadmap identifies source of changes
 - The roadmap identifies a technical report as the source of most technical changes.
 - RAIs are identified for a few changes.
 - Consistency with values elsewhere in the DCD.
 - Editorial.



Roadmap Example

TIER 2 REVISION 16 CHANGE ROADMAP

<u>Section</u>	<u>Page No.</u>	<u>Type of Change</u>
3.4	3.4-1	APP-GW-GLR-130
3.4	3.4-3	APP-GW-GLN-105 APP-GW-S2R-010 APP-GW-GLN-105 Editorial
3.4	3.4-7	APP-GW-GLN-105
3.4	3.4-8	To be consistent with subsection 6.3.7.4.4
3.4	3.4-11	Editorial
3.4	3.4-19	APP-GW-GLN-124
3.4	3.4-20	APP-GW-GLN-105 Consistency with Table 6.2.2-1
3.4	3.4-21 and 3.4-22	APP-GW-GLN-105
3.4	3.4-23	APP-GW-GLR-130 Editorial
3.4	3.4-24 and 3.4-25	APP-GW-S2R-010
3.4	3.4-26	Editorial

9



Revision 16 Ground Rules

- Technical Changes are defined and explained in Technical Reports.
- AP1000 Design Certification regulatory basis of the existing Design Certification remains valid.
- COL applicant activities are defined in COL Information Items and “imbedded requirements” are removed from text.
- AP1000 COL Applicant design changes agreed to by all in the DCWG.

10



Technical Reports

- Submittal of technical reports by Westinghouse provide standard AP1000 Design information and basis for DCD Rev. 16
- NuStart review and oversight of technical report preparation provides utility input and support of standardization of AP1000 COL applications.

11



Technical Reports - Review

- NRC Staff Review
 - Requests for Additional Information
 - Interaction as necessary
- NRC SER Preparation
 - Open Item Identification
 - Open Item Resolution

NRC Staff Review and SER Preparation for Technical Reports are expected to drive the content of the Design Certification Amendment FSR

12



COL Information Item Changes

- COL information item descriptions at the end of DCD sections were rewritten to reflect completion or partial completion of the activities.
- Nonspecific COL activity requirements scattered through the text were rewritten to reference specific COL information items.
- Items requiring post application information were changed to COL holder activities

13



DCD changes

- Extension of seismic spectra to soil conditions
- Revision of buildings for enhanced protection
- Update of fuel design approach
- Protection system I&C update
- Update of electrical system
- Completion of HFE activities
- Piping DAC information
- Turbine manufacturer change
- X/Q and Dose Calculations

14



Chapter 1

- Changes to building configuration in General Arrangement drawings 1.2
- Rewording of COL applicant activities in discussion of guidance conformance.

15



Chapter 2

- Update of site parameters for additional soil conditions
- Update of subsurface soil condition parameters
- Revision of X/Q parameters

16



Chapter 3

- Update site soil parameters
- Update key structural dimension drawings
- Update containment design
- Update of reinforcement design
- Revision of design summary tables
- Addition of load follow transient

17



Chapter 3 Continued

- Reactor internals changes
- Update CRDM Design
- Update integrated head package design
- Update seismic qualification requirements
- Update LBB bounding analysis curves
- Add appendix on high frequency
- Update Environmental Qualification Methodology

18



Chapter 4

- Update Gray Rod Design
- Define process for fuel updates
- Remove Tier 2* designation

19



Chapter 5

- Minor updates to component designs including additional material specifications.

20



Chapter 6

- Updated requirements for and design of debris screens.
- Altered configuration of Control Room and support areas.

21



Chapter 7

- Selected one protection system hardware platform
- Updated the I & C design process
- Updated protection system instruments and logic diagrams
- Developed Architecture and Communication Design

22



Chapter 8

- Added provision for fast bus transfer.
- Added provisions for electrically powered auxiliary boiler.

23



Chapter 9

- Updated design of new fuel racks and spent fuel racks.
- Updated write-up for spent fuel cooling.
- Updated handling systems.
- Added provision for nonmetallic pipe.
- Adjusted service water and component cooling water temperature parameters.
- Changed potable water system source to be site specific.

24



Chapter 9 Continued

- Changed waste water retention basins scope.
- Updated P&IDs for Service Water, Component Cooling Water, and central Chilled Water Systems
- Added provision for zinc addition.
- Updated P&IDs for Chemical and Volume Control System.
- Added control support area term.

25



Chapter 9 Continued

- Updated ventilation system P&IDs and sketches.
- Removed fuel oil fired auxiliary boiler.
- Updated P&IDs for Fire Protection System Standby Diesel Fuel Oil System.
- Revised fire area numbers, descriptions, associated tables and drawings to be consistent with building arrangement changes.

26



Chapter 10

- Revised turbine–generator description and figures and heat balance to be consistent with Toshiba design.
- Revised Turbine Overspeed Protection to replace mechanical overspeed device.
- Updated P&IDs for main steam system.
- Changed raw water scope.

27



Chapter 11

- Added radwaste monitor tanks to the radwaste building.
- Added compliance with 10 CFR 20.1406
- Updated P&IDs for Liquid and Gaseous Radwaste Systems.

28



Chapter 12

- Added discussion for considerations for 10 CFR 20.1406
- Revised radiation zone drawings to reflect building arrangement changes.

29



Chapter 13

- Revised write-ups to reflect completion of human factor engineering and procedure development activities.
- Removed security information to referenced documents.

30



Chapter 14

- Clarifications in 14.3 for consistency with other Tier 2 sections and Tier 1 scope.

31



Chapter 15

- Revised dose results
- Included revised atmospheric dispersion factors

32



Chapter 16

- Finalized information previously shown in brackets.
- Revised values consistent with design changes.
- Steam generator TSTF only

33



Chapter 17

- NQA-1 Revision update
- Update D-RAP description.

34



Chapter 18

- Updated to reflect completion of Human Factors Engineering activities

35



Chapter 19

- Addressed site-specific design and site-specific external hazards in a standard manner.
- Change to CAFTA with no change in results.

36



Basis for NRC Review

- It is expected that NRC review will focus on continued technical report review.
- The SER for Design Certification Amendment (DCD Rev. 16) can be based largely on SERs prepared for technical reports.
- The regulatory basis used for the current design certification is expected to remain valid.
- The DCD revision has generally not been updated to incorporate recent SRP and Reg. Guide revisions.

37



NRC Review Scheduling Considerations

- Most technical reports have been submitted. Remaining reports related to structural issues.
- COL Applications will reference DCD Revision 16.
- Westinghouse approval of design changes that require DCD changes will be limited.
- We anticipate few RAI responses will suggest DCD changes.

38



Westinghouse Actions

- Submit SAMDA valuation Letter for Amendment request
- Update Table 1.8-2 to correct inconsistencies
- Identify process for DCD impact control
- Establish priorities for NRC technical interactions
- Begin RAI status reports

39



NRC Actions

- Establish schedule and budget
- Update technical report review status on a regular basis
- Provide open items
- Schedule technical meetings

40

