

**Appendix A**  
**AP1000 DCD, Introduction, Table 1-1, Revision 15**

included in the Tier 2 Information are identified by double brackets and listed in Section 1.8 of the Tier 2 Information.

### 3.5 Plant-Specific Changes to Designated Information in the Tier 2 Information

*Tier 2\** means the portion of the Tier 2 information, designated as such in the AP1000 design control document, which is subject to the change process in Section VIII of the AP1000 design certification rule. This designation expires for some Tier 2\* information under Section VIII of the AP1000 design certification rule.

An applicant who references the AP1000 design certification rule may not depart from Tier 2\* information, which is designated with italicized text or brackets and an asterisk in the AP1000 design control document, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of the AP1000 design certification rule and 10 CFR 52.63(a)(4).

The AP1000 Tier 2\* information, summarized in Table 1-1 of this introduction, is designated with italicized text in the Tier 2 Information. Certain figures that are indicated to be Tier 2\* may contain information beyond that that is considered to be Tier 2\*. A review of the text referencing the figure may be necessary to determine what information on the figure is considered to be Tier 2\*. The AP1000 Tier 2\* information for which the Tier 2\* designation expires when the COL holder first achieves 100% power operation is indicated in Table 1-1 of this introduction.

### 3.6 Treatment of Probabilistic Risk Assessment Information

A design-specific Probabilistic Risk Assessment (PRA) for the AP1000 Standard Plant Design was submitted as a part of the application for design certification as required by 10 CFR 52.47. One purpose of the PRA was to develop insights for the design and its features. Significant insights that resulted from the PRA are identified in Section 19.59 of the Tier 2 Information. However, the detailed methodology and quantitative portions of the design-specific PRA are not included in the Design Control Document because it is anticipated that this material will be subject to modifications and refinements as the detailed design is completed and the as-built plant parameters and new methodology become available.

Table 1-1  
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| Item   | Expiration at First Full Power | Tier 2 Reference   |
|--|--------------------------------|--|
| Dimensions for Nuclear Island Structures   | Yes                            | 3.7.1.4<br>Table 3.7.1-2<br>Figure 3.7.1-14  |
| Nuclear Island Key Structural Dimensions   | Yes                            | 3.7.2<br>Figure 3.7.2-12   |
| Polar Crane Parked Orientation   | Yes                            | 3.7.2.3.2  |
| Containment Vessel Design Characteristics and Spacing Between Each Pair of Ring Supports | Yes                            | 3.8.2.1.1  |
| 2001 Edition of ASME Code, Section III, including 2002 Addenda                           | Yes                            | 3.8.2.2<br>3.8.2.5<br>5.2.1.1  |
| ASME Code Case N-284-1   | Yes                            | 3.8.2.2<br>3.8.2.5   |
| Use of ACI-349-01  | Yes                            | 3.8.3.2<br>3.8.4.2<br>3.8.4.4.1<br>3.8.4.5<br>3.8.4.5.1<br>3.8.5.5<br>Table 3.8.4-2  |
| Use of AISC N690-1994  | Yes                            | 3.8.3.2<br>3.8.4.2<br>3.8.4.4.1<br>3.8.4.5<br>3.8.4.5.2<br>Table 3.8.4-1   |
| Use of AISI  | Yes                            | 3.8.4.4.1<br>3.8.4.5   |
| Design Summary of Critical Sections Inside Containment                                   | Yes                            | 3.8.3.5.8.1<br>3.8.3.5.8.2<br>3.8.3.5.8.3<br>Table 3.8.3-3<br>Table 3.8.3-4<br>Table 3.8.3-5<br>Table 3.8.3-6<br>Table 3.8.4-1<br>Figure 3.8.3-1<br>Figure 3.8.3-2 |

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| Item   | Expiration at First Full Power | Tier 2 Reference   |
|--|--------------------------------|--|
| Design Summary of Critical Sections Inside Containmentment (Cont.) |                                | Figure 3.8.3-8<br>Figure 3.8.3-14<br>Figure 3.8.3-15<br>Figure 3.8.3-17<br>Figure 3.8.3-18   |
| Design Summary of Critical Sections Outside Containmentment        | Yes                            | 3.8.4.5.4<br>Figure 3.8.4-2<br>Figure 3.8.4-4<br>Figure 3.8.5-3<br>App 3H.1<br>App 3H.2<br>App 3H.3<br>App 3H.3.1<br>App 3H.3.2<br>App 3H.3.3<br>App 3H.4<br>App 3H.4.1<br>App 3H.5<br>App 3H.5.1<br>App 3H.5.1.1<br>App 3H.5.1.2<br>App 3H.5.1.3<br>App 3H.5.1.4<br>App 3H.5.1.5<br>App 3H.5.2<br>App 3H5.2.1<br>App 3H.5.2.2<br>App 3H.5.3<br>App 3H.5.3.1<br>App 3H.5.4<br>App 3H.5.5<br>App 3H.5.5.1<br>App 3H.5.6<br>App 3H.5.6.1<br>App 3H.5.6.2<br>App 3H.5.6.3<br>Table 3H.5-1<br>Table 3H.5-2<br>Table 3H.5-3<br>Table 3H.5-4<br>Table 3H.5-5<br>Table 3H.5-6<br>Table 3H.5-7 |

Table 1-1 (Cont.)  
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| Item   | Expiration at First Full Power | Tier 2 Reference   |
|--|--------------------------------|--|
| Design Summary of Critical Sections Outside Containment (Cont.)  |                                | Table 3H.5-8<br>Table 3H.5-9<br>Table 3H.5-10<br>Table 3H.5-11<br>Table 3H.5-12<br>Table 3H.5-13<br>Figure 3H.2-1<br>Figure 3H.5-1<br>Figure 3H.5-2<br>Figure 3H.5-3<br>Figure 3H.5-4<br>Figure 3H.5-5<br>Figure 3H.5-6<br>Figure 3H.5-7<br>Figure 3H.5-8<br>Figure 3H.5-9<br>Figure 3H.5-10<br>Figure 3H.5-11<br>Figure 3H.5-12 |
| Design Summary of Critical Sections for Nuclear Island Basemat   | Yes                            | 3.8.5.4.3<br>Table 3.8.5-3   |
| Seismic Qualification Standards  | Yes                            | 3.10.1.1   |
| Methods and Procedures for Qualifying Electrical Equipment, Instrumentation, and Mechanical Components | Yes                            | 3.10.2   |
| Experienced-Based Qualification  | Yes                            | 3.10.6   |
| Maximum Fuel Rod Average Burnup  | No                             | 4.3.1.1.1  |
| Fuel Principal Design Requirements   | No                             | 4.1.1  |
| WCAP-12488-P-A, "Fuel Criteria Evaluation Process"   | No                             | 4.1<br>4.1.3<br>4.2<br>4.2.1<br>4.2.1.1.2<br>4.2.1.1.3<br>4.2.1.5<br>4.2.1.6<br>4.2.3<br>4.2.6<br>4.3.1<br>4.3.5   |

Table 1-1 (Cont.)  
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| Item   | Expiration at First Full Power | Tier 2 Reference         |
|--|--------------------------------|--------------------------|
| Reactor Core Description (First Cycle)   | Yes                            | Table 4.3-1              |
| Nuclear Design Parameters (First Cycle)  | Yes                            | Table 4.3-2              |
| Reactivity Requirements for Rod Cluster Control Assemblies   | Yes                            | Table 4.3-3              |
| MOV Design and Qualification   | Yes                            | 5.4.8.1.2                |
| Other Power-Operated Valves Design and Qualification   | Yes                            | 5.4.8.1.3                |
| Motor Operated Valves  | Yes                            | 5.4.8.5.2                |
| Power Operated Valves  | Yes                            | 5.4.8.5.3                |
| N-284-1 Metal Containment Shell Buckling Design Methods, Section III, Division I Class MC                                    | Yes                            | Table 5.2-3              |
| WCAP-13383, "AP600 Instrumentation and Control Hardware & Software Design, Verification & Validation Process Report," Rev 1. | Yes                            | Chapter 7<br>Table 1.6-1 |
| WCAP-14605, "Westinghouse Setpoint Methodology for Protection Systems, AP600," Rev 0   | Yes                            | Chapter 7<br>Table 1.6-1 |
| CENPD-396-P, Rev. 01, "Common Qualified Platform"  | Yes                            | Chapter 7<br>Table 1.6-1 |
| CE-CES-195, "Software Program Manual for Common Q Systems," Rev 01   | Yes                            | Chapter 7<br>Table 1.6-1 |
| WCAP-15927, "Design Process for AP1000 Common Q Safety Systems," Rev 0   | Yes                            | Chapter 7<br>Table 1.6-1 |
| Verification and Validation  | Yes                            | 7.1.2.14                 |
| Hard-wired DAS manual actuation  | No                             | 7.7.1.11                 |
| Nuclear Island Fire Areas  | No                             | Figure 9A-1              |
| Turbine Building Fire Areas  | No                             | Figure 9A-2              |
| Annex I & II Building Fire Areas   | No                             | Figure 9A-3              |
| Radwaste Building Fire Areas   | No                             | Figure 9A-4              |
| Diesel Generator Building Fire Areas   | No                             | Figure 9A-5              |
| Natural Circulation Test   | First Plant Only               | 14.2.5                   |
| Description of "First Three Plant Tests"   | Third Plant                    | 14.2.5                   |
| Verification of proper operation of core makeup tanks in recirculation mode  | Third Plant                    | 14.2.9.1.3               |

Table 1-1 (Cont.)  
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| Item   | Expiration at First Full Power | Tier 2 Reference |
|--|--------------------------------|------------------|
| Verification of automatic depressurization during hot functional testing   | Third Plant                    | 14.2.9.1.3       |
| Verification of proper operation of core makeup tanks to transition to draindown mode  | Third Plant                    | 14.2.9.1.3       |
| Passive Residual Heat Removal Heat Exchanger Natural Circulation Test  | First Plant Only               | 14.2.10.3.7      |
| First-Plant-Only and Three-Plant-Only Tests  | As Discussed                   | 14.4.6           |
| 10 CFR 50.46 Criteria for NOTRUMP Homogeneous Sensitivity Model  | No                             | 15.6.5.4B.2.2    |
| 10 CFR 50.46 Criteria for Critical Heat Flux Assessment  | No                             | 15.6.5.4B.2.3    |
| WCAP-14396, "Man-in-the-Loop Test Plan Description," Rev 3   | No                             | Table 1.6-1      |
| WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2                 | No                             | Table 1.6-1      |
| WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2         | No                             | Table 1.6-1      |
| WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0 | No                             | Table 1.6-1      |
| WCAP-15847, "AP1000 Quality Assurance Procedures Supporting NRC review of AP1000 SSAR Sections 18.2 and 18.8," Rev 1             | No                             | Table 1.6-1      |
| Basis for Human Factors Engineering Program  | No                             | 18.1             |
| NUREG-0711, "Human Factors Engineering Program Review Model," July 1994  | No                             | 18.1.1           |
| WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2         |                                |                  |
| WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2                 |                                |                  |
| NUREG-0711, "Human Factors Engineering Program Review Model," July 1994  | No                             | 18.2.1.2         |
| Applicable Facilities  | No                             | 18.2.1.3         |
| Applicable Human Systems Interfaces  | No                             | 18.2.1.4         |
| Applicable Plant Personnel   | No                             | 18.2.1.5         |

Table 1-1 (Cont.)  
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| Item   | Expiration at First Full Power | Tier 2 Reference |
|--|--------------------------------|------------------|
| Technical Basis<br>NUREG-0711, "Human Factors Engineering Program Review Model," July 1994   | No                             | 18.2.1.6         |
| Responsibility of Human System Interface Design Team   | No                             | 18.2.2.1         |
| Composition of HFE Design Team   | No                             | 18.2.2.3         |
| Action Item Tracking   | No                             | 18.2.3.1         |
| Subcontractor Efforts<br>WCAP-15847, "AP1000 Quality Assurance Procedures Supporting NRC review of AP1000 SSAR Sections 18.2 and 18.8," Rev 1  | No                             | 18.2.3.5         |
| General Process and Procedures for Design Review of HFE Products   | No                             | 18.2.4           |
| HFE Technical Program and Milestones<br>NUREG-0711, "Human Factors Engineering Program Review Model," July 1994<br>NUREG-0711, "Human Factors Engineering Program Review Model," Rev 1   | No                             | 18.2.5           |
| NUREG-0711, "Human Factors Engineering Program Review Model," July 1994<br>WCAP-15847, "AP1000 Quality Assurance Procedures Supporting NRC review of AP1000 SSAR Sections 18.2 and 18.8," Rev 1<br>NUREG-0711, "Human Factors Engineering Program Review Model," Rev 1 | No                             | 18.2.7           |
| Human System Interface Design Team Process   | No                             | Figure 18.2-1    |
| AP600 Task Analysis Implementation Plan<br>NUREG-0711, "Human Factors Engineering Program Review Model," July 1994   | No                             | 18.5             |
| Task Analysis Scope<br>WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2  | No                             | 18.5.1           |
| Task Analysis Implementation Plan  | No                             | 18.5.2           |



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| Item  | Expiration at First Full Power | Tier 2 Reference |
|---|--------------------------------|------------------|
| Function-Based Task Analysis<br>WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0  | No                             | 18.5.2.1         |
| NUREG-0711, "Human Factors Engineering Program Review Model," July 1994<br>WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0<br>WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2 | No                             | 18.5.5           |
| Integration of Human Reliability Analysis with HFE<br>WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2  | No                             | 18.7             |
| WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2  | No                             | 18.7.2           |
| Human System Interface Design<br>WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0<br>WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2   | No                             | 18.8             |
| Design Guidelines<br>WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2   | No                             | 18.8.1.2         |
| Man-in-the-Loop Test Plan to Obtain Feedback from Prototype Design Products<br>WCAP-14396, "Man-in-the-Loop Test Plan Description," Rev 3   | No                             | 18.8.1.4         |
| HSI Design Provides Necessary Alarms, Displays, and Controls<br>WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2  | No                             | 18.8.1.7         |

Table 1-1 (Cont.)  
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| Item  | Expiration at First Full Power | Tier 2 Reference |
|---|--------------------------------|------------------|
| Operator Decision-Making Model Used by Task Analysis Activities<br>WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0 | No                             | 18.8.1.8         |
| Critical Human Actions and Risk-Important Tasks<br>WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2                         | No                             | 18.8.1.9         |
| Safety Parameter Display System<br>10 CFR 50.34(f)(2)(iv)<br>NUREG-0737, Supplement 1, "Requirements for Emergency Response Capability"   | No                             | 18.8.2           |
| Implementation Plan for Integrating Human Reliability Analysis with HFE<br>WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2 | No                             | 18.8.2.1         |
| Display of Safety Parameters<br>WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0                                    | No                             | 18.8.2.2         |
| Safety Parameter Display System HFE<br>NUREG-0711, "Human Factors Engineering Program Review Model," July 1994  | No                             | 18.8.2.5         |
| Minimum Information, Safety Parameter Display System Design<br>NUREG-1342, "A Status Report Regarding Industry Implementation of Safety Parameter Display Systems"                                  | No                             | 18.8.2.6         |
| Main Control Area Mission and Major Tasks<br>Regulatory Guide 1.97  | No                             | 18.8.3.2         |
| Remote Shutdown Workstation Mission and Major Tasks   | No                             | 18.8.3.4         |
| Technical Support Center Mission and Major Tasks<br>NUREG-0737, Supplement 1, "Requirements for Emergency Response Capability"  | No                             | 18.8.3.5         |

Table 1-1 (Cont.)  
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| Item   | Expiration at First Full Power | Tier 2 Reference         |
|--|--------------------------------|--------------------------|
| WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2<br>WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2<br>WCAP-14695, "Description of the Westinghouse Operator Decision Making Model and Function Based Task Analysis Methodology," Rev 0<br>10 CFR 50.34(f)(2)(iv)<br>NUREG-0737, Supplement 1, "Requirements for Emergency Response Capability"<br>NUREG-0711, "Human Factors Engineering Program Review Model," July 1994<br>NUREG-1342, "A Status Report Regarding Industry Implementation of Safety Parameter Display Systems"<br>WCAP-14396, "Man-in-the-Loop Test Plan Description," Rev 3 | No                             | 18.8.6                   |
| Human Performance Issues to be Addressed by HSI Design   | No                             | Table 18.8-1             |
| Human Factors Engineering Verification and Validation<br>WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Rev 2  | No                             | 18.11.2                  |
| Inventory of Displays, Alarms, and Controls  | No                             | 18.12.1                  |
| Implementation Process for Identification of Critical PRA Operator Actions<br>WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2   | No                             | 18.12.2                  |
| Remote Shutdown Workstation Displays, Alarms, and Controls   | No                             | 18.12.3                  |
| WCAP-14651, "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan," Rev 2   | No                             | 18.12.5                  |
| Piping Design Analysis Criteria (DAC)  | Yes                            | See DCD Intro, Table 1-2 |