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Your ref: Project Number 740
Our ref: DCP/NRC1886

May 11, 2007

Subject: AP1000 COL Standard Technical Report Submittal of APP-GW-GLR-037, Revision 1

In support of Combined License application pre-application activities, Westinghouse is submitting Revision 1 of AP1000 Standard Combined License Technical Report Number 71A. This report completes and documents, on a generic basis, activities required for COL Information Item 14.4-2 in the AP1000 Design Control Document. Changes to the Design Control Document identified in Technical Report Number 71A are intended to be incorporated into FSARs referencing the AP1000 design certification or incorporated into the design control document by an amendment to the design certification. This report is submitted as part of the NuStart Bellefonte COL Project (NRC Project Number 740). The information included in this report is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification.

The purpose for submittal of this report was explained in a March 8, 2006 letter from NuStart to the U.S. Nuclear Regulatory Commission. This revision incorporates changes identified in responses to NRC requests for additional information.

Pursuant to 10 CFR 50.30(b), APP-GW-GLR-037, Revision 1, "AP1000 Test Specifications and Procedures," Technical Report Number 71A, is submitted as Enclosure 1 under the attached Oath of Affirmation.

It is expected that when the NRC review of Technical Report Number 71A is complete, COL Information Item 14.4-2 will be considered complete for COL applicants referencing the AP1000 Design Certification.

Questions or requests for additional information related to the content and preparation of this report should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

DOP

Very truly yours,

A. Sterdis, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

/Attachment

1. "Oath of Affirmation," dated May 11, 2007

/Enclosure

1. APP-GW-GLR-037, Revision 1, "AP1000 Test Specifications and Procedures," Technical Report Number 71A, dated May 2007.

cc:	S. Bloom	-	U.S. NRC	1E	1A
	S. Coffin	-	U.S. NRC	1E	1A
	G. Curtis	-	TVA	1E	1A
	P. Grendys	-	Westinghouse	1E	1A
	P. Hastings	-	Duke Power	1E	1A
	C. Ionescu	-	Progress Energy	1E	1A
	D. Lindgren	-	Westinghouse	1E	1A
	A. Monroe	-	SCANA	1E	1A
	M. Moran	-	Florida Power & Light	1E	1A
	C. Pierce	-	Southern Company	1E	1A
	E. Schmiech	-	Westinghouse	1E	1A
	G. Zinke	-	NuStart/Entergy	1E	1A

ATTACHMENT 1

"Oath of Affirmation"

ATTACHMENT 1

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of:	)
NuStart Bellefonte COL Project	)
NRC Project Number 740	)

APPLICATION FOR REVIEW OF
"AP1000 GENERAL COMBINED LICENSE INFORMATION"
FOR COL APPLICATION PRE-APPLICATION REVIEW

W. E. Cummins, being duly sworn, states that he is Vice President, Regulatory Affairs & Standardization, for Westinghouse Electric Company; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission this document; that all statements made and matters set forth therein are true and correct to the best of his knowledge, information and belief.

W. E. Cummins
Vice President
Regulatory Affairs & Standardization

Subscribed and sworn to
before me this ~~22nd~~ 11th day
of May 2007.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Debra McCarthy, Notary Public
Monroeville Boro, Allegheny County
My Commission Expires Aug. 31, 2009
Member, Pennsylvania Association of Notaries

Notary Public

ENCLOSURE 1

APP-GW-GLR-037, Revision 1

AP1000 Test Specifications and Procedures

Technical Report Number 71A

AP1000 DOCUMENT COVER SHEET

TDC: _____ Permanent File: _____ APY: _____

RFS#: _____ RFS ITEM #: _____

AP1000 DOCUMENT NO.	REVISION NO.		ASSIGNED TO
APP-GW-GLR-037	1	Page 1 of 34	

ALTERNATE DOCUMENT NUMBER: TR71A PSA 5-11-07 WORK BREAKDOWN #: GW

ORIGINATING ORGANIZATION: Westinghouse Electric Company

TITLE: **AP1000 Test Specifications and Procedures**

ATTACHMENTS:	DCP #/REV. INCORPORATED IN THIS DOCUMENT REVISION:
CALCULATION/ANALYSIS REFERENCE:	

ELECTRONIC FILENAME	ELECTRONIC FILE FORMAT	ELECTRONIC FILE DESCRIPTION
APP-GW-GLR-037 Rev 1.doc	Microsoft Word	

ORIGINATOR S. W. Long	SIGNATURE / DATE Stewart W. Long 5-10-07	
REVIEWER M. G. Williams	SIGNATURE / DATE Mark G. Williams 5/10/07	
REVIEWER	SIGNATURE/DATE	
VERIFIER for L. R. Perea S. W. LONG	SIGNATURE/DATE Stewart W. Long 5-10-07	VERIFICATION METHOD Page by page
AP1000 RESPONSIBLE MANAGER F. L. Carpentino	SIGNATURE* 5-10-07	APPROVAL DATE 5-10-07

* Approval of the responsible manager signifies that document is complete, all required reviews are complete, electronic file is attached and document is released for use.

AP1000 Standard Combined License Technical Report

AP1000 Test Specifications and Procedures
Revision 1

Westinghouse Electric Company LLC
Nuclear Power Plants
Post Office Box 355
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AP1000 Test Specifications and Procedures

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

The purpose of this document is to close combined license (COL) item 14.4-2 for "Test Specifications and Procedures." This COL item is listed in Section 14.4 of the Design Control Document (DCD).

In DCD (Reference 1) Section 14.4.2, COL item "Test Specifications and Procedures" requires the COL applicant to provide test specifications and test procedures for the preoperational and startup tests. This is information item 14.4-2.

> COL Information Item 14.4-2
>
> "The Combined License applicant is responsible for providing test specifications and test procedures for the preoperational and startup tests, as identified in Section 14.2.3, for review by the NRC."

1.2 Project Scope

In support of NuStart AP1000 Combined Construction & Operating License Application (COLA) submittals planned by the end of 2007, Startup and Preoperational system test specifications per Design Control Document (DCD) Chapter 14 are being developed by Westinghouse (WEC) with priority on safety related (SR) and defense-in-depth (DID) systems. This technical report documents the development process.

This project scope includes both test specifications and test procedures. Specifically, the scope encompasses a set of the preoperational specifications with safety related and defense-in-depth functions (plus all of the startup specifications) that are needed for COL. None of the procedures are needed for the COLA, but are due to the NRC no later than 60 days prior to preoperational system testing and 60 days before fuel load for startup testing (Reference 3).

1.3 Detailed Scope for COL Action Item 14.4-2

"Test Specifications and Procedures" addresses the preparation of 88 preoperational system test specifications and 59 startup test specifications as defined in Chapter 14, to be followed by 289 preoperational test procedures and 59 startup test procedures. This technical report covers the program for writer qualifications and training as well as establishes quality assurance (QA) and administrative requirements. Writer's Guidelines control preparation of preoperational specs and procedures as well as startup specs and procedures. They establish programmatic guidelines for the development of Preoperational and Startup Test Specifications and Procedures. These Writer's Guidelines have been developed and are available for NRC review at Westinghouse's offices in Monroeville, Pennsylvania.

The set of the preoperational specifications with safety related and defense-in-depth functions and all of the startup specifications will be prepared by Westinghouse. As noted in Section 1.2, none of the procedures are needed for the COLA, but are due to the NRC no later than 60 days prior to preoperational system testing and 60 days before fuel load for startup testing.

1.4 Test Specification and Procedure Standardization

The overall goal is to develop specifications, then later procedures, incorporating industry best practices and standards. Lessons learned will be incorporated and whenever possible existing example procedures, either from previous initial startups or operating plants, will be used as templates. Writer's Guidelines will be collaborative efforts between Westinghouse and the plant operator.

COL submittal focuses on Startup and Preoperational Specifications.

1.5 Closure of COL Item 14.4-2

This technical report:

(1) does not result in any regulatory impacts,
(2) does not affect severe accident criteria, and
(3) will not alter security requirements.

The NRC will have the option to review sample specifications at the Westinghouse design office. Based on these reviews and the programmatic process to prepare Startup and Preoperational test specifications and procedures as described in this technical report, the NRC is requested to consider this COL item closed.

2.0 TECHNICAL BACKGROUND

2.1 Overview

A project plan has been prepared to manage the writing, review, and approval of AP1000 test and operating procedures as related to COL Item 14.4-2. The plan uses a definition of tasks based on a work breakdown structure (WBS) for the procedure preparation process. This plan is further described in Sections 2.2 through 2.6 below.

2.2 Integrated Master Plan

The highest level of the WBS is the Integrated Master Plan for major deliverables as shown below:

Table 2.2: Integrated Master Plan

Deliverables Currently Available for NRC Audit — WEC Engineering Office (Phase 1) Preoperational and Startup Test Specifications	
◊ Preoperational System Test Specifications (88 total)	Complete 2007
◊ Startup Test Specifications (59 total)	Complete 2007
Deliverables To Be Provided by the COL Holder — WEC Engineering Office (Phase 2) Preoperational and Startup Test Procedures	
◊ Draft Preoperational System Test Procedures (153 total), Phase 2a • Safety Related (71 total) • Defense-in-Depth (82 total)	Complete 2010
◊ Draft Preoperational System Test Procedures (136 total), Phase 2b • Non-Safety Related (70 total) • Balance of Plant (66 total)	Complete 2010
◊ Draft Startup Test Procedures (59 total)	Complete 2009
Planned NRC Deliverables — COL Holder (Phase 3) Preoperational and Startup Test Procedures	
◊ Preoperational System Test Procedures (289 total)	Complete 60 days prior to testing
◊ Startup Test Procedures (59 total)	Complete 60 days prior to fuel load

2.3 Confirmation of Testing to Achieve ITAAC Requirements

ITAAC requirements delineated in DCD Chapter 2 (Tier 1 commitments) have been matched to DCD Chapter 14 (Tier 2 commitments) to confirm that all necessary testing will be achieved. Appendix A provides a summary of ITAAC requirements.

2.4 Lists of Deliverables

Table B-1 of Appendix B provides a list of preoperational test specifications, which covers 88 systems. This set of 88 test specifications becomes approximately 289 test procedures as shown in Table B-2 of Appendix B, since each system requires multiple tests. Startup test specifications (Table B-3) are a one-for-one match with the test procedures, so only a single list is provided.

2.5 Description of Work Breakdown Structure (WBS)

The WBS has been developed using a three level model. The starting point is level 1 which comprises a list of the major procedure groups as noted in Table 2.2. Each procedure group is broken down into a level 2 list of specifications and/or procedures. Lastly, each spec/procedure is defined by level 3 development subtasks. Each procedure also has a schedule. This approach follows industry standard project management methods, but incorporates some innovative techniques to monitor performance metrics. The goal of the project plan implementing this WBS is to continuously track all deliverables for specifications and procedures to maintain high quality and to ensure all are completed on schedule to support NRC and customer requirements.

2.6 Writer's Guidelines

Writer's Guidelines for AP1000 Preoperational Test Procedures and Test Specifications and Writer's Guidelines for AP1000 Startup Test Procedures and Test Specifications have been developed and are available for NRC review onsite at Westinghouse at any time.

3.0 REGULATORY IMPACT

3.1 Applicable Sections of the NRC's Final Evaluation Analysis Report

Section 14.4.2 is the portion of the NRC's FSER related to the COL Actions covered by this report. However, this section is not impacted by COL Action closure.

3.2 Severe Accident Change Criteria

Two sets of activities are addressed in this technical report – Preoperational and Startup. There are no proposed departures from Tier 2 that would affect resolution of a severe accident issue identified in the DCD. Therefore no license amendment is required.

For Preoperational activities, the operations are performed at the component or system level prior to fuel load. With no fuel loaded, there is no possibility of a severe accident. Therefore, there are no changes that have an impact on the Severe Accident Criteria.

The Startup activities begin with fuel load and continue with a series of integrated system tests over the power ascension range and end with the commissioning tests. Testing is performed within the established Technical Specifications. As such, there are no changes that have an impact on the Severe Accident Criteria.

3.3 Security

The closure of this COL Information Item will not alter barriers or alarms that control access to protected areas of the plant. The closure of this COL Information Item will not alter requirements for security personnel. Therefore, the closure of this COL Information Item does not have an adverse impact on the security assessment of the AP1000.

4.0 REFERENCES

1. APP-GW-GL-700, Revision 15, AP1000 Design Control Document.

2. NUREG-1793, Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design, September 2004.

3. NRC Regulatory Guide 1.68, Rev. 2, Initial Test Programs for Water-Cooled Nuclear Power Plants, August 1978.

5.0 DCD MARKUP

The following DCD markups identify how the AP1000 DCD will be modified.

Revise Section 14.4.2 as follows:

14.4.2.1.1 Test Specifications and Procedures

The Combined License information requested in this subsection has been partially addressed in APP-GW-GLR-037, Revision 1 and APP-GW-GLR-038, Revision 1 (Reference 1), and the applicable changes are incorporated into the DCD. Test Specifications have been developed as indicated in Reference 1 and are available for NRC onsite review at Westinghouse's offices.

The Combined Operating License Holder will provide the Preoperational and Startup Procedures for NRC prior to each planned test in accordance with the requirements of DCD Section 14.2.3.

The following words represent the original Combined Operating License Information Item commitment.

The Combined License applicant is responsible for providing test specifications and test procedures for the preoperational and startup tests, as identified in subsection 14.2.3, for review by the NRC.

Add new Section 14.4.7 and Reference 1 as follows:

14.4.7 References

1. **APP-GW-GLR-037, "AP1000 Test Specifications and Procedures," May 2007.**

APPENDIX A

DCD TIER 2 CHAPTER 14 PREOPERATIONAL TEST REQUIREMENTS vs. DCD TIER 1 ITAAC REQUIREMENTS

(4 pages including this page)

TABLE A-1
DCD Tier 2 Chapter 14 Preoperational Requirements vs. DCD Tier 1 ITAAC Requirements

System Description	AP1000 DCD Preop Tests Chapter 14 Reference	AP1000 DCD Tier 1 ITAAC Section #
14.2.9.1 – Preoperational Testing of Systems with Safety Related Functions		
Reactor Coolant System	14.2.9.1.1	2.1.2
Steam Generator System	14.2.9.1.2	2.2.4
Passive Core Cooling System	14.2.9.1.3	2.2.3
Passive Containment Cooling System	14.2.9.1.4	2.2.2
Chemical and Volume Control System Isolation	14.2.9.1.5	2.3.2
Main Control Room Emergency Habitability System	14.2.9.1.6	2.2.5
Expansion, Vibration, and Dynamic Effects	14.2.9.1.7	2.1.2
Rod Control Drive System	14.2.9.1.8	2.5.3
Reactor System	14.2.9.1.9	2.1.3
Containment System	14.2.9.1.10	2.2.1
Containment Hydrogen Control System	14.2.9.1.11	2.3.9
Protection and Safety Monitoring System	14.2.9.1.12	2.5.2
Incore Instrumentation System	14.2.9.1.13	2.5.5
Class 1E DC and UPS System	14.2.9.1.14	2.6.3
Fuel Handling and Refueling System	14.2.9.1.15	2.1.1
Long-Term Safety Related System Support	14.2.9.1.16	2.6.1, 2.7.3, 2.2.2
14.2.9.2 – Preoperational Testing of Systems with Defense-In-Depth (DID) Functions		
Main Steam System	14.2.9.2.1	2.4.3
Main and Startup Feedwater System	14.2.9.2.2	2.4.1
Chemical and Volume Control System	14.2.9.2.3	2.3.2
Normal Residual Heat Removal System	14.2.9.2.4	2.3.6
Component Cooling Water System	14.2.9.2.5	2.3.1
Service Water System	14.2.9.2.6	2.3.8
Spent Fuel Pool Cooling System	14.2.9.2.7	2.3.7
Fire Protection System	14.2.9.2.8	2.3.4
Central Chilled Water System	14.2.9.2.9	2.7.2
Nuclear Island Nonradioactive Ventilation System	14.2.9.2.10	2.7.1
Radiologically Controlled Area Ventilation System	14.2.9.2.11	2.7.5
Plant Control System	14.2.9.2.12	2.5.3
Data Display and Processing System	14.2.9.2.13	2.5.4
Diverse Actuation System	14.2.9.2.14	2.5.1
Main AC Power System	14.2.9.2.15	2.6.1
Non Class 1E DC and UPS System	14.2.9.2.16	2.6.2
Standby Diesel and Auxiliary Boiler Fuel Oil System	14.2.9.2.17	2.3.3, 2.6.4, 2.7.4
Plant Lighting System	14.2.9.2.19	2.6.5
Primary Sampling System	14.2.9.2.20	2.3.13
Annex/Aux Building Nonradioactive Ventilation System	14.2.9.2.21	2.7.3

TABLE A-1 (Continued)
DCD Tier 2 Chapter 14 Preoperational Requirements
vs. DCD Tier 1 ITAAC Requirements

System Description	AP1000 DCD Preop Tests Chapter 14 Reference	AP1000 DCD ITAAC Tier 1 Section #
14.2.9.3 – Preoperational Testing of Systems with Non-Safety Related Radwaste Functions		
Liquid Radwaste System	14.2.9.3.1	2.3.10
Gaseous Radwaste System	14.2.9.3.2	2.3.11
Solid Radwaste System	14.2.9.3.3	2.3.12
Radioactive Waste Drain System	14.2.9.3.4	2.3.29
Steam Generator Blowdown System	14.2.9.3.5	2.4.4
Waste Water System	14.2.9.3.6	2.3.17
14.2.9.4 – Preoperational Testing of Additional Non-Safety Related Systems		
Condensate System	14.2.9.4.1	2.4.6
Condenser Air Removal System	14.2.9.4.2	2.4.5
Main Turbine System	14.2.9.4.3	2.4.2
Main Generation System	14.2.9.4.4	2.6.10
Turbine Building Closed Cooling Water System	14.2.9.4.5	2.3.20
Circulating Water System	14.2.9.4.6	2.4.7
Turbine Island Chemical Feed System	14.2.9.4.7	2.4.10
Condensate Polishing System	14.2.9.4.8	2.4.11
Demineralized Water Transfer and Storage System	14.2.9.4.9	2.3.14
Compressed and Instrument Air Systems	14.2.9.4.10	2.3.15
Containment Recirculation Cooling System	14.2.9.4.11	2.7.7
Containment Air Filtration System	14.2.9.4.12	2.7.6
Communication Systems	14.2.9.4.13	2.3.19
Mechanical Handling System	14.2.9.4.14	2.3.5
Seismic Monitoring System	14.2.9.4.15	2.5.9
Special Monitoring System	14.2.9.4.16	2.5.6
Secondary Sampling System	14.2.9.4.17	2.3.21
Turbine Building Ventilation System	14.2.9.4.18	2.7.9
Health Physics and Hot Machine Shop HVAC System	14.2.9.4.19	2.7.10
Radwaste Building HVAC System	14.2.9.4.20	2.7.8
Main, Unit Auxiliary and Reserve Aux. Transformer	14.2.9.4.21	2.6.10

TABLE A-1 (Continued)
DCD Tier 2 Chapter 14 Preoperational Requirements
vs. DCD Tier 1 ITAAC Requirements

System Description	AP1000 DCD Preop Tests Chapter 14 Reference	AP1000 DCD ITAAC Tier 1 Section #
Preoperational Testing of Balance of Plant Systems		
Auxiliary Steam Supply System	N/A	2.4.8, No Entry
Cathodic Protection System	N/A	2.6.8, No Entry
Closed Circuit TV System	N/A	No ITAAC Req
Condenser Tube Cleaning System	N/A	2.4.9, No Entry
Containment System	N/A	2.3.32, No Entry
Demineralized Water Treatment System	N/A	2.3.24, No Entry
Diesel Generator Building Heating and Ventilation System	14.2.9.2.17	2.7.4
Excitation and Voltage Regulation System	N/A	2.6.11, No Entry
Generator Hydrogen and CO2 Systems	N/A	2.4.13, No Entry
Gland Seal System	N/A	2.4.12, No Entry
Gravity and Roof Drain Collection System	N/A	2.3.25, No Entry
Grounding and Lightning Protection System	N/A	2.6.6, Inspection
Heater Drain System	N/A	2.4.14, No Entry
Hot Water Heating System	N/A	2.7.11, No Entry
Hydrogen Seal Oil System	N/A	2.4.15, No Entry
Main Turbine and Generator Lube Oil System	N/A	2.4.16, No Entry
Main Turbine Control and Diagnostics System	N/A	2.5.10, No Entry
Meteorological and Environmental Monitoring System	N/A	No ITAAC Req
Onsite Standby Power System	14.2.9.2.17	2.6.4
Operation and Control Centers	14.2.9.2.13	2.5.7
Plant Gas Systems	N/A	2.3.18, No Entry
Plant Security System	N/A	2.6.9, No Entry
Potable Water System	N/A	2.3.16, No Entry
Raw Water System	N/A	No ITAAC Req
Sanitary Drainage System	N/A	2.3.27, No Entry
Special Process Heat Tracing System	N/A	No ITAAC Req
Storm Drain System	N/A	No ITAAC Req
Transmission Switchyard and Offsite Power System	N/A	No ITAAC Req
Turbine Island Vent, Drains and Relief System	N/A	2.3.28, No Entry

Where: N/A – Not Applicable

APPENDIX B

LISTS OF DELIVERABLES FOR PREOPERATIONAL & STARTUP TEST SPECIFICATIONS AND PROCEDURES

(21 pages including this page)

TABLE B-1
Preoperational Test Specifications Listing (Preliminary Data)

	System Code	Preoperational Test Specification Title	Specification Number
1.	ASS	Auxiliary Steam Supply System	APP-ASS-T1-501
2.	BDS	Steam Generator Blowdown System	APP-BDS-T1-501
3.	CAS	Compressed and Instrument Air Systems	APP-CAS-T1-501
4.	CCS	Component Cooling Water System	APP-CCS-T1-501
5.	CDS	Condensate System	APP-CDS-T1-501
6.	CES	Condenser Tube Cleaning System	APP-CES-T1-501
7.	CFS	Turbine Island Chemical Feed System	APP-CFS-T1-501
8.	CMS	Condenser Air Removal System	APP-CMS-T1-501
9.	CNS	Containment System	APP-CNS-T1-501
10.	CPS	Condensate Polishing System	APP-CPS-T1-501
11.	CVS	Chemical and Volume Control System	APP-CVS-T1-501
12.	CWS	Circulating Water System	APP-CWS-T1-501
13.	DAS	Diverse Actuation System	APP-DAS-T1-501
14.	DDS	Data Display and Processing System	APP-DDS-T1-501
15.	DOS	Standby Diesel and Auxiliary Boiler Fuel Oil System	APP-DOS-T1-501
16.	DRS	Storm Drain System	APP-DRS-T1-501
17.	DTS	Demineralized Water Treatment System	APP-DTS-T1-501
18.	DWS	Demineralized Water Transfer and Storage System	APP-DWS-T1-501
19.	ECS	Main AC Power System	APP-ECS-T1-501
20.	EDS	Non Class 1E DC and UPS System	APP-EDS-T1-501
21.	EFS	Communication Systems	APP-EFS-T1-501
22.	EGS	Grounding and Lightning Protection System	APP-EGS-T1-501
23.	EHS	Special Process Heat Tracing System	APP-EHS-T1-501
24.	ELS	Plant Lighting System	APP-ELS-T1-501
25.	EQS	Cathodic Protection System	APP-EQS-T1-501
26.	FHS	Fuel Handling and Refueling System	APP-FHS-T1-501
27.	FPS	Fire Protection System	APP-FPS-T1-501
28.	FWS	Main and Startup Feedwater System	APP-FWS-T1-501
29.	GSS	Gland Seal System	APP-GSS-T1-501
30.	HCS	Generator Hydrogen and CO2 Systems	APP-HCS-T1-501
31.	HDS	Heater Drain System	APP-HDS-T1-501
32.	HSS	Hydrogen Seal Oil System	APP-HSS-T1-501
33.	IDS	Class 1E DC and UPS System	APP-IDS-T1-501
34.	IIS	Incore Instrumentation System	APP-IIS-T1-501
35.	LOS	Main Turbine and Generator Lube Oil System	APP-LOS-T1-501
36.	MES	Meteorological and Environmental Monitoring System	APP-MES-T1-501
37.	MHS	Mechanical Handling System	APP-MHS-T1-501
38.	MSS	Main Steam System	APP-MSS-T1-501
39.	MTS	Main Turbine System	APP-MTS-T1-501
40.	OCS	Operation and Control Centers	APP-OCS-T1-501
41.	PCS	Passive Containment Cooling System	APP-PCS-T1-501

TABLE B-1 (Continued)
Preoperational Test Specifications Listing (Preliminary Data)

	System Code	Preoperational Test Specification Title	Specification Number
42.	PGS	Plant Gas Systems	APP-PGS-T1-501
43.	PLS	Plant Control System	APP-PLS-T1-501
44.	PMS	Protection and Safety Monitoring System	APP-PMS-T1-501
45.	PSS	Primary Sampling System	APP-PSS-T1-501
46.	PWS	Potable Water System	APP-PWS-T1-501
47.	PXS	Passive Core Cooling System	APP-PXS-T1-501
48.	RCS	Reactor Coolant System	APP-RCS-T1-501
49.	RDS	Gravity and Roof Drain Collection System	APP-RDS-T1-501
50.	RMS	Radiation Monitoring System	APP-RMS-T1-501
51.	RNS	Normal Residual Heat Removal System	APP-RNS-T1-501
52.	RWS	Raw Water System	APP-RWS-T1-501
53.	RXS	Reactor System	APP-RXS-T1-501
54.	SDS	Sanitary Drainage System	APP-SDS-T1-501
55.	SES	Plant Security System	APP-SES-T1-501
56.	SFS	Spent Fuel Pool Cooling System	APP-SFS-T1-501
57.	SGS	Steam Generator System	APP-SGS-T1-501
58.	SJS	Seismic Monitoring System	APP-SJS-T1-501
59.	SMS	Special Monitoring System	APP-SMS-T1-501
60.	SSS	Secondary Sampling System	APP-SSS-T1-501
61.	SWS	Service Water System	APP-SWS-T1-501
62.	TCS	Turbine Building Closed Cooling Water System	APP-TCS-T1-501
63.	TDS	Turbine Island Vents, Drains and Relief System	APP-TDS-T1-501
64.	TOS	Main Turbine Control and Diagnostics System	APP-TOS-T1-501
65.	TVS	Closed Circuit TV System	APP-TVS-T1-501
66.	VAS	Radiologically Controlled Area Ventilation System	APP-VAS-T1-501
67.	VBS	Nuclear Island Nonradioactive Ventilation System	APP-VBS-T1-501
68.	VCS	Containment Recirculation Cooling System	APP-VCS-T1-501
69.	VES	Main Control Room Emergency Habitability System	APP-VES-T1-501
70.	VFS	Containment Air Filtration System	APP-VFS-T1-501
71.	VHS	Health Physics and Hot Machine Shop HVAC System	APP-VHS-T1-501
72.	VLS	Containment Hydrogen Control System	APP-VLS-T1-501
73.	VRS	Radwaste Building HVAC System	APP-VRS-T1-501
74.	VTS	Turbine Building Ventilation System	APP-VTS-T1-501
75.	VUS	Containment Leak Rate Test System	APP-VUS-T1-501
76.	VWS	Central Chilled Water System	APP-VWS-T1-501
77.	VXS	Annex/Aux Building Nonradioactive Ventilation System	APP-VXS-T1-501
78.	VYS	Hot Water Heating System	APP-VYS-T1-501
79.	VZS	Diesel Generator Building Heating and Ventilation System	APP-VZS-T1-501

TABLE B-1 (Continued)
Preoperational Test Specifications Listing (Preliminary Data)

	System Code	Preoperational Test Specification Title	Specification Number
80.	WGS	Gaseous Radwaste System	APP-WGS-T1-501
81.	WLS	Liquid Radwaste System	APP-WLS-T1-501
82.	WRS	Radioactive Waste Drain System	APP-WRS-T1-501
83.	WSS	Solid Radwaste System	APP-WSS-T1-501
84.	WWS	Waste Water System	APP-WWS-T1-501
85.	ZAS	Main Generation System	APP-ZAS-T1-501
86.	ZBS	Transmission Switchyard and Offsite Power System	APP-ZBS-T1-501
87.	ZOS	Onsite Standby Power System	APP-ZOS-T1-501
88.	ZVS	Excitation and Voltage Regulation System	APP-ZVS-T1-501

TABLE B-2
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Safety Related Functions
TOTAL 71 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Reactor Coolant System Testing	
1.	RCS System Leakage Testing	APP-RCS-T1P-501
2.	Cold RCP and Motor Testing	APP-RCS-T1P-502
3.	Head Vent Valve Operations Testing	APP-RCS-T1P-503
4.	Pressurizer Pressure, Level and Spray Testing	APP-RCS-T1P-504
5.	RCS Hot Functional Testing Heatup and Normal Operations	APP-RCS-T1P-505
6.	RCS Hot RCP and Motor Testing	APP-RCS-T1P-506
7.	Measurement of RCS and RCS Component Pressure Drops	APP-RCS-T1P-507
8.	RCS System Cold Hydrostatic Testing	APP-RCS-T1P-508
9.	Inservice Testing of RCS Valves	APP-RCS-T1P-509
	Steam Generator System Testing	
10.	Steam Generator Valve and Instrumentation Cold Testing	APP-SGS-T1P-501
11.	SGS Overpressure Protection Test	APP-SGS-T1P-502
12.	Steam Generator Class Hot Valve Cycle Test	APP-SGS-T1P-503
	Passive Core Cooling System Testing	
13.	Operation of Safety Related Components	APP-PXS-T1P-501
14.	CMT Injection Line Resistance Test	APP-PXS-T1P-502
15.	Accumulator Injection Line Resistance Test	APP-PXS-T1P-503
16.	Containment Recirculation Line Resistance Test	APP-PXS-T1P-504
17.	IRWST Injection Line Resistance Test	APP-PXS-T1P-505
18.	Cold Leg Balance Line Resistance Test	APP-PXS-T1P-506
19.	Automatic Depressurization Stage 1, 2, 3, & 4 Flow Path Resistances Test	APP-PXS-T1P-507
20.	PXS Hot Functional Testing	APP-PXS-T1P-508
	Passive Containment Cooling System Testing	
21.	Safety-Related Valves' Operational Testing	APP-PCS-T1P-501
22.	Alarms and Control Logic Testing	APP-PCS-T1P-502
23.	Containment Vessel Heat Removal Verification Testing	APP-PCS-T1P-503
24.	Recirculation Pumps' Performance Testing and Recirculation Capacity Testing	APP-PCS-T1P-504
25.	PCS Flow Path Testing	APP-PCS-T1P-505
	Chemical and Volume Control System Testing	
26.	RCS At Ambient Conditions	APP-CVS-T1P-501
27.	RCS Level In Hot Leg At Mid Loop	APP-CVS-T1P-502
	Main Control Room Emergency Habitability System Testing	
28.	Main Control Room Ventilation Isolation Signal	APP-VES-T1P-501
29.	Main Control Room Emergency Habitability System Integrated Test	APP-VES-T1P-502

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Safety Related Functions
TOTAL 71 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Reactor System Testing	
30.	Pre- and Post-Hot Functional Inspection Testing of Reactor Vessel and Internals	APP-RXS-T1P-501
31.	Reactor Vessel Internals Vibration Testing	APP-RXS-T1P-502
	Containment System Testing	
32.	Containment Isolation	APP-CNS-T1P-501
33.	Containment Integrated Leakage Rate Test (Type A)	APP-CNS-T1P-502
34.	Leak Rate Testing – Type B	APP-CNS-T1P-503
35.	Leak Rate Testing – Type C	APP-CNS-T1P-504
36.	Containment Inspection	APP-CNS-T1P-505
	Containment Hydrogen Control System Testing	
37.	Hydrogen Monitoring	APP-VLS-T1P-501
38.	Hydrogen Igniters	APP-VLS-T1P-502
	Protection and Safety Monitoring System Testing	
39.	Initial Tests	APP-PMS-T1P-501
40.	PMS Integrated System Tests	APP-PMS-T1P-502
41.	Time Response Testing	APP-PMS-T1P-503
	Incore Instrumentation System Testing	
42.	IIS Component Testing of the Safety Related CET Signals	APP-IIS-T1P-501
43.	IIS Component Testing for Other IIS Signals	APP-IIS-T1P-502
	Class 1E DC and UPS System Testing	
44.	Verification of Class 1E 125 Vdc Controls, Instrumentation and Electrical Separation	APP-IDS-T1P-501
45.	Class 1E 125 Vdc Battery Discharge Service Test	APP-IDS-T1P-502
46.	Class 1E Uninterruptible Power Supply	APP-IDS-T1P-503
47.	1E 125 Vdc Low Voltage Test	APP-IDS-T1P-504
48.	Ancillary Diesel Generator Connection Verification Test to the IDS System	APP-IDS-T1P-505
49.	Class 1E 125 Vdc Battery Discharge Capacity Test	APP-IDS-T1P-506
	Fuel Handling and Refueling System Testing	
50.	Burnable Poison Rod Assembly Handling Tool	APP-FHS-T1P-501
51.	Burnable Poison Road Assembly Rack Inserts	APP-FHS-T1P-502
52.	Rod Cluster Control Storage Station	APP-FHS-T1P-503
53.	Reactor Vessel Internals Lift Rig	APP-FHS-T1P-504
54.	Load Cell System for Vessel Head and Internal Lifting Rigs	APP-FHS-T1P-505

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Safety Related Functions
TOTAL 71 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
55.	Reactor Vessel Upper Internals Storage Stand	APP-FHS-T1P-506
56.	Permanent Cavity Seal Ring	APP-FHS-T1P-507
57.	Control Rod Drive Shaft Unlatching Tool	APP-FHS-T1P-508
58.	Control Rod Drive Shaft Handling Tool	APP-FHS-T1P-509
59.	Irradiation Sample Handling Tool	APP-FHS-T1P-510
60.	Reactor Vessel Lower Internals Storage Stand	APP-FHS-T1P-511
61.	Containment, Spent and New Fuel Storage Racks	APP-FHS-T1P-512
62.	Spent Fuel Assembly Handling Tool	APP-FHS-T1P-513
63.	Integrated Head Package Storage Stand	APP-FHS-T1P-514
64.	Integrated Fuel Handling Control System	APP-FHS-T1P-515
65.	Rod Cluster Control Handling Tool	APP-FHS-T1P-516
66.	New Fuel Assembly Handling Tool	APP-FHS-T1P-517
67.	New Fuel Elevator	APP-FHS-T1P-518
68.	Fuel Handling Machine	APP-FHS-T1P-519
69.	Refuel Machine	APP-FHS-T1P-520
70.	Fuel Transfer System /Tube	APP-FHS-T1P-521
71.	Underwater Lighting	APP-FHS-T1P-522

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Defense-In-Depth Functions
TOTAL 82 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Main Steam System Testing	
1.	Valve Testing	APP-MSS-T1P-501
2.	Instrumentation and Alarm Testing	APP-MSS-T1P-502
	Main and Startup Feedwater System Testing	
3.	Main and Startup Feedwater System Valve Operational Testing	APP-FWS-T1P-501
4.	Main and Startup Feedwater System Instrumentation and Alarm Testing	APP-FWS-T1P-502
5.	Main and Startup Feedwater System Valves Stroke Time Testing	APP-FWS-T1P-503
6.	Main and Startup Feedwater System Pump Performance Testing	APP-FWS-T1P-504
7.	Main Feedwater Recirculation Test Procedure	APP-FWS-T1P-505
8.	Hot Functional Water Hammer Test Procedure	APP-FWS-T1P-506
9.	Startup Feedwater Control System Checkout Test Procedure	APP-FWS-T1P-507
	Chemical and Volume Control System Testing	
10.	RCS Residual Heat Removal Operation	APP-CVS-T1P-503
11.	RCS At Water Solid Conditions Testing	APP-CVS-T1P-504
12.	Preoperational Test During Heatup and Pre Core Hot Functional Operating Conditions	APP-CVS-T1P-505
	Normal Residual Heat Removal System Testing	
13.	RNS Normal Shutdown Cooling and Cask Pit Alignments	APP-RNS-T1P-501
14.	RNS Mid-Loop Alignment Testing	APP-RNS-T1P-502
15.	RNS Testing During Spent Fuel Pool Cooling Alignment	APP-RNS-T1P-504
16.	RNS Heat Exchanger Heat Removal and Heat Rate Testing	APP-RNS-T1P-505
	Component Cooling Water System Testing	
17.	Component Cooling System Logic and Flow Balance Testing with Plant at Ambient Conditions	APP-CCS-T1P-501
18.	With Plant at Shutdown Cooling Conditions	APP-CCS-T1P-502
	Service Water System Testing	
19.	SWS Component Control Logic, Indication and Alarm Testing	APP-SWS-T1P-501
20.	SWS Pump Testing, Cold Shutdown, Single, Cross and Dual Train	APP-SWS-T1P-502
21.	SWS Testing During Plant HFT (Single Train Shutdown Cooling at 4 Hours after Shutdown)	APP-SWS-T1P-503
22.	SWS Testing During Plant HFT (Dual Train Shutdown Cooling at 4 Hours after Shutdown)	APP-SWS-T1P-504
	Spent Fuel Pool Cooling System Testing	
23.	SFS Component and Instrumentation Testing to Verify Control and Alarm Functions	APP-SFS-T1P-501

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Defense-In-Depth Functions
TOTAL 82 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
24.	Verification of Available Make-up Sources to the Spent Fuel Pool	APP-SFS-T1P-502
25.	Spent Fuel Pool Cooling System Operation in the Normal Cooling and Purification Mode	APP-SFS-T1P-503
26.	Spent Fuel Pool Gate Leak Test	APP-SFS-T1P-504
27.	Verification of the SFS Capability to Transfer Water Between Different Associated Components	APP-SFS-T1P-505
28.	Verify the Drain Flow Path from the IRWST to the Liquid Radwaste System	APP-SFS-T1P-506
29.	Verify the Gravity Drain Flow Path form the Fuel Transfer Canal, Cask Washdown Pit and Cask Loading Pit to the Liquid Radwaste System	APP-SFS-T1P-507
30.	Resin Transfer from the Demineralizers to the Spent Resin Tanks	APP-SFS-T1P-508
31.	Verify the Functionality of the Siphon Breakers and Emergency Make-up Flow Path from the Cask Washdown Pit	APP-SFS-T1P-509
32.	Verify Operability of Refueling Cavity Drain Check Valve	APP-SFS-T1P-510
33.	Operation of SFS Pumps from the Emergency Power Supply	APP-SFS-T1P-511
	Fire Protection System Testing	
34.	Component Testing	APP-FPS-T1P-501
35.	Integrated Fire Protection System Test	APP-FPS-T1P-502
	Central Chilled Water System Testing	
36.	Low Capacity Sub-System Central Chilled Water System Logic/Loop Testing	APP-VWS-T1P-501
37.	Low Capacity Sub-System Integrated Test	APP-VWS-T1P-502
38.	High Capacity Subsystem Central Chilled Water Component Logic/Loop Testing	APP-VWS-T1P-503
39.	High Capacity Central Chilled Water System Integrated Test	APP-VWS-T1P-504
	Nuclear Island Nonradioactive Ventilation System Testing	
40.	System Logic and Air Balance Testing of the MCR/TSC HVAC Subsystem	APP-VBS-T1P-501
41.	System Logic and Air Balance Testing of the A/C, & B/D Class 1E Electrical Rooms, Division A/C & B/D Class 1E Battery Rooms, and PCS Valve Room	APP-VBS-T1P-502
42.	Ventilation System with Plant at Normal Operating Temperature and Pressure During Hot Functional Testing	APP-VBS-T1P-503
	Radiologically Controlled Area Ventilation System Testing	
43.	VAS Integrated System Testing	APP-VAS-T1P-501
	Plant Control System Testing	
44.	Logic Test	APP-PLS-T1P-501
45.	Integrated System Test	APP-PLS-T1P-502

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Defense-In-Depth Functions
TOTAL 82 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
46.	Hot Functional Test	APP-PLS-T1P-503
	Data Display and Processing System Testing	
47.	DDS Instrument Loop Verification Testing	APP-DDS-T1P-501
48.	DDS Control Function Verifications	APP-DDS-T1P-502
	Diverse Actuation System Testing	
49.	Channel Test and Internal Two-Out-of-Two Logic Test	APP-DAS-T1P-501
50.	DAS Manual Actuation Logic Mode Testing	APP-DAS-T1P-502
51.	DAS Automatic Logic Mode Testing	APP-DAS-T1P-503
52.	DAS Local/Remote Status Indication and Instrumentation Indication	APP-DAS-T1P-504
53.	Non-Class 1E Uninterruptible Power Feed to DAS Transfer Test	APP-DAS-T1P-505
	Main AC Power System Testing	
54.	6.9KV Switchgear Bus ECS-EC-1, Load Centers ECS-EK-11, 12, 13, 14 and 480V Associated Motor Control Centers Testing	APP-ECS-T1P-501
55.	6.9KV Switchgear Bus ECS-EC-2, Load Centers ECS-EK-21, 22, 23, 24 and 480V Associated Motor Control Centers Testing	APP-ECS-T1P-502
56.	6.9KV Switchgear Bus ECS-EC-3, Load Centers ECS-EK-31, RCP Breakers ECS-ES-31 & 32 and 480V Associated Motor Control Centers Testing	APP-ECS-T1P-503
57.	6.9KV Switchgear Bus ECS-EC-4, Load Centers ECS-EK-41, RCP Breakers ECS-EC-41&42 and 480V Associated Motor Control Centers Testing	APP-ECS-T1P-504
58.	6.9KV Switchgear Bus ECS-EC-5 and 6.9KV RCP Breakers ECS-EC-51 & 52 Testing	APP-ECS-T1P-505
59.	6.9KV Switchgear Bus ECS-ES-6 and 6.9KV RCP Breakers ECS-EC-61 & 62 Testing	APP-ECS-T1P-506
60.	Main Step-Up Transformer (MSU) ZAS-ET-1A,1B, 1C, Unit Aux Transformers (UAT) ZAS-ET-2A & 2B and Reserve Aux Transformer (RAT) ZAS-ET-4, Control Logic and Protective Relay Functions Testing	APP-ECS-T1P-507
61.	Initial Energization Main Step-Up Transformer (MSU) ZAS-ET-1A, 1B, 1C, Unit Auxiliary Transformers (UAT) ZAS-ET-2A & 2B and 6.9KV Bus's ECS-ES-1 through ECS-ES-6 Testing.	APP-ECS-T1P-508
62.	Initial Energization of the Reserve Aux Transformer (RAT) ZAS-ET-4	APP-ECS-T1P-509
63.	Ancillary AC Generators #1, ECS-MG-01 and #2, ECS-MG-02 Performance Capacity Load Test	APP-ECS-T1P-510
64.	Ancillary AC Generators #1, ECS-MG-01 and #2, ECS-MG-02, 72-hour Post Accident Monitoring Loads Test	APP-ECS-T1P-511
65.	In-Service Load Check Data Collection Process	APP-ECS-T1P-512

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Defense-In-Depth Functions
TOTAL 82 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Non Class 1E DC and UPS System Testing	
66.	Verification of Non-Class 1E 125 Vdc Controls and Instrumentation	APP-EDS-T1P-501
67.	Verification of Non-Class 1E Uninterruptible Power System	APP-EDS-T1P-502
68.	Non-Class 1E 125 Vdc Battery Discharge Service Test	APP-EDS-T1P-503
69.	Non-Class 1E 125 Vdc Battery Discharge Performance Test	APP-EDS-T1P-504
	Standby Diesel and Auxiliary Boiler Fuel Oil System Testing	
70.	Diesel Generator Fuel Oil Component Static Testing	APP-DOS-T1P-501
71.	Diesel Generator Fuel Oil Component Active Testing	APP-DOS-T1P-502
72.	Auxiliary Boiler Fuel Oil Component Static Testing	APP-DOS-T1P-503
73.	Auxiliary Boiler Fuel Oil Component Active Testing	APP-DOS-T1P-504
	Radiation Monitoring System Testing	
74.	RMS Integrated System Testing	APP-RMS-T1P-501
	Plant Lighting System Testing	
75.	Normal Lighting Component Active Testing	APP-ELS-T1P-501
76.	Emergency and Panel Lighting Component Active Testing	APP-ELS-T1P-502
77.	Emergency Battery Pack Lighting Unit Component Active Testing	APP-ELS-T1P-503
78.	Programmable Light Control System Active Testing	APP-ELS-T1P-504
	Primary Sampling System Testing	
79.	Primary Sampling Cold Testing	APP-PSS-T1P-501
80.	Primary Sampling Hot Functional Test	APP-PSS-T1P -502
	Annex/Aux Building Nonradioactive Ventilation System Testing	
81.	VXS Component Test	APP-VXS-T1P-501
82.	VXS System Integration Test	APP-VXS-T1P-502

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Systems with Non-Safety Related Radwaste Functions
TOTAL 16 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Liquid Radwaste System Testing	
1.	Calibration and Operation of Instrumentation	APP-WLS-T1P-501
2.	WLS Pump and Valve Test	APP-WLS-T1P-502
3.	Flow Path to Containment Sump Verification	APP-WLS-T1P-503
4.	WLS Filter and Ion Exchanger Operational Test	APP-WLS-T1P-504
5.	Degasifier Functional Testing	APP-WLS-T1P-505
	Gaseous Radwaste System Testing	
6.	WGS Component Test	APP-WGS-T1P-501
7.	WGS System Integration Test	APP-WGS-T1P-502
	Solid Radwaste System Testing	
8.	WSS Component Test	APP-WSS-T1P-501
9.	WSS System Integration Test	APP-WSS-T1P-502
	Radioactive Waste Drain System Testing	
10.	Initial System Startup and Component Testing	APP-WRS-T1P-501
	Steam Generator Blowdown System Testing	
11.	BDS Component and Instrumentation Testing	APP-BDS-T1P-501
12.	Cold Wet Layup Functional Testing	APP-BDS-T1P-502
13.	BDS Hot Functional Testing	APP-BDS-T1P-503
	Waste Water System Testing	
14.	Sump and Retention Basin Instrumentation and Controls	APP-WWS-T1P-501
15.	Sump and Retention Basin Pumps	APP-WWS-T1P-502
16.	Waste Oil Separator and Waste Oil Tank	APP-WWS-T1P-503

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Additional Non-Safety Related Systems
TOTAL 54 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Condensate System Testing	
1.	CDS Valves Testing	APP-CDS-T1P-501
2.	CDS Instrumentation and Alarm Testing	APP-CDS-T1P-502
3.	CDS Pumps Testing	APP-CDS-T1P-503
	Condenser Air Removal System Testing	
4.	CMS Component Test	APP-CMS-T1P-501
5.	CMS System Integration Test	APP-CMS-T1P-502
	Main Turbine System Testing	
6.	MTS Component Test	APP-MTS-T1P-501
7.	MTS System Integration Test	APP-MTS-T1P-502
	Main Generation System Testing	
8.	ZAS Component Test	APP-ZAS-T1P-501
9.	ZAS System Integration Test	APP-ZAS-T1P-502
	Turbine Building Closed Cooling Water System Testing	
10.	Turbine Building Closed Cooling Water System Testing	APP-TCS-T1P-501
11.	TCS Component and Instrumentation testing to verify control and alarm functions	APP-TCS-T1P-502
12.	TCS Component Coolers Flow Control Valves Testing	APP-TCS-T1P-503
13.	Turbine Building Closed Cooling Water System Testing at RCS HFT Steady State Conditions, Hot Zero Power	APP-TCS-T1P-504
	Circulating Water System Testing	
14.	Valve Operational Testing	APP-CWS-T1P-501
15.	Alarms and Control Logic Testing	APP-CWS-T1P-502
16.	CWS Cold Integration Testing	APP-CWS-T1P-503
	Turbine Island Chemical Feed System Testing	
17.	CFS Component Test	APP-CFS-T1P-501
18.	CFS System Integration Test	APP-CFS-T1P-502
	Condensate Polishing System Testing	
19.	Alarm and Control Logic Testing	APP-CPS-T1P-501
20.	Resin Addition	APP-CPS-T1P-502
21.	Resin Bed Rinse	APP-CPS-T1P-503
22.	Full Flow Recirculation	APP-CPS-T1P-504
23.	Resin Bed Backwash Cycle	APP-CPS-T1P-505
24.	Resin Transfer	APP-CPS-T1P-506

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Additional Non-Safety Related Systems
TOTAL 54 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
25.	Resin Trap Backwash Cycle	APP-CPS-T1P-507
	Demineralized Water Transfer and Storage System Testing	
26.	DWS Control Function Testing	APP-DWS-T1P-501
27.	Performance Test of DWST Degasification Package, MS01	APP-DWS-T1P-502
28.	Performance Test of CST Degasification Package, MS02	APP-DWS-T1P-503
29.	Flow Delivery Test of DWS	APP-DWS-T1P-504
	Compressed and Instrument Air Systems Testing	
30.	Calibration and Operation of Instrumentation	APP-CAS-T1P-501
31.	CAS Functional Testing	APP-CAS-T1P-502
	Containment Recirculation Cooling System Testing	
32.	VCS Fan control circuitry testing	APP-VCS-T1P-501
33.	VCS Flow Balance Test	APP-VCS-T1P-502
	Containment Air Filtration System Testing	
34.	VFS Component Test	APP-VFS-T1P-501
	Communication Systems Testing	
35.	EFS Component Test	APP-EFS-T1P-501
36.	EFS System Integration Test	APP-EFS-T1P-502
	Mechanical Handling System Testing	
37.	Containment Polar Crane Component Test	APP-MHS-T1P-501
38.	Spent Fuel Shipping Cask Crane Component Test	APP-MHS-T1P-502
39.	Equipment Hatch Hoist Component Test	APP-MHS-T1P-503
40.	Maintenance Hatch Hoist Component Test	APP-MHS-T1P-504
	Seismic Monitoring System Testing	
41.	SJS Component Test	APP-SJS-T1P-501
42.	SJS System Integration Test	APP-SJS-T1P-502
	Special Monitoring System Testing	
43.	SMS Preoperational Tests	APP-SMS-T1P-501
44.	Hot Functional Baseline Data Collection	APP-SMS-T1P-502
	Secondary Sampling System Testing	
45.	Secondary Sampling System	APP-SSS-T1P-501

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Additional Non-Safety Related Systems
TOTAL 54 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Turbine Building Ventilation System Testing	
46.	Turbine Building Exhaust Fans and Louvers Testing	APP-VTS-T1P-501
47.	Turbine Building Space Heater Test	APP-VTS-T1P-502
48.	Personnel Area HVAC Test (Office Area, Engineering Work Station and Secondary Sampling Laboratory)	APP-VTS-T1P-503
49.	Turbine Lube Oil Reservoir Room, Lube Oil Storage Room, Motor Driven Fire Pump Room, Diesel Fire Pump Room, Auxiliary Boiler Room and the Men's and Women's Restrooms HVAC Testing	APP-VTS-T1P-504
50.	Electrical Equipment Rooms HVAC Test	APP-VTS-T1P-505
	Health Physics and Hot Machine Shop HVAC System Testing	
51.	Initial System Startup, Component, and System Airflow Balancing Testing	APP-VHS-T1P-501
52.	VHS System Test	APP-VHS-T1P-502
	Radwaste Building HVAC System Testing	
53.	VRS Component Test	APP-VRS-T1P-501
54.	VRS System Integration Test	APP-VRS-T1P-502

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Balance of Plant Systems
TOTAL 66 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Auxiliary Steam Supply System Testing	
1.	ASS Instrument Calibration Preoperational Checks	APP-ASS-T1P-501
2.	ASS Functional Test	APP-ASS-T1P-502
	Condenser Tube Cleaning System Testing	
3.	CES Component Test	APP-CES-T1P-501
4.	CES System Integration Test	APP-CES-T1P-502
	Storm Drain System Testing	
5.	DRS Component Test	APP-DRS-T1P-501
	Demineralized Water Treatment System Testing	
6.	DTS Component Test	APP-DTS-T1P-501
7.	DTS System Integration Test	APP-DTS-T1P-502
	Grounding and Lightning Protection System Testing	
8.	Grounding and Lightning Protection System Testing	APP-EGS-T1P-501
	Special Process Heat Tracing System Testing	
9.	EHS Line Temperature Control Testing	APP-EHS-T1P-501
10.	EHS Ambient Temperature Control Testing	APP-EHS-T1P-502
	Cathodic Protection System Testing	
11.	EQS Component Test	APP-EQS-T1P-501
12.	EQS System Integration Test	APP-EQS-T1P-502
	Gland Seal System Testing	
13.	Gland Steam System Logic Testing and Operation With Plant At Ambient Condition	APP-GSS-T1P-501
14.	Gland Steam System Testing and Operation With Plant At NOP/NOT Conditions	APP-GSS-T1P-502
	Generator Hydrogen and CO2 Systems Testing	
15.	HCS Component Test	APP-HCS-T1P-501
16.	HCS System Integration Test	APP-HCS-T1P-502
	Heater Drain System Testing	
17.	Valves Testing	APP-HDS-T1P-501
18.	Instrumentation and Alarm Testing	APP-HDS-T1P-502
19.	Pump Testing	APP-HDS-T1P-503

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Balance of Plant Systems
TOTAL 66 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Hydrogen Seal Oil System Testing	
20.	HSS Component Test	APP-HSS-T1P-501
21.	HSS System Integration Test	APP-HSS-T1P-502
	Main Turbine and Generator Lube Oil System Testing	
22.	LOS Component Test	APP-LOS-T1P-501
23.	LOS System Integration Test	APP-LOS-T1P-502
	Meteorological and Environmental Monitoring System Testing	
24.	MES Component Test	APP-MES-T1P-501
25.	MES System Integration Test	APP-MES-T1P-502
	Operation and Control Centers Testing	
26.	Main Control Room Testing	APP-OCS-T1P-501
27.	Remote Shutdown Workstation Testing	APP-OCS-T1P-502
	Plant Gas Systems Testing	
28.	Calibration, Alarm Set Point and Operation of the Nitrogen Subsystem Instrumentation	APP-PGS-T1P-501
29.	Calibration, Alarm Set Point and Operation of Hydrogen Subsystem Instrumentation	APP-PGS-T1P-502
30.	Calibration, Alarm Set Point and Operation of the Carbon Dioxide Subsystem Instrumentation	APP-PGS-T1P-503
31.	Nitrogen System Controls, Actuation Signals, Interlock Tests and Pressure Control Device Adjustment	APP-PGS-T1P-504
32.	Hydrogen System Actuation Signal Test	APP-PGS-T1P-505
33.	Carbon Dioxide System Actuation Signal Test	APP-PGS-T1P-506
34.	Integrated Nitrogen System Test	APP-PGS-T1P-507
35.	Integrated Hydrogen System Test	APP-PGS-T1P-508
36.	Integrated Carbon Dioxide System Test	APP-PGS-T1P-509
	Potable Water System Testing	
37.	PWS Instrumentation and Controls	APP-PWS-T1P-501
38.	PWS Normal Operation Testing	APP-PWS-T1P-502
39.	PWS Water Quality	APP-PWS-T1P-503
40.	PWS Water Heater Testing	APP-PWS-T1P-504
	Gravity and Roof Drain Collection System Testing	
41.	Gravity and Roof Drain System Functional Test	APP-RDS-T1P-501
	Raw Water System Testing	
42.	RWS Component Test	APP-RWS-T1P-501

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Balance of Plant Systems
TOTAL 66 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
43.	RWS System Integration Test	APP-RWS-T1P-502
	Sanitary Drainage System Testing	
44.	Sanitary Drainage System Test	APP-SDS-T1P-501
	Plant Security System Testing	
45.	SES Component Test	APP-SES-T1P-501
46.	SES System Integration Test	APP-SES-T1P-502
	Turbine Island Vents, Drains and Relief System Testing	
47.	TDS Relief, Vents and Drains / ASS Auxiliary Boiler	APP-TDS-T1P-501
48.	TDS Relief, Vents and Drains / Feedwater Heater and MSR	APP-TDS-T1P-502
49.	TDS Radiation Monitor	APP-TDS-T1P-503
	Main Turbine Control and Diagnostics System Testing	
50.	TOS Component Test	APP-TOS-T1P-501
51.	TOS System Integration Test	APP-TOS-T1P-502
	Closed Circuit TV System Testing	
52.	TVS Component Test	APP-TVS-T1P-501
53.	TVS System Integration Test	APP-TVS-T1P-502
	Hot Water Heating System Testing	
54.	VYS Component Test	APP-VYS-T1P-501
55.	VYS System Integration Test	APP-VYS-T1P-502
	Diesel Generator Building Heating and Ventilation System Testing	
56.	VZS Component Test	APP-VZS-T1P-501
57.	VZS System Integration Test	APP-VZS-T1P-502
	Transmission Switchyard and Offsite Power System Testing	
58.	ZBS Component Test	APP-ZBS-T1P-501
59.	ZBS System Integration Test	APP-ZBS-T1P-502
	Onsite Standby Power System Testing	
60.	Onsite Standby Power System Component Static Testing	APP-ZOS-T1P-501
61.	Onsite Standby Power System Component Active Testing	APP-ZOS-T1P-502
62.	Onsite Standby Power System Start and Sequencing Component Active Testing	APP-ZOS-T1P-503
63.	Onsite Standby Power System Operational Testing	APP-ZOS-T1P-504
64.	Onsite Standby Power System Loading Verification Testing	APP-ZOS-T1P-505

TABLE B-2 (Continued)
Preoperational Test Procedures Listing (Preliminary Data)

Preoperational Testing of Balance of Plant Systems
TOTAL 66 PROCEDURES

	Preoperational Test Procedure Title	Procedure Number
	Excitation and Voltage Regulation System Testing	
65.	ZVS Component Test	APP-ZVS-T1P-501
66.	ZVS System Integration Test	APP-ZVS-T1P-502

TABLE B-3
Startup Test Specifications Listing (Preliminary Data)

	Startup Test Specification Title	Specification Number
	Initial Fuel Loading and Pre-Critical Tests	
	TOTAL 20 SPECIFICATIONS	
1.	Fuel Loading Prerequisites and Periodic Checks	APP-GW-T1-601
2.	Reactor Systems Sampling for Fuel Loading	APP-GW-T1-602
3.	Fuel Loading Instrumentation and Neutron Source Requirements	APP-GW-T1-603
4.	Inverse Count Rate Ratio Monitoring for Fuel Loading	APP-GW-T1-604
5.	Initial Fuel Loading	APP-GW-T1-605
6.	Post Fuel Loading/Pre-Critical Test Sequence	APP-GW-T1-606
7.	Incore Instrumentation System Pre-Critical Verification	APP-IIS-T1-601
8.	RTD & T/C Cross Calibration	APP-GW-T1-607
9.	NIS Pre-Critical Verification	APP-PMS-T1-601
10.	Setpoint Pre-Critical Verification	APP-GW-T1-608
11.	Rod Control System	APP-PLS-T1-601
12.	Rod Position Indication System	APP-PLS-T1-602
13.	Control Rod Drive Mechanism	APP-PLS-T1-603
14.	Rod Drop Time Measurement	APP-PLS-T1-604
15.	Rapid Power Reduction System	APP-PLS-T1-605
16.	Process Instrumentation Alignment	APP-PMS-T1-602
17.	RCS Flow Measurement	APP-RCS-T1-601
18.	RCS Flow Coastdown	APP-RCS-T1-602
19.	PZR Spray Capability & Continuous Spray Flow Verification	APP-RCS-T1-603
20.	Feedwater Valve Stroke Test	APP-GW-T1-609
	Initial Criticality Tests	
	TOTAL 4 SPECIFICATIONS	
21.	Initial Criticality Test Sequence	APP-GW-T1-610
22.	Initial Criticality	APP-GW-T1-611
23.	Nuclear Instrumentation System Verification	APP-PMS-T1-603
24.	Post-Critical Reactivity Computer Checkout	APP-GW-T1-612
	Low Power Tests	
	TOTAL 7 SPECIFICATIONS	
25.	Low-Power Test Sequence	APP-GW-T1-613
26.	Determination of Physics Testing Range	APP-GW-T1-614
27.	Boron Endpoint Determination	APP-GW-T1-615
28.	Isothermal Temperature Coefficient Measurement	APP-GW-T1-616
29.	Bank Worth Measurement	APP-GW-T1-617
30.	Natural Circulation (First Plant Only)	APP-RCS-T1-604

	Startup Test Specification Title	Specification Number
31.	Passive Residual Heat Removal Heat Exchanger (First Plant Only)	APP-PXS-T1-601
	Power Ascension Tests	
	TOTAL 28 SPECIFICATIONS	
32.	Test Sequence	APP-GW-T1-618
33.	Incore Instrumentation System	APP-IIS-T1-602
34.	Nuclear Instrumentation System	APP-PMS-T1-604
35.	Setpoint Verification	APP-GW-T1-619
36.	Startup Adjustments of Reactor Control Systems	APP-PLS-T1-606
37.	Rod Cluster Control Assembly Out of Bank Measurements (First Plant Only)	APP-GW-T1-620
38.	Axial Flux Difference Instrumentation Calibration	APP-GW-T1-621
39.	Primary and Secondary Chemistry	APP-GW-T1-622
40.	Process Measurement Accuracy Verification	APP-GW-T1-623
41.	Process Instrumentation Alignment at Power Conditions	APP-GW-T1-624
42.	Reactor Coolant System Flow Measurement at Power Conditions	APP-RCS-T1-605
43.	Steam Dump Control System	APP-GW-T1-625
44.	Steam Generator Level Control System	APP-GW-T1-626
45.	Radiation and Effluent Monitoring System	APP-GW-T1-627
46.	Ventilation Capability	APP-GW-T1-628
47.	Biological Shield Survey	APP-RMS-T1-601
48.	Thermal Power Measurement and State point Data Collection	APP-GW-T1-629
49.	Dynamic Response	APP-GW-T1-630
50.	Reactor Power Control System	APP-GW-T1-631
51.	Load Swing Test	APP-GW-T1-632
52.	100 Percent Load Rejection	APP-GW-T1-633
53.	Load Follow Demonstration (First Plant Only)	APP-GW-T1-634
54.	Hot Full Power Boron Endpoint	APP-GW-T1-635
55.	Plant Trip from 100 Percent Power	APP-GW-T1-636
56.	Thermal Expansion	APP-GW-T1-637
57.	Loss of Offsite Power	APP-GW-T1-638
58.	Feedwater Heater Loss and Out of Service Test	APP-GW-T1-639
59.	Remote Shutdown Workstation	APP-GW-T1-640