WISCONSIN ELECTRIC POWER COMPANY
POINT BEACH NUCLEAR PLANT

SIMULATOR FOUR-YEAR REPORT

Contents

1.0 Introduction

This report is provided every four years on the anniversary of initial certification in accordance with 10 CFR 55.45. The report describes Simulator Certification Tests (SCT) performed from 1996 to 1999, discusses test failures from 1996 to 1999, and provides a schedule of tests to be performed over the next four year period.

2.0 Simulator Information

Owner	Wisconsin Electric Power Company
Simulator Vendor	Westinghouse Electric Corporation
Reference Plant	Point Beach Nuclear Plant Unit 1, Docket No. 50-266 Point Beach Nuclear Plant Unit 2, Docket No. 50-301
Type	Two Loop Pressurized Water Reactor
Rating	1518.5 MWT (each unit)
Certification Date	July 22, 1991
Type of Report	Four Year

3.0 Completed Certification Tests

The annual and quadrennial certification tests were completed as scheduled in the 1995 Four-Year Report, except as noted in Sections 5.1 and 9.1.

3.1 Test Number Change

The previous report listed the test numbers as all starting with "14." The number "14" indicated that the test was a part of the initial Simulator Acceptance Testing Program and was deleted as it provides no value.

3.2 Test Deletion

The certification tests listed below have been deleted due to revisions in plant procedures that now incorporate these evolutions in SCT 6.6.3, Hot Shutdown to Cold Shutdown and SCT 6.6.6, Cold Shutdown to Hot Shutdown.

SCT 6.6.3.1 Plant Cooldown, OP-5A Part C (CVC)

SCT 6.6.6.1 Plant Heatup, OP-5A Part A (CVC)

3.3 Test Title Change

The title for the certification test listed below has been changed to conform to the plant procedure title.

SCT 6.6.6 Cold Shutdown to Low Power

Has been changed to:

SCT 6.6.6 Cold Shutdown to Hot Shutdown

The plant procedure identifiers that had been a part of the certification test titles have been removed as they served no useful purpose. Procedural references are now contained within the main body of certification tests.

4.0 Certification Test Failures

Two tests failed during the four year test period. The simulator performance has since been corrected.

SCT 3.3 Duty Cycle Test (1996)

This test failure was the result of the computers not meeting the average spare time acceptance criteria. Simulator discrepancy report (SDR) 96-0077 was written to track and correct this discrepancy. The discrepancy was resolved and the test has since been performed satisfactorily.

SCT 6.8.12.1 Load Reference Channel Fails (1996)

This test failure was a result of the malfunction not producing the desired effect. SDR 96-0128 was written to track and correct this discrepancy. The discrepancy was resolved and the test has since been performed satisfactorily.

4.1 Certification Test Discrepancies

During the four years of certification test performance there were fourteen valid problems identified on the Unit 1 Simulator. This resulted in the following simulator discrepancy reports being written to track corrective actions and subsequent acceptance testing:

SDR	Title
95-0159	Plant Computer Shows Tcold Greater Than Thot by 8 Degrees
96-0002	Unable to Operate RCP Breaker During Fill & Vent
96-0021	PT420 Scaled Incorrectly on the Plant Computer
96-0039	Rod Insertion Limits are Incorrect
96-0077	Computers Do Not Meet Average Spare Time Acceptance Criteria.
96-0098	Hotwell Level/Temp Increase
96-0102	Safety Injection Pump Motor Amps Too High
96-0110	Steam Generator Narrow Range Level Swell is Too High
96-0128	Malf EHC5 Doesn't Work - Load Reference Failure
96-0162	Pressurizer Level Setpoint Calculation
96-0164	Unable to Drain During Fill and Vent
96-0165	U1 Turbine Stop Valve Test/Lose 20 MW at 370 MWE
96-0166	Audio Count Rate Not Functioning
(SFR#1203)	Accumulator Fill Valve Allows Too Much Flow

5.0 Simulator Certification Test Program Review

An internal review of the simulator certification test program was conducted during the second half of 1998. This review identified discrepancies and weaknesses with regard to the certification testing program. These identified issues and corrective actions are described below.

5.1 Identified Issues:

Eight certification tests, listed in the 1991 report, were omitted from the 1995 report. The test number, title, date it should have been scheduled, and the date it was performed are listed below:

Test	Title	Date it should have been scheduled	Date performed
SCT 6.6.6.2	Removing RHR System from Operation	1995	1998
SCT 6.6.6.3	Reactor Startup	1995	1998
SCT 6.8.5.3	Loss of Condenser Vacuum	1995	1998
SCT 6.8.8.8	Uncoupled Rod	1995	1996
SCT 6.8.11.1	Diesel Generator Failure to Start	1995	1996
SCT 6.8.12.1	Load Reference Channel Fails	1995	1996
SCT 6.8.25.8	Steam Dump Load Reject Controller Failure	1997	1998
SCT 6.8.29.1	RTD Bypass Line Failure	1997	1998

In addition to the list above, a number of certification tests had been modified without adequate review and approval, and some completed tests were not being reviewed in a timely manner.

5.2 Corrective Actions:

Simulator Guidelines were developed and issued. The guidelines placed simulator support personnel duties, responsibilities, and procedures under formal revision control. In addition to describing the current organization, the guidelines contain specific procedures which dictate task performance requirements.

The simulator certification tests are being reviewed, revised, and issued under formal revision control. Final test approval rests with the Simulator Review Committee chairman.

Once issued, all tests will be run to ensure proper simulator performance. Discrepancies will be captured and corrected through the simulator discrepancy report process. The action plan specifies a goal of having all certification tests revised and successfully run on the simulator prior to December 31, 1999. As of June 1, 1999, thirty-seven out of eighty-nine certification tests have been revised and successfully run on the simulator.

6.0 Simulator Modifications

The Simulator Review Committee establishes the priority for implementing modifications. Numerous modifications have occurred, including some significant ones listed below:

- Turbine Driven Auxiliary Feedwater Pump Overspeed Trip Valve Replacement.
- Steam Generator Instrument Level Tap Changes.
- Completion of Emergency Diesel Generator Installation and Diesel Generator Governor Valve Replacement.
- Chemical and Volume Control Makeup Water and Boric Acid Totalizer Controller Replacement.
- Low Pressure Turbine Rotor Replacement.
- Eighteen Month Core Load Installation (Unit 2).
- Instrument Bus Transfer Switch Installation.
- Alternate Shutdown Electrical Bus (B08 and B09) Installation.
- Radiation Monitoring System Control Terminal (RMS CT) Installation.

7.0 Exceptions To ANSI/ANS 3.5-1985 As Endorsed By Reg Guide 1.149

7.1 Simulator Background Sounds

The simulator background sounds, while not required, are mentioned as a consideration in ANSI/ANS 3.5-1985, Section 3.2.3. The original equipment is not functional and Wisconsin Electric has determined that the repair of this equipment is not a priority at this time. Background sounds will be considered if the simulator is converted to a PC platform.

7.2 RMS CT Modification

The RMS CT modification was installed ahead of the plant. Installation has not been completed in the plant, presenting a possible conflict with ANSI/ANS 3.5-1985, Section 5.3. This is a difference that has existed for approximately three years. Current plans are to maintain the simulator in this configuration as the RMS CT is currently scheduled to be installed in the plant during the third quarter of 1999.

7.3 G01 Diesel Generator Control Section of Control Panel C02

The G01 Diesel Generator Control section of control panel C02 leads the plant. Installation has not been completed in the plant, presenting a possible conflict with ANSI/ANS 3.5-1985, Section 3.2.2. This is a difference that has existed for approximately three years. Current plans are to maintain the simulator in this configuration as the G01 Diesel Generator Control modification is currently scheduled to be installed in the plant during the refueling outage on Unit 2 in 2000.

8.0 Other Simulator Certification Issues

8.1 Unit 2 Simulator Certification

The initial Simulator Certification Report, submitted July 1991, stated that "Unit 2 software will be formally tested as part of a long-term project to certify the Unit 2 portion of the PBNP simulator." Wisconsin Electric has determined that Unit 2 Simulator certification is not economically viable at this time.

Acceptance testing demonstrated that Unit 2 hardware and software did not negatively impact Unit 1 performance. The software to support Unit 2 operation is essentially a copy of Unit 1. As such, it does not contain certain Unit 2 specific features nor model Unit 2 specific response. The execution of model software for both units is under the control of a single executive system running on two mainframe computers connected via shared memory. This system executes all model software for both units.

Wisconsin Electric has concluded that conducting selected training sessions on Unit 2, such as reactor startups and occasional equipment malfunctions, does provide a benefit to the operating crews and initial license class candidates. While response may not exactly mimic Unit 2 plant response, the training is very valuable in reinforcing the mirror image layout and addressing other human factors issues, such as communications between unit operators during a casualty response, diagnosis of multiple unit equipment failures, etc. While the Unit 2 simulator will occasionally be used during training cycles, it will not be the unit of focus during performance of NRC required JPMs and operating examinations.

8.2 Incore Flux Mapping System

The Incore Flux Mapping System will no longer be included as part of the simulator modeled system. The panel will be left in place for visual simulation only per Simulator Review Committee decision. It should be noted that crew members are not tasked with operating this system.

8.3 Plant Modifications

Plant modification reviews are performed via hard copy review of the full modification package rather than the method described in the initial Simulator Certification Report.

8.4 Simulator Control Functions

The initial simulator certification report stated that all simulator control functions would be tested. Verification of simulator control functions is limited to those that are required to perform training and certification testing.

9.0 Certification Test Schedule

9.1 Schedule Changes

One test originally scheduled for 1996 was performed in 1998:

SCT 4.4 Simulator Operating Limits

Three of the tests originally scheduled for 1997 were performed in 1996:

SCT 6.6.1 Normal Power to Low Power Operations

SCT 10.1 Main Turbine Stop and Governor Valve Test

SCT 10.5 Steam Dump Valves Modulating and Trip Test, and Atmospheric Steam Dump Valve Test

9.2 1996 PBNP Certification Tests (as performed)

Test	Title
SCT 3.3	Duty Cycle Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.4	NSSS Mass Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	PZR PORV Stuck Open Without High Head SI
SCT 6.6.1	Normal Power to Low Power Operations
SCT 6.6.2	Reactor Shutdown
SCT 6.6.3	Hot Shutdown to Cold Shutdown
SCT 6.6.3.1	Plant Cooldown, OP-5A, Part C (CVC)
SCT 6.6.3.2	Placing Residual Heat Removal System in Operation
SCT 6.6.6	Plant Start-Up Cold to Hot Standby
SCT 6.6.7	Nuclear Startup From Hot Standby to Rated Power
SCT 6.6.8	Secondary Systems Startup
SCT 6.8.3.2	Loss of Component Cooling Water System
SCT 6.8.5.6	Hotwell Level Control Failure
SCT 6.8.8.3	Drifting Rod Group
SCT 6.8.8.8	Uncoupled Rod
SCT 6.8.11.1	Diesel Generator Failure to Start
SCT 6.8.12.1	Load Reference Channel Fails
SCT 6.8.13.7	Loss of 120 Volt AC Instrument Bus
SCT 6.8.29.3	Steam Generator Tube Rupture
SCT 6.8.29.6	RCS Cold Leg Temperature Transmitter Failure
SCT 6.8.29.8	Pressurizer Safety Valve Failure
SCT 6.8.33.1	Fuel Element Failure
SCT 6.8.37.2	Main Steam Line Break Outside Containment
SCT 6.8.37.3	Steam Generator Safety Valve Failure
SCT 6.8.39.3	SI Pump Failure

1996 PBNP Certification Tests (as performed) (cont)

Test	Title
SCT 7.1	Loss of All AC Power (Station Blackout)
SCT 7.2	Loss of All Feedwater
SCT 7.6	ATWS Initiated From a Loss of Main Feedwater
SCT 10.1	Main Turbine Stop and Governor Valve Test
SCT 10.4	Degraded RHR System Capability
SCT 10.5	Steam Dump Valves Modulating & Trip Test and Atmospheric Steam Dump Valve Test

9.3 1997 PBNP Certification Tests (as performed)

Test	Title
SCT 3.3	Duty Cycle Test
SCT 4.4	Simulator Operating Limits Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.5	BOP Mass Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.8.3.3	Thermal Barrier Heat Exchanger Leak
SCT 6.8.8.2	Dropped Rod
SCT 6.8.11.2	Diesel Generator Inadvertent Trip
SCT 6.8.12.3	Inadvertent Turbine Trip
SCT 6.8.23.4	Power Range Channel Summing and Level Amp Failure
SCT 6.8.23.5	Power Range Detector Failure
SCT 6.8.25.12	Pressurizer Pressure Controller Failure
SCT 6.8.26.1	Reactor Trip / Bypass Breaker Failure
SCT 6.8.29.9	Pressurizer PORV Failure
SCT 6.8.30.3	RHR Pump Fails to Start on SI
SCT 6.8.41.1	CCW to Service Water Leak

9.4 1998 PBNP Certification Tests (as performed)

Test	Title
SCT 3.3	Duty Cycle Test
SCT 4.4	Simulator Operating Limits
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.2	75% Power Heat Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.6.6.2	Removing RHR System From Service
SCT 6.6.6.3	Reactor Startup
SCT 6.8.2.1	Compressed Air System Header Break
SCT 6.8.5.1	Main Feedpump Discharge Line Break
SCT 6.8.5.2	Feedline Break Inside Containment
SCT 6.8.5.3	Loss of Condenser Vacuum
SCT 6.8.5.4	Main Feedwater Pump Trip
SCT 6.8.8.1	Stuck Rod
SCT 6.8.8.4	Improper Bank Overlap
SCT 6.8.9.2	Letdown Line Leak Outside Containment
SCT 6.8.13.3	Loss of 4160 Volt Bus
SCT 6.8.16.3	Generator Trip
SCT 6.8.25.3	Tref Program Failure
SCT 6.8.25.8	Steam Dump Load Reject Control Failure
SCT 6.8.25.15	Tavg Bistable Failure
SCT 6.8.29.1	RTD Bypass Line Failure
SCT 6.8.37.5	Stuck Open Condenser Dump Valve
SCT 6.8.41.2	Service Water Pump Failure
SCT 8.1	AFW System Check Valves and Flow Indications
SCT 8.2	ORT6: Containment Spray Service Test
SCT 10.2	Natural Circulation Cooldown

9.5 1999 PBNP Certification Test Schedule

Test	Title
SCT 3.[illegible]	Duty Cycle Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.1	100% Power Heat Balance
SCT 6.3.3	28% Power Heat Balance
SCT 6.3.4	NSSS Mass Balance
SCT 6.3.5	BOP Mass Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA with Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.6.1	Normal Power to Low Power
SCT 6.6.2	Reactor Shutdown
SCT 6.6.3	Hot Shutdown to Cold Shutdown
SCT 6.6.3.2	Placing RHR in Operation
SCT 6.6.6	Cold Shutdown to Hot Shutdown
SCT 6.6.6.2	Removing RHR System From Service
SCT 6.6.6.3	Reactor Startup
SCT 6.6.7	Low Power to Normal Power Operations
SCT 6.6.8	Secondary Systems Startup
SCT 6.8.2.2	Instrument Air Compressor Trip
SCT 6.8.3.2	Standby CCW Pump Start Failure
SCT 6.8.3.3	Thermal Barrier Heat Exchanger Leak
SCT 6.8.5.2	Feedline Break Inside Containment
SCT 6.8.5.5	Feedwater Flow Transmitter Failure
SCT 6.8.5.6	Hotwell Level Control Failure
SCT 6.8.8.2	Dropped Rod
SCT 6.8.8.3	Ratcheting Rod Group
SCT 6.8.8.4	Improper Bank Overlap
SCT 6.8.8.5	Logic Cabinet Urgent Failure
SCT 6.8.8.8	Uncoupled Rod
SCT 6.8.11.1	Diesel Generator Failure to Start

1999 PBNP Certification Test Schedule (cont)

Test	Title
SCT 6.8.11.2	Diesel Failure Inadvertent Trip
SCT 6.8.12.1	Load Reference Channel Fails
SCT 6.8.12.3	Inadvertent Turbine Trip
SCT 6.8.13.3	Loss of 4160 Volt Bus
SCT 6.8.13.6	Loss of 125 Volt DC Bus
SCT 6.8.13.7	Loss of 120 Volt AC Bus
SCT 6.8.16.3	Generator Trip
SCT 6.8.23.4	PR Channel Summing & Level Amp Failure
SCT 6.8.23.5	Power Range Detector Failure
SCT 6.8.25.2	Back Up Heater Reduced Capacity
SCT 6.8.25.3	Tref Program Failure
SCT 6.8.25.12	Pressurizer Pressure Control Failure
SCT 6.8.25.15	Tavg Bistable Failure
SCT 6.8.26.1	Reactor Trip/Bypass Breaker Failure
SCT 6.8.29.1	RTD Bypass Line Failure
SCT 6.8.29.2	DBA LOCA
SCT 6.8.29.3	Steam Generator Tube Rupture
SCT 6.8.29.6	RCS Cold Leg Temperature Transmitter Failure
SCT 6.8.29.8	Pressurizer Safety Valve Failure
SCT 6.8.29.9	Pressurizer PORV Failure
SCT 6.8.30.2	RHR Pump Trip
SCT 6.8.30.3	RHR Pump Fails to Start on Safety Injection Actuation
SCT 6.8.33.1	Fuel Element Failure
SCT 6.8.37.1	Main Steam Line Break Inside Containment
SCT 6.8.37.2	Main Steam Line Break Outside Containment
SCT 6.8.37.3	Steam Generator Safety Valve Failure
SCT 6.8.37.5	Stuck Open Condenser Dump Valve
SCT 6.8.39.3	Safety Injection Pump Failure
SCT 6.8.41.1	CCW to Service Water Leak
SCT 7.1	Loss of All AC Power (Station Blackout)
SCT 7.2	Loss of All Feedwater
SCT 7.6	ATWS Initiated From a Loss of MFW
SCT 8.2	ORT-6: Containment Spray Service Test
SCT 10.1	TS-3 Main Turbine Stop/Governor Valve Test
SCT 10.3	Reactor Coolant Pump Operation
SCT 10.4	Degraded RHR System Capability
SCT 10.5	Steam Dump Valve & Atmospheric Dump Valve Test

9.6 2000 PBNP Certification Test Schedule

Test	Title
SCT 3.3	Duty Cycle Test
SCT 4.4	Simulator Operating Limits Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.4	NSSS Mass Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.8.3.2	Loss of Component Cooling Water System
SCT 6.8.5.6	Hotwell Level Control Failure
SCT 6.8.8.3	Ratcheting Rod Group
SCT 6.8.12.1	Load Reference Channel Fails
SCT 6.8.13.7	Loss of 120 Volt AC Instrument Bus
SCT 6.8.29.3	Steam Generator Tube Rupture
SCT 6.8.29.6	RCS Cold Leg Temperature Transmitter Failure
SCT 6.8.29.8	Pressurizer Safety Valve Failure
SCT 6.8.33.1	Fuel Element Failure
SCT 6.8.37.2	Main Steam Line Break Outside Containment
SCT 6.8.37.3	Steam Generator Safety Valve Failure
SCT 6.8.39.3	SI Pump Failure
SCT 7.1	Loss of All AC Power (Station Blackout)
SCT 7.2	Loss of All Feedwater
SCT 7.6	ATWS Initiated From a Loss of Main Feedwater
SCT 10.4	Degraded RHR System Capability

9.7 2001 PBNP Certification Test Schedule

Test	Title
SCT 3.3	Duty Cycle Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.5	BOP Mass Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.6.1	Normal Power to Low Power Operations
SCT 6.6.2	Reactor Shutdown
SCT 6.6.3	Hot Shutdown to Cold Shutdown
SCT 6.6.3.2	Placing RHR in Operation
SCT 6.6.6	Cold Shutdown to Hot Standby
SCT 6.6.6.2	Removing RHR System From Operation
SCT 6.6.6.3	Reactor Startup
SCT 6.6.7	Low Power to Normal Power Operations
SCT 6.6.8	Secondary Systems Startup
SCT 6.8.3.3	Thermal Barrier Heat Exchanger Leak
SCT 6.8.8.2	Dropped Rod
SCT 6.8.11.2	Diesel Generator Inadvertent Trip
SCT 6.8.23.4	Power Range Channel Summing and Level Amp Failure
SCT 6.8.23.5	Power Range Detector Failure
SCT 6.8.25.12	Pressurizer Pressure Controller Failure
SCT 6.8.26.1	Reactor Trip / Bypass Breaker Failure
SCT 6.8.29.1	RTD Bypass Line Failure
SCT 6.8.29.9	Pressurizer PORV Failure
SCT 6.8.30.3	RHR Pump Fails to Start on SI
SCT 6.8.41.1	CCW to Service Water Leak
SCT 10.1	Main Turbine Stop and Governor Valve Test

9.8 2002 PBNP Certification Test Schedule

Test	Title
SCT 3.3	Duty Cycle Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.2	75% Power Heat Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.8.2.1	Compressed Air System Header Break
SCT 6.8.5.1	Main Feedpump Discharge Line Break
SCT 6.8.5.2	Feedline Break Inside Containment
SCT 6.8.5.3	Loss of Condenser Vacuum
SCT 6.8.5.4	Main Feedwater Pump Trip
SCT 6.8.8.1	Stuck Rod
SCT 6.8.8.4	Improper Bank Overlap
SCT 6.8.9.2	Letdown Line Leak Outside Containment
SCT 6.8.13.3	Loss of 4160 Volt Bus
SCT 6.8.16.3	Generator Trip
SCT 6.8.25.3	Tref Program Failure
SCT 6.8.25.8	Steam Dump Load Rejection Control Failure
SCT 6.8.25.15	Tavg Bistable Failure
SCT 6.8.37.5	Stuck Open Condenser Dump Valve
SCT 6.8.41.2	Service Water Pump Failure
SCT 8.1	AFW System Check Valves and Flow Indications
SCT 8.2	ORT6: Containment Spray Service Test
SCT 10.2	Natural Circulation Cooldown

9.9 2003 PBNP Certification Test Schedule

Test	Title
SCT 3.3	Duty Cycle Test
SCT 6.1.4	Steady State Drift Test, 100% Power, BOL
SCT 6.2.1	100% Power Steady State Performance Test
SCT 6.2.2	75% Power Steady State Performance Test
SCT 6.2.3	28% Power Steady State Performance Test
SCT 6.3.1	100% Power Heat Balance
SCT 6.3.3	28% Power Heat Balance
SCT 6.5.1	Manual Reactor Trip
SCT 6.5.2	Simultaneous Trip of Both Main Feedwater Pumps
SCT 6.5.3	Simultaneous Closure of All Main Steam Isolation Valves
SCT 6.5.4	Simultaneous Trip of All Reactor Coolant Pumps
SCT 6.5.5	Trip of Any Single Reactor Coolant Pump
SCT 6.5.6	Turbine Trip Below P-9
SCT 6.5.7	Maximum Rate Power Ramp 100% to 75% to 100%
SCT 6.5.8	LOCA With Loss of Offsite Power
SCT 6.5.9	Maximum Unisolable Main Steam Line Break
SCT 6.5.10	Pressurizer PORV Stuck Open Without High Head SI
SCT 6.8.2.2	Instrument Air Compressor Trip
SCT 6.8.5.5	Feedwater Flow Transmitter Failure
SCT 6.8.8.5	Logic Cabinet Urgent Failure
SCT 6.8.8.8	Uncoupled Rod
SCT 6.8.11.1	Diesel Generator Failure to Start
SCT 6.8.12.3	Inadvertent Turbine Trip
SCT 6.8.13.6	Loss of 125 Volt DC Bus
SCT 6.8.25.2	Back Up Heater Reduced Capacity
SCT 6.8.29.2	DBA LOCA
SCT 6.8.30.2	RHR Pump Trip
SCT 6.8.37.1	Main Steam Line Break Inside Containment
SCT 10.3	Reactor Coolant Pump Operation
SCT 10.5	Steam Dump Valves Modulating and Trip Test and Atmospheric Steam Dump Valve Test

71-0784

HOLTEC
INTERNATIONAL

Holtec Center, 555 Lincoln Drive West, Marlton, NJ 08053

Telephone (609) 797-0900
Fax (609) 797-0909

July 16, 1999

Carl Paperiello, Ph.D.
Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: USNRC Docket No. 71-9261
HI-STAR 100 Certificate of Compliance No. 71-9261
Renewal of Holtec Quality Assurance Program Approval

Reference: Holtec Project 5014

Dear Dr. Paperiello:

The purpose of this correspondence is to request renewal of the NRC's approval of Holtec International's Quality Assurance Program in accordance with the provisions of 10 CFR 71.38. The current NRC approval of Holtec's QA Program expires on August 31, 1999. Enclosed is one uncontrolled copy of the current Holtec Quality Assurance Manual for your review.

If you have any questions or require additional information, please contact us.

Sincerely,

Mark Soler
Acting Quality Assurance Manager

Cc: Mr. E. William Brach (w/ encl.)
Document ID: 5014331

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Enclosure: Holtec International Quality Assurance Manual, Revision 11, dated February 1, 1999.

Approval:

Brian Gutherman, PE
Licensing Manager

K. P. Singh, Ph.D., PE
President and CEO

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HOLTEC INTERNATIONAL
Holtec Center, 555 Lincoln Drive West, Marlton, NJ 08053
Telephone (609) 797-0900
Fax (609) 797-0909

Client Distribution (w/o encl.):

Recipient	Utility
Mr. David Bland	Southern Nuclear (HUG Chairman)
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