

SALEM SIMULATOR
4-Year Certification Report

Table of Contents

- I. PURPOSE
- II. BACKGROUND
- III. REFERENCES
- IV. DEFINITIONS
- V. PERFORMANCE CRITERIA OBJECTIVES
- VI. SIMULATOR ANNUAL REVIEW
- VII. CHANGES SINCE LAST REPORT & REG. GUIDE 1.149, 1987
- VIII. EXCEPTIONS TO ANS-3.5-1985
- IX. REPORTING REQUIREMENTS PER 10CFR55.45

ATTACHMENTS:

- A - Uncorrected Test Failures/Schedule for Completion
- B - Description of Completed Testing
- C - Description/Schedule of Testing for 1994-1997

9401060170 931223
PDR ADDCK 05000272
P PDR

SALEM SIMULATOR

4-Year Certification Report

I. PURPOSE

This report provides compliance with the Code of Federal Regulations for the submittal of a 4-year certification report for plant-referenced simulators, in accordance with 10CFR55, sections 45(b)(5)(ii) and 45(b)(5)(vi).

SALEM SIMULATOR

4-Year Certification Report

II. BACKGROUND

10CFR55.45(b)(5)(ii) requires those facility licensees which use a simulation facility consisting solely of a plant-referenced simulator as defined in 55.4 to "submit, every four years on the anniversary of the certification, a report to the Commission which identifies any uncorrected performance test failures, and submit a schedule for correction of such performance test failures, if any."

10CFR55.45(b)(5)(vi) requires any certification report submitted pursuant to 55.45(b)(5)(ii), "must include a description of performance testing completed for the simulation facility, and must include a description of the performance tests, if different, to be conducted on the simulation facility during the subsequent four-year period, and a schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four years."

ANSI/ANS-3.5-1985 specifies the requirements for the minimum performance and configuration criteria for a plant-referenced simulator. These requirements provide a method acceptable to the NRC for a facility licensee to certify a simulator for use in portions of license examinations.

SALEM SIMULATOR

4-Year Certification Report

III. REFERENCES

Title 10, Code of Federal Regulations, Part 55, *Operators' Licenses*, sections 45(b)(5)(ii) and 45(b)(5)(vi), 1993

ANSI/ANS-3.5-1985, *Nuclear Power Plant Simulators for Use in Operator Training*, 1985

USNRC Regulatory Guide 1.149, *Nuclear Power Plant Simulation Facilities for Use in Operator License Examinations*, 1987

Salem Simulator Procedure SP-206, rev. 6, *ANS-3.5 Validation*, 1993

SALEM SIMULATOR

4-Year Certification Report

IV. DEFINITIONS

Exceptions to the Standard - are those commitments identified in ANS-3.5-1985 which cannot be fully met and does not imply failure to meet the requirements of 10CFR55.45.

Malfunction Test Procedure (MTP) - is a simulator test procedure which is used to specifically test and validate the logical and dynamic response of the simulation models for those malfunctions that are available for simulator training and examinations.

Performance Test Procedure (PTP) - is a simulator test procedure which is used to test and validate the logical and dynamic response of the simulation models for all other types of tests which are not defined as a Malfunction Test Procedure, i.e., those transients listed in Appendix B of ANS-3.5-1985.

SALEM SIMULATOR

4-Year Certification Report

V. PERFORMANCE CRITERIA OBJECTIVES (SP-206)

The arrangement of the instrumentation and controls of the simulator shall be designed to duplicate the size, shape, color and configuration of the reference plant. (ANS-3.5-1985, section 3.2.1)

The extent of simulation shall be such that the same action is required on the simulator to conduct an operation as on the reference plant using reference plant procedures. (ANS-3.5-1985, section 3)

The operator shall not be able to discern a difference between the response of the simulator instrumentation and that of the reference plant. Until actual plant data can be obtained, analytical, design, similar plant and/or best estimate data shall be used. (ANS-3.5-1985, section 3.1)

The simulator computed values for steady state, full power, automatic control operation shall not deviate by more than 2% over a 60 minute period. (ANS-3.5-1985, section 4.1)

The simulator computed values of the critical parameters related to rated full power values and interim power levels for which reference plant data is available shall not deviate by more than 2% with that of the reference plant. (ANS-3.5-1985, section 4.1)

The simulator computed values of non-critical parameters related to rated full power values and interim power levels for which valid reference plant data is available shall agree within 10% of that of the reference plant. (ANS-3.5-1985, section 4.1)

The simulator shall demonstrate the ability to perform the minimum evolutions specified in 3.1.1 and 3.1.2 of ANS-3.5-1985. Where applicable, the acceptance criteria for these evolutions will be the same as the plant startup test criteria. (ANS-3.5-1985, section 4.2.1)

During *transient* operations the observable change in the monitored parameters will correspond in direction to those expected from a best estimate analysis and will not violate the physical laws of nature or adversely influence an operators evaluation or decision regarding the event. (ANS-3.5-1985, section 4.2.1)

The simulator shall not fail to cause an *alarm* or automatic action if the reference plant would have caused an *alarm* or automatic action, and conversely, the simulator shall not cause an *alarm* or automatic action if the reference plant would not cause an *alarm* or automatic action. (ANS-3.5-1985, section 4.2.1)

SALEM SIMULATOR

4-Year Certification Report

VI. SALEM SIMULATOR ANNUAL REVIEW (SP-206)

Each year an annual review of the status of the reference plant to the existing simulator configuration is conducted by a Simulator Review Committee.

The Simulator Review Committee is comprised of members of the simulator support, operations training staff and the station operations department; at least one person representing each group. The committee is chaired by the **Principal Training Supervisor - Simulator Support**. The committee reviews simulator scheduling, training needs and requests which may require special implementation by the simulator support group. The review encompasses the following:

DCR/DCP Review - All *DCR/DCP* contained in the *DCP* Database with a status code of 4A (*DCP* close-out phase) or greater and an impact code of "Y" (YES) will undergo a final evaluation to determine the specific scope of the *modification* required. The applicable *DCR/DCP's* are scheduled for implementation within 12 months following the review date, minimizing impact on the simulator training schedule.

Station vs. Simulator Hardware Differences - All hardware differences between the Station (Units 1 & 2) and the Simulator are reviewed. The resulting list of Station vs. Simulator Hardware Differences is presented and evaluated for training impact by the Simulator Review Committee.

Operating Procedures Review - All differences in the Operating Procedures Review are reviewed. The resulting list of Operating Procedures is presented and evaluated for training impact by the Simulator Review Committee.

Operator Feedback Review - All outstanding operator inputs concerning simulator performance in the Operator Feedback Database are reviewed for applicability and impact on the simulator by the Simulator Review Committee.

Discrepancy Reports - All DR's outstanding at the time of the annual review are evaluated for impact, adjusting the priority of resolution as necessary.

Malfunction Assessment - The following information (when presented to the Simulator Support Group) is evaluated and utilized in the review of existing malfunctions, and in the development of new malfunctions:

- Job Task Analysis
- Licensee Event Reports
- Significant Event Reports
- Operations Reports
- Significant Event Notifications
- Technical Information Service Bulletins
- NRC Bulletins and Circulars
- Local Site Considerations
- Plant Specific Operating Experience
- Probabilistic Risk Assessment Studies

Simulator enhancements committed to by the Nuclear Training Center Project Tracking System shall be incorporated. In addition, the above items are evaluated for training merit and simulator capability for the development of new malfunctions. If the training benefits are desirable, the simulator is modified as required to support the selected events. All existing malfunctions are also reviewed and recommended for deletion if no longer applicable to the established training programs.

Based upon the findings and recommendations of the committee, the **Principal Training Supervisor - Simulator Support** will prioritize the implementation of any simulator *modifications*. The prioritization will account for simulator training usage, manpower availability, and relative merit of the *modification*.

Annual Review Meeting Report Summary provides an overview of the items which are covered as part of the annual review meeting. This includes items such as completion lists, for DR's, feedback's, procedure differences, DCR/DCPs, as well as to-be-prioritized lists for work projected in the upcoming year.

SALEM SIMULATOR

4-Year Certification Report

VII. CHANGES SINCE LAST REPORT

A. General

Since the submittal of the initial certification, the Salem simulator has undergone extensive changes in both the hardware and software environments. Recognizing that the Salem simulator is a dual-unit certified simulation facility, the majority of all changes have been made in reference to the Salem Unit 2 control room.

The variations between the Units (1 & 2) and the simulator are identified in the Hardware and Procedure Differences databases. These are continually reviewed and updated as modifications occur via plant design changes at the applicable unit. Based on the engineering and training review assessments, the simulator is upgraded accordingly to prevent or minimize any impact on training or examinations on **either** Unit.

The simulation models and supporting hardware are continually being upgraded to 1) incorporate the identified plant design changes, 2) provide training enhancements for use in simulator scenarios and 3) provide improved dynamic response for all integrated systems within the scope of simulation.

The following provides an overview (not inclusive) of the extensive upgrade work involved in the Salem simulator over the past four (4) years:

- Development and Integration of New, Advanced Models for:
 - Reactor Core
 - Reactor Containment
 - Reactor Coolant System (RCS), Steam Generators, Pressurizer
 - Secondary Side of the Steam Generators
 - Auxiliary Feedwater System
- Substantial Upgrade of Existing Models for:
 - Pressurizer Relief Tank (PRT)
 - Main Steam
 - Plant Process Computer (P250)
 - 500KV, 13KV & 4KV Electrical Distribution
 - Residual Heat Removal (RHR)
 - Turbine Auxiliaries Cooling (TACs)
 - Service Water (SW)
 - Main Turbine/Generator & Auxiliaries
 - Reactor Vessel Level Instrumentation System (RVLIS)

- Human Factors Design Change Implementation
 - "Simulation" of Advanced, Digital, Microprocessor-based Overhead Annunciator System (BETA)
 - Control Panel Extensions
 - Control Monitoring Equipment Relocation
 - Replacement of \cong 300 Control Panel Indicators (Analog to Digital)
 - Control Room Environment Upgrade (Lighting, Carpeting, Desks, etc.)

In order to support the required "computing" power for many of the above upgrades, it was necessary to modify, compile and test "ALL" simulation models and executives. This required 16 man-months of software modifications and testing.

A new Certification Testing Schedule has been developed to implement the changes associated with newly developed malfunctions and those which changed due to the upgrading of the simulation models. The new schedule provides for the required 25%/yr testing and the annual operability testing as identified in Appendix A & B of ANS-3.5-1985, and Reg. Guide 1.149, 1987.

The descriptions of most malfunctions were changed slightly to provide consistency between the Instructor Station display, Cause & Effect documents, test procedures (MTP's & PTP's) and the Certification Testing Schedule.

The PTP's which were duplicates of MTP's on the original testing schedule have been deleted. The associated test being performed will remain the same. The PTP's have been re-numbered, as identified on the new testing schedule.

B. Specific

The following MTP's were previously identified as "spares" but are now designated as malfunction additions as follows:

- MTP-045, Uncontrolled Rod Insertion In Automatic Control
- MTP-049, Ejection of Any Rod
- MTP-055, 1st Stage Pressure Transmitter PT505 Fails Hi/Lo
- MTP-056, 1st Stage Pressure Transmitter PT506 Fails Hi/Lo
- MTP-062, 21(22) Safety Injection Pump Trip
- MTP-094, 21A(B), 22A(B), 23A(B), Condenser Tube Leak
- MTP-113, Condenser Dump Valve 2CN56 Fails Open/Closed
- MTP-164, Main Generator Electrical Fault
- MTP-183, 23 Aux. FW Pump Overspeed Trip
- MTP-208, 21(22) Charging Pump Trip
- MTP-266, 21(22) MG Set Reverse Current Trip

MTP-048 has been spared; its malfunction, "Rod Misalignment, Failure of RCCA H-12 Bank D to Move" has been incorporated into MTP-064, "Any Rod(s) Fails to Trip (Stuck)."

MTP-051, MTP-052 and MTP-053 are now incorporated into one (1) malfunction, MTP-267, "Any Rod(s) Inadvertently Drops."

MTP-065 was previously identified as "Control Rod 1D4 Stuck"; it is now incorporated into the "Any Rod(s) Fails To Move (Elect)" malfunction. The MTP # (065) remains the same.

MTP-078 and MTP-079 have swapped test numbers; MTP-078 is now designated "21(22,23,24) Steam Generator Tube Rupture" and MTP- 079 is now spared.

MTP-122 is now incorporated into MTP-121 and MTP-122 is now spared.

MTP-219, "Loss of Cntl Air (Lk Between 2CA39 & 2CA54)" is now designated as a spare.

C. Initial Certification (Dec., 1989) Submittal Exceptions

Two of the requested *Exceptions to the Standard* for the initial certification submittal as identified in PSE&G's follow-up letter to the USNRC, NLR-N90163, dated August 09, 1990, are no longer required.

Comment #4 - Due to the overhead annunciator (OHA) upgrade design change at both Units, the differences in the OHA's for Unit 1 compared to the simulator are slight. The Unit 2 OHA's are identical to those in the simulator. These have been determined to have **no** impact on simulator training or examinations, and therefore is no longer considered an exception.

Comment #10 - Due to the upgrades to the PA system, radios and telephones, they are now identical to the reference plant. Therefore, this item is no longer considered an exception.

SALEM SIMULATOR

4-Year Certification Report

VIII. EXCEPTIONS TO ANS-3.5-1985 & REG. GUIDE 1.149, 1987

This section denotes the identified *Exceptions to the Standard*, for the Salem Generating Station Simulation Facility, as applicable to Salem Generating Units 1 & 2. Although certified as a dual-unit simulation facility, the PSE&G Salem simulator is generally upgraded to match those changes associated with the Unit 2 control room. All existing differences between the two (2) units and the simulator are reviewed, evaluated and re-prioritized for upgrade, as appropriate, based on the engineering and training value assessment.

The following addresses those exceptions as applicable to Unit 1, Unit 2 and common for both, with the justification for each.

UNIT 1 (Salem Simulator vs. SGS Unit 1 Control Room)

- **Hardware Differences** - the following identifies the **significant** hardware differences as of December, 1993:

EXCEPTION - IRP4 contains an extra row of status lights for the "recirculation mode." The simulator has none.

JUSTIFICATION - The simulator reflects the Unit 2 control room in this area and has no training or examination impact.

EXCEPTION - The ICC3 and IRP6 panels are presently being modified for the new electrical switchyard upgrade design change. The simulator has not yet been changed to reflect these modifications.

JUSTIFICATION - The simulator is scheduled in 1994 to undergo the various modifications associated with the switchyard upgrade and will precede Unit 2 in this design change.

EXCEPTION - IRP6 contains the controls for the gas turbine (Unit 3).

JUSTIFICATION - The simulator reflects the Unit 2 control room in this area and has no training or examination impact.

EXCEPTION - The controls on ICC3 for the main generator are for a Westinghouse generating unit.

JUSTIFICATION - The simulator reflects the Unit 2 control room for the controls of a General Electric generator and has no training or examination impact.

UNIT 1 (cont.)

EXCEPTION - The chemistry recorders previously installed in 1RP2 no longer exist.

JUSTIFICATION - The simulator reflects the Unit 2 control room in this area and has no training or examination impact. (The simulator is scheduled to precede Unit 2 in this area due to a design change in progress.)

UNIT 2 (Salem Simulator vs. SGS Unit 2 Control Room)

- **Hardware Differences** - the following identifies the **significant** hardware differences as of December, 1993:

EXCEPTION - Panel 2RP7 has the Generator Monitoring System located on top of the panel. The simulator does not have this item.

JUSTIFICATION - This system has no training or examination impact, and, as a result, is not currently installed.

UNIT 1 & UNIT 2 (Salem Simulator vs. SGS Units 1 & 2 - Common)

- **Hardware Differences** - the following identifies the **significant** hardware differences as of December, 1993:

EXCEPTION - The rod counters in both Units have the mechanical-type rod counters. The simulator has new LCD rod counters.

JUSTIFICATION - The simulator preceded the plant on this design change and both Units are in the process of replacing the mechanical type counters with the same LCD type as in the simulator.

EXCEPTION - The Radiation Monitoring System (RMS) on the 1(2)RP1 panels at both Units is considerably different than that of the simulator.

JUSTIFICATION - The RMS in the simulator more closely resembles Unit 1 than Unit 2. The simulator is currently being upgraded to reflect the system as it appears in Unit 2 at this point in time. However, both Units are currently undergoing further design changes with the RMS and may result in Unit vs. simulator differences which deviate from those identified as of December, 1993.

UNIT 1 & UNIT 2 (cont.)

• **Malfunction Testing at Approximately 25% Per Year**

EXCEPTION - All malfunctions identified on the initial certification test schedule were not tested at the rate of approximately 25%/year.

JUSTIFICATION - With the development and integration of new state-of-the-art models (see section VII, "CHANGES SINCE LAST REPORT"), simulator system and transient response fidelity displayed immediate improvements. This required substantial SRO evaluations and rewrites of Malfunction/Performance Test procedures. As a result, the initial identified malfunctions were not tested at the rate of 25% per year, but all were completed within the four (4) year period. The actual rate of testing was as follows:

1989 = 23%
1990 = 23%
1992 = 15%
1993 = 39%

NOTE: Although Reg. Guide 1.149, 1987 specifies periodic testing of those malfunctions identified in section 3.1.2 (ANS-3.5-1985), our test program identifies all available malfunctions as part of the 25%/yr periodic testing.

• **Section 3.1.2 Malfunctions**

EXCEPTION - No validated malfunction currently exists for a loss of instrument air. (3.1.2(2))

JUSTIFICATION - The control and station air simulation models are currently being upgraded and include four (4) new development malfunctions. These will be incorporated into the training load in 1994 and are identified as follows:

"BREAK IN CONTROL AIR HEADER 2A"
"#2 STATION AIR COMPRESSOR TRIP"
"BREAK IN CONTAINMENT AIR HEADER 2A"
"BREAK IN CONTAINMENT AIR HEADER 2B"

EXCEPTION - No validated malfunction currently exists for a loss of DC. (3.1.2(3))

JUSTIFICATION - The 125V and 28V DC simulation models are scheduled to be upgraded to ensure the correct DC power supplies and failure mode response to the existing and newly upgraded simulation models for a loss of DC.

SALEM SIMULATOR

4-Year Certification Report

IX. REPORTING REQUIREMENTS PER 10CFR55.45

A. Uncorrected Test Failures and Schedule for Completion -

Attachment A identifies all uncorrected test failures, and the schedule for the satisfactory completion of the identified test failures.

B. Description of Completed Testing -

Attachment B gives a brief description of the testing which was performed over the last four (4) years as per the *initial test schedule*.

C. Description of Testing for the Next Four (4) Years -

Attachment C gives a brief description of the simulator testing to be completed over the next four (4) years.

D. Schedule of Testing for the Next Four (4) Years -

Attachment C also identifies the new certification testing schedule which segregates all simulator testing into 25%/yr for the Appendix A items of ANS-3.5 and once/yr for the Appendix B annual operability items of ANS-3.5, as applicable.

UNCORRECTED TEST FAILURES

&

SCHEDULE FOR COMPLETION

A. Uncorrected Test Failures:

TEST #	DESCRIPTION
MTP-010	21 (22,23,24) Reactor Coolant Pump Binding Shaft
MTP-076	Lube Oil TCV 21(22)ST28 Fails Open/Closed
MTP-103	21A (22B,22C) Low Pressure FW Heater Tube Leak
MTP-158	Loss of 2A 125V DC Bus
MTP-159	Loss of 2B 125V DC Bus
MTP-160	Loss of 2C 125V DC Bus
MTP-167	Automatic Voltage Regulator Fails High/Low

All of the above malfunctions have been designated NOT VALID for training or examinations until the associated identified problems have been corrected and satisfactorily retested.

B. Schedule for Completion:

All of the above identified malfunctions which have been designated NOT VALID for training are scheduled to be corrected and satisfactorily re-tested within the 1st quarter of 1994, except for MTP-158, 159 & 160. Due to the extensive research and manpower involved in the upgrade of the 125V DC models, they are scheduled to be corrected and satisfactorily re-tested by the end of 1994.

This schedule for completion for the uncorrected test failures identified above is established to ensure their timely re-validation for use in simulator training and examinations. However, simulator upgrade priorities, as designated by the Nuclear Training Department, may result in some of these failures not being corrected until sometime in 1995.

SALEM SIMULATOR

Initial Certification Test Schedule Description

In accordance with 10CFR55.45(b)(5)(vi), this attachment provides a brief description of the tests completed for the simulator over the past four (4) years, as per the *initial test schedule*.

The initial schedule is maintained as a "Quarterly Report" form in the simulator database system to reflect the current status of test completion dates. This schedule will remain in effect until the end of December, 1993. The new Certification Testing Schedule (Attachment C) will begin as of January, 1994.

This attachment (B) is comprised of the following fields:

EVENT # - This identifies the Malfunction or Performance Test Procedure number.

MALF # - This identifies the actual malfunction number being used for a particular test.

MALFUNCTION DESCRIPTION - This field gives the brief description of the malfunction or performance test which was completed.

INITIAL VALIDATION - This field identifies when the malfunction or performance test was initially completed.

DATE LAST TESTED - This field identifies the date when a particular malfunction or performance test was last tested. This does **not** imply the only date a MTP or PTP was tested. Due to the many upgrades of the simulation models over the past four (4) years, a particular test may have been run several times as part of the verification and validation process following a system upgrade or discrepancy resolution.

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-001	001	REACTOR COOLANT SYSTEM INTERMEDIATE LEG RUPTURE OF NO. 21,22,23,24 (DOUBLE ENDED BREAK)	PTP-008	05/27/93
MTP-002	002	RCS LEAK INTO CONTAINMENT	03/05/89	08/21/91
MTP-003	003	LOSS OF REACTOR COOLANT PUMP NO. 21 OR 22	PTP-005	02/22/93
MTP-004	004	LOSS OF REACTOR COOLANT PUMP 23 OR 24	01/23/89	02/23/93
MTP-005	005	RCP 21,22,23 OR 24 SHEARED SHAFT	03/07/89	03/05/93
MTP-006	006	SPARE		
MTP-007	007	RCP 21,22,23 OR 24 NUMBER 1 SEAL FAILURE	07/22/89	10/19/91
MTP-008	008	RCP 21,22,23 OR 24 NUMBER 2 SEAL FAILURE	07/22/89	10/19/91
MTP-009	009	RCP 21,22,23 OR 24 NUMBER 3 SEAL FAILURE	07/22/89	09/21/93
MTP-010	010	RCP 21,22,23 OR 24 BINDING SHAFT	07/22/89	
MTP-011	011	RCP 21,22,23 OR 24 LOSS OF CCW TO THE UPPER LUBE OIL COOLER	07/22/89	08/06/91
MTP-012	012	RCP 21,22,23 OR 24 HIGH VIBRATION	07/22/89	04/05/93
MTP-013	013	RCP 21,22,23 OR 24 THERMAL BARRIER FAILURE	03/08/89	09/21/93
MTP-014	014	LOOP 21,22,23 OR 24 HOT LEG RTD OUT OF CALIBRATION	01/30/89	04/05/93
MTP-015	015	LOOP 21,22,23 OR 24 COLD LEG RTD OUT OF CALIBRATION	01/30/89	04/05/93
MTP-016	016	NARROW RANGE PRESSURIZER PRESSURE CONTROL TRANSMITTER NO. 457 OUT OF CALIBRATION	PTP-022	03/30/93
MTP-017	017	HOT CALIBRATED PRESSURIZER LEVEL TRANSMITTER NO. LT 461 OUT OF CALIBRATION, HIGH/LOW	PTP-025	08/31/90
MTP-018	018	PRESSURIZER POWER OPERATED RELIEF VALVE 2PR1 OR 2PR2 DEVELOPS VARIABLE LEAK	PTP-010	03/19/93
MTP-019	019	PRESSURIZER SPRAY VALVE 2PS1, 2PS3 FAILS OPEN/CLOSED	PTP-024	09/28/91
MTP-020	020	PRESSURIZER SAFETY VALVE 2PR3,2PR4, OR 2PR5 FAILS OPEN/CLOSED	PTP-013	03/24/93
MTP-021	021	PRESSURIZER AUXILIARY SPRAY VALVE FAILS OPEN	03/17/89	10/19/91
MTP-022	022	SPARE		
MTP-023	023	PRESSURIZER BACKUP HEATER 22 FAILURE	01/31/89	02/22/93
MTP-024	024	SPARE		
MTP-025	025	LOSS OF COMPONENT COOLING WATER TO NO. 21, 22, RHR HEAT EXCHANGER (VALVE 21CC15, 2CC15 FAILS CLOSED)	05/03/89	05/14/90
MTP-026	026	LOSS OF RESIDUAL HEAT REMOVAL PUMP NO. 21, 22 (ELECTRICAL TRIP)	PTP-020	08/19/93
MTP-027	027	LETDOWN LEAK INTO CONTAINMENT	04/14/89	10/24/91
MTP-028	028	LETDOWN ISOLATION VALVE 2CV277 FAILURE	03/16/89	09/27/93
MTP-029	029	CCW FLOW CONTROL VALVE TO THE LETDOWN HEAT EXCHANGER FAILURE	03/30/89	09/10/90
MTP-030	030	RCS LEAK INTO CCW THROUGH A TUBE LEAK IN THE LETDOWN HEAT EXCHANGER	05/08/89	10/19/91
MTP-031	031	RCP SEAL INJECTION FLOW CONTROLLER (2CV71) FAILURE	03/16/89	03/13/92
MTP-032	032	BLENDER BORIC ACID FLOW CONTROLLER FAILURE	03/28/89	09/27/93
MTP-033	033	BLENDER PRIMARY WTR FLOW CONTROLLER FAILURE	05/15/89	05/14/90

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-034	034	23 CHARGING PUMP TRIP	03/07/89	08/06/91
MTP-035	035	MASTER CHARGING FLOW CONTROLLER FAILURE	03/17/89	03/13/92
MTP-036	036	VCT LEVEL TRANSMITTER LT-114 FAILURE	03/29/89	11/15/93
MTP-037	037	VCT LEVEL TRANSMITTER LT-112 FAILURE	05/08/89	05/16/90
MTP-038	038	SPARE		
MTP-039	039	VOLUME CNTL TNK RELIEF VALVE 2CV241 FAILURE	03/16/89	11/12/93
MTP-040	040	FUEL LEAK PRODUCING VARIABLE CONCENTRATION OF FISSION PRODUCTS IN RX COOLANT SYSTEM	PTP-027	04/01/93
MTP-041	041	SPARE		
MTP-042	042	SPARE		
MTP-043	043	CHARGING LINE LEAK (INSIDE AUXILIARY BLDG)	PTP-012	10/22/91
MTP-044	044	UNCONTROLLED CONTINUOUS ROD WITHDRAWAL: IN MANUAL CONTROL	03/07/89	07/19/93
MTP-045	045	SPARE		
MTP-046	046	SPARE		
MTP-047	047	SPARE		
MTP-048	048	ROD MISALIGNMENT, FAILURE OF RCCS H-12 BANK "D" TO MOVE	PTP-023	08/26/91
MTP-049	049	SPARE		
MTP-050	050	SPARE		
MTP-051	051	DROPPED RCCA	PTP-023	08/29/93
MTP-052	052	DROPPED CONTROL ROD 2B4	04/25/89	08/29/93
MTP-053	053	DROPPED CONTROL ROD 2B1	04/25/89	08/29/93
MTP-054	054	SPARE		
MTP-055	055	SPARE		
MTP-056	056	SPARE		
MTP-057	057	CONTROL RODS FAIL TO MOVE ON DEMAND (AUTOMATIC AND MANUAL)	PTP-023	07/19/93
MTP-058	058	FAILURE OF AUTOMATIC REACTOR TRIP	PTP-033	08/19/93
MTP-059A	059A	FAILURE OF MANUAL REACTOR TRIP	PTP-059A	08/19/93
MTP-059B	050B	FAILURE OF MANUAL SI/REACTOR TRIP	12/11/89	08/19/93
MTP-060	060	SPARE		
MTP-061	061	ROD CONTROL SPEED PROGRAM FAILURE	02/14/89	08/19/93
MTP-062	062	SPARE		
MTP-063	063	SPARE		
MTP-064	064	STUCK ROD	12/15/89	08/19/93
MTP-065	065	CONTROL ROD 1D4 STUCK	02/14/89	07/18/93
MTP-066	066	TRB TRIP DUE TO FAILURE OF 2OET SOLENOID VLV	02/23/89	08/19/93
MTP-067	067	EHC SPEED REFERENCE CHANNEL FAILURE	02/15/89	05/13/90
MTP-068	068	EHC MAIN SPEED CHANNEL FAILURE	02/15/89	08/07/91
MTP-069	069	FAILURE OF TURBINE TO TRIP	04/11/89	04/07/93
MTP-070	070	EHC LOAD REFERENCE CHANNEL FAILURE	02/22/89	09/06/93
MTP-071	071	LOAD CHAN (IMPULSE PRESS TRANSDUCER) FAILURE	02/22/89	05/14/90
MTP-072	072	DC POWER SUPPLY FAILURE TO EHC SYSTEM	03/09/89	08/07/91
MTP-073	073	FAILURE OF EHC MAN TRACKING OF AUTO SIGNAL	02/27/89	03/16/92

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-074	074	SPARE		
MTP-075	075	MAIN TURBINE LOSS OF LUBE OIL	03/08/89	09/06/93
MTP-076	076	LUBE OIL TEMPERATURE HIGH/LOW	05/09/89	05/16/90
MTP-077	077	LUBE OIL PRESSURE LOW	03/09/89	08/07/91
MTP-078	078	SPARE		
MTP-079	079	STEAM GEN TUBE RUPTURE (NO. 21,22,23,24)	PTP-011	03/23/93
MTP-080	080	MEGAWATT TRANSDUCER FAILS HIGH/LOW (INPUT TO EHC)	03/09/89	11/11/93
MTP-081	081	TURBINE CONTROL VALVE 21,22,23, OR 24 MS29 FAILS OPEN/CLOSED	02/22/89	05/14/90
MTP-082	082	TURBINE CONTROL VALVE 21,22,23, OR 24 MS29 FAILS AS IS	02/22/89	08/08/91
MTP-083	083	TURB HIGH VIBRATION LOW PRESS SECTION NO. 23	05/08/89	11/12/93
MTP-084	084	SPARE		
MTP-085	085	LOSS OF TURBINE TURNING GEAR MOTOR	02/23/89	09/06/93
MTP-086	086	LOSS OF VACUUM (DUE TO AIR INLEAKAGE)	PTP-018	10/30/91
MTP-087	087	SPARE		
MTP-088	088	MAIN STEAM LINE RUPTURE UPSTEAM OF THE FLOW ORIFICE	03/16/89	07/22/91
MTP-089	089	FAILURE OF AUTOMATIC TURBINE RUNBACK TO STOP AFTER OTdT/OPdT CONCITION CLEARS	04/11/89	11/24/92
MTP-090	090	MAIN STEAM LINE RUPTURE INSIDE CONTAINMENT	PTP-009	07/22/91
MTP-091	091	MAIN STEAM LINE BREAK OUTSIDE CONTAINMENT	PTP-026	08/23/91
MTP-092	092	MSIV FAILURE (MS-167) OPEN/CLOSED	PTP-003	09/20/93
MTP-093	093	FAILURE OF TURBINE BYPASS VALVE CONTROL	PTP-032	10/27/92
MTP-094	094	SPARE		
MTP-095	095	STEAM GENERATOR LEVEL TRANSMITTER FAILURE	03/16/89	11/15/93
MTP-096	096	STEAM GENERATOR NO. 21,22,23 OR 24 FEED FLOW CHANNEL I TRANSMITTER FAILS	PTP-031	11/15/93
MTP-097	097	STEAM GENERATOR 21,22,23 OR 24 FEED FLOW CHANNEL II FAILURE	03/16/89	11/15/93
MTP-098	098	STEAM GENERATOR STEAM FLOW CHANNEL I TRANSMITTER FAILURE	03/15/89	03/16/92
MTP-099	099	STEAM GENERATOR STM FLOW CHANNEL II FAILURE	03/06/89	11/15/93
MTP-100	100	STEAM GENERATOR PRESSURE TRANSMITTER CHANNEL III (PT-526, PT-536) OR CHANNEL IV (PT-516, PT-546)	02/23/89	05/14/90
MTP-101	101	MAIN PRESSURE FEEDWATER HEATER NO. 26A, B, C TUBE LEAK	07/28/89	08/16/91
MTP-102	102	SPARE		
MTP-103	103	LOW PRESSURE FEEDWATER HEATER NO. 22A, 22B OR 22C TUBE LEAK	04/01/89	04/07/93
MTP-104	104	STEAM GENERATOR FEED PUMP NO. 21 OR 22 TRIP	PTP-021	11/14/93
MTP-105	105	SPARE		
MTP-106	106	SPARE		
MTP-107	107	FEEDWATER HEATER NO. 26A, B, OR C LEVEL CONTROL SWITCH LSHH FAILS CLOSED	05/04/89	05/16/90
MTP-108	108	SPARE		
MTP-109	109	SPARE		

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-110	110	FEEDWATER LINE BREAK, OUTSIDE CONTAINMENT	PTP-028	08/26/91
MTP-111	111	MAIN FEED LINE RUPTURE, INSIDE CONTAINMENT	PTP-029	11/12/93
MTP-112	112	HOTWELL NO. 22 LEVEL TRANSMITTER (LA-0487) FAILURE	08/15/89	11/11/93
MTP-113	113	SPARE		
MTP-114	114	LOSS OF CIRCULATING WATER PMP 21 (22-24) A, B	12/15/89	11/15/93
MTP-115	115	SPARE		
MTP-116	116	LOSS OF HEATER DRAIN PMP NO. 21,22,23 (ELECTRICAL TRIP)	04/13/89	08/08/91
MTP-117	117	LOSS OF CONDENSATE PUMP NO. 21, 22,23 (ELECTRICAL TRIP)	08/29/89	04/19/93
MTP-118	118	MAIN TURBINE STOP VALVE NO. 21,22,23, OR 24 MS28 FAILS OPEN/CLOSED	02/22/89	09/06/93
MTP-119	119	MAIN STEAM SAFETY VALVE 21,22,23 OR 24 MS14 FAILS OPEN	07/19/89	09/26/90
MTP-120	120	SPARE		
MTP-121	121	HEATER DRAIN TANK 2A,B,C LEVEL CONTROLLER LA 1D17Z, LA1D12Z) FAILS	07/27/89	08/08/91
MTP-122	122	HEATER DRAIN TANK NO. 2A,B,C LEVEL CONTROLLER LA 1D17, LA1D19, LA1D21 FAILS HIGH	12/15/89	N/A (DELETED)
MTP-123	123	GLAND SEAL REGULATOR FAILS CLOSED	05/03/89	11/12/93
MTP-124	124	CONDENSATE POLISHING DEMINERALIZER HIGH DIFFERENTIAL PRESSURE	03/23/89	05/14/90
MTP-125	125	SPARE		
MTP-126	126	MAIN FEEDWATER REGULATING VALVE 21,22,23 OR 24 BF19 FAILS	02/21/89	11/14/93
MTP-127	127	MAIN FEEDWATER BYPASS VALVE 21, 22,23 OR 24 BF40 FAILS	02/28/89	03/16/92
MTP-128	128	FAILURE OF STEAM GENERATOR FEED REGULATING VALVE BF19 TO RESPOND TO AUTOMATIC CONTROL (MANUAL OPERABLE)	02/28/89	11/14/93
MTP-129	129	MAIN STEAM RELIEF VALVE 21,22, 23 OR 23MS10	05/12/89	05/16/90
MTP-130	130	SPARE		
MTP-131	131	STEAM GENERATOR FEED PUMP (SGFP) MASTER CONTROLLER INPUT (PT-508) FAILURE	05/02/89	08/14/91
MTP-132	132	LOSS OF TURBINE AUXILIARY COOLING WATER PUMP NO. 21, 22, 23 (ELECTRICAL TRIP)	04/03/89	10/23/92
MTP-133	133	LOSS OF STATOR COOLING WATER PUMP NO. 21,22	05/04/89	11/11/93
MTP-134	134	LOSS OF ALL OFFSITE POWER	PTP-008	09/27/90
MTP-135	135	LOSS OF 21 STATION POWER TRANSFORMER	07/26/89	02/12/92
MTP-136	136	LOSS OF 22 STATION POWER TRANSFORMER	07/26/89	02/12/92
MTP-137	137	LOSS OF STATION POWER TRANSFORMER NO. 1	07/26/89	11/11/93
MTP-138	138	LOSS OF STATION POWER TRANSFORMER NO. 2	07/26/89	09/28/90
MTP-139	139	LOSS OF AUXILIARY POWER TRANSFORMER	06/08/89	08/09/91
MTP-140	140	LOSS OF 2H 4 KV GROUP BUS	07/27/89	11/14/92
MTP-141	141	LOSS OF 2E 4 KV GROUP BUS	07/27/89	11/14/93
MTP-142	142	LOSS OF 2G 4 KV GROUP BUS	07/27/89	09/28/90
MTP-143	143	LOSS OF 2F 4 KV GROUP BUS	07/27/89	09/03/91

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-144	144	LOSS OF 1A 4 KV VITAL BUS	06/21/89	10/29/92
MTP-145	145	LOSS OF 2B 4 KV VITAL BUS	06/12/89	11/14/93
MTP-146	146	LOSS OF 2C 4 KV VITAL BUS	PTP-015	02/18/92
MTP-147	147	LOSS OF VITAL INSTRUMENT BUS	PTP-016	02/17/92
MTP-148	148	LOSS OF VITAL INSTRUMENT BUS 2B	10/17/89	11/15/93
MTP-149	149	LOSS OF VITAL INSTRUMENT BUS 2C	10/17/89	11/15/93
MTP-150	150	LOSS OF VITAL INSTRUMENT BUS 2D	10/17/89	04/16/93
MTP-151	151	SPARE		
MTP-152	152	SPARE		
MTP-153	153	SPARE		
MTP-154	154	SPARE		
MTP-155	155	LOSS OF 2A 460/230 V VITAL BUSES	08/16/89	02/14/92
MTP-156	156	LOSS OF 2B 460/230 V VITAL BUSES	10/18/89	04/21/93
MTP-157	157	LOSS OF 2C 460/230 V VITAL BUSES	08/17/89	11/12/93
MTP-158	158	LOSS OF 2A 125 VDC BUS	10/14/89	11/15/93
MTP-159	159	LOSS OF 2B 125 VDC BUS	PTP-017	11/15/93
MTP-160	160	LOSS OF 2C 125 VDC BUS	10/15/89	11/15/93
MTP-161	161	EMERGENCY DIESEL GENERATOR 2A TRIP	06/08/89	09/06/93
MTP-162	162	EMERGENCY DIESEL GENERATOR 2B TRIP	06/08/89	05/17/90
MTP-163	163	EMERGENCY DIESEL GENERATOR 2C TRIP	08/17/89	08/12/91
MTP-164	164	SPARE		
MTP-165	165	SPARE		
MTP-166	166	SPARE		
MTP-167	167	AUTOMATIC VOLTAGE REGULATOR FAILURE	08/17/89	11/12/93
MTP-168	167	LOSS OF MAIN GENERATOR EXCITER	PTP-001	11/12/93
MTP-169	169	SPARE		
MTP-170	170	SPARE		
MTP-171	171	LOSS OF CONTAINMENT SPRAY PUMP NO. 21 OR 22	03/23/89	09/03/93
MTP-172	172	LOSS OF COMPONENT COOLING WATER PUMP NO. 21,22,23 (ELECTRICAL TRIP)	05/08/89	08/12/91
MTP-173	173	LOSS OF CONTAINMENT FAN COIL UNIT 21,22,23,24 OR 25	05/25/89	10/30/92
MTP-174	174	SPARE		
MTP-175	175	SPARE		
MTP-176	176	SPARE		
MTP-177	177	FALSE CONTAINMENT PHASE A ISOLATION SIGNAL (TRAIN A OR B)	05/31/89	11/17/93
MTP-178	178	SPARE		
MTP-179	179	SI ACCUMULATOR NO. 21,22,23 OR 24 WATER SPACE LEAK	08/03/89	09/28/90
MTP-180	180	SI ACCUMULATOR NO. 21,22,23 OR 24 GAS SPACE LEAK	05/03/89	08/12/91
MTP-181	181	LOSS OF AUXILIARY FEEDWATER PUMP NO. 21,22, (ELECTRICAL TRIP)	PTP-021	09/03/93
MTP-182	182	FAILURE OF PRESSURE OVERRIDE PROTECTION ON NO. 21,22 AUXILIARY FEEDWATER PUMP	04/24/89	09/03/93
MTP-183	183	SPARE		

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-184	184	FAILURE OF SAFETY INJECTION PUMP NO. 21,22 TO START ON SI SIGNAL	03/15/89	09/03/93
MTP-185	185	FAILURE OF CHARGING PUMP NO. 21,22 TO START UPON SAFEGUARD ACTUATION	03/15/89	09/03/93
MTP-186	186	SPARE		
MTP-187	187	FALSE OVERPOWER DELTA - T TRIP SIGNAL (TRAIN A OR B)	04/03/89	04/19/93
MTP-188	188	SPARE		
MTP-189	189	LOSS OF CONTROL POWER TO POWER RANGE CHANNEL N41, N42, N43 OR N44	03/09/89	09/05/93
MTP-190	190	SOURCE RANGE CHANNEL N31, N32 FAILS	03/09/89	5/15/90
MTP-191	191	"NOISY" - SOURCE RANGE CHANNEL N-31 OR N-32	03/15/89	08/13/91
MTP-192	192	LOSS OF INSTRUMENT POWER TO SOURCE RANGE	03/09/89	09/22/93
MTP-193	193	POWER RANGE CHANNEL N41, N42, N43, N44 FAILS	PTP-030	09/05/93
MTP-194	194	SOURCE RANGE CHANNEL N31, N32 DISCRIMINATOR SETTING HIGH/LOW	03/13/89	09/22/93
MTP-195	195	INTERMEDIATE RANGE CHANNEL N-35, N-36 COMPENSATING VOLTAGE HIGH/LOW	05/04/89	08/13/91
MTP-196	196	SPARE		
MTP-197	197	INTERMEDIATE RANGE CHANNEL N35, N36 NOISY	03/15/89	03/17/92
MTP-198	198	FAILURE OF INTERMEDIATE RANGE P-6 MANUAL BLOCK TO DEENERGIZE SOURCE RANGE DETECTORS	03/16/89	09/22/93
MTP-199	199	POWER RANGE CHANNEL N41, N42, N43, N44 NOISY	03/21/89	05/15/90
MTP-200	200	PROCESS RAD MONITOR 2R11A FAILS HIGH/LOW	05/01/89	08/20/91
MTP-201	201	PROCESS RAD MONITOR 2R12B FAILS HIGH/LOW	05/01/89	10/30/92
MTP-202	202	PROCESS RAD MONITOR 2R12A FAILS HIGH/LOW	05/01/89	11/12/93
MTP-203	203	PROCESS RAD MONITOR 2R41A FAILS HIGH/LOW	07/22/89	09/29/90
MTP-204	204	PROCESS RAD MONITOR 2R41B FAILS HIGH/LOW	05/04/89	08/20/91
MTP-205	205	PROCESS RAD MONITOR 2R41C FAILS HIGH/LOW	05/01/89	10/30/92
MTP-206	206	AREA RADIATION MONITOR 2R1A FAILS HIGH/LOW	05/01/89	11/12/93
MTP-207	207	PROCESS RAD MONITOR 2R1B FAILS HIGH/LOW	05/01/89	05/16/90
MTP-208	208	SPARE		
MTP-209	209	PROCESS RAD MONITOR 2R31 FAILS HIGH/LOW	05/01/89	08/20/91
MTP-210	210	NON 1 E AREA RADIATION MONITOR FAILURES 2R4, 2R5, 2R34 OR 2R42A	05/01/89	10/29/92
MTP-211	211	FAILURE OF NON 1E FILTER PROCESS MONITORS	05/01/89	11/12/93
MTP-212	212	FAILURE OF APD PUMP FOR 2R11A, 2R11B, AND 2R12A	04/03/89	05/15/90
MTP-213	213	SPARE		
MTP-214	214	SPARE		
MTP-215	215	LOSS OF SERVICE WATER PUMP NO. 21,22,23,24,25 OR 26	04/10/89	08/20/91
MTP-216	216	SERVICE WATER HEADER LEAK IN THE SERVICE WATER STRUCTURE	PTP-019	09/28/91
MTP-217	217	SERVICE WATER LEAK - 21,22 NUCLEAR HEADER PENETRATION AREA	08/17/89	11/12/93
MTP-218	218	SERVICE WATER LEAK IN CONTAINMENT ON NO. 23 CONTAINMENT FAN COIL UNIT	09/30/89	11/14/93
MTP-219	219	LOSS OF CNTL AIR (LK BETWEEN 2CA39 & 2CA54)	PTP-014	02/17/92

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
MTP-220	220	SPARE		
MTP-221	221	SPARE		
MTP-222	222	SPARE		
MTP-223A	223A	SEMI-AUTOMATIC SWAPOVER (TRAIN A) FAILS	04/12/89	10/30/92
MTP-223B	223B	SEMI-AUTOMATIC SWAPOVER (TRAIN B) FAILS	04/12/89	11/15/93
MTP-224	224	SPARE		
MTP-225	225	SPARE		
MTP-226	226	SPARE		
MTP-227	227	SPARE		
MTP-228	228	SPARE		
MTP-229	229	SPARE		
MTP-230	230	SPARE		
MTP-231	231	PROCESS RADIATION MONITOR 2R13A FAILS HIGH/LOW (21 FAN COIL UNIT SERVICE WATER MONITOR)	06/14/89	05/16/90
MTP-232	232	PROCESS RADIATION MONITOR 2R13B FAILS HIGH/LOW (22 & 24 FAN COIL UNIT SERVICE WATER MONITOR)	06/14/89	08/20/91
MTP-233	233	PROCESS RADIATION MONITOR 2R13C FAILS HIGH/LOW (23 & 25 FAN COIL UNIT SVC WTR MONITOR)	06/14/89	10/30/92
MTP-234	234	PROCESS RADIATION MONITOR 2R16 FAILS HIGH/LOW (PLANT VENT EFFLUENT MONITOR)	06/14/89	11/12/93
MTP-235	235	PROCESS RADIATION MONITOR 2R18 FAILS HIGH/LOW (LIQUID RADWASTE DISPOSAL MONITOR)	06/14/89	05/16/90
MTP-236	236	PROCESS RADIATION MONITOR 2R19A FAILS HIGH/LOW (NO. 21 STM GENERATOR BLOWDOWN MONITOR)	06/14/89	08/20/91
MTP-237	237	PROCESS RAD MONITOR 2R19B FAILS HIGH/LOW	06/14/89	10/30/92
MTP-238	238	PROCESS RAD MONITOR 2R19C FAILS HIGH/LOW	06/14/89	11/12/93
MTP-239	239	PROCESS RAD MONITOR 2R19D FAILS HIGH/LOW	06/14/89	05/16/90
MTP-240	240	PROCESS RAD MONITOR 2R44A FAILS HIGH/LOW	06/14/89	08/20/91
MTP-241	241	PROCESS RAD MONITOR 2R44B FAILS HIGH/LOW	06/14/89	10/30/92
PTP-001	168	REACTOR TRIP DUE TO MAIN GENERATOR TRIP	11/21/89	03/11/93
PTP-002	104	SIMULTANEOUS TRIP OF BOTH MFP'S	11/21/89	03/11/93
PTP-003	092	SIMULTANEOUS TRIP OF ALL MSIV'S	12/12/89	03/24/93
PTP-004	NONE	TRIP OF ALL RCP'S DUE TO LOSS OF CCW	12/17/89	03/11/93
PTP-005	003	21 AND 23 RCP TRIP	11/25/89	03/11/93
PTP-006	NONE	TURBINE TRIP WITHOUT REACTOR TRIP	11/25/89	03/12/93
PTP-007	NONE	MAXIMUM RATE POWER RAMP	12/01/89	03/15/93
PTP-008	001/ 134	LARGE BREAK LOCA WITH LOSS OF OFF-SITE POWER	11/25/89	03/22/93
PTP-009	090	MAIN STEAM LINE RUPTURE INSIDE CONTAINMENT	12/19/89	05/05/93
PTP-010	018	PRESSURIZER PORV STUCK OPEN	12/18/89	03/22/93
PTP-011	079	STEAM GENERATOR TUBE RUPTURE	11/26/89	04/02/93
PTP-012	043	CHARGING LINE LEAK	12/10/89	10/22/91
PTP-013	020	PRIMARY SAFETY VALVE STUCK OPEN	12/18/89	04/02/93
PTP-014	219/ 221	LOSS OF CONTROL AIR	12/17/89	10/01/91
PTP-015	146	LOSS OF 2C 4KV VITAL BUS	11/26/89	02/18/92
PTP-016	147	LOSS OF 2A 115 VAC BUS	11/26/89	02/17/92

**SALEM SIMULATOR
ANS-3.5-1985
QUARTERLY REPORT**

EVENT #	MALF #	MALFUNCTION DESCRIPTION	INITIAL VALIDATION	DATE LAST TESTED
PTP-017	159	LOSS OF 2B 125 VDC BUS	11/26/89	11/15/93
PTP-018	086	LOSS OF CONDENSER VACUUM	12/10/89	10/30/91
PTP-019	216	LOSS OF SERVICE WATER	11/27/89	09/28/91
PTP-020	026	LOSS OF RHR COOLING	11/27/89	09/28/91
PTP-021	104/ 181/ 183	LOSS OF ALL FEEDWATER	11/27/89	06/03/93
PTP-022	016	PRESSURIZER PRESSURE CHANNEL FAILURE	11/29/89	04/03/93
PTP-023	048/ 051/ 057/ 064	CONTROL ROD MALFUNCTIONS	11/29/89	08/26/91
PTP-024	019	PRESSURIZER SPRAY VALVE FAILS OPEN	11/29/89	09/28/91
PTP-025	017	PRESSURIZER LEVEL CHANNEL FAILURE	11/29/89	08/31/90
PTP-026	091	MAIN STEAM LINE RUPTURE OUTSIDE CONTAINMENT	11/29/89	08/23/91
PTP-027	040	FUEL CLADDING FAILURE	12/06/89	04/02/93
PTP-028	110	MAIN FEED LINE RUPTURE OUTSIDE CONTAINMENT	11/30/89	08/26/91
PTP-029	111	MAIN FEED LINE RUPTURE INSIDE CONTAINMENT	12/18/89	11/12/93
PTP-030	193	POWER RANGE NI CHANNEL FAILURE	11/30/89	02/14/92
PTP-031	096	STEAM GENERATOR FEEDWATER FLOW CHAN FAILURE	11/30/89	09/28/91
PTP-032	093	TURBINE BYPASS SYSTEM FAILURE	11/30/89	08/23/91
PTP-033	058/ 059	ANTICIPATED TRANSIENT WITHOUT A TRIP	12/11/89	10/05/91
PTP-N01	N01	COLD SHUTDOWN TO HOT STANDBY	09/21/89	06/24/93
PTP-N02	N02	HOT STANDBY TO MINIMUM LOAD	09/25/89	06/25/93
PTP-N03	N03	POWER OPERATION	09/07/89	06/21/93
PTP-N04	N04	MINIMUM LOAD TO HOT STANDBY	09/20/89	06/21/93
PTP-N05	N05	HOT STANDBY TO COLD SHUTDOWN	09/19/89	06/22/93
PTP-N06	N06	MAINTAINING HOT STANDBY	09/20/89	06/24/93
PTP-RT1	RT1	COMPUTER REAL TIME TEST	11/07/89	12/05/93
PTP-SS1	SS1	25% POWER	12/20/89	06/30/93
PTP-SS2	SS2	75% POWER	12/20/89	12/20/93
PTP-SS3	SS3	100% POWER	12/20/89	06/30/93
PTP-SS4	SS4	SIMULATOR STABILITY	11/21/89	03/29/93

SALEM SIMULATOR
Certification Testing Schedule
(SP-206)

In accordance with ANS-3.5, 1985 and Regulatory Guide 1.149, 1987, simulator testing is performed to demonstrate simulator performance, stability and operability.

The Certification Testing Schedule provides the frequencies of the various tests performed to ensure the above requirements are satisfied.

The following provides an overview of the testing performed for verification of simulator performance, stability and operability:

<u>TYPE OF TEST</u>	<u>FREQUENCY</u>
· Drift Verification	Annually
· Steady State Verification	Annually
· Computer Real Time	Annually
· ANS-3.5, Appendix B Transients	Annually
· Malfunctions	25%/Year
· FSAR Transients	25%/Year
· Configuration Update	As Required
· Normal Operations (Startup/Shutdown) (Safety-Related Surv.) (Core Performance Tests)	25%/Year

The Certification Testing Schedule is presented as a "Quarterly Report" form and is maintained in the simulator database system to accurately reflect the current status of test completion dates. The Quarterly Report form is comprised of the following fields:

TEST # - the Performance or Malfunction test identification number.

MALF # - identifies the malfunction identification number (if applicable)

TEST DESCRIPTION - description or title of the test

OFFSET YEAR - a number of 1 to 4 which identifies which year of the four year rotation the test is scheduled to be evaluated/validated. The base year is 1989 for Salem; 1 identifies 1990, etc. If a test is identified as an annual operability test, then a zero (0) is entered here.

SCHEDULED TEST DATE - identifies the month within the current 4-year cycle when a particular test should be validated to ensure timely completion.

DATE LAST TESTED - identifies the date a test was last validated. This may not coincide with the scheduled test date if a test is being performed early for verification of simulator modifications, changes in computer environment, etc. A historical file will be maintained in the database to capture every time a particular test was run during the 4-year period.

IMPACT - this field identifies any impact a particular test may have, as follows:

- D - DUE - indicates a test is due in the current month
- O - OVERDUE - indicates a test is overdue as of the end of the month in which it was due.
- E - EXCEPTION - indicates a test has become an exception to ANS-3.5 as a result of being greater than 1 year overdue from the year in which it was due to be validated, requiring an update to Appendix 19 (SP-206). For example, if a test was due to be revalidated in May of 1993, it would not become an "exception" until after December of 1994.

STATUS SAT/UNSAT - this field identifies whether or not a particular test was last performed satisfactorily; this also identifies those malfunctions which are UNSAT as **NOT VALID** for training or examinations.

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-001	MRC001F	RCS RUPTURE OF RC LOOP 21 922,23,24) (DOUBLE ENDED BREAK)	1	1/94			
MTP-002	MRC002F	RCS LEAK INTO CONTAINMENT	2	1/95			
MTP-003	MRC003F	21 (22) RC PUMP ELECTRICAL TRIP	3	1/96			
MTP-004	MRC004F	23 (24) RC PUMP ELECTRICAL TRIP	4	1/97			
MTP-005	MRC005F	21 (22,23,24) RC PUMP SHEARD SHAFT	1	2/94			
MTP-007	MRC007F	21 (22,23,24) RC PUMP - #1 SEAL FAILS	2	2/95			
MTP-008	MRC008F	21 (22,23,24) RC PUMP - #2 SEAL FAILS	3	2/96			
MTP-009	MRC009F	21 (22,23,24) RC PUMP - #3 SEAL FAILS	4	2/97			
MTP-010	MRC010F	21 (22,23,24) RC PUMP - BINDING SHAFT	1	3/94			
MTP-011	MRC011F	21 (22,23,24) RC PUMP - LOSS OF CCW TO THE UPPER LUBE OIL COOLER	2	3/95			
MTP-012	MRC012F	21 (22,23,24) RC PUMP - HIGH VIBRATION	3	3/96			
MTP-013	MRC013F	21 (22,23,24) RC PUMP - THERMAL BARRIER FAILS	4	3/97			
MTP-014	MTR014F	LOOP 21 (22,23,24) HOT LEG RTD AVG SUMMATOR FAILS	1	4/94			
MTP-015	MTR015F	LOOP 21 (22,23,24) COLD LEG RTD FAILS HI/LO	2	4/95			
MTP-016	MTR016F	PZR PRESSURE CH I (PT 455)/CH III (PT 457) FAILS HI/LO	3	4/96			
MTP-017	MTR017F	PZR LEVEL CH I (LT 459)/CH III (LT 461) FAILS HI/LO	4	4/97			
MTP-018	MRC018F	PZR POWER OPERATED RELIEF VALVE 2PR1 (2PR2) DEVELOPS LEAK	1	5/94			
MTP-019	MRC019F	PRESSURIZER SPRAY VALVE 2PSI (2PS3) FAILS OPEN/CLOSED	2	5/95			
MTP-020	MRC020F	PRESSURIZER SAFETY VALVE 2PR3 (2PR4,2PR5) FAILS OPEN/CLOSED	3	5/96			
MTP-021	MRC021F	PZR AUX SPRAY VALVE 2CV75 FAILS OPEN/CLOSED	4	5/97			
MTP-023	MRC023F	PRESSURIZER BACKUP HEATER 22 FAILS TO ENERGIZE	1	6/94			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-025	MRC025F	LOSS OF COMPONENT COOLING WATER TO 21 (22) RHR HEAT EXCHANGER	3	8/96			
MTP-026	MRC026F	21 (22) RESIDUAL HEAT REMOVAL PUMP TRIP	4	8/97			
MTP-027	MRC027F	LETDOWN LEAK IN CONTAINMENT BETWEEN 2CV2/2CV277	1	7/94			
MTP-028	MRC028F	LETDOWN ISOL VALVE 2CV277 FAILS OPEN/CLOSED	2	7/95			
MTP-029	MRC029F	LETDOWN HX FCV 2CC71 FAILS OPEN/CLOSED	3	7/96			
MTP-030	MRC030F	TUBE LEAK IN LETDOWN NON-REGEN HX	4	7/97			
MTP-031	MRC031F	RCP SEAL INJECTION FCV 2CV71 FAILS OPEN/CLOSED	1	8/94			
MTP-032	MRC032F	BORIC ACID FLOW CONTROLLER FAILS HI/LO	2	8/95			
MTP-033	MRC033F	PRIMARY WTR FLOW CONTROLLER FAILS HI/LO	3	8/96			
MTP-035	MRC035F	CHARGING MASTER FLOW CONTROLLER FAILS HI/LO	1	9/94			
MTP-036	MTR036F	VCT LEVEL TRANSMITTER LT-114 FAILS HI/LO	2	9/95			
MTP-037	MTR037F	VCT LEVEL TRANSMITTER LT-112 FAILS HI/LO	3	9/96			
MTP-039	MRC039F	VCT RELIEF VALVE 2CV241 FAILS OPEN	4	9/97			
MTP-040	MRC040F	FUEL ELEMENT FAILURE (0-50 PINS)	1	10/94			
MTP-043	MRC043F	CHARGING LINE LEAK INSIDE AUXILIARY BLDG	2	10/95			
MTP-044	MRD044F	UNCONTROLLED ROD WITHDRAWAL IN MANUAL CONTROL	2	6/95			
MTP-045	MRD045F	UNCONTROLLED ROD INSERTION IN AUTOMATIC CONTROL	3	6/96			
MTP-049	MRD049F	EJECTION OF ANY ROD	4	6/97			
MTP-055	MSS055F	1ST STAGE PRESSURE TRANSMITTER PT505 FAILS HI/LO	4	3/97			
MTP-056	MSS056F	1ST STAGE PRESSURE TRANSMITTER PT506 FAILS HI/LO	1	4/94			
MTP-057	MRD057F	CONTROL RODS FAIL TO MOVE IN AUTOMATIC OR MANUAL CONTROL	1	7/94			
MTP-058	MRD058F	FAILURE OF AUTOMATIC REACTOR TRIP	1	9/94			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-059A	MRD059F	FAILURE OF MANUAL REACTOR TRIP	2	9/95			
MTP-059B	MRD059F	FAILURE OF MANUAL SI/REACTOR TRIP	3	9/96			
MTP-061	MRD061F	ROD SPEED CONTROL PROGRAM FAILURE	2	7/95			
MTP-062	MRD062F	21 (22) SAFETY INJECTION PUMP TRIP	4	9/97			
MTP-064	MRD064F	ANY ROD(S) FAILS TO TRIP (STUCK)	3	7/96			
MTP-065	MRD065F	ANY ROD(S) FAILS TO MOVE (ELECT)	4	7/97			
MTP-066	MSS066F	MAIN TURBINE INADVERTENTLY TRIPS	2	4/95			
MTP-067	MSS067F	EHC SPEED REFERENCE CHANNEL FAILURE	1	1/94			
MTP-068	MSS068F	EHC MAIN SPEED CHANNEL FAILURE	2	1/95			
MTP-069	MSS069F	MAIN TURBINE FAILS TO AUTO TRIP	1	10/94			
MTP-070	MSS070F	EHC LOAD REFERENCE CHANNEL FAILURE	3	1/96			
MTP-071	MSS071F	EHC LOAD CHANNEL FAILURE	4	1/97			
MTP-072	MSS072F	DC PWR SUPPLY FAILURE TO EHC SYS, TRN A(B)	1	2/94			
MTP-073	MSS073F	EHC MANUAL TRACKING OF AUTO SIGNAL FAILS HIGH/LOW	2	2/95			
MTP-075	MSS075F	MAIN TURBINE LOSS OF LUBE OIL	3	4/96			
MTP-076	MSS076F	LUBE OIL TCV 21(22) ST28 FAILS OPEN/CLOSED	4	4/97			
MTP-077	MSS077F	MAIN TURBINE LUBE OIL PRESSURE LOW	1	5/94			
MTP-078	MSS078F	21 (22,23,24) STEAM GENERATOR TUBE RUPTURE	4	10/97			
MTP-080	MSS080F	EHC MW TRANSDUCER FAILS HI/LO	3	2/96			
MTP-081	MSS081F	21 (22,23,24) MS29 TURBINE CONTROL VALVE FAILS OPEN/CLOSED	2	5/95			
MTP-082	MSS082F	21 (22,23,24) MS29 TURBINE CONTROL VALVE FAILS AS IS	3	5/96			
MTP-083	MSS083F	MAIN TURBINE HIGH VIBRATION - BEARING #7 (8)	4	5/97			
MTP-085	MSS085F	MAIN TURBINE TURNING GEAR MOTOR TRIP	1	6/94			
MTP-086	MSS086F	LOSS OF MAIN CONDENSER VACUUM	2	12/95			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-088	MSS088F	MAINSTEAM LINE (21 SG) (22,23,24) RUPTURE	1	11/94			
MTP-089	MSS089F	AUTOMATIC TURBINE RUNBACK FAILS TO STOP	2	6/95			
MTP-090	MSS090F	MAIN STEAM LINE 21 (22,23,24) BREAK IN CONTAINMENT	2	11/95			
MTP-091	MSS091F	MAIN STEAM LINE BREAK OUTSIDE CONTAINMENT	3	11/96			
MTP-092	MSS092F	MSIV 21 (22,23,24) MS167 FAILS OPEN/CLOSED	4	11/97			
MTP-093	MSS093F	LOSS OF STEAM DUMP CONDENSER CONDENSER VACUUM PERMISSIVE	3	6/96			
MTP-094	MSS094F	21A(B), 22A(B), 23A(B) CONDENSER TUBE LEAK	2	9/95			
MTP-095	MTR095F	21 (22,23,24) SG LEVEL XMTR CH I (LT529/539)/CH II (LT519/549) FAILS HIGH/LOW	3	12/96			
MTP-096	MTR096F	21 (22,23,24) SG FEED FLOW CH I (FT510,520,530,540) FAILS HIGH/LOW	4	12/97			
MTP-097	MTR097F	21 (22,23,24) SG FEED FLOW CH II (FT511,521,531,541) FAILS HIGH/LOW	1	1/94			
MTP-098	MTR098F	21 (22,23,24) SG STM FLOW CH I (FT512,522,532,542) FAILS HIGH/LOW	2	1/95			
MTP-099	MTR099F	21 (22,23,24) SG STM FLOW CH II (FT513,523,533,543) FAILS HIGH/LOW	3	1/96			
MTP-100	MTR100F	21 (22,23,24) SG PRESS XMTR CH III (PT526/536)/CH IV (PT516/546) FAIL HIGH/LOW	4	1/97			
MTP-101	MSS101F	26A(B,C) HIGH PRESSURE FW HEATER TUBE LEAK	1	2/94			
MTP-103	MSS103F	22A(B,C) LOW PRESSURE FW HEATER TUBE LEAK	2	2/95			
MTP-104	MSS104F	21 (22) STEAM GENERATOR FEED PUMP TRIP	3	2/96			
MTP-107	MSS107F	26A(B,C) HIGH PRESSURE FW HEATER LEVEL SWITCH (LSHH) FAILS CLOSED	4	2/97			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-110	MSS110F	21 (22,23,24) FW LINE BREAK OUTSIDE CONTAINMENT	1	3/94			
MTP-111	MSS111F	21 (22,23,24) FW LINE BREAK INSIDE CONTAINMENT	2	3/95			
MTP-112	MSS112F	HOTWELL LEVEL XMTR LA-0487 FAILS HI/LO	3	3/96			
MTP-113	MSS113F	CONDENSER DUMP VALVE 2CN56 FAILS OPEN/CLOSED	4	3/97			
MTP-114	MWS114F	21A(B), 22A(B), 23A(B) CIRCULATING WATER PUMP TRIP	3	9/96			
MTP-116	MSS116F	21 (22,23) HEATER DRAIN PUMP TRIP	1	4/94			
MTP-117	MSS117F	21 (22,23) CONDENSATE PUMP TRIP	2	4/95			
MTP-118	MSS118F	21 (22,23,24) MS28 TURBINE STOP VALVE FAILS OPEN/CLOSED	4	6/97			
MTP-119	MSS119F	21 (22,23,24) MS14 SG SAFETY VALVE FAILS OPEN/CLOSED	3	4/96			
MTP-121	MTR121F	2A(B,C) HEATER DRAIN TANK LEVEL CONTROLLER FAILS HI/LO (LA-1017Z, LA-1019Z, LA-1021Z)	4	4/97			
MTP-123	MSS123F	GLAND SEAL REGULATOR FAILS CLOSED	1	5/94			
MTP-124	MSS124F	CONDENSER POLISHING DEMINEALIZER HIGH DIFFERENTIAL PRESSURE	2	5/95			
MTP-126	MSS126F	21 (22,23,24) BF19 FW REG VALVE FAILS OPEN/CLOSED	3	5/96			
MTP-127	MSS127F	21 (22,23,24) BF40 FW REG BYPASS VALVE FAILS OPEN/CLOSED	4	5/97			
MTP-128	MSS128F	21 (22,23,24) BF19 FW REG VALVE FAILS TO CONTROL IN AUTOMATIC	1	6/94			
MTP-129	MSS129F	21 (22,23,24) MS10 RELIEF VLV FAILS OPEN/CLOSED IN AUTO	1	12/94			
MTP-131	MSS131F	SGFP MASTER CONTROLLER INPUT (PT-508) FAILS HIGH/LOW	2	6/95			
MTP-132	MSS132F	21 (22,23) TAC PUMP TRIP	4	9/97			
MTP-133	MSS133F	21 (22) STATOR WATER COOLING PUMP TRIP	4	2/97			
MTP-134	MEL134F	LOSS OF ALL 500KV OFFSITE POWER	3	6/96			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-135	MEL135F	LOSS OF 21 STATION POWER TRANSFORMER	4	6/97			
MTP-136	MEL136F	LOSS OF 22 STATION POWER TRANSFORMER	1	7/94			
MTP-137	MEL137F	LOSS OF #1 STATION POWER TRANSFORMER	2	7/95			
MTP-138	MEL138F	LOSS OF #2 STATION POWER TRANSFORMER	3	7/96			
MTP-139	MEL139F	LOSS OF #2 AUXILIARY POWER TRANSFORMER	4	7/97			
MTP-140	MEL140F	LOSS OF 2H 4160V GROUP BUS	1	8/94			
MTP-141	MEL142F	LOSS OF 2E 4160V GROUP BUS	2	8/95			
MTP-142	MEL142F	LOSS OF 2G 4160V GROUP BUS	3	8/96			
MTP-143	MEL143F	LOSS OF 2F 4160V GROUP BUS	4	8/97			
MTP-144	MEL144F	LOSS OF 2A 4160V VITAL BUS	1	9/94			
MTP-145	MEL145F	LOSS OF 2B 4160V VITAL BUS	2	9/95			
MTP-146	MEL146F	LOSS OF 2C 4160V VITAL BUS	3	9/96			
MTP-147	MEL147F	LOSS OF 2A VITAL INSTRUMENT BUS	4	9/97			
MTP-148	MEL148F	LOSS OF 2B VITAL INSTRUMENT BUS	1	10/94			
MTP-149	MEL149F	LOSS OF 2C VITAL INSTRUMENT BUS	2	10/95			
MTP-150	MEL150F	LOSS OF 2D VITAL INSTRUMENT BUS	3	10/96			
MTP-155	MEL155F	LOSS OF 460/230V INFEED BREAKER 2A4D	4	10/97			
MTP-156	MEL156F	LOSS OF 460/230V INFEED BREAKER 2B4D	1	11/94			
MTP-157	MEL157F	LOSS OF 460/230V INFEED BREAKER 2C4D	2	11/95			
MTP-158	MEL158F	LOSS OF 2A 125V DC BUS	3	11/96			
MTP-159	MEL159F	LOSS OF 2B 125V DC BUS	4	11/97			
MTP-160	MEL160F	LOSS OF 2C 125V DC BUS	1	12/94			
MTP-161	MGE161F	2A EMERGENCY DIESEL GENERATOR TRIP	2	12/95			
MTP-162	MGE162F	2B EMERGENCY DIESEL GENERATOR TRIP	3	12/96			
MTP-163	MGE163F	2C EMERGENCY DIESEL GENERATOR TRIP	4	12/97			
MTP-164	MGE164F	MAIN GENERATOR ELECTRICAL FAULT	1	3/94			
MTP-167	MGE167F	AUTOMATIC VOLTAGE REGULATOR FAILS HI/LO	2	3/95			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-168	MGE168F	LOSS OF MAIN GENERATOR EXCITER	3	3/96			
MTP-171	MRP171F	21 (22) CONTAINMENT SPRAY PUMP TRIP	2	10/95			
MTP-172	MRP172F	21 (22,23) COMPONENT COOLING PUMP TRIP	1	10/94			
MTP-173	MRP173F	21 (22,23,24,25) CONTAINMENT FAN COIL UNIT TRIP	2	11/95			
MTP-177	MRP177F	FALSE CONTAINMENT PH A ISOL SIGNAL, TRN A(B)	3	10/96			
MTP-179	MRP179F	21 (22,23,24) SI ACCUMULATOR WATER LEAK	4	10/97			
MTP-180	MRP180F	21 (22,23,24) SI ACCUMULATOR GAS LEAK	1	11/94			
MTP-181	MRP181F	21 (22) AUXILIARY FEEDWATER PUMP TRIP	2	11/95			
MTP-182	MRP182F	21 (22) AFP PRESS OVRD PROT FAILS	3	11/96			
MTP-183	MRP183F	23 AUX FW PUMP OVERSPEED TRIP	4	11/97			
MTP-184	MRP184F	21 (22) SI PUMP FAILS TO START ON SEC	1	12/94			
MTP-185	MRP185F	21 (22) CHARGING PUMP FAILS TO START ON SEC	2	12/95			
MTP-187	MRP187F	FALSE OVERPOWER dT TRIP SIGNAL, TRN A(B)	3	12/96			
MTP-189	MNI189F	CONTROL POWER LOSS TO POWER RANGE CHANNEL N41 (42,43,44)	4	6/97			
MTP-190	MNI190F	SOURCE RANGE CHANNEL N31 (32) FAILS HIGH	1	7/94			
MTP-191	MNI191F	SOURCE RANGE CHANNEL N31 (32) NOISY	2	7/95			
MTP-192	MNI192F	INSTRUMENT POWER LOSS TO SOURCE RANGE CHANNEL N31 (32)	3	7/96			
MTP-193	MNI193F	POWER RANGE CHANNEL N41 (42,43,44) FAILS HIGH/LOW	4	7/97			
MTP-194	MNI194F	SOURCE RANGE CHANNEL N31 (32) DISCRIMINATOR SETTING HIGH/LOW	1	8/94			
MTP-195	MNI195F	INTERMEDIATE RANGE CHANNEL N35 (36) COMPENSATING VOLTAGE SET HIGH/LOW	2	8/95			
MTP-197	MNI197F	INTERMEDIATE RANGE CHANNEL N35 (36) NOISY	3	8/96			
MTP-198	MNI198F	P-6 FAILS TO BLOCK SOURCE RANGE CIRCUIT	4	8/97			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-199	MNI199F	POWER RANGE CHANNEL N41 (42,43,44) NOISY	1	9/94			
MTP-200	MNI200F	PROCESS RAD MONITOR 2R11A FAILS HIGH/LOW	1	1/94			
MTP-201	MNI201F	PROCESS RAD MONITOR 2R12B FAILS HIGH/LOW	2	1/95			
MTP-202	MNI202F	PROCESS RAD MONITOR 2R12A FAILS HIGH/LOW	3	1/96			
MTP-203	MIN203F	PROCESS RAD MONITOR 2R41A FAILS HIGH/LOW	4	1/97			
MTP-204	MIN204F	PROCESS RAD MONITOR 2R41B FAILS HIGH/LOW	1	2/94			
MTP-205	MIN205F	PROCESS RAD MONITOR 2R41C FAILS HIGH/LOW	2	2/95			
MTP-206	MNI206F	AREA RAD MONITOR 2R1A FAILS HIGH/LOW	3	2/96			
MTP-207	MNI207F	PROCESS RAD MONITOR 2R1B FAILS HIGH/LOW	4	2/97			
MTP-208	MEL208F	21 (22) CHARGING PUMP TRIP	3	10/96			
MTP-209	MNI209F	PROCESS RAD MONITOR 2R31 FAILS HIGH	1	3/94			
MTP-210	MNI210F	AREA RAD MONITOR 2R2 (2R4, 2R5, 2R34, 2R42A) FAILS HIGH	2	3/95			
MTP-211	MNI211F	FILTER MONITOR 2R24A (2R25A, 2R26A, 2R38, 2R40) FAILS HIGH	3	3/96			
MTP-212	MNI212F	APD PUMP FOR 2R11A/2R11B/2R12A TRIPS	4	3/97			
MTP-215	MNI215F	21 (22,23,24,25,26) SERVICE WATER PUMP TRIP	2	10/95			
MTP-216	MSW216F	21 (22) SERVICE WATER HEADER LEAK IN SERVICE WATER STRUCTURE	3	10/96			
MTP-217	MSW217F	21 (22) SERVICE WATER HEADER LEAK IN THE PENETRATION AREA	4	10/97			
MTP-218	MSW218F	SERVICE WATER LEAK IN 23 CFCU	1	11/94			
MTP-223	MRP223F	SEMI-AUTOMATIC SWAPOVER FAILS, TRAIN A (B)	4	12/97			
MTP-231	MRM231F	PROCESS RAD MONITOR 2R13A FAILS HIGH/LOW	1	4/94			
MTP-232	MRM232F	PROCESS RAD MONITOR 2R13B FAILS HIGH/LOW	2	4/95			
MTP-233	MRM233F	PROCESS RAD MONITOR 2R13C FAILS HIGH/LOW	3	4/96			
MTP-234	MRM234F	PROCESS RAD MONITOR 2R16 FAILS HIGH/LOW	4	4/97			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
MTP-235	MRM235F	PROCESS RAD MONITOR 2R18 FAILS HIGH/LOW	1	5/94			
MTP-236	MRM236F	PROCESS RAD MONITOR 2R19A FAILS HIGH/LOW	2	5/95			
MTP-237	MRM237F	PROCESS RAD MONITOR 2R19B FAILS HIGH/LOW	3	5/96			
MTP-238	MRM238F	PROCESS RAD MONITOR 2R19C FAILS HIGH/LOW	4	5/97			
MTP-239	MRM239F	PROCESS RAD MONITOR 2R19D FAILS HIGH/LOW	1	6/94			
MTP-240	MRM240F	AREA RAD MONITOR 2R44A FAILS HIGH/LOW	2	6/95			
MTP-241	MRM241F	AREA RAD MONITOR 2R44B FAILS HIGH/LOW	3	6/93			
MTP-266	MRD266F	21 (22) MG SET REVERSE CURRENT TRIP	1	8/94			
MTP-267	MRD267F	ANY ROD(S) INADVERTENTLY DROPS	2	8/95			

PTP-001	N/A	MANUAL REACTOR TRIP	0	AO - FEB			
PTP-002	MSS104FA MSS104FB	SIMULTANEOUS TRIP OF BOTH SGFPs	0	AO - MAR			
PTP-003	MSS092FA-D	SIMULTANEOUS CLOSURE OF ALL MSIVs	0	AO - APR			
PTP-004	MRC003FA-D	SIMULTANEOUS TRIP OF ALL RCPs	0	AO - MAY			
PTP-005	MRC003F	TRIP OF ANY SINGLE RCP	0	AO - JUN			
PTP-006	MSS066F	TURBINE TRIP WITHOUT IMMEDIATE REACTOR TRIP	0	AO - JUL			
PTP-007	N/A	MAXIMUM RATE POWER RAMP	0	AO - AUG			
PTP-008	MRC001F MEL134F	LARGE BREAK LOCA WITH LOSS OF OFFSITE POWER	0	AO - SEP			
PTP-009	MSS088F	MAIN STEAM LINE RUPTURE	0	AO - OCT			
PTP-010	MRC018F MRP184FA/B MRP185FA/B	PZR PORV FAILS OPEN WITH LOSS OF HIGH-HEAD SI	0	AO - NOV			
PTP-011	MRP181FA/B MRP183F MSS104FA/B	LOSS OF ALL FEEDWATER [3.1.2(10)]	2	12/95			
PTP-012	MRD058F MSS104FA/B	FAILURE OF AUTOMATIC REACTOR TRIP [3.1.2(24)]	3	12/96			
PTP-013	MRD058F (OVDI)	INADVERTENT ECCS ACTUATION WITHOUT REACTOR TRIP	4	12/97			
PTP-N01	N/A	COLD SHUTDOWN TO HOT STANDBY	1	7/94			
PTP-N02	N/A	HOT STANDBY TO MINIMUM LOAD	1	7/94			

**SALEM SIMULATOR
4-YEAR
CERTIFICATION TESTING SCHEDULE**

TEST #	MALF #	TEST DESCRIPTION	OFFSET YEAR	SCHEDULED TEST DATE	DATE LAST TESTED	IMPACT	STATUS SAT/UNSAT
PTP-NO3	N/A	POWER OPERATION	2	7/95			
PTP-NO4	N/A	MINIMUM LOAD TO HOT STANDBY	2	7/95			
PTP-NO5	N/A	HOT STANDBY TO COLD SHUTDOWN	3	7/96			
PTP-NO6	N/A	MAINTAINING HOT STANDBY	3	7/96			
PTP-NO7	N/A	CORE PERFORMANCE TESTS	4	7/97			
PTP-NO8	N/A	SAFETY-RELATED SURVEILLANCES	4	7/97			
PTP-RT1	N/A	COMPUTER REAL TIME TEST	0	AO - DEC			
PTP-SS1	N/A	25% POWER	0	AO - DEC			
PTP-SS2	N/A	50% POWER	0	AO - DEC			
PTP-SS3	N/A	100% POWER	0	AO - DEC			
PTP-SS4	N/A	SIMULATOR STABILITY	0	AO - DEC			