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UHRIG,R.E. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Submits integrated startup test program for insp & testing to be completed prior to returning unit to operation after steam generator repair program,per Amend 69 to OL.Apps A,B, C & D encl.

SEE Repts.

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FLORIDA POWER & LIGHT COMPANY

December 23, 1981
L-81-535

Office of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 2055

Dear Mr. Varga:

Re: Turkey Point Unit No. 3
Docket No. 50-250
Integrated Startup Test Program

We are submitting, for your review, our Integrated Startup Test Program for inspection and testing to be completed prior to returning Turkey Point Unit No. 3 to operation after the Steam Generator Repair Program. This letter is to meet the requirements of Amendment No. 69 to the Operating License for Turkey Point Unit No. 3 to submit the test program sixty days prior to fuel loading. The Integrated Startup Test Program is comprised of two phases: Preoperational Tests and Startup Tests. The format of the program follows the intent of Regulatory Guide 1.68, Revision 2, August, 1978, "Preoperational and Initial Startup Test Programs for Water-Cooled Power Reactors". In some cases interpretation is necessary since Turkey Point Unit No. 3 is a previously licensed PWR plant that has undergone major equipment repair and modification rather than being new construction.

The tests in the Preoperational Test phase are designed to provide assurance that components and subsystems of new, modified, and original systems function safely within established design criteria. The Preoperational Tests on a new or modified system are conducted prior to fuel loading. This test phase also allows the plant operating staff to become familiar with the operation of a new or modified system and to verify by trial use, to the extent practical, that the operating procedures are adequate. The hot functional test of the plant will be performed during this test phase.

The tests in the Startup Test phase are designed to provide assurance that systems that were previously demonstrated as functioning safely, and the new or modified systems will function to "(1) provide for safe normal operation and high tolerance for systems malfunctions and transients, (2) ensure that, in the event of errors, malfunctions, and off-normal conditions, the reactor protection systems and other design features will arrest the event or limit its consequences to defined and acceptable levels, and (3) ensure that adequate safety margins exist for events of extremely low probability or for arbitrarily postulated hypothetical events without reduction in the safety margin for the protection of public health and safety". The Startup Tests are performed after fuel loading to confirm the design basis and demonstrate that the plant will continue to operate in accordance with design.

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SUMMARY

This letter outlines the Integrated Startup Test Program we plan to implement to demonstrate our ability to safety return Turkey Point Plant Unit No. 3 to power. The Integrated Startup Test Program will provide the necessary assurance that the plant can be operated in accordance with design requirements and in a manner that will not endanger the health and safety of the public.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/JEM/ah

cc: J. P. O'Reilly, Regional Administrator, Region II
Harold F. Reis, Esquire

LIST OF APPENDICES

APPENDIX A

STARTUP NETWORK

Per Criterion 1 of Appendix A to 10 CFR 50 all structures, systems, and components will be tested or demonstrated operable to levels commensurate with the importance of the safety functions. In addition, the extent of testing will vary directly with the amount of modifications done to and around the particular equipment or system. The sequence of tests will be conducted so that the safety of the plant is never totally dependent on the performance of untested structures, systems or components.

The key points of the Integrated Startup Test Program are presented below. The attached Appendices provide additional details of the program. Further information is available for the NRC site inspector at the Turkey Point Plant. These Appendices are working documents that will be revised as required within the framework of this letter.

ORGANIZATION

Appendix D contains the "Procedure for Conducting the Integrated Startup Test Program for Post Steam Generator Repair and Design Changes". This document defines the organizations, responsibilities, actions, and administrative controls for each phase of the program.

The management and direction of the Integrated Startup Test Program is under the direct control of Florida Power & Light Company (FPL) with principal authority assigned to the Plant Manager-Nuclear for Turkey Point Plant. The Startup Department is composed of FPL Nuclear Operations and Maintenance personnel with outside consultants as needed. The Startup Department has overall responsibility for implementation and documentation of the program.

The conduct and direction of the tests in the Preoperational Test phase are controlled by the Startup Department. The conduct and direction of the tests in the Startup Test phase are controlled by Turkey Point Operations staff with technical support from the Startup Department.

In all cases the test procedures require approval of the Plant Nuclear Safety Committee prior to implementation. Deviations to approved test procedures are documented and become part of the final test results. Administrative controls for making changes to approved procedures are provided in existing plant procedures. The acceptance criteria for all tests are approved by the Plant Nuclear Safety Committee. Design related deficiencies are resolved by the Startup Department with the assistance of the FPL project engineer and Turkey Point operations or outside consultants as deemed necessary.

TEST PHASES

Preoperational and Startup Test Phases are shown on the network in Appendix A and defined in more detail in Appendix D. Each phase of the Integrated Startup Test Program is composed of a series of tests as described below:

1. Preoperational Test Phase

   The Preoperational Test Phase consists of flushes and hydrostatic and functional tests of new, modified and affected original equipment and systems with no fuel in the reactor. This phase also includes a walkdown of existing plant systems adjacent to construction work areas for possible damage. The Hot Functional Test includes heatup of the primary system to hot shutdown conditions, thermal expansion checks of

affected systems, vibration testing of construction affected equipment, reactor coolant pump coast down time checks and primary system operational pressure test. A primary system flush and clean-up will be performed during the Hot Functional Test at the recommendation of the NSSS supplier and to meet primary system chemistry requirements. Any repairs and subsequent testing will be accomplished as necessary prior to fuel loading and startup testing. Major milestones during the Preoperational Test phase are outlined in Appendix A. Major Preoperational Tests are listed in Appendix B. The actual sequence of individual tests is formulated prior to performance of the tests considering equipment and system availability. The Startup Department analyzes the preoperational test results. The acceptable criteria for all tests are approved by the Plant Nuclear Safety Committee. In instances where performance of components of systems deviates from predicted results, further engineering evaluations, rework, and/or retesting is performed to resolve the discrepancies before the test is considered satisfactory. Assistance from the FPL project engineer and Turkey Point operations or outside consultants is solicited as deemed necessary. Systems which have to be modified as a result of the Preoperational Test are retested to verify acceptable performance. The major prefuel loading Preoperational Tests are outlined in Appendix B. Components and systems are tested and evaluated according to approved testing procedures. Preoperational Tests are performed to verify, as near as possible, the performance of the system under actual operating conditions. Where required, simulated signals or inputs are used to verify the full operating range of the system and to calibrate and align the systems and instruments at these conditions.

2. Startup Test Phase

The major testing milestones during the Startup Test phase are identified on the network (Appendix A) and discussed below. Major Startup Tests are listed in Appendix C.

a. Post-Fuel Loading Tests

Systems that are not used during normal plant operations, but must be in a state of readiness to perform safety functions, are tested or demonstrated operable prior to plant conditions requiring them to be available as defined in the Technical Specifications. Fuel loading will begin after all prerequisite system tests and operations are satisfactorily completed. Upon completion of fuel loading, the reactor upper internals and pressure vessel head are installed. Additional mechanical and electrical tests are performed on the rod control system, rod position indication, and in-core moveable detector system. The purpose of this segment of the Startup Test Phase is to prepare the system for nuclear operation and to establish that all design requirements necessary for operation are achieved.

b. Criticality and Low Power Physics Tests

On completion of integrated safeguards testing, nuclear operation of the reactor begins. These final segments of Startup Testing include criticality and low power

physics testing. The purpose of these tests is to verify the operational characteristics of the unit and core, and to acquire data for the proper calibration of set points, and to ensure that operation is within license requirements. Appendix C includes the major Startup Tests which are performed from fuel loading to rated power. The actual sequence of tests is formulated by the Turkey Point startup and operating personnel considering test requirements and equipment availability.

Procedures are prepared to specify the sequence of tests and measurements and the conditions under which each is to be performed to ensure safety of operation and consistency of the results obtained. If significant deviations from design calculation exist, unacceptable behavior is revealed, or apparent anomalies develop, the testing would be suspended and the situation reviewed to determine whether a question of safety is involved prior to resumption of testing.

c. Power Operation

After the operating characteristics of the reactor and unit have been verified by low power physics testing, the plant will be brought to full rated power level in accordance with existing plant procedures.

d. At Power Testing

Upon reaching full rated power level, the following at power tests are performed: final steam generator carryover testing, secondary plant heat balance checks, condensate polishing chemistry performance testing, and load rejection testing with the condensate polisher in service, when the system becomes available.

EXTENT OF TESTING

All Unit No. 3 systems and systems common to both Unit No. 3 and Unit No. 4 are included in the Integrated Startup Test Program. The tests required for individual components within a system will be developed by the Startup Department or will be performed in accordance with existing plant procedures. The Procedure Index for existing plant procedures is included as an Attachment to Appendix D.

In areas such as Unit No. 3 containment, where extensive work has been performed, all nuclear safety related equipment and systems will be checked by visual inspection during the Preoperational Testing or Startup Testing phase. In other areas, such as the Auxiliary Building where little work has been performed, selected system walkdowns will be employed in conjunction with normal plant startup procedures to verify the operability of the equipment.

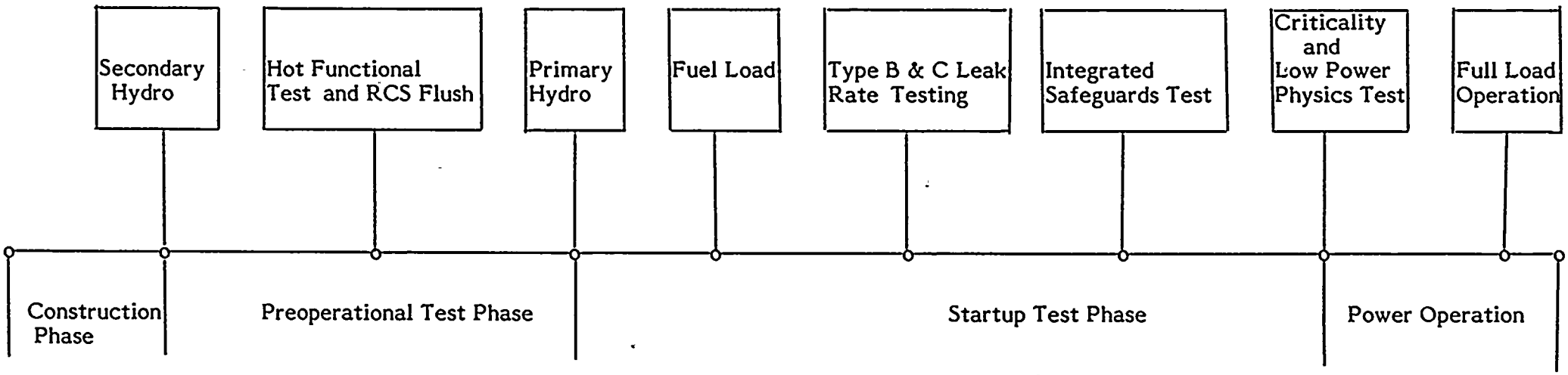
Those systems that are new or have undergone major design basis changes will undergo complete component testing and performance testing to verify design and installation.

The accelerated start up schedule may preclude completion of previously planned modifications. All components will be tested upon completion to insure system reliability prior to being placed into service.

APPENDIX A

STARTUP NETWORK

TURKEY POINT UNIT 3



APPENDIX B

LIST OF MAJOR PREOPERATIONAL TESTS AND CHECKS

APPENDIX B

LIST OF PREOPERATIONAL TESTS AND CHECKS

I. HYDROSTATIC TESTING

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
1. Steam Generator Secondary Side Integrity Test	To verify the integrity of secondary side and associated piping following the installation of the new steam generator lower assemblies.

II. HOT FUNCTIONAL TEST

1. The hot functional test is performed in accordance with Hot Functional Test Sequencing Document.	The Reactor Coolant System is tested using pump heat to reverify heat-up procedures and to demonstrate satisfactory performance of components and systems exposed to reactor coolant system temperature. Proper operation of instrumentation, controllers, and alarms, is checked against design operation conditions of auxiliary systems and setpoints verified. Among the demonstrations performed are: a. To check that water can be charged by the Chemical and Volume Control System at rated flow against normal reactor coolant pressures. b. To check letdown design flow rate for each operating mode. c. To check response of system to change in pressurizer level. d. To check operation of the excess letdown and seal water flow paths. e. To check steam generator level instrumentation response to level changes. f. To check thermal expansion of selected system components and piping. g. To perform isothermal calibration of resistance temperature detectors and incore thermocouples. h. To operationally check out the residual Heat Removal System.

NOTE: The sequence of tests and checks following is not necessarily in the order that they will be performed during the Hot Functional Test.

APPENDIX B

LIST OF PREOPERATIONAL TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
2. Process instrumentation (Temperature pressure, level, and flow instruments)	Equipment is aligned and calibrated using existing plant procedures.
3. Expansion and Restraint	During the heat-up to operating temperature, selected points on components and piping of the Reactor Coolant System are checked at various temperatures to verify unrestricted expansion. Points of interference detected during the heat-up are recorded for correction after cool down or are corrected prior to increasing the temperature.
4. Pressurizer	During the hot functional testing, the pressure controlling capability of the pressurizer is demonstrated to be within the controlling band. With reactor coolant pumps operating and with full spray, the pressure-reducing capability of the pressurizer is verified. With the spray secured and all heaters energized, the pressure-increasing capability of the pressurizer is verified. Pressurizer Power Operated Relief Valves are functionally checked at operating pressure. The Pressurizer Safety Valves are bench tested to verify setpoints using existing plant procedures prior to installation.
5. Reactor Coolant Pumps and Motors	As the pumps and motors are placed in operation they are checked for: 1. Megger and hi pot test (as applicable) 2. Cooling 3. Lubrication 4. Power requirements including correct power supply voltage. 5. Overload protection 6. Direction of rotation (initial start only) 7. Vibration frequency and amplitude of motor shaft and motor frame

APPENDIX B

LIST OF PREOPERATIONAL TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
6. Steam Generators	The proper operation of instrumentation and control system of steam generators are checked during heat-up and at temperature. The functioning of the blowdown system will be checked.
7. Chemical Tests to Establish Water Quality	Water for Reactor Coolant System fill and makeup is analyzed for chloride content, conductivity, total suspended solids, pH, clarity, and fluorides to requirements specified by existing plant procedures. During RCS heatup and prior to exceeding 250°F, hydrazine is added to scavenge oxygen from the RCS. Prior to, at hot shutdown and during heat-up, chemical analysis is performed to verify the R.C.S. chemistry is within specifications.
8. Reactor Coolant Flow Test	At cold shutdown conditions, measurements are made of elbow tap differential pressures to make relative comparison. At hot shutdown conditions, measurement of loop elbow differential pressure drops are made. Using these data with the reactor coolant pump performance curve, the calculated flow is verified to the design flow. Flow coastdown and transients following reactor coolant pump stoppages are also determined during the hot functional testing.
9. Chemical and Volume Control System System Tests	Makeup and letdown operations are conducted with the Chemical and Volume Control System to check out the different modes of dilution and boration and to verify flow in the different modes. The adequacy of heat tracing to maintain the required Boric Acid concentration in solution is verified. The ability to adequately sample is demonstrated.
10. Emergency Boration System Tests (Safety Injection System)	The ability of the emergency borate system is verified by pumping boric acid into the Reactor Coolant System.

APPENDIX B

LIST OF PREOPERATIONAL TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
11. Steam Generator Safety Valves	The setpoint of safety valves is verified by tests at appropriate pressure and temperature conditions in accordance with existing plant procedures. Setpoints are checked by using a pressure assist device which adds to the force due to pressure. Once the valve leaves the seated position the assist device is vented, allowing the valve to reseat immediately.
12. Auxiliary Feedwater System	The auxiliary feedwater system is operationally checked out to verify its ability to provide water to the steam generators within the required time frame.
13. Instrument Air System	The instrument air system is tested to verify proper operation.
14. Leak Detection System Tests	Temperature detectors in the drain lines from pressurizer safety valves and the reactor vessel head seal and their alarm functions are checked. Pressurizer relief tank level and temperature sensors are calibrated and associated alarms checked.
15. Residual Heat Removal System Test	The residual heat removal systems capability to remove heat is demonstrated.
16. Reactor Coolant Pump Seal and Cooling Water Test	Prior to reactor coolant pump operation and with the system pressurized, flow to the pump seals and cooling water is set. Flow is adjusted to specified values using installed instruments. When at operating temperature and pressure, seal and cooling flows and temperatures are checked.
17. Condenser Circulating Water System	Prior to hot functional testing, the main circulating water system is tested to verify operability.
18. Steam Generator Makeup Water and Chemical Treatment	The makeup system to the steam generators is checked out to verify operability. The chemical treatment system is checked out when chemicals are added to the steam generators.

APPENDIX B

LIST OF PREOPERATIONAL TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
19. Component Cooling Water System Test	Component cooling flow to the various components cooled by the CCW system is adjusted, the system operationally checked out, and setpoints verified.
20. Primary Sampling System	Operations are performed to: 1. Demonstrate that liquid and gas samples can be obtained from sample points. 2. Demonstrate that valves, instruments, and controls function properly. 3. Verify proper functioning of the sample cooler.
21. Pressurizer Relief Tank	The pressurizer relief tank and associated valves and instrumentation are checked out to verify performance of design functions.
22. Containment Ventilation System Test	The system is operated to balance air flows and to verify the ability to maintain temperatures below maximum allowable limits, ability to cool Rx components and RCPs.
23. Accumulator Tests	Flow through the accumulator lines is initiated to demonstrate that the check valves are free to open. Tests are also made to verify that accumulator pressure could be maintained.
24. Containment Spray System Tests	Tests are performed to verify pump operating characteristics, and response to control signals.
25. Primary System Hydrostatic Test	Hydrostatic testing of the reactor coolant system will be performed at test pressures as specified by ASME standards for the system. Prior to pressurization, the system will be heated to hot shutdown conditions. The pressure is then increased to test pressure, maintained for the specified time period and inspection for leakage is made. Overpressure protection is provided during the test.

APPENDIX B

LIST OF PREOPERATIONAL TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
27. Incore Thermocouples and Resistance Temperature Detectors	All readout and temperature compensating equipment is checked during the calibration and isothermal corrections for the operative thermocouples are determined.
28. Control Rod Drive Mechanism and Rod Position Indication Coil Cooling System Test	The cooling system is checked out to verify adequate air flow, proper temperatures and motor current.

APPENDIX C

LIST OF MAJOR STARTUP TESTS AND CHECKS

APPENDIX C

LIST OF STARTUP TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
I. FUEL LOAD	
1. Refueling Equipment (Hand Tools, Power Equipment and Associated Protective Interlocks)	Prior to core loading, tests and checks are performed in accordance with existing plant procedures to demonstrate the operability of the fuel handling equipment and fuel transfer system.
2. Nuclear Instrumentation System	Nuclear instruments are calibrated and source range detector response to a neutron source is checked as a primary source is loaded.
3. Process Instrumentation (Temperature Pressure, Level and Flow Instruments)	Equipment was aligned and calibrated during Preoperational Testing.
4. Area Radiation Monitor Tests	Prior to core loading, the radiation monitoring system alarms associated with core loading are checked out and the alarm setpoints verified.
5. Reactor Component Handling System (Polar Crane)	Testing was performed on the polar crane during the Construction Phase of the steam generator repair.
6. Residual Heat Removal System Test	Testing was performed on this system during Preoperational Testing.
7. Chemistry Tests	Prior to, during and following core loading, primary sampling will be performed to verify boron concentration in the reactor coolant system is within Tech Spec limits..
8. Baseline Data for Inservice Inspections	Systems and components that require inspection in accordance with Section XI of the ASME Codes are examined for baseline data. Information from these inspections provides baseline data for subsequent inservice inspections. Note: This activity will be occurring throughout the entire test program.

APPENDIX C

LIST OF STARTUP TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
II. LEAK RATE TESTING	
1. Containment Tests	Containment Type B and C leakage tests will be performed in accordance with Appendix J to 10 CFR 50 and approved plant procedures.
III. INTEGRATED SAFEGUARDS TEST	
1. Engineered Safety Features	The Engineereed Safety Features logic matrices are tested to demonstrate operability, proper logic, redundancy and coincidence in accordance with Technical Specifications.
2. Emergency Power Systems	The automatic starting and loading of the emergency diesel generators is demonstrated during temporary loss of off-site power during the safeguards test.
3. Containment Isolation Systems	The operation of actuation systems and components used for containment isolation is verified during test.
4. Auxiliary Feedwater System	Automatic operation of pumps and valves is verified during test.
5. Safety Injection System	Automatic operation of pumps and valves is verified during test.
6. Residual Heat Removal System	Automatic operation of pumps and valves is verified during test.
7. Containment Spray System	Automatic operation of pumps and valves is verified during test.
8. Emergency Containment Coolers	Automatic operation of coolers, valves and required water flow is verified during test.

APPENDIX C

LIST OF STARTUP TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
9. Emergency Containment Filters	Automatic operation of filter fan is verified during test.
10. Accumulator Check Valves	Operation of check valves will be verified during test.

IV. LOW POWER PHYSICS TESTS

1. Reactor Protection System	Prior to criticality, this system is tested to demonstrate operability, proper logic, redundancy and coincidence. The protection channels are verified through tripping of the reactor trip breakers.
2. Nuclear Instrumentation (Excore)	Prior to criticality, all channels are checked to verify high level trip functions, alarm setpoints, operation of strip chart recorders and any auxiliary equipment.
3. Control Rod Systems Tests A. Rod Control System	Prior to plant heatup or at hot shutdown, this system is energized and operationally checked out with mechanisms connected to each power supply. The ability of the system to step is verified, the alarm and inhibit functions tested and the system parameters adjusted to specified values.
B. Rod Drop Tests	At hot shutdown conditions, the drop times of full length rods are tested. The drop time is measured from the release of the rod until the rod enters the top of the dashpot. This time is verified to be less than the maximum value specified in the Technical Specifications.
C. Rod Position Indication	During rod control system tests, the position indication system was aligned to provide rod movement indication. At hot shutdown conditions, individual rod positions are calibrated to within tolerances specified in existing plant procedures.

APPENDIX C

LIST OF STARTUP TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
4. Steam Generator Blowdown System Test	At hot shutdown conditions, a functional test is performed to verify blowdown flow is consistent with system design parameters. This blowdown system flow test is also performed at 70% reactor power.
5. Initial Criticality	The objective is to bring the reactor critical from the plant hot shutdown conditions. Prior to start of rod withdrawal, the nuclear instrumentation had been aligned, checked, and conservative reactor trip setpoints made per existing plant procedures. At preselected points in rod withdrawal, data is taken and inverse count rate plots made to enable extrapolating to the expected critical rod position. Initial criticality and low power physics tests are performed in accordance with existing plant procedures to verify plant design parameters.

V. FULL POWER OPERATION

1. Power Ascension	Normal post refueling Technical Specification required testing will apply for power ascension. In addition the following design tests associated with modified systems will be performed: 1. Steam generator moisture carryover tests. 2. Steam generator thermal and hydraulic performance verification. 3. Steam generator water level stability and control demonstration. 4. Condensate polishing performance testing, when polishing system is available.

APPENDIX C

LIST OF STARTUP TESTS AND CHECKS

TITLE OF TEST OR CHECK	TEST OR CHECK OBJECTIVE
5.	Load rejection testing with condensate polisher, when polishing system is available.
6.	Steam generator blowdown system flow test at 70% reactor power, when heat recovery portion of the system is available.
2. Power Conversion System (Turbine Generator)	
A. Vibration Frequency and Amplitude	When the main turbine is rolled, vibration readings are monitored, (Turbine vibrations are also monitored throughout the power escalation program). Major equipment (e.g., feedwater pumps and condensate pumps) are operated as they become available and are observed for indications of excessive vibration.
B. Turbine Control and Bypass Valves	The turbine control system will be demonstrated in turbine operation up to and including a period of operation at synchronous speed. The turbine bypass valves to the condenser and their associated control systems are checked out to verify operability.
C. Feedwater and Feedwater Control System	The feedwater and condensate pumps are operationally checked out during hot functional testing. During power escalation, the power is increased and the ability of the feedwater pumps and control system to maintain level in the system generators is verified.
D. Makeup Water and Chemical Treatment	The makeup system to the steam generators was checked out during hot functional testing and at power operation. The chemical treatment system is checked out when chemicals are added to the steam generators at heat-up to steaming conditions.

APPENDIX D

PROCEDURE FOR CONDUCTING THE INTEGRATED STARTUP TEST PROGRAM

PROCEDURE

FOR CONDUCTING THE

INTEGRATED STARTUP TEST PROGRAM

FOR POST

STEAM GENERATOR REPAIR

AND

PC/M DESIGN CHANGES

TURKEY POINT PLANT

FLORIDA POWER AND LIGHT COMPANY

MIAMI, FLORIDA

TURKEY POINT UNIT 3
FLORIDA POWER AND LIGHT COMPANY
MIAMI, FLORIDA

1.0 PURPOSE AND SCOPE

1.1 To provide guidelines for the accomplishment of the tests to be performed prior to plant operations.

1.2 To define the phases of the Integrated Startup Test Program.

1.3 To delineate the responsibilities of the organizations participating in the Integrated Startup Test Program.

1.4 To provide the administrative controls to ensure that the necessary prerequisites are completed prior to commencing the Integrated Startup Test Program.

2.0 REFERENCES

2.1 Administrative Site Procedure ASP-11, Construction Turnover

2.2 Turkey Point Technical Specifications

3.0 DEFINITIONS

3.1 Integrated Startup Test Program Phases

The Integrated Startup Test Program is divided into two phases. The objectives of each phase are defined below:

PHASE I Preoperational Tests - Those test performed to demonstrate the proper functioning of new, modified and existing equipment, subsystems and systems through and including the Hot Functional Test of the plant prior to fuel loading.

PHASE II Startup Tests - Those tests performed to assure the proper integrated operation of the plant and to demonstrate that the plant can be operated safely as designed from fuel loading to full power operation.

3.2 Plant Procedures

To the extent practical, the Integrated Startup Test Program will be conducted using existing plant procedures as they already include the electrical checks, mechanical checks, calibration checks, hydrostatic tests,

surveillance requirements, operating parameters, administrative policies, etc., necessary to perform the testing program. Additional procedures will be written as they are required. A copy of the Turkey Point Units 3 & 4 Procedure Index is attached. Three types of these existing plant procedures are defined below.

3.2.1 Administrative Procedure (AP's)

Written instructions which define the method by which the responsible person or persons direct the conduct of plant operations and the means and the limits required for the administration of the plant.

3.2.2 Operating Procedure

There are three general categories of Operating Procedures:

1. Normal Operating Procedures (OP's) which are written instructions which define the normal method, means, and limits of operation, in all modes, of the plant, plant systems, or processes.

2. Off Normal Operating Procedure (ONOP's) which specify operator actions for restoring an operating variable to its normal controlled value when it departs from its range, or to restore normal operating conditions following a perturbation. Actions taken under off-normal operating conditions are invoked following an operator observation or alarm to correct a condition which, if not corrected, could degenerate into a condition requiring action under an emergency procedure.

3. Emergency Operating Procedures (EOP's) which are written instructions which specify actions, including operator manipulation of controls:

   (1) To avoid further degradation of off-normal conditions which in themselves do not constitute an accident but which could lead to an accident.

   (2) To reduce the consequences of an accident or hazardous condition which has already occurred.

3.2.3 Maintenance Procedure (MP's)

Written instructions defining the policies and practices by which mechanical, electrical, instrumentation and control and fire protection systems of Units 3 and 4 are kept in a condition of good repair or efficiency so that they may satisfactorily perform their intended functions. These procedures include those activities performed to maintain, modify, or repair nuclear safety related and fire protection equipment. Related activities are those actions taken by operating personnel to determine that a planned maintenance activity can be safely performed under the existing plant conditions. Procedures for these related activities by operations personnel are considered to be operating procedures, but may be included in maintenance procedures.

3.3 Administative Site Procedures (ASP's)

Written instructions that define the policies and practices of the FPL Construction Department and their associated contractors when performing repairs and design changes on the plant. A copy of the Administrative Site Procedure Index is attached.

3.4 Plant Change/Modifications (PC/M's)

PC/M's are engineered design changes or modifications to plant systems or equipment. A nuclear safety related PC/M is a design change or modification which has a direct effect on those plant features necessary to assure the integrity of the reactor coolant system pressure boundary, the capability to shutdown the reactor and maintain it in a safely shutdown condition, or the capability to prevent or mitigate the consequences of accidents which could adversely affect the environment.

4.0 PARTICIPATING ORGANIZATIONS AND RESPONSIBILITIES

4.1 Plant Nuclear Safety Committee (PNSC)

Consists of management personnel from Turkey Point Plant as designated in the Plant Technical Specifications. The PNSC reviews and recommends approval of all test procedures used during the integrated startup test program, and of items as delineated in the Technical Specifications.

4.2 Turkey Point Operating Staff

Consists of employees engaged in the operation and maintenance of systems, subsystems or portions of the plant under the direction of the Plant Manager-Nuclear.

4.3 Westinghouse Electric Corporation (W)

The term Westinghouse or (W) shall be limited to equipment and services furnished as part of or under contract for the nuclear steam supply and turbine generator systems.

4.4 Bechtel Power Corporation (Bechtel)

Bechtel shall furnish Engineering, Construction and Startup services as required by FPL.

4.5 Daniel Construction Company (Daniel)

Daniel shall furnish Construction Quality Control services as required by the FPL Construction QC Department.

4.6 FPL Construction Department

The Construction Department functions under the direction of the Project Site Manager. The Construction Department is responsible for all work associated with the Steam Generator Repair Project (SGRP) and other design change modifications (PC/M's).

4.7 Quality Control (QC)

4.7.1 FPL Construction QC

The Construction Quality Control Department is responsible for assuring that nuclear safety related components, system or partial systems are released in accordance with existing procedures for testing, that test data documentation is in compliance with contractors' procedure, and that retention control of documentation is adequate. This department is also responsible for verifying that nuclear safety related systems are built in accordance with approved design documents.

4.7.2 FPL Plant QC

The Turkey Point Quality Control Department is responsible for the inspection, and witness of tests required during preoperational and startup testing, and shall maintain control of QC documentation for all activities affecting nuclear power plants. The level and extent of QC involvement is defined in the individual procedures.

4.8 FPL Power Plant Engineering (EPP)

This department is responsible to resolve component and system deficiencies discovered during construction, the Preoperational Test Phase, the Startup Test Phase and during normal plant operations.

4.9 Startup Department

The Startup Department is responsible for the development and implementation of the Integrated Startup Test Program. The department consists of selected plant personnel who are assisted by Bechtel Startup Engineers under the direction of the Startup Superintendent. The Startup Superintendent reports directly to the Plant Manager-Nuclear. The Startup Department is responsible for conducting the tests and checks under their jurisdiction, for assuring that testing is performed in accordance with approved procedures and for reviewing all test data through the Preoperational Test Phase. They will provide technical assistance, as necessary, to the Nuclear Operations Staff during the Startup Test Phase.

4.10 Turnover Committee

The purpose of this Committee is to determine the responsibility for resolving deficiencies discovered after turnover and during the Preoperational Test Phase and the Startup Test Phase.

5.0 CONSTRUCTION PHASE

The Construction Phase for new, modified or repaired systems is the responsibility of the FPL Construction Department. All activities of the Construction Phase shall be performed in accordance with approved specifications, design change packages, (PC/M's) and procedures, as applicable.

As the construction phase of new, modified or repaired systems is completed, the FPL Construction Department will coordinate walkdown to ensure that the work is completed with the Contractor and FPL Startup Department in preparation for turnover to the FPL Startup Department for Preoperational Testing. Any items that are found to be incomplete or deficient during the walkdowns shall be documented on a Punch List and resolved prior to turnover acceptance by the FPL Startup Department for Preoperational Testing.

The turnover of new, modified or repaired systems shall be accomplished in accordance with an approved Administrative Site Procedure.

6.0 PREOPERATIONAL TEST PHASE

When a system or subsystem is sufficiently complete and related support systems are available so that the intended functions can be performed, the Startup Department will accept the system for preoperational testing. The Preoperational Test Phase is the responsibility of the Startup Department. They will be assisted by the plant staff supplemented by construction crafts personnel as needed. The Startup Department is responsible for documentation of and maintaining a status list of discrepancies determined during preoperational testing. The discrepancies will be documented on a Punch List and the Punch List forwarded to the Turnover Committee for resolution prior to releasing the system for unrestricted operation. The Startup Department is also responsible for assuring that all tests are performed in accordance with approved procedures, reviewing all test data through the preoperational testing phase and writing additional procedures as needed.

Important plateaus in the Preoperational Test Phase are as follows:

A. Individual Equipment and Systems Tests and Checks
B. Required Equipment and Systems Aligned and Calibrated
C. Hot Functional Test of Plant
D. Primary System Overpressure Test
E. Cooldown and Release for Startup Test Phase

Upon successful completion of preoperational testing, the Startup Department will review the documentation and test data as required to verify the functional operability of the equipment and systems. Any items found to be incomplete but not limiting for unrestricted operation will be documented on a Punch List and the Punch List forwarded to the Turnover Committee for resolution. The plant is then released to the Turkey Point Operating Staff for the Startup Test Phase.

7.0 STARTUP TEST PHASE

When the preoperational testing is completed, preparation is made to return the plant to power operation. The systems and equipment tested individually and during the hot functional test are now tested to demonstrate that they can operate safely as an integrated unit from fuel loading to full power operation. The Startup Test Phase is the responsibility of the Turkey Point Operating Staff with technical assistance as required from the Startup Department.

Major milestones in the Startup Test Phase are listed below:

A. Fuel Load
B. Leak Rate Testing
C. Integrated Safeguards Test
D. Criticality and Low Power Physics Tests
E. Power Operation

The Startup Test Phase will be performed in accordance with existing plant prodedures that will be changed as necessary to incorporate the operation of new or modified systems and equipment. Additional procedures will be developed should they be required.

Systems that are not used during normal plant operations, but must be in a state of readiness to perform safety functions, are checked under test conditions prior to plant startup. At no time will the safety of the plant be dependent on the performance of untested structures, systems or components.

The Startup Department and the Turkey Point Operating Staff will be responsible to present evidence that the required testing is completed and proper documentation is available.

8.0 ATTACHMENTS

8.1 Turkey Point Units 3 and 4 Procedure Index.

8.2 FPL Construction Administrative Site Procedure Index.

PROCEDURE NUMBER	DATE	TITLE
		ADMINISTRATIVE
0103.2	10/1/81	Responsibilities of Operators on Shift and Maintenance of Operating Logs and Records
0103.3	5/21/81	Control and Use of Jumpers and Disconnected Leads
0103.4	10/23/81	In Plant Equipment Clearance Orders
0103.5	7/30/81	Administrative Control of Valves, Locks and Switches
0103.6	6/26/80	Reportable Occurrences
0103.7	6/26/80	Reports Required by Technical Specifications and 10 CFR
0103.8	8/8/78	Shutdown Rate Guidelines
0103.9	4/24/79	Facility Staff Qualifications
0103.10	5/28/81	Using Plant Drawings
0103.11	8/14/81	Housekeeping
0103.12	4/2/81	Notification of Significant Event to NRC
0103.13	5/15/80	Fire Watch Patrol
0103.15	10/29/81	Operating Experience Feedback
0103.16	11/5/81	Duties and Responsibilities of the Shift Technical Advisor
0109.1	3/26/81	Preparation, Revision, and Approval of Procedures
0109.3	11/25/80	On the Spot Changes to Procedures
0109.6	4/30/79	Temporary Procedures
0110.4	9/3/81	Plant Nuclear Safety Committee - General Procedures
0149.1	4/23/81	Special Nuclear Material Accountability
0149.2	10/31/77	Determination of Average Annual Capacity Factor
0190.1	8/28/80	Quality Assurance and Quality Control Program and Organization at Turkey Point
0190.4	9/24/81	Procurement Document Quality Control
0190.9	2/1/80	Control of Measuring and Test Equipment
0190.10	5/15/80	Cleaning of Nuclear Safety Related Systems and Components (Mechanical)
0190.12	6/18/81	Nonconforming Material, Parts, or Components
0190.13	9/24/81	Corrective Action for Conditions Adverse to Quality
0190.14	8/28/80	Document Control and Quality Assurance Records
0190.15	10/23/81	Plant Projects - Approval, Implementation and Regulatory Requirements
0190.16	5/18/79	Scheduling and Surveillance of Periodic Tests and Checks Required by Technical Specifications
0190.17	2/15/80	Maintaining Records for Design Cycles
0190.19	5/28/81	Control of Maintenance on Nuclear Safety Related and Fire Protection Systems
0190.21	5/29/79	Nuclear Safety Hazards: Identification
0190.22	5/18/79	Changes, Tests, and Experiments
0190.23	5/18/79	Electrical Department Instrument Calibration Program
0190.25	7/16/76	Compliance Review Program
0190.26	2/29/80	Calibration Control of Installed Nuclear Safety Related I and C Equipment
0190.27	9/26/79	Electrical Department Installed Instrument Calibration Program
0190.28	4/2/81	Mechanical Test Control (Post Maintenance)
0190.61	10/8/81	Control of Liquid Penetrant Testing
0190.62	2/12/79	Requirements for Welding Procedures and Welder Qualifications
0190.63	9/3/81	Welding Filler Metal Control Procedures
0190.67	4/24/79	Welding and Cutting Safety Procedure

PROCEDURE NUMBER	DATE	TITLE
		ADMINISTRATIVE (cont'd)
0190.70	8/28/80	Inspection of Maintenance Activities on Nuclear Safety Related and Fire Protection Equipment
0190.71	10/23/81	Qualification of Quality Control Inspectors
0190.72	6/18/81	Receipt Inspection, Identification, and Control of Nuclear Safety Related and Fire Protection Parts, Materials, and Components
0190.73	8/28/80	Quality Control Surveillance Program
0190.76	3/5/81	Verification of Steam Generator Tube Plug Installation
0190.77	6/18/81	Magnetic Particle Inspection (Electromagnetic Yoke Method)
0190.78	6/20/79	Inspection Procedure for Ultrasonic Material Thickness Measurement
		GENERAL PLANT PROCEDURES
0202.1	8/20/81	Reactor Startup, Cold Conditions to Hot Shutdown Conditions
0202.2	10/15/81	Unit Startup, Hot Shutdown to Power Operation
0204.1	12/18/80	Secondary Plant Operating Checks and Tests
0204.2	9/3/81	Schedule of Periodic Tests, Checks, Calibrations and Operating Evolutions
0204.3	5/21/81	Initial Criticality After Refueling
0204.5	4/23/81	Nuclear Design Check Tests During Startup Sequence After Refueling
0205.1	5/2/80	Unit Shutdown, Full Load to Hot Shutdown Conditions
0205.2	7/30/81	Reactor Shutdown, Hot Shutdown to Cold Shutdown Conditions
0206.2	6/18/81	Spent Resin System
0206.3	5/21/81	Refueling Water Storage Tank - Normal Operation
0206.4	4/10/80	Periodic Visual Leak Inspection of Systems Outside the Containment for Control of Radioactive Material Leakage
0206.5	10/30/80	Visual Leak Inspection of Class III Systems
0208.1	4/23/81	Shutdown Resulting from Reactor Trip or Turbine Trip
0208.3	5/7/81	Annunciator List - Panel A - Reactor Coolant
0208.4	5/7/81	Annunicator List - Panel B - Reactor
0208.5	4/30/79	Annunicator List - Panel C - Steam Generator and Reactor Trips
0208.6	5/7/81	Annunciator List - Panel D - Condensate and Feedwater
0208.7	4/10/80	Annunciator List - Panel E - Turbine Generator
0208.8	5/7/81	Annunciator List - Panel F - Electrical
0208.9	5/7/81	Annunciator List - Panel G - Miscellaneous
0208.10	2/12/79	Annunciator List - Panel H - Safety Injection and Auxiliary
0208.11	8/28/80	Annunciator List - Panel I - Station Service
0208.12	8/28/80	Annunciator List - Panel X - Common
0208.13	10/1/81	Annunciator List - Waste/Boron Panels
0208.14	1/11/80	Deviation or Failure of Reactor Protection and Safety Related Hagan Instrumentation Channels
0209.1	9/24/81	Valve Exercising Procedure
0209.3	9/24/81	Inservice Pump Testing Program Implementation Procedure for Auxiliary Feedwater Pumps
0209.4	11/21/79	Inservice Testing - Valve Seat Leakage Testing

PROCEDURE NUMBER	DATE	TITLE
		TRAINING PROCEDURES
0301	8/20/81	Licensed Operator Requalification Program
0303	4/25/77	Nuclear Operator and Nuclear Turbine Operator Training and Retraining Program
0304	8/20/81	Plant Training
0305	11/14/80	Emergency Team Training
0306	12/12/80	New Employee Indoctrination and Orientation
0307	6/19/81	Shift Technical Advisor Training Program
		MAINTENANCE PROCEDURE - GENERAL
0701.1	8/14/81	Welding Job Control List
0701.2	9/3/81	Quarterly Calibration of Filler Metal (Welding Rod) Ovens
0703	12/8/78	Maintenance of Copes-Vulcan Air Operated Control Valves
0707.1	10/4/79	Series G Chempump Removal, Repair, and Replacement
0707.2	2/24/81	Snubber Inspection and Repair
0707.8	5/22/80	Periodic Calibration of Instrumentation Used in Station Heat Rate Determination
0707.9	12/7/79	Inspection of Swagelok Fittings
0707.10	9/24/81	Reactor Trip and Generator Output Breakers: Inspection and Maintenance
0707.11	3/13/78	Tube Plugging - Auxiliary Heat Exchangers with Stainless Steel Tubes and Flanged Tube Sheets
0707.13	12/4/79	Fischer-Porter Hagan Pressure Transmitters Alignment and Calibration Procedure
0707.14	11/21/79	Safety and Relief Valve Testing Procedure
0707.15	5/19/78	Fischer-Porter Differential Transmitter Alignment, Maintenance, and Calibration
0707.16	1/23/79	Hagan Summators Repairs and Calibration
0707.17	1/23/79	Hagan Single and Dual Comparators Repairs and Calibration
0707.18	12/4/79	Hagan Manual/Automatic (M/A) Controller Calibration and Repair
0707.19	5/19/78	Hagan Manual/Auto Control Station Calibration and Repair
0707.20	1/23/79	Hagan Isolators Repairs and Calibration
0707.21	1/23/79	Calibration of Hagan Optimac Analog Computer Elements
0707.25	7/31/78	Hagan 40V and 45V Loop Power Supply Repair and Calibration
0707.26	12/15/78	4160 Volt Motor Grounding and Testing Without the Use of Manufacturer's Ground and Test Device
0707.27	12/15/78	4160 Volt Motor Grounding and Testing With the Use of Manufacturer's Ground and Test Device
0707.28	12/15/78	4160/480 Volt Load Center Transformer Grounding and Testing Without the Use of Manufacturer's Ground and Test Device
0707.29	9/18/80	Calibration of Rosemount Model 1153 Pressure Transmitter
0707.31	9/18/81	Installation of 4KV Switchgear Ground Attachments
0710.0	4/10/80	Liquid Penetrant Testing
0710.1	10/19/76	Liquid Penetrant Testing at Elevated Temperatures
0720	2/5/79	Preventative Maintenance Program - Mechanical
0724	4/10/80	Vent and Drain Flange Replacement with Swagelok Plugs

PROCEDURE NUMBER	DATE	TITLE
		MAINTENANCE PROCEDURE - GENERAL (cont'd)
0725	1/9/81	Fire Stop and Cable Tray Fireproofing
0726	11/9/78	Velan Pressure Seal Valves - Seal Ring Replacement - Valves 20139, 239, 339
0728	7/22/80	Bushing Replacement on 5KV Penetration Canisters
0729	1/22/81	Safety Related MOV Motor Maintenance
0731	8/31/79	Calibration of Mechanical Department Measuring Test Equipment
0732	12/4/79	QC Check and Replacement of BFD/NBFD Relays in Reactor Protection and Safeguards Systems
0733	10/2/80	Hagan's MV/I Amplifier Repairs and Calibration
0734	4/2/81	Safety Related Supports/Restraints Removal and Replacement
0735	4/13/81	Emergency Load Sequencer - General Electric Type - HFA Relay Coil Spool Visual Inspection
0736	10/15/81	Heavy Load Handling
0737	6/18/81	Implementation Procedure for Installation of Output Test Points in Hagan Power Supplies
		REACTOR AND REACTOR COOLANT SYSTEM
1001.1	10/30/80	Filling and Venting the Reactor Coolant System
1003.1	8/24/79	Metal Impact Monitoring System - Verification of Alarms
1004.1	6/20/79	RCS - Periodic Leak Test Following RCS Opening
1004.2	8/14/81	Reactor Protection System - Periodic Test
1004.3	5/22/80	Reactivity Deviations from Design Calculations
1004.4	5/7/81	Overpressure Mitigating System Functional Test of Nitrogen Back-Up System
1004.5	7/10/81	Reactor Coolant Pressure Isolation Valve Leakage Testing
1005.1	6/11/81	Draining the Reactor Coolant System
1007.2	9/11/80	Reactor Coolant Bypass Loop RTD Replacement
1007.3	4/3/80	Setting Reactor Protection Undervoltage Time Delay Relays (UVTD)
1007.4	7/15/77	Replacement of RCS Flow Transmitter Above Permissive P-8
1007.5	10/20/77	Daily and Weekly Checks of Metal Impact Monitoring System (MIMS)
1007.6	6/11/81	Sub-Cooled Margin Monitor System Maintenance and Calibration
1008.2	9/15/77	Excessive Reactor Coolant System Leakage
1008.3	9/25/75	Loss of Reactor Coolant Flow
1008.4	9/15/77	Excessive RCS Activity
1008.6	8/28/75	Operation Outside the Axial Flux Difference Target Band
1008.7	8/14/81	Reactor Coolant System Natural Circulation
1009.1	9/11/80	Estimated Critical Conditions
1009.3	10/30/80	Shutdown Margin Calculation
1009.4	4/2/76	Operation Within the Axial Flux Difference Target Band

PROCEDURE NUMBER	DATE	TITLE
		REACTOR COOLANT PUMPS
1100.1	6/6/80	Reactor Coolant Pump Operation
1107.1	11/15/76	Reactor Coolant Pump Seal and Motor Removal
1107.2	12/4/79	Reactor Coolant Pump Seal Inspection
1107.3	|9/24/81|	Reactor Coolant Pump Impeller Removal and Replacement
1107.4	12/5/80	Reactor Coolant Pump Seal and Motor Replacement
1107.7	9/11/80	Reactor Coolant Pump - Refurbishing of Number 3 Seal
1107.8	7/9/80	Reactor Coolant Pump Motor - Motor Flywheel Removal and Installation
1108.1	7/22/80	Reactor Coolant Pump Off-Normal Conditions
		PRESSURIZER AND PRESSURIZER RELIEF TANK
1200.1	6/6/80	Pressurizer Steam Space Venting
1207.1	|9/24/81|	Pressurizer Safety Valve, Repair and Setting
1207.6	4/10/80	Replacement of Pressurizer Mini Spray Valves 524 and 525
1207.7	7/31/80	Recalibration of Pressurizer Level Program
1207.8	7/31/80	Pressurizer Manway Cover Removal and Replacement
1208.1	7/9/80	Pressurizer Malfunction of Power Operated Relief or Safety Valves
1208.2	3/3/76	Pressurizer - Malfunction of Level Control
1300.1	5/2/80	Pressurizer Relief Tank Operation
		REACTOR VESSEL
1407.1	12/7/79	Reactor Vessel - Removal of Missile Shield
1407.2	1/5/79	Removal of Control Rod Drive Mechanism Cooling
1407.3	8/27/81	Reactor Vessel - Removal of Rod Drive Electrical Cables
1407.4	8/29/78	Reactor Vessel - Removal of Instrument Ports
1407.5	6/7/78	Reactor Vessel - Removal of Head Insulation
1407.6	3/26/81	Installation of Reactor Vessel Cavity Seal Ring
1407.7	12/5/80	Reactor Vessel Stud Tensioner, Closure/Nut/Stud Removal and Guide Stud Installation
1407.8	3/26/81	Reactor Vessel - Removal of Vessel Head
1407.9	6/11/81	Reactor Vessel - Removal of Upper Internals
1407.10	8/1/79	Reactor Vessel - Installing Upper Internals
1407.11	6/18/81	Reactor Vessel - Installation of Vessel Head
1407.12	5/7/81	Reactor Vessel - Guide Stud Removal, Closure Stud/Nut Installation and Stud Tensioner Operation
1407.13	5/29/79	Removal of Reactor Vessel Cavity Seal Ring
1407.14	6/7/78	Reactor Vessel - Installation of Head Insulation
1407.15	1/11/80	Reactor Vessel - Installation of Instrument Ports
1407.16	8/27/81	Reactor Vessel - Installation of Rod Drive Electrical Cables
1407.17	6/7/78	Reactor Vessel - Installation of Control Rod Drive Mechanism Cooling
1407.18	6/7/78	Reactor Vessel - Installation of Missile Shield
1407.19	6/11/81	Reactor Vessel - Removal of Lower Internals
1407.20	7/10/81	Reactor Vessel - Installation of Lower Internals
1407.21	|10/1/81|	Refueling Activities Check-Off List
|1407.23	10/8/81	Removal and Installation of Spent Fuel Pit Keyway Gate|

PROCEDURE NUMBER	DATE	TITLE
		STEAM GENERATOR
1502.1	8/8/78	Placing Steam Generator in Service
1502.2	7/31/80	Steam Generator Recirculation System
1504.3	9/19/75	Steam Generator, Moisture Carryover Test
1506.1	7/31/80	Steam Generator Wet Layup
1506.2	3/13/81	Steam Generator Pressure Test/Hydrostatic Test
1507.1	7/10/81	Steam Generator Safety Valve Repair and Setting
1507.2	3/26/81	Steam Generator Manway Cover Removal and Replacement
1507.4	10/8/81	Recalibration of Steam Dump Reference Temperature
1507.5	8/8/78	Steam Generator, Safety Valve Removal and Reinstallation
1507.6	5/7/81	Steam Generator Secondary Manway Cover Removal and Replacement
1507.7	8/1/79	Steam Dump Valves to Atmosphere - Inspection and Repair
1507.8	8/21/80	Steam Generator Main Steam Isolation Valves - Disassembly, Repair and Reassembly
1507.9	4/3/80	Entry into Secondary Side of Steam Generators for Inspection and/or Repair
1507.10	2/1/80	Entry into Primary Coolant Piping for Visual Examination
1507.11	11/25/80	Steam Generator Handhole Covers and Tube Lane Blocking Device Inserts Removal and Installation
1507.12	8/21/80	Main Steam Check Valves Disassembly, Repair, and Reassembly
1508.2	4/25/80	Steam Generator Tube Leak
		SECONDARY CHEMISTRY
1560	7/21/78	Secondary Chemistry - Precautions and Limits
		FULL LENGTH ROD CONTROL CLUSTER ASSEMBLIES
1600.1	5/2/80	Full Length Rod Control Mechanism - Motor Generator Operation
1604.1	7/10/81	Full Length RCC - Periodic Exercise
1604.3	10/14/77	At Power Measurement of Moderator Temperature, Doppler and Power Coefficient
1604.4	9/19/79	Power Defect Measurement
1604.8	4/24/79	CRDM/RPI Stepping and Drop Time Test
1604.9	6/20/79	Reactor Full Length Control Rod System (CRDM) Test
1607.5	4/10/80	Power Supply Replacement in Full Length Rod Control System
1607.7	7/15/77	Full Length RCC Position Determination and Lift Mechanism Checkout
1607.8	2/1/80	Preventative Maintenance - CRDM
1607.10	7/9/80	Inspection of CRDM Motors and RPI Stacks and Cables
1608.1	7/10/81	Full Length RCC - Malfunction
		ROD POSITION INDICATION
1804.1	10/25/79	Axial Flux, Rod Deviation and Rod Position Indication System - Monthly Test
1807.4	1/23/79	RPI Amplifier and Indicator Adjustments
1807.5	8/20/79	Recalibration of Rod Insertion Limits

PROCEDURE NUMBER	DATE	TITLE
		CHARGING AND LETDOWN
2101.1	10/14/76	CVCS - Charging and Letdown - Initial Valve Alignment
2132.1	9/19/79	CVCS - Volume Control Tank Gas Space Concentration Control
2140.1	4/16/76	CVCS - Charging Pump Operation
2147.1	8/14/81	Charging Pump Packing Replacement
2147.2	2/24/81	Charging Pump Disassembly, Repair and Assembly
2147.3	8/1/80	Charging Pump Motor Overhaul and Maintenance
		CHEMICAL MIX SYSTEM
2402.1	11/30/76	CVCS - Chemical Mix System - Chemical Addition
		HEAT TRACING
2500.1	1/22/80	Heat Tracing System - Normal Operation
2504.1	5/15/80	Heat Tracing System - Periodic Test
		BORON CONCENTRATION CONTROL SYSTEM
2601.1	9/19/79	CVCS - Boric Acid System Valve Alignment
2603.1	11/21/79	CVCS - Boron Concentration Control System - Automatic Makeup
2603.5	7/10/81	CVCS - Boric Acid Batching and Transferring
2603.6	9/20/76	Tank Level Bubbler Lines, Blowdown
2607.1	5/19/78	Foxboro Magnetic Flow Transmitters - Removing from and Returning to Service
2608.1	10/1/81	Chemical and Volume Control System Emergency Boration
2608.2	10/14/76	CVCS - Malfunction of Boron Concentration Control System
		BORON RECYCLE SYSTEM
2803.1	9/19/79	CVCS - Boron Recycle System - Operating Instructions
2819.1	0-11/28/72	CVCS - Purge of CVCS Holdup Tanks
2860.1	1/3/79	CVCS - Gas Stripper Package
2870.1	9/19/79	CVCS - Boric Acid Evaporator Operation
2879.1	4/10/80	CVCS - Boric Acid Evaporator Package Emergency Waste Processing
		COMPONENT COOLING SYSTEM
3100.1	2/24/78	Component Cooling System Normal Operation
3104.1	8/14/81	Component Cooling Water System - Periodic Test of Pumps
3107.1	4/3/80	Component Cooling Pump Seal Replacement
3107.2	4/3/80	Component Cooling Pump Disassembly, Repair and Assembly
3107.3	4/3/80	Component Cooling Water Pump Motor Overhaul and Maintenance
3108.1	6/23/76	Component Cooling System - Loss of Component Cooling Flow
3108.2	2/15/80	High Activity in Component Cooling System
3109.1	3/12/76	Component Cooling System Chemical Addition

PROCEDURE NUMBER	DATE	TITLE
		RESIDUAL HEAT REMOVAL SYSTEM
3204.1	9/24/81	Residual Heat Removal System - Periodic Test
3205.1	4/3/80	Isolation for Maintenance of Low Head Safety Injection Check Valves (*-875A, *-875B, and *-875C)
3206.2	3/5/81	Residual Heat Removal System - Annual Test
3206.3	7/30/81	Residual Heat Removal System Hydrostatic Test During Normal Unit Operation
3207.1	9/18/80	RHR Pump Seal Replacement
3207.2	12/4/79	RHR Pump Disassembly, Repair and Assembly
3207.4	4/3/80	RHR Motor Operated Stop Valves MOV-*-750 and MOV-*-751 Maintenance
3207.8	4/3/80	Residual Heat Removal Pump Motor Overhaul and Maintenance
3208.1	6/11/81	Malfunction of Residual Heat Removal System
		TURBINE PLANT COOLING WATER
3302.1	7/2/81	Turbine Plant Cooling Water System - Startup and Normal Operation
3308.1	2/1/80	Turbine Plant Cooling Water - Malfunction
3309.1	6/10/81	Chemical Treatment of Turbine Plant Cooling Water System
		INTAKE COOLING WATER
3404.2	8/14/81	Intake Cooling Water System - Periodic Test of Pumps
3407.1	10/30/80	Intake Cooling Water - Pump Removal and Installation of Spare
3407.3	10/17/80	Intake Cooling Water Pump - Disassembly, Repair, and Reassembly
3407.4	7/22/80	Intake Cooling Water Pump Motor Overhaul/Maintenance (Louis Allis Motor)
3407.6	5/22/80	Intake Cooling Water Pump Motor - Overhaul and Maintenance (Siemens-Allis)
3408.1	8/1/79	Intake Cooling Water - Malfunction
3408.2	5/28/81	Intake Cooling Water - Failure Due to Steam Generator or Main Transformer Transportation Incident
		SPENT FUEL PIT COOLING
3500.1	7/30/81	SFP Cooling System - Normal Operation
3501.1	5/15/80	Spent Fuel Pit Makeup
3501.2	9/22/77	Filling the Spent Fuel Pit
3507.1	8/1/80	Spent Fuel Pit Heat Exchanger Pump Motor Overhaul and Maintenance
3508.1	6/11/81	SFP Cooling System - Failure of the Spent Fuel Pit Cooling Pump

PROCEDURE NUMBER	DATE	TITLE
		SAFEGUARDS
4004.1	9/24/81	Containment Spray Pumps - Periodic Test
4004.2	6/25/81	Safeguard Relay Rack Train A, B, and Emergency Load Sequencer Timer - Periodic Test
4004.4	2/11/77	Containment Isolation Rack QR50 and QR51 - Periodic Test
4007.1	3/1/79	Emergency Load Sequencer Time Delay Relay Test, at Refueling
4008.1	5/19/78	Re-energizing Safeguards after Loss of a Single Power Supply
		SAFETY INJECTION
4103.1	5/7/81	High Head Safety Injection and Containment Spray Lineup for Automatic Operation
4104.1	10/23/81	High Head Safety Injection System - Periodic Test
4104.2	6/18/81	Engineered Safeguards and Emergency Power Systems - Integrated Test
4107.3	5/22/80	Safety Injection System - Check Valve Maintenance
4107.4	4/25/80	Safety Injection System - Lapping of Rockwell 2" Check Valves
4107.5	5/16/79	Electrical Preparations for Integrated Test of Engineered Safeguards and Emergency Power Systems
4107.6	4/3/80	Safety Injection Pump Motor Overhaul and Maintenance
4107.7	4/23/81	High Head SIS Pump Dis-assembly, Replacement of Rotating Element and Reassembly
		CONTAINMENT SPRAY
4204.2	7/31/80	Containment Spray System Nozzle Functional Test
4207.1	4/3/80	Containment Spray System Pump Motor Overhaul and Maintenance
		EMERGENCY DIESEL GENERATOR
4303.1	10/31/78	Emergency Diesel Generator - Normal Standby Condition
4304.1	6/26/80	Emergency Diesel Generator - Periodic Test Load on 4 KV Bus
4304.2	2/15/80	Emergency Diesel Generator Operability Test
4307.3	3/16/79	Emergency Diesel Generator - Annual Inspection (Mechanical)
4307.4	10/25/79	Emergency Diesel Generator - Annual Inspection (Electrical)
4307.5	9/18/80	Emergency Diesel Generator - Fuel Oil Pump Replacement
		ACCUMULATORS
4504.1	10/1/81	Accumulator Check Valves Backleakage - Periodic Test
		EMERGENCY CONTAINMENT COOLERS AND FILTERS
4700	4/10/80	Emergency Coolers and Filters - Normal Operation Procedure
4704.1	9/11/80	Emergency Containment Filter - System Operating Test and Inspection
4704.2	7/21/78	Emergency Containment Charcoal Filters - Surveillance Specimen Evaluation
4704.3	1/23/79	Emergency Containment Filter Systems: HEPA Filters Performance Test

PROCEDURE NUMBER	DATE	TITLE
		EMERGENCY CONTAINMENT COOLERS AND FILTERS
4704.4	3/8/79	Emergency Containment Filter Systems: Adsorber Cells Performance Test
4704.5	4/3/80	Emergency Containment Coolers - Performance Test at Refueling
4704.6	6/11/81	Emergency Containment Coolers - Periodic Test
4707.1	7/31/80	Emergency Containment Filter Fan Motor Maintenance
4707.2	7/31/80	Emergency Containment Cooler Fan Motor Maintenance
		WASTE DISPOSAL SYSTEM - LIQUID WASTES
5110.1	12/5/80	WDS - Reactor Coolant Drain Tank Operation
5120	3/13/81	WDS - Laundry, Hot Shower and Chemical Drain System Operation
5150.3	2/26/76	WDS - Evaporators Number 2 and 3 Operation
5163.1	8/31/79	WDS - Waste Condensate Tank, Polishing Demineralizer and Monitor Tank Operation
5163.2	10/1/81	WDS - Controlled Liquid Release to Circulating Water
5163.4	11/21/79	Waste Disposal System, Waste Liquid Demineralizer Operation
5167.1	7/14/78	Disassembly and Reassembly of Liquid Waste Release Monitor
		WASTE DISPOSAL SYSTEM - SOLID WASTES
5323.1	8/31/79	WDS - Baler Operations
5333.1	4/23/81	WDS - Transferring Spent Resin Storage Tank to Shielded Shipping Cask
5333.4	9/26/79	WDS - Solidification of Evaporator Concentrates with Cement
		WASTE DISPOSAL SYSTEM - GASEOUS
5503.1	10/25/79	WDS - Gaseous Disposal System Operation
5504.1	9/12/78	Post Accident Containment Vent System - Equipment Inspection and Operating Tests
5504.2	1/30/79	Post Accident Containment Vent System - Adsorber Cell Performance Test
5504.3	1/30/79	Post Accident Containment Vent System - HEPA Filter Performance Test
5508.1	11/21/79	WDS - Accidental Release of Radioactive Gas
5508.2	4/10/80	WDS - Off Normal Operation - Gaseous Waste Disposal System
5510.1	5/11/79	WDS - Operation of Gas Analyzer and Gas Sampling Procedures
5523.1	3/26/81	WDS - Gas Decay Tank Controlled Release to Atmosphere
5530.1	4/16/76	WDS - Operation of Waste Gas Compressor
5537.1	4/16/76	WDS - Waste Gas Compressor - Placing in Service and Removing from Service
		MAIN CONDENSER
6103.1	9/11/78	Amertap Condenser Tube Cleaning System Operation
6108.1	3/12/76	Main Condenser - Loss of Water Box Prime
6108.2	4/6/79	Main Condenser - Loss of Vacuum

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PROCEDURE NUMBER	DATE	TITLE
6108.4	4/25/80	Condenser Leak Procedure Normal Power Operation
		CONDENSER CIRCULATING WATER
6200.1	8/28/80	Condenser Circulating Water System - Startup/Shutdown
		AIR EJECTORS
6600	12/4/79	Operation of Steam Jet Air Ejector System Including Hogging Jet
		CATHODIC PROTECTION
6703	4/7/80	Cathodic Protection - Intake and Condenser - Operating Instructions
		CONDENSATE SYSTEM
7001.1	4/3/80	Condensate and Feedwater System - Valve Alignment for Normal Operation
7100.1	3/17/80	Condensate Pumps Operating Instructions
		FEEDWATER SYSTEM
7200.1	11/1/76	Steam Generator Feed Pump - Operating Instructions
		AUXILIARY FEEDWATER SYSTEM
7300.2	11/16/78	Auxiliary Feedwater System - N_2 Backup System Operation
7300.3	7/9/80	Auxiliary Feedwater System - Operating Instructions
7304.1	9/24/81	Auxiliary Feedwater System - Periodic Test
7307.2	9/18/80	Aux. Feedwater Pump Disassembly, Inspection, Repair and Assembly
7307.3	10/8/81	Auxiliary Feedwater Pump Turbine Overhaul
7307.4	2/29/80	Aux. Feedwater Pump Turbine Throttle Trip Value Overhaul
7308.1	6/25/81	Malfunction of the Auxiliary Feedwater System
		FEEDWATER HEATERS
7400.1	10/19/76	Feedwater Heaters - Removing from and Returning to Service
		HEATER DRAINS
7500.1	1/7/77	Heater Drain Pumps - Removing and Returning to Service
		TURBINE GENERATOR
8001.1	2/9/77	Placing Turbine on Turning Gear
8004.1	1/5/74	Turbine Generator - Overspeed Trip Test

PROCEDURE NUMBER	DATE	TITLE
		TURBINE SEAL SYSTEMS
8110.1	10/27/76	Turbine Seal System - Operating Instructions
		LUBE OIL PURIFICATION AND STORAGE
8500.1	5/14/81	Turbine Lube Oil System - Transfer, Purification and Cooling
		GENERATOR
8607.1	12/15/78	Power Generator Grounding for Safety and Test Preparation
		GENERATOR COOLING SYSTEM
8700.1	6/21/79	Turbine Generator - Operation of Seal Oil System
8702.1	10/26/81	Turbine Generator - Charging Generator with Hydrogen
8705.1	10/26/81	Purging Hydrogen from Generator
8705.2	10/15/81	Turbine Generator Reactivating Hydraulic Gas Dryer
		MAIN TRANSFORMER
9104.1	10/1/81	Main Transformer - Periodic Test
9108.1	9/27/77	Main Transformer - Malfunction
		AUXILIARY TRANSFORMER
9204.1	6/18/81	Auxiliary Transformer - Periodic Test
9207.1	12/15/78	Auxiliary Transformer - Grounding for Safety and Test Preparation Without the Use of Manufacturer's Ground Test Device
9208.1	9/27/77	Auxiliary Transformer - Malfunction
		STARTUP TRANSFORMER
9304.1	3/13/81	Startup Transformer - Periodic Test
9307.1	12/15/78	Startup Transformer - Grounding for Safety and Test Preparation Without the Use of Manufacturer's Ground Test Device
9308.1	9/27/77	Startup Transformer - Malfunction
		4KV SWITCHGEAR
9400.1	1/11/80	Operation of 4160 Volt and 480 Volt LCC Switchgear
9407.1	7/30/81	4160 Volt Switchgear Triennial Inspection
9407.2	12/15/78	4160 Volt Bus Grounding for Safety and Test Preparation Without the Use of Manufacturer's Ground Test Device
9407.3	12/18/80	4160 Volt Switchgear Cubicle Component Inspection

PROCEDURE NUMBER	DATE	TITLE
		480 V SWITCHGEAR
9507.1	12/7/79	480 Volt Switchgear - Periodic Inspection
9507.2	12/18/80	480 Volt Circuit Breaker Mounting Modifications Applicable to 480 Volt Motor Control Centers
		DC SYSTEM
9600.1	3/2/78	DC Electrical System - Normal System Lineup and Operation of Batteries and Chargers
9604.1	9/24/81	DC System - Periodic Tests and Inspections
9607.1	12/22/78	125 VDC Load Center Undervoltage Alarm Relay Test/Calibration for 3A, 3B, 4A, and 4B DC Load Centers
9608.1	7/14/78	125 V DC System - Location of Grounds
9654.1	10/14/80	125 V DC Battery Load Test for 3A and 4B Batteries
9654.2	10/20/80	125 V DC Battery Load Test for 3B and 4A Batteries
9659.1	10/17/80	3A and 4B Batteries - Removing from and Returning to Service
9659.2	10/20/80	3B and 4A Batteries - Removing and Returning to Service
		INSTRUMENT AC POWER SUPPLY
9700.1	5/27/77	Instrument AC Power Supply - Operation of Normal and Spare Inverters
9707.1	9/24/81	Inverter Annual Inspection
		ISOLATED PHASE BUS
9900	11/22/74	Iso-Phase Bus Cooling System Operation
		CONTAINMENT VENTILATION
10100	9/3/81	Containment Ventilation and Containment Purge
10107.1	8/10/79	Repair of Containment Purge Valves
		AUXILIARY BUILDING VENTILATION
10200	0-3/23/71	Auxiliary Building Ventilation
		CONTROL BUILDING HEATING, VENTILATION AND AIR CONDITIONING
10304.1	1/30/79	Control Room Post MHA Air Conditioning System - HEPA Filter Performance Test
10304.2	1/30/79	Control Room Post MHA Air Conditioning System - Adsorber Cell Performance Test
10307.1	5/14/76	Emergency Filter - HEPA and Adsorber Post MHA Air Cleaning Systems Filter Installation, Removal and Repair
10308.1	5/30/78	Control Building Heating Ventilation and Air Conditioning System - Off-Normal Procedure

PROCEDURE NUMBER	DATE	TITLE
		PROCESS RADIATION MONITORING
11100	2/29/80	Process Radiation Monitoring System - Operating Instructions
11104.1	9/26/79	Process Radiation Monitoring System - Periodic Test
11107.1	5/7/81	Process Radiation Monitoring System - Maintenance and Calibration
11108.1	2/15/80	Process Radiation Monitoring System - Off-Normal Condition Operation
		AREA RADIATION MONITORING
11200	11/15/76	Area Radiation Monitoring System - (ARMS) General Instructions
11204.1	6/18/81	Area Radiation Monitoring System - Periodic Test
11207.1	9/18/81	Area Radiation Monitoring System - Calibration
11208.1	10/1/76	Area Radiation Monitoring System (ARMS) - Off-Normal Operation
		RADIATION PROTECTION
11500	9/18/80	Health Physics Manual
11550.1	12/5/80	HP-1 - Radiation Work Permit
11550.2	11/25/80	HP-2 - Radiation Rules of Practice
11550.4	4/2/81	HP-4 - Scheduling of Periodic Health Physics Activities
11550.5	1/5/79	HP-5 - Man-Rem Reporting
11550.10	10/23/81	HP-10 - Calibration and Operation of Health Physics Laboratory Counting Equipment
11550.11	2/1/80	HP-11 - Operation of Portal Monitors and Hand and Foot Monitors
11550.13	8/20/81	HP-13 - Portable Survey Instruments
11550.16	12/7/77	HP-16 - Count Rate Instrument Calibration
11550.17	8/27/81	HP-17 - Use of the Eberline Multiple Source Gamma Calibrator Model 1000B
11550.18	2/1/80	HP-18 - Calibration of Portable Gamma Survey Instruments
11550.20	10/25/79	HP-20 - Radiation Surveys
11550.21	9/7/78	HP-21 - Surface Contamination Surveys
11550.22	12/31/80	HP-22 - Airborne Contamination Surveys
11550.23	9/7/78	HP-23 - Environmental and Radiation Controlled Areas - Radiation Monitoring
11550.24	9/7/78	HP-24 - Shielding Surveys
11550.25	10/8/81	HP-25 - Conducting Surveys of Areas Outside the Radiation Controlled Area
11550.30	8/20/81	HP-30 - Personnel Monitoring of External Dose
11550.31	12/4/79	HP-31 - Personnel Monitoring of Internal Dose - Bioassays
11550.32	12/5/80	HP-32 - Pocket Dosimeter Source and Drift Check
11550.33	6/13/80	HP-33 - Operation of the Whole-Body Counter
11550.34	12/4/79	HP-34 - Matrix Calibration of the Whole-Body Counter
11550.41	10/4/79	HP-41 - Movement of Material Inside the Radiation Controlled Area
11550.42	10/4/79	HP-42 - Handling and Storage of Radioactive Waste
11550.43	4/25/80	HP-43 - Inventory and Leak Testing of Sealed Sources
11550.45	12/5/80	HP-45 - Release of Material from the Radiation Controlled Area
11550.46	10/1/81	HP-46 - Radioactive Waste Shipping
11550.47	8/27/81	HP-47 - Compacting Solid Waste
11550.50	6/28/79	HP-50 - Use and Maintenance of Protective Clothing

RADIATION PROTECTION (cont'd)

11550.53	4/10/80	HP-53 - Iodine-131 Air Activity Determination By Use of Whole Body Counter
11550.55	10/8/81	HP-55 - Temporary Shielding
11550.60	7/10/81	HP-60 - Respiratory Protection Manual
11550.61	2/17/78	HP-61 - Full Face Respirator, Air Purifying Type, Scott, Series 801450 and 801500
11550.64	2/17/78	HP-64 - Full Face Respirators, Airline Type, Mine Safety Appliances Model 93524
11550.65	6/13/80	HP-65 - Respirator Equipment Maintenance Program
11550.66	2/1/80	HP-66 - Selection, Use, Issue, Control and MPC Hour Accountability of Respiratory Protection Equipment
11550.67	5/29/79	HP-67 - Full - Face Respirator, Self-Contained Breathing Apparatus Type, Scott Pressur - Pak II
11550.68	10/31/78	HP-68 - Operation of the Sodium Chloride Respirator Test Booth
11550.70	4/25/80	HP-70 - Decontamination of Personnel
11550.71	9/7/78	HP-71 - Decontamination of Tools, Equipment, and Areas
11550.80	9/3/81	HP-80 - Qualification of Health Physics Personnel
11550.81	10/30/80	HP-81 - Health Physics Training
11550.90	6/11/81	HP-90 - Inventory of Emergency Equipment
11550.91	10/15/81	HP-91 - Emergency Radiation Team Response
11550.101	6/11/81	HP-101- Radiological Incident Reports

SOURCE RANGE NUCLEAR INSTRUMENTATION

12104.2	|10/23/81|	Source Range Nuclear Instrumentation - Periodic Channel Functional Test
12107.1	11/13/80	Source Range Nuclear Instrumentation - High Voltage and Discriminator Voltage Adjustments
12107.2	12/4/79	Source Range Nuclear Instrumentation - Adjustments
12108	10/1/76	Source Range Nuclear Instrumentation Malfunction

INTERMEDIATE RANGE NUCLEAR INSTRUMENTATION

12204.2	|10/23/81|	Intermediate Range Nuclear Instrumentation - Periodic Channel Functional Test
12207.1	10/8/81	Intermediate Range Nuclear Instrumentation - Compensating Voltage Adjustments
12207.2	11/13/80	Intermediate Range Nuclear Instrumentation - Checkout and Adjustments
12208	3/3/76	Intermediate Range Malfunction

PROCEDURE NUMBER	DATE	TITLE
		POWER RANGE NUCLEAR INSTRUMENTATION
12304.2	10/23/81	Power Range Nuclear Instrumentation - Periodic Channel Functional Test
12304.3	6/18/81	Power Range Nuclear Instrumentation - Shift Checks and Daily Calibrations
12304.4	6/3/75	Power Range Nuclear Instrumentation - Channel Check and Calibration
12304.6	6/18/81	Power Range Nuclear Instrumentation - Calculation of Target Flux Difference
12304.8	7/31/80	Inducing Xenon Oscillation to Produce Various Incore Axial Offsets
12307.2	4/23/81	Power Range Overpower Trip High Range Adjustments
12307.3	11/13/80	Quarterly Calibration of the Nuclear Power Range Instrumentation, Axial Flux Deviation Process Instrumentation to OPSP and OTSP, and Nuclear Power Range Axial Flux Deviation Alarm
12308	10/1/81	Power Range Nuclear Instrumentation Malfunction
12308.2	8/6/81	Power Range Nuclear Instrumentation - Verification of Upper, Lower, and Channel Deviation Alarms
12401.2	12/15/77	Incore Nuclear Instrumentation - Determination of Upper and Lower Limit Switch Settings
12404.1	8/28/80	Power Distribution Surveillance Using Incore Movable Detector System
12404.2	1/22/81	Determination of Effective Axial Peaking Factor
12404.3	3/26/81	Implementation of Augmented Surveillance
12407.1	3/26/81	Retracting and Inserting Incore Instrumentation Thimbles
12407.2	12/7/79	Incore Flux Detector Drive Mechanism Repair and Detector Replacement
12407.3	9/19/78	Incore Flux Mapping System Thimble Cleaning and Lubrication
		INCORE THERMOCOUPLES
12607.2	2/15/80	Incore Thermocouple - Maintenance Checkout
		EXCORE NUCLEAR INSTRUMENTATION
12702.1	9/19/79	Normal Alignment of Reactivity Computer
12707.1	5/22/80	Excore Nuclear Instrumentation - Receipt, Pre-Installation and Post - Installation Inspections and Test of Detectors
12707.2	4/6/79	Excore Nuclear Instrumentation Installation of Detectors
		CONTAINMENT LEAKAGE SURVEILLANCE
13100.1	3/16/79	Containment Integrated Leak Rate Test - Unit 3
13100.2	1/12/81	Containment Integrated Leak Rate Test - Unit 4
13104.1	12/15/78	Containment Purge Valve Leak Test
13108.1	7/10/81	Loss of Containment Integrity

PROCEDURE NUMBER	DATE	TITLE
		CONTAINMENT TENDONS
		PENETRATIONS
13404.1	10/30/80	Containment Boundary Isolation Valves - Local Leak Rate Test
13404.2	12/15/78	Electrical Penetration Canisters - Local Leak Rate Test
		CONTAINMENT HATCHES
13513	11/21/79	Personnel Access Hatch - Operating Instructions
13514.1	8/20/81	Personnel and Emergency Air Locks - Local Leak Rate Tests
13514.2	6/25/81	Containment Access Hatch - Local Leak Rate Test (Vacuum Test)
13523	2/15/80	Emergency Access Hatch - Operating Instruction
13531.1	1/23/79	Equipment Access Hatch - Local Leak Rate Test
13537.2	3/19/75	Personnel and Emergency Access Hatches - Preventative Maintenance
		PROCESS INSTRUMENTATION
14004.1	6/13/80	Steam Generator Protection Channels - Periodic Test
14004.2	3/26/81	Reactor Coolant Flow Protection Channels - Periodic Test
14004.3	9/18/81	Tavg and Delta T Protection Channels - Periodic Test
14004.4	11/5/81	Pressurizer Pressure and Water Level Protection Channels - Periodic Test
14004.5	4/3/80	Seismograph - Periodic Test
14007.5	10/23/81	Recalibration of High Delta T Alarm Setpoint
14007.6	6/18/81	Tref Program - Recalibration
14007.7	10/23/81	Tavg Alarms - Recalibration
14007.11	4/23/81	Reactor Coolant Temperature
14007.12	6/18/81	Reactor Coolant Flow Instrumentation Calibration During Refueling
14007.13	11/12/81	Pressurizer Water Level Instrumentation Calibration
14007.14	4/2/81	Pressurizer Pressure Instrumentation Calibration During Refueling
14007.15	12/5/80	Rod Position Indication Instrumentation Calibration During Refueling
14007.16	8/27/81	Steam Generator Level Feedwater Flow and Steam Flow Instrumentation Calibration During Refueling
14007.17	12/7/79	Charging Flow Instrumentation Calibration During Refueling
14007.18	9/18/80	Residual Heat Removal Pump Flow Instrumentation Calibration
14007.19	11/14/77	Boric Acid Tank Level Instrumentation Calibration During Refueling
14007.20	12/22/78	Refueling Water Storage Tank Level Instrumentation Calibration
14007.21	7/31/78	Volume Control Tank Level Instrumentation Calibration During Refueling
14007.22	12/22/78	Containment Pressure (Wide and Narrow Range) Instrumentation Calibration During Refueling
14007.23	11/14/77	Containment Sump Level Instrumentation Calibration During Refueling

PROCEDURE NUMBER	DATE	TITLE
		PROCESS INSTRUMENTATION (cont'd)
14007.24	11/14/77	Accumulator Level Instrumentation Calibration During Refueling
14007.25	9/18/80	Accumulator Pressure Instrumentation Calibration During Refueling
14007.26	8/27/81	Steam Line, Steam Header and Turbine 1st Stage Pressure Instrumentation Calibration
14007.27	1/22/80	Boric Acid Blender Control System Instrumentation Test During Refueling
14007.28	11/12/81	Tavg and ΔT Control Loops Calibration Check and Adjustments
14007.29	1/30/79	Recalibration of Over Power Delta T Setpoint (OPSP)
14007.30	11/12/81	Auxiliary Feedwater Flow Indication and Control Instrumentation Calibration
14007.31	11/12/81	Replacement of NBFD Relays in Reactor Protection and Safeguards System During Refueling
		WATER TREATMENT PLANT
15100	8/27/81	Water Treatment Plant (WTP) - Pretreatment Section Startup and Shutdown
15103	8/27/81	WTP Pretreatment Section - Normal Operation
15200	6/25/81	WTP Demineralizer Section - Normal Operation
15209	7/1/81	WTP Demineralizer Section - Abnormal Operation - Raw Water Supply to Carbon Filters
15307.1	1/23/79	Primary Water Makeup Pump Motor Overhaul and Maintenance
15307.2	10/15/81	Replacing Carbon in Activated Carbon Pressure Filters
		PRIMARY WATER SYSTEM
		FIRE PROTECTION SYSTEM
15500	3/13/81	Fire Protection Program
15524	6/18/81	Fire Protection Pump and Power Supply - Periodic Test
15525	8/20/81	Fire Protection Underground Piping - Periodic Flow Test
15527.1	10/24/78	Fire Pump Motor Overhaul
15537.1	10/1/81	Fire and Smoke Detection System - Semi-Annual Test
15537.2	7/16/81	Periodic Surveillance of Fire Protection Equipment
15537.3	5/2/80	Surveillance of Penetration Fire Barriers (Fire Stops)
15537.4	11/5/81	Annual Fire Hose Hydro Test
15538	7/30/81	Fire and Smoke Detection System - Operating Instructions
15543	10/8/81	Normal Operation of Main, Auxiliary, Startup Transformers and H^2 Seal Oil System Deluge Fire Protection System
15549.1	3/25/77	Resetting Deluge Fire Protection System After Actuation of SUPROTEX Automatic Valve
		INSTRUMENT AIR SYSTEM
15600.1	6/18/81	Instrument Air System - Operating Instructions
15607.1	7/22/80	Instrument Air Compressor Maintenance
15608.1	2/24/81	Loss of Instrument Air
15650	9/3/81	Breathing Air System Operating Instruction
		POLAR CRANE

PROCEDURE NUMBER	DATE	TITLE
		FUEL HANDLING
16000.1	4/24/79	Limits and Precautions for Handling Fuel Assemblies
16001.2	8/20/81	Technical Specification Surveillance Requirements for Core Refueling
16002.5	3/13/81	Refueling Core Shuffle
16002.6	6/11/81	Preparations and Precautions for Refueling Fuel Shuffle
16002.7	10/30/80	Refueling Pre-Shuffle in Spent Fuel Pit
16004.1	12/15/78	Fuel Transfer Tube Flange Local Leak Rate Test
16004.2	6/11/81	Refueling System Interlocks Verification
16007.1	12/20/79	Fuel Transfer Tube - Installation of Blind Flange
16008.1	10/23/75	Accident Involving New Fuel
16008.2	10/23/75	Accident Involving Spent Fuel
16009.1	12/4/79	Receipt and Handling of New Fuel Containers
16009.2	2/15/80	Site Removal of New Fuel Assemblies from Shipping Containers and Handling of Shipping Containers
16009.6	11/5/81	On-Site Unpacking Inspection and Manual Loading of Burnable Poison Rod Assemblies
16100	12/5/80	Fuel Transfer System Normal Operation
16104.1	12/18/80	Fuel Transfer System - Periodic Test
16122	3/26/81	Filling the Refueling Canal and Reactor Refueling Cavity
16125.1	5/14/81	Draining Refueling Cavity Using RHR System
16125.2	11/4/77	Draining Refueling Cavity below the Reactor Vessel Flange Level via the Reactor Coolant Drain Tank
16125.3	11/1/79	Draining the Refueling Cavity and SFP Canal below the Reactor Vessel Flange Level to the RWST using the Emergency SFP Pump
16129.1	10/12/79	Purifying Reactor Coolant and Refueling Cavity During Refueling Using a CVCS Mixed Bed Demineralizer
16129.3	10/14/76	Reactor Cavity Filtration System - Operation and Filter Changeout
16200	12/4/79	Manipulator Crane Operating Instructions
16204.1	8/20/81	Manipulator Crane and RCC Change Fixture Periodic Tests
16207.1	12/7/79	Manipulator Crane - Removal and Installation of Inner Mast and Gripper
16300	5/21/76	Spent Fuel Pit Bridge Crane Operating Instructions
16304.1	11/13/80	Spent Fuel Pit Bridge Crane - Periodic Test
16400	0-10/13/70	New Fuel Elevator Operating Instructions
16404.1	12/4/79	New Fuel Elevator - Periodic Test
16404.2	1/30/79	New Fuel Monorail Hoist - Periodic Test
16450	5/21/76	New Fuel Monorail Hoist Operating Instructions
16500	8/4/77	New Fuel Bridge Crane Operating Instructions
16504.1	12/4/79	New Fuel Bridge Crane - Periodic Test
16700	9/11/79	Cask Crane Operating Instructions
16701.1	6/11/81	Gantry Crane - Inspection and Preventative Maintenance
16702.1	8/27/81	Spent Fuel Shipment Using Model NFS-4 Shipping Cask
16702.2	4/12/77	Spent Fuel Transfer
16702.3	7/16/81	Spent Fuel Transfer (NAC and NFS Shipping Cask)
16702.4	12/22/78	Thimble Plug Transfer
16702.5	10/25/79	Spent Fuel Shipment Using National Lead Industries (NLI) Shipping Cask

PROCEDURE NUMBER	DATE	TITLE
		FUEL HANDLING (cont'd)
16707.1	8/11/78	Operation of Spent Fuel Building Sliding Door
16708.1	6/23/76	Spent Fuel Cask Emergency Cooling
16711.1	10/9/74	Irradiation Surveillance Capsule Handling Cask DOT-55-14300
16900.1	3/26/81	Uncoupling Full Length Control Rods
16900.3	1/30/75	Thimble Plug Assembly Handling Tool
16900.4	9/17/74	Spent Fuel Assembly Handling Tool - Operating Instructions
16900.5	7/31/78	Irradiation Specimen Handling Tool Operation and Specimen Container Transfer
16900.6	9/19/74	Guide Tube Cover Handling Tool - Operating Instructions
16900.9	3/3/76	RCC Change Fixture Operation
|DELETED|		
16900.11	12/5/80	Burnable Poison Rod Assembly Handling Tool Manual Type
16900.12	9/17/74	New Fuel Assembly Handling Fixture Operating Instructions
16900.13	5/14/81	Core Mapping Following Core Loading
16900.15	1/20/78	Coupling of Full Length Control Rods
16900.16	9/3/81	Rod Cluster Control Change Tool
		SAMPLE SYSTEM
18000		DIGITAL DATA PROCESSING SYSTEM
		EMERGENCY PROCEDURES
20000	3/5/81	(E-0) - Immediate Actions and Diagnostics
20001	3/5/81	(E-1) - Loss of Reactor Coolant
20002	3/5/81	(E-2) - Loss of Secondary Coolant
20003	3/5/81	(E-3) - Steam Generator Tube Rupture
20004	6/11/81	Loss of Offsite Power
20005	4/25/80	Control Room Inaccessability
20006	4/23/81	Loss of Feedwater Flow or Steam Generator Level
20101	8/20/81	Duties of Emergency Coordinator
20102	8/14/81	Duties of an Individual Who Discovers an Emergency Condition
20103	4/23/81	Classification of Emergencies and Criteria for Evacuation
20104	|10/8/81|	Emergency Roster
20105	3/26/81	On-Site Support Centers
20106	3/26/81	Natural Emergencies
20107	5/7/81	Fire and Explosion Emergencies
20109	3/26/81	Criteria For, and Conduct of Local Evacuation
20110	3/26/81	Criteria For, and Conduct of Owner Controlled Area Evacuation
20111	3/26/81	Re-entry
20112	3/26/81	Communications Network
20113	3/26/81	Maintaining Emergency Preparedness, Emergency Exercises, Drills, Tests and Evaluations
20125	3/26/81	On-Site Emergency Organization
20126	|10/15/81|	Loss of Coolant Accident Dose Calculation
20201	3/26/81	Maintaining Emergency Preparedness - Radiological Emergency Plan Training

OFF-SITE EMERGENCY ORGANIZATION

PROCEDURE NUMBER	DATE	TITLE
1101	9/8/81	Duties of the Emergency Control Officer - Off-Site Emergency Organization
1102	9/8/81	Duties of the Recovery Manager, Off-Site Emergency Organization
1103	4/1/81	Duties of the Emergency Information Manager; Off-Site Emergency Organization
1104	4/1/81	Duties of the Emergency Security Manager
1105	4/1/81	Duties of the Emergency Technical Manager
1106	4/1/81	Duties of the Governmental Affairs Manager
1107	4/1/81	Duties and Responsibilities of the Emergency Plan Administrator
1211	4/1/81	Activation and Use of the Emergency News Center (Turkey Point)
1212	9/8/81	Activation and Use of the Interim Emergency Operations Facility (Turkey Point)
1301	10/23/81	Emergency Roster - Off-Site Emergency Organization

WELDING PROCEDURES (Limited Distribution Only)

WP-1A	8/14/81	Manual Shielded Metal-Arc Process - For Welding Carbon Steel Plate and Piping
WP1-AT	8/14/81	Manual, Combination Process - Welding Tungsten Inert Gas and Shielded Metal Arc-Materials Group P1 to P1
WP6-A	8/14/81	Manual Shielded Metal-Arc Process - For Welding 12% Chromium Steel Plate and Piping
WP1-8-AT(1)	8/14/81	Manual, Combination Process Welding Tungsten Inert Gas and Shielded Metal Arc Materialsl Group P8 to P1
WP-8-AT	8/14/81	Manual, Combination Process Welding, Tungsten Inert Gas and Shielded Metal Arc Materials Group P8 to P8
WP1-T	8/14/81	Gas Tungsten - Arc Welding - For Materials in the P-1 Grouping of Section IX of the ASME Boiler and Pressure Code
WP1-8-T	8/14/81	Gas Tungsten - Arc Welding - For Materials in the P-1 and P-8 Grouping of Section IX of the ASME Boiler and Pressure Code
WP8-T	8/14/81	Gas Tungsten - Arc Welding - GTAW Process For Materials to be Welded in the P-8 Grouping of Section IX of the ASME Boiler and Pressure Code

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PLANT CONSTRUCTION

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ASP-3	Document Control	2
ASP-4	Change Request/Notice Control	1
ASP-5	Field Sketch Preparation	1
ASP-6	Welding Control	2
ASP-7	Procurement	1
ASP-8	Corrective Action	1
ASP-9	Material Control	1
ASP-10	Indoctrination and Training	1
ASP-11	Construction Turnover	1
ASP-12	Q.A. Records	1
ASP-13	Housekeeping	1
ASP-14	Control of Material Temporarily Removed from Normal Operating Position	1
ASP-16	Calibration and Control of Measuring and Test Equip.	1
ASP-17	Fire Prevention	1

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TURKEY POINT PLANT
UNITS 3 and 4
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F:PSR