

ENCLOSURE 1
WATTS BAR NUCLEAR PLANT
PRESTART TEST PROGRAM
CORRECTIVE ACTION PROGRAM PLAN
REVISION 2

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WATTS BAR NUCLEAR PLANT
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CORRECTIVE ACTION PROGRAM PLAN

REVISION 2

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PROGRAM DESCRIPTION FOR WATTS BAR PRESTART

Title: TEST PROGRAM

Revision No.	Description of Revision	Date Approved
0	Initial Issue	12/08/88
1	The following sections had minor changes made for clarification: 1.0, 2.0, 3.0, 4.0, 4.1, 4.2, 4.3, 4.5, 4.6, 4.7, 4.9, 4.10, 6.0, 6.1, 6.2, 7.1, 7.2, Exhibit A and Attachment 1. (First revision sent to NRC.)	12/20/88
2	Table 1: Added Systems 27, 213, 214, 215, and 232. Clarified note to say that *'d systems will be included with System 88. Added **'d note. Corrected system titles. Exhibit A: Rewritten to enhance bases for exclusions.	06/14/89

**PRESTART TEST PROGRAM
CORRECTIVE ACTION PROGRAM PLAN**

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PRESTART TEST PROGRAM

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) requires nuclear facilities to demonstrate the capability of plant equipment to perform their designed functions prior to the commencement of fuel loading activities. This is accomplished at the Watts Bar Nuclear Plant (WBN) via the Preoperational Test Program, as described in the Final Safety Analysis Report (FSAR), using detailed test instructions. The results of these tests will provide documentary evidence of the ability to perform design functions. The Preoperational Test Program for WBN unit 1 is essentially complete.

Although the test program controls have been questioned in the past by TVA and NRC, and the resolutions of these questions have brought about changes and improvements in test program controls, the technical adequacy of the Preoperational Test Program was not invalidated as a result of changes to the program. This is evidenced by the fact that no major retesting was required to resolve any identified item. The review of the completed test performances by the design organization as a part of the approval process ensures that any technical inadequacies are identified prior to full approval of the test.

Since there have not been any major technical or programmatic deficiencies identified in the Preoperational Test Program, the Preoperational Test Program will be completed in accordance with governing procedures and Chapter 14 of the FSAR. This will fulfill the testing requirements of Regulatory Guide 1.68 (November 1973) for licensing WBN unit 1. Furthermore, the Design Baseline and Verification Program (DBVP) includes a review of the Preoperational Test Program results and yet to be performed test instructions in comparison with the WBN unit 1 design baseline. This review will ensure that the completed program will be consistent with the updated design baseline.

The lengthy delay between the completion of many of the preoperational tests and future plant operations of WBN unit 1 has created conditions that the Preoperational Test Program is not designed to address. These conditions are:

- Plant equipment may have degraded.
- Operating organizations' knowledge about the plant and procedures may have been affected.
- Plant equipment has undergone modifications during this delay, some without being adequately tested. This condition has been addressed by TVA's response to NRC violation 50-390/86-21-01.

In order to clearly and properly address the above conditions, a completely independent test program, the Prestart Test Program, will be established. The principal reason for this program, as stated, is the lengthy delay between the completion of many of the preoperational tests and future plant operations. Attachment 1 is a list of the specific items that form the basis for this CAP.

2.0 OBJECTIVES

To the extent required for fuel loading, the Prestart Test Program will demonstrate the operational capability of WBN unit 1.

3.0 SCOPE

System and component functions associated with each system listed in Table 1 will be tested. The Nuclear Engineering (NE) revised preoperational test scoping documents will be the source for the identification of the system and component functions.

Major tests currently scheduled to be part of the Prestart Test Program include integrated engineered safety features actuation, standby power supply (diesel-generator), containment integrated leak rate and non-nuclear heatup.

4.0 PROGRAM DESCRIPTION

The Prestart Test Program performance will fulfill the requirements of Regulatory Guide 1.68 (November 1973) for the prefuel loading part of the system functional test program with certain defined exclusions. The systems addressed by the Prestart Test Program are listed in Table 1. The Regulatory Guide 1.68 systems and tests excluded from the program and the bases for those exclusions are detailed in Exhibit A.

The system and component functions to be addressed by the program, along with their appropriate testing activities, will undergo extensive pretest and posttest reviews. These reviews will each be documented in formal documentation packages. This will ensure the adequacy and availability of the documentation for the functional testing.

This program will support the plant licensing activities and provide the following advantages:

- Consistency with the programs currently used for restart of Browns Ferry Nuclear Plant (BFN) and Sequoyah Nuclear Plant (SQN).
- Identification of any equipment degradation by comparison of the test results with the previously obtained baseline data.
- Demonstration of the adequacy of WBN's equipment surveillance and maintenance programs by review and use of these programs in the Prestart Test Program performance.
- Demonstration of the effectiveness of the corrective actions that have been implemented to ensure appropriate, clear, and consistent test program controls.
- Development of formal system-oriented documentation packages that clearly address each applicable design function along with its appropriate and acceptable test results.

A flow chart of the major programmatic activities and their interrelationships is shown in Attachment 2.

The Prestart Test Program will be conducted and audited in accordance with the appropriate plant procedures and will be completed prior to the commencement of fuel loading activities. Attachment 3 is a typical test performance fragnet.

The following is a discussion of each of the program activities:

4.1 Identification of System and Component Functions

During the pretest review process, the system and component level functions to be addressed by the program will be defined. These will be defined principally via revised preoperational test scoping documents for the systems listed in Table 1. These revised scoping documents will be prepared and issued by NE in accordance with the requirements of the WBN DBVP. These documents will also be reviewed by testing personnel to ensure their consistency with the FSAR, Design Criteria, Technical Specifications, and Configuration Control Drawings.

As used by the program, the following definitions of system and/or component functions are applicable:

- System functions are defined as those functions that (1) involve more than one component, (2) demonstrate a system response for accident or normal operation, (3) demonstrate an automatic actuation or interlock, or (4) demonstrate system response time performance.

- Component functions are defined as those functions that involve actions related to a single component within any given system.

A review of each system in Table 1 will be conducted to assure that all of the functions meeting the criteria of Sections 4.1.1, 4.1.2, and 4.1.3 have been defined. Those functions meeting the criteria as defined by 4.1.3 but not included in the revised scoping documents will be added to this program.

4.1.1 Primary Safety Functions

Primary safety functions are those necessary to ensure:

- The integrity of the reactor coolant pressure boundary.
- The capability to shut down the reactor and maintain it in a safe shutdown condition.
- The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposure comparable to the guideline exposures of 10 CFR, Part 100.

4.1.2 Fire Detection and Suppression Functions

Functions that detect or suppress a fire.

4.1.3 Other Functions

- Balance of Plant (BOP) equipment whose failure would directly prevent or cause an actuation of the reactor trip system or the engineered safeguard features actuation system (ESFAS).
- Additional functions, as identified by plant personnel, that are important to plant operation but are not safety related.

4.2 Preparation of the Function Analysis Reports and Function Test Matrices

The pretest reviews will result in the preparation of Function Analysis Reports (FARs) and the initial preparation of the Function Test Matrices (FTMs) for each system.

The system and component functions that are addressed by the program will be input to the FTMs. Each FTM will identify and cross reference each function with the test or tests required to demonstrate its acceptability.

The FARs will include identification of the applicable functions and identification of appropriate testing. Each FAR will include the associated FTM. The FARs will be reviewed then submitted to the Joint Test Group (JTG). Their content, preparation, and maintenance are discussed in detail in Section 7.0.

4.3 JTG Review of the FARs

The JTG is an oversight group, and their responsibilities and makeup are described in Section 6.4. The JTG will be required to review and concur with each FAR prior to commencement of applicable testing activities. This upper-level review will provide added assurance of the identification of technically adequate and consistent testing.

4.4 Preparation of Test Instructions

Existing plant instructions will be used to test as many functions as possible. For those functions for which test instructions do not exist, either new test instructions will be prepared or changes will be made to existing plant instructions. These new instructions or changes will be prepared using existing plant procedures and will be submitted to the JTG for approval.

4.5 Performance of Testing

The performance of testing activities will be in accordance with those details outlined in the applicable FARs. The necessary testing will be completed, as appropriate, through the single or combined performances of various testing mechanisms (e.g., Maintenance Instruction [MI], Preoperational Test Instruction [PTI], Surveillance Instruction [SI], Technical Instruction [TI] and Work Plan [WP]), in accordance with their respective governing procedures.

4.6 Preparation of the Test Analysis Packages

Following completion of the testing activities for each system a Test Analysis Package (TAP) will be prepared. Each TAP will include the successfully completed test instructions, reviews of the tests, and the completed FTM. Each TAP will be reviewed, then submitted for JTG review and concurrence. The content, preparation, and maintenance of the TAPs are discussed in detail in Section 7.0.

4.7 JTG Review of the TAPs

The JTG will review and concur with the TAPs following completion of the applicable testing activities. This upper level review will provide added assurance of the identification and completion of technically adequate and consistent testing.

4.8 Plant Review of the TAPs

Following JTG review and concurrence, the TAPs will then be submitted to the Plant Operations Review Committee (PORC) for review and to the Plant Manager for approval.

4.9 Retention of the FARs and TAPs

Following their appropriate review and approvals, the FARs and TAPs will be retained as QA records.

4.10 Recurrence Control

As stated, the principal reason for this program is the lengthy delay between the completion of many of the preoperational tests and future plant operations. Therefore, recurrence control is not applicable.

4.11 Licensing Assessment

The Prestart Test Program will be supportive of the licensing of WBN unit 1 since this program, with certain justified exceptions, will also fulfill the prefuel loading portions of the system functional testing described in Regulatory Guide 1.68 (November 1973). This program will be independent of and supplementary to the Preoperational Test Program and will provide documentary evidence of the operational capability of WBN unit 1. The FSAR will be amended to include a description of this program.

5.0 PROGRAM INTERFACES

Revised preoperational test scoping documents are being developed and issued by NE in accordance with the requirements of the DBVP corrective action program. They will be the principal sources for the identification of the applicable system and component functions.

6.0 PROGRAM IMPLEMENTATION

The Prestart Test Program will be conducted formally and audited in accordance with the appropriate plant procedures. The program will be implemented by the Systems Engineering Section, within the WBN Technical Support Organization. The following is a discussion of the key elements in the implementation of the program:

6.1 Procedural Control

All activities associated with the program, including its staffing, administrative and technical oversight, and responsibilities, will be defined and controlled in accordance with either existing or specifically prepared site instructions and/or procedures.

The SI Program will be used to the extent practical to obtain the necessary Prestart Test Program documentation.

6.2 Staffing

The program will be conducted by the Systems Engineering Section, within the WBN Technical Support Organization. The Systems Engineering Section is staffed by experienced test personnel.

The various other plant organizations (e.g., Electrical, Instrumentation, and Mechanical Maintenance, Component Engineering) will provide the personnel, procedures, and equipment to assist in the performance of testing and other activities essential to the success of the Prestart Test Program.

6.3 The WBN Layup Program

When it becomes necessary to remove the applicable plant equipment from its layup configuration prior to testing, the WBN Layup Program personnel will assist, as required, in the identification and implementation of the proper plant procedures to be utilized.

6.4 Program Oversight

The JTG will be established to provide an overall review of the program to ensure the following:

- The results of other programs that affect testing are adequately addressed.
- The scope and depth of the program are acceptable.
- Test instructions are developed as required.
- The performance results of the program-required tests are acceptable.
- Each FAR and TAP is prepared in accordance with program procedures/instructions and adequately supports the program objectives.

This group will be comprised of the following:

- The Chairman (appointed by the Nuclear Site Director).
- An NE representative.
- The NQA Site Quality Manager or designee.

- The Nuclear Power (NP) Operations Superintendent or designee.
- The NP Systems Engineering Supervisor or Designee.
- The NP Technical Support Superintendent or Designee.
- The Nuclear Steam Supply System (NSSS) Vendor Representative (optional).

6.5 The WBN Plant Operations Review Committee

The PORC will review the TAPs prior to their submittal for approval by the Plant Manager.

7.0 PROGRAM DOCUMENTATION

The Prestart Test Program will produce the following:

7.1 Identification, Tracking, and Resolution of Deficiencies and Open Items

The identification, tracking, and resolution of any Deficiency (DN) or Open Item (OI) encountered during the performance of the identified test instructions will be in accordance with the applicable procedure governing that instruction. The CAQ program will be used as required.

7.2 Documentation Packages

The program will produce two formal documentation packages to document the accomplishment of its objectives. These packages are described as follows:

7.2.1 Function Analysis Report

Pretest reviews will be performed for each system and component function listed in the FTM. These reviews will be assembled and documented on a system basis in FARs that will include:

- Identification of all system and component functions via inclusion of the FTM.
- The identification of appropriate testing for all applicable system and component functions.

7.2.2 Test Analysis Package

Posttest reviews will be performed for all system and component function tests listed in the FTM. These reviews will be assembled and documented on a system basis in TAPs that will include:

- The completed testing instructions for all identified system and component functions.
- Test reviews that will include documentary evidence of the identification and adequate disposition of all DNs and OIs encountered during the testing activities.

8.0 CONCLUSION

The Prestart Test Program will demonstrate that the applicable WBN plant equipment and personnel required for unit 1 operation have operational capability, and that the plant is ready to commence fuel loading activities. This will be accomplished through test of the identified system and component functions.

The program will provide the following conclusive demonstrations:

- The applicable plant equipment is capable of performing its intended function despite the lengthy delay between the completion of the applicable preoperational tests and actual plant operations.
- The applicable plant equipment that has undergone modifications during this delay has been subjected to adequate postmodification testing.
- The applicable plant equipment has suffered no degradation during this delay.
- The operating organizations are knowledgeable about the plant and procedures and are prepared to operate the facility in a safe manner.

Table 1

SYSTEMS WHOSE FUNCTIONS ARE ADDRESSED BY THE PROGRAM

1	Main Steam System
2	Condensate System
3	Main and Auxiliary Feedwater System
13	Fire Detection System
14	Condensate Demineralizer System
15	Steam Generator Blowdown System
18	Fuel Oil System
24	Raw Cooling Water System
25	Raw Service Water System
26	High Pressure Fire Protection System
27	Condenser Circulating Water System
30	Ventilating System
31	Air-Conditioning (Cooling-Heating) System
32	Control Air System
33*	Service Air System
37	Gland Seal Water System
39	CO ₂ Storage, Fire Protection, and Purging System
41*	Layup Water Treatment System
42*	Chemical Cleaning System
43	Sample and Water Quality System
46	Feedwater Control System
47	Turbogenerator Control System
52	System Test Facility (Seismic Instrument Portion Only)
59*	Demineralized Water & Cask Decontamination System
61	Ice Condenser System

* Containment Isolation Functions only. Will be included with system 88, Containment Isolation System.

Table 1

SYSTEMS WHOSE FUNCTIONS ARE ADDRESSED BY THE PROGRAM

62	Chemical and Volume Control System
63	Safety Injection System
65	Emergency Gas Treatment System
67	Essential Raw Cooling Water System
68	Reactor Coolant System
70	Component Cooling System
72	Containment Spray System
74	Residual Heat Removal System
77	Waste Disposal System
78	Spent Fuel Pit Cooling System
79	Fuel Handling and Storage System
81	Primary Makeup Water System
82	Standby Diesel Generator System
83	Hydrogen Recombination System
84	Flood Mode Boration System
86	Diesel Starting Air System
88	Containment Isolation System
90	Radiation Monitoring System
92	Neutron Monitoring System
99	Reactor Protection System
211	6.9-kV Shutdown Power
212	480-V Shutdown Power
213**	Reactor Motor Operated Valve Power
214**	Control and Auxiliary Vent Power
215	Diesel Auxiliary Power
228	Those portions of the Auxiliary Building Lighting System defined by DBVP as being required to mitigate Design Baseline Events.
232**	Reactor Vent Power
235	120-V ac Vital Power
236	125-V dc Vital Power
251	Sound Powered Telephones
252	Plant Paging System (Evacuation Alarm Portion Only)
268	Permanent Hydrogen Mitigation System
271	Containment and Auxiliary Buildings (Reactor Components Handling Systems Only)

** Will be included with system 212, 480V Shutdown Power.

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS

- I. The following is a discussion of those systems which are excluded from the Prestart Test Program and the basis for this exclusion. These systems were part of the Preoperational Test Program and have been or will be tested by that program. Exclusion of a system from the Prestart Test Program does not preclude a function of that system from being included as allowed by section 4.1.3. Such a function would be handled with an appropriate Prestart Test Program system. When this is the case, no additional report or matrix is required.

The following systems are excluded because these systems will be tested after fuel load (AFL) by the Preoperational Test Program as described in FSAR, Chapter 14:

- 005 Extraction Steam System
- 006 Heater Drains and Vents
- 085 Control Rod Drive System
- 094 Incore Flux Detector System

The following Balance of Plant (BOP) systems are excluded because these systems are in service, were adequately tested by the Preoperational Test Program following transfer, are being maintained under operational control, (for the less complex systems) problems can be readily identified through system operation, and do not present a challenge to safe shutdown and accident mitigation:

- 012 Auxiliary Boiler System
- 020 Central Lubricating Oil System
- 028 Water Treatment System
- 029 Potable Water Distribution System
- 038 Insulating Oil System
- 040 Station Drainage System
- 044 Building Heating System
- 200 161/6.9kV Common Power System
- 201 6.9kV Unit Power System
- 205 480V Turbine Building Common Power System
- 206 480V Auxiliary Building Common Power System
- 221 480V Service Building Power System
- 226 Intake Pump Station Power System
- 233 Yard Lighting System
- 238 120V AC Preferred Power System
- 239 250V DC Power System
- 241 120V AC Computer Power System
- 245 500kV Switchyard Equipment and Cable Tunnel Cable Trays System
- 248 Electrical Control and Recording Instrument System
- 261 Plant Process Computer System
- 270 Turbine Building Cranes and Miscellaneous

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

The following BOP systems are excluded because these systems do not present a challenge to safe shutdown and accident mitigation, are being maintained under operational control, and were or will be tested under the Preoperational Test Program controls.

- 035 Generator Cooling System
- 036 Feedwater Secondary Treatment System
- 059 Demineralized Water and Cask Decontamination System
- 202 6.9kV Reactor Coolant Pump Power System
- 203 480V Unit Power System
- 225 Condenser Circulating Water Pumping Station Power System
- 244 24kV Power System (Includes Main Transformers)
- 263 Status Monitoring Computer System
- 264 Technical Support Center

II. The following is a discussion of exceptions to the requirements of Appendix A to Regulatory Guide 1.68 (November 1973). The discussion is keyed to the Regulatory Guide paragraph numbers. (Items not referenced contain requirements fully implemented by the Prestart Test Program.)

A. Preoperational Testing

The Prestart Test Program will not include flushing and cleaning activities or verification of flushing or cleaning performance because: Systems are in service, under Watts Bar Layup Program which adequately controls cleanliness or being modified in which case the construction QA/QC process adequately controls cleaning and flushing. Systems in service are monitored as appropriate to maintain proper cleanliness. Additionally, those portions of systems directly interacting with the reactor coolant system will be flushed under the chemistry program controls prior to hot functional testing.

The Prestart Test Program will not include hydrostatic tests or verification of hydrostatic tests since hydrostatic tests are adequately controlled by either the construction controls prior to transfer or the construction controls of modifications after transfer.

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

1. Reactor Coolant System

c. Vibration Test

Vibration testing of reactor internals in accordance with Regulatory Guide 1.20, Vibration measurements of reactor internals is excluded because it is a one-time test that was verified by Preoperational Test W-1.10. The test was completed to the satisfaction of the NSSS vendor. Westinghouse NCS issued Quality Release QR-P-25704, Revision 0 which released the internals for core load. There have been no changes or modifications which warrant a retest.

d. Pressure Boundary Integrity Test

Hydrostatic tests are excluded because they are adequately controlled by the construction controls.

NOTE: A cold hydrostatic test of the reactor coolant system will be performed by construction due to modification since the initial construction test.

2. Reactivity Control Systems

b. Standby Liquid Control System Tests
Not applicable to Watts Barc. Automatic Reactor Power Control Systems Test
These tests are to be performed by the Preoperational Test Program after fuel loading and are therefore outside the scope of the Prestart Test Program.d. Incore Monitor System Tests
These tests are to be performed by the Preoperational Test Program after fuel loading and are therefore outside the scope of the Prestart Test Program.e. Control Rod Systems Tests
These tests are to be performed by the Preoperational Test Program after fuel loading and are therefore outside the scope of the Prestart Test Program.f. Auxiliary Startup Instrumentation Tests
These tests are outside the scope of the Prestart Test Program because they are performed as part of the Startup Program.

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

4. Power Conversion Systems
 - h. Makeup Water and Chemical Treatment Systems
These systems are excluded from the Prestart Test Program as identified in paragraph I.
5. Auxiliary Systems
 - d. Vent and Drain Systems
These tests are to be performed by the Preoperational Test Program after fuel loading and are therefore outside the scope of the Prestart Test Program.
 - j. Ventilation Systems
The Turbine Building portion of the Ventilation System is not included as described in the basis of the BOP Systems.
 - l. Emergency Condenser
Not applicable to Watts Bar
 - m. Reactor Core Isolation Cooling Systems
Not applicable to Watts Bar
 - o. Shield Cooling System
Not applicable to Watts Bar
6. Electrical Systems
 - d. Communication System Tests
The Plant Telephone System including the dedicated lines is not included in the Prestart Test Program because the system is being operated and maintained under operational control.
7. Containment Systems
 - a. Containment Tests
The Containment Overpressure Test is excluded from the Prestart Test Program since it is a one-time test and was previously completed.
9. Emergency Core Cooling Systems
 - d. Automatic Depressurization Systems Tests
Not applicable to Watts Bar

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

10. Fuel Storage and Handling Systems

a. Spent Fuel Pit Cooling Systems Test

Those portions that introduce water into the spent fuel pit are excluded. Since it is impractical to remove the new fuel presently stored in the spent fuel pit, introduction of water must be avoided. The excluded portion was acceptably tested by the Preoperational Test Program and no modifications have been made which would require a retest.

c. Operability and Leak Tests of sectionalizing devices in the fuel storage pool and refueling canal.

The sectionalizing devices are excluded since testing requires water in the spent fuel pit. Since it is impractical to remove the new fuel presently stored in the spent fuel pit, introduction of water must be avoided. These devices were acceptably tested by the Preoperational Test Program and no modifications have been made which would require a retest.

12. Radiation Protection System

b. Personnel Monitor and Survey Instrument Tests

These tests are included in a program administrated by radiological control and are therefore not included in the Prestart Test Program.

c. Laboratory Equipment Tests

These tests are included in a Program administrated by radiological control and are therefore not included in the Prestart Test Program.

- B. Precritical Tests - After Fuel Loading. Post-fuel loading tests are not within the scope of the Prestart Test Program.
- C. Low-Power Tests. Post fuel loading tests are not within the scope of the Prestart Test Program.
- D. Power-Ascension Tests. Post-fuel loading tests are not within the scope of the Prestart Test Program.

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

III. The following is a discussion of exceptions to the requirements of Appendix C to Regulatory Guide 1.68 (November 1973). The discussion is keyed to the Regulatory Guide paragraph numbers.

As an introduction to this section, we must realize that the Watts Bar Prestart Test Program is somewhat different from a typical Preoperational Test Program. For example, all construction type testing, i.e., motor bumps for rotation, lubrication, megger and hipot test, vibration, torque and limit switch settings, valve strokes, and etc., were performed prior to the Preoperational Test Program. The Preoperation Test Program further proved that the components were properly lubricated, set-up and adjusted to perform their design functions. The Prestart Test Program is a further verification that these components are still properly "set-up" to perform their design functions.

The Prestart Test Program is designed to use approved Watts Bar Surveillance Instructions (SIs), System Operating Instructions (SOIs), General Operating Instructions (GOIs), Maintenance Instructions (MIs), etc., to prove functions. These instructions ensure that equipment is properly aligned for safe operation. The test instructions written by the Prestart Test Group will ensure that these requirements are met.

A. Preoperational Test Program

1. Prerequisites

These activities were complete prior to the transfer for the Preoperational Test Program. Construction controls are such that any modifications made since transfer would require these activities to be completed.

- a. All systems included in the Prestart Test Program will undergo a systems completion verification. This verification will ensure that all systems are constructed as-designed. Any exceptions will be identified, tracked, and resolved.

Checkout of wiring continuity and electrical protective devices are not included in the Prestart Test Program. These checkouts were previously performed and there are programs and instructions in place to perform these checkouts in event of a fault or during routine maintenance or calibration.

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

Adjustments of settings on torque limiting devices, temperature controllers, and limit switches will be verified on those components, as required, to test functions identified by NE.

- c. Tests of the individual components or subsystems to demonstrate that they meet their functional requirements will be verified on those components, as required, to test functions identified by NE. Exception is taken to the following items as noted:

Valves

Operability Against Pressure - Valves identified by NE as having a function of operability against pressure will be included in the MOVATS Program. Although it does not test valves against system pressure, MOVATS proves the operator is developing sufficient torque to operate within design conditions.

Pumps

Direction of Rotation - All pump motors were previously bumped for rotation. During performance of flow and pressure characteristic curves, improper rotation would be detected.

Motor Load - Pumps were previously tested under loaded conditions to ensure their capability to perform without load problem. Pump motors equipped with AMP meters will be observed to ensure they are operating in normal range.

Motors

Direction of Rotation - All motors, as applicable, were previously bumped for rotation. During testing of NE identified functions improper rotation would be detected.

Megger of Hipot Tests - These tests were previously performed, as required. If a problem is encountered during prestart testing, i.e., overcurrent trip of motor breaker, these tests will be performed, as appropriate, using maintenance instructions.

EXHIBIT A

REGULATORY GUIDE 1.68 (NOVEMBER 1973) CLARIFICATIONS AND EXCLUSIONS
(continued)

Piping and Vessels

Hydrostatic Tests, Leak Tightness, Cleaning, Flushing, Layup, Proper Gasketing, Bolt Torque and Insulation -

These activities were complete prior to the transfer for the Preoperational Test Program. Construction controls are such that any modifications made since transfer would include these activities in the workplan. Paragraph 1.0 of the CAP also discusses post modification testing.

Instrumentation and Control

Circuit Breaker Operation - Circuit breakers were tested as part of the Construction Program. Any malfunctions would be corrected under the Maintenance Program. These breakers are periodically tested in accordance with the Plant Periodic Maintenance Program.

The use of Watts Bar approved Administrative Instructions (AIs), SIs, SOIs, GOIs, and etc., will ensure that necessary prerequisites are met, qualified personnel are performing operations, proper line-ups are complete, and equipment is operated in a safe manner. This will ensure that some of the items not specified above are adequately verified, i.e., seal cooling, lubrication, filling, and venting.

- B. Fuel Loading
These requirements are not applicable to the Prestart Test Program.
- C. Startup to Critical Procedures
These requirements are not applicable to the Prestart Test Program.
- D. Power Ascension Procedures
These requirements are not applicable to the Prestart Test Program.

Attachment 1

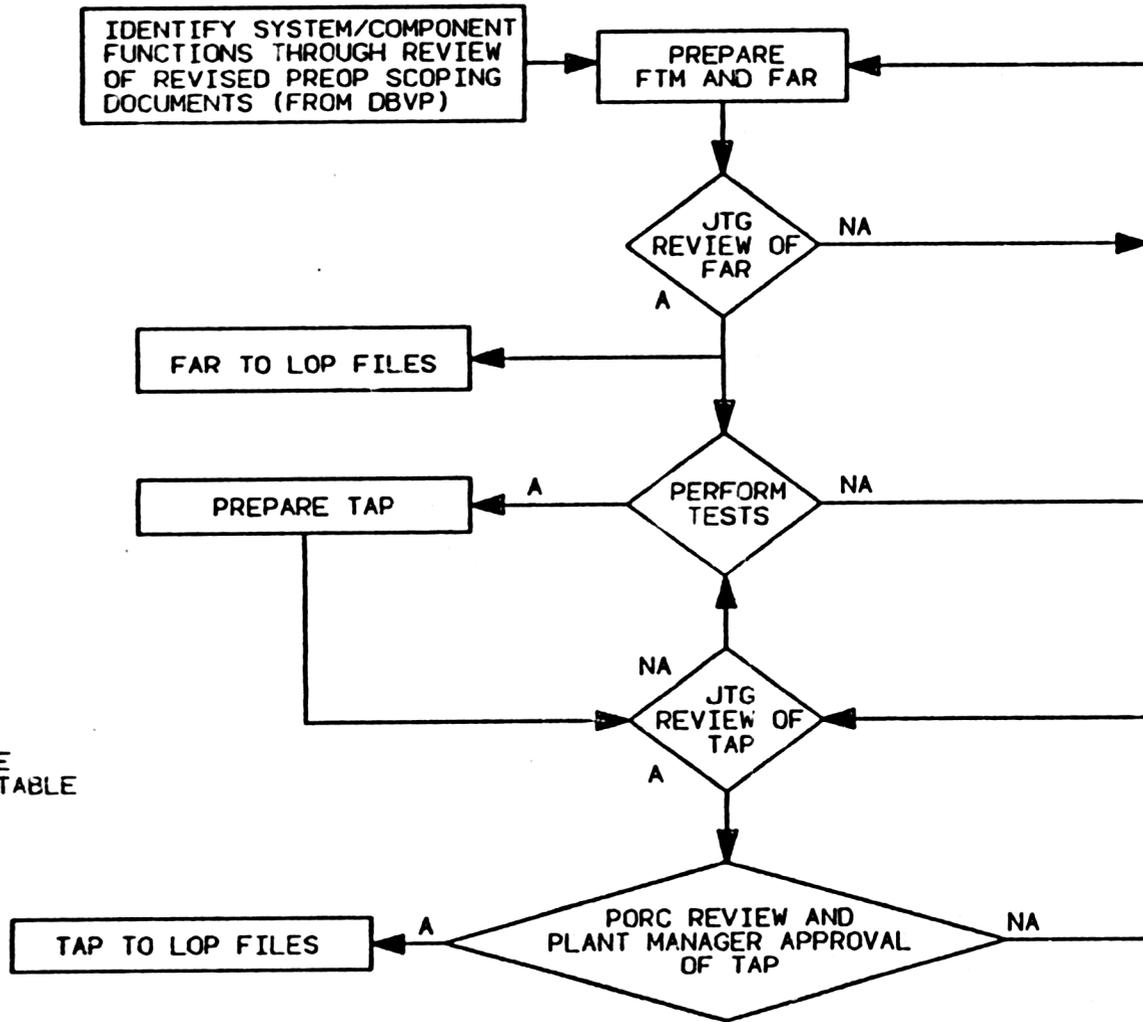
BASIS FOR CAP

The lengthy delay between the completion of many of the preoperational tests and future plant operations of WBN unit 1 as explained in Section 1.0.

NRC concerns raised in Kenneth P. Barr's letter to S. A. White dated February 3, 1988.

ATTACHMENT 2

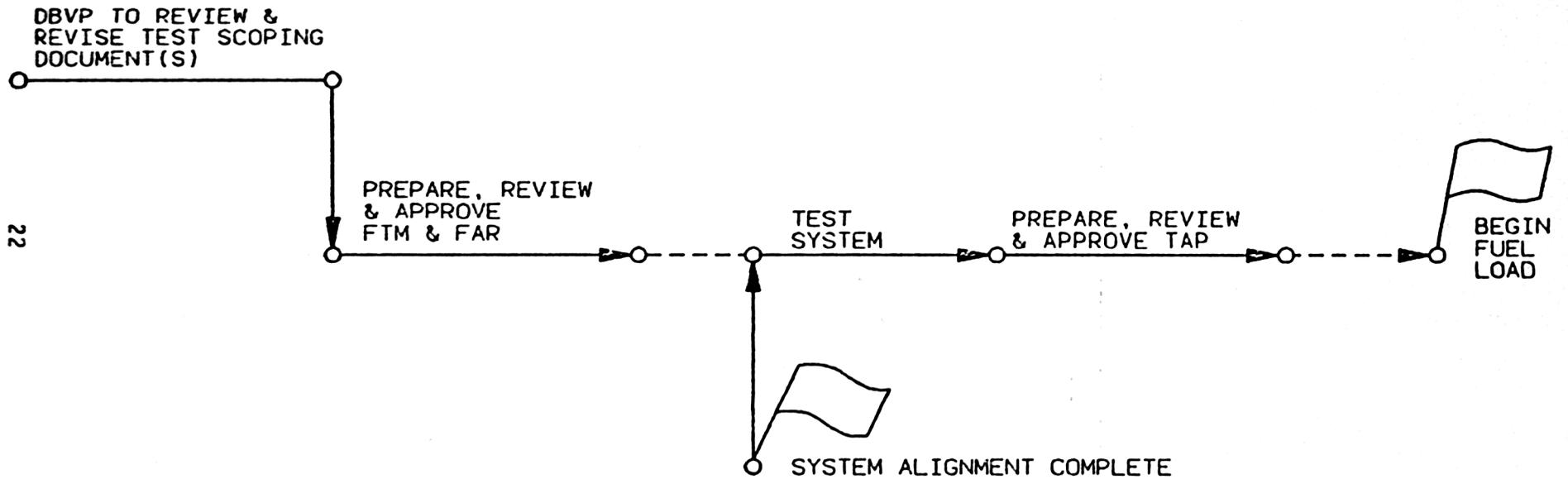
FLOW CHART



NOTE: A = ACCEPTABLE
NA = NOT ACCEPTABLE

PRESTART TEST PROGRAM WATTS BAR NUCLEAR PLANT

ATTACHMENT 3 FRAGNET



ABOVE DIAGRAM TYPICAL FOR A SYSTEM.
PROGRAM INCLUDES MANY SYSTEMS.

ENCLOSURE 2

LIST OF COMMITMENTS

For the Watts Bar Nuclear Plant unit 1, TVA commits to:

- The Prestart Test Program will demonstrate the operational capability of WBN unit 1 for fuel loading.
- The Final Safety Analysis Report (FSAR) will be amended to include a description of this program.
- Submit to NRC a detailed description of the Prestart Test Program similar to the Watts Bar FSAR chapter 14 description of the Preoperational Test Program prior to the completion of the program on any system.
- Those portions of systems directly interacting with the reactor coolant system will be flushed under the chemistry program controls prior to hot functional testing.
- A cold hydrostatic test of the reactor coolant system will be performed by construction due to modification since the initial construction test.