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January 21, 2002

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: River Bend Station - Unit 1
Docket No. 50-458
Cycle 11 Startup Report

File No.: G9.5, G9.25.1.4

RBF1-01-0280
RBG-45900

Ladies and Gentlemen:

In accordance with River Bend Station (RBS) Technical Requirements Manual TR 5.6.8, enclosed is a Startup Report that provides a summary of the startup physics testing conducted on the Cycle 11 core reload and the second phase of the Power Uprate implementing the pressure increase.

If you have any questions, please contact Barry M. Burmeister at (225) 381-4148.

Sincerely,

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ENCLOSURE

River Bend Station Unit 1

Cycle 11

Startup Physics Test Summary

And

Power Uprate – Pressure Increase Phase

Startup Physics Overview

River Bend Station (RBS) resumed commercial operation in Cycle 11 on October 10, 2001 following a Refueling/Maintenance Outage. The Cycle 11 reload consisted of replacing 123 GE11 and 77 GE8B General Electric fuel assemblies with 200 Atrium 10 Framatome fuel assemblies. The following startup tests were performed during Refueling Outage RF10 or while attaining full power after RF10, and are summarized in this report:

1) Core Loading Verification

2) Control Rod Functional Testing

3) Shutdown Margin Determination

4) TIP Asymmetry

In addition to the above startup physics tests, the startup test program included: Core Monitoring System Verification and Recirculation System Calibration, as well as other surveillance testing required by RBS Technical Specifications. The additional test results are available at the site on request.

Core Loading Verification

Purpose

Ensure each reactor fuel assembly is:

- in its correct core location
- oriented properly
- seated properly in its support piece

Criteria

The reactor core is visually checked to verify conformance to the vendor supplied core loading pattern. Fuel assembly serial numbers, orientations, and core locations are recorded. A height check is performed to verify all assemblies are properly seated.

Results

The as-loaded core was verified for proper fuel assembly serial numbers, locations, orientation and seating in accordance with the RBS Cycle 11 core loading pattern. There were no location or orientation deviations from the Cycle 11 core loading pattern.

The core verification procedure was successfully completed on October 5, 2001.

Control Rod Functional Testing

Purpose

Verify functionality of each control rod by:

- performing normal withdrawals and insertions
- ensuring it is latched to its control rod drive
- assuring that it moves at design speeds without excessive friction

Criteria

Testing of each control rod is performed to ensure proper operability. This testing includes coupling verification, friction testing where required, and scram time testing.

Results

Friction testing was not required for any control rods based on the channel management analysis for BOC 11. Fifteen Control Rod Drive Mechanisms were replaced during the outage. They were scram time tested prior to startup during the vessel hydro in accordance with Technical Specification Surveillance Requirements 3.1.4.3 and 3.1.4.4 with satisfactory results.

The remaining control rods were scram time tested during the vessel hydro testing in accordance with RBS Technical Specification Surveillance Requirement 3.1.4.1. All of the control rod scram times were within the allowable limits.

A control rod coupling check was performed in accordance with RBS Technical Specification Surveillance Requirement 3.1.3.5 each time a control rod was fully withdrawn.

Shutdown Margin Determination / Reactivity Anomaly Check

Purpose

To ensure that:

- the reactor can be made sub-critical from all operating conditions
- the reactivity transients associated with postulated accident conditions are controllable within acceptable limits
- the reactor will be maintained sufficiently sub-critical to preclude inadvertent critically in the shutdown condition

Criteria

The sub-critical demonstration verifies the reactor remains sub-critical with the analytically determined strongest worth control rod fully withdrawn.

The in-sequence rod withdrawal shutdown margin calculation begins by withdrawing control rods in their standard sequence until criticality is achieved. The shutdown margin of the core is determined from calculations based on the critical rod pattern, the reactor period and the moderator temperature.

Reactivity Anomaly verification is performed in accordance with Technical Specification Surveillance Requirement 3.1.2.1 after reaching equilibrium xenon concentrations at 100% reactor power.

Results

The sub-critical demonstration was performed on October 7, 2001.

The in-sequence critical shutdown margin surveillance procedure was completed on October 10, 2001. The shutdown margin (SDM) at the beginning-of-cycle (BOC) was calculated to be 2.5286 % delta k/k. The Cycle 10 "R" value is equal to 0.530% delta k/k. Therefore, the Cycle 11 minimum shutdown margin at the most reactive point in the fuel cycle is 1.9986 % delta k/k which is bounded by the RBS Technical Specification 3.1.1 requirement of 0.38% delta k/k. Final steady state full power operation was achieved on October 22, 2001.

It was verified on October 22, 2001 that no reactivity anomaly was present by performance of Technical Specification Surveillance Requirement 3.1.2.1.

Tip Asymmetry Check

Purpose

To determine the reproducibility of the Traversing Incore Probe (TIP) system readings

Criteria

An asymmetry determination is performed as part of a detailed statistical uncertainty evaluation of the TIP System. A complete set of TIP data is obtained at steady state conditions while greater than 75% rated core thermal power.

The calculated χ^2 of the symmetric integral TIP measurement differences should not exceed the critical χ^2. (calculated χ^2 < critical χ^2)

Results

The TIP reproducibility and symmetry uncertainty calculations were performed on November 12, 2001 at 100% core thermal power.

The critical χ^2 is 29.14 and the calculated χ^2 is 15.31.

River Bend Station Reactor Dome Pressure Increase Startup Test Report

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Executive Summary

This report is submitted to the Nuclear Regulatory Commission (NRC) in accordance with the requirements of the River Bend Station Technical Requirements Manual Section TR 5.6.8.

The Power Escalation Test Program, performed by Entergy Operations Inc. at River Bend Station, implements the testing and equipment performance monitoring commitments contained within Licensing Topical Report, "Generic Guidelines for General Electric BWR Generic Power Uprate," NEDC-31897P-A, Class III, May 1992 (LTR-1), and the letter from EOI to the USNRC dated August 1, 1999, "Request for License Amendment for Power Uprate Operation."

This report details the results of the second phase of the River Bend Station 5% Power Uprate. The first phase of the River Bend Station Power Uprate Project was a zero reactor pressure increase (no increase in the reactor operating pressure) power uprate. This, second phase involved only an increase in reactor dome pressure, and no increase in core thermal power. Consequently, there was no significant change in feedwater or steam mass flow as a result of this phase. The pressure increase was accomplished during the power ascension following Refueling Outage 10.

During the first phase of Power Uprate implementation, in October 2000, the Reactor Pressure Control System and the Reactor Level and Feedwater Control Systems were dynamically tested. This was done to ensure that the increase in power and feedwater and steam mass flow rates did not adversely impact the proper function of these systems. During this second phase there were no significant increases in mass flow rates therefore, further dynamic testing of these systems was not performed.

Power ascension, including dome pressure increase began on October 11, 2001, and was completed October 25, 2001. Pressure was increased in 5 psi increments until the new maximum reactor dome pressure of 1070 psia was reached. After reaching the new maximum dome pressure, a Maximum Dependability Capacity Test was completed. The uprate power ascension test program was successfully completed with all acceptance criteria being satisfied. All equipment and system performance was as expected.

River Bend Station Uprate Power Ascension
Startup Test Report

1. Purpose

This Power Uprate Startup Test Report is submitted to the Nuclear Regulatory Commission pursuant to Section TR 5.6.8, Startup Report, which requires:

- "A summary report of plant startup and power escalation shall be submitted following … (2) Amendment to the license involving a planned increase in power level."…
- "The report shall in general include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications."
- "Any corrective actions that where required to obtain satisfactory operation shall also be described."
- "Any additional specific details required in license conditions based on other commitments shall also be included in this report."
- "Startup reports shall be submitted within 90 days following completion of the startup test program …"

2. Uprate Power Ascension Program Scope

2.1 Program Development

The River Bend Station Power Ascension Test Program was developed in accordance with the generic guidelines provided in Licensing Topical Report (LTR) NEDC-31897P-A, Generic Guidelines for General Electric Boiling Water Reactor Power Uprate, the License Amendment Request including the Safety Analysis Report and various Power Uprate Project Task Reports. The power ascension test program included testing or equipment monitoring recommendations from many Task Reports. According to section 5.11.9 of NEDC-31897P-A, Power Uprate Testing, "Large transient tests (e.g., isolation) will not be required for uprates within 5% power. Initial plant testing and experience during plant operation is considered to be sufficient." Consequently no large transients were included within the River Bend Station Uprate Power Ascension Test Program, including this second, pressure increase phase.

The Uprate Power Ascension Test Program was developed to verify the following:

- Plant systems and equipment affected by power uprate are operating within design limits.
- Nuclear fuel thermal limits are maintained within expected margins.
- The response of the main steam pressure control system is stable, with adequate control margin to allow for anticipated transients.
- The response of the reactor water level control system is stable, with adequate control margin to allow for anticipated transients.
- The response of the reactor core flow control system is stable and bi-stable core flow is within acceptable limits.
- The feedwater heater drains and level control system is stable.
- The MSR drains and level control system is stable.
- Reliable system operation is maintained.
- Radiation levels are acceptable and stable.

2.2 Prerequisites to Power/Pressure Ascension Testing

Prior to the commencement of power/pressure ascension testing, the test procedure required the completion of numerous activities, which included:

- The applicable plant operating procedures, administrative procedures, surveillance test procedures, calibration procedures, chemical and radiological procedures and other similar procedures were reviewed and revised as required.
- Computer software programs were reviewed and revised as required to support the power uprate test program.
- The applicable plant instrumentation setpoint changes or recalibrations were completed.
- All plant modifications were reviewed to assure they were completed as required and had no exception which could affect the uprate test program.
- Temporary Modifications logs and GL91-18 applicable degraded conditions were reviewed to assure there was no impact on the ability of the effected equipment to support uprate, and that uprate would not have an adverse impact on any existing degraded condition.
- Baseline data was taken as required by the procedure, prior to exceeding the old maximum reactor dome pressure limit of 1040 psia.
- Commitments which were the result of the Power Uprate Safety Analysis Report (SAR), Power Uprate License Amendment, the NRC Power Uprate Safety Evaluation (SE), and actions resulting from Power Uprate project Task Report review, were verified as either closed, included in the power ascension program or evaluated as not impacting power ascension.

2.3 Uprate Power/Pressure Ascension Testing

Power Ascension was performed in accordance with a River Bend Station Special Test Procedure. Operator Training and Infrequently Performed Test or Evolution (IPTE) briefings were completed prior commencing the pressure increase beyond the old limit of 1040 psia. Additionally, shift briefings were held for each Operations shift during the implementation period, to ensure adequate communication of current plant conditions and anticipated plant response.

Power ascension occurred such that pressure was increased in 5 psi increments, until 100% core thermal power was achieved. Then pressure was increased, while holding power constant, until the new reactor dome pressure limit of 1070 psia was reached. During this power/pressure increase each increment included a period of data collection and evaluation.

Following each power increase, testing and equipment performance data was collected and evaluated in accordance with established acceptance criteria. At each incremental step in power ascension, the following activities were performed:

- Core Thermal Performance data evaluated.
- Reactor pressure control system stability, steam flows limit cycling, and variation in incremental regulation performance data evaluated.
- Reactor water level control and the variation in incremental regulation performance data evaluated.
- Electro-Hydraulic Control (EHC) System oil pressure to the Turbine control valve oscillation data evaluated.
- Feedwater heater level control performance data evaluated.
- MSR drain system level control performance was evaluated.
- Bistable reactor recirculation flow data evaluated.
- Reactor Recirculation Core flow / Drive flow relationship was evaluated.
- A complete set of equipment performance data (e.g., control room readings, local readings, process computer, and Emergency Response Information System (ERIS) computer data) was collected, evaluated and predicted performance at the next power/pressure increment determined.

After pressure increase to 1070 psia was completed, a maximum dependable capacity test was performed.

2.4 Test Acceptance Criteria

General Discussion

The development of the power uprate test recommendations and acceptance criteria was based on the review of similar test programs performed at other plants, Chapter 14 of the River Bend Station Final Safety Analysis Report (FSAR), the outputs of the Uprated NSSS heat balance, and numerous RBS specific GENE Task Reports. The River Bend Station original Startup Test Program , Regulatory Guide 1.68 and LTR 31987 P-A were also used as inputs.

Following each step increase in reactor dome pressure, test data was evaluated against its performance acceptance criteria (i.e., design predictions or predictions which resulted from extrapolations of actual plant performance). If the test data satisfied the acceptance criteria then system and component performance were determined to comply with their design requirements.

Plant parameters during power ascension were evaluated with two levels of acceptance criteria. The criteria associated with safe and reliable plant operation are classified as Level 1. The criteria associated with performance expectations, either derived from design or actual performance history, are classified as Level 2. The following paragraphs describe the actions required to be taken if an individual criterion is not satisfied.

Level 1 Acceptance Criteria

Level 1 acceptance criteria normally relate to the values of process variables assigned in the design of the plant, component systems or associated equipment. If a Level 1 test criterion is not satisfied, the plant must be placed in a hold condition that is judged to be satisfactory and safe, based upon prior testing. Plant operating or test procedures or the Technical Specifications may guide the decision on the direction to be taken. Tests consistent with this hold condition may be continued. Resolution of the problem must be immediately pursued by equipment adjustments or through engineering evaluation as appropriate. Following resolution, the applicable test portion must be repeated to verify that the Level 1 requirement is satisfied. A description of the problem must be included in the report documenting successful completion of the test.

Level 1 acceptance criteria for power ascension included requirements that reactor feedwater flow, reactor water level, reactor pressure and other reactor systems are expected to exhibit stable full power operating characteristics. This Level 1 acceptance criterion of requiring all plant systems to exhibit normal high power level operating behavior (i.e.,

stable reactor water level control, and feedwater flow, with acceptable limit cycling if any) is to assure that that this testing can be performed with acceptable risk.

Level 2 Acceptance Criteria Equipment Performance

If a Level 2 test criterion is not satisfied, plant operating or test plans would not necessarily be altered. The limits stated in this category are usually associated with expectations of system transient performance whose characteristics can be improved by equipment adjustments. An investigation of the related adjustments, as well as the measurement and analysis methods would be initiated.

If all Level 2 requirements in a test are ultimately met, there is no need to document a temporary failure in the test report; unless there is a lessons learned benefit involved. Following resolution of temporary Level 2 test criterion failures, the applicable test portion must be repeated to verify that the Level 2 requirement is satisfied.

For the River Bend Station Power Uprate, specific Level 2 acceptance criteria were established as detailed in the following paragraphs.

EHC/Reactor Pressure Control

The pressure increase phase of the River Bend power uprate resulted in no significant additional mass flow. Additionally, since the pressure increase resulted in increased main turbine control valve margin, due to the decreased specific volume of main steam, no dynamic testing on the reactor pressure control system was performed. The system was observed to ensure acceptable performance after each pressure increase increment.

Reactor Water Level and Feedwater (FW) Control

The pressure increase phase of the River Bend power uprate resulted in no significant additional mass flow. Acceptable feedwater system dynamic response was verified during the first phase (power and flow increase phase) by performing system dynamic testing. No dynamic testing on the Feedwater and Reactor Level Control System was performed during this, second phase. The system was observed to ensure acceptable performance after each pressure increase increment.

Generator Stator Temperatures

The maximum allowable RTD temperature limit is 168 degrees F. These temperatures are monitored by TAMARIS, an automatic temperature monitoring system located in the main control room. This system is equipped with alarming capabilities, should any temperatures approach the maximum temperature limit. No significant increases in generator temperatures were anticipated (gross generation was predicted to increase by only 2-4 Mwe) as a result of the pressure increase phase, and no control room TAMARIS alarms were experienced during the pressure increase phase.

Bistable Reactor Recirculation Flow

The current plant limits associated with bistable flow were maintained.

Turbine Stop, Control and CIV Valve Testing

The absolute power levels at which RBS Turbine Stop, Control and CIV tests will be performed was not changed for Power Uprate. The margins for neutron flux trip, and bypass valve open events were not affected, and these tests were not performed.

3. Summary of Uprate Testing and Equipment Performance Results

3.1 Key Events

Power Ascension Chronological Sequence of Events

No.	Event Description	Date
1	Authorization granted to commence uprate power ascension testing	10-11-01
2	Place MSRs into Optimized configuration	10-13-01
3	Perform testing at 1025 psig Reactor Dome Pressure	10-13-01
4	Perform testing at 1030 psig Reactor Dome Pressure	10-13-01
5	Perform testing at 1035 psig Reactor Dome Pressure	10-13-01
6	Perform testing at 1040 psig Reactor Dome Pressure	10-13-01
7	Perform testing at 1045 psig Reactor Dome Pressure	10-13-01
8	Perform testing at 1050 psig Reactor Dome Pressure	10-13-01
9	Perform testing at 1055 psig Reactor Dome Pressure	10-13-01
10	Place Leading Edge Flowmeter into service and ascend to 3039 MWt, corrected.	10-25-01
11	Complete MDC test	11-28-01

3.2 Testing and Equipment Performance Results

Control Systems Performance Results

Control Systems most affected by uprate were monitored to assure acceptable performance and compliance with their specific Level 1 and 2 acceptance criteria. The following table summarizes these control systems.

Control System Performance Results

No.	Control System Description	Level 1 Acceptance Criteria	Level 2 Acceptance Criteria	Tuning Adjustments Required
1	Reactor Water Level Control System	Satisfied	Satisfied	No
2	EHC and Reactor Pressure Control System	Satisfied	Satisfied	No
3	Feedwater Heater Level Control System	Satisfied	Satisfied	No
4	Rx. Recirculation and Bi-Stable Flow	Satisfied	Satisfied	No

Equipment Performance Results

The following systems and selected equipment most affected by uprate within these systems were closely monitored to assure that equipment performed as predicted and that they operated within their design requirements.

Equipment Performance Results

No.	System Description	Level 1 Acceptance Criteria	Level 2 Acceptance Criteria	Predicted Performance Results
1	Condensate System	Satisfied	Satisfied	Acceptable
2	Feedwater System	Satisfied	Satisfied	Acceptable
3	Heater Drain System	Satisfied	Satisfied	Acceptable
4	MSR Drain System	Satisfied	Satisfied	Acceptable
5	Main Generator and Alternator	Satisfied	Satisfied	Acceptable
6	Nuclear Boiler	Satisfied	Satisfied	Acceptable
7	Reactor Recirculation System	Satisfied	Satisfied	Acceptable
8	Main Turbine	Satisfied	Satisfied	Acceptable
10	Main Transformer	Satisfied	Satisfied	Acceptable
11	Stator Cooling System	Satisfied	Satisfied	Acceptable
12	Isophase Bus Cooling	Satisfied	Satisfied	Acceptable
13	TPCCW System (CCS)	Satisfied	Satisfied	Acceptable

Reactor and Core Performance Results

1. Core thermal hydraulic parameters were verified to be within Technical Specification limits.

2. Margins to fuel thermal limits were verified to be acceptable.

3. Reactor Recirculation flow (drive flow) was in accordance with predictions for each power plateau.

4. Reactor operation was stable with no discernable change in reactor performance from pre uprate full power operating conditions. The core operated in a manner consistent with predicted expectations.

Radiation and Chemistry Results

Radiation surveys of selected areas within the plant were performed before and after the pressure increase at 100% core thermal power. As predicted, no significant change in plant radiation levels were experienced as a result of the pressure increase.

Chemistry monitoring (reactor water, condensate water and off gas) continued throughout the uprate power/pressure ascension test program with no discernable change from prior full power operating conditions

Net Gross Electrical Output Gain From Pressure Increase Phase of Power Uprate

The net electrical output increased 3 MWE as a result of increasing reactor dome pressure from 1040 psia to 1070 psia, as indicated by MDC test results before and after the pressure increase. The pre-pressure increase value was obtained from an MDC test performed immediately after the first, flow-only phase of power uprate was implemented, in October, 2000.

3.3 Exceptions

Equipment and Test Exceptions

None. All Level 1 and 2 acceptance criteria were satisfied and equipment and system performance behaved in accordance with predicted expectations.

4. Application of the USAR Initial Startup Test Program to the Power Uprate Project

4.1 General Discussion

The River Bend Station Safety Analysis Report section 10.4, Required Testing requires "This report will include ...brief discussions as to why it was not necessary to repeat specific tests listed in USAR Section 14, during the power uprate test program." This section of the Uprate Startup Test addresses this requirement with respect to the Power Uprate Project. The USAR Section 14 addresses the River Bend Station initial startup test program. The initial startup test program was divided into three main parts. They are: Construction test and Equipment Demonstrations, Preoperational and System Demonstrations, and Startup Tests and Operational Demonstrations. Each of these programs is discussed in the following paragraphs with respect to the River Bend Station Power Uprate Project.

4.2 Construction Tests and Equipment Demonstrations

Construction tests (safety related) are those tests, which demonstrate that safety- related equipment meets functional operability requirements. These tests cover a wide variety of checks to assure that components are properly installed and adjusted according to manufacturers instructions, Architect Engineering drawings and specifications, satisfy code requirements comply with FSAR requirements, etc. They include but are not limited to test such as: hydrostatic pressure tests. Electrical megger tests, load tests, cleanliness inspections, rotational tests, alignment tests, etc.

Equipment demonstrations (non-safety-related) are those tests used to demonstrate that non-safety-related equipment meets functional operability performance requirements.

As applies to the Power Uprate, this category of test demonstration is conducted as part of the modification process. These tests, where required, are included in the modification (administrative procedure) package. Required Post Modification Tests for Power Uprate modifications were successfully completed as part of the modification closure process.

4.3 Preoperational Tests and Operational Demonstrations

Preoperational test (safety-related) are those tests conducted prior to fuel loading to demonstrate that the plant has been properly designed and constructed, and that the safety-related structures, systems and components meet safety-related performance requirements.

System demonstrations (non-safety-related) consist of those tests conducted to demonstrate that non-safety-related system and components function as required to meet normal plant operating requirements.

This category of test demonstration is conducted as part of the post modification testing process.

Power Uprate modifications were successfully completed as part of the modification closure process.

4.4 Startup Tests and Operational Demonstrations

USAR Requirements

Startup Tests are safety-related tests and consist of such activities as fuel loading, pre-critical tests, critical and low power tests and power ascension tests that ensure fuel loading in a safe manner, confirm the design bases, demonstrate where practical that the plant is capable of withstanding the anticipated transients and postulated accidents, and ensure that the plant is safely brought to rated capacity and sustained power operation.

River Bend Station Power Uprate Startup Program Development

The following method as described in the next two paragraphs was used in establishing uprate testing requirements.

The development of the power uprate test recommendations and acceptance criteria is based on the review of similar test programs performed at other plants, Chapter 14 of the River Bend Station USAR, the outputs of the NSSS heat balance and power flow map tasks, and the River Bend Station Startup Tests. From the total population of tests identified in the preceding programs, a set of tests were selected for further evaluation and incorporation into the River Bend Station uprate test program. The effect of the power uprate at River Bend Station on the operational parameters, performance characteristics and acceptance criteria of these tests were examined. If the test was potentially impacted by power uprate, it was then evaluated for applicability and inclusion within the River Bend Station Uprate Power Ascension Test Program. This evaluation resulted in a final set of test recommendations to be performed during the initial ascension and operation at full 105% uprated power.

The recommendations are the result of a test selection process that is based upon a review of the original startup test program and changes resulting from the power uprate of the River Bend Station plant. The tests and equipment performance monitoring included in these recommendations fall into the following categories:

a. tests involving control systems with specific performance expectations assumed in the power uprate transient analyses and specific performance expectations for operational considerations,

b. tests affected by power uprate

c. tests required based on engineering judgement, and

d. performance monitoring of equipment impacted by power uprate

In general, most of these tests can be satisfied by completion of existing surveillance or functional tests, performance of instrumentation calibration and equipment setup, evaluation of the results of post modification testing, or through steady state data collection as part of normal system monitoring."

Transient Testing

As applies to Power Uprate and allowed by the SAR, system transient and control system dynamic response testing to demonstrate acceptable system performance was performed as a part of the phase 1, flow-only Power Uprate Power Ascension Testing. All test data was reviewed to assure compliance with the acceptance criteria for power ascension testing for uprate affected equipment. No transient testing was performed during the phase 2, pressure increase portion of Power Uprate.

Comparison of Power Uprate Tests to USAR Power Ascension Tests

As required by the SAR, the following Table addresses each of the initial power ascension tests and their applicability to the River Bend Station Uprate Power Ascension Test Program. Tests identified with a yes were incorporated in either phase 1 or phase 2 of the River Bend Station Uprate Test program unless credit was taken for another activity (i.e., surveillance test), that satisfies the requirement.

Results of FSAR Initial Startup Testing Evaluation
For Inclusion In The Uprate Power Ascension Test Program

Test No.	Start-up Power Ascension Test Description	Required In Uprate Test Procedure(1)	Acceptance Criteria Same as FSAR
101	Chemical and Radiochemical	Yes (2)	Yes
102	Radiation Measurements	Yes	Yes
103	Fuel Loading	No	NA
104	Full Core Shutdown Margin	No	NA
105	Control Rod Drive System	No	NA
106	SRM Performance and Control Rod Sequence	No	NA
107	Water Level Measurements	No	NA
108	Intermediate Range Monitor Performance	No	NA
109	Local Power Range Monitor Calibration	No	NA
110	Average Power Range Monitor Calibration	Yes	Yes
111	Process Computer	Yes	Yes
112	Reactor Core Isolation Cooling System	No	NA
113	Selected Process Temperatures	Yes	Yes
114	System Expansion	No	NA
115	Core Power Distribution	Yes	Yes
116	Core Performance	Yes	Yes
117	Steam Production	Yes	Yes
118	Core Power-Void Mode Response	No	NA
119	Pressure Regulator	Yes	Yes
120	Feedwater Control System	Yes	Yes
121	Turbine Valve Surveillance	No	NA
122	Main Steam Isolation Valves	No	NA
123	Relief Valves	No	NA
124	Turbine Stop Valve Trips and Generator Load Rejections	No	NA
125	Shutdown From Outside The Control Room	No	NA
126	Recirculation Flow Control System	No	NA
127	Recirculation System	No	NA
128	Loss Of Turbine Generator and Offsite Power	No	NA
129	Deleted	NA	NA
130	Vibration Measurements	No	NA
131	Deleted	NA	NA
132	Recirculation System Flow Calibrations	No	NA
133	Reactor Water Cleanup System	No	NA
134	Residual Heat Removal System	No	NA
135	Control Rod Sequence Exchange	No	NA
136	Drywell Piping Vibrations	No	NA
137	Off-Gas System	No	NA

Note (1) From G.E.N.E. Task Report, Startup Test Recommendations, Testing Required
(2) Credit Taken For Surveillance Monitoring Program