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Nuclear

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United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and 50-457

Subject: Startup Report for Braidwood Station Units 1 and 2 – Mid-Cycle Power Uprate

References: (1) Letter from R. M. Krich (Commonwealth Edison Company) to U.S. NRC, "Request for License Amendment to Permit Uprated Operations at Byron and Braidwood Stations," dated July 5, 2000

(2) Letter from George F. Dick, Jr. (U.S. NRC) to O.D. Kingsley (Exelon Generation Company, LLC), "Issuance of Amendments: Increase in Reactor Power, Byron Station, Units 1 and 2, and Braidwood Station Units 1 and 2," dated May 4, 2001

On May 4, 2001, the NRC issued License Amendment 113 for Braidwood Station, Units 1 and 2, which allowed an increase in the maximum reactor power level from 3411 megawatts thermal (MWt) to 3586.6 MWt. Power ascension on Braidwood Station, Units 1 and 2 was subsequently initiated during mid-cycle operations to an interim power level, prior to performing the modifications necessary to attain full power uprate. Consequently, a mid-cycle Power Ascension Test Program was performed for both Unit 1 and Unit 2.

The Unit 1 mid-cycle power ascension started May 13, 2001, and was completed on May 18, 2001. Power was raised until the administrative limit of 97.6% Turbine Impulse Pressure was reached. This interim mid-cycle power level was approximately 3468 MWt. The remainder of the Power Uprate power ascension will be performed following modifications to the High Pressure (HP) Turbine in the Fall 2001 refueling outage.

The Unit 2 mid-cycle power ascension started May 24, 2001 and was completed May 28, 2001. Power was raised until Governor Valve #4 indicated Valve Wide Open (VWO). This interim mid-cycle power level was approximately 3436 MWt. The remainder of the Power Uprate power ascension will be performed following modifications to the HP Turbine in the Spring 2002 refueling outage.

The Braidwood Station Technical Requirements Manual, Section 5.3.a, "Startup Report," requires that a summary report of the plant startup and power escalation testing be submitted to the NRC for an amendment to the license involving a planned increase in power level. Attached is the subject Startup Report covering the power escalation testing conducted from May 13, 2001 through May 28, 2001.

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A Supplemental Startup Report will also be submitted within 90 days following completion of the Power Uprate power ascension for each unit.

If you have any questions or require additional information concerning this report, please contact Ms. Amy Ferko, Regulatory Assurance Manager, at (815) 417-2699.

Respectfully,

James D. von Suskil
Site Vice President
Braidwood Station

Attachment

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Braidwood Station

ATTACHMENT

BRAIDWOOD STATION, UNITS 1 AND 2

MID-CYCLE POWER UPRATE ASCENSION

STARTUP REPORT

Braidwood Station, Units 1 and 2
Mid-Cycle Power Uprate Ascension Startup Report

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Executive Summary

This mid-cycle Startup Summary Test Report is submitted to the NRC in accordance with the requirements of the Braidwood Station Technical Requirements Manual, Section 5.0 "Administrative Controls," Section 5.3.a, which requires the submittal of a Startup Report after an amendment to the license involving a planned increase in power level.

On May 4, 2001, the NRC issued License Amendment 113 for Braidwood Station, Units 1 and 2, which allowed an increase in the maximum reactor power level from 3411 megawatts thermal (MWt) to 3586.6 MWt. A mid-cycle Power Ascension Test Program was subsequently performed for both Unit 1 and Unit 2. The Braidwood Station mid-cycle Power Ascension Test Program was developed in accordance with the generic guidelines provided in Westinghouse Topical Report, WCAP-10263, "A Review Plan for Uprating the License Power of a PWR Power Plant," dated 1983, and incorporated lessons learned from similar power uprate test programs performed at other nuclear plants.

Power ascension on both Braidwood Station units was initiated during mid-cycle operations to an interim level, prior to performing the modifications necessary to attain full power uprate. During the next refuel outage for each unit, the necessary High Pressure (HP) turbine modifications will be installed to allow power ascension to full power uprate.

Unit 1 mid-cycle power ascension started May 13, 2001, and was completed on May 18, 2001. Power was increased until the administrative limit of 97.6% Turbine Impulse Pressure was reached. This interim mid-cycle power level was approximately 3468 Megawatts Thermal (MWt). The remainder of the Power Uprate power ascension will be performed following modifications to the HP turbine scheduled to be installed in the ninth refuel outage (i.e., A1R09) in the Fall of 2001. The mid-cycle uprate Power Ascension Test Program was successfully completed with all acceptance criteria satisfied.

The Unit 2 mid-cycle power ascension started May 24, 2001 and was completed May 29, 2001. Power was increased until the Governor Valve #4 indicated Valve Wide Open (VWO). This activity was completed which resulted in an interim mid-cycle power level of approximately 3436 MWt. The remainder of the Power Uprate power ascension will be performed following modifications to the HP Turbine scheduled to be installed in the ninth refuel outage (i.e., A2R09) in the Spring of 2002. The mid-cycle uprate Power Ascension Test Program was successfully completed with all acceptance criteria satisfied.

Braidwood Station, Units 1 and 2 Power Uprate Ascension Startup Report

1.0 Purpose

This Power Uprate Startup Report is submitted to the NRC to satisfy the reporting requirements of the Braidwood Station's Technical Requirements Manual, Section 5.3.a, "Startup Report," which requires this report to address the following items.

1. Address each of the tests identified in the Updated Final Safety Analysis Report.

2. 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.

3. Describe corrective actions required to obtain satisfactory operation.

4. Include any additional specific details required in license conditions based on other commitments.

2.0 Power Uprate Power Ascension Program Scope

2.1 Program Development

The development of the power uprate test recommendations and acceptance criteria was based on the review of similar power uprate test programs performed at other nuclear plants, and the generic guidelines provided in WCAP-10263 "A Review Plan for Uprating the License Power of a PWR Power Plant," dated 1983. The power uprate master Design Change Package (DCP) for each unit specified the modification testing requirements for the plant setpoint scaling change requests (SSCR) required for implementation of the power uprate program.

The mid-cycle Power Ascension Test Program verified the following items.

- Plant systems and equipment affected by power uprate are operating within design limits.

- Nuclear fuel thermal limits are maintained within expected margins.

- The feedwater heater drain and level control system is stable.

- Radiation levels are acceptable and stable.

- Chemistry parameters are below the "Action" levels.

- Steam Generator feedwater flow and water level satisfactorily maintained in automatic control.

2.2 Prerequisites to Power Ascension Testing

Prior to the commencement of mid-cycle power ascension testing, special test procedures required the completion of numerous activities. These activities included the following items:

- 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 necessary.

- The applicable plant instrumentation setpoint changes or calibrations were completed as determined by the power uprate master DCP.

- Plant modifications were reviewed to assure they were completed as required and had no issues which could affect the uprate test program.

- The Out of Service Log and the Operation Configuration Change Log were reviewed to assure there were no conflicts with power uprate testing.

- Baseline data was taken at the 3411 MWt power level (i.e., the pre-uprate power level).

- Review of the NRC's Safety Evaluation approving the proposed power uprate license amendment and associated Technical Specification (TS) changes.

2.3 Mid-Cycle Power Uprate Ascension Testing

Mid-cycle power ascension was performed in accordance with a Braidwood Station Special Procedures (SPP) for each unit. Operator training and heightened level of awareness (HLA) briefings were completed prior to power ascension.

Power ascension on both units occurred using a single ramp to an administrative limit. The administrative limit for Unit 1 was 97.6% Turbine Impulse Pressure and for Unit 2 the administrative limit was until Governor Valve #4 indicated Valve Wide Open.

Following the power increase, testing and equipment performance data were collected and evaluated in accordance established test acceptance criteria. At the final plateau in power ascension, the following activities were performed:

- Reactor fuels parameters were evaluated.

- Feedwater and main steam parameters for turbine-driven feedwater pump speed, feedwater control valve position, feedwater pump, condensate pump and condensate booster pump suction pressure net positive suction head (NPSH) requirements, and steam generator water level control were evaluated.

- Feedwater heater level control performance data were evaluated.

- A selected set of equipment performance data (e.g., control room readings, local readings, and process computer information) were collected and evaluated.

- Chemistry evaluations were conducted.
- Main generator stator internal temperature data were collected and evaluated.
- Radiation surveys were performed and evaluated at key points in the power ascension sequence.
- Secondary plant and turbine/generator system performance were evaluated.
- Automatic controls systems were evaluated.

2.4 Test Acceptance Criteria for Units 1 and 2

General Discussion

The development of the power uprate test recommendations and acceptance criteria was based on the review of similar power uprate test programs performed at other plants and the power uprate master DCP.

Following the step increase in power level, test data recorded during the power ascension were evaluated and compared to the performance acceptance criteria (i.e., design predictions or limits). If the test data satisfied the acceptance criteria, then system and component performance were determined to comply with their design requirements.

Plant parameters during mid-cycle power ascension were evaluated using two levels of acceptance criteria. The criteria associated with plant safety were classified as Level 1. The criteria associated with design expectations were classified as Level 2. The following paragraphs describe the actions required to be taken if an individual criterion was not satisfied.

Level 1 Acceptance Criteria

Level 1 acceptance criteria normally relate to the values of process variables for components and systems determined during the design of the plant. If a Level 1 test criterion is not satisfied, the plant must be placed in a safe "hold" condition. Plant operating or test procedures or the Technical Specifications may guide the decision on the appropriate actions to be taken. Resolution of the problem must be immediately pursued by equipment adjustments or through engineering evaluation, as appropriate. Following resolution, the applicable test steps must be repeated to verify that the Level 1 acceptance criterion is satisfied. A description of the problem must be included in the test report documenting successful completion of the test.

For the Braidwood Station power uprate, the following specific Level 1 acceptance criteria were established:

- The Reactor Coolant System (RCS) average temperature is automatically maintained within ± 1.5 °F of its reference temperature during steady state operations when the control rods are in the automatic mode of control.

- The chemical and volume control system can maintain RCS system volume and a steady RCS boron concentration during steady state power level and routine power changes without excessive operator intervention.

- The reactor core parameters and indications do not exceed any limitations stated in the Core Operating Limits Report (COLR).

- No turbine runback and control rod stop signals generated from the Overpower Delta Temperature or Overtemperature Delta Temperature setpoints after completion of setpoint scaling changes.

- Steam generator feedwater flow and steam generator water level satisfactorily maintained in automatic control.

- The Turbine Driven Main Feedwater Pump speed during steady state conditions does not exceed 5500 RPM.

All the above Level 1 criteria were met for both Units 1 and 2.

Level 2 Acceptance Criteria Equipment Performance

If a Level 2 acceptance criteria limit is not satisfied, then startup testing may proceed after an investigation by testing, engineering, and operations personnel. The limits stated in this category are usually associated with expectations of system performance whose characteristics can be improved by equipment adjustments. The Level 2 parameter that was outside the Level 2 acceptance limit in the SPP is described in Section 3.3, "Unit 1 – System and Equipment Performance Results."

For the Braidwood Station Power Uprate, the following specific Level 2 acceptance criteria were established.

System and Equipment Performance

- System and Equipment Level 2 acceptance limits are identified in various attachments of the appropriate SPP. Any limits that were exceeded required a documented evaluation in the SPP Test Report.

- Water cooling systems exhibit stable full power operating characteristics.

Turbine Generator Temperature Monitoring System (TGTMS)

- TGTMS Data within Acceptance Limits

- Turbine Supervisory Vibration Data within Acceptance Limits

Plant Instrumentation

- RCS delta temperature power and calorimetric power are within plus or minus 2% of the plant process computer (PPC) indication.

- RCS pressure remains stable with no unexpected operation of pressurizer backup heaters during steady state power operation.

2.5 Differences between Unit 1 and Unit 2

2.5.1 Differences in Scaling Changes

The operating RCS average temperature remained at 582.0 °F for Unit 1, while the RCS average temperature for Unit 2 was rescaled from 582.0 °F to 582.7 °F. The difference is based on an administrative limit of a RCS core exit temperature for the Unit 2 D5 steam generators.

2.5.2 Differences in Test Acceptance Criteria

Listed below are the major differences in Level 1 test acceptance criteria between Unit 1 and Unit 2.

- RCS temperatures
- Steam Generator narrow range levels

Listed below are the major Level 2 test acceptance criteria differences between Unit 1 and Unit 2.

- RCS temperature alarms and setpoints
- Steam Generator narrow range levels
- Feedwater Regulating Valve Position

3.0 Unit 1 - Summary of Mid-Cycle Uprate Testing and Equipment Performance Results

3.1 Unit 1 Power Ascension Chronological Sequence of Events

No.	Event Description	Date
1	Authorization granted to commence Power Uprate ascension testing per SPP 01-001 Braidwood Unit 1 Power Uprate On-Line Implementation Procedure.	5/13/01
2	Completed Heighten Level of Awareness (HLA) Brief.	5/13/01
3	Completed Setpoint and Scaling changes (SSCRs).	5/16/01
4	Completed ramp to 3468 MWt with 97.6% Turbine Impulse Pressure	5/17/01
5	Completed initial review and approval of testing at the mid-cycle uprated power plateau	5/18/01

3.2 Unit 1 - Control Systems Performance Results

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

No.	Control System Description	Level 1 Acceptance Criteria	Level 2 Acceptance Criteria	Tuning Adjustments Required
1	RCS (Pressurizer) Pressure	Satisfied	Satisfied	None
2	Pressurizer Level Control	Satisfied	Satisfied	None
3	Rod Control	Satisfied	Satisfied	None
4	Steam Generator Level Control System	Satisfied	Satisfied	None
5	Feedwater Pump Speed Control	Satisfied	Satisfied	None
6	Feedwater Heater Level Control System	Satisfied	Satisfied	None
7	DEHC Control System	Satisfied	Satisfied	None
8	Steam Flow / Feed Flow Mismatch	Satisfied	Satisfied	None

3.3 Unit 1 – System and Equipment Performance Results

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

No.	System Description	Level 1 Acceptance Criteria	Level 2 Acceptance Criteria	Predicted Performance
1	Condensate System	Satisfied	Satisfied	Acceptable
2	Condenser	Satisfied	Satisfied	Acceptable
3	Condensate Booster System	Satisfied	Satisfied	Acceptable
4	Feedwater System	Satisfied	Satisfied	Acceptable
5	Heater Drain System	Satisfied	Satisfied	Acceptable
6	Reactor	Satisfied	Satisfied	Acceptable
7	Reactor Coolant System	Satisfied	Satisfied	Acceptable
8	Main Steam System	Satisfied	Satisfied	Acceptable
9	Main Turbine	Satisfied	Satisfied	Acceptable
10	Main Transformer	Satisfied	Satisfied	Acceptable
11	Auxiliary Transformers	Satisfied	Satisfied	Acceptable
12	Generator Cooling System	Satisfied	Satisfied (1)	Acceptable
13	Generator Condition Monitoring	Satisfied	Satisfied	Acceptable
14	Main Generator and Exciter Field	Satisfied	Satisfied	Acceptable
15	Isophase Bus Cooling	Satisfied	Satisfied	Acceptable
16	Reheater Systems	Satisfied	Satisfied	Acceptable

Unexpected Condition

(1) Generator Cooling System flow control valve position open percentage for Stator Water Cooler Temperature Control Valve (TCV) indicated 100% open and Generator Hydrogen Cooler Outlet TVC indicated 80% open, while the Level 2 Operating Limit for both was 80% open. A review of the affected components during baseline data collection, verified that normal temperatures were realized for the both the Stator Water Coolers and the Generator Hydrogen Cooler Outlet temperatures and were evaluated as acceptable for the mid-cycle power uprate plateau.

3.4 Unit 1 – Review and Approval of Testing at the Mid-Cycle Power Uprate Plateau of 3468 MWt.

1. Reactor Fuel Parameters: No adverse trends or conditions were observed with reactor operation at the mid-cycle power uprate plateau of 3468 MWt. Fuel thermal margins were found acceptable as determined by the performance of a flux map and Power Distribution Limits TS required surveillances.

2. Feedwater and Main Steam Parameters: The Turbine Driven Feedwater Pump speed, feedwater control valve position, and steam generator water level met their acceptance criteria. Feedwater pump, condensate pump and condensate booster pump suction pressures exceeded NPSH requirements. Feedwater Heater Level Control performance data was taken and evaluated to be acceptable. Equipment performance was determined to be acceptable for continued operation at the mid-cycle uprate plateau of 3468 MWt.

3. Chemistry Approval: RCS, Condensate and Feedwater chemistry did not reach Chemistry Action Levels.

4. Main Generator Parameters: Generator stator temperatures and bus bar temperatures satisfied their Level 2 acceptance limits. Generator conditions were found satisfactory for continued operation at the mid-cycle power uprate plateau of 3468 MWt.

5. Radiation Protection Approval: Plant areas were surveyed and found to be acceptable for operations at the mid-cycle power uprate plateau.

6. Secondary Plant and Turbine/Generator Systems Approval: System and Equipment data required by System Engineering have been collected and performance found acceptable.

7. Automatic Control Systems: All automatic control systems were acceptable for continued operation at the mid-cycle power uprate plateau of 3468 MWt.

3.5 Unit 1 - Exceptions

Equipment and Test Exceptions

All Level 1 and 2 acceptance criteria were satisfied and equipment and system performance behaved in accordance with predicted expectations with the exception of the Generator Cooling Systems TCVs. The condition was reviewed and accepted by testing, engineering, and operations personnel.

4.0 Unit 2 - Summary of Mid-Cycle Uprate Testing and Equipment Performance Results

4.1 Unit 2 Power Ascension Chronological Sequence of Events

No.	Event Description	Date
1	Completed Heighten Level of Awareness (HLA) Brief.	5/13/01
2	Completed Setpoint and Scaling changes (SSCRs).	5/28/01
5	Completed ramp to 3436 MWt with Governor Valve # 4 reaching VWO	5/28/01
6	Completed initial review and approval of testing at the mid cycle uprated power plateau	5/29/01

4.2 Unit 2 - 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.

No.	Control System Description	Level 1 Acceptance Criteria	Level 2 Acceptance Criteria	Tuning Adjustments Required
1	RCS (Pressurizer) Pressure	Satisfied	Satisfied	None
2	Pressurizer Level Control	Satisfied	Satisfied	None
3	Rod Control	Satisfied	Satisfied	None
4	Steam Generator Level Control System	Satisfied	Satisfied	None
5	Feedwater Pump Speed Control	Satisfied	Satisfied	None
6	Feedwater Heater Level Control System	Satisfied	Satisfied	None
7	DEHC Control System	Satisfied	Satisfied	None
8	Steam Flow / Feed Flow Mismatch	Satisfied	Satisfied	None

4.3 Unit 2 – System and Equipment Performance Results

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

No.	System Description	Level 1 Acceptance Criteria	Level 2 Acceptance Criteria	Predicted Performance
1	Condensate System	Satisfied	Satisfied	Acceptable
2	Condenser	Satisfied	Satisfied	Acceptable
3	Condensate Booster System	Satisfied	Satisfied	Acceptable
4	Feedwater System	Satisfied	Satisfied	Acceptable
5	Heater Drain System	Satisfied	Satisfied	Acceptable
6	Reactor	Satisfied	Satisfied	Acceptable
7	Reactor Coolant System	Satisfied	Satisfied	Acceptable
8	Main Steam System	Satisfied	Satisfied	Acceptable
9	Main Turbine	Satisfied	Satisfied	Acceptable
10	Main Transformer	Satisfied	Satisfied	Acceptable
11	Auxiliary Transformers	Satisfied	Satisfied	Acceptable
12	Generator Cooling System	Satisfied	Satisfied	Acceptable
13	Generator Condition Monitoring	Satisfied	Satisfied	Acceptable
14	Main Generator and Exciter Field	Satisfied	Satisfied	Acceptable
15	Isophase Bus Cooling	Satisfied	Satisfied	Acceptable
16	Reheater Systems	Satisfied	Satisfied	Acceptable

All Equipment Performance was within the Level 1 and Level 2 acceptance criteria and has been evaluated to support continued operations at the mid-cycle power uprate plateau of 3436 MWt.

4.4 Unit 2 – Review and Approval of Testing at the Mid-Cycle Power Uprate Plateau of 3436 MWt.

1. Reactor Fuel Parameters: No adverse trends or conditions were observed with reactor operation at the mid-cycle power uprate plateau of 3436 MWt. Fuel thermal margins were found acceptable as determined by the performance of a flux map and Power Distribution Limits TS required surveillances.

2. Feedwater & Main Steam Parameters: The Turbine Driven Feedwater Pump speed, feedwater control valve position, and steam generator water level met their acceptance criteria. Feedwater pump, condensate pump and condensate booster pump suction pressure exceeded NPSH requirements. Feedwater Heater Level Control performance data was taken and evaluated to be acceptable. Equipment performance was determined to be acceptable for continued operation at the mid-cycle uprate plateau of 3436 MWt.

3. Chemistry Approval: RCS, Condensate and Feedwater Chemistry did not reach Chemistry Action Levels.

4. Main Generator Parameters: Generator stator temperatures and bus bar temperatures satisfied their Level 2 acceptance limits. Generator conditions were found satisfactory for continued operation at the mid-cycle power plateau of 3436 MWt.

5. Radiation Protection Approval: Plant areas were surveyed and found to be acceptable for operations at the mid-cycle power uprate plateau.

6. Secondary Plant and Turbine/Generator Systems Approval: System and Equipment data required by System Engineering have been collected and performance found acceptable.

7. Automatic Control Systems: All automatic control systems were acceptable for continued operation at the mid-cycle power uprate plateau of 3436 MWt.

4.5 Unit 2 - Exceptions

Equipment and Test Exceptions

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

5.0 Application of the UFSAR Initial Startup Test Program to the Braidwood Power Uprate Project

5.1 General Discussion

The development of the power uprate test recommendations and acceptance criteria is based on the review of similar test programs performed at other nuclear plants; Westinghouse Topical Report, WCAP-10263, "A Review Plan for Uprating the License Power of a PWR Power Plant," dated 1983; and Section 7, "Output Determination," of the Westinghouse "Revised Proposal for Power Uprate," dated August 23, 1999. WCAP-10263 recommends that a test program be developed on a plant specific basis addressing the significance of the hardware modifications and the magnitude of the power uprate. The Braidwood Station hardware upgrades were limited to instrument setpoint scaling changes and minor equipment modifications that were completed as part of the plant modification process.

The Updated Final Safety Analysis Report (UFSAR) Chapter 14, "Initial Test Program," addresses the Braidwood Station initial test program. The initial test program included both preoperational and initial startup testing. Each of these programs is discussed in the following paragraphs:

5.1.1 Preoperational Tests

Preoperational testing consisted of system performance tests performed prior to core load on completed systems prior to final acceptance. These tests demonstrated the capability of structures, systems and components to meet safety related performance requirements.

This category of tests is now conducted as part of the post modification testing process. Mid-cycle Power Uprate modification tests were successfully completed as part of the modification process and work control process.

5.1.2 Initial Startup Tests

Initial startup testing consisted of those single and multi-system tests that occurred during or after fuel loading and which demonstrated overall plant performance. This included such activities as precritical tests, low-power tests (i.e., including criticality tests), and power ascension tests. This testing confirmed the design bases and

demonstrated, where possible, that the plant is capable of withstanding the design transients and postulated accidents.

This category of tests was reviewed for applicability in developing the Braidwood Station Uprate Power Ascension Test Program to determine the initial data needed to be re-verified. It was determined that minimal data required re-verification based on the scope of the mid-cycle power ascension power uprate program.

5.1.3 Comparison of UFSAR Startup Tests to Power Uprate Ascension Tests

The following table addresses each of the initial power ascension tests and their applicability to the Braidwood Station Mid-Cycle Uprate Power Ascension Test Program. Tests identified with a 'Yes' were incorporated into the Braidwood Uprate Test Program unless credit was taken for another activity (i.e., surveillance test) that satisfies the requirement.

Test No. (1)	Startup Test Title	Required in Power Uprate Test Procedure	Acceptance Criteria Same as UFSAR
14.2-62	Initial Core Load	No	NA
14.2-63	Control Rod Drives	No	NA
14.2-64	Rod Position Indicators	No	NA
14.2-65	Reactor Trip Circuit	No	NA
14.2-66	Rod Drop Measurements	No	NA
14.2-67	Incore Flux Monitor System	No	NA
14.2-68	Nuclear Instrumentation	No	NA
14.2-69	Reactor Coolant System Pressure	No	NA
14.2-70	Reactor Coolant System Flow	No	NA
14.2-71	Pressurizer Effectiveness	No	NA
14.2-72	Water Chemistry	Yes (2)	Yes
14.2-73	Radiation Surveys	Yes (3)	Yes
14.2-74	Effluent Radiation Monitors	No	NA
14.2-75	Initial Criticality	No	NA
14.2-76	Power Ascension	Yes (4)	Yes
14.2-77	Moderator Temperature Reactivity Coefficient Measurement	No	NA
14.2-78	Control Rod Reactivity Worth Measurement	No	NA
14.2-79	Boron Reactivity Worth Measurement	No	NA
14.2-80	Flux Distribution Measurement	No	NA
14.2-81	Pseudo Rod Ejection	No	NA
14.2-82	Power Reactivity Coefficient Measurement	No	NA
14.2-83	Core Performance Evaluation	No	NA
14.2-84	Flux Asymmetry Evaluation	No	NA
14.2-85	Full-Power Plant Trip	No	NA
14.2-86	Shutdown from Outside the Control Room	No	NA
14.2-87	Loss of Offsite Power	No	NA
14.2-88	10% Load Swing	No	NA
14.2-89	50% Load Reduction	No	NA
14.2-90	RTD Cross-Calibration	No	NA
14.2-91	Turbine Trip from 25% Power	No	NA

Notes: (1) UFSAR Chapter 14 table numbers
(2) Water Chemistry at uprate power in accordance with Chemistry Action Levels
(3) Areas surveyed and found acceptable for uprated power operations
(4) Special Test Procedure at mid-cycle power uprate was implemented

6.0 Full Power Capability

6.1 General Discussion

The Braidwood Station Power Uprate will be implemented in two steps. First, each unit will increase core thermal power to the uprated power level that represents approximately a 1% increase in steam flow associated with the current thermal power. Second, each unit will increase core thermal power to 3586.6 MWt following their respective ninth refuel outage and the replacement of their HP Turbine.

The initial power uprate on both Braidwood Station units was completed during mid-cycle operations in May of 2001.

6.2 Unit 1

Power was raised on Unit 1 until the administrative limit of 97.6% Turbine Impulse Pressure was reached. This interim mid-cycle power level was approximately 3468 MWt. The remainder of the Power Uprate power ascension will be performed following modifications to the HP Turbine in the Fall 2001 refueling outage (i.e., A1R09). Braidwood Unit 1 will complete the power ascension to the full uprated power level of 3586.6 MWt upon normal return to service following the refueling outage.

6.3 Unit 2

Power was raised on Unit 2 until Governor Valve #4 indicated valve wide open. This interim mid-cycle power level was approximately 3436 MWt. The remainder of the Power Uprate power ascension will be performed following modifications to the HP Turbine in the Spring 2002 refueling outage (i.e., A2R09). Braidwood Unit 2 will complete the power ascension to the full uprated power level of 3586.6 MWt upon normal return to service following the refueling outage.