FPL

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

Re: St. Lucie Unit 2
Docket No. 50-389
Cycle 17 Startup Report

Pursuant to St. Lucie Unit 2 Technical Specification (TS) 6.9.1.1, Florida Power & Light Company (FPL) is submitting the Cycle 17 Startup Report. This report is required due to the replacement of the steam generators and the implementation of Startup Test Activity Reduction (STAR).

Please contact us if there are any questions regarding this submittal.

Very truly yours,

Gordon L. Johnston
Site Vice President
St. Lucie Plant

GLJ/KWF

Attachment

IE26
NRR

ST. LUCIE UNIT 2, CYCLE 17 REACTOR STARTUP PHYSICS TESTING REPORT

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I. Introduction

The purpose of this report is to provide a description of the fuel design and core load, and to summarize the startup testing performed at St. Lucie Unit 2 following the Cycle 17 refueling. The startup testing verifies that key core and plant parameters are as predicted. The major parts of this testing program include:

1) Initial criticality following refueling,

2) Zero power physics testing,

3) Power ascension testing, and,

4) Replacement Steam Generator Testing.

This Cycle 17 Startup Report is being submitted in accordance with Technical Specification 6.9.1.1 due to the replacement of the original steam generators during the refueling outage, which may have significantly altered the thermal and/or hydraulic performance of the unit.

The test data collected during startup and summarized in this report indicates that although key thermal-hydraulic parameters exhibited some changes there was no significant impact to the performance of the unit. The test data satisfied all acceptance criteria and demonstrated conformance to predicted performance.

II. Cycle 17 Fuel Design

The Cycle 17 reload consists entirely of fuel manufactured by Westinghouse. The primary design change to the core for Cycle 17 is the replacement of 77 irradiated fuel assemblies (4 Region P assemblies, 73 Region S assemblies) with 72 fresh fuel assemblies (Region X), and 5 irradiated Region S fuel assemblies from the spent fuel pool. The fuel in the Cycle 17 core is arranged in a low leakage pattern. The mechanical design of Region X fuel is essentially the same as that of Region U fuel, and consists of Value-Added™ fuel pellets and Guardian Grid™ design, first introduced in Cycle 11. The only significant difference is that Region X incorporates the use of ZIRLO™ cladding.

The safety analysis of this design was performed by Westinghouse and by FPL using NRC approved methodologies. The core design and the generation of physics inputs to safety are performed by FPL using the Westinghouse physics methodology.

The Cycle 17 reload is based on the Westinghouse WCAP-9272, Westinghouse Reload Safety Evaluation Methodology, first introduced in Cycle 15 for St. Lucie Unit 2. This approach uses a checklist format to assess cycle-specific core design and plant parameters for compliance with the existing safety analysis.

The Cycle 17 core map is represented in Figure 1. The assembly serial numbers and Control Element Assembly (CEA) serial numbers are given for each core location.

III. CEA Drop Time Testing

Following the core reload and prior to the approach to criticality, CEA drop time testing was performed. The objective of this test is to measure the time of insertion from the fully withdrawn position (upper electrical limit) to the 90% inserted position under hot, full flow conditions. The average CEA drop time was found to be 2.91 seconds with maximum and minimum times of 3.02 seconds and 2.74 seconds, respectively (Reference 7). All drop times were within the 3.1 second requirement of Technical Specification 3.1.3.4 and within the safety analysis requirements supporting the reload PC/M 07004, “St. Lucie Unit 2 Cycle 17 Reload,” requirements (Reference 6).

IV. Approach to Criticality

The approach to criticality involved diluting from a non-critical boron concentration of 1830 ppm to a predicted critical boron concentration of 1623 ppm. Inverse Count Rate Ratio (ICRR) plots were maintained during the dilution process using wide range channels C and D, and startup channels 1 and 2. Refer to Figures 2 through 5 for ICRR information. Table 2 summarizes the dilution rates and times, as well as beginning and ending boron concentrations.

Initial criticality for St. Lucie Unit 2, Cycle 17, was achieved on January 4, 2008 at 0204 hours with CEA group 5 at 112 inches withdrawn and all other CEAs at the All-Rods-Out (ARO) position. The actual critical concentration was measured to be 1623 ppm (Reference 1).

V. Zero Power Physics Testing

To ensure that the operating characteristics of the Cycle 17 core were consistent with the design predictions, the following tests were performed:

1) Reactivity Computer Checkout;
2) All Rods Out Critical Boron Concentration; and,
3) Isothermal Temperature Coefficient Measurement

Proper operation of the reactivity computer is ensured by performing the "Reactivity Computer Checkout." This part of the testing determines the appropriate testing range and checks that reactivity changes are being correctly calculated by the reactivity computer's internal algorithms. The testing range is selected such that the signal to noise ratio is maximized and that testing is performed below the point of adding nuclear heat. The reactivity calculation is checked by performing a positive and negative reactor period test through respective introduction of a known amount of positive and negative reactivity. The results of the reactivity computer checkout were compared to the appropriate predictions supplied in the reload PC/M 07004 (Reference 6). Satisfactory agreement was obtained.

The measurement of the all-rods-out (ARO) critical boron concentration was performed. The measured value was 1627 ppm which compared favorably with the design value of 1628 ppm (Reference 2). This was within the acceptance limits of ± 50 PPM.

The measurement of the isothermal temperature coefficient was performed and the resulting Moderator Temperature Coefficient (MTC) was derived. The MTC was determined to be 1.279 pcm/°F which fell well within the acceptance criteria of ± 2.0 pcm/°F of the design MTC of 1.63 pcm/°F. This complies with Unit 2 Technical Specification 3.1.1.4 requirements that the maximum upper limit shall be +5 pcm/°F at ≤70% of Rated Thermal Power.

Rod worth measurements were not performed due to the implementation of the Startup Test Activity Reduction (STAR) program (Reference 9). Appendix A contains further information on the implementation of STAR for Unit 2 Cycle 17.

All acceptance criteria were met.

VI. Power Ascension Program

During power ascension, the fixed incore detector system is utilized to verify that the core is loaded properly and there are no abnormalities occurring in various core parameters (core peaking factors, linear heat rate, and tilt) for power plateaus at 30%, 45%, and greater than 98% rated thermal power.

A summary of the flux maps at the 30%, 45% and 98% power levels is provided in Figures 6, 7 and 8. These flux maps are used for comparing the measured power distribution with the predicted power distribution. For the purposes of power ascension, the acceptance criteria require the Root Mean Square (RMS) value of the power deviation to be less than or equal to 5%. The individual assembly powers should be within 10% of the predicted power for assembly powers greater than or equal to 0.9 (30% and 98% plateaus). In addition, for the 30% plateau the Relative Power Density (RPD) should be within 0.1 RPD units of predicted for assembly powers less than or equal to 0.9. These criteria were satisfied.

Additionally, calorimetric, nuclear, and delta T power calibrations were performed at each power plateau prior to advancing reactor power to the next higher level specified by procedure.

A determination of RCS flow by calorimetric parameters (Reference 8) was performed and the measured result of 404,128 gpm met the minimum acceptance criteria of 349,500 gpm (Technical Specification required flow of 335,000 gpm + uncertainties).

VII. Steam Generator Testing

The Unit 2 Original Steam Generators (OSG) were replaced with new, equivalent steam generators supplied by AREVA, during the 2007 Steam Generator (SG) and Replacement and Refueling Outage. As a result of the steam generator replacement, return to service testing was performed.

The return to service testing comprised two discreet types of testing: post work testing and performance testing. Testing of many of the individual components impacted by the installation of the Replacement Steam Generators (RSGs) was performed and documented under the Post Maintenance program. Performance testing which required integrated plant conditions was performed using existing plant procedures, or specialized test procedures detailed in 2-PTP-35, "Unit 2 Cycle 17 Return to Service Testing and Performance Verification".

There were no adverse conditions identified during the performance of 2-PTP-35 affecting the thermal and hydraulic behavior of the reactor core. Performance of the RSGs was monitored throughout the power ascension. The data was reviewed at each power plateau and compared with design predictions, which were summarized in 2-PTP-35. The power plateaus were chosen to align with the normal power ascension procedure.

Figure 9 displays the measured primary side differential pressure at the power plateaus. As illustrated on the graph the average differential pressure decreased with rising power due the effects of decreasing fluid density with power. Reactor Vessel differential pressure was monitored throughout the power ascension and is shown on Figure 10. This parameter was used to estimate the RCS flow in Mode 3. Values for the measured and predicted differential pressures are provided in Table VII-1 below. Based on the various instrument uncertainties (e.g., RCS flow measurement uncertainty is ±14,500 gpm) and accuracy of the analytical model, the differences are considered reasonable and the results acceptable.

Table VII-1: Differential Pressures for the SG and Reactor Vessel (Based on 100% Power, 1355 MWt per SG)

Parameter	Measured Value	Predicted Value
SG Differential Pressure	20.5 psid to 23.5 psid @ measured flow of 404,128 gpm	27.6 psid @ measured flow of 402,814 gpm
Reactor Vessel Differential Pressure	47 psid @ measured flow of 404,128 gpm	45.05 psid @ measured flow of 409,193 gpm

Figure 11 shows the RCS temperatures at the various power levels. T_{Cold} was maintained per procedures to approximately 549°F (actual measured was ~548.34°F). The measured T_{Hot} and consequently ΔT were higher than predicted due to the effects of Hot Leg Stratification Factor (HLSF), which was determined to be approximately 5°F at 100% power.

The parameters T_{Avg}, T_{Ref} and predicted T_{Avg} are plotted on Figure 12. The Average Temperature, (T_{Avg}), based on primary temperature instruments and T_{Ref}, which is derived from turbine first stage pressure, are used as indication of primary to secondary power mismatch. At 100% power the predicted T_{Avg} was 572.26°F, the measured T_{Avg} was 575.8°F, and the measured T_{Ref} was 575.7°F. The measured values were reasonable compared to the predicted value taking into account the effect of HLSF. Also, with T_{Avg} and T_{Ref} being within 0.1°F of each other there was no indication of a primary to secondary power mismatch and the results are documented as acceptable.

The RCS low flow reactor trip is derived from SG differential pressure instrumentation. Differential pressure data is collected in Mode 3. The low flow trip setpoints were determined and implemented based on the Mode 3 differential pressure data. The Hot Zero Power flow rate of approximately 406,000 gpm calculated in Mode 3 determined that the low flow trip setpoints were set to cover a range of SG differential pressures of 20.0 psid to 28.5 psid as specified in 2-PTP-35.

At the 98% plateau, the RCS flow was determined as 404,128 gpm (202,064 gpm per SG) at a SG differential pressure of approximately 23 psid per SG. AREVA determined the best estimate primary flow to be 201,407 gpm per SG with a pressure loss along the tubes of 27.60 psid at this predicted flow rate. Considering the calculational uncertainties as well as the instrument uncertainties for both the flow measurement (i.e., ±14,500 gpm) and the differential pressure measurements, the calculated and measured values are within the measurement uncertainty and are considered acceptable.

In accordance with Technical Specification Table 3.2-2, the measured RCS flow rate (after accounting for uncertainties) is required to be ≥ 335,000 gpm and less than the PCM 05137 maximum design flow of 431,000 gpm. Accounting for a measurement uncertainty of 14,500 gpm, the actual RCS flow is between 389,628 gpm and 418,628 gpm. Therefore, the minimum flow requirement is met and the design flow rate is not exceeded.

Blowdown testing was performed in accordance with NOP-23.02. The acceptance criterion for the blowdown test is to achieve a blowdown rate of 1% (5.9×10^4 lb/hr/SG) of steam flow or meeting the maximum capacity of the system. As a blowdown capacity of 5.9×10^4 lb/hr/SG was achieved during the test the blowdown capacity measurement was documented as acceptable. In addition, there was no detectable primary to secondary leakage as verified by testing and by Chemistry daily sampling results.

As described above, RSG performance tests that could impact the thermal and hydraulic behavior of the reactor core, performed per RSG Return to Service procedure, were completed and it was concluded that there were no adverse impacts to the thermal and hydraulic behavior of the reactor core as a result of the installation of RSGs at St. Lucie Unit 2.

VIII. Summary

Compliance with the applicable Unit 2 Technical Specifications was satisfactory. The acceptance criteria for all the startup testing parameters were met.

IX. References

1) *"Unit 2 Initial Criticality Following Refueling,"* Pre-Operational Procedure 2-3200088, Rev. 27.

2) *"Reload Startup Physics Testing,"* Pre-Operational Procedure 3200091, Rev. 27

3) *"Reactor Engineering Power Ascension Program,"* Pre-Operational Procedure 3200092, Rev. 33.

4) St. Lucie Unit 2 Technical Specifications.

5) Engineering Evaluation PSL-ENG-SEMJ-08-011, *"St. Lucie Unit 2 Replacement Steam Generator Return to Service Summary Report,"* Revision 0, February 2008.

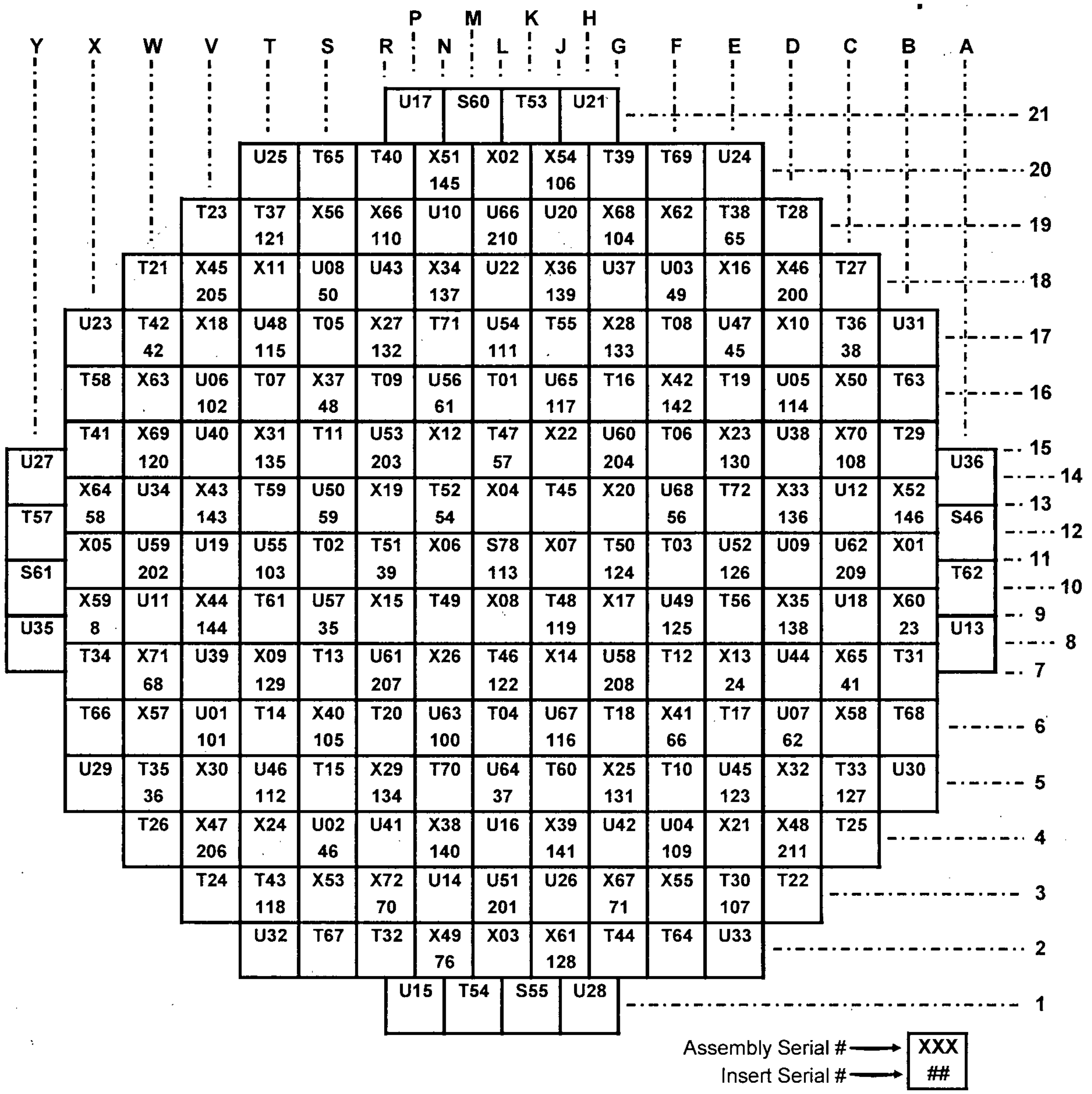
6) St. Lucie Unit 2 Cycle 17 Reload PC/M #07004, Rev 1.

7) *"Periodic Rod Drop Time and CEA Position Functional Test,"* Operating Procedure 2-0110054, Rev. 26C.

8) "*RCS Flow Determination by Calorimetric,*" Operating Procedure 2-0120051, Rev. 16A.

9) WCAP- 16011-P-A, Rev. 0, "Startup Test Activity Reduction Program," February 2005.

FIGURE 1
CYCLE 17 CORE LOADING PATTERN



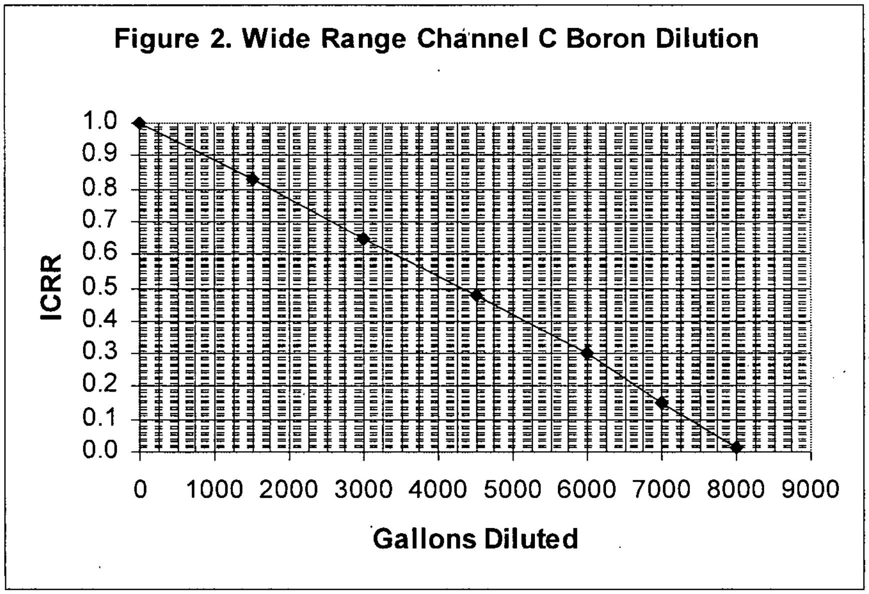


Figure 2. Wide Range Channel C Boron Dilution
ICRR
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0 1000 2000 3000 4000 5000 6000 7000 8000 9000
Gallons Diluted

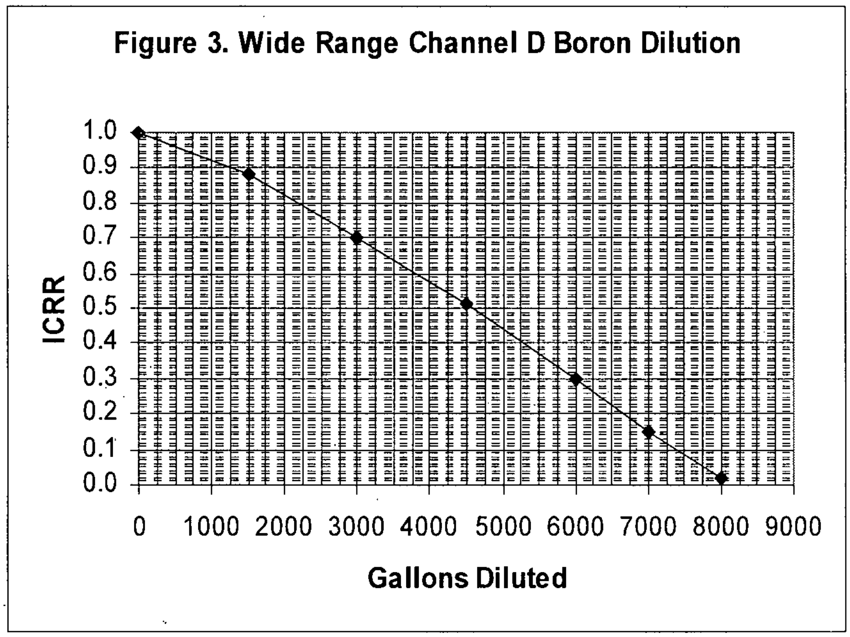


Figure 3. Wide Range Channel D Boron Dilution
ICRR
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0 1000 2000 3000 4000 5000 6000 7000 8000 9000
Gallons Diluted

Figure 4. Startup Channel 1 Boron Dilution

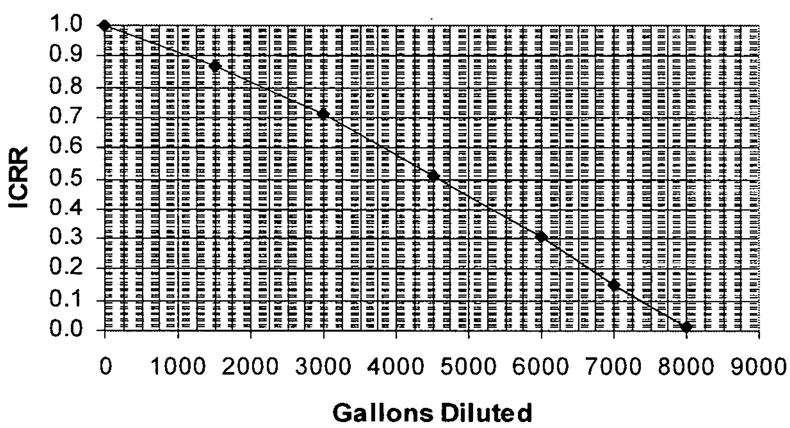


Figure 5. Startup Channel 2 Boron Dilution

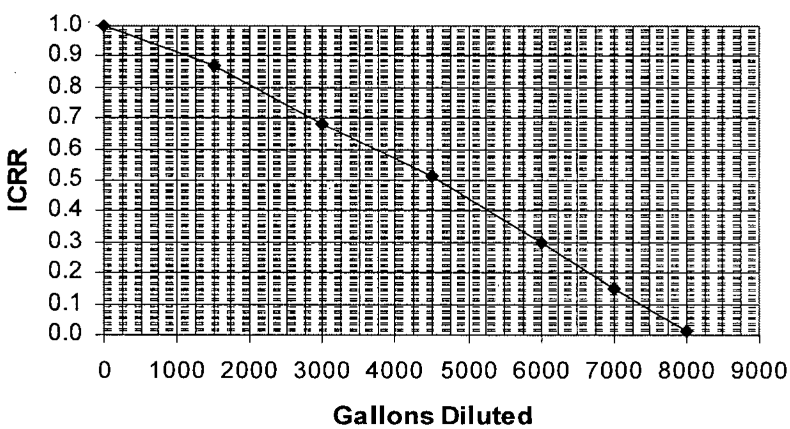
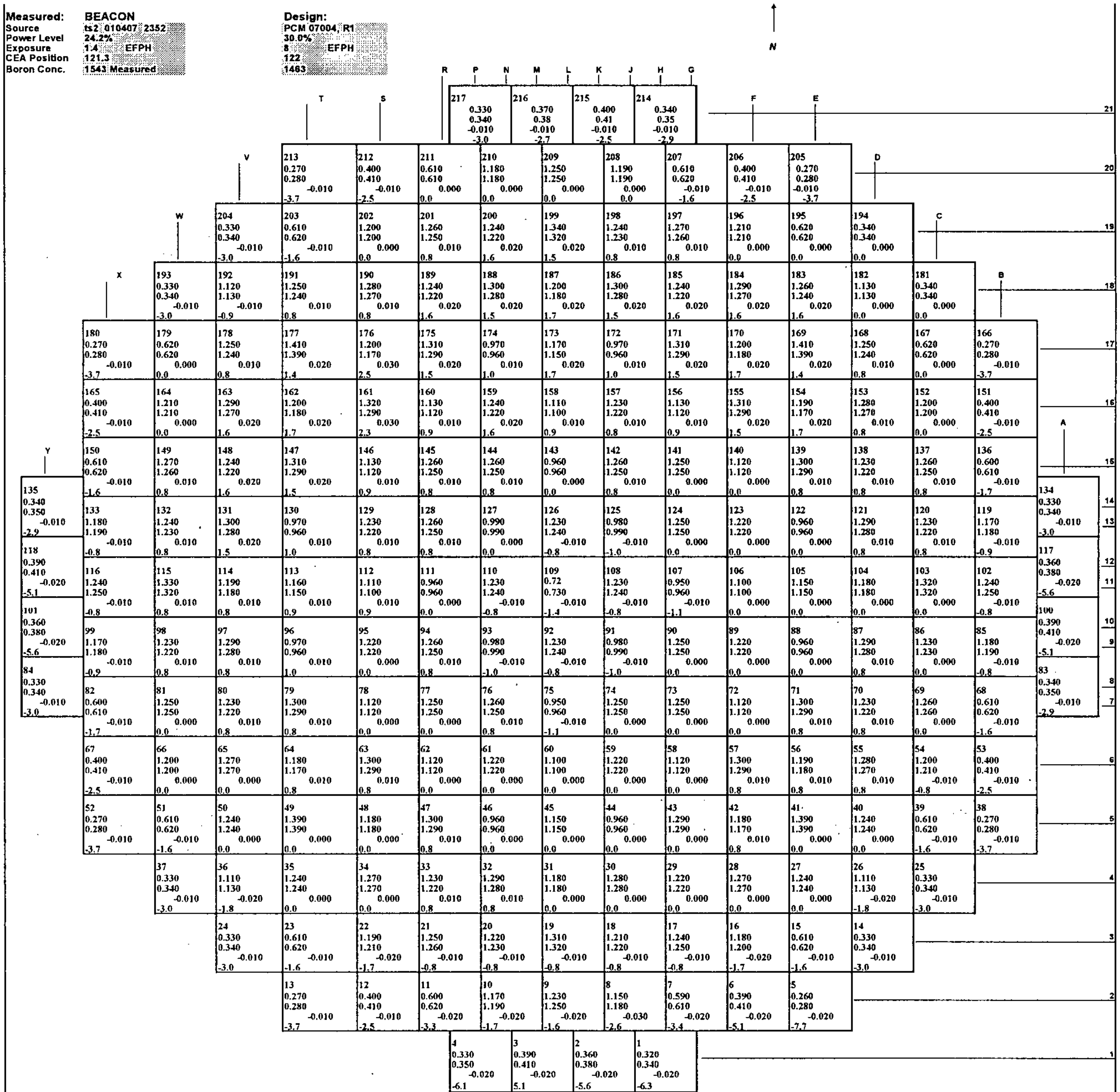


Figure 6

POWER DISTRIBUTION COMPARISON WITH DESIGN – 30% POWER



RMS Deviation: 1.18%

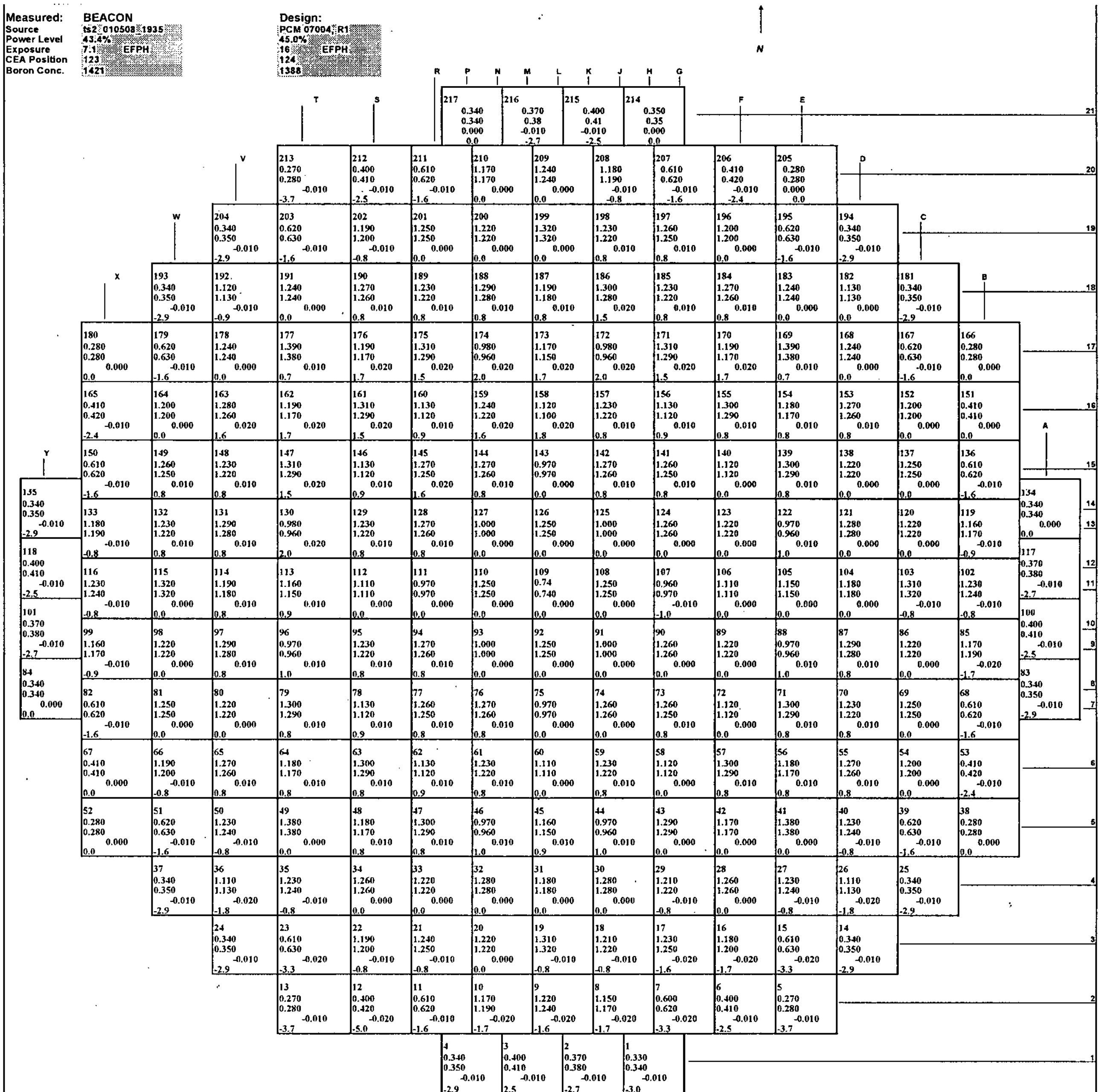
The incore detection system is operable per Appendix 1, RMS deviation should be less than or equal to 5.0% and meet the requirements of 4.7.1 if performed at the 25 and 98 percent power test plateaus during the power ascension test program.

Key:

Box #
Measured
Design
Delta
% Diff.

Figure 7

POWER DISTRIBUTION COMPARISON WITH DESIGN – 45% POWER



RMS Deviation: 1.03%

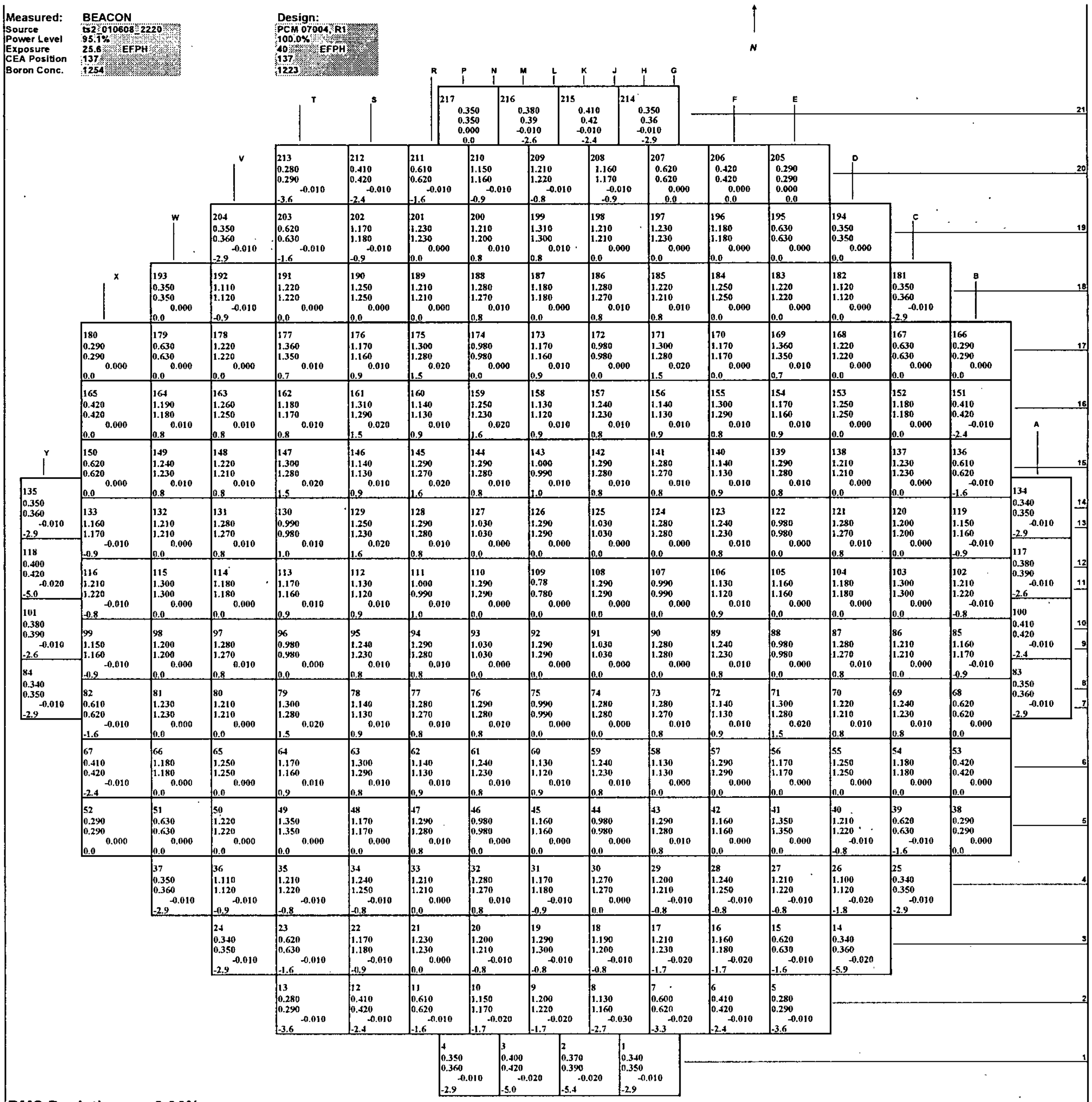
The incore detection system is operable per Appendix 1, RMS deviation should be less than or equal to 5.0% and meet the requirements of 4.7.1 if performed at the 25 and 98 percent power test plateaus during the power ascension test program.

Key:

Box #
Measured
Design
Delta
% Diff.

Figure 8

POWER DISTRIBUTION COMPARISON WITH DESIGN – 98% POWER



RMS Deviation: 0.96%

The incore detection system is operable per Appendix 1, RMS deviation should be less than or equal to 5.0% and meet the requirements of 4.7.1 if performed at the 25 and 98 percent power test plateaus during the power ascension test program.

Key:

Box #
Measured
Design
Delta
% Diff.

Figure 9

Average RSG Differential Pressure

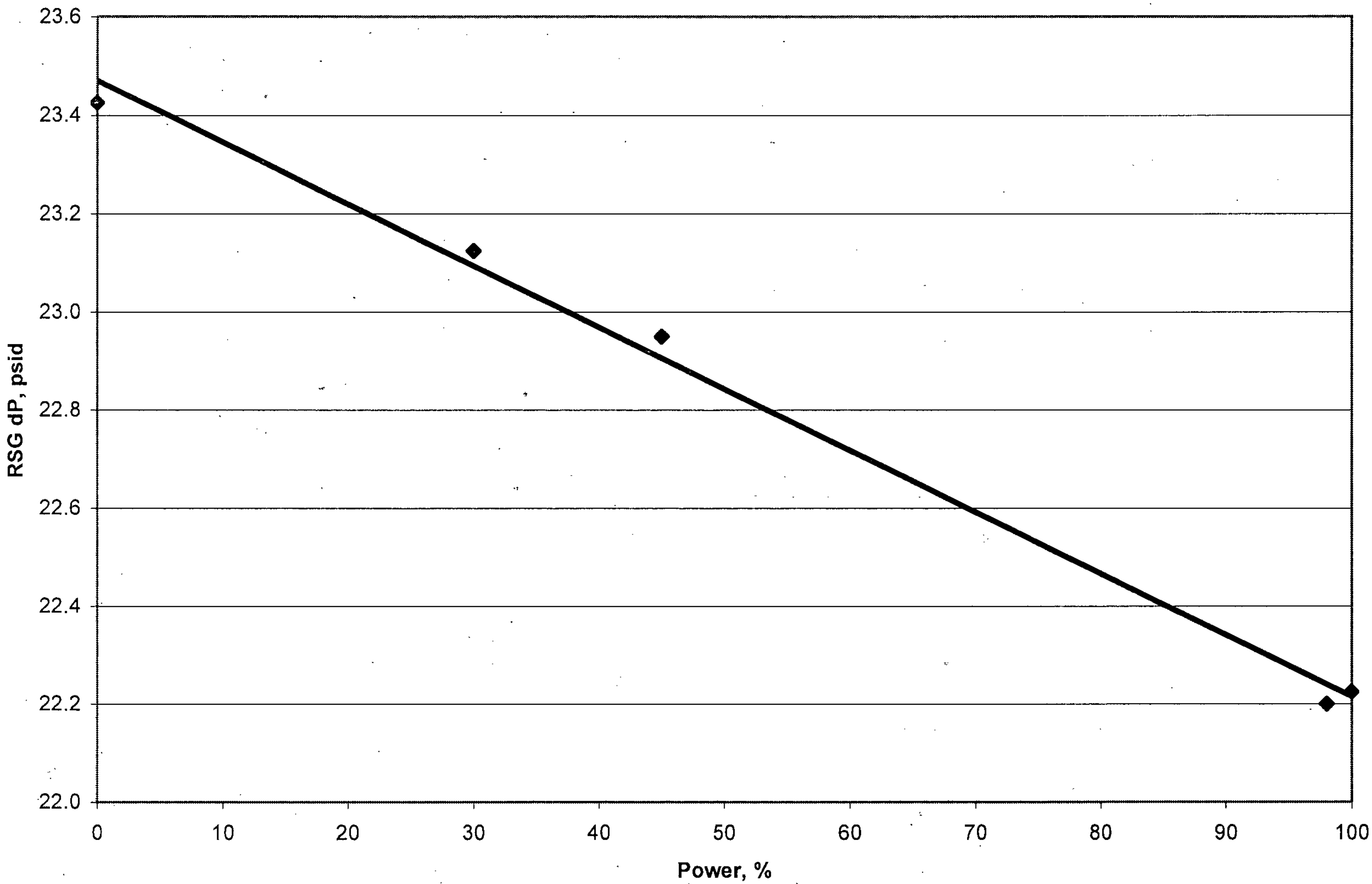


Figure 10
Rx Vessel Differential Pressure vs. Power

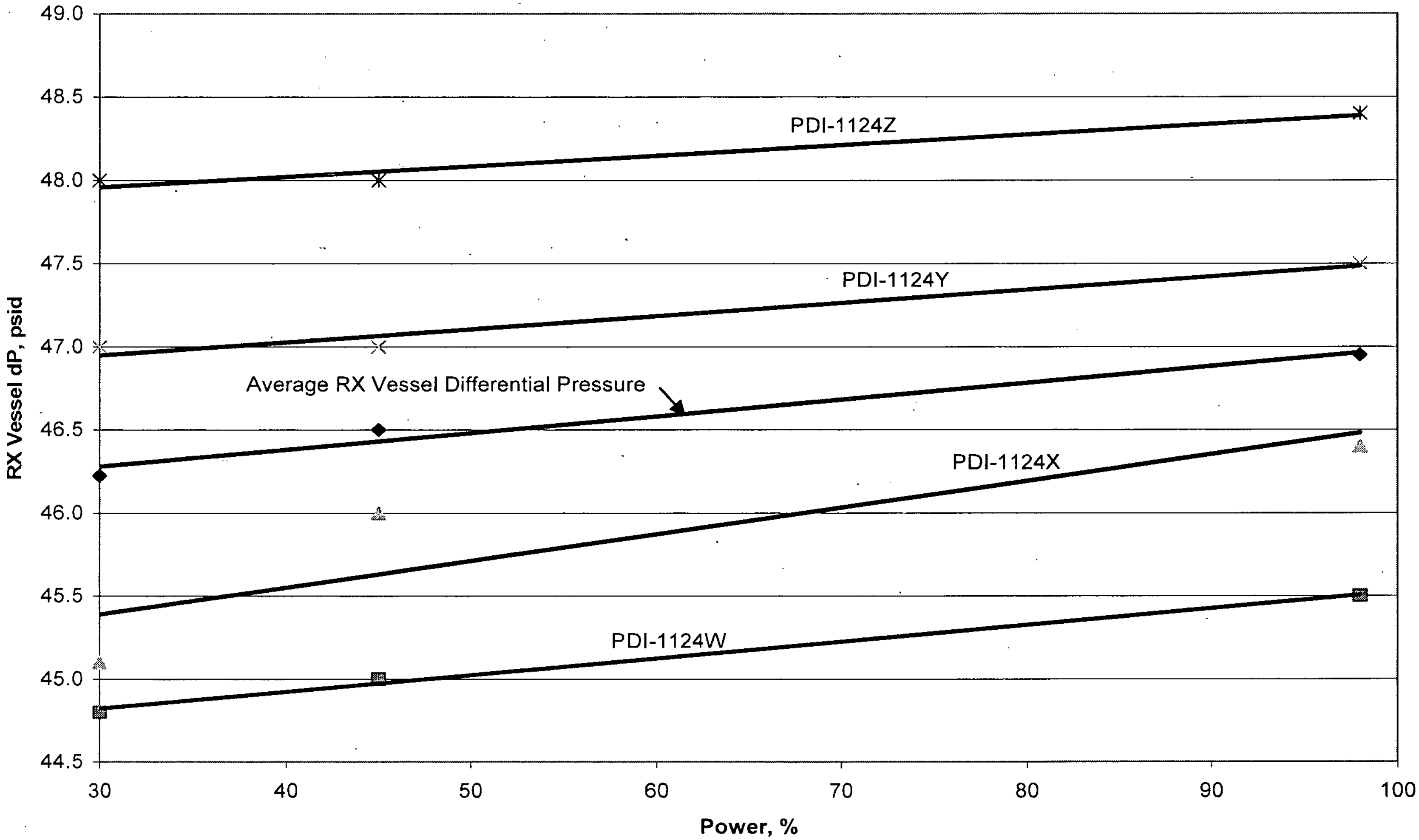


Figure 11

RCS Temperature vs. Power

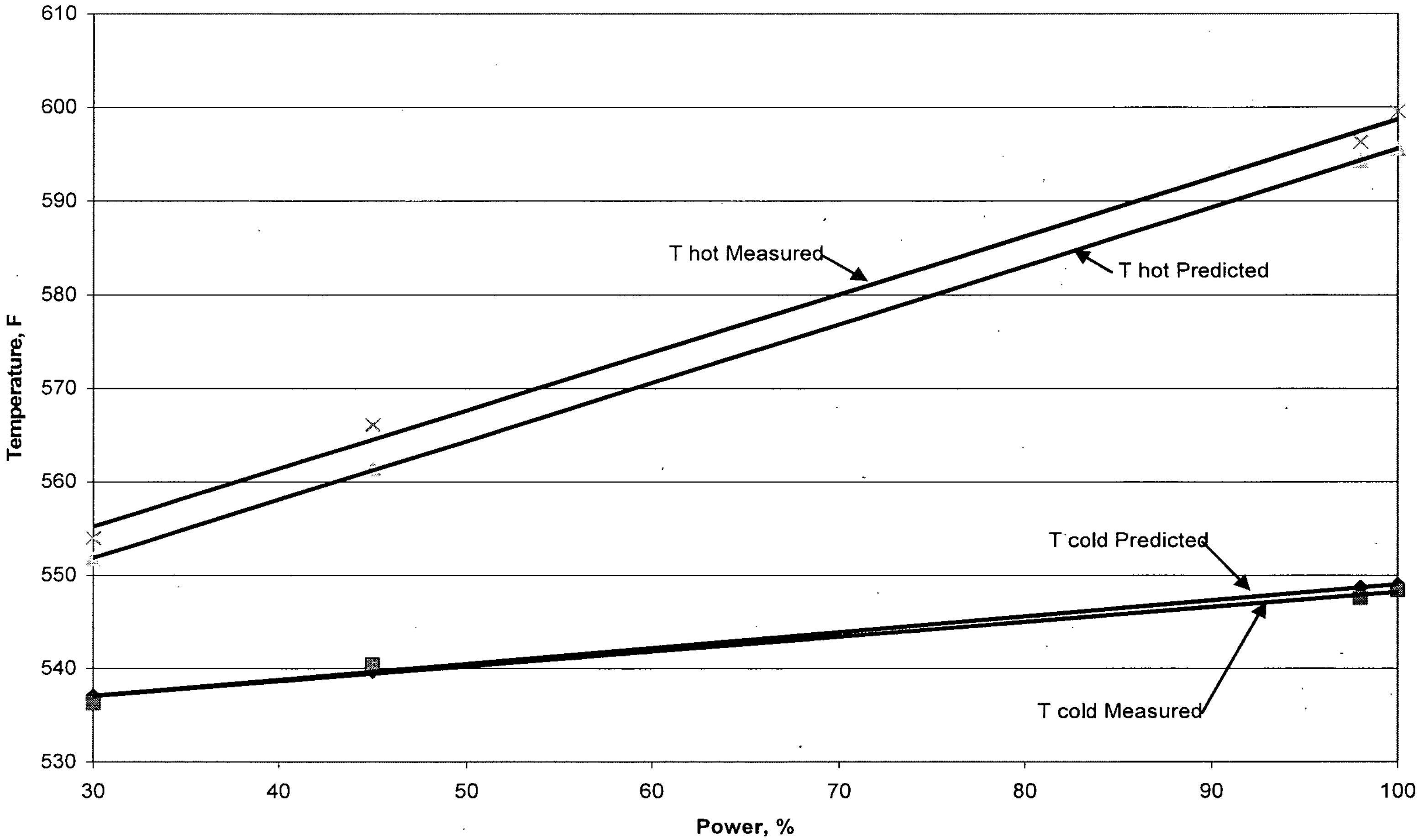


Figure 12

Tavg/Tref vs. Power

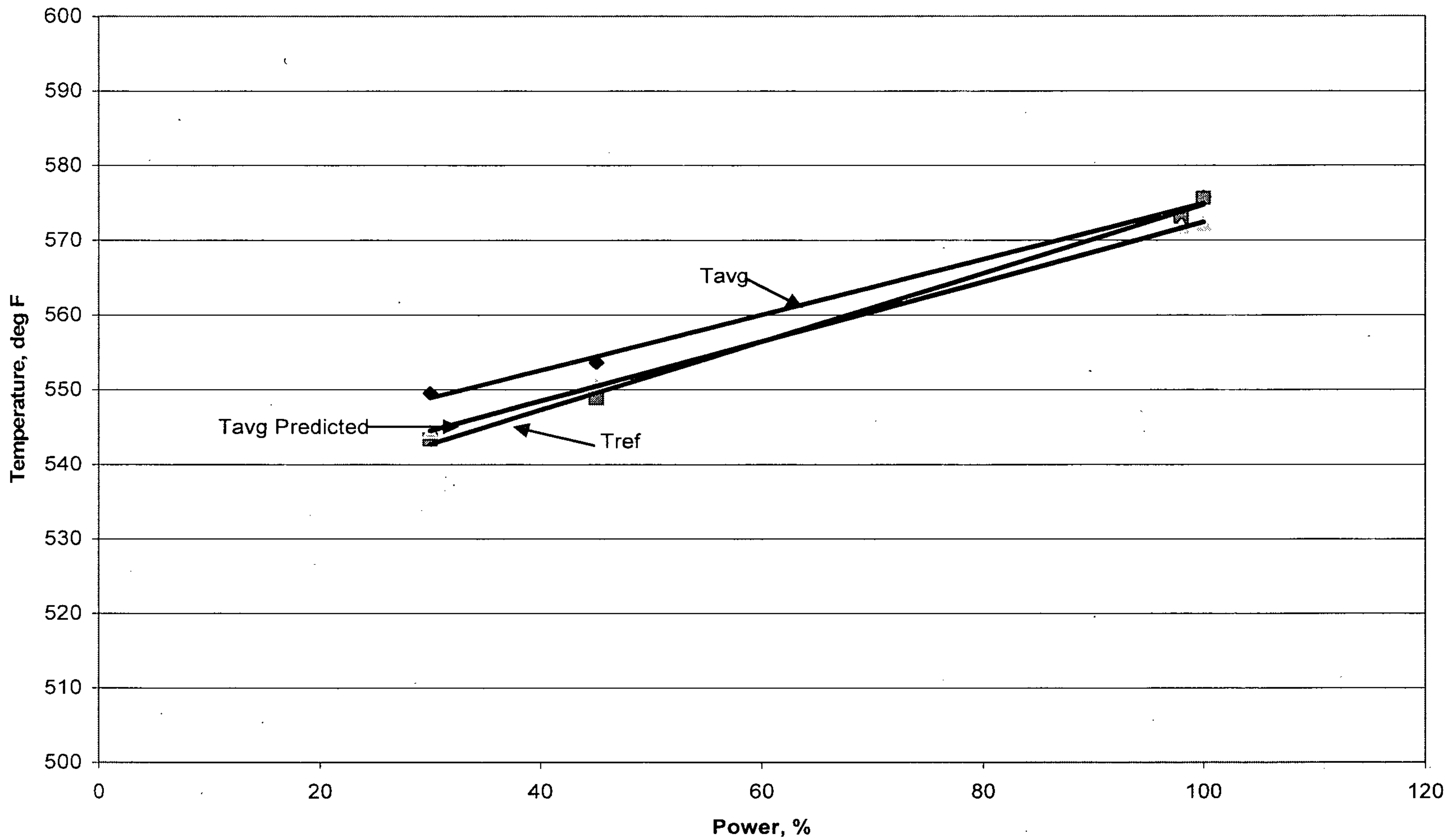


Table 1
Cycle 17 Reload Sub-Batch ID*

Sub-Batch	Number of Assemblies
S4	4
S5	1
T1	20
T2	8
T3	16
T4	8
T5	20
U1	8
U2	28
U3	8
U4	4
U5	20
X1	8
X2	24
X3	12
X4	4
X5	16
X6	8

*Reference 6

Table 2
Approach to Criticality

Dilution Rate	Initial Boron Concentration (ppm)	Final Boron Concentration (ppm)	Approximate Dilution Time (minutes)
132 gpm	1830	1787	20
88 gpm	1787	1661	62
44 gpm	1661	1623	96

Appendix A
Summary of Implementation on the First Application of STAR for St. Lucie Unit 2, Cycle 17

Background

The St. Lucie Unit 2, Cycle 17 startup from refueling successfully utilized the Startup Test Activity Reduction (STAR) Program in accordance with Westinghouse Topical Report, WCAP-16011-P-A, Rev. 0 (Reference A-1). This was the first application of the STAR Program at St. Lucie Unit 2. The current implementation eliminates the CEA worth measurement only and there is no change to the MTC testing requirements. The conditions and limitations of the NRC safety evaluation for the STAR Program topical report (Reference A-1) requires that "each licensee using STAR to submit a summary report following the first application, either successful or not, of STAR to its plant. The report should (a) identify the core design method used, (b) compare the measured and calculated values and the differences between these values to the corresponding core design method uncertainties and (c) show compliance with the STAR applicability requirements. If the application of STAR is unsuccessful, identify the reasons why the STAR application failed."

This summary report provides the NRC with the required information specified in the Conditions and Limitations section of the NRC safety evaluation for the STAR topical report.

Core Design Method Used

The core design method used for St. Lucie Unit 2 Cycle 17 reload core was the PHOENIX-P/ANC code design package described in Reference A-2. The CASMO-4/SIMULATE-3 (CS) code package described in Reference A-3 was used for the alternate method calculations.

Cycle 17 STAR Program Test Results (Comparison of Measured and Calculated Values)

A comparison of the last measured cycle values (Cycle 16) and the corresponding calculated values for the key physics parameters is provided in Table 3 along with the design method/analysis uncertainties.

Table 3: Comparison of Key Parameters

Parameter	Measured (Cycle 16)	Predicted (Cycle 16)	Safety Analysis / Design Method Uncertainty	Within Criteria?
BOC HZP CBC	1570	1567	100 ppm (minimum)	Yes
BOC HZP CEA WORTH (Bank B)	1513.49	1528.00	15%	Yes
BOC HZP CEA WORTH (Bank 1/3/5)	1433.63	1415.00	15%	Yes
BOC HZP CEA WORTH (Bank 2/4)	1354.64	1299.00	15%	Yes
BOC HZP CEA WORTH (Bank A)	1696.70	1690.00	15%	Yes
BOC HZP CEA WORTH (Total)	5998.47	5932.00	10%	Yes
BOC HZP ITC	-0.864	-1.301	1.8 pcm/°F	Yes
Power Distribution (RMS, 30%)	2.46		±5.00% *	Yes
Power Distribution (RMS, 45%)	1.56		±5.00% *	Yes
Power Distribution (RMS, 98%)	1.37		±5.00% *	Yes

*Procedural limit based on guidance in ANSI Standard 19.6.1 – 1997.

The measured to predicted values for Cycle 16 were all within the acceptance criteria and design method/safety analysis uncertainties. This demonstrates compliance with Applicability Requirements of Table 3.4 for "Core Design", Items 1 and 2 in the STAR Topical.

Table 4 provides a summary of tests performed during the startup of the current Cycle 17.

Table 4: Summary of Tests Performed for Cycle 17

TEST	POWER	Location	Within Test Criteria
CEA Drop Time	Shutdown	Test results located in Section III of this document.	YES
CEA Drop Characteristics	Shutdown	CEA coupling verified by CEA drop characteristics	YES
CBC	HZP	Test results located in Sections IV and V of this document.	YES
ITC	HZP	Test results located in Section V of this document.	YES
MTC Surveillance	HZP	Test results located in Section V of this document.	YES
Incore Flux Symmetry	Low (30%)	Test results located in Section VI and Figure 4 of this document.	YES
Incore Power Distribution	Intermediate (45%)	Test results located in Section VI and Figure 5 of this document.	YES
Incore Power Distribution	HFP (98%)	Test results located in Section VI and Figure 6 of this document.	YES
ΔCBC HZP-HFP	HFP	The difference in boron concentration was within 21.0 ppm of prediction.	YES

Compliance with STAR Applicability Requirements

STAR Applicability Requirements are conditions that must be satisfied to use the STAR Program. The STAR Applicability Requirements are provided in Table 3-4 of Reference A-1 and provide assurance that the core can be operated as designed when used in conjunction with the proposed tests. The STAR Applicability Requirements involve the following areas:

- Core Design
- Fabrication
- Refueling
- Startup Testing
- CEA Lifetime

Conformance with the STAR Applicability Requirements is documented in accordance with plant processes and procedures. Demonstration of compliance with each of the STAR applicability requirements was documented in STAR Cycle Specific Startup Test Checklists that were completed during the core design and startup testing for Cycle 17. The completed STAR Cycle Specific Startup Test Checklists verify the applicability requirements of Reference A-1 are satisfied.

References

A-1. WCAP- 16011-P-A, Rev. 0, "Startup Test Activity Reduction Program," February 2005.

A-2. WCAP-11596-P-A, "Qualification of the PHOENIX-P/ANC Nuclear Design System for Pressurized Water Reactor Cores," June 1988.

A-3. CASMO-4 Methodology, SSP-95/02 Revision 0, September 1995 & SIMULATE-3 Methodology, SSP-95/18 Revision 0, October 1995.

Core Design Applicability Requirements

The core design for Cycle 17 (cycle for STAR implementation) consists of the following:

- A cycle length ~of 16.1 EFPM
- An average enrichment of 3.83 w/o U-235
- A maximum enrichment of 4.17 w/o U-235
- A reload of 72 fresh assemblies
- A burnable absorber type of Gd_2O_3
- A CEA absorber type of B_4C
- A low leakage fuel management scheme

Requirements from Table 3.4, "Core Design" section (Pages 3-9 and 3-10) in WCAP-16011-P-A

STAR Topical Applicability Requirement	Requirement	Requirement Satisfied Yes / No
Core Design Item 1	See Table 3	YES
Core Design Item 2	See Table 3	YES
Core Design Item 3 (first bullet)	Cycle Length	YES
Core Design Item 3 (second bullet)	Average Enrichment	YES
Core Design Item 3 (second bullet)	Maximum Enrichment	YES
Core Design Item 3 (third bullet)	Fraction of Core Reloaded	YES
Core Design Item 3 (fourth bullet)	Fuel Type	YES
Core Design Item 3 (fifth bullet)	Burnable Absorber Type	YES
Core Design Item 3 (sixth bullet)	CEA Absorber Type	YES
Core Design Item 3 (seventh bullet)	Fuel Management	YES
Core Design Item 4 (first bullet)	CEA Worth Reconciliation	YES – Within 5%

CEA Lifetime Applicability Requirements

Requirements from Table 3.4, "CEA Lifetime" section (Page 3-11)
in WCAP-16011-P-A

STAR Topical Applicability Requirement	Requirement	Requirement Satisfied Yes / No
CEA Lifetime Items 1, 2, 3	CEA lifetime requirements are consistent with the St. Lucie Unit 2 CEA lifetime management program/evaluation, which adheres to the STAR Topical criteria on CEA Lifetime?	YES

Fabrication Applicability Requirements

Requirements from Table 3.4, "Fabrication" section (Page 3-11) in WCAP-16011-P-A

STAR Topical Applicability Requirement	Requirement	Requirement Satisfied Yes / No
Fabrication Item 1.a	FPL final core design/burnable absorber letter is in agreement with the final manufacturing document to ensure STAR Topical Applicability Requirements Fabrication Item 1.a?	YES
Fabrication Item 1.b, 1.c	The STAR Topical Applicability Requirements Fabrication Items 1.b and 1.c are consistent between FPL final core design/burnable absorber letter and the final manufacturing document (for each rod type)?.	YES
Fabrication Item 1.c (2)	STAR Topical Fabrication Item 1.c (2) is consistent with the fuel design requirements (fuel assembly orientation)?	YES
Fabrication Item 1.d	The STAR Topical Applicability Requirements Fabrication Item 1.d for each fuel assembly is correct per the requirements of the FPL final core design/burnable absorber letter?	YES
Fabrication Items 2.a, 2.b, 2.c, 2.d	For new CEAs, is the final manufacturing document consistent with the design specifications for STAR Topical Applicability Requirements Fabrication Items 2.a, 2.b, 2.c, and 2.d.	YES

Refueling Applicability Requirements

Requirements from Table 3.4, "Refueling" section (Page 3-11) in WCAP-16011-P-A

STAR Topical Applicability Requirement	Requirement	Requirement Satisfied Yes / No
Refueling Item 1	Core verification	YES
Refueling Item 2	CEA coupling	YES

Startup Testing Applicability Requirements

Requirements from Table 3.4, "Startup Testing" section (Page 3-11) in WCAP-16011-P-A

The measured to predicted value for the ARO HZP CBC difference was < 10 ppm for Cycle 17.

STAR Topical Applicability Requirement	Requirement	Requirement Satisfied Yes / No
Startup Testing Item 1	Measured to Predicted ARO HZP CBC	YES