Entergy

Entergy Nuclear South
Entergy Operations, Inc.
17265 River Road
Killona, LA 70057-3093
Tel 504 739 6715
Fax 504 739 6698
rmurill@entergy.com

Robert J. Murillo
Licensing Manager
Waterford 3

W3F1-2008-0057

August 25, 2008

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Startup and Power Escalation Report for Cycle 16
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

In accordance with Waterford 3 Technical Specification 6.9.1, Entergy is submitting the attached summary report for plant startup and power escalation testing for Waterford 3's Cycle 16 operation. Waterford 3 resumed commercial power operation on June 1, 2008, following the completion of refueling outage 15. This report summarizes the results of the WSES-3 Cycle 16 startup physics test program, which includes the impact of the introduction of Next Generation Fuel (NGF).

There are no new commitments contained in this submittal.

Please contact Mr. Robert J. Murillo, Manager, Licensing at (504) 739-6715 if there are any questions concerning this matter.

Sincerely,

RJM/GCS/ssf

Attachment: Waterford's Startup and Power Escalation Report for Cycle 16.

IE26
NRR

cc: Mr. Elmo E. Collins, Jr.
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
612 E. Lamar Blvd., Suite 400
Arlington, TX 76011-4125

NRC Senior Resident Inspector
Waterford Steam Electric Station Unit 3
P.O. Box 822
Killona, LA 70066-0751

U. S. Nuclear Regulatory Commission
Attn: Mr. N. Kalyanam
Mail Stop O-07D1
Washington, DC 20555-0001

Wise, Carter, Child & Caraway
ATTN: J. Smith
P.O. Box 651
Jackson, MS 39205

Winston & Strawn
ATTN: N.S. Reynolds
1700 K Street, NW
Washington, DC 20006-3817

Morgan, Lewis & Bockius LLP
ATTN: T.C. Poindexter
1111 Pennsylvania Avenue, NW
Washington, DC 20004

Attachment to

W3F1-2008-0057

WATERFORD 3's STARTUP AND POWER ESCALATION REPORT FOR CYCLE 16

TABLE OF CONTENTS

1.0 Introduction

This report summarizes the results of the WSES-3 Cycle 16 startup physics test program, as it pertains to the introduction of Next Generation Fuel (NGF). This program included pre-critical tests as well as those conducted during low power physics testing (LPPT), power ascension, and at full power. While all these tests performed as part of this program were completed satisfactorily, not all test results are included in this summary. Only those tests deemed necessary to demonstrate acceptance of the measured core physics parameters are included.

The objective of these tests was to demonstrate that, during reactor operation, the measured core physics parameters would be within the assumptions of the Final Safety Analysis Report (FSAR) accident analysis and within the limitations of the plant technical specifications, as well as to verify the nuclear design calculations. It was also the intent of these tests to demonstrate adequate conservatism in the Cycle 16 core performance with respect to the WSES-3 FSAR, Technical Specifications, Cycle 16 Core Operating Limits Report (COLR), and Cycle 16 Reload Analysis Report.

2.0 Reactor Core Description

WSES-3 Cycle 16 core includes using Next Generation Fuel (NGF) assemblies. The introduction of 100 NGF (Region Z) to the WSES-3 core entails the following changes:

- A reduced pellet diameter of 0.3225 inches (vs. 0.325 inches for Region Y).
- A reduced cutback (i.e., non-poison) region of 6 inches at both the top and bottom of the ZRB_2 rods (vs. 7 inches for Region Y).
- The use of Optimized ZIRLO™ fuel rod cladding material (vs. ZIRLO™ for Region Y).
- The fuel rod cladding diameters (in inches) for Region Z are reduced to 0.374 OD x 0.329 ID from 0.382 OD x 0.332 ID to accommodate the higher pressure drop of the mid and intermediate flow mixing (IFM) grids.
- The overall fuel rod length has been increased from Region Z to 162.568 inches from 161.868 inches.
- The fuel rod initial fill gas pressure has been reduced for Region Z to 275 psig at 75°F from 380 psig at 68°F.
- The IFBA rod initial fill gas pressure has been reduced for Region Z to 150 psig at 75°F from 150 psig at 68°F.
- A new lower end fitting assembly, new outer and center guide tube assemblies, a new upper end fitting flow plate with longer hold-down springs, all new mid grid assemblies with I-springs,

intermediate flow mixing (IFM) grids, a new Inconel top grid, a modified Guardian™ grid, and new thimble crimp screws that replace the old bold/locking discs.

- Top, mid, and IFM grid assemblies featuring sleeves that bulged to the guide tubes instead of welded and smaller cell sizes to accommodate the smaller diameter fuel rods.
- A guide tube flange that is bulged to the outer guide tube rather than welded.
- A Guardian™ grid that is attached to the lower end fitting via inserts instead of welding the grid skirt to the lower end fitting.
- Stress-Relief Annealed (SRA) ZIRLO™ materials for guide tubes and Optimized ZIRLO™ materials for grid straps rather than the Zircaloy-4 materials used in previous fuel regions.
- An anti-rotational joint between guide tubes and the upper nozzle to prevent damage to spacer grids and grid-to-guide tube joints during guide post installation and removal.
- An initial shoulder gap of 0.502 inches less than the standard fuel assemblies.

The reload region will consist of:

- 8 type Z1 assemblies, each with 48 integral burnable absorber rods
- 16 type Z2 assemblies, each with 80 integral burnable absorber rods
- 8 type Z3 assemblies, each with 88 integral burnable absorber rods
- 24 type Z4 assemblies, each with 100 integral burnable absorber rods
- 28 type Z5 assemblies, each with 112 integral burnable absorber rods
- 16 type Z6 assemblies, each with 124 integral burnable absorber rods

In addition twenty-one (21) Region X and ninety-six (96) Region Y assemblies in the core during Cycle 15 will be retained for Cycle 16. See Table 1 for additional enrichment information.

The Cycle 16 core makes use of a low-leakage fuel management scheme in which previously burned Region Y and Region X assemblies are placed on the core periphery. The 100 fresh Region Z assemblies are located throughout the interior of the core where they are arranged with the previously burned fuel in a pattern that minimizes power peaking. This type of fuel management is economically beneficial because it reduces core leakage and, therefore, uranium requirements for a specified total energy output. This low-leakage design also reduces the total neutron fluence that the reactor vessel is exposed to during the cycle.

WSES-3 Cycle 16 continues the use of a burnable absorber using zirconium diboride (ZrB_2) coating in the Next Generation Fuel. By design, ZrB_2 is coated onto the outer surface of the uranium dioxide (UO_2) fuel pellets prior to loading into the fuel rod cladding tubes rather than being mixed with the UO2 directly, as is done with other integral fuel burnable absorber (IFBA) materials. The ZrB_2 IFBA coated pellets are identical to the enriched uranium dioxide pellets except for the addition of a thin boride coating on the pellet cylindrical surface. Coated pellets occupy the central portion of the fuel stack.

3.0 Low Power Physics Testing

3.1 Initial Criticality

Following each refuel, initial criticality is achieved by boron dilution. The initial RCS boron concentration is required to be greater than the predicted All-Rods-Out (ARO) Critical Boron Concentration (CBC) by an amount worth of 1.5% $\Delta\rho$. An estimated CBC is calculated for ARO, Regulating CEA Group P at 75 inches withdrawn. All shutdown and regulating CEA groups are withdrawn to their upper electrical limits, with the exception of Group P at 75 inches, and dilution is commenced. For Cycle 16, the estimated ARO CBC was calculated to be 1194 ppm. Criticality was achieved with a CBC of 1166 ppm and Group P at 75 inches withdrawn.

3.2 Critical Boron Concentration Measurement

The purpose of this test is to verity the critical boron concentration for the ARO CEA configuration of the startup test predictions. Initially, CEA's are ARO except for Regulating CEA Group P at greater than 130 inches withdrawn. Three stable RCS boron samples are averaged to estimate the rodded CBC. Group P is withdrawn to the upper group stop and the residual worth is measured using a reactivity meter. The measured ARO CBC for Cycle 16 was 1206 ppm. The predicted ARO CBC for Cycle 16 was 1194 ppm.

3.3 Isothermal Temperature Coefficient Measurement

Isothermal Temperature Coefficient (ITC) at Hot Zero Power (HZP) measurement was not performed due to the implementation of the Startup Activity Test Reduction (STAR) program approved by the NRC.

4.0 Power Ascension Testing

4.1 Fuel Symmetry Verification

Prior to exceeding 30% full power, fuel symmetry verification must be performed to ensure that no detectable fuel misloadings are present. Assembly power data is obtained by executing CECOR, a computer code used to construct three dimensional assembly and peak pin power distributions from incore detector signals. Each instrumented assembly power is compared with the average of its symmetric group and a percent difference is calculated. The acceptance criterion states than this difference must be less than or equal to 10%. The largest percent difference from average observed was approximately 2.88%. See Table 2 for CECOR output.

4.2 Core Power Distribution Measurement

The purpose of this test is to verity that selected measured core power distribution parameters agree with the predicted core power distribution parameters at both the 68% and 100% power levels. These parameters include the measured radial power distribution, axial power distribution, planar radial peaking factor (F_{xy}), integrated radial peaking factor (F_r), core averaged axial peaking factor (F_z), and three-dimensional (3-D) power peaking factor (F_q). A snapshot is taken and CECOR executed to obtain assembly power data. The comparisons were made using the GETARP program and the results are shown in Tables 3 and 4, and summarized in Tables 4.2-1 and 4.2-2.

Table 4.2-1

WSES-3 Cycle 16 68% Core Power Distribution Results				
	Westinghouse Predicted	Measured*	% Difference	Acceptance Criteria
Radial RMS	N/A	1.2748	N/A	≤ 5.0%
Axial RMS	N/A	4.7253	N/A	≤ 5.0%
F_{xy}	1.490	1.4839	-0.4088	± 10.0 %
F_r	1.436	1.4296	-0.4428	± 10.0 %
F_z	1.102	1.1164	1.3028	± 10.0 %
F_q	1.581	1.6100	1.8348	± 10.0 %

*RMS values in %.

Table 4.2-2

WSES-3 Cycle 16 100% Core Power Distribution Results				
	Westinghouse Predicted	Measured*	% Difference	Acceptance Criteria
Radial RMS	N/A	1.0889	N/A	≤ 5.0%
Axial RMS	N/A	3.6358	N/A	≤ 5.0%
F_{xy}	1.4700	1.4669	-0.2111	± 10.0 %
F_r	1.4170	1.4163	-0.0522	± 10.0 %
F_z	1.0880	1.1385	4.6455	± 10.0 %
F_q	1.5980	1.6743	4.7761	± 10.0 %

*RMS values in %.

The acceptance criteria states that for the measured radial power distribution, the total RMS error between measured and predicted relative power densities for all assemblies must be less than 5.0%. Also, for each assembly with a predicted relative power density less than 0.9, the percent difference between measured and predicted must be less that 15%. For those assemblies with predicted relative power densities greater than or equal to 0.9, the percent difference between measured and predicted must be less than 10%. For the axial power distribution, the RMS error between measured and predicted relative power densities must be less than 5%. Additionally, for all four peaking factors, measured and predicted values must agree to within 10%. All acceptance criteria were met at both the 68% and 100% power levels and are summarized in Tables 4.2-1 and 4.2-2.

5.0 Operational Testing

5.1 Isothermal Temperature Coefficient (ITC) Measurement

Prior to reaching 40 Effective Full Power Days (EFPD) core burnup, an Isothermal Temperature Coefficient/Moderator Temperature Coefficient (ITC/MTC) test must be conducted to verify compliance with Technical Specification and COLR requirements. Initially, power is reduced to approximately 99.5% to allow temperature fluctuations necessary for the test. The RCS average temperature is increased and decreased by approximately 5 °F and the power change is measured. This process is repeated two (2) additional times to obtain sufficient data to determine an average rate of change of power with temperature. This value is multiplied by a predicted Power Coefficient to arrive at an average ITC.

The MTC is then calculated by subtracting the predicted Fuel Temperature Coefficient (FTC) from the measured average ITC. Additional calculations include MTC linear extrapolations to 70% and 100% at the current burnup and an extrapolation to 100% power at the end of cycle (EOC).

Table 5.1-21

	Echelon* Prediction	Measured*	Acceptance* Criteria
ITC	-1.1593	-1.3705	± 0.5
MTC (70%)**	N/A	-0.8888	-3.9 < MTC < 0.0
MTC (100%)**	N/A	-1.2739	-3.9 < MTC < -0.2
EOC MTC (100%)**	N/A	-2.2764	-3.9 < MTC < -0.2

*All values are $x10^{-4}$

** MTC values at 70%, 100% and EOC 100% are extrapolated.

The acceptance criteria demands that, for any core burnup, the MTC be less positive than 0.0×10^{-4} $\Delta\rho$ / °F at 70% power, more negative than -0.2×10^{-4} $\Delta\rho$ / °F at 100% power, and less negative than -3.9×10^{-4} $\Delta\rho$ / °F at any power. Also, the measured average ITC must agree with predictions to within $\pm 0.5 \times 10^{-4}$ $\Delta\rho$ / °F. All acceptance criteria were met and are summarized in Table 5.1-1.

6.0 Conclusions

Based upon the successful completion of all startup tests required, specifically those described above, and the proximity of core physics parameters to predicted values, it is concluded that the measured core parameters verify that Cycle 16 nuclear design calculations and demonstrate adequate conservatism with respect to the limits and requirements of the FSAR and technical specification, respectively.

7.0 **References**

7.1 WSES-3 Technical Specifications

7.2 WSES-3 Cycle 16 Core Operating Limits Report (COLR)

7.3 WSES-3 Final Safety Analysis Report (FSAR)

7.4 NF-WTFD-08-10, "Waterford 3 Cycle 16 Final Reload Analysis Report"

7.5 WSES-3 Procedure NE-002-002, Variable Tavg Test

7.6 WSES-3 Procedure NE-002-003, Post-Refueling Startup Testing Controlling Document

7.7 WSES-3 Procedure NE-002-030, Initial Criticality

7.8 WSES-3 Procedure NE-002-050, Critical Boron Concentration Measurement

7.9 WSES-3 Procedure NE-002-110, Fuel Symmetry Verification

7.10 WSES-3 Procedure NE-002-140, Core Power Distribution Measurement

7.11 NF-WTFD-08-20, "Waterford 3 Cycle 16 Startup Test Predictions"

7.12 CEO2008-00107, "Waterford 3 Cycle-16 Variable Tavg Test Predictions"

Table 1

Waterford-3 Cycle 16 Design Core Loading Description

Sub-Batch ID	Number of Assemblies	UO_2 Rods per Assembly	Nominal Enrichment (wt. %)	ZrB_2 Rods per Assembly	Shim Loading (ZrB_2)	Number of Fuel Rods (Including ZrB_2 Rods)	Number of ZrB_2 Rods
Z1	8	176	4.60	8	2.0 X	1472	64
		12	4.00	40	2.0 X	416	320
Z2	16	144	4.60	40	2.0 X	2944	640
		12	4.00	40	2.0 X	832	640
Z3	8	124	3.80	60	2.0 X	1472	480
		24	3.40	28	2.0 X	416	224
Z4	24	136	3.80	48	2.0 X	4416	1152
		0	3.40	52	2.0 X	1248	1248
Z5	28	116	3.80	68	2.0 X	5152	1904
		8	3.40	44	2.0 X	1456	1232
Z6	16	112	3.80	72	2.0 X	2944	1152
		0	3.40	52	2.0 X	832	832
Total	100					23600	9888
Y1	12	184	4.10	0	2.0 X	2208	0
		28	3.80	24	2.0 X	624	288
Y2	16	176	4.10	8	2.0 X	2944	128
		12	3.80	40	2.0 X	832	640
Y3	4	164	4.10	20	2.0 X	736	80
		12	3.80	40	2.0 X	208	160
Y4	8	160	4.10	24	2.0 X	1472	192
		8	3.80	44	2.0 X	416	352
Y5	36	144	4.10	40	2.0 X	6624	1440
		12	3.80	40	2.0 X	1872	1440
Y6	20	136	4.10	48	2.0 X	3680	960
		0	3.80	52	2.0 X	1040	1040
Total	96					22656	6720

Table 1 (cont.)

Waterford-3 Cycle 16 Design Core Loading Description

Sub-Batch ID	Number of Assemblies	UO_2 Rods per Assembly	Nominal Enrichment (wt. %)	Erbia Rods per Assembly	Shim Loading (Erbia)	Number of Fuel Rods (Including Erbia Rods)	Number of Erbia Rods
XT	4	184	4.35	0	---	736	0
		52	4.00	0	---	208	0
X0	1	184	4.48	0	---	184	0
		52	4.13	0	---	52	0
X3	8	144	4.48	0	---	1152	0
		20	4.13	72	2.1	736	576
X4	8	136	4.48	0	---	1088	0
		12	4.13	88	2.1	800	704
Total	21					4956	1280

Grand Total	217		51212	**ZrB_2** 16,608 **Erbia** 1280

Table 2

GLOBAL TILT FOR OCTANT SYMMETRIC GROUPS SUMMED OVER ALL AXIAL DETECTOR LEVELS

BOX	INST	AZIMUTHAL ANGLE(DEG)	CYCLES IN CORE	POWER	POWER/ SYMMETRIC AVERAGE	PERCENT DIFFERENCE FROM AVERAGE
84	21	10.62000	2	.77186	1.02058	2.05777
83	20	169.38000	2	.74791	.98892	-1.10847
134	36	190.62000	2	.74911	.99051	-.94932
205	52	240.25500	2	.86086	1.00000	.00000
11	4	74.05500	2	1.85281	.98060	-1.94026
7	2	105.94500	2	1.89463	1.00273	.27313
207	53	254.05500	2	1.89689	1.00393	.39279
211	55	285.94500	2	1.91355	1.01274	1.27431
9	3	90.00000	0	3.29821	1.00326	.32622
209	54	270.00000	0	3.27676	.99674	-.32622
25	6	140.19400	2	1.49867	1.05787	5.78692
181	45	219.80600	2	1.21977	.86100	-13.90044
193	51	320.19400	2	1.53164	1.08114	8.11353
66	19	26.56500	0	2.96302	.97851	-2.14919
54	13	153.43500	0	3.09058	1.02064	2.06353
152	38	206.56500	0	2.94340	.97203	-2.79720
164	44	333.43500	0	3.11539	1.02883	2.88287
98	28	9.46200	0	3.38469	.99509	-.49123
86	22	170.53800	0	3.42992	1.00839	.83852
120	29	189.46200	0	3.37432	.99204	-.79612
132	35	350.53800	0	3.41666	1.00449	.44881
27	7	128.66000	0	3.39563	.99258	-.74158
183	46	231.34000	0	3.38407	.98921	-1.07935
191	50	308.66000	0	3.48329	1.01821	1.82092

BOX	INST	AZIMUTHAL ANGLE(DEG)	CYCLES IN CORE	POWER	POWER/ SYMMETRIC AVERAGE	PERCENT DIFFERENCE FROM AVERAGE
33	10	68.19900	0	3.71417	.99125	-.87485
29	8	111.80100	0	3.74190	.99865	-.13498
185	47	248.19900	0	3.71249	.99080	-.91976
189	49	291.80100	0	3.81926	1.01930	1.92960
187	48	270.00000	0	3.46702	1.00000	.00000
64	18	36.87000	0	3.52815	.98070	-1.92959
56	14	143.13000	0	3.63290	1.00982	.98206
154	39	216.87000	0	3.54497	.98538	-1.46201
162	43	323.13000	0	3.68425	1.02410	2.40952
96	27	14.03600	0	3.32935	.98241	-1.75857
88	23	165.96400	0	3.40753	1.00548	.54846
130	34	345.96400	0	3.42995	1.01210	1.21011
62	17	56.31000	0	3.12623	.99721	-.27905
156	40	236.31000	0	3.14373	1.00279	.27905
60	16	90.00000	0	3.10605	.99684	-.31591
158	41	270.00000	0	3.12574	1.00316	.31591
94	26	26.56500	0	2.90268	.99057	-.94263
90	24	153.43500	0	2.92627	.99862	-.13768
124	31	206.56500	0	2.94242	1.00414	.41375
128	33	333.43500	0	2.94983	1.00667	.66657
92	25	90.00000	0	2.86552	1.00000	.00000

Table 2 (cont.)

During the performance of NE-002-110, all octant symmetric groups passed the 10% criteria except for the group containing instruments 6, 45, and 51 (instrument 12 would normally be within this group but was taken out of scan due to bad signals). The percent deviations for this group were (from CECOR edit 21):

BOX	INST	AZIMUTHAL ANGLE(DEG)	CYCLES IN CORE	POWER	POWER/ SYMMETRIC AVERAGE	PERCENT DIFFERENCE FROM AVERAGE
25	6	140.19400	2	1.49867	1.05787	5.78692
181	45	219.80600	2	1.21977	.86100	-13.90044
193	51	320.19400	2	1.53164	1.08114	8.11353

From the Startup test predictions (NF-WTFD-08-20), the powers in these locations are predicted to be:

BOX	15% Power	68% Power
25	0.52	0.52
181	0.40	0.41
193	0.52	0.52
Average	0.48	0.483

The large differences in powers are due to the non-symmetric loading of the assemblies in these locations. Box 25 and 193 contain assemblies from Batch Y5 while Box 181 has a Batch XT assembly. As can be seen, the power in Box 181 from the startup test predictions is significantly different than those in the other two boxes.

Using the above information, the "expected" deviations for these locations would be:

BOX	15% Power	68% Power
25	8.33	7.66
181	-16.67	-15.11
193	8.33	7.66

Therefore, a difference for Box 181 on the order of -17% can be expected based on predicted data. The measured difference was -13.90%.

The large differences using the predicted power distribution demonstrates that the group containing detectors 6, 12, 45, and 51 are not symmetric by design and need not be included in the symmetric group check for this procedure.

Table 3

```
GGGGGGGGGG  EEEEEEEEEE  TTTTTTTTTTT      AAAA      RRRRRRRRR   PPPPPPPPP
GGGGGGGGGG  EEEEEEEEEE  TTTTTTTTTTT     AAAAAA     RRRRRRRRRR  PPPPPPPPPP
GGG         EEE             TTT        AAA  AAA    RRR     RRR PPP      PPP
GGG  GGGGG  EEEEEE          TTT       AAAAAAAAAA   RRRRRRRRRR  PPPPPPPPPP
GGG  GGGGG  EEEEEE          TTT       AAAAAAAAAA   RRRRRRRRR   PPPPPPPPP
GGG    GGG  EEE             TTT       AAA     AAA  RRR RRR     PPP
GGGGGGGGGG  EEEEEEEEEE      TTT       AAA     AAA  RRR  RRR    PPP
GGGGGGGGGG  EEEEEEEEEE      TTT       AAA     AAA  RRR     RRR PPP       (FPA)
A PROGRAM TO EXTRACT DATA FROM CECOR SUMMARY FILES FOR COMPARISON OF
AXIAL AND RADIAL POWER DISTRIBUTIONS.
GETRNP01 - GETARP FOR NT REVISION 1
MEASURED DATA EXTRACTED FROM: w3303tw.s01
PREDICTED DATA EXTRACTED FROM: c16p068

                              RELATIVE RADIAL POWER DISTRIBUTION COMPARISON
+-----------+                                +------+------+------+------+
; PREDICTED ;                                ;  .280;  .490;  .480;  .270;                   (MEAS.-PREDICTED)
; MEASURED  ;                                ;  .287;  .497;  .493;  .270;    % DIFFERENCE = ----------------- X 100.0
; % DIFFER  ;                                ;  2.59;  1.42;  2.80;   .09;                       PREDICTED
+-----------+               +------+------+------+------+------+------+------+------+------+
                            ;  .310;  .530;  .690; 1.040; 1.150; 1.030;  .680;  .520;  .300;
                            ;  .315;  .532;  .672; 1.014; 1.140; 1.003;  .656;  .519;  .300;
                            ;  1.63;   .39; -2.66; -2.52;  -.86; -2.65; -3.56;  -.11;   .13;
                     +------+------+------+------+------+------+------+------+------+------+------+
                     ;  .520; 1.060; 1.060; 1.100; 1.180; 1.220; 1.180; 1.090; 1.050; 1.040;  .500;
                     ;  .517; 1.039; 1.046; 1.079; 1.163; 1.210; 1.157; 1.066; 1.029; 1.015;  .500;
                     ;  -.55; -1.96; -1.30; -1.95; -1.40;  -.79; -1.97; -2.16; -2.01; -2.44;   .00;
              +------+------+------+------+------+------+------+------+------+------+------+------+------+
              ;  .520; 1.070; 1.200; 1.330; 1.290; 1.240; 1.220; 1.240; 1.280; 1.310; 1.170; 1.010;  .410;
              ;  .523; 1.038; 1.169; 1.311; 1.285; 1.245; 1.215; 1.240; 1.278; 1.295; 1.145;  .980;  .412;
              ;   .51; -3.02; -2.60; -1.43;  -.41;   .39;  -.43;   .02;  -.17; -1.17; -2.17; -3.01;   .43;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .310; 1.070; 1.210; 1.250; 1.260; 1.220; 1.200; 1.230; 1.200; 1.210; 1.240; 1.220; 1.150; 1.000;  .290;
       ;  .323; 1.058; 1.187; 1.248; 1.247; 1.224; 1.195; 1.234; 1.192; 1.216; 1.229; 1.216; 1.131;  .984;  .300;
       ;  4.06; -1.11; -1.92;  -.15; -1.05;   .34;  -.45;   .36;  -.64;   .48;  -.85;  -.31; -1.64; -1.60;  3.39;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .530; 1.070; 1.330; 1.260; 1.270; 1.130; 1.120; 1.120; 1.120; 1.130; 1.250; 1.240; 1.290; 1.030;  .510;
       ;  .547; 1.071; 1.335; 1.261; 1.267; 1.122; 1.120; 1.112; 1.116; 1.110; 1.245; 1.228; 1.293; 1.031;  .528;
       ;  3.30;   .08;   .38;   .08;  -.28;  -.71;  -.04;  -.74;  -.32; -1.78;  -.37;  -.93;   .20;   .13;  3.49;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .680; 1.100; 1.290; 1.220; 1.140; 1.140; 1.060; 1.050; 1.050; 1.130; 1.130; 1.210; 1.270; 1.080;  .680;
+------;  .699; 1.105; 1.312; 1.241; 1.139; 1.142; 1.055; 1.058; 1.050; 1.130; 1.120; 1.213; 1.284; 1.081;  .690;------+
;  .270;  2.72;   .43;  1.71;  1.70;  -.07;   .18;  -.46;   .79;   .01;   .03;  -.89;   .26;  1.10;   .11;  1.40;  .280;
;  .266+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .279;
; -1.49; 1.030; 1.180; 1.240; 1.200; 1.120; 1.060; 1.060; 1.040; 1.050; 1.050; 1.110; 1.190; 1.230; 1.170; 1.030;  -.35;
+------; 1.017; 1.187; 1.261; 1.198; 1.129; 1.056; 1.065; 1.039; 1.059; 1.045; 1.113; 1.173; 1.243; 1.170; 1.015;------+
;  .480; -1.24;   .61;  1.73;  -.20;   .80;  -.35;   .51;  -.05;   .90;  -.45;   .24; -1.43;  1.04;   .01; -1.49;  .480;
;  .491+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .494;
;  2.39; 1.150; 1.220; 1.220; 1.230; 1.120; 1.050; 1.040; 1.010; 1.030; 1.050; 1.120; 1.230; 1.220; 1.220; 1.140;  2.93;
+------; 1.126; 1.221; 1.228; 1.245; 1.125; 1.064; 1.044; 1.018; 1.038; 1.059; 1.118; 1.235; 1.222; 1.219; 1.129;------+
;  .480; -2.12;   .10;   .66;  1.21;   .44;  1.31;   .34;   .83;   .73;   .85;  -.18;   .37;   .16;  -.07;  -.96;  .480;
;  .491+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .495;
;  2.23; 1.030; 1.170; 1.240; 1.190; 1.110; 1.050; 1.050; 1.030; 1.050; 1.050; 1.120; 1.200; 1.240; 1.180; 1.030;  3.09;
+------; 1.011; 1.175; 1.255; 1.202; 1.127; 1.055; 1.064; 1.038; 1.064; 1.058; 1.130; 1.200; 1.262; 1.186; 1.022;------+
;  .280; -1.84;   .43;  1.24;  1.03;  1.54;   .50;  1.30;   .74;  1.30;   .79;   .92;   .01;  1.75;   .49;  -.75;  .270;
;  .270+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .274;
; -3.54;  .680; 1.080; 1.270; 1.210; 1.130; 1.130; 1.050; 1.050; 1.050; 1.140; 1.140; 1.220; 1.290; 1.100;  .680;  1.59;
+------;  .687; 1.083; 1.293; 1.226; 1.129; 1.137; 1.054; 1.061; 1.058; 1.148; 1.146; 1.248; 1.318; 1.108;  .703;------+
       ;   .97;   .32;  1.80;  1.31;  -.06;   .61;   .36;  1.04;   .81;   .71;   .51;  2.30;  2.16;   .77;  3.44;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .510; 1.030; 1.290; 1.240; 1.250; 1.130; 1.110; 1.120; 1.110; 1.130; 1.260; 1.260; 1.330; 1.060;  .530;
       ;  .527; 1.029; 1.299; 1.231; 1.251; 1.112; 1.119; 1.116; 1.126; 1.133; 1.279; 1.275; 1.346; 1.076;  .551;
       ;  3.27;  -.13;   .70;  -.73;   .11; -1.60;   .77;  -.36;  1.43;   .27;  1.52;  1.16;  1.17;  1.48;  3.88;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .290; 1.000; 1.150; 1.220; 1.240; 1.210; 1.200; 1.230; 1.200; 1.220; 1.260; 1.250; 1.200; 1.070;  .310;
       ;  .302;  .996; 1.145; 1.230; 1.238; 1.218; 1.193; 1.235; 1.201; 1.238; 1.263; 1.266; 1.200; 1.067;  .325;
       ;  4.11;  -.37;  -.41;   .78;  -.15;   .69;  -.56;   .41;   .10;  1.49;   .24;  1.25;   .01;  -.28;  4.87;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
              ;  .410; 1.010; 1.170; 1.310; 1.280; 1.240; 1.220; 1.240; 1.290; 1.320; 1.200; 1.060;  .520;
              ;  .434; 1.002; 1.172; 1.307; 1.277; 1.238; 1.206; 1.250; 1.307; 1.332; 1.193; 1.052;  .528;
              ;  5.91;  -.75;   .15;  -.20;  -.24;  -.18; -1.17;   .83;  1.29;   .92;  -.55;  -.76;  1.60;
              +------+------+------+------+------+------+------+------+------+------+------+------+------+
                     ;  .500; 1.040; 1.050; 1.090; 1.180; 1.220; 1.180; 1.100; 1.060; 1.060;  .510;
                     ;  .510; 1.033; 1.040; 1.071; 1.156; 1.205; 1.165; 1.088; 1.060; 1.053;  .519;
                     ;  1.99;  -.71;  -.92; -1.71; -2.06; -1.24; -1.28; -1.07;  -.02;  -.65;  1.79;
                     +------+------+------+------+------+------+------+------+------+------+------+
                            ;  .300;  .520;  .680; 1.030; 1.150; 1.030;  .690;  .530;  .310;
                            ;  .305;  .526;  .666; 1.001; 1.127; 1.010;  .672;  .536;  .319;
                            ;  1.61;  1.14; -2.08; -2.80; -1.96; -1.98; -2.61;  1.18;  2.80;
                            +------+------+------+------+------+------+------+------+------+
                                             ;  .270;  .480;  .490;  .280;
                                             ;  .271;  .490;  .493;  .286;
                                             ;   .26;  2.13;   .65;  1.97;
                                             +------+------+------+------+
```

Table 3 (cont.)

RELATIVE AXIAL POWER DISTRIBUTION COMPARISON

NODE	PREDICTED	MEAS.	% DIFFERENCE
1	.6030	.6205	2.9010
2	.7140	.6982	-2.2114
3	.8040	.7723	-3.9380
4	.8470	.8333	-1.6181
5	.8850	.8757	-1.0496
6	.9130	.9086	-.4768
7	.9330	.9355	.2721
8	.9480	.9585	1.1126
9	.9590	.9786	2.0417
10	.9680	.9960	2.8975
11	.9770	1.0116	3.5421
12	.9840	1.0254	4.2058
13	.9900	1.0379	4.8397
14	.9960	1.0491	5.3289
15	1.0020	1.0589	5.6771
16	1.0070	1.0674	5.9999
17	1.0130	1.0746	6.0793
18	1.0190	1.0805	6.0307
19	1.0240	1.0851	5.9699
20	1.0300	1.0888	5.7070
21	1.0360	1.0916	5.3683
22	1.0420	1.0939	4.9833
23	1.0480	1.0958	4.5590
24	1.0540	1.0979	4.1664
25	1.0620	1.1017	3.7405
26	1.0720	1.1080	3.3586
27	1.0810	1.1139	3.0398
28	1.0880	1.1164	2.6063
29	1.0920	1.1162	2.2117
30	1.0950	1.1145	1.7782
31	1.0980	1.1118	1.2613
32	1.1010	1.1081	.6447
33	1.1020	1.1033	.1192
34	1.1020	1.0974	-.4147
35	1.1020	1.0904	-1.0499
36	1.1010	1.0823	-1.6974
37	1.1000	1.0729	-2.4612
38	1.0970	1.0624	-3.1583
39	1.0940	1.0504	-3.9838
40	1.0890	1.0370	-4.7746
41	1.0830	1.0222	-5.6181
42	1.0750	1.0052	-6.4925
43	1.0630	.9859	-7.2485
44	1.0460	.9636	-7.8737
45	1.0250	.9377	-8.5132
46	.9960	.9073	-8.9042
47	.9550	.8704	-8.8637
48	.9010	.8241	-8.5336
49	.8400	.7613	-9.3658
50	.7390	.6948	-5.9846
51	.6220	.6302	1.3162

PEAKING PARAMETER COMPARISON

PARAMETER	MEAS.	PREDICTED	% DIFFERENCE
FXY	1.4839	1.4900	-.4088 %
FR	1.4296	1.4360	-.4428 %
FZ	1.1164	1.1020	1.3028 %
FQ	1.6100	1.5810	1.8348 %

CALCULATED RMS VALUES
RADIAL = 1.2748
AXIAL = 4.7253
MEASURED ASI = -.0047
PREDICTED ASI = -.0361

ACCEPTANCE CRITERIA REPORT

MEASURED FXY WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
MEASURED FR WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
MEASURED FZ WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
MEASURED FQ WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
RMS ERROR ON AXIAL DISTRIBUTION WAS LESS THAN OR EQUAL TO 5.000 %.
RMS ERROR ON RADIAL DISTRIBUTION WAS LESS THAN OR EQUAL TO 5.000 %.
ALL PREDICTED RADIAL POWERS LESS THAN 0.9
WERE WITHIN PLUS OR MINUS 15.000 % OF MEASURED.
ALL PREDICTED RADIAL POWERS GREATER THAN OR EQUAL TO 0.9
WERE WITHIN PLUS OR MINUS 10.000 % OF MEASURED.

*** ALL ACCEPTANCE CRITERIA WERE MET ***

Table 4

```
GGGGGGGGGG  EEEEEEEEEE  TTTTTTTTTTT     AAAA      RRRRRRRRR    PPPPPPPPP
GGGGGGGGGG  EEEEEEEEEE  TTTTTTTTTTT    AAAAAA     RRRRRRRRRR   PPPPPPPPPP
GGG         EEE             TTT       AAA  AAA    RRR     RRR  PPP     PPP
GGG  GGGGG  EEEEEE          TTT      AAAAAAAAAA   RRRRRRRRRR   PPPPPPPPPP
GGG  GGGGG  EEEEEE          TTT      AAAAAAAAAA   RRRRRRRRR    PPPPPPPPP
GGG    GGG  EEE             TTT      AAA    AAA   RRR RRR      PPP
GGGGGGGGGG  EEEEEEEEEE      TTT      AAA    AAA   RRR  RRR     PPP
GGGGGGGGGG  EEEEEEEEEE      TTT      AAA    AAA   RRR     RRR  PPP      (FPA)
A PROGRAM TO EXTRACT DATA FROM CECOR SUMMARY FILES FOR COMPARISON OF
AXIAL AND RADIAL POWER DISTRIBUTIONS.
GETRNP01 - GETARP FOR NT REVISION 1
MEASURED DATA EXTRACTED FROM: w3305nj.s02
PREDICTED DATA EXTRACTED FROM: C16P100
```

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                                          RELATIVE RADIAL POWER DISTRIBUTION COMPARISON
+-----------+                                +------+------+------+------+
; PREDICTED ;                                ;  .290;  .490;  .490;  .270;                 (MEAS.-PREDICTED)
; MEASURED  ;                                ;  .285;  .491;  .487;  .268;   % DIFFERENCE = ----------------- X 100.0
; % DIFFER  ;                                ; -1.76;   .11;  -.59;  -.72;                      PREDICTED
+-----------+               +------+------+------+------+------+------+------+------+------+
                            ;  .320;  .530;  .690; 1.030; 1.140; 1.020;  .680;  .530;  .310;
                            ;  .310;  .528;  .675; 1.011; 1.130; 1.001;  .660;  .520;  .304;
                            ; -3.10;  -.42; -2.12; -1.81;  -.86; -1.89; -3.01; -1.92; -1.94;
                     +------+------+------+------+------+------+------+------+------+------+------+
                     ;  .520; 1.060; 1.060; 1.100; 1.180; 1.210; 1.170; 1.090; 1.050; 1.040;  .500;
                     ;  .509; 1.028; 1.040; 1.077; 1.162; 1.203; 1.157; 1.068; 1.031; 1.018;  .499;
                     ; -2.02; -3.07; -1.91; -2.12; -1.49;  -.56; -1.08; -1.99; -1.77; -2.14;  -.16;
              +------+------+------+------+------+------+------+------+------+------+------+------+------+
              ;  .530; 1.060; 1.190; 1.310; 1.280; 1.240; 1.220; 1.230; 1.270; 1.300; 1.160; 1.000;  .420;
              ;  .521; 1.030; 1.155; 1.296; 1.270; 1.237; 1.217; 1.235; 1.268; 1.291; 1.150;  .984;  .415;
              ; -1.78; -2.84; -2.97; -1.05;  -.75;  -.21;  -.24;   .39;  -.19;  -.70;  -.90; -1.59; -1.16;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .320; 1.060; 1.190; 1.240; 1.250; 1.210; 1.200; 1.230; 1.200; 1.210; 1.240; 1.220; 1.140;  .990;  .300;
       ;  .318; 1.050; 1.181; 1.237; 1.244; 1.217; 1.199; 1.237; 1.199; 1.214; 1.234; 1.214; 1.135;  .985;  .298;
       ;  -.73;  -.92;  -.72;  -.26;  -.46;   .59;  -.08;   .60;  -.07;   .31;  -.47;  -.45;  -.41;  -.46;  -.69;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .530; 1.060; 1.310; 1.250; 1.260; 1.140; 1.120; 1.130; 1.120; 1.140; 1.250; 1.230; 1.280; 1.030;  .520;
       ;  .540; 1.061; 1.323; 1.260; 1.265; 1.130; 1.126; 1.129; 1.125; 1.122; 1.248; 1.229; 1.288; 1.032;  .525;
       ;  1.87;   .12;   .97;   .80;   .36;  -.88;   .54;  -.06;   .45; -1.57;  -.18;  -.10;   .62;   .17;   .96;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .690; 1.100; 1.280; 1.220; 1.140; 1.150; 1.070; 1.060; 1.070; 1.140; 1.130; 1.200; 1.270; 1.080;  .680;
+------;  .693; 1.099; 1.300; 1.236; 1.147; 1.151; 1.071; 1.072; 1.068; 1.142; 1.131; 1.210; 1.278; 1.083;  .689;------+
;  .270;   .44;  -.09;  1.58;  1.28;   .62;   .05;   .07;  1.11;  -.23;   .19;   .05;   .87;   .63;   .27;  1.29;  .280;
;  .269+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .285;
;  -.28; 1.020; 1.170; 1.240; 1.200; 1.120; 1.070; 1.070; 1.060; 1.070; 1.070; 1.120; 1.190; 1.230; 1.170; 1.020;  1.68;
+------; 1.016; 1.181; 1.254; 1.205; 1.135; 1.075; 1.080; 1.064; 1.076; 1.068; 1.121; 1.180; 1.239; 1.172; 1.018;------+
;  .490;  -.44;   .95;  1.09;   .40;  1.38;   .48;   .95;   .33;   .56;  -.18;   .11;  -.82;   .75;   .21;  -.18;  .490;
;  .488+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .492;
;  -.34; 1.130; 1.210; 1.220; 1.230; 1.130; 1.060; 1.060; 1.030; 1.050; 1.060; 1.130; 1.230; 1.220; 1.200; 1.130;   .49;
+------; 1.125; 1.213; 1.229; 1.246; 1.137; 1.076; 1.063; 1.034; 1.057; 1.073; 1.131; 1.237; 1.225; 1.214; 1.130;------+
;  .490;  -.49;   .28;   .75;  1.31;   .59;  1.49;   .24;   .43;   .70;  1.24;   .11;   .58;   .42;  1.17;  -.01;  .490;
;  .488+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .492;
;  -.41; 1.020; 1.170; 1.230; 1.190; 1.120; 1.070; 1.070; 1.050; 1.070; 1.070; 1.120; 1.200; 1.230; 1.170; 1.020;   .33;
+------; 1.011; 1.170; 1.248; 1.207; 1.133; 1.075; 1.078; 1.058; 1.079; 1.080; 1.137; 1.206; 1.254; 1.180; 1.020;------+
;  .290;  -.88;   .01;  1.45;  1.42;  1.19;   .42;   .73;   .79;   .80;   .90;  1.55;   .51;  1.94;   .82;   .02;  .270;
;  .275+------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+  .275;
; -5.22;  .680; 1.080; 1.270; 1.200; 1.130; 1.140; 1.070; 1.060; 1.070; 1.150; 1.140; 1.220; 1.280; 1.090;  .690;  1.74;
+------;  .684; 1.081; 1.284; 1.221; 1.138; 1.147; 1.070; 1.073; 1.074; 1.158; 1.154; 1.241; 1.306; 1.103;  .697;------+
       ;   .53;   .13;  1.07;  1.76;   .74;   .65;  -.02;  1.23;   .40;   .70;  1.19;  1.74;  2.00;  1.23;  1.09;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .520; 1.030; 1.280; 1.230; 1.250; 1.140; 1.120; 1.130; 1.120; 1.140; 1.260; 1.250; 1.310; 1.060;  .530;
       ;  .523; 1.027; 1.292; 1.231; 1.253; 1.126; 1.126; 1.132; 1.133; 1.144; 1.276; 1.269; 1.332; 1.070;  .544;
       ;   .50;  -.28;   .91;   .09;   .20; -1.26;   .58;   .21;  1.12;   .37;  1.30;  1.49;  1.72;   .90;  2.61;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
       ;  .300;  .990; 1.140; 1.220; 1.240; 1.210; 1.200; 1.230; 1.200; 1.210; 1.250; 1.240; 1.190; 1.060;  .320;
       ;  .299;  .995; 1.145; 1.222; 1.239; 1.214; 1.198; 1.236; 1.204; 1.230; 1.259; 1.253; 1.194; 1.060;  .320;
       ;  -.22;   .53;   .45;   .19;  -.10;   .33;  -.16;   .51;   .37;  1.67;   .73;  1.01;   .34;  -.04;   .13;
       +------+------+------+------+------+------+------+------+------+------+------+------+------+------+------+
              ;  .420; 1.000; 1.160; 1.300; 1.270; 1.230; 1.220; 1.240; 1.280; 1.310; 1.190; 1.050;  .530;
              ;  .437; 1.001; 1.164; 1.296; 1.262; 1.229; 1.206; 1.240; 1.288; 1.315; 1.180; 1.043;  .524;
              ;  4.14;   .06;   .36;  -.29;  -.62;  -.05; -1.17;   .00;   .60;   .41;  -.84;  -.62; -1.05;
              +------+------+------+------+------+------+------+------+------+------+------+------+------+
                     ;  .500; 1.040; 1.050; 1.090; 1.170; 1.210; 1.170; 1.100; 1.060; 1.050;  .510;
                     ;  .506; 1.028; 1.037; 1.069; 1.153; 1.196; 1.162; 1.084; 1.052; 1.041;  .511;
                     ;  1.13; -1.13; -1.21; -1.90; -1.41; -1.18;  -.72; -1.49;  -.79;  -.87;   .25;
                     +------+------+------+------+------+------+------+------+------+------+------+
                            ;  .310;  .530;  .680; 1.020; 1.130; 1.030;  .690;  .530;  .310;
                            ;  .308;  .524;  .667;  .997; 1.117; 1.005;  .673;  .531;  .313;
                            ;  -.59; -1.10; -1.88; -2.23; -1.16; -2.39; -2.40;   .16;  1.09;
                            +------+------+------+------+------+------+------+------+------+
                                             ;  .270;  .490;  .490;  .290;
                                             ;  .268;  .483;  .486;  .283;
                                             ;  -.77; -1.34;  -.76; -2.54;
                                             +------+------+------+------+
```

Table 4 (cont.)

RELATIVE AXIAL POWER DISTRIBUTION COMPARISON

NODE	PREDICTED	MEAS.	% DIFFERENCE
1	.7080	.7180	1.4058
2	.8360	.8076	-3.4014
3	.9360	.8920	-4.7020
4	.9800	.9601	-2.0312
5	1.0180	1.0058	-1.1948
6	1.0450	1.0396	-.5134
7	1.0620	1.0655	.3280
8	1.0730	1.0859	1.2034
9	1.0800	1.1020	2.0380
10	1.0840	1.1143	2.7975
11	1.0870	1.1237	3.3746
12	1.0880	1.1303	3.8913
13	1.0880	1.1350	4.3197
14	1.0880	1.1377	4.5662
15	1.0870	1.1385	4.7418
16	1.0860	1.1378	4.7725
17	1.0840	1.1356	4.7589
18	1.0820	1.1320	4.6246
19	1.0800	1.1274	4.3897
20	1.0780	1.1220	4.0780
21	1.0760	1.1160	3.7149
22	1.0740	1.1098	3.3309
23	1.0720	1.1034	2.9321
24	1.0700	1.0977	2.5862
25	1.0690	1.0938	2.3225
26	1.0700	1.0926	2.1120
27	1.0700	1.0911	1.9684
28	1.0680	1.0863	1.7157
29	1.0640	1.0790	1.4143
30	1.0600	1.0704	.9846
31	1.0540	1.0610	.6661
32	1.0480	1.0506	.2522
33	1.0410	1.0394	-.1502
34	1.0340	1.0274	-.6391
35	1.0260	1.0146	-1.1156
36	1.0180	1.0010	-1.6709
37	1.0100	.9866	-2.3141
38	1.0000	.9716	-2.8398
39	.9900	.9558	-3.4548
40	.9800	.9391	-4.1686
41	.9680	.9217	-4.7824
42	.9540	.9029	-5.3593
43	.9380	.8824	-5.9227
44	.9190	.8597	-6.4491
45	.8950	.8342	-6.7916
46	.8650	.8050	-6.9343
47	.8270	.7703	-6.8544
48	.7780	.7276	-6.4729
49	.7240	.6706	-7.3824
50	.6430	.6103	-5.0830
51	.5500	.5519	.3486

PEAKING PARAMETER COMPARISON

PARAMETER	MEAS.	PREDICTED	% DIFFERENCE
FXY	1.4669	1.4700	-.2111 %
FR	1.4163	1.4170	-.0522 %
FZ	1.1385	1.0880	4.6455 %
FQ	1.6743	1.5980	4.7761 %

CALCULATED RMS VALUES
RADIAL = 1.0889
AXIAL = 3.6358
MEASURED ASI = .0728
PREDICTED ASI = .0495

ACCEPTANCE CRITERIA REPORT

MEASURED FXY WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
MEASURED FR WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
MEASURED FZ WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
MEASURED FQ WAS WITHIN PLUS OR MINUS 10.000 % OF THE PREDICTED VALUE.
RMS ERROR ON AXIAL DISTRIBUTION WAS LESS THAN OR EQUAL TO 5.000 %.
RMS ERROR ON RADIAL DISTRIBUTION WAS LESS THAN OR EQUAL TO 5.000 %.
ALL PREDICTED RADIAL POWERS LESS THAN 0.9
WERE WITHIN PLUS OR MINUS 15.000 % OF MEASURED.
ALL PREDICTED RADIAL POWERS GREATER THAN OR EQUAL TO 0.9
WERE WITHIN PLUS OR MINUS 10.000 % OF MEASURED.

*** ALL ACCEPTANCE CRITERIA WERE MET ***