PALO VERDE NUCLEAR GENERATING STATION - UNIT 2 END-OF-CYCLE 1 SURVEILLANCE FUEL EXAMINATION REPORT CEN-375(V)-NP

MAY, 1988

A REPORT TO
ARIZONA NUCLEAR POWER PROJECT

FROM

COMBUSTION ENGINEERING, INC.

NUCLEAR POWER SYSTEMS

WINDSOR, CONNECTICUT

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1.0 INTRODUCTION

This report documents fuel examinations conducted during the End-of-Cycle 1 refueling outage at Palo Verde Nuclear Generating Station - Unit 2. The inspections were performed to fulfill examination requirements for EOC-1 that are specified by the PVNGS-2 operating license. The examinations conducted at EOC-1 include:

- Eddy Current Testing of Assembly Guide Tubes for Wear
- Dimensional Measurements to Characterize Fuel Rod and Assembly Growth

A total of 1/ assemblies were inspected. Table 1 lists the assemblies and identifies the specific examinations performed on each.

Table 1 PVNGS-2 Fuel Assemblies Selected for Examinations

		Core		Examinati	on	S
Assembly	Discharged	Location	Guide Tube	Dimension (1)	C	EA
S/N (2)	EOC-1	Cycle-1	Wear	Measures (1)	T	ype
1057	yes	R11		x		
AC62	yes	H12	x		4	center fingers of a 12-finger CEA
A063	yes	F4	x			center fingers of a 12-finger CEA
A024	yes	L3	x		4	finger part-length CEA
A046	yes	G15	x		4	finger part-length CEA
A036	yes	Н8		x		
A059	yes	N15		×		
B109	yes	С8		×		
B119	yes	L7		x		
B137	yes	K2	x		4	center fingers of a 12-finger CEA
B144 (2)	yes	F3	x		4	outer fingers of two 12-finger CEAs
P1B226 (3)	no	H7	x	×		outer fingers of two 12-finger CEAs
B205	no	B11		×		
C005	no	J17	x	x	4	finger CEA
C025	no	C15	x	x		finger CEA
C112 (2)	no	B13	x			fingers of a 12-finger CEA
P1C114 (3)	no	R4		_ <u>x</u>		
17			10	10		

 ⁽¹⁾ Shoulder gap and guide tube length.
 (2) Assembly serial numbers are prefixed with "P2" unless otherwise specified.
 (3) Plxxx denotes fuel assemblies initially scheduled for PVNGS-1.

2.0 GUIDE TUBE WEAR EVALUATION

This section describes the evaluation of the guide tube wear measurements taken on ten PVNGS-2 fuel assemblies following Cycle 1. The selection of the measured fuel assemblies, establishment of a wear criterion, and extrapolation of the measured wear were all based on knowledge gained by C-E over nearly ten years of experience. Detailed information regarding this experience base is included in Section 2.0 of Reference 1. Also included in this reference are the evaluation results of the twenty PVNGS-1 fuel assemblies inspected after Cycle 1. Based on those favorable results (a maximum projected wear volume of only 25% of the allowable wear volume), the number of PVNGS-2 fuel assemblies inspected was reduced from twenty to ten.

Details on the ten fuel assemblies selected for examination following Cycle 1 are provided in Table 1, and their locations in the core are shown in Figure 1. It can be seen that all of the various CEA geometries are represented in the sample, and that in general the assemblies were located close to the reactor outlets. Each of the four outer guide tubes of the ten fuel assemblies were inspected with an eddy current testing (ECT) probe.

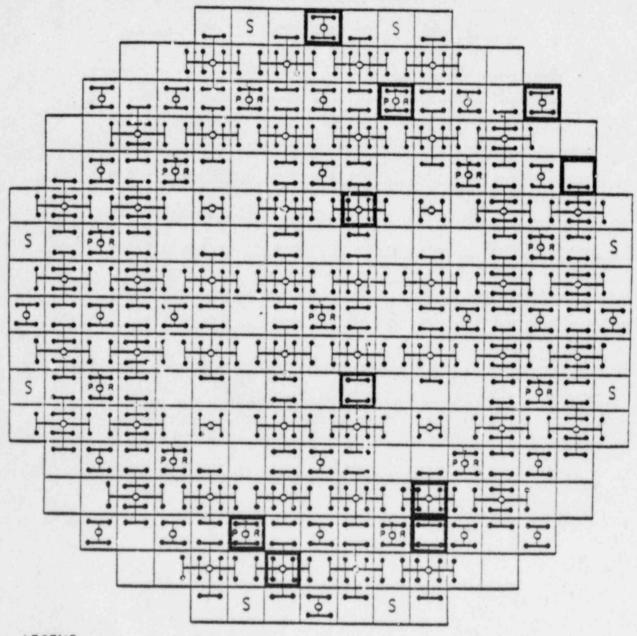
2.1 Evaluation of Guide Tube Wear Data

The inspection of the ten PVNGS-2 fuel assemblies ... guide tube wear employed an improved ECT probe design compared to the ECT probe design used for the PVNGS-1 inspections. The new probe design resulted in a slightly different relationship between ECT voltage and guide tube wear volume. This relationship, shown in Figure 2, was again derived by using the ECT probe to inspect calibration standards (actual Zircaloy guide tube stock with known geometries of mechanical flaws on the inner diameter).

Cycle 1 Core Locations of PVNGS-2

Cycle 1 Core Locations of PVNGS-2
Fuel Assemblies Inspected for Guide Tube Wear

Figure 1



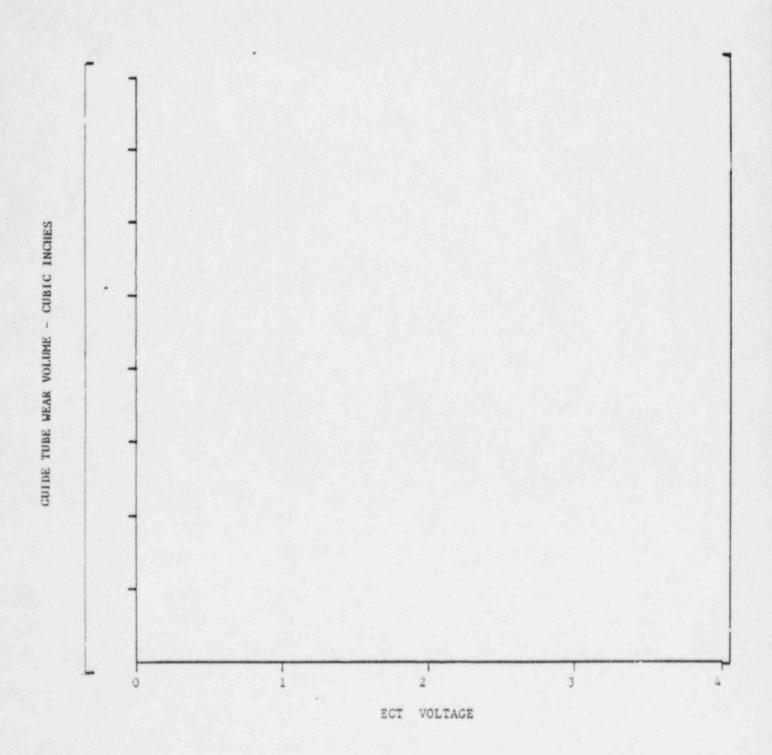
LEGEND:

S-SPARE 4-FINGERED CEA

Note: Reactor outlets are on the core centerline at the top and bottom of the diagram.

Figure 2

ECT VOLTAGE VS. GUIDE TUBE WEAR VOLUME
FOR PVNGS-2



The ECT measurements are summarized in Appendix A. The reported data include the serial number of the fuel assembly inspected, the ECT voltage, location, and axial extent of any wear indication for each of the guide tubes within the fuel assembly. Figure A-1 shows the C-E convention used when identifying individual guide tubes.

2.2 Evaluation Results

The evaluation of guide tube wear is based on wear volumes. The analytical technique, including the development of a volume loss of as a limiting wear criterion, are discussed in Reference 1. The results of the PVNGS-1 inspection showed a maximum projected wear volume after three cycles of operation under a CEA to be . Since this maximum projected value was well below the criterion of , it was concluded that the guide tube wear data verified that PVNGS-1 fuel assemblies were acceptable for operation without guide tube modification (wear sleeves). Similarly, it could be concluded the PVNGS-2 fuel assemblies are acceptable without wear sleeves provided their wear data were bounded by the PVNGS-1 wear data.

3.0 FUEL ASSEMBLY DIMENSIONAL CHANGE EVALUATION

This section describes the evaluation of the shoulder gap (distance between the top of the fuel rods and the bottom of the upper end fitting) and guide tube length measurements taken at PVNGS-2 during the EOC-1 outage. A total of ten fuel assemblies were inspected; three Batch A, four Batch B, and three Batch C. The specific fuel assemblies inspected are identified in Table 1. The shoulder gap of peripheral fuel rods on the four faces of the length of each fuel assembly were measured optically using a periscope, while each of the four guide tubes was measured using the guide-tube length-measurement tool.

3.1 Pre-Shutdown Evaluation

The shoulder gap evaluation for PVNGS-2 fuel parallels the method used for PVNGS-1, i.e., predictions of the remaining shoulder gap were based on the minimum available shoulder gap at the beginning of life (BOL), a conservatively high fuel rod growth prediction, and a conservatively low guide tube growth prediction. Both the PVNGS-1 and PVNGS-2 evaluations adjust the available shoulder gap at BOL to account for component dimensional tolerances, elastic compression of the guide tubes, and differential thermal expansion between the fuel rods and the guide tubes. Both evaluations also employ a fuel rod growth rate that represents more growth than the 95/95 upper limit for the distribution of data from the batch whose high fluence rods had the highest observed growth rates of any fuel examined by C-E, (Arkansas Nuclear One Unit 2 Batch C). The difference in the Cycle 2 evaluations of the PVNGS-1 fuel and the PVNGS-2 fuel is the treatment of the guide tube growths.

As discussed in Reference 1, the shoulder gap evaluation for the PVNGS-1 fuel used a conservatively low guide tube growth prediction calculated using the methods described in Reference 2. In order to accommodate the higher EOC-2 fluences at PVNGS-2, the PVNGS-2

evaluation uses the PVNGS-1 measurement data to reduce the excessive amount of conservatism in the guide tube growth predictions associated with the method of Reference 2. The minimum guide tube growth required to prevent shoulder gap closure for the limiting fuel rod in PVNGS-2 Cycle 2 is calculated. The growth rate associated with this required growth and the PVNGS-1 data are shown in Figure 3. The margin between the actual data and the calculated growth rate indicates that the guide tube growths of the PVNGS-1 fuel assemblies, extrapolated to the appropriate fluence, will all be in excess of the minimum guide tube growth required at EOC-2 for the PVNGS-2 fuel. Therefore, as long as the PVNGS-2 guide tube growth data show similar margin, the use of the minimum required guide tube growth can be concluded to be conservative for the PVNGS-2 Cycle 2 shoulder gap evaluation.

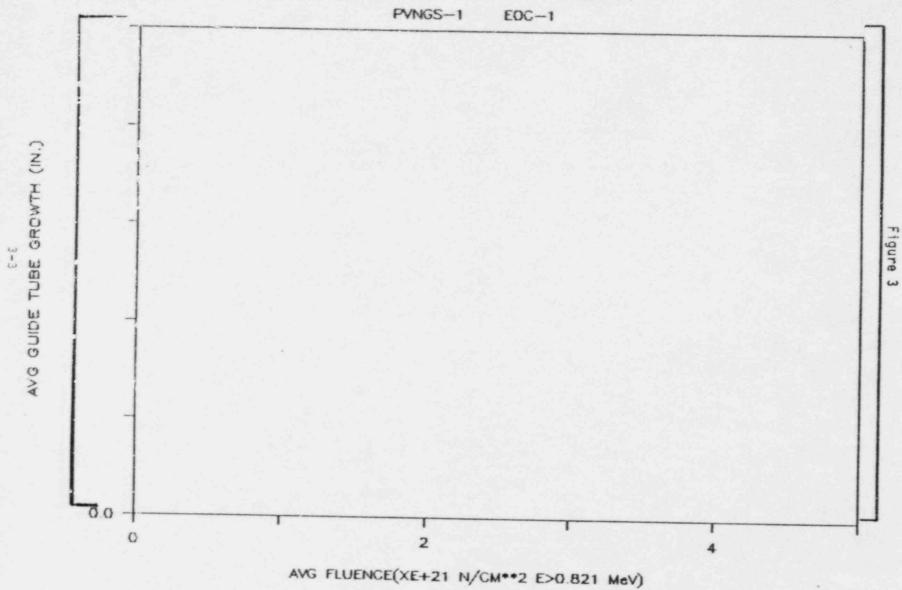
3.2 Dimensional Change Data

The individual shoulder gap measurements are tabulated in Appendix B, Tables B-1 through B-10. For each shoulder gap measured, the tabulation also contains the initial shoulder gap (the nominal value from the design drawings), the resulting shoulder gap change (initial gap - EOC-1 gap), the inferred fuel rod growth (shoulder gap change plus guide tube growth), fuel rod growth strain (fuel rod growth/active length), and the fuel rod's axial average fast fluence. Guide tube information (average growth and average fluence) is included at the bottom of each fuel assembly's shoulder gap tabulation. The shoulder gap change data, guide tube growth data, and fuel rod growth data are plotted relative to the appropriate fast fluence in Figure 4, 5, and 6, respectively.

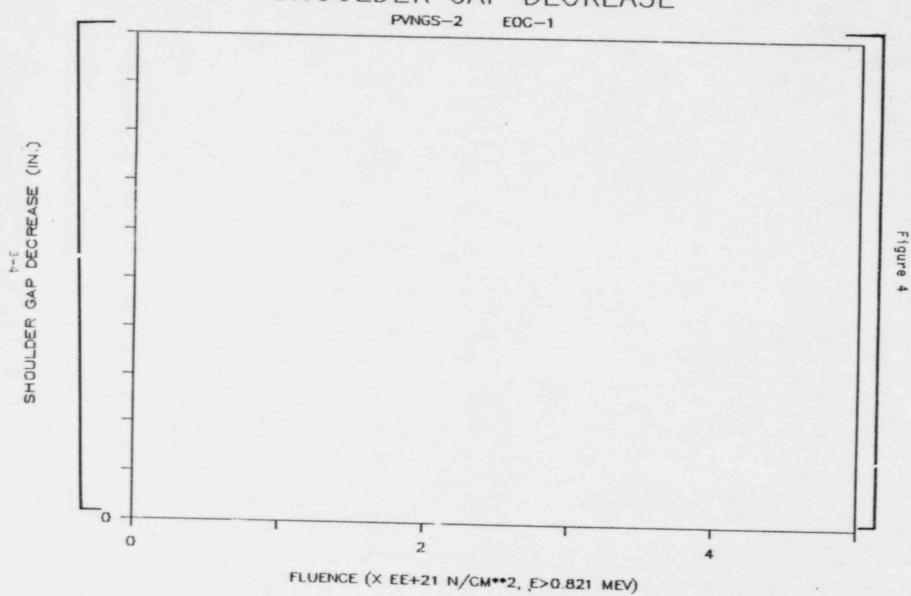
3.3 Post-Shutdown Evaluation

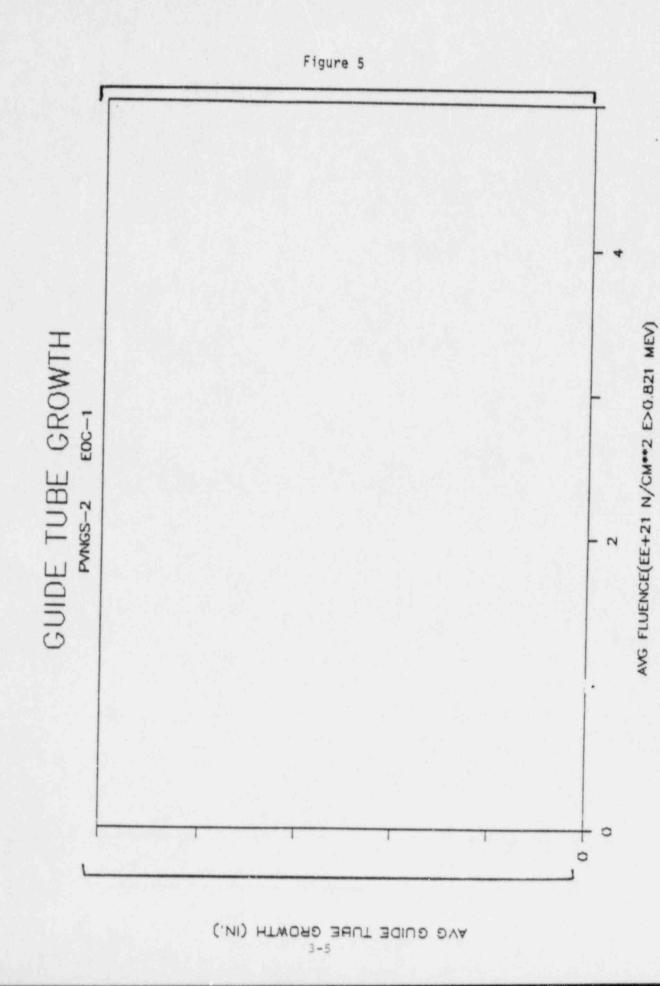
Fuel rod growth data are shown in Figure 6 along with the design basis taken from the ANO-2 Batch C data \int_{∞} . The figure shows that the high fluence data are all below the design

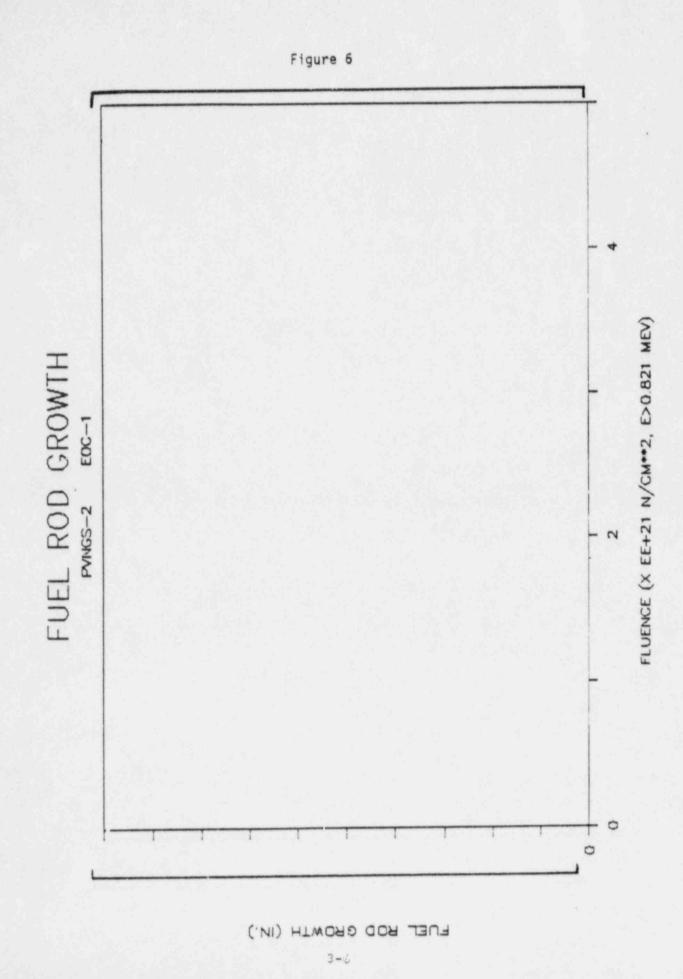
GUIDE TUBE GROWTH



SHOULDER GAP DECREASE







basis and the trend of the data is for increased margin at higher fluences. Therefore, it is conservative to use the fuel rod growth model when predicting limiting shoulder gap changes.

Guide tube length change data for the PVNGS-2 fuel are shown in Figure 5, along with the minimum required guide tube growth rate discussed in Section 4.1 The figure shows similar margin for the PVNGS-2 measurements as Figure 3 shows for the PVNGS-1 measurements. Therefore, the use of the minimum required guide tube growth can be concluded to be conservative for the PVNGS-2 Cycle 2 shoulder gap evaluation.

The fuel rod growth data and the guide tube growth data from PVNGS-1 and PVNGS-2 at EOC-1 have confirmed the conservations of the analytical modeling used in the shoulder gap evaluation of the PVNGS-2 Cycle 2 fuel. Therefore, since the shoulder gap evaluation verified that the limiting fuel rod in Cycle 2 had sufficient shoulder gap and since the analytical modeling used in the evaluation has been shown to be conservative, it is concluded that the fuel in PVNGS-2 Cycle 2 is acceptable with respect to shoulder gap.

4.0 SUMMARY AND CONCLUSIONS

Guide tube wear originating from the mechanical interaction between guide tubes and CEAs was first observed by C-E in 1978. Since that time, C-E has established several surveillance programs to ensure significant margin to the limiting wear criterion. A program of this type was implemented for the System 80 design.

Ten fuel assemblies from PVNGS-2 were selected for guide tube wear examination following Cycle 1. The assemblies examined represent all combinations of CEA types and geometries. The selections were biased towards regions of the core which have higher than average coolant flow rates; areas expected to generate more severe wear. A total of 40 guide tubes were examined bringing the total C-E experience with System 80 guide tubes to 120 (80 from PVNGS-1).

The criterion used to evaluate the results was based on deterministically conservative assumptions of wear geometry, loading severity, and material properties. This criterion was the same as that used in the original decision to operate the System 80 fuel type without protective wear sleeves.

The evaluation of all wear measurements showed that the most limiting of the 120 measured guide tubes (total System 80) had acceptable wear. Its wear rate was less than that determined in the original flow tests of the System 80 design. Extrapolation of the wear to three cycles of operation demonstrated significant margin to the guide tube wear limit criterion. The effects of core shuffling and of fuel exposure to the reactor environment lead C-E to conclude that no case of guide tube wear will be as severe as predicted by the extrapolation.

The inspection samples and the evaluation results from PVNGS-1 and PVNGS-2 support the continued operation of all System 80 fuel assemblies through the completion of their design life without guide tube modification (wear sleeves).

Dimensional measurements of peripheral fuel rod shoulder gap and of guide tube lengths were performed on ten PVNGS-2 fuel assemblies following Cycle 1. Fuel rod growth data, determined from the measurements, indicate that the growth of high fluence fuel rods is less than the growth predicted by the model used to determine design limits for shoulder gap. In addition, the trend of the data is for an increasing margin between rod growth and the design basis at higher fluences. The measured guide tube growths are greater than the growths predicted by the growth rate associated with the minimum guide tube growth required at EOC-2.

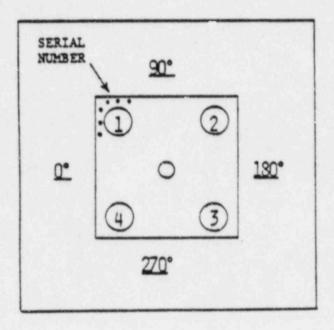
Based on the fuel assembly dimensional measurements performed at PVNGS-1 and PVNGS-2, the C-E models for predicting guide tube growth and fuel rod growth have been shown to be conservative. As a result, adequate margin for shoulder gap reduction exists in all fuel assemblies designated for operation in PVNGS-2 Cycle 2. In addition, it is concluded that the shoulder gap evaluation technique is acceptable for determining the fluence capabilities of PVNGS fuel. Therefore, comparisons of fluence capabilities and peak fuel rod fluence can be made for subsequent cycles to verify the acceptability of the shoulder gap of the operating fuel.

5.0 REFERENCES

- (1) CE NPSD-428-P, "Palo Verde Nuclear Generating Station Unit 1 End-of-Cycle 1 Fuel Examination Report", December, 1987.
- (2) CE NPD-269-P, Rev. 1-P. "Extended Burnup Operation of Combustion Engineering PWR Fuel", July, 1984.

Appendix A

Figure A-l
Guide Tube Identification Format



EDDY-CURRENT GUIDE TUBE WEAR DATA

Assembly Number	Guide Tube Number	Voltage	Axial Location From Top of Post (Inches)	Axial Extent of Indication (Inches)
2A024	1 2 3 4			1
28137	1 2 3			
2B144	1 2			
	3			
20005	1			
	2			
	3			
	*			
2C112	1 2 3			

N.D. - Nothing Detectable

EDDY-CURRENT GUIDE TUBE WEAR DATA

From of Po (Inch	st (Inches)
18226	7
3	
4	
2A068 1 2 3 4	
•	
2A062 1 2 3	
4	
2A046 1	
2A046 1 2 3 4	
20025	
2 3 4	

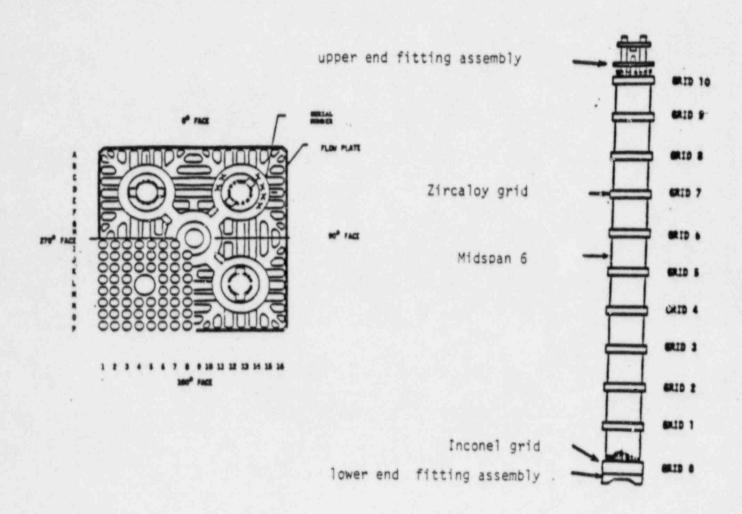
N.D. - Nothing Detectable

Appendix B

Figure B-1

Fuel Assembly and Fuel Rod

Identification Format



ASSEMBLY SERIAL NO. PZA036

FACE:	NORTH		***				LHCE	EAST		***			
		CY 1	E00-1	BAP	ROD	GROWTH			CY 1	EDC-1		ROD	GROWTH
		FLUENCE		DECREASE		STRAIN			FLUENCE		DECREASE		STRAIN
		(E)0.821)	(in.)	(in.)	(in.)	(1)			(E)0.821)		(in.)	(in.)	(2)
		-		*********		7		1	7 010	_			
	1.582	3.785	1 2					1.682					
	1.682	3.793						1.682					
3	1.682	3.800				- 1	,	1.682	3.821				
:	1.682	3.805						1.582	3.824				
2	1.682	3.809					3	1.682	3.826				
	1.682	3.815	1				0	1.682	3.831				
	1.682	3.822					,	1.682	3.835	1			
	1.682	3.826				127	8	1.682	3.838				
4	1.682	3.825					9	1.682	3.837				
10	1.682	3.821					10	1.682	3.831				
11	1.682	3.813					11	1.682	3.822				
12	1.682	3.806				12 14 14 15	12	1.682	3.815				
13	1.682	3.802	1				13	1.682	3.809				
14	1.682	3.796					14	1.682					
4.44		3.789					15	1.682	3.794				
15	1.682												
16	1.682 1.682 SDUTH	3.780	E00-1	SAP	RND	SROWTH	FACE:	1.682	(270)	L FDC+1	EAP	enn	REPURE
ACE:	SOUTH	3.780 (180) CY 1 FLUENCE		SAP DECREASE (in.)	ROD SROWTH (is.)	GROWTH STRAIN (I)	FACE:	WEST	CY 1 FLUENCE		SAP DECREASE (in.)	4.0	STRAIN
FACE:	SOUTH BOL SAP (in.)	3.780 (180) CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	WEST	(270) CY 1 FLUENCE (E>0, 821)	SH. SAP		SROWTH (in.)	GROWTH STRAIN (1)
ACE:	SOUTH SOL SAP (in.)	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	WEST BOL SAP (in.)	(270) CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	SOUTH SOL SAP (in.) 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	WEST	(270) CY 1 FLUENCE (E>0, 821)	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	SOUTH SOL SAP (in.) 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	WEST BOL SAP (in.)	(270) CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	1.682 SOUTH BOL SAP (in.) 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	WEST BOL SAP (in.) 1.682 1.682	270) CY 1 FLUENCE (E>0.821) 3.780 3.789	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	SOUTH SOL SAP (in.) 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.707	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	MEST BOL GAP (in.) 1.682 1.682 1.682	(270) CY 1 FLUENCE (E)0.821) 3.780 3.789 3.766	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	1.682 SOUTH BOL SAP (in.) 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.707 3.813	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	MEST (in.) 1.682 1.682 1.682 1.682	(270) CY 1 FLUENCE (E)0.821) 3.780 3.789 3.796 3.803	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	1.682 SOUTH BOL SAP (in.) 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.707 3.813 3.820	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	MEST (in.) 1.682 1.682 1.682 1.682	(270) CY 1 FLUENCE (E)0. 821) 3.780 3.789 3.766 3.803 3.909	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	1.682 SOUTH BOL SAP (in.) 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	MEST (in.) 1.682 1.682 1.682 1.682 1.682	(270) CY 1 FLUENCE (E>0.821) 3.780 3.786 3.803 3.909 3.815	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
ACE:	SOUTH SOL SAP (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.825 3.835 3.841 3.843	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	MEST (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682	270) CY 1 FLUENCE (E>0.821) 3.780 3.789 3.766 3.803 3.909 3.815 3.823	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
16 ACE:	SOUTH SOL SAP (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826 3.835 3.841 3.843 3.838	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE:	MEST (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682	270) CY 1 FLUENCE (E>0.821) 3.780 3.789 3.766 3.803 3.909 3.815 3.823 3.828	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
16 FACE: 1 2 3 4 5 6 7 7 8 8 9	SOUTH BOL SAP (is.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826 3.835 3.841 3.943 3.838 3.838 3.833	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE: ROD 1 2 3 4 5 6 7 8 9 10	MEST (in.) 1.582 1.582 1.582 1.582 1.582 1.582 1.582 1.582 1.582	(270) CY 1 FLUENCE (E)0.821) 3.780 3.789 3.766 3.803 3.909 3.815 3.823 3.828 3.830	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
16 ACE: 11 2 3 4 4 5 5 6 6 7 8 8 9 9 110 111 122	SOUTH SOL SAP (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826 3.835 3.841 3.843 3.838	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE: ROD 1 2 3 4 5 6 7 8 9	MEST (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	(270) CY 1 FLUEMCE (E)0.821) 3.780 3.789 3.766 3.803 3.909 3.815 3.823 3.823 3.823 3.823 3.825	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
16 ACE: 11 2 3 3 4 5 5 6 6 7 8 8 9 9 110 111 122	SOUTH BOL SAP (is.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826 3.835 3.841 3.943 3.838 3.838 3.833	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE: ROD 1 2 3 4 5 6 7 8 9 10 11 12	MEST BOL GAP (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	(270) CY 1 FLUEMCE (E)0. 821) 3.780 3.789 3.796 3.803 3.909 3.815 3.823 3.823 3.823 3.825 3.819	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
16 FACE: 1 1 2 3 4 5 6 7 8 9 9 10 11 12 13	1.682 SOUTH (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826 3.835 3.841 3.943 3.838 3.838 3.833 3.828	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE: ROD 1 2 3 4 5 6 7 8 9 10	MEST (is.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	(270) CY 1 FLUENCE (E)0. 821) 3.780 3.789 3.766 3.803 3.909 3.815 3.823 3.823 3.825 3.825 3.819 3.813	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN
16 FACE: 11 22 34 45 56 66 77 88 99 110	1.682 SOUTH (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.780 (180) CY 1 FLUENCE (E>0.821) 3.790 3.799 3.'07 3.813 3.820 3.826 3.835 3.841 3.843 3.838 3.833 3.828 3.825	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	FACE: ROD 1 2 3 4 5 6 7 8 9 10 11 12 13	MEST BOL GAP (in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	(270) CY 1 FLUENCE (E)0.821) 3.780 3.789 3.766 3.803 3.909 3.815 3.823 3.823 3.829 3.825 3.819 3.813 3.809	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN

. 1) NOMINAL BOL SHOULDER GAP: 1.682 in. NOTE: ALL REPLATED FLUENCE NUMBERS ARE I 10 EE 21 N/CM++2

2) AVERAGE GUIDE TUBE FROMTH:

3.164

NOTE: ALL REPLATED FLUENCE NUMBERS ARE I 10 EE 21 N/CM++2

FLUENCES CALCULATED FOR E>0.821 ARE ADJUSTED TO ACTUAL BURNUP OF 448 EFPD

3.164

⁴⁾ AVE. BOL ROD ACTIVE LENSTH: 150 in.

ASSEMBLY SERIAL NO. P2AO57

FACE:	HTROM					COCUTY	FACE	EAST			***	000	200470
				SAP					CY I		SAP		SROWTH
		FLUENCE							FLUENCE				STRAIN
0.000		(E>0.821)		(in.)	(in.)	(1)			(E)0.821)		(in.)	(in.)	(1)
22228			********	********	2222222		11111		*********		*********	*******	*******
1	1.682	3.729					1	1.682					
2	1.682	3.733					2	1.682					
3	1.582	3.735					3	1.682					
4	1.682	3.735	1				4	1.682					
5	1.682	3.734	1				5	1.682	3.766				
6	1.682	3.732					6	1.682					
7	1.682	3.731				200	7	1.682	3.772				
8	1.682	3.727					8	1.682	3.774				
9	1.682	3.718					9	1.582	3.772				
10	1.682	3.702					10	1.682	3.765				
11	1.682	3.685	1				11	1.682	3.758				
12	1.682	3.667					12	1.682	3.751				
13	1.682	3.649	1				13	1.682	3.747				
14	1.682	3.631				1	14	1.682	3.742				
15	1.682	3.611					15	1.682	3.735	1			
16	1.682						16	1.682	3.729				
	ALTERNATION OF THE PARTY OF THE	FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	ROD GROWTH (in.)	STRAIN			CY 1 FLUENCE (E>0.821)		DECREASE (in.)	ROD GROWTH (in.)	STRAIN (I)
								1515753	PR 24 X 8 E2 WY		E W 2 F 8 5 2 F 1	*******	*******
1	1.682						1	1.682					
2	1.682	3.646					2	4 - 4 -					
2	1.682	3.670					3	1.682					
4	1.682	3.690				- N. 192	4	1.682		4			
5	1.582	3.709					5	1.682		4			
6	1.682	3.729	1				6	1.682					
7	1.682	3.747	1			38.1	7	1.682		1.14			
8	1.682	3.762					. 8	1.682					
9	1.682	3.771					9	1.682					
10	1.682	3.775	1			7 1 1	10		3.618				
11	1.682	3.775					11	1.682	3.616	1			
12	1.682	3,775					12	1.682	3, 515	1			
13	1.682	3.775					13	1.682	3.617				
									3.619				
14	1.687	3.773					14	1.662	9 : 0 1 7	2			
14	1.682	3.773					15	1.682	3.619	1			
15	1.682 1.682 1.682	3.773 3.769 3.762											

FLUENCES CALCULATED FOR ENG. 821 ARE ADJUSTED TO ACTUAL BURNUP OF 448 EFPD

ASSEMBLY SERIAL NO. P2A059

ROD	(in.)	FLUENCE (E)0.821)	(in.)	(in.)	(in.)	SROWTH STRAIN (I)	ROD	(in.)	CY 1 FLUENCE (E)0.821)	(10.)	(in.)	ROD SROWTH	SROWTH STRPIN
1	1.682	3.409		**********	*******	P	****		********		,	*******	******
*							1	1.682					
-	1.682	3.391					2	1.682	57775055				
,	1.682	3.371					2	1.682	100000000000000000000000000000000000000				
	1.682	3.350				Contract of	4	1.682					
,	1.682	3.328					5	1.682	3.664				
0	1.682	3.309					. 6	1.682	3.651				
1	1.682	3.290					. 7	1.682	3.640	71.7			
8	1.682	3.272					. 8	1.682	3.626				
9	1.682	3.248					9	1.682	3.606				
10	1.682	3.223					10	1.682	3.580				
11	1.682	3.196					11	1.682	3.552				
12	1.682	3.171					12	1.682	3.524	1			
13	1.682	3.149					13	1.682	3.496				
14	1.682	3,127	\$ V				14	1.682	3.468				
15	1.682	3.106					15	1.682	3.439				
16	1.682	3.084	100			1	16	1.682	3.409				
			han			_				-			
ACE:	SOUTH	(180)					FACE.	WEST (270)				
ACE:	SOUTH	(180) CY 1	E0C-1	SAP	800	SROWTH	FACE:	WEST (ERC-1	***		
		CY 1	EOC-1	GAP DECREASE	ROD	GROWTH STRAIN			CY 1	EDC-1	SAP	ROD	SROWTH
	BOL SAP	CY 1 FLUENCE	SH. SAP	DECREASE	BROWTH	STRAIN		BOL SAP	CY 1 FLUENCE	SH. SAP	DECREASE	GROWTH	STRAIN
00	BOL SAP	CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	BOL SAP	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
00	OL SAP	CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	OL SAP	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
00	00L SAP (in.)	CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	(in.)	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
00	1.682 1.682	CY 1 FLUENCE (E>0.821) 3.647 3.652	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	(in.) 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
00	1.682 1.682	CY 1 FLUENCE (E>0.821) 3.647 3.652 3.659	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
00	1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O.821) 3.647 3.652 3.659 3.666	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
00	1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O.821) 3.647 3.652 3.659 3.666 3.672	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
00	1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E>0.821) 3.647 3.652 3.659 3.666 3.672 3.681	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
00	1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O. 821) 3.647 3.652 3.659 3.666 3.672 3.681 3.691	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
00	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O. 821) 3.647 3.652 3.659 3.666 3.672 3.681 3.691 3.700	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 3 4 5 6 7 8	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O. 821) 3.647 3.652 3.659 3.666 3.672 3.681 3.691 3.700 3.704	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356 3.404	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
11 22 33 4 55 6 7 7 8 9	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E>0.821) 3.647 3.652 3.659 3.666 3.672 3.681 3.691 3.700 3.704 3.706	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356 3.404 3.450	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
1 2 3 4 5 6 6 7 7 8 8 9	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E>0.821) 3.652 3.659 3.666 3.672 3.681 3.691 3.700 3.704 3.706 3.703	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD 1 2 3 4 5 6 7 8 9	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 3.356 3.404 3.450 3.489	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
1 2 3 4 5 6 6 7 7 8 9 9	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E>0.821) 3.647 3.652 3.659 3.666 3.672 3.681 3.691 3.700 3.704 3.706 3.703	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD 1 2 3 4 5 6 7 8 9 10	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356 3.404 3.450 3.489 3.521 3.548	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
11 22 33 4 5 5 6 6 7 7 8 8 9 9	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O. 821) 3.647 3.652 3.659 3.666 3.672 3.681 3.700 3.704 3.705 3.703 3.703 3.704	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD 1 2 3 4 5 6 7 8 9 10 11 12	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356 3.404 3.450 3.489 3.521 3.548 5.575	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
11 22 33 4 55 66 77 88 99 110 111 112 123 134	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E>0.821) 3.647 3.652 3.659 3.666 3.672 3.681 3.691 3.700 3.704 3.706 3.703	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD 1 2 3 4 5 6 7 8 9 10 11 12 13	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356 3.404 3.450 3.450 3.450 3.521 3.548 7.575 3.599	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
100	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O. 821) 3.647 3.652 3.659 3.666 3.672 3.681 3.700 3.704 3.705 3.703 3.703 3.704	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD 1 2 3 4 5 5 6 7 8 9 10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 3.305 3.404 3.450 3.489 3.521 3.548 3.575 3.599 3.620	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIM
11 22 33 4 55 66 77 88 99 110 111 112 123 134	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)O. 821) 3.647 3.652 3.659 3.666 3.672 3.681 3.700 3.704 3.704 3.703 3.704 3.704 3.704	SH. SAP	DECREASE (in.)	SROWTH (in.)	STRAIN (1)	ROD 1 2 3 4 5 6 7 8 9 10 11 12 13	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	CY 1 FLUENCE (E)0.821) 3.084 3.143 3.200 3.253 3.305 5.356 3.404 3.450 3.450 3.450 3.521 3.548 7.575 3.599	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)

1) NOMINAL BOL SHOULDER GAP= 1.682 in. MOTE: ALL REPORTED FLUENCE MUMb. TE I 10 EE 21 M/CM++2

2) AVERAGE GUIDE TUBE FLUENCE= 2.899

4) AVE. BOL ROD ACTIVE LENGTH= 150 in.

ASSEMBLY SERIAL NO. PZB109

	NORTH	CY 1	EDC-1	SAP	ROD	GROWTH	PALE	: EAST	(90) CY 1	E0C-1	SAP	ROD	SROWT
	BOL BAP	FLUENCE		DECREASE		STRAIN		BOL BAP	FLUENCE	SH. GAP			STRAI
		(E)0.821)		(in.)	(in.)	(2)			(E)0.821)		(in.)	(in.)	(1)
	2.382	3.594			E2238800	mmmm 7				_	********	*******	
2	2.382	3.623					1	2.382	3.540				
2	2.382	3.732					2	2.382	3.559				
							3	2.382	3.659	1			
	2.382	3.764					:	2.382	3.682				
5	2.382						3	2.382	3.695				
7		3.803					٥	2.382	3.707				
8	2.382						7	2.382	3.724	1			
9	2.382	3.848	1				8	2.382	3.740				
	2.382	3.856					9	2.382	3.744				
10		3.853					10	2.382	3.737				
11	2.382	3.845					11	2.382	3.726				
12	2.382	3.843					12	2.382	3.720				
13	2.382	3.840					13	2.382	3.716	1			
14	2.382	3.825					14	2.382	3.700				
15	2.382	3.730					15	2.382	3.607				
							4.2	2.382	3.594				
16	2.382 SOUTH		EOC-1	SAP	ROD	SROWTH		WEST (270)	FOC-1	SAP	RUD	ERONT
ACE:	SOUTH	(180) CY 1 FLUENCE	EOC-1 SH. SAP	SAP DECREASE		SROWTH STRAIN	FACE:	WEST (270) CY 1 FLUENCE				STRAI
ACE:	SOUTH BOL SAP (in.)	(180) CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (270) CY 1 FLUENCE (E>0.821)	SH. SAP	(in.)	SROWTH (in.)	STRAI
ACE:	SOUTH BOL SAP (in.)	(180) CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (270) CY 1 FLUENCE (E)0.821)	SH. SAP	(in.)	SROWTH (in.)	STRAII
ACE:	SOUTH BOL SAP (in.)	(180) CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL SAP (in.)	270) CY 1 FLUENCE (E>0.821)	SH. SAP	(in.)	SROWTH (in.)	STRAI!
ACE:	SOUTH BOL BAP (in.) 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL SAP (in.) 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724	SH. SAP	(in.)	SROWTH (in.)	
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382	(180) CY 1 FLUENCE (E)0.821) 3.673 3.681 3.768	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL SAP (in.) 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814	SH. SAP	(in.)	SROWTH (in.)	STRAI!
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.824	SH. SAP	(in.)	SROWTH (in.)	STRAII
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.824 3.825	SH. SAP	(in.)	SROWTH (in.)	STRAI
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.773	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL 5AP (in.) 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.824 3.825 3.825	SH. SAP	(in.)	SROWTH (in.)	STRAI!
ACE:	SOUTH BOL BAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.825 3.828 3.836	SH. SAP	(in.)	SROWTH (in.)	STRAI
ACE:	SOUTH BOL BAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775 3.776	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE:	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.825 3.828 3.836 3.843	SH. SAP	(in.)	SROWTH (in.)	STRAI
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775 3.776 3.768	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD 2 3 4 5 6 7 8	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.828 3.836 3.843 3.841	SH. SAP	(in.)	SROWTH (in.)	STRAI
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.775 3.776 3.768 3.768 3.749	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD 2 3 4 5 6 7 8 9 10	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.825 3.828 3.836 3.843 3.841 3.828	SH. SAP	(in.)	SROWTH (in.)	STRAI
ACE:	SOUTH SOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.775 3.775 3.776 3.768 3.749 3.727	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.828 3.825 3.828 3.843 3.841 3.828 3.841	SH. SAP	(in.)	SROWTH (in.)	STRAI
00 1 2 2	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775 3.768 3.749 3.749 3.727 3.710	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD 2 3 4 5 6 7 8 9 10 11 12	WEST (BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.828 3.836 3.843 3.841 3.828 3.814 3.828	SH. SAP	(in.)	SROWTH (in.)	STRAI
16 ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E)0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775 3.768 3.749 3.727 3.710 3.692	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD 12 3 4 5 6 7 8 9 10 11 12 13	WEST (BOL 5AP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.828 3.836 3.841 3.828 3.841 3.828 3.841 3.8797	SH. SAP	(in.)	SROWTH (in.)	STRAI!
16 ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E>0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775 3.776 3.749 3.749 3.727 3.710 3.692 3.667	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD 12 3 4 5 6 7 8 9 10 11 12 13 14	#EST (BOL 5AP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.828 3.836 3.843 3.841 3.828 3.814 3.805 3.797 3.782	SH. SAP	(in.)	SROWTH (in.)	STRAII
ACE:	SOUTH BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	(180) CY 1 FLUENCE (E)0.821) 3.673 3.681 3.768 3.774 3.773 3.772 3.775 3.768 3.749 3.727 3.710 3.692	SH. SAP	DECREASE (in.)	GROWTH (is.)	STRAIN (I)	FACE: ROD 12 3 4 5 6 7 8 9 10 11 12 13	WEST (BOL 5AP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	270) CY 1 FLUENCE (E>0.821) 3.716 3.724 3.814 3.825 3.828 3.836 3.841 3.828 3.841 3.828 3.841 3.8797	SH. SAP	(in.)	SROWTH (in.)	STRAI

FLUENCES CALCULATED FOR E>0.821 ARE ADJUSTED TO ACTUAL BURNIP OF 448 EFPD

¹⁾ NOMINAL BOL SHOULDER GAP=
2) AVERAGE GUIDE TUBE GROWTH=
3) AVERAGE GUIDE TUBE FLUENCE=
3.155

⁴⁾ AVE. BOL ROD ACTIVE LENETH: 150 in.

ASSEMBLY SERIAL NO. P28119

FACE	: MORTH		***				FACE	EAST					
	001 040	CY 1	1-203	SAP	ROD	GROWTH			CY 1	EDC-1	BAP	ROD	BROWT
00		FLUENCE (E)0.821)	SH. SAP	and the same of		STRAIN			FLUENCE	SH. SAP			STRAI
				(in.)	(10.)	(1)			(E)0.821)		(in.)	(in.)	(1)
1	2.382					7	1	2.382	3.716	F	**********	*******	*******
2	2.382					- 1	2	2.382	1 11 11 11 11 11 11 11 11 11 11 11 11 1				
3	2.382	3.834					3	2.382					
4	2.382	3.853					4	2.382					
5	2.382	3.861					5	2.382					
6	2.382	3.868					6	2.382					
7	2.382	2.883					7	2.382	3.878	1			
8	2.382	3.895					8	2.382	3.890	1			
9	2.382	3.895					9	2.382	3.890				
10	2.382	3.884	1				10	2.382	3.879	1			
11	2.382	2.888					11	2.382	3.865				
12	2.382	3.862	1				12	2.382	3.858	1			
13	2.382	3.854					13	2.382	3.851				
14	2.382	3.835					14	2.382	3.833				
15	2.382	3.738	1				15	2.382	3.735				
16	2.382	3.722				7 40 4	16	2.382	3.721				
QD.		FLUENCE (E)0.821)	EDC-1 SH. BAP (is.)	DECREASE	SRDWTH	GROWTH STRAIN (I)			FLUENCE (E)0.821)	EDC-1 SH. SAP	DECREASE	GROWTH (in.)	STRAIN (I)
		*******							322222222				
1	2.382	3.716					1	2.382	3.722				
2	2,382	3.731					2	2.382	3.737				
3	2.382	3.828	1				2	2.382	3.835	1			
	2.382	3.846	1				4	2.382	3.853				
	2.382	3.854	1				. 5	2.382	3.859	1			
1	2.382	3.862	1				6	2.382	3.867				
	2.382	3.876					7	2.382	3.881	1			
	2.382	3.887					8	2.382	3.893	1			
	2.382	3.887 3.876					9	2.382	3.892				
6	2.382	3.867				1	10	2.382	3.879				
	2 702					1	11	2.382	3.865				
1	2.382												
1 2	2.382	3.854	100				12	2.382	3.856	1			
1 2 3	2.382 2.382	3.854				*	13	2.382	3.848				
1 2 3 4	2.382 2.382 2.382	3.854 5.846 3.828					13	2.382	3.848				
1 2 3	2.382 2.382	3.854					13	2.382	3.848				

4) AVE. BOL ROD ACTIVE LENGTH: 150 in.

NOTE: ALL REPORTED FLUENCE NUMBERS ARE I 10 EE 21 N/CH++2

FLUENCES CALCULATED FOR E>0.821 ARE ADJUSTED TO ACTUAL BURNUP OF 448 EFPD

¹⁾ NOMINAL BOL SHOULDER SAFT
2) AVERAGE SUIDE TUBE SROWTH: []
3) AVERAGE SUIDE TUBE FLUENCE: 3.072

ASSEMBLY SERIAL NO. PZB205

BOL GAP FLUENCE SH. SAP DECREASE SROWTH STRAIN (ROD (in.) (E)0.821) (in.) (in.	FACE: EAST (90) SAP ROD GROWTH CY 1 FDC-1 RAP		a CHOI		CENH	900	RAP	EOC-1	CY 1	NORTH	Mu61
DD (in.: (E)0.821) (in.) (in.) (in.) (I) ROD (in.: (E)0.821) (in.) (in.) (in.) (in.) (I) ROD (in.: (E)0.821) (in.) (in	D APPRIANCE COOKIES		80) SAP		21.75.00					BOL GAP	
1 1.682 3.055 2 1.882 3.055 3 1.882 3.055 3 1.882 3.258 4 1.682 3.254 5 1.682 3.357 8 1.682 3.466 9 1.682 3.466 10 1.682 3.466 11 1.682 3.466 12 1.682 3.546 12 1.682 3.544 13 1.682 3.544 14 1.682 3.146 15 1.682 3.544 16 1.682 3.486 17 1.682 3.544 18 1.682 3.486 19 1.682 3.544 10 1.682 3.554 11 1.682 3.114 15 1.682 3.544 16 1.682 3.554 17 1.682 3.554 18 1.682 3.554 19 10 1.682 3.166 11 1.682 3.166 11 1.682 3.166 12 1.682 3.554 13 1.682 3.554 14 1.682 3.005 15 1.682 3.546 16 1.682 3.554 17 1.682 3.554 18 1.682 3.554 19 10 1.682 3.166 11 1.682 3.166 11 1.682 3.166 11 1.682 3.166 11 1.682 3.166 11 1.682 3.166 11 1.682 3.166 11 1.682 3.166 12 1.682 3.554 13 1.682 3.554 14 1.682 3.556 15 1.682 3.556 16 1.682 3.556 17 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 1.682 3.556 18 18 18 18 18 18 18 18 18 18 18 18 18 1	(in.) (in.) (I) ROD (in.) (E)0.821) (in.) (in.)			ROD	(1)	(in.)	(in.)	(in.)			-
2 1.682 J.035 3 1.682 J.155 4 1.682 J.212 5 1.682 J.215 5 1.682 J.215 5 1.682 J.215 5 1.682 J.215 5 1.682 J.207 7 1.682 J.201 9 1.682 J.406 9 1.682 J.402 1 1.682 J.496 1 1.682 J.519 1 1.682 J.496 1 1.682 J.559		********	*******		******		********				****
3 1.682 3.155 4 1.682 3.258 5 1.682 3.225 4 1.682 3.255 5 1.682 3.255 5 1.682 3.255 5 1.682 3.255 5 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 7 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1.682 3.207 1 1 1.682 3.207 1 1 1.682 3.207 1 1 1.682 3.207 1 1 1.682 3.207 1 1 1 1.682 3.207 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1							2
4 1.582 J.212 5 1.682 J.215 5 1.682 J.305 7 1.682 J.305 7 1.682 J.305 7 1.682 J.205 8 1.682 J.406 9 1.682 J.406 10 1.682 J.486 11 1.682 J.486 11 1.682 J.486 12 1.682 J.514 14 1.682 J.514 15 1.682 J.478 16 1.682 J.478 16 1.682 J.484				2					700 700 800		*
5 1.882 3.258 6 1.882 3.305 7 7 1.882 3.215 6 1.882 3.207 7 1.882 3.201 9 1.882 3.442 9 1.882 3.442 9 1.882 3.189 10 1.882 3.189 11 1.882 3.189 11 1.882 3.146 11 1.882 3.146 11 1.882 3.146 11 1.882 3.146 11 1.882 3.146 11 1.882 3.146 11 1.882 3.146 11 1.882 3.146 11 1.882 3.148 11 1.882 3.146 11 1.882 3.146 11 1.882 3.148 11 1.882 3.148 11 1.882 3.148 11 1.882 3.148 11 1.882 3.148 11 1.882 3.091 13 1.882 3.114 14 1.882 3.091 15 1.882 3.100 13 1.882 3.114 14 1.882 3.091 15 1.882 3.995 11 1.882 3.584 11 1.882 3.484 11 1.882 3.484 11 1.882 3.595 11 1.882 3.595 11 1.882 3.594 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.596 11 1.882 3.597 11 1.882 3.598 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 1.882 3.599 11 11 11 11 11 11 11 11 11 11 11 11 1				2							,
6 1.682 3.305 7 1.682 3.305 7 1.682 3.305 8 1.682 3.406 9 1.682 3.406 9 1.682 3.442 10 1.682 3.466 11 1.682 3.466 11 1.682 3.511 13 1.682 3.511 13 1.682 3.511 13 1.682 3.511 14 1.682 3.544 15 1.682 3.484 16 1.682 3.484 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1						7.00	
7 1.682 J.357 8 1.682 J.406 9 1.682 J.442 10 1.682 J.466 11 1.682 J.486 12 1.682 J.516 13 1.682 J.514 14 1.682 J.544 15 1.682 J.478 16 1.682 J.484 17 1.682 J.484 18 1.682 J.478 19 10 1.682 J.146 11 1.682 J.484 11 1.682 J.478 12 1.682 J.778 13 1.682 J.778 14 1.682 J.778 15 1.682 J.778 16 1.682 J.484 17 1.682 J.785 18 1.682 J.586				5							4
8 1.682 3.406 9 1.682 3.442 10 1.682 3.422 11 1.682 3.486 11 1.682 3.544 12 1.682 3.511 13 1.682 3.544 14 1.682 3.544 15 1.682 3.544 16 1.682 3.484 ACF: SOUTH (180) CY 1 ZOC-1 SAP ROD SROWTH STRAIN (E) CY 1 EOC-1 SAP ROD SROWTH (In.) (E) C.821) (in.) (in.) (E) C.821) (in.) (in.) (in.) (E) C.821) (in.) (in.) (in.) (E) C.821) (in.) (in.) (in.) (in.) (E) C.821) (in.) (in.) (in.) (in.) (E) C.821) (in.) (in.											7
9 1.582 3.442 10 1.682 3.465 11 1.682 3.465 12 1.682 3.586 12 1.682 3.534 13 1.682 3.534 14 1.682 3.544 15 1.682 3.486 16 1.682 3.486 17 1.682 3.091 18 1.682 3.486 18 1.682 3.091 19 10 1.682 3.091 10 1.682 3.091 11 1.682 3.091 12 1.682 3.091 13 1.682 3.095 14 1.682 3.095 14 1.682 3.095 15 1.682 3.095 16 1.682 3.095 16 1.682 3.095 16 1.682 3.095 16 1.682 3.095 16 1.682 3.095 17 18 18 18 18 18 18 18 18 18 18 18 18 18		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		7							0
10 1.682 3.466 11 1.682 3.486 12 1.682 3.511 13 1.682 3.534 14 1.682 3.544 15 1.682 3.484 ACF: SDUTH (180) CY 1 ZOC-1 GAP ROD GROWTH BOL GAP FLUENCE SH. GAP DECREASE GROWTH STRAIN 10 (in.) (E)0.821) (in.) (in.) (in.) (in.) (2) 1 1.682 3.484 1 1.682 3.504 1 1.682 3.556 1 1.682 3.556 1 1.682 3.556 1 1.682 3.557 1 1.682 3.556 1 1.682 3.557 1 1.682 3.556 1 1.682 3.557 1 1.682 3.556 1 1.682 3.514 1 1.682 3.586 1 1.682 3.514 1 1.682 3.586 1 1.682 3.514 1 1.682 3.586 1 1.682 3.514 1 1.682 3.586 1 1.682 3.514 1 1.682 3.586 1 1.682 3.514 1 1.682 3.586 1 1.682 3.514 1 1.682 3.586 1 1.682 3.597 1 1.682 3.586 1 1.682 3.597 1 1.682 3.586 1 1.682 3.597 1 1.682 3.586 1 1.682 3.597 1 1.682 3.586 1 1.682 3.597 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586 1 1.682 3.586				8					7.000		0
11	11000										10
12 1.682 3.511 13 1.682 3.534 14 1.682 3.544 15 1.682 3.478 16 1.682 3.484 ACR: SDUTH (180) CY 1 ZDC-1 GAP ROD GROWTH SOL GAP FLUENCE SH. GAP DECREASE GROWTH STRAIN (10) (in.) (E)0.821) (in.) (in.) (in.) (in.) (in.) (in.) (in.) (E)0.821) (in.)		3.169	1.682						2.0		
13 1.682 3.534 14 1.682 3.544 15 1.682 3.478 16 1.682 3.484 ACF: SDUTH (180) CY 1 ZOC-1 GAP ROD GROWTH BOL GAP FLUENCE SH. GAP DECREASE GROWTH STRAIN DD (in.) (E)O.821) (in.) (in		3.146	1.682					1			
14 1.682 3.544 15 1.682 3.478 16 1.682 3.494 ACE: SOUTH (180) CY 1 ZOC-1 SAP RDD SROWTH BOL SAP FLUENCE SH. SAP DECREASE BROWTH STRAIN DD (in.) (E)0.821) (in.) (in.) (in.) (in.) (2) ROD (in.) (E)0.821) (in.) (in.		3.130	1.682								
15 1.682 3.478 16 1.682 3.484 16 1.682 3.484 17 1.682 3.484 18 1.682 3.005 16 1.682 3.985 18 1.682 3.985 18 1.682 3.985 18 1.682 3.005 16 1.682 3.985 18 1.682 3.504 18 1.682 3.566 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 1.682 3.586 18 18 18 18 18 18 18 18 18 18 18 18 18 1	13 1.682 3.114	3.114	1.682	13							
16 1.682 3.484 16 1.682 2.985 ACE: SOUTH (180) CY 1 ZDC-1 GAP ROD GROWTH BOL GAP FLUENCE SH. GAP DECREASE GROWTH STRAIN (in.) (E)0.821) (in.) (in	14 1.682 3.091	3.091	1.682	14							
ACE: SOUTH (180) CY 1 EOC-1 SAP ROD SROWTH BOL SAP FLUENCE SH. SAP DECREASE SROWTH STRAIN DO (in.) (E)0.821) (in.) (in.) (in.) (in.) (in.) (E)0.821) (in.) (in.	15 1.682 3.005	3.005	1.682	15							
CY 1 ZDC-1 SAP RDD SROWTH BOL SAP FLUENCE SH. SAP DECREASE SROWTH STRAIN (in.) (E)0.821) (in.)	16 1.882 2.985	2.985	1.682	16				L	3.484	1.682	16
CY 1 ZDC-1 SAP RDD GROWTH BOL SAP FLUENCE SH. SAP DECREASE SROWTH STRAIN OD (in.) (E>0.821) (in.) (i	화계 하는 이번 교육이 그 보았다면요. 그래 아무지역 경기								/10A1	PRIMI	APE.
BOL SAP FLUENCE SH. SAP DECREASE SROWTH STRAIN OD (in.) (E>0.821) (in.)	745 546 488VEV		WEST I		*****	200	040	700-1		SOUTH	Merca
1	Transfer and the second	The State of the S								IN CAP	
1 1.682 3.504 2 1.682 3.496 3 1.682 3.559 4 1.682 3.566 5 1.682 3.543 5 1.682 3.543 6 1.682 3.514 7 1.682 3.568 7 1.682 3.514 8 1.682 3.599 9 1.682 3.496 1 1.682 3.496 1 1.682 3.496 1 1.682 3.599 1 1.682 3.490 1 1.682 3.490 1 1.682 3.490 1 1.682 3.490 1 1.682 3.590 1 1.682 3.399 1 1.682 3.399 1 1.682 3.580 1 1.682 3.399 1 1.682 3.580 1 1.682 3.580 1 1.682 3.599	tie to the to the to the total the total t										
1 1.682 3.504 1 1.682 3.496 2 1.682 3.483 3 1.682 3.566 1 1.682 3.559 4 1.682 3.566 1 1.682 3.525 1 1.682 3.514 1 1.682 3.578 1 1.682 3.476 1 1.682 3.440 1 1.682 3.402 1 1.682 3.370 1 1.682 3.370 1 1.682 3.370 1 1.682 3.386 1 1.682 3.389 1 1.682 3.389 1 1.682 3.389 1 1.682 3.389 1 1.682 3.389	The same same same same same										
1.682 3.566 1.682 3.559 4 1.682 3.566 1.682 3.543 5 1.682 3.566 1.682 3.514 7 1.682 3.568 1.682 3.514 7 1.682 3.578 1.682 3.476 9 1.682 3.589 1.682 3.440 10 1.682 3.586 1.682 3.402 11 1.682 3.580 1.682 3.370 12 1.682 3.580 3.339 13 1.682 3.585 4.682 3.299 14 1.682 3.585				7							
1.682 3.586 1.682 3.559 4 1.682 3.566 1.682 3.543 5 1.682 3.566 1.682 3.525 6 1.682 3.568 1.682 3.514 7 1.682 3.578 1.682 3.501 8 1.682 3.589 1.682 3.440 9 1.682 3.586 1.682 3.402 11 1.682 3.586 1.682 3.370 12 1.682 3.580 3.339 13 1.682 3.585 4.682 3.299 14 1.682 3.585			1.682	1				1	3.496		
1.682 3.559 1.682 3.543 1.682 3.525 1.682 3.566 1.682 3.568 1.682 3.514 7 1.682 3.578 1.682 3.501 8 1.682 3.589 1.682 3.440 9 1.682 3.586 1.682 3.586 1.682 3.579 1.682 3.770 1.682 3.370 1.682 3.370 1.682 3.389 1.682 3.389 1.682 3.389 1.682 3.585	1 1.682 3.484	3.484		1 2					200		
1.682 3.543 1.682 3.525 6 1.682 3.568 1.682 3.514 7 1.682 3.578 1.682 3.501 8 1.682 3.589 1.682 3.446 9 1.682 3.586 1.682 3.440 1 1.682 3.440 1 1.682 3.586 1 1.682 3.370 1 1.682 3.370 1 1.682 3.389 1 1.682 3.389 1 1.682 3.389	1 1.682 3.484 2 1.682 3.483	3.484	1.682	2 3					3.566		
1.682 3.525 1.682 3.514 1.682 3.501 1.682 3.476 0 1.682 3.440 1 1.682 3.402 1 1.682 3.370 2 1.682 3.370 3 1.682 3.339 1 1.682 3.339 1 1.682 3.586 1 1.682 3.580 1 1.682 3.580 1 1.682 3.580 1 1.682 3.585 1 1.682 3.585	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561	3.484 3.483 3.561	1.682	2 3 4					3.566 3.559	1.682	
1.682 3.514 1.682 3.501 1.682 3.476 0 1.682 3.440 1 1.682 3.402 1 1.682 3.370 2 1.682 3.370 3 1.682 3.339 4 1.682 3.299	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566	3.484 3.483 3.561 3.566	1.682 1.682 1.682	2 3 4 5					3.566 3.559 3.543	1.682	
1.682 3.501 1.682 3.476 9 1.682 3.589 1 1.682 3.402 1 1.682 3.586 1 1.682 3.370 1 1.682 3.370 1 1.682 3.580 1 1.682 3.580 1 1.682 3.585 1 1.682 3.585	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566	3.484 3.483 3.561 3.566 3.566	1.682 1.682 1.682 1.682	1 2 3 4 5					3.566 3.559 3.543	1.682	
1.682 3.476 0 1.682 3.440 1 1.682 3.586 1 1.682 3.579 2 1.682 3.370 3 1.682 3.339 4 1.682 3.299	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568	3.484 3.483 3.561 3.566 3.566 3.568	1.682 1.682 1.682 1.682 1.682	1 2 3 4 5 6 7					3.566 3.559 3.543 3.525	1.682 1.682 1.682	
0 1.682 3.440 1 1.682 3.402 2 1.682 3.370 3 1.682 3.339 4 1.682 3.299	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568 7 1.682 3.578	3.484 3.483 3.561 3.566 3.566 3.568 3.578	1.682 1.682 1.682 1.682 1.682 1.682	1 2 3 4 5 6 7					3.566 3.559 3.543 3.525 3.514	1.682 1.682 1.682 1.682	
1 1.682 3.402 2 1.682 3.370 3 1.682 3.339 4 1.682 3.299	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568 7 1.682 3.578 8 1.682 3.589	3.484 3.483 3.561 3.566 3.568 3.568 3.578 3.589	1.682 1.682 1.682 1.682 1.682 1.682 1.682	1 2 3 4 5 6 7 8					3.566 3.559 3.543 3.525 3.514 3.501 3.476	1.682 1.682 1.682 1.682 1.682	
2 1.682 3.370 12 1.682 3.580 3 1.682 3.339 13 1.682 3.585 4 1.682 3.299 14 1.682 3.582	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568 7 1.682 3.578 8 1.682 3.589 9 1.682 3.592	3.484 3.483 3.561 3.566 3.568 3.578 3.578 3.589 3.592	1.682 1.682 1.682 1.682 1.682 1.682 1.682	1 2 3 4 5 6 7 8 9					3.566 3.559 3.543 3.525 3.514 3.501 3.476	1.682 1.682 1.682 1.682 1.682 1.682	
3 1.682 3.339 4 1.682 3.299	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568 7 1.682 3.578 8 1.682 3.589 9 1.682 3.589 9 1.682 3.589	3.484 3.483 3.561 3.566 3.566 3.568 3.578 3.589 3.589 3.589	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682						3.566 3.559 3.543 3.525 3.514 3.501 3.476 3.440	1.682 1.682 1.682 1.682 1.682 1.682	
4 1.682 3.299	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.568 7 1.682 3.578 8 1.682 3.589 9 1.682 3.592 10 1.682 3.592 10 1.682 3.579	3.484 3.483 3.561 3.566 3.566 3.568 3.578 3.589 3.592 3.586 3.579	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	11					3.566 3.559 3.543 3.525 3.514 3.501 3.476 3.440 3.402	1.682 1.682 1.682 1.682 1.682 1.682 1.682	1
	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568 7 1.682 3.578 8 1.682 3.589 9 1.682 3.592 10 1.682 3.586 11 1.682 3.579 12 1.682 3.580	3.484 3.483 3.561 3.566 3.568 3.578 3.589 3.592 3.586 3.579 3.586	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	11					3.566 3.559 3.543 3.525 3.514 3.501 3.476 3.440 3.402 3.370	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	1 2
5 1.682 3.193	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.566 6 1.682 3.568 7 1.682 3.578 8 1.682 3.589 9 1.682 3.592 10 1.682 3.586 11 1.682 3.579 12 1.682 3.580 13 1.682 3.585	3.484 3.483 3.561 3.566 3.568 3.578 3.589 3.579 3.586 3.579 3.580 3.580 3.585	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	11 12 13					3.566 3.559 3.543 3.525 3.514 3.501 3.476 3.440 3.402 3.370 3.339	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	1 2 3
6 1.682 3.161	1 1.682 3.484 2 1.682 3.483 3 1.682 3.561 4 1.682 3.566 5 1.682 3.568 7 1.682 3.578 8 1.682 3.589 9 1.682 3.589 9 1.682 3.579 11 1.682 3.579 12 1.682 3.579 12 1.682 3.580 13 1.682 3.585 14 1.682 3.585	3.484 3.483 3.561 3.566 3.568 3.578 3.578 3.589 3.579 3.586 3.579 3.586 3.579 3.580 3.585 3.582	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	11 12 13 14					3.566 3.559 3.543 3.525 3.514 3.501 3.476 3.440 3.402 3.370 3.339 3.299	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	2 3 4

1) NOMINAL BOL SHOULDER SAP= 1.682 in. NOTE: ALL REPORTED FLUENCE NUMBERS ARE I 10 EE 21 N/CM++2

3) AVERAGE SUIDE TUBE FLUENCE= 2.829

4) AVG. BOL RDD ACTIVE LENGTH= 150 in. FLUENCES CALCULATED FOR EXO.821 ARE ADJUSTED TO ACTUAL BURNUP OF 448 EFPD

ASSEMBLY SERIAL NO. P18226

1 1 2 3 4 5 5 6 1 7 1 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	FLUENCE (E>0.821)	(in.)	GAP DECREASE (in.)	GROWTH (in.)	STRAIN (2)	800	(in.)	FLUENCE (E)0.821) 3.718 3.732 3.830	(in.)	DECREASE (in.)	(in.)	GROWTH STRAIN (I)
1 1 2 3 4 1 5 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.717 3.722 3.810 3.820 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702	(in.)	(in.)	(in.)	(2)	ROD 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	(in.) 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.718 3.732 3.830 3.847 3.855 3.862 3.877 3.888 3.888 3.876 3.862 3.854 3.854 3.854 3.854	(in.)	(in.)	(in.)	(1)
1 1 2 1 3 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.717 3.722 3.810 3.819 3.820 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					1 2 3 4 5 6 7 8 9 10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.718 3.732 3.830 3.847 3.855 3.862 3.877 3.888 3.888 3.876 3.862 3.854 3.854 3.877				
1 1 2 1 3 4 4 5 5 1 5 6 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.717 3.722 3.810 3.819 3.820 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					1 2 3 4 5 6 7 8 9 10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.718 3.732 3.830 3.847 3.855 3.862 3.877 3.888 3.888 3.876 3.862 3.854 3.862 3.876				
2 3 4 5 6 7 1 8 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.722 3.819 3.829 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.732 3.830 3.847 3.855 3.862 3.877 3.888 3.876 3.862 3.854 3.825 3.730				
3 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.810 3.819 3.820 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.830 3.847 3.855 3.862 3.877 3.888 3.876 3.862 3.854 3.854 3.825 3.730				
4 1 5 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.819 3.820 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.847 3.855 3.862 3.877 3.888 3.876 3.862 3.854 3.862 3.854 3.825 3.730				
5 1 6 1 7 1 8 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.820 3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.855 3.862 3.877 3.888 3.876 3.862 3.854 3.854 3.825 3.730				
6 1 7 1 8 1 9 1 10 1 11 1 12 1 13 1 14 1 15 1 16 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.822 3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.862 3.877 3.888 3.876 3.862 3.854 3.854 3.825 3.730				
7 1 8 1 9 1 10 1 11 11 12 11 13 1 14 1 15 1 16 1 1 16 1 1 1 1 1 1 1 1 1 1 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.831 3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.877 3.888 3.888 3.876 3.862 3.854 3.854 3.825 3.730				
8 1 9 1 10 1 11 1 12 1 13 1 14 1 15 1 16 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.838 3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.888 3.876 3.862 3.854 3.854 3.825 3.730				
9 1 10 1 11 1 12 1 13 1 14 1 15 1 16 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.837 3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.582 1.582 1.582 1.582 1.582 1.582 1.582	3.888 3.876 3.862 3.854 3.847 3.825 3.730				
10 1 11 1 12 1 13 1 14 1 15 1 16 1	1.682 1.682 1.682 1.682 1.682 1.682 1.682	3.826 3.814 3.809 3.804 3.793 3.702					10 11 12 13 14	1.682 1.682 1.682 1.682 1.682	3.876 3.862 3.854 3.847 3.825 3.730				
11 1 12 1 13 1 14 1 15 1 16 1	1.682 1.682 1.682 1.682 1.682 1.682	3.814 3.809 3.804 3.793 3.702					11 12 13 14 15	1.682 1.682 1.682 1.682 1.682	3.862 3.854 3.847 3.825 3.730				
12 1 13 1 14 1 15 1 16 1	1.682 1.682 1.682 1.682 1.682	3.809 3.804 3.793 3.702					12 13 14 15	1.682 1.682 1.682 1.682	3.854 3.847 3.82b 3.730				
13 1 14 1 15 1 16 1 FACE: SI	1.682 1.682 1.682 1.682	3.804 3.793 3.702					13 14 15	1.682 1.682 1.682	3.847 3.825 3.730				
14 1 15 1 16 1 FACE: SI	1.682	3.793 3.702	L				14	1.682	3.82b 3.730				
15 1 16 1 FACE: SI 90L	1.682	3.702	L				15	1.682	3.730				
16 1 FACE: SI BOL	1.682		L										
FACE: SI			_			_	10	1.002					
	SAP	CY 1 FLUENCE	EDC-1 SH. SAP	SAP DECREASE		SROWTH STRAIN		BOL GAP	CY 1 FLUENCE	EDC-1 SH. SAP	SAP DECREASE	ROD GROWTH	GROWTH STRAIN
		(E>0.821)	(in.)	(in.)	(in.)	(I)			(E>0.821)	(in.)	(in.)	(in.)	(1)
	. 682	3.692	_		******	7		1.682	3.692	_	143 82 83 834	180 10 111	********
2 1.	. 682	3.702	1			1	2	1.682	3.702	1			
3 1.	. 682	3.793	1			- 1	3	1.682	3.792				
4 1.	.682	3.805					4	1.682	3.803	1			
5 1.	. 682	3.810	1			1	5	1.682	3.806				
6 1.	. 682	3.815					6	1.682	3.811				
7 1.	. 682	3.827					7	1.682	3.822				
	. 682	3.838	1 12				8	1.682	3.832				
	.682	3.840	1				9	1.682	3.832				
	. 682	3.832	1				10	1.682	3.822				
	.682	3.823	1				11	1.682	3.811				
	. 682	3.821	1				12	1.682	3.806				
	. 682	3.820	1				13	1.682	3.803				
	. 6B2	3.811	1				14	1.682	3.791	1			
	.682	3.723	1				15	1.682	3.701	į.			
	. 682	3.718	1				16	1.582	3.692	1			

1) NOMINAL BOL SHOULDER GAP: 1.882 in. NOTE: ALL REPORTED FLUENCE NUMBERS ARE 1 10 EE 21 N/CM++2

2) AVERAGE SUIDE TUBE FLUENCE: 3.189

NOTE: ALL REPORTED FLUENCE NUMBERS ARE 1 10 EE 21 N/CM++2

FLUENCES CALCULATED FOR E>0.821 ARE ADJUSTED TO ACTUAL BURNUP CF 448 EFPD

3) AVERAGE SUIDE TUBE FLUENCE: 3.189

⁴⁾ AVG. BOL ROD ACTIVE LENGTH: 150 in.

ASSEMBLY SERIAL NO. P2CO05

ROD	(in.)	FLUFMCE (E)0.821	SH. SAP	(in.)	SROWTH (in.)	GROWTH STRAIN (1)	ROD	(in.)	CY 1 FLUENCE (E)0.821)	(in.)	DECREASE (in.)	ROD GROWTH	GROWTH STRAIN
1	2.382		2000		******	7	12221		**********	F	*********	******	mman
2	2.382							2.382					
3	2.382					1	2	2.382					
4	2.382					1	,	2.382					
5	2.382	1.445					N.	2.382					
6	2.382	1.447					, i	2.382					
7	2.382	1.448					7	2.382					
9	2.382	1.448					8	2.382	1 1000000000000000000000000000000000000				- 1
9	2.382	1.448					9	2.382	2.666				
10	2.382	1.448					10	2.382	2.524				- 1
11	2.382	1.447					11	2.382	2.369				
12	2.382	1.445				90.45	12	2.382	2.203				
13	2.382	1.445					13	2.382	2.027				
14	2.382	1.446					14	2.382	1.841				
15	2.382	1.437				1000	15	2.382	1.637				
16	2.382	1.436				4-51 P	16	2.382	1.436	1			
		(180) CY 1 FLUENCE (E)0,821)	EDC-1 SH. BAP	BAP DECREASE (in.)	ROD GROWTH (in.)	GROWTH STRAIN (I)	8		CY 1 FLUENCE		GAP DECREASE		GROWTH STRAIN
				11017	******	14/			(E)0.821)	(is.)	(in.)	(in.)	(I)
1	2.382	3.288	Г			٦	1	2.382	1.436		E3 60 E3 12 21	III DE FOR	*********
2	2.382	3.298					2	2.382	1.637				
3	2.382	3.328	1					2.382	1.841	1			
4	2.382	3. 335	1				i	2.382	2.027				100
5	2.382	3.340					5	2.382	2.203				
6	2.382	3.346						2.382	2.369				
7	2.382	3.351				1	7	2.382	2.524				
8	2.382	3.356	1					2.382	2.666	gribarii.			1
9	2.382	3.356					9	2.382	2.796				
10	2.382	3.351					10	2.382	2.911				
11	2.382	3.346						2.382	3.011				
12	2.382	3.340						2.382	3.100				
13	2.382	3.335	1					2.382	3.176				
14	2.382	3.328						2.382	3.237				
15	2.382	3.298						2.382					
16	2.382	3.288						2.382	3.263				
						7		21001	3. 280	-			

¹⁾ NOMINAL BOL SHOULDER GAP= 2.382 in. NOTE: ALL REPORTED FLUENCE NUMBERS ARE I 10 EE 21 N/CM++2

2) AVERAGE GUIDE TUBE FRUENCE= 2.188

3) AVERAGE GUIDE TUBE FLUENCE= 2.188

4) AVG. BOL ROD ACTIVE LENGTH= 150 in.

ASSEMBLY SERIAL NO. P20025

- Musica	MORTH			***			FACE:	EAST					
	POI CAO	CY 1 FLUENCE	1-303	SAP		SROWTH			CY 1	1-303	SAP		
OD			1.00	10.10.00		STRAIN (I)			FLUENCE				
		********				322222222			(E)0.821)		(in.)	(in.)	(I)
1	2.382	0.656					1	2.382		٢	*********		******
2	2.382		1				2	2.382					
3	2.382	0.831					3	2.382					
4	2.382	0.913	1				4	2.382					
5	2.382	0.994					5	2.382					
6	2.382	1.075					6	2.382					
7	2.382	1.156	1			100	. 7	2.382	1.398				
8	2.382	1.236					8	2.382					
9	2.382	1.316					9	2.382	1.236				
10	2.382	1.397					10	2.382	1,156				
11	2.382	1.481					11	2.382	1.075	1			
12	2.382	1.570					12	2.382	0.994				
13	2.382	1.664					13	2.382	0.913				
14	2.382	1.766					14	2.382	0.831				
15	2.382	1.861				4	15	2.382	0.742				
16	2.382	1.970					16	2.382	0.656				
ACE:	SOUTH	/10A1											
	300111		E0C-1	SAP	ROD	SROWTH	FACE:	MEST		EDC-1	GAP	800	SROWTH
			EOC-1 SH. SAP	SAP DECREASE	ROD	BROWTH STRAIN			CY 1	EDC-1 SH. SAP	GAP DECREASE	ROD	
	BOL SAP	CY 1	SH. SAP					BOL GAP	CY 1 FLUENCE	SH. SAP			
00	80L SAP	CY 1 FLUENCE (E>0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN	ROD	BOL GAP	CY 1 FLUENCE	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
00	80L SAP (in.) 2.382	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	BOL GAP	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
100	80L SAP (in.) 2.382 2.382	CY 1 FLUENCE (E)0.821) 3.280 3.249	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	BOL GAP	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
00	80L GAP (in.) 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.228	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	BOL GAP (in.) 2.382	CY 1 FLUENCE (E)0.821)	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
100	2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.228 3.179	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	BOL SAP (in.) 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
100	2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.228 3.179 3.120	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
100	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 3.280 3.249 3.228 3.179 3.120 3.055	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
100	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.228 3.179 3.120 3.055 2.984	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
00	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.228 3.179 3.120 3.055 2.984 2.905	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN
1 2 3 4 5 6 7 8	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.129 3.179 3.120 3.055 2.984 2.905 2.817	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 3 4 5 6 7 7 8 9 9 10	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.228 3.179 3.120 3.055 2.984 2.905 2.817 2.719	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	BOL 6AP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717 2.814 2.903 2.982	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 3 4 5 5 6 7 8 9 10	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.129 3.120 3.055 2.984 2.905 2.817 2.719 2.613	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD 1 2 3 4 5 6 7 8 9 10 11	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717 2.814 2.903	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 3 4 5 6 7 8 9 10 11 12	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.179 3.120 3.055 2.984 2.905 2.817 2.719 2.613 2.500	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD 22 3 4 5 6 7 8 9 10 11 12	BOL 6AP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717 2.814 2.903 2.982	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 2 3 4 5 6 6 7 7 8 9 10 11 12 13	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 3.280 3.249 3.228 3.179 3.120 3.055 2.984 2.905 2.817 2.719 2.500 2.381	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717 2.814 2.903 2.782 3.052	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 3 4 5 5 6 6 7 8 9 10 11 12 13 14	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E>0.821) 3.280 3.249 3.179 3.120 3.055 2.984 2.905 2.817 2.719 2.613 2.500 2.381 2.255	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717 2.814 2.903 2.782 3.052 3.118	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)
1 2 3 4 5 6 6 7 7 8 9 10 11 12 13	BOL SAP (in.) 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 3.280 3.249 3.228 3.179 3.120 3.055 2.984 2.905 2.817 2.719 2.500 2.381	SH. SAP	DECREASE (in.)	GROWTH (in.)	STRAIN (I)	ROD	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	CY 1 FLUENCE (E)0.821) 1.970 2.107 2.254 2.380 2.499 2.611 2.717 2.814 2.903 2.782 3.052 3.118 3.177	SH. SAP	DECREASE (in.)	GROWTH (in.)	(2)

1) NOMINAL BOL SHOULDER BAP= 2.382 in. NOTE: ALL REPORTED FLUENCE MUMBERS ARE I 10 EE 21 M/CM++2

2) AVERAGE BUIDE TUBE BRONTH= 5.781

3) AVERAGE BUIDE TUBE FLUENCE= 1.781 FLUENCES CALCULATED FOR EXO. 821 ARE ADJUSTED TO ACTUAL BURNUP OF 44

⁴⁾ AVE. BOL ROD ACTIVE LENGTH: 150 in. NM = not measured

ASSEMBLY SERIAL NO. PICII4

FAC		CY 1 FLUENCE (E>0.821		SAP DECREAS	ROD E GROWTH (in.)	SROWTH			CY 1	CONTRACTOR OF THE PARTY OF	GAP DECREASE	ROD GROWTH	SROWTH STRAIN
22.21	*******					(1)			(E)0.821)		(in.)	(in.)	(1)
- 1	2.382	3.698				7	- 1	2.382		_	*********	********	***********
2	2.382	3.706					2	2.382	2.5-20.0				
2	2.382	3.795					3	2.382					
4	2.382	3.805					4	2.382					
5	2.382	3.805	1				5	2.382					
6	2.382	2.803	1				6	2.382					
7	2.382	3.809	1				7	2.382					
8	2.382	3.811				1	8	2.382					
9	2.382	3.801					9	2.382	3.812				
10	2.382	3.780					10	2.382	2.811				
- 11	2.382	3.757					11	2.382	3.805				
12	2.382	3.739					12	2.382	3.806				
13	2.382	3.722					13	2.382	3.806				
14	2.382	3.695	1			S. Hills	14	2.382	3.796				
15	2.382	3.592				MONEY:	15	2.382	3.707	1500			
16	2.382	3.571					16	2.382	3.698				
	BOL SAP	CY 1 FLUENCE	EDC-1 SH. SAP (in.)	GAP DECREASE (in.)	ROD SROWTH	GROWTH STRAIN			CY 1 FLUENCE		GAP DECREASE	ROD SROWTH	GROWTH STRAIN
	*******				110.7	(1)				(in.)	(in.)	(is.)	(1)
1	2.382	3.289	Г			7			********	*******	RECEPTED IN	*******	*********
2	2.382	3.326						7 707		_			
3		41444				March 1997		2.382	3,571				
	2.382					150	2	2.382	3.571 3.577				
4	2.382	3.438					3	2.382	3.571 3.577 3.660				
5		3.438					3 4	2.382 2.382 2.382	3.571 3.577 3.660 3.665				
5	2.382	3.438 3.479 3.510					3 4 5	2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657				
5 6 7	2.382 2.382 2.382	3.438 3.479 3.510 3.541					3 4 5	2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647				
5 6 7 8	2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576					2 3 4 5 6 7	2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641				
5 6 7 8 9	2.382 2.382 2.382 2.382 2.382	3.479 3.510 3.541 3.576 3.609					2 3 4 5 6 7 8	2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641 3.633				
5 6 7 8 9 10	2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576 3.609 3.630					2 3 4 5 6 7 8	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641 3.633 3.611				
4 5 6 7 8 9 10	2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576 3.609 3.630 3.639						2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.641 3.633 3.611 3.578				
11	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576 3.609 3.630 3.639 3.645					11	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.641 3.633 3.611 3.578 3.542				
11	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576 3.609 3.630 3.639 3.645 3.655					11 12	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641 3.633 3.611 3.578 3.542 3.511				
11 12 13	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576 3.609 3.630 3.639 3.645 3.635 3.645					11 12 13	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641 3.533 3.611 3.578 3.542 3.511 3.480				
11 12 13 14	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.479 3.510 3.541 3.576 3.609 3.630 3.639 3.645 3.655 3.666					11 12 13 14	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641 3.633 3.611 3.578 3.542 3.511 3.480 3.439				
11 12 13	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.438 3.479 3.510 3.541 3.576 3.609 3.630 3.639 3.645 3.635 3.645					11 12 13 14 15	2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382 2.382	3.571 3.577 3.660 3.665 3.657 3.647 3.641 3.533 3.611 3.578 3.542 3.511 3.480				

4) AVS. BOL ROD ACTIVE LENGTH= 150 in.

1) NOMINAL BOL SHOULDER SAP= 2.382 in. NOTE: ALL REPORTED FLUENCE MUMBERS ARE I 10 EE 21 N/CH++2

3) AVERAGE SUIDE TUBE FRUENCE= 3.072

NOTE: ALL REPORTED FLUENCE MUMBERS ARE I 10 EE 21 N/CH++2

FLUENCES CALCULATED FOR E>0.821 ARE ADJUSTED TO ACTUAL BURNUP OF 448 EFPD