A 04/27/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
DISTRIBUTION FOR INCOMING MATERIAL 50-244

REC: ZIEMANN D L
NRC

ORG: WHITE L D
ROCHESTER GAS & ELEC

DOCDATE: 04/18/78
DATE RCVD: 04/26/78

DOCTYPE: LETTER NOTARIZED: NO
SUBJECT:
FORWARDING RESPONSE TO NRC REQUEST CONSISTING OF INFO CONCERNING DATA TAKEN DURING THE STARTUP OF CYCLE 7 AT SUBJECT FACILITY...W/ATT TABLE PRESENTING PREDICTED ROD WORTH AND THE MEASURED ROD WORTHS WITH AND WITHOUT CONTROL RODS L8 & K7 SWAPPED.

COPIES RECEIVED
LTR 1 ENCL 1

PLANT NAME: RE GINNA - UNIT 1

REVIEWER INITIAL: XJM
DISTRIBUTOR INITIAL:

********** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS **********

ANNUAL ENVIRONMENTAL RPTS (OL STAGE).
(DISTRIBUTION CODE A007)

FOR ACTION: BR CHIEF ZIEMANN**W/7 ENCL

INTERNAL: REG FILE**W/ENCL
I & E**W/2 ENCL
BALLARD**W/ENCL
KREGER**W/ENCL
NRC PDR**W/ENCL
EEB**W/ENCL
J. COLLINS**W/ENCL
KASTNER**W/ENCL

EXTERNAL: LPDR'S
ROCHESTER, NY**W/ENCL
TIC**W/ENCL
NSIC**W/ENCL
ACRS CAT B**W/ENCL

DISTRIBUTION: LTR 20 ENCL 20
SIZE: 1P+3P

CONTROL NBR: 781160178

********** THE END **********

ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

LEON D. WHITE, JR.
VICE PRESIDENT

TELEPHONE
AREA CODE 716 546-2700

April 18, 1978

50-244

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis Ziemann, Chief
Operating Reactors Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Ziemann:

During conversations with members of the NRC staff, a request was made for data taken during the startup of Cycle 7 at the R. E. Ginna Plant. This data reflects measurements taken with control rod L8 operating as a D bank rod and rod K7 operating as an A bank rod. Figure 1 illustrates the $F^N_{\Delta H}$ obtained from the Incore reduction of Flux Map VII-3 which was taken with the rods as described above. Figure 2 illustrates the $F^N_{\Delta H}$'s with the rod swap corrected.

Also attached is a table which presents the predicted rod worth and the measured rod worths with and without control rods L8 and K7 swapped.

Very truly yours,

L. D. White, Jr.

L. D. White, Jr.

A007
S
1/1

Cycle - 7 Flux Map VII-3

D bank = 136 steps, 28% power, Control Rod L8 and K7 interchanged

ROCHESTER GAS AND ELECTRIC CORPORATION

CORE MAP

Measured $F^N_{\Delta H}$

	1	2	3	4	5	6	7	8	9	10	11	12	13	
270°														
A						0.546 -1.0	0.552 0.6	0.560 1.5						A
B				0.636 -1.1	1.009 -1.0	1.131 -1.0	0.824 -0.4	1.144 0.2	1.022 0.3	0.647 0.6				B
C			.471 -1.1	1.008 -1.1	1.284 -1.1	1.117 -0.2	0.907 -0.5	1.110 -0.8	1.301 0.3	1.025 0.6	0.479 0.6			C
D		0.629 -2.2	0.998 -2.2	0.979 -2.2	1.130 -0.3	1.244 0.3	0.980 0.5	1.241 0.0	1.134 0.0	1.006 0.5	1.025 0.4	0.646 0.4		D
E		0.997 -2.2	1.270 -2.2	1.111 -2.2	1.255 -1.2	1.178 -0.3	0.978 -0.1	1.176 -0.6	1.266 -0.3	1.141 0.4	1.305 0.4	1.024 0.4		E
F	0.556 1.1	1.152 1.0	1.095 -2.2	1.215 -2.2	1.162 -1.9	1.034 -1.4	1.230 -1.2	1.030 -1.8	1.159 -2.1	1.222 -1.7	1.107 -1.1	1.148 0.7	0.568 3.3	F
180° G	0.551 1.0	0.831 0.9	0.914 0.4	0.969 -0.6	0.961 -2.0	1.224 -1.8	1.049 -1.6	1.209 -2.9	0.944 -3.8	0.949 -2.7	0.888 -2.4	0.829 0.7	0.563 3.3	G 0°
H	0.556 1.1	1.152 1.0	1.131 1.0	1.254 0.9	1.182 -0.3	1.043 -0.6	1.236 -0.7	1.025 -2.3	1.150 -2.9	1.217 -2.1	1.096 -2.1	1.135 -0.4	0.568 3.3	H
I		1.03 1.2	1.315 1.2	1.147 0.9	1.279 0.7	1.185 0.2	0.980 0.0	1.191 0.8	1.268 -0.2	1.118 -1.6	1.269 -2.3	0.993 -2.6		I
J		0.692 7.6	1.098 7.6	1.050 4.9	1.173 3.5	1.242 0.1	0.980 0.5	1.257 1.3	1.139 0.5	0.993 -0.8	1.004 -1.6	0.626 -2.7		J
K			0.517 8.4	1.101 8.0	1.408 8.5	1.204 7.6	0.918 0.8	1.106 -1.2	1.269 -2.2	0.992 -2.7	0.474 -0.6			K
L				0.703 9.4	1.110 8.9	1.140 -0.2	0.827 -0.0	1.107 -3.1	0.963 -5.5	0.605 -5.8				L
M						0.550 -0.2	0.548 -0.2	0.540 -2.2	← $F^N_{\Delta H}$ ← % Difference between measured and predicted					M
	1	2	3	4	5	6	7	8	9	10	11	12	13	
90°														

$\frac{\text{Meas-Pred}}{\text{Pred}}$ x 100%

N

FIGURE 1

47-17

Cycle - 7 Flux Map VII-4

D bank = 119 steps, 25% power, Control Rod Swap Corrected

ROCHESTER GAS AND ELECTRIC CORPORATION

CORE MAP

Measured $F^N_{\Delta H}$

	1	2	3	4	5	6	7	8	9	10	11	12	13
A						0.595 5.6	0.589 3.8	0.578 2.6					
B				0.690 5.6	1.051 5.6	1.171 5.7	0.852 3.2	1.137 2.6	1.031 3.6	0.694 6.2			
C			0.531 5.54	1.081 5.6	1.334 5.6	1.109 1.1	0.875 -0.7	1.104 0.7	1.329 5.2	1.087 6.2	0.535 6.2		
D		0.646 -1.3	1.011 -1.3	1.002 -1.3	1.148 1.2	1.207 -2.1	0.949 -4.1	1.229 -0.3	1.162 2.4	1.033 1.8	1.016 -0.9	0.648 -0.9	
E		0.983 -1.3	1.248 -1.3	1.123 -1.3	1.270 -0.1	1.201 0.2	0.990 -2.6	1.145 -4.5	1.244 -2.1	1.127 -0.9	1.253 -0.9	0.986 -0.9	
F	0.552 -1.8	1.086 -1.8	1.083 -1.3	1.219 -1.3	1.184 -1.4	1.068 -1.5	1.242 -2.6	1.038 -4.2	1.152 -4.1	1.205 -2.4	1.087 -0.9	1.087 -1.8	0.547 -2.7
G	0.554 -1.8	0.808 -1.8	0.864 -1.9	0.974 -1.6	0.988 -2.8	1.226 -3.9	1.060 -4.1	1.211 -5.1	0.965 -5.1	0.969 -2.0	0.871 -1.1	0.808 -1.8	0.549 -2.7
H	0.551 -1.8	1.086 -1.8	1.077 -1.8	1.222 -1.0	1.181 -1.6	1.039 -4.2	1.191 -6.6	1.008 -7.1	1.171 -2.5	1.237 0.2	1.108 1.0	1.105 -0.2	0.547 -2.7
I		0.977 -1.8	1.241 -1.8	1.130 -0.6	1.271 0.1	1.149 -4.2	0.952 -6.3	1.186 -1.1	1.306 2.8	1.161 2.1	1.299 2.7	1.026 3.0	
J		0.674 3.0	1.055 3.0	1.034 1.8	1.149 1.3	1.183 -4.1	0.978 -1.1	1.280 3.8	1.177 3.7	1.039 2.3	1.052 2.6	0.674 3.1	
K			0.517 2.7	1.053 2.9	1.300 2.8	1.132 3.2	0.926 5.1	1.164 6.2	1.330 5.3	1.067 4.2	0.515 2.2		
L				0.670 2.6	1.023 2.8	1.085 -2.1	0.809 -2.1	1.149 3.7	1.068 7.3	0.701 7.2			
M						0.552 -2.1	0.556 -2.1	0.573 1.7					

← $F^N_{\Delta H}$

← %Difference between measured and predicted

270° (top) 180° (left) 0° (right) 90° (bottom)

N

FIGURE 2

47-17

Startup - Cycle 7 - May 21, 1977

Core Condition BOL, HZP, NoXe	Boron Worth (ppm/%Δρ)	Boron Endpoint Predicted (ppm)	Boron Endpoint Measured* (ppm)	Isotherm Temp. Coefficient** Predicted (pcm/°F)	Isotherm Temp. Coefficient** Measured* (pcm/°F)
ARO	-115	1382	1400	-3.4	-3.23
D bank in	-114	1296	1321	-5.0	-5.2
D&C bank in	-114	1177	1207	-7.8	-8.25

Control Rod Bank Worth

Bank	Predicted Worth (%Δρ) Bank	Predicted Worth (%Δρ) Cumulative	Measured* (%Δρ) Bank	Measured* (%Δρ) Cumulative	Measured (%Δρ) Bank	Measured (%Δρ) Cumulative
D	0.754	0.754	0.666	0.666	0.711	0.711
D&C	1.047	1.801	0.991	1.657	0.979	1.690

* indicates measurements done with control rod L8 operating as a D bank rod and rod K7 operating as an A bank rod.

** Doppler Coefficient is +1.9 pcm/°F