

February 23, 1982

In reply, please  
refer to LAC-8109

DOCKET NO. 50-409

Director of Nuclear Reactor Regulation  
ATTN: Mr. Dennis M. Crutchfield  
Operating Reactors Branch #5  
Division of Operating Reactors  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

SUBJECT: DAIRYLAND POWER COOPERATIVE  
LA CROSSE BOILING WATER REACTOR (LACBWR)  
PROVISIONAL OPERATING LICENSE NO. DPR-45  
APPLICATION FOR AMENDMENT TO LICENSE



- References:
- (1) 10CFR50, Section 50.90.
  - (2) LACBWR Technical Specifications.
  - (3) DPC Letter, LAC-7572, Linder to Crutchfield, dated June 1, 1981.
  - (4) NRC Letter, Crutchfield to Linder, dated November 6, 1981.
  - (5) 10CFR170, Section 170.22.

Gentlemen:

In accordance with the provisions of Reference (1), an application to amend Provisional Operating License No. DPR-45 for the La Crosse Boiling Water Reactor is hereby filed with three (3) signed original applications, together with thirty-seven (37) copies.

The license change requested would increase the allowed maximum average exposure of any fuel assembly not on the periphery of the core from 16,800 MWD/MTU to 17,200 MWD/MTU in Technical Specifications 4.2.4.2.5 and 5.2.17.5. The basis for this request is the demonstrated reliable performance of the redesigned Type III (Exxon) fuel as discussed in Reference 3 and below.

The performance of the LACBWR fuel during the current cycle (Cycle 7) continues to be extremely good with off-gas activity and primary coolant gross  $\beta/\gamma$ ,  $\alpha$ , I-131 and Dose Equivalent I-131 activities all less than or approximately equal to those exhibited at the end of Cycle 6. Continuous plots of these parameters for Cycle 7 and Cycle 6 along with the reactor power histogram, core average exposure and lead inner assembly average exposure are presented in Enclosure 1 to this letter.

*Good  
5/11 w/check  
\$4,000*

Estimates of the total number of defective fuel rods in the LACBWR core at the end of previous fuel cycles have been presented in Table I of the DPC report LAC-TR-096 (Enclosure 1 of Reference 3), along with end of cycle values for various indicators of fuel condition. From this data we have developed the following correlation which relates the approximate number of defective fuel rods to the observed off-gas activity.

$$R_{\text{def}} = .096 [\text{OG}(P_{\text{F}}/P) - 358]$$

where  $R_{\text{def}}$  = the number of defective fuel rods in the LACBWR core

OG = the off-gas activity emission rate (Ci/day) measured at the 150 cu. ft. off-gas holdup tank effluent monitor

and  $P_{\text{F}}/P$  = rated thermal power/operating thermal power

This relation has been fitted to the data at the end of cycles 5 and 6, but also predicts the conditions observed at the end of Cycles 1A, 2 and 3 quite well. When it is applied to the present reactor conditions, it indicates that there are no defective fuel rods (or at the most one) in the LACBWR core at this time.

We do not believe that precipitous deterioration of the fuel condition will occur during operation to higher fuel exposures. Any deterioration that might occur during the limited additional operation allowed by the requested Technical Specification change is expected to develop slowly and would be apparent at an early stage from increases in the reactor coolant and off-gas radioactivity. The current Technical Specification limits for these activities provide assurance that LACBWR fuel assemblies will not exhibit unacceptable degradation during this limited additional operation.

We will continue to closely monitor the off-gas and reactor coolant activity levels in accordance with the provisions of the Technical Specifications, and if there is an activity increase of a magnitude commensurate with the onset of significant fuel failures, an estimate of the number of failures will be made and provided to the NRC. We also plan to examine all the fuel assemblies in the present LACBWR core at the next refueling outage, both visually and by dry sipping, to confirm the integrity of the assemblies or to identify the location of suspected leakers.

Mr. Dennis M. Crutchfield  
Operating Reactors Branch #5

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Please find attached, as Enclosure 2 to this letter, proposed revised pages for the LACBWR Technical Specifications. These proposed revisions include changes to the Bases for Sections 4.2.4.2 and 5.2.17.

This change has been determined to be a Class III Amendment as defined in Reference (5), since it is deemed not to involve a significant hazards consideration and a check for \$4,000.00 will be forwarded to cover the fee.

The information submitted in this application for license amendment has been reviewed by the LACBWR Committees as prescribed in Technical Specifications.

If there are any questions concerning this submittal, please contact us.

Very truly yours,

DAIRYLAND POWER COOPERATIVE



Frank Linder, General Manager

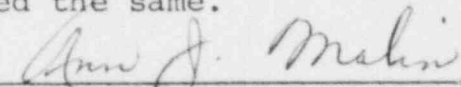
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- Enclosures: 1) Power Histogram and Reactor  
Coolant and Off-Gas Activities  
for LACBWR Cycle 7 and Cycle 6.
- 2) Proposed Revised Technical  
Specifications

cc: J. G. Keppler, Reg. Dir., NRC-DRO III  
NRC Resident Inspectors

STATE OF WISCONSIN)  
 )  
COUNTY OF LA CROSSE)

Personally came before me this 2<sup>nd</sup> day of March, 1982, the above named Frank Linder, to me known to be the person who executed the foregoing instrument and acknowledged the same.

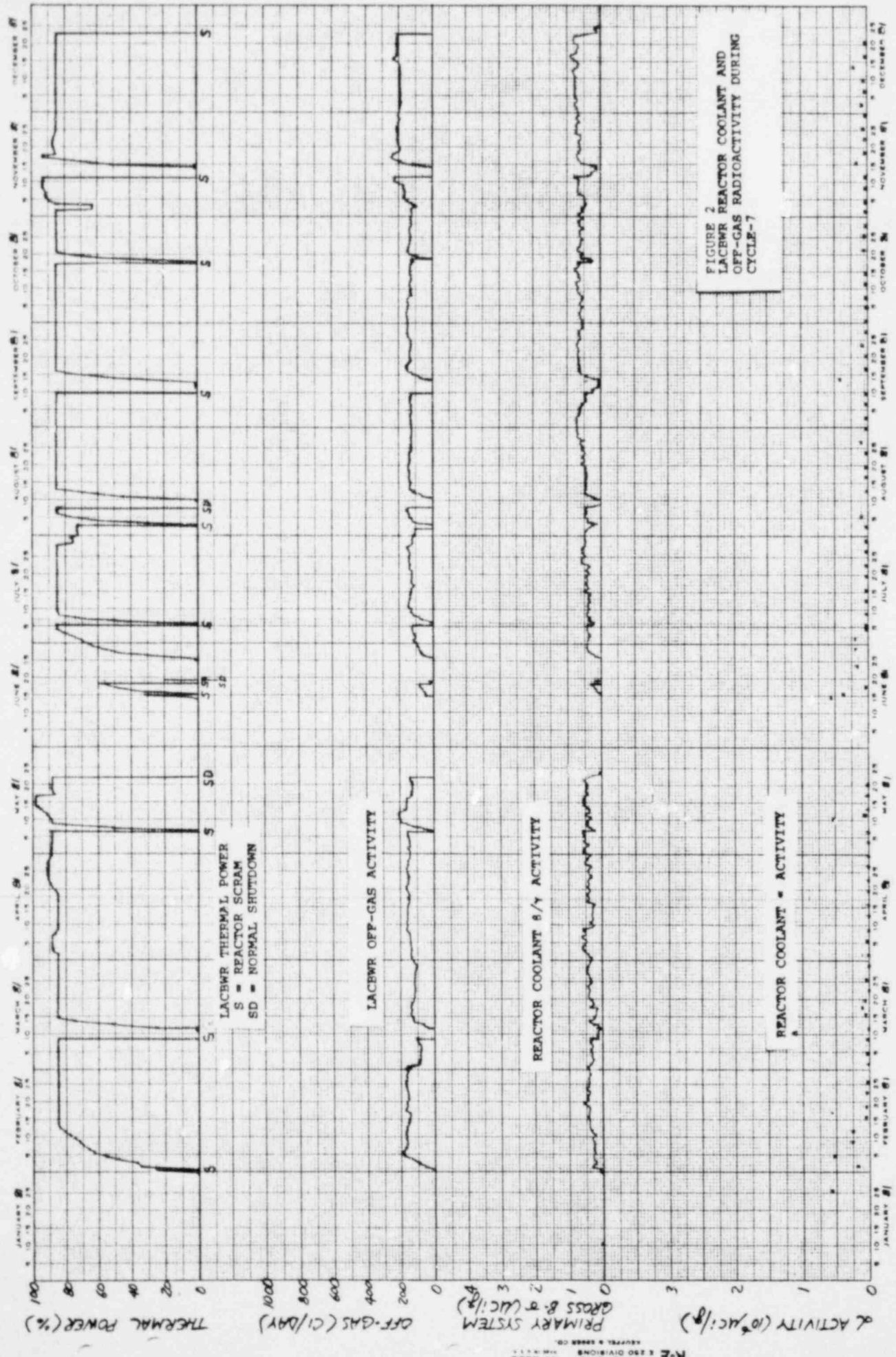


Notary Public, La Crosse County,  
Wisconsin.  
My Commission Expires 2/26/84.

Enclosure 1 to DPC Letter LAC-8109

LACBWR Power Histogram and Reactor Coolant and  
Off-Gas Activities for LACBWR Cycle 7 and Cycle 6.

Max. Inner Assy Avg Exp. 11.67 12.17 12.73 13.14 13.72 13.75 14.23 14.70 15.23 15.71 16.11  
 Core Avg. Exp (GWD/NTU) 6.97 7.45 8.00 8.41 8.98 9.00 9.47 9.93 10.46 10.95 11.35





Max. Assy Exp. 16.18 ~ 16.67 ~ 17.20  
 Core Avg Exp. 11.43 ~ 11.93 ~ 12.48  
 (GWD/MTU)

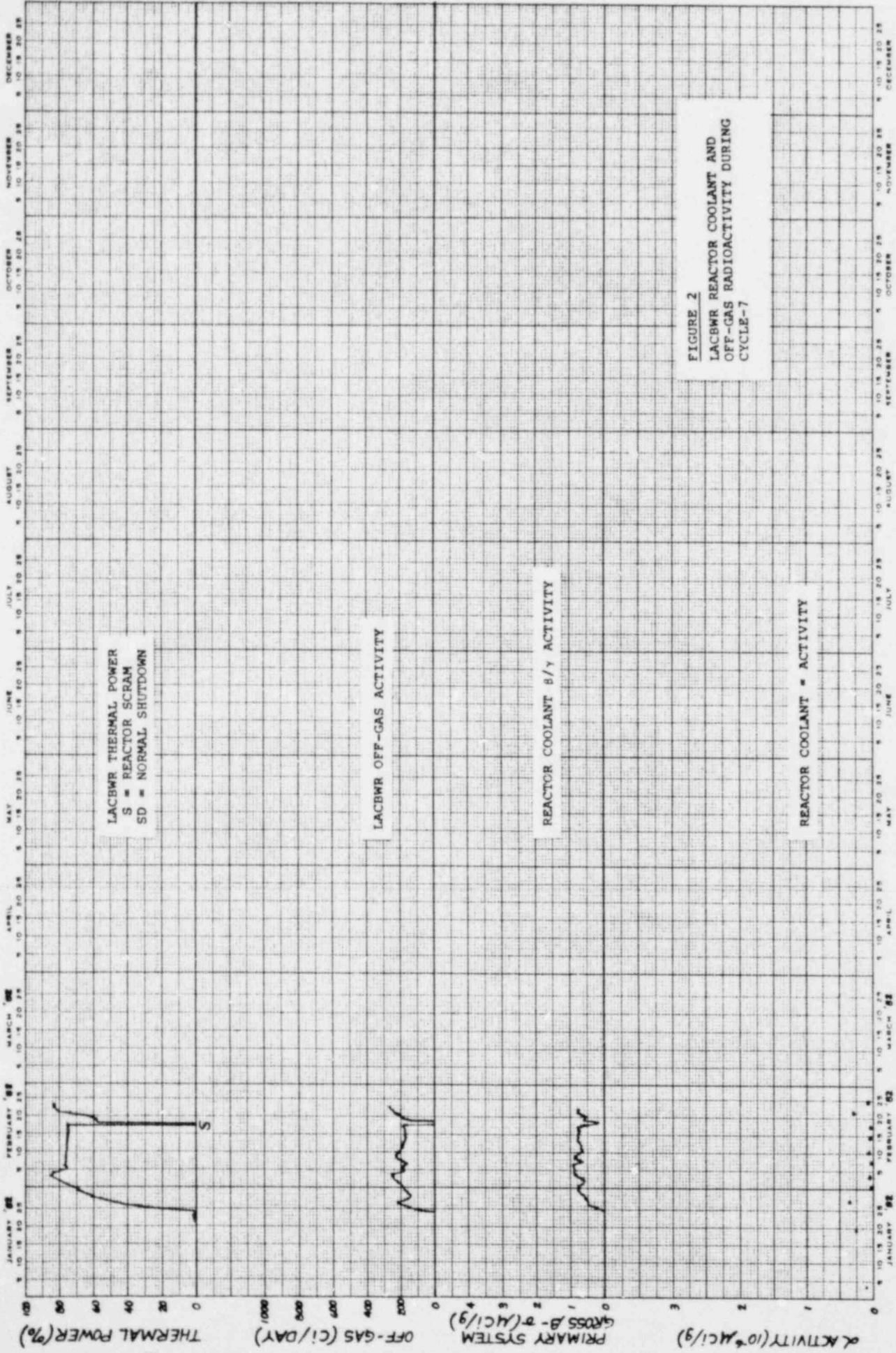


FIGURE 2  
 LACBWR REACTOR COOLANT AND  
 OFF-GAS RADIOACTIVITY DURING  
 CYCLE-7

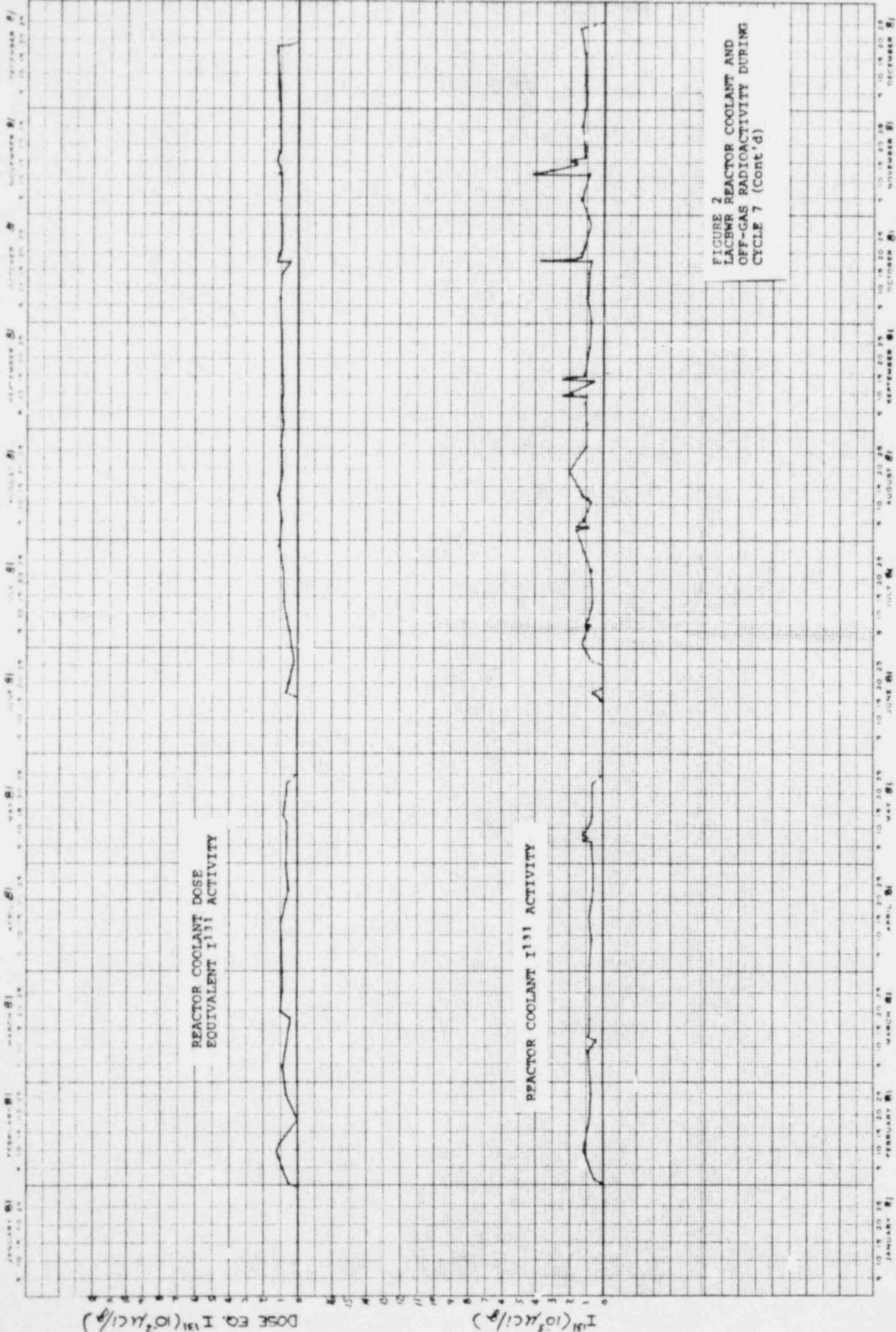


FIGURE 2  
 LACBWR REACTOR COOLANT AND  
 OFF-GAS RADIOACTIVITY DURING  
 CYCLE 7 (Cont'd)

DOSE EA. I<sup>131</sup> (10<sup>3</sup> μCi/g)

I<sup>131</sup> (10<sup>3</sup> μCi/g)

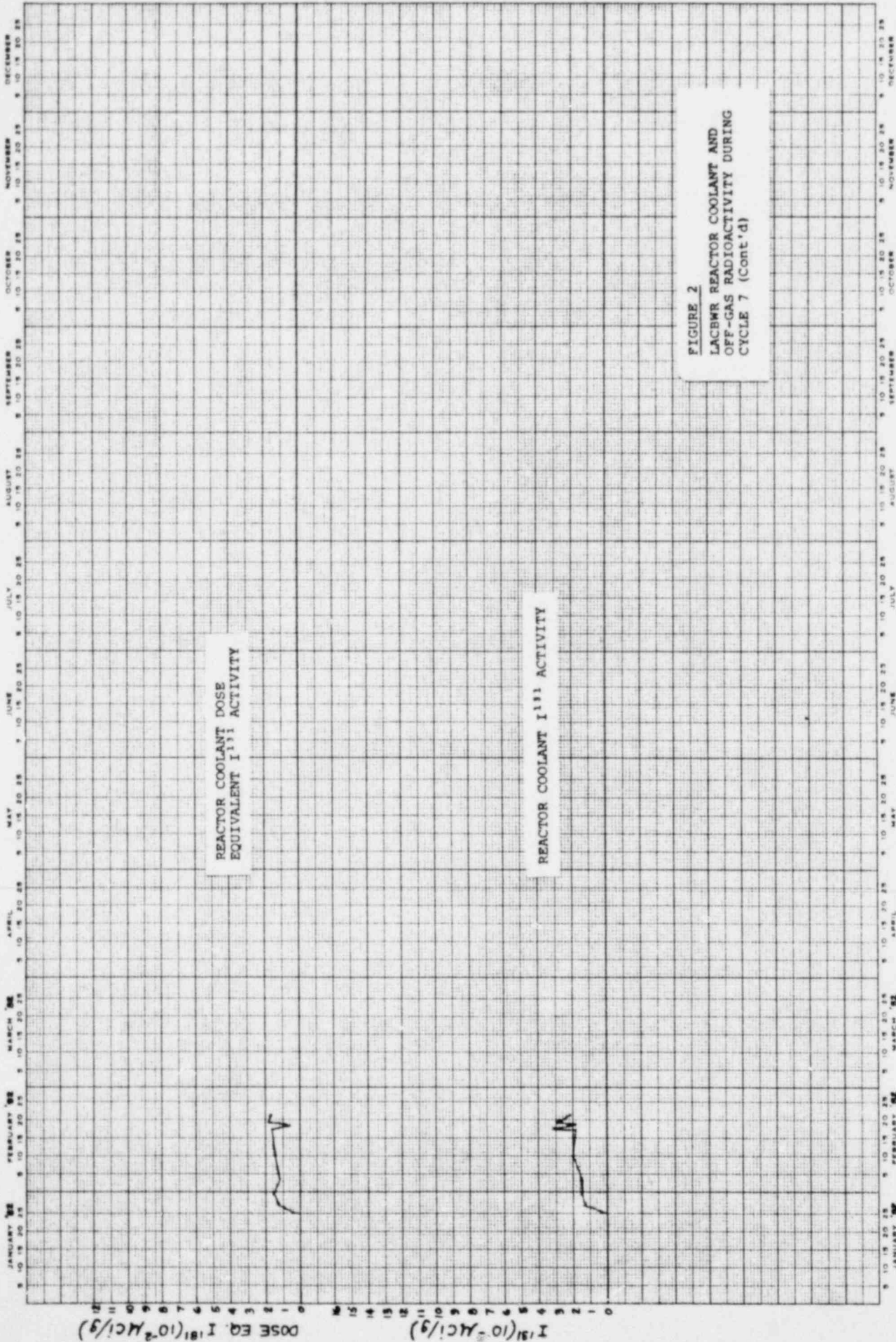


FIGURE 2  
 LACBWR REACTOR COOLANT AND  
 OFF-GAS RADIOACTIVITY DURING  
 CYCLE 7 (Cont'd)



Max Inner Assy Avg. Exp.  
Core Avg. Exp.  
(GWD/MTU)

6.04	7.18	7.56	8.03	8.59	9.20	9.86	10.39	11.05
4.65	5.67	6.00	6.39	6.87	7.38	7.92	8.36	8.89

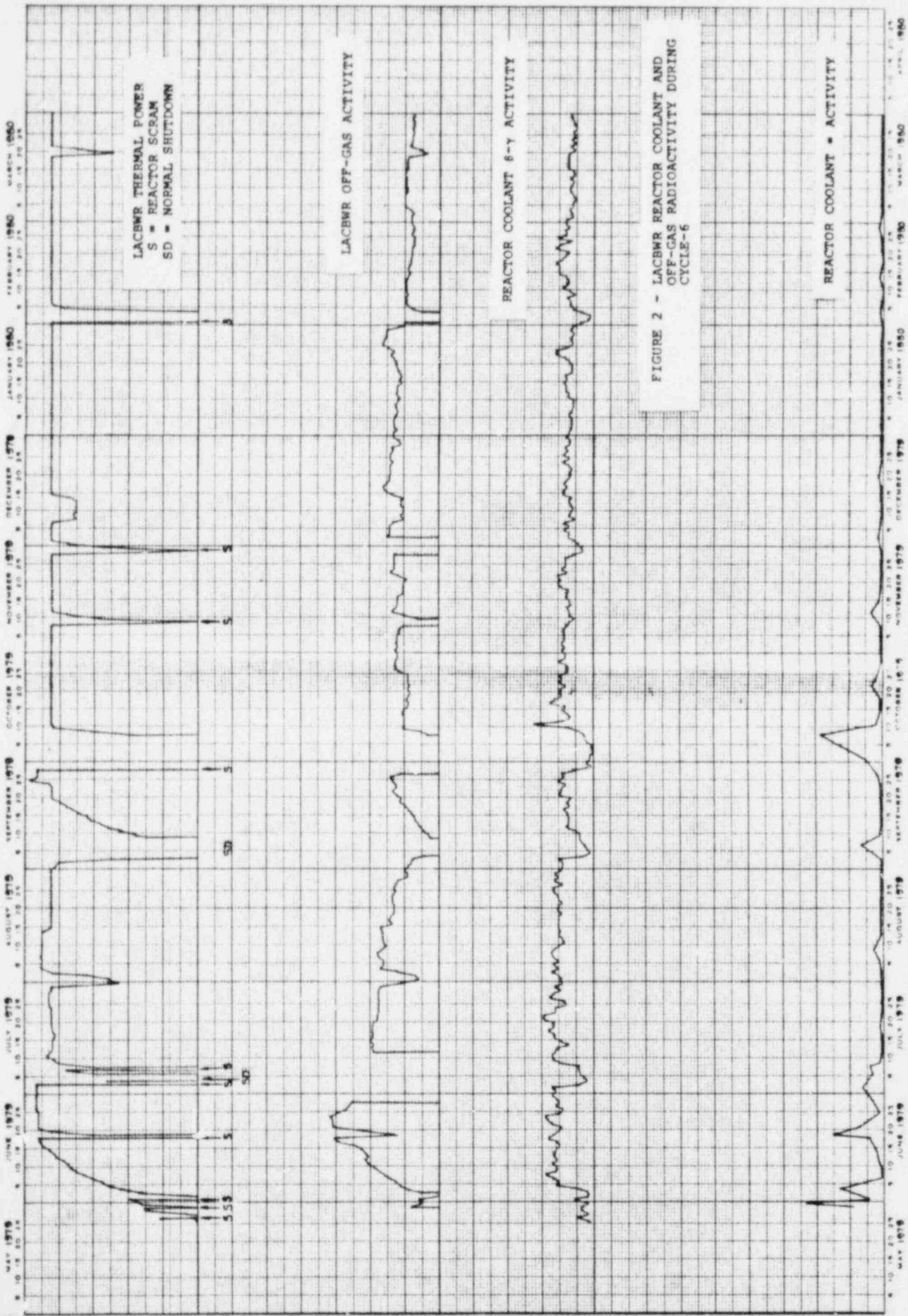
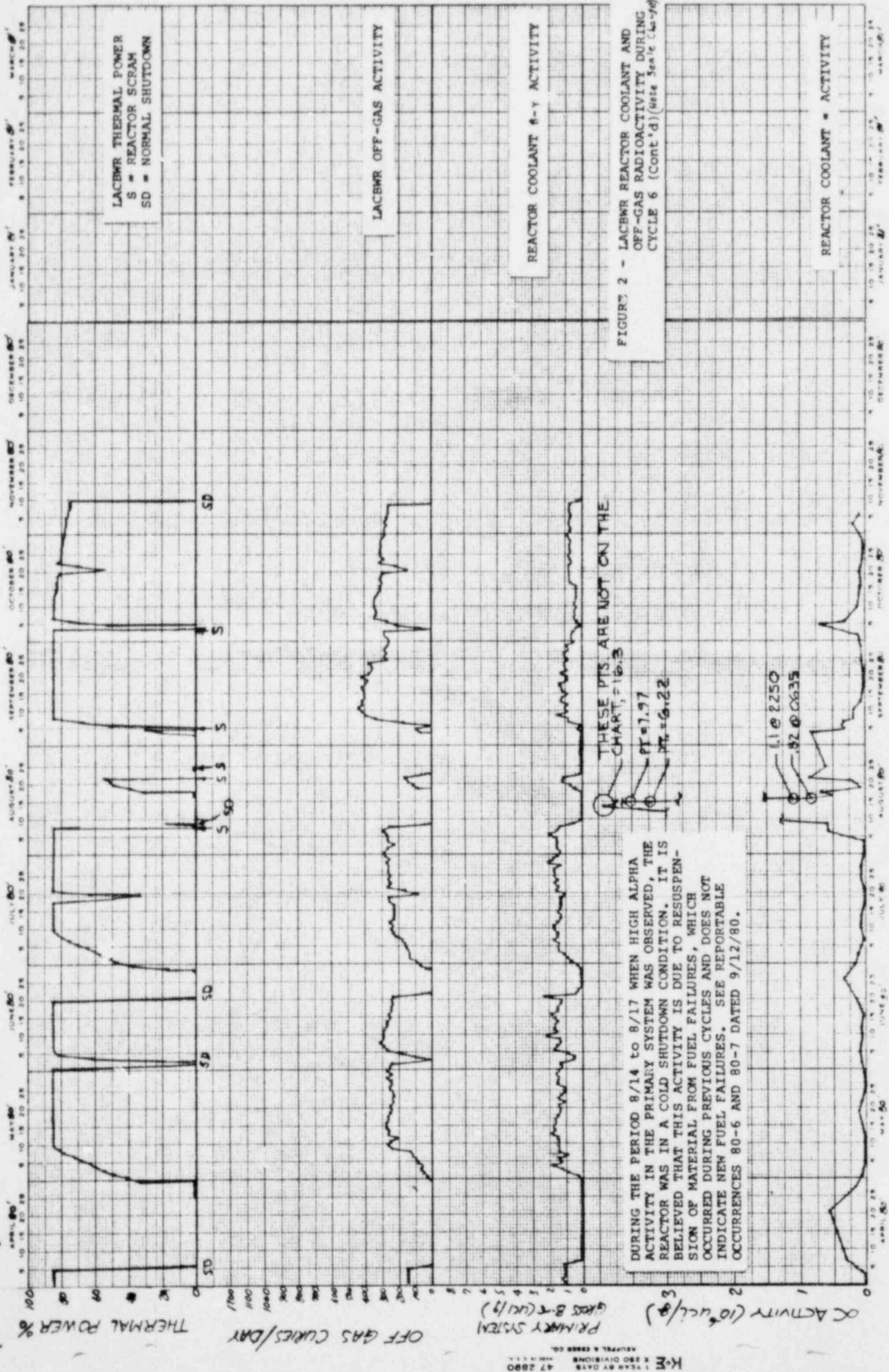


FIGURE 2 - LACBWR REACTOR COOLANT AND OFF-GAS RADIOACTIVITY DURING CYCLE-6

Max. Inner Assy 11.17  
 Core Avg. Exp. 8.99  
 (GWD/MTU)

APRIL '80	MAY '80	JUNE '80	JULY '80	AUGUST '80	SEPTEMBER '80	OCTOBER '80	NOVEMBER '80	DECEMBER '80	JANUARY '81	FEBRUARY '81	MARCH '81
11.17	11.79	12.22	12.83	13.04	13.56	14.16	14.33				
8.99	9.49	9.82	10.32	10.49	10.91	11.40	11.57				



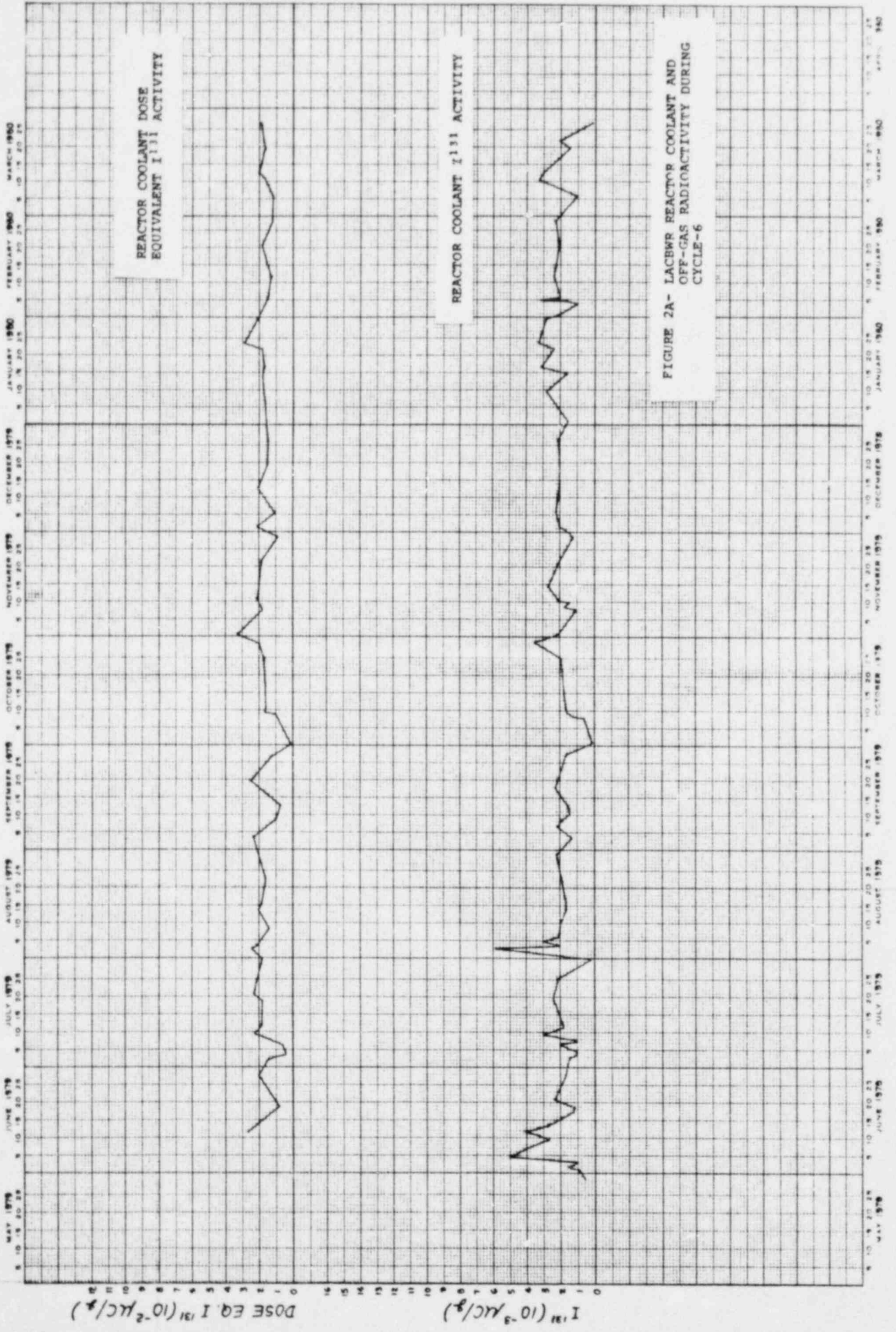


FIGURE 2A- LACBWR REACTOR COOLANT AND OFF-GAS RADIOACTIVITY DURING CYCLE-6



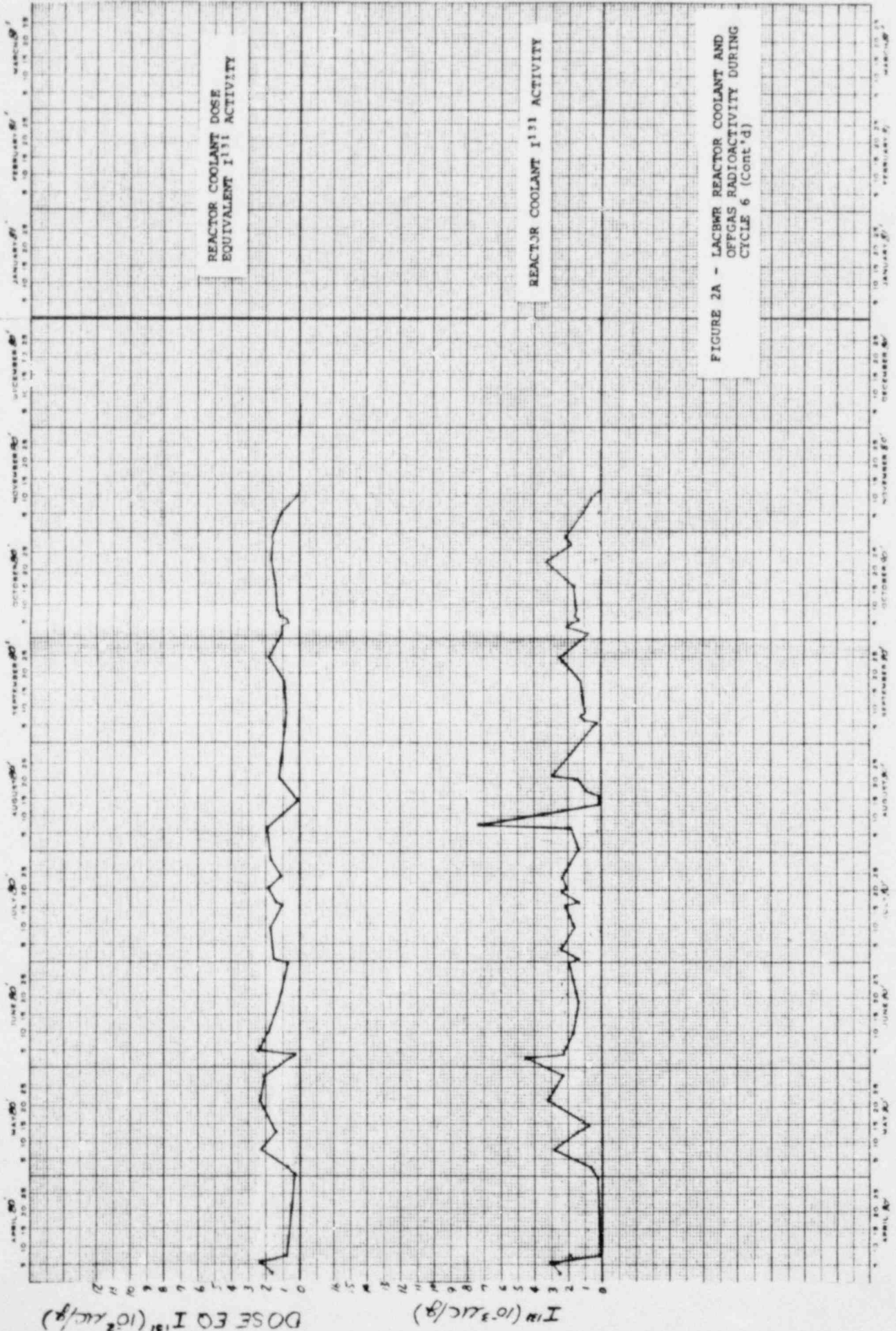


FIGURE 2A - LACBWR REACTOR COOLANT AND OFFGAS RADIOACTIVITY DURING CYCLE 6 (Cont'd)