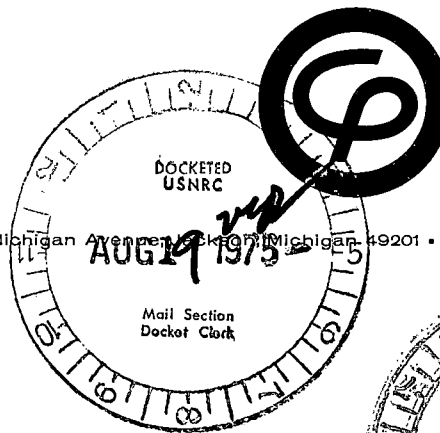


**Consumers  
Power  
Company**

General Offices: 212 West Michigan Avenue, Detroit, Michigan 48201 • Area Code 517 788-0550

August 18, 1975



Division of Reactor Licensing  
US Nuclear Regulatory Commission  
Washington, DC 20555

DOCKET 50-255, LICENSE DPR-20  
PALISADES PLANT, FLUSHING REPORTS

Attached are Steam Generator Flushing Reports No 7 and No 8 for the Palisades Plant. These reports cover the period from June 1, 1975 through July 31, 1975.

*David A. Bixel*

David A. Bixel  
Assistant Nuclear Licensing Administrator

CC: JGKeppler, USNRC  
File

PALISADES PLANT  
Steam Generator Flushing Report No 7

This report covers the period from June 1, 1975 through June 30, 1975. In compliance with Appendix C to the Provisional Operating License DPR-20 as revised March 28, 1975, graphs are attached showing steam generator:

1. Phosphate and Sulfate Concentration
2. Conductivity ( $\mu\text{mho/cm}$ )
3. pH
4. Weight of Phosphate and Sulfate Removed

At the beginning of this period, the plant was operating at approximately 80% power. Steam generator chemistry was within specifications. Steam generator phosphates varied between 0.2 and 0.3 ppm.

Late on June 20, 1975 the plant was removed from service for repairs. Cooldown commenced and the steam generators were put into a short-time layup with approximately 35 ppm of hydrazine. The feed-water heaters were drained and the condensate system was put into layup with approximately 60 ppm hydrazine. The return of dissolved chemicals due to the cooldown occurred as expected. Heat-up commenced on June 29, 1975 reestablishing blowdown for cleanup. The plant was put on the line in the morning of June 30, 1975, but just after noon the plant again shut down. The plant returned to operation at 2124 on June 30, 1975.

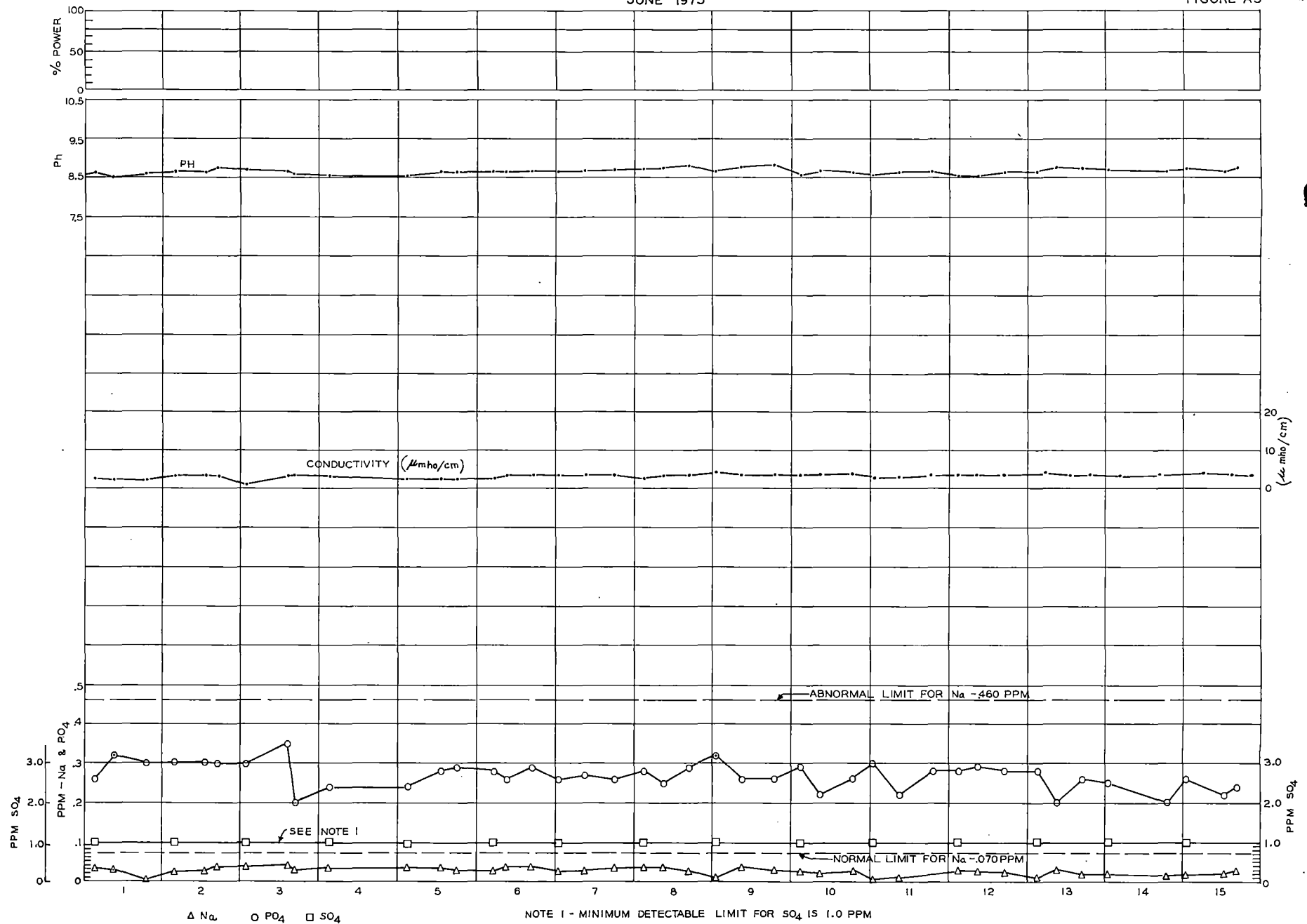
The upset caused by the shutdown is shown on the chemistry graphs. pH depressions that occurred just after the shutdown and just after start-up were due to misvalving of the chemical addition system.

The amount of phosphate removed from the steam generators increased during this period by approximately two pounds for "A" and "B" steam generators. The amount of sulphate removed also increased by approximately two pounds per steam generator.

At the end of the period, the plant was on the line at 20% power with 20 gpm blowdown per generator for cleanup.

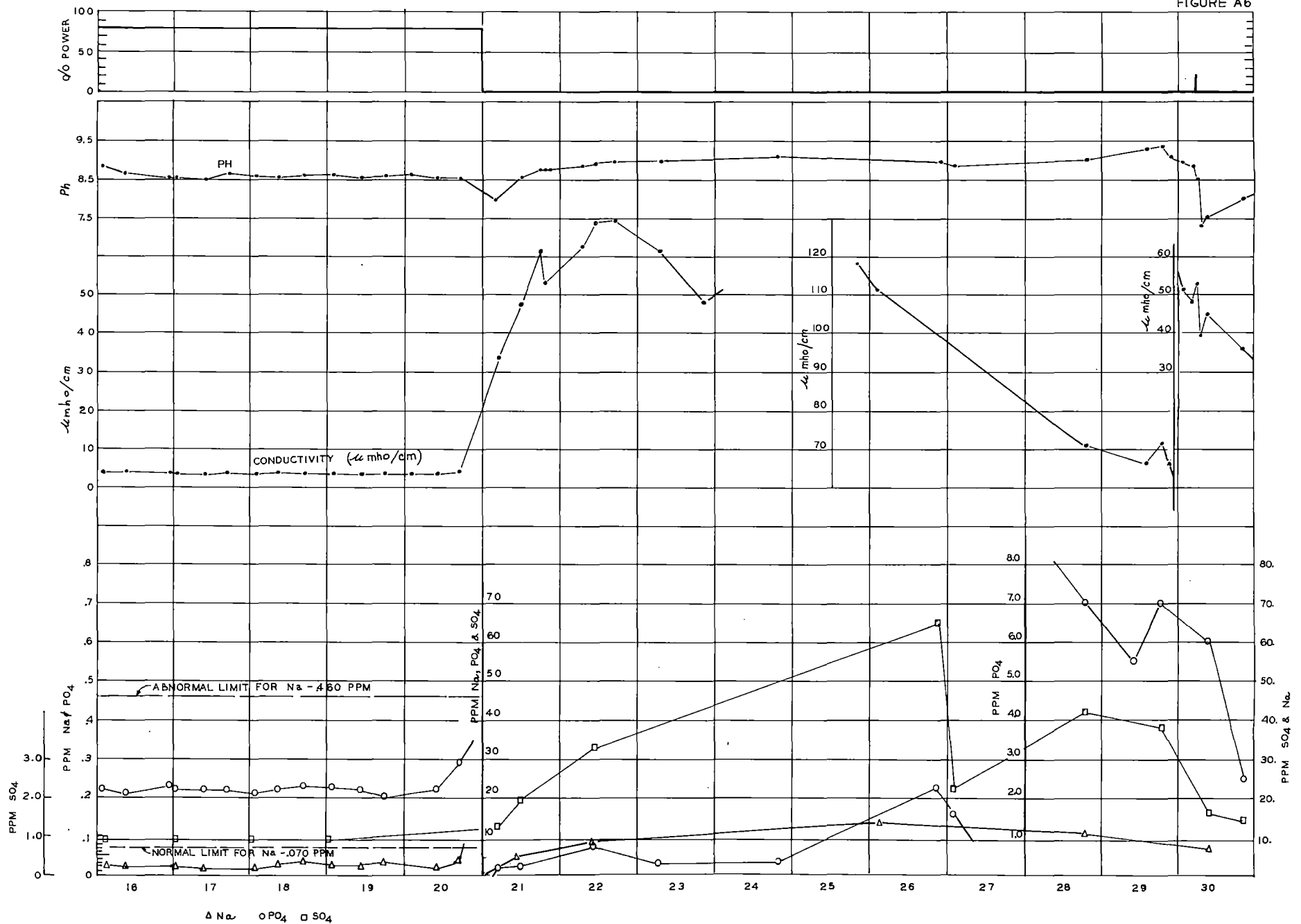
PALISADES STEAM GENERATOR A  
WATER CHEMISTRY DATA  
JUNE 1975

REV 1  
FIGURE A5



PALISADES STEAM GENERATOR A  
WATER CHEMISTRY DATA  
JUNE 1975

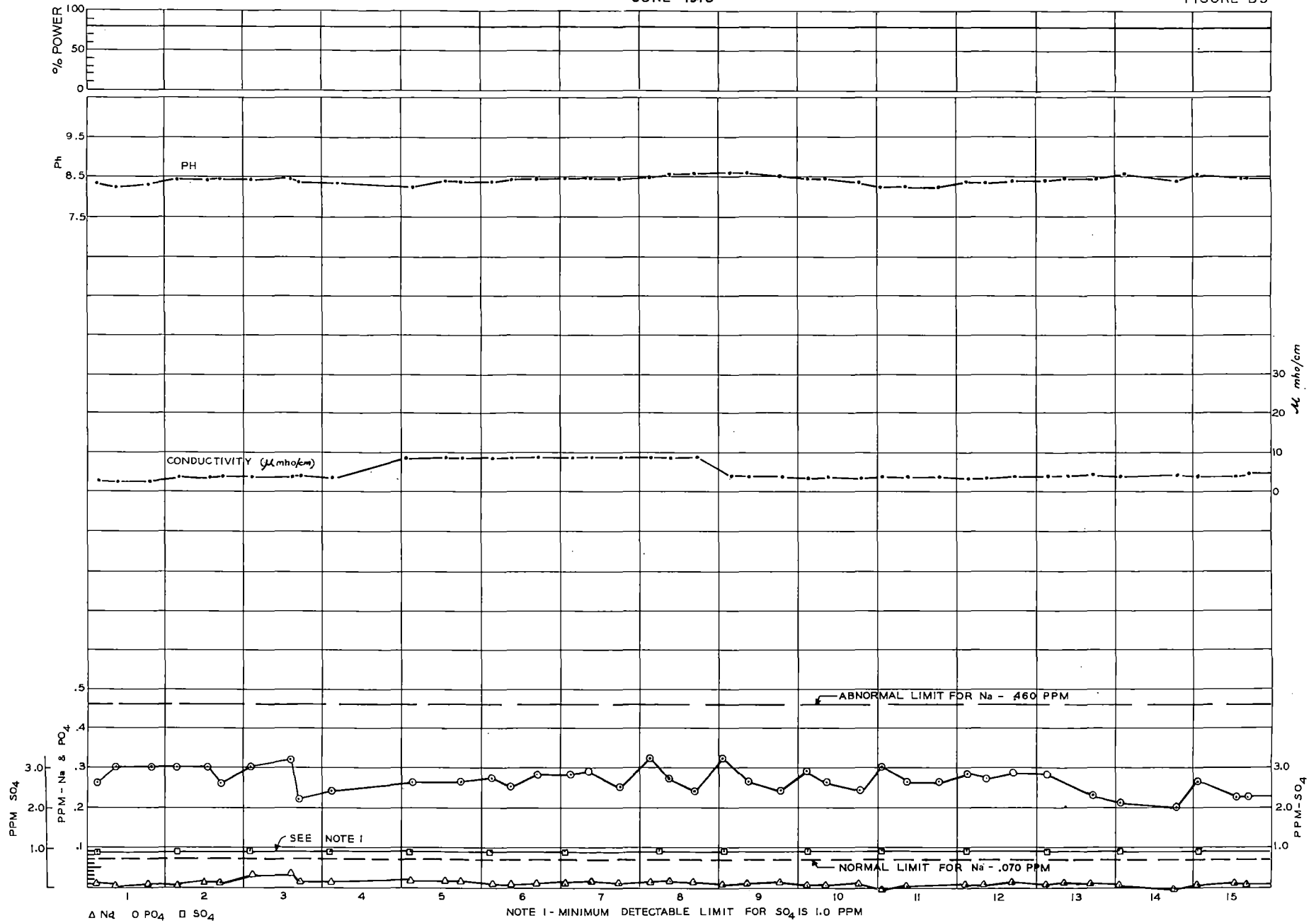
REV 1  
FIGURE A6



PALISADES STEAM GENERATOR B  
WATER CHEMISTRY DATA  
JUNE 1975

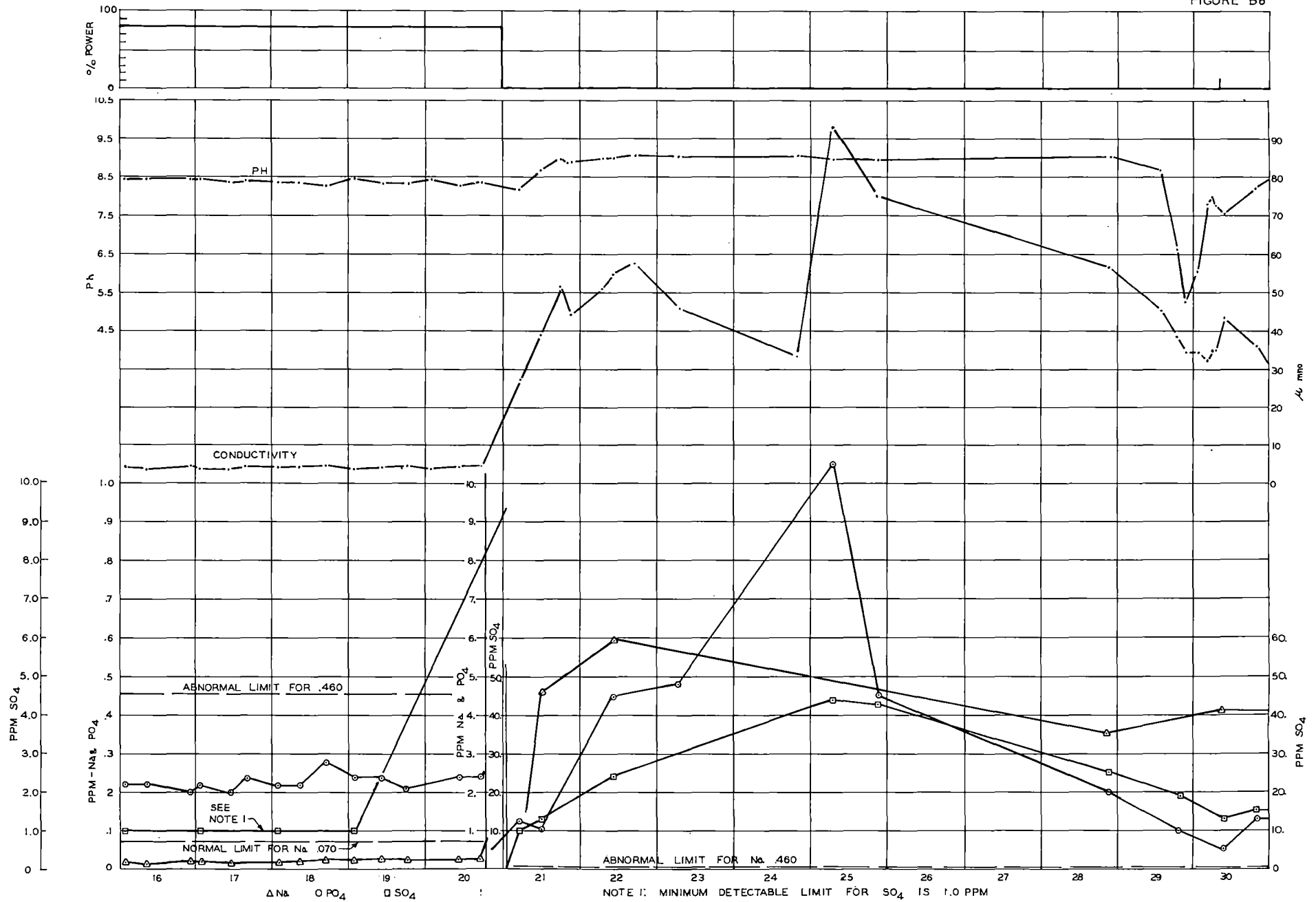
REV. I

FIGURE B5



PALISADES STEAM GENERATOR B  
WATER CHEMISTRY DATA  
JUNE 1975

REV 1  
FIGURE B6

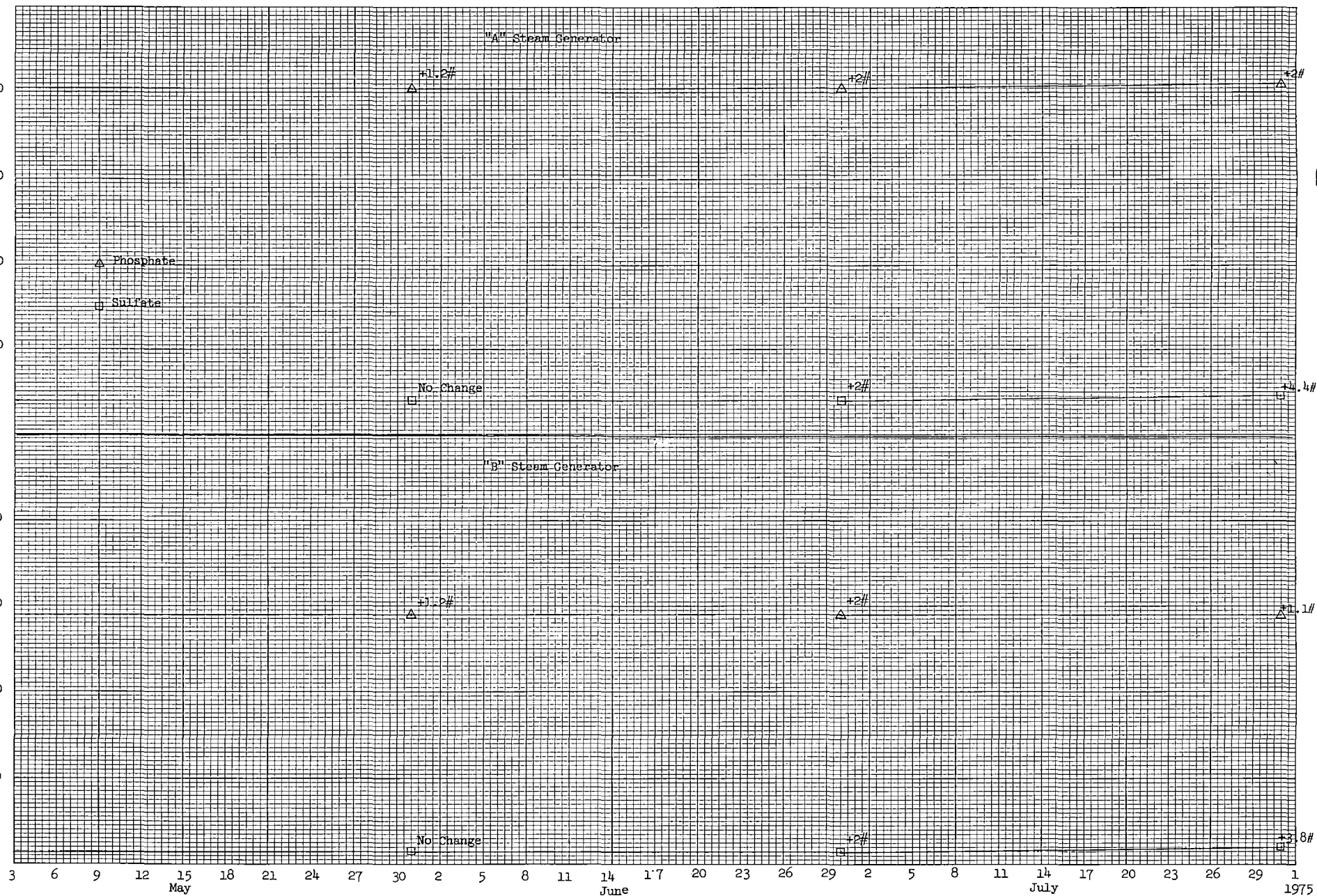


# Phosphate and Sulfate Removes from the Steam Generators

Lbs

47 1970

K&E 12 x 20 TO THE INCH • 10 x 15 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.



PALISADES PLANT  
Steam Generator Flushing Report No 8

This report covers the period from July 1, 1975 to July 31, 1975. In compliance with Appendix C to the Provisional Operating License DPR-20, as revised March 28, 1975, graphs are attached showing steam generator:

1. Phosphate and Sulphate Concentration
2. Conductivity ( $\mu\text{mho/cm}$ )
3. pH
4. Weight of Phosphate and Sulphate Removed

At the beginning of this period, the plant had just started up and was at approximately 21% power. The steam generator chemistry reflected the shutdown with relatively high concentrations of dissolved solids. Power ascension at approximately 10% per day started late on July 1, 1975. The chemistry graphs show the characteristic decrease in dissolved solids. Plant power was maintained at approximately 80% from July 8 to July 27, 1975. During this period, steam generator chemistry was quite stable with average values as follows:

	<u>"A"</u>	<u>"B"</u>
pH	8.4	8.4
Conductivity	3.5 $\mu\text{mho/cm}$	3.0 $\mu\text{mho/cm}$
$\text{PO}_4$	0.25 ppm	0.25 ppm
$\text{SO}_4$	<1.0 ppm	<1.0 ppm
Na	0.010 ppm	0.010 ppm

On July 27 the plant was shut down. The secondary systems remained hot and were not put into lay-up. There was an increase in dissolved solids. The maximum concentrations were as follows:

	<u>"A"</u>	<u>"A"</u>
$\text{SO}_4^=$	5.0 ppm	3.5 ppm
$\text{PO}_4^=$	3.8 ppm	1.95 ppm
$\text{Na}^+$	2.92 ppm	1.92 ppm

The plant was returned to service on July 29, and at the end of the period it was at approximately 80% power. Within 48 hours after synchronizing, all steam generator chemistry parameters were within "normal limits."

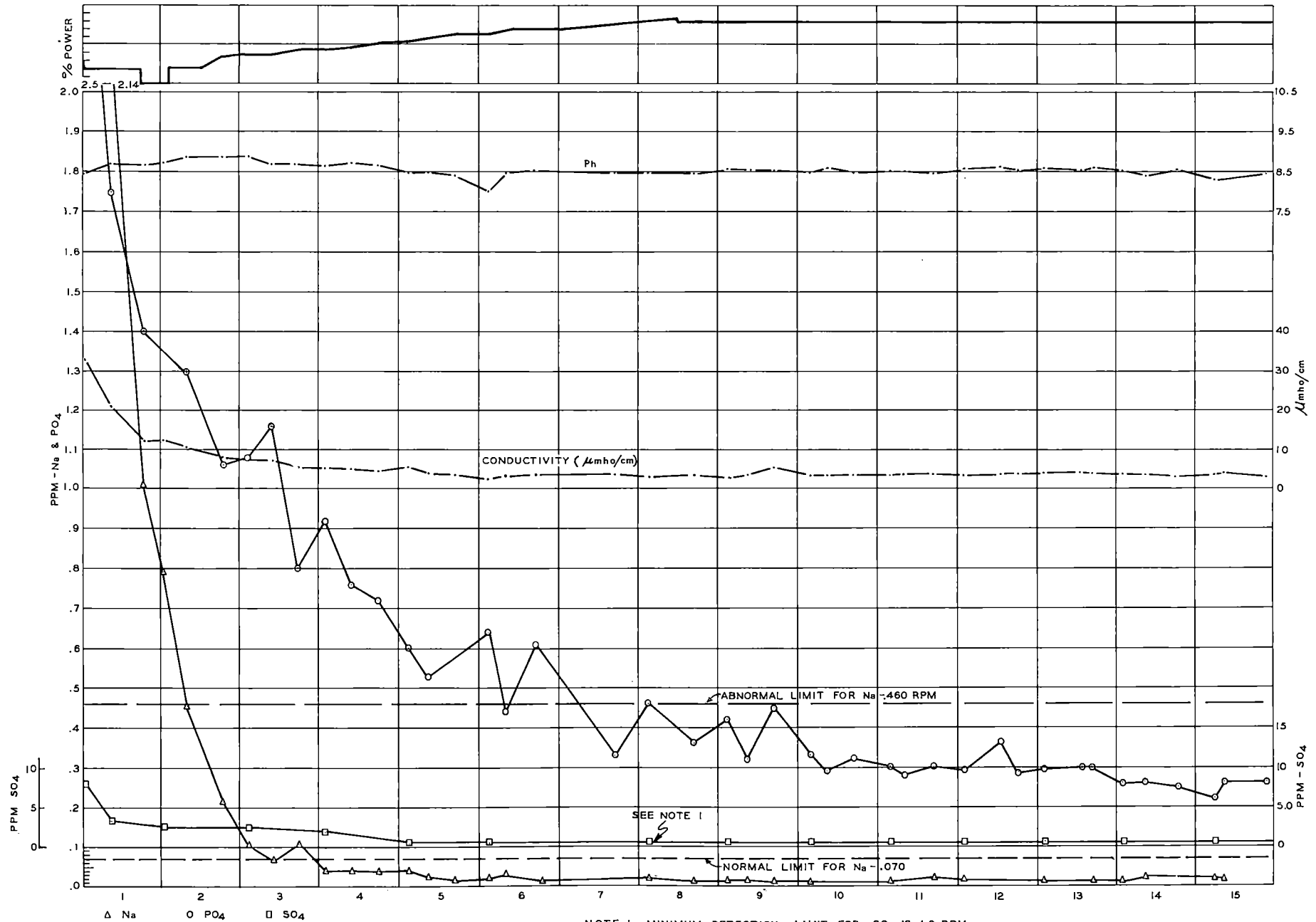
The amount of dissolved solids ( $\text{PO}_4^=$  and  $\text{SO}_4^=$ ) removed during this period was approximately:

	<u>"A"</u>	<u>"B"</u>
$\text{PO}_4$	2.0#	1.1#
$\text{SO}_4$	4.4#	3.8#



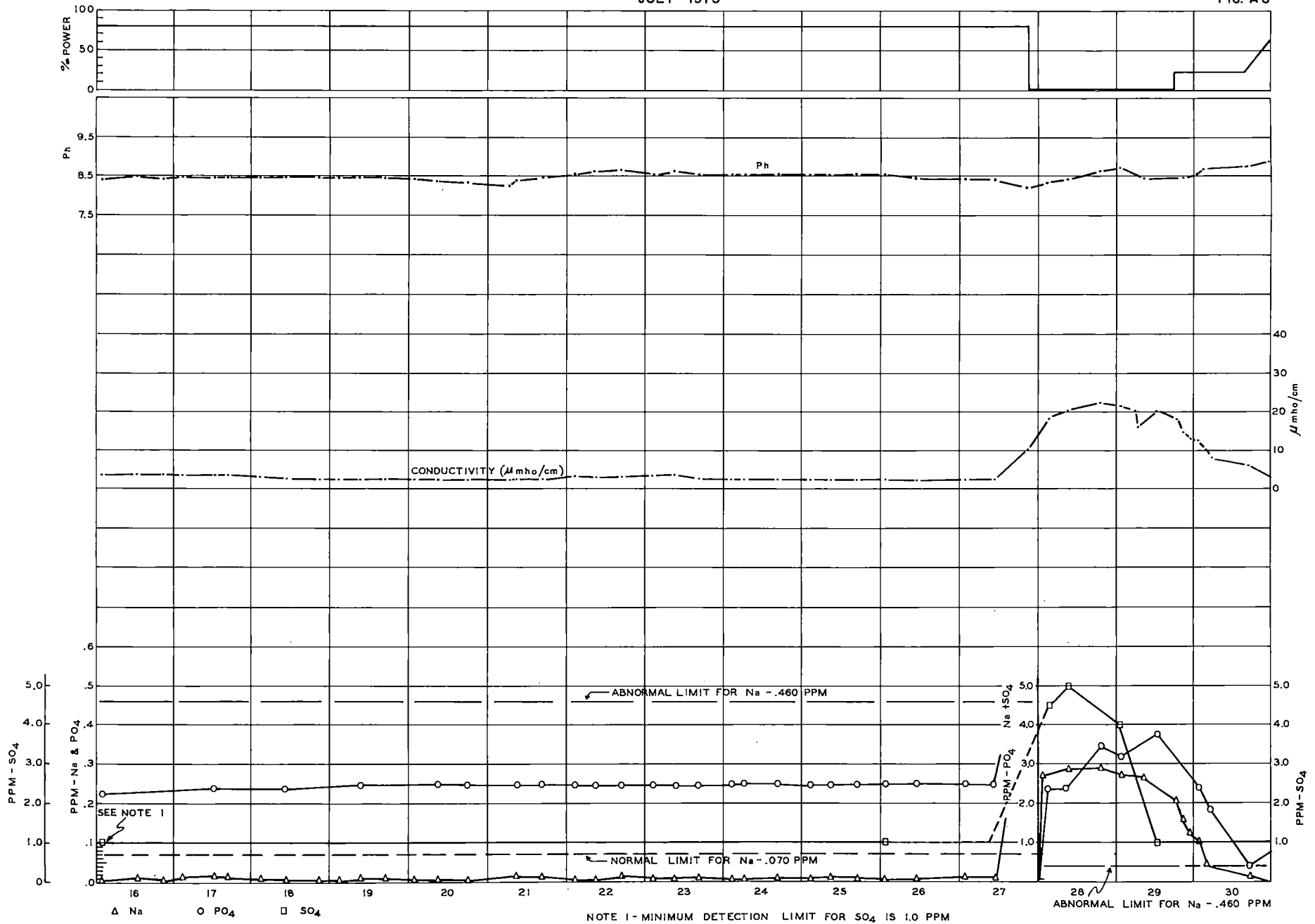
PALISADES STEAM GENERATOR A  
WATER CHEMISTRY DATA  
JULY 1975

REV. 1  
FIGURE A7



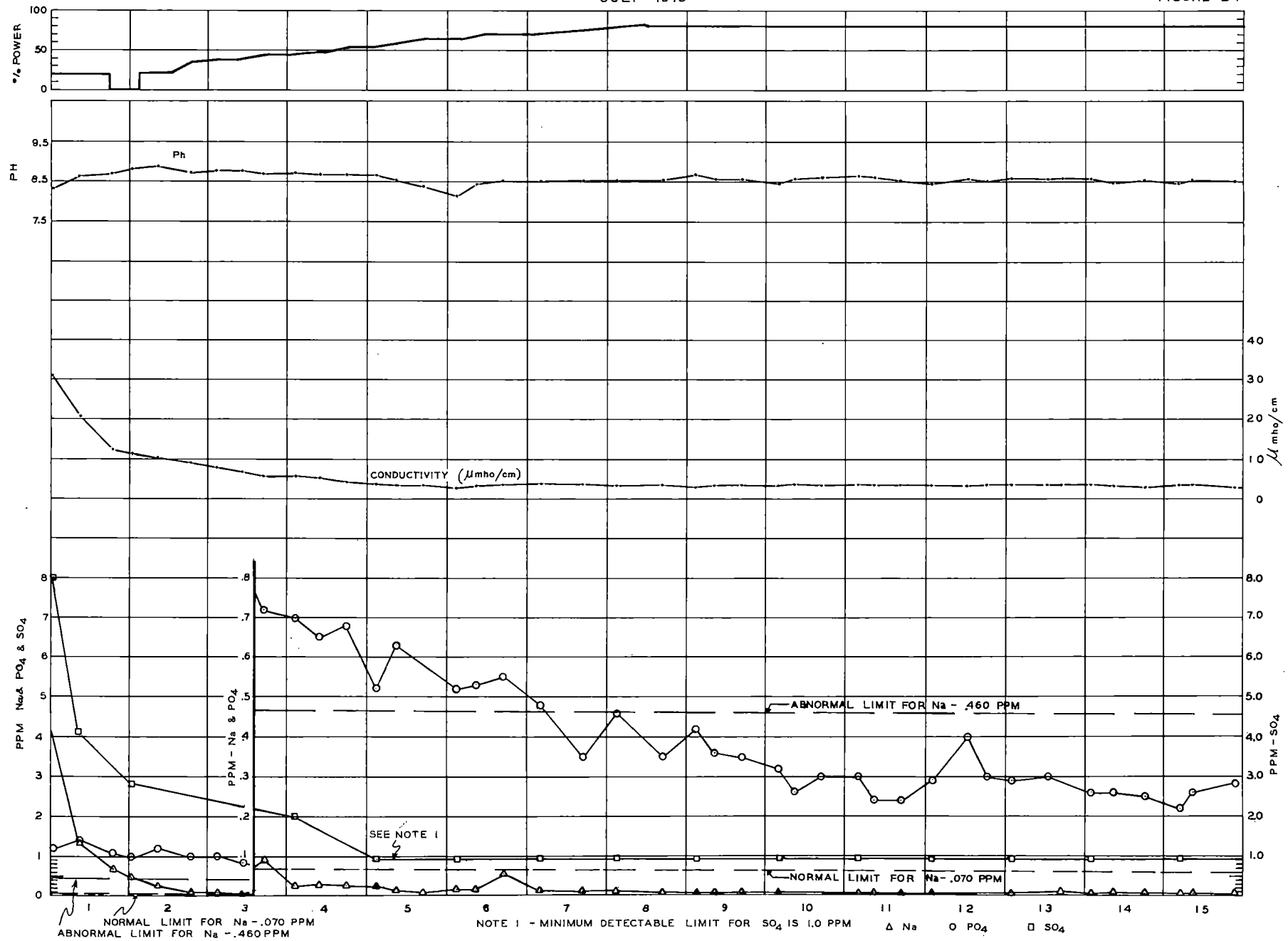
PALISADES STEAM GENERATOR A  
WATER CHEMISTRY DATA  
JULY 1975

REV. I  
FIG. A8



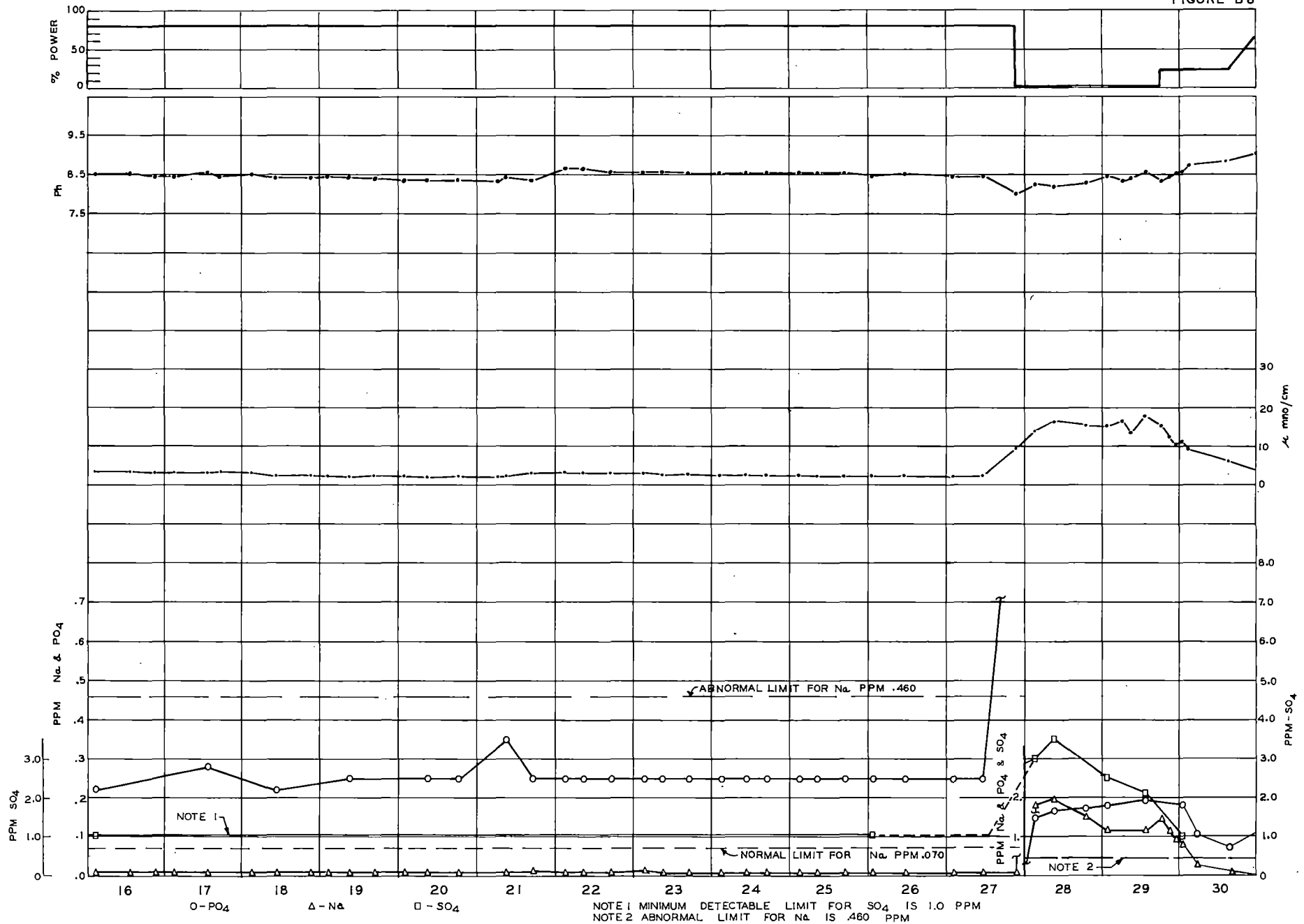
PALISADES STEAM GENERATOR B  
WATER CHEMISTRY DATA  
JULY 1975

REV I  
FIGURE B 7



PALISADES STEAM GENERATOR B  
WATER CHEMISTRY DATA  
JULY 1975

REV 1  
FIGURE B 8



# Phosphate and Sulfate Removes from the Steam Generators

Lbs

47 1970

K-E  
12 x 20 TO THE INCH • 10 x 15 INCHES  
KEUFFEL & ESSER CO. MADE IN U.S.A.

