

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

June 2, 1981



Director of Nuclear Reactor Regulation  
Attention: Ms. E. Adensam, Chief  
Licensing Branch No. 4  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Ms. Adensam:

In the Matter of the Application of ) Docket Nos. 50-327  
Tennessee Valley Authority ) 50-328

As required by the Sequoyah Nuclear Plant unit 1 operating license (DPR-77) item 2.C(22)D(3)(b) and the draft Sequoyah unit 2 operating license, we are enclosing 20 copies of a report to address the hydrogen environment items in the Sequoyah Nuclear Plant Safety Evaluation Report and the hydrogen control measures research program.

The enclosed report is a nonproprietary version. We will submit the proprietary pages under separate cover.

If you have any questions, please get in touch with D. L. Lambert at FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

A handwritten signature in cursive script, appearing to read "L. M. Mills".

L. M. Mills, Manager  
Nuclear Regulation and Safety

Sworn to and subscribed before me  
this 2nd day of June 1981

Bryant M. Lowery  
Notary Public

My Commission Expires 4/4/82

Enclosure (20)

8106110129

P

POOR ORIGINAL

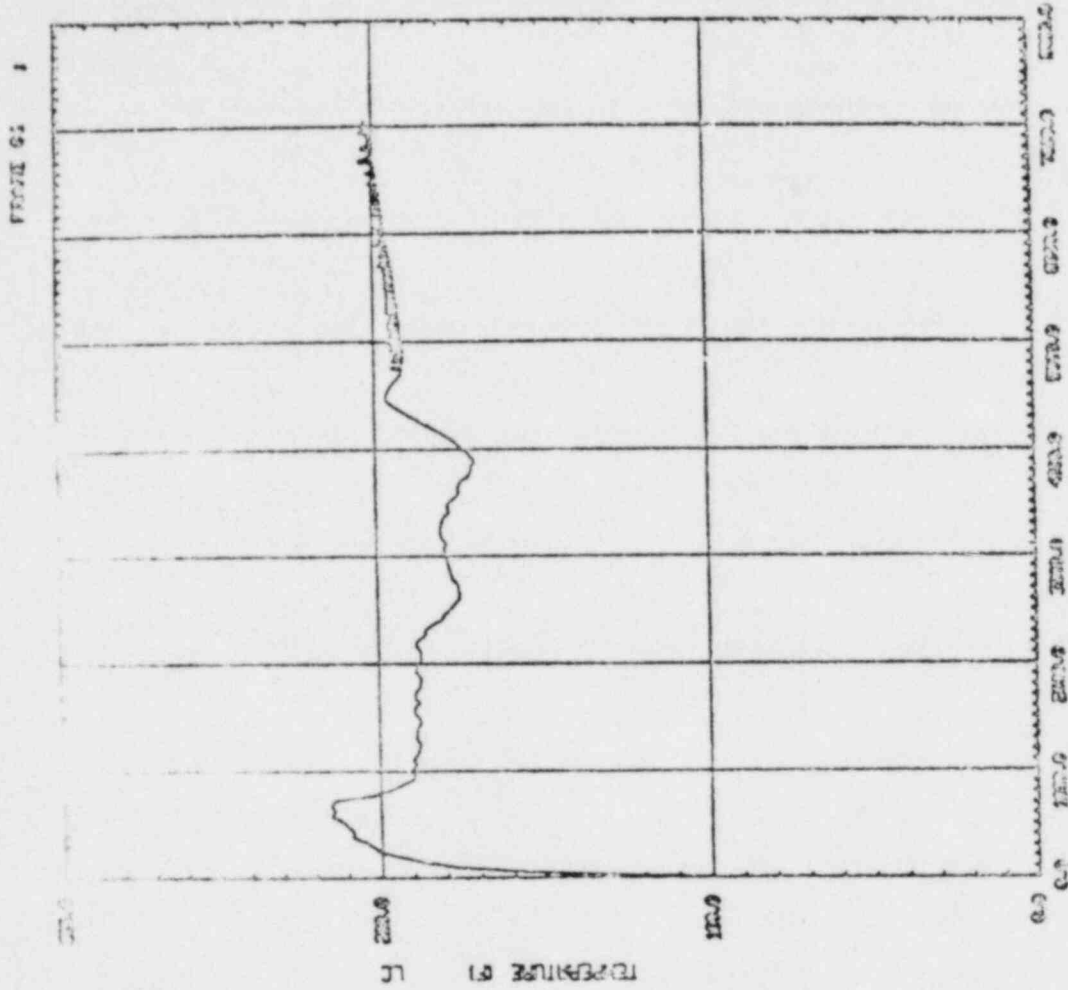
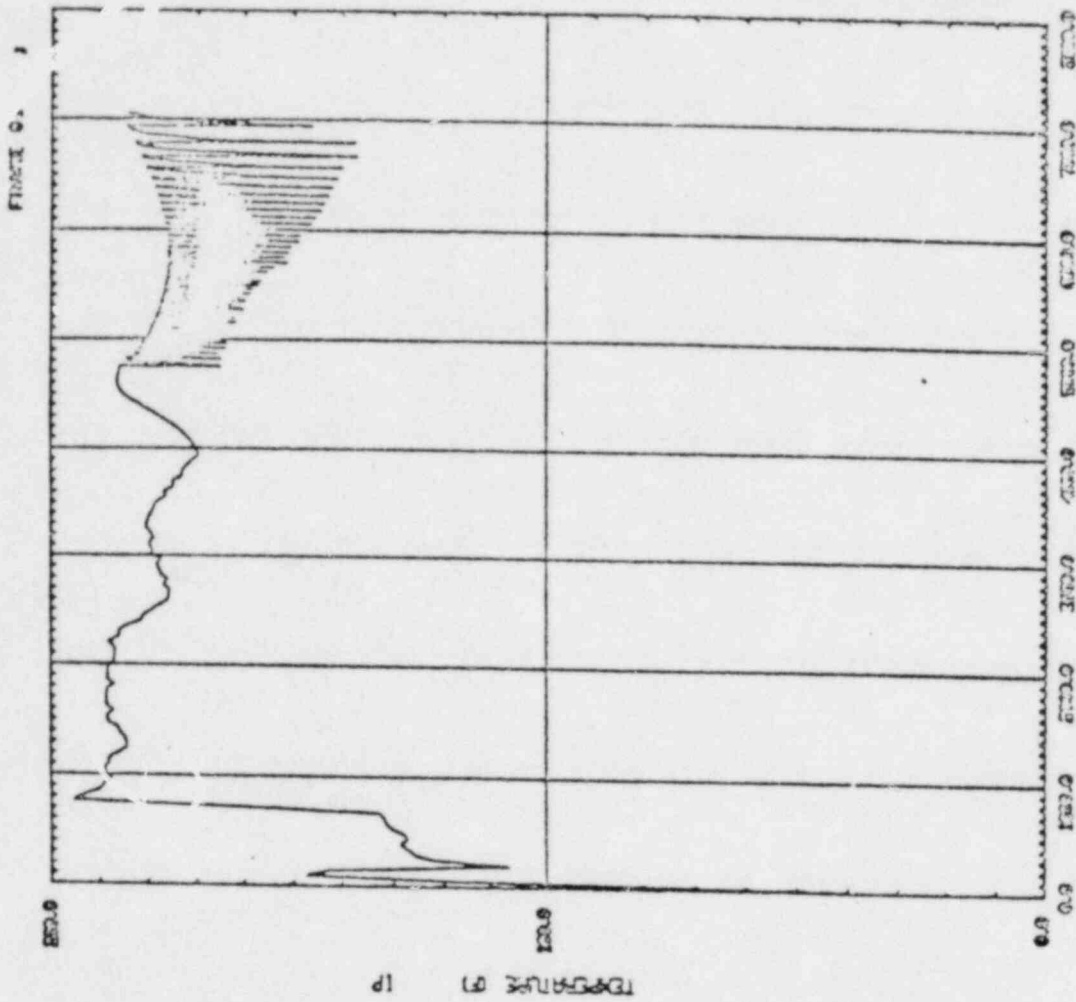


FIGURE 2.1-1  
TEMPERATURE OF REACTOR VS. TIME (SECONDS)

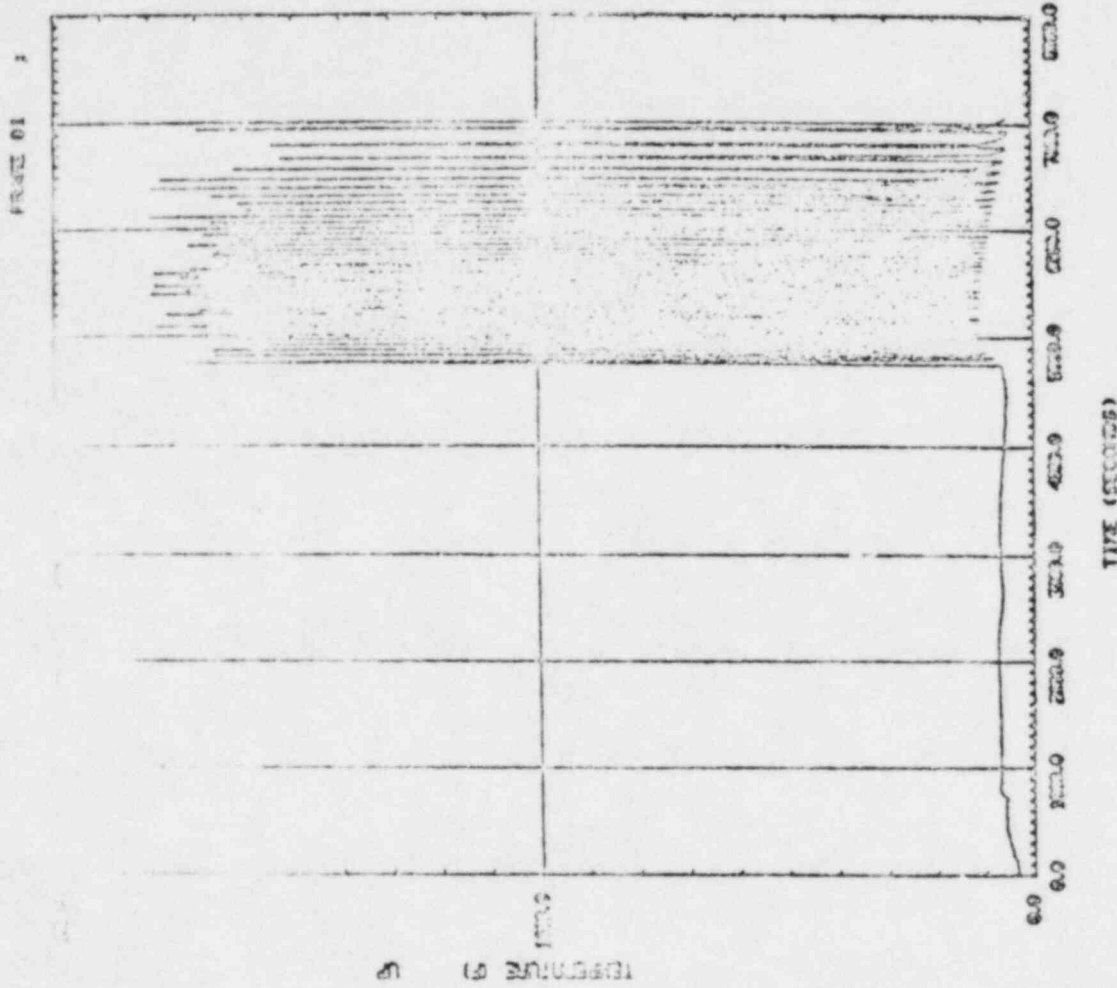
POOR ORIGINAL



THE (SECONDS)  
TAN SED WELL OCEAN DEPOSITED FROM DEPOSITED STAY WITH 10000 AT 10000

FIGURE 2.1-2

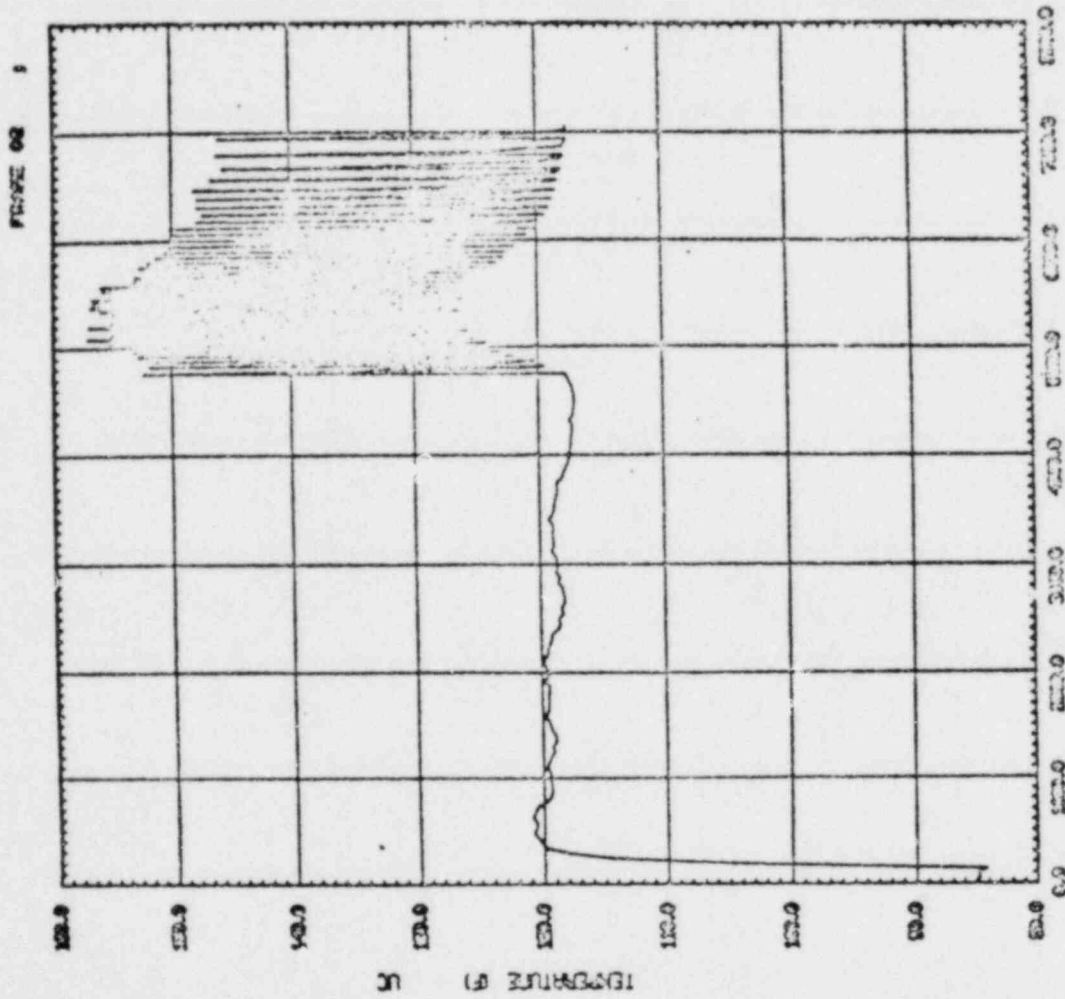
POOR ORIGINAL



THE SED WILL OPERATE CORRECTLY FOR 100% OF THE TIME

FIGURE 2.1-3

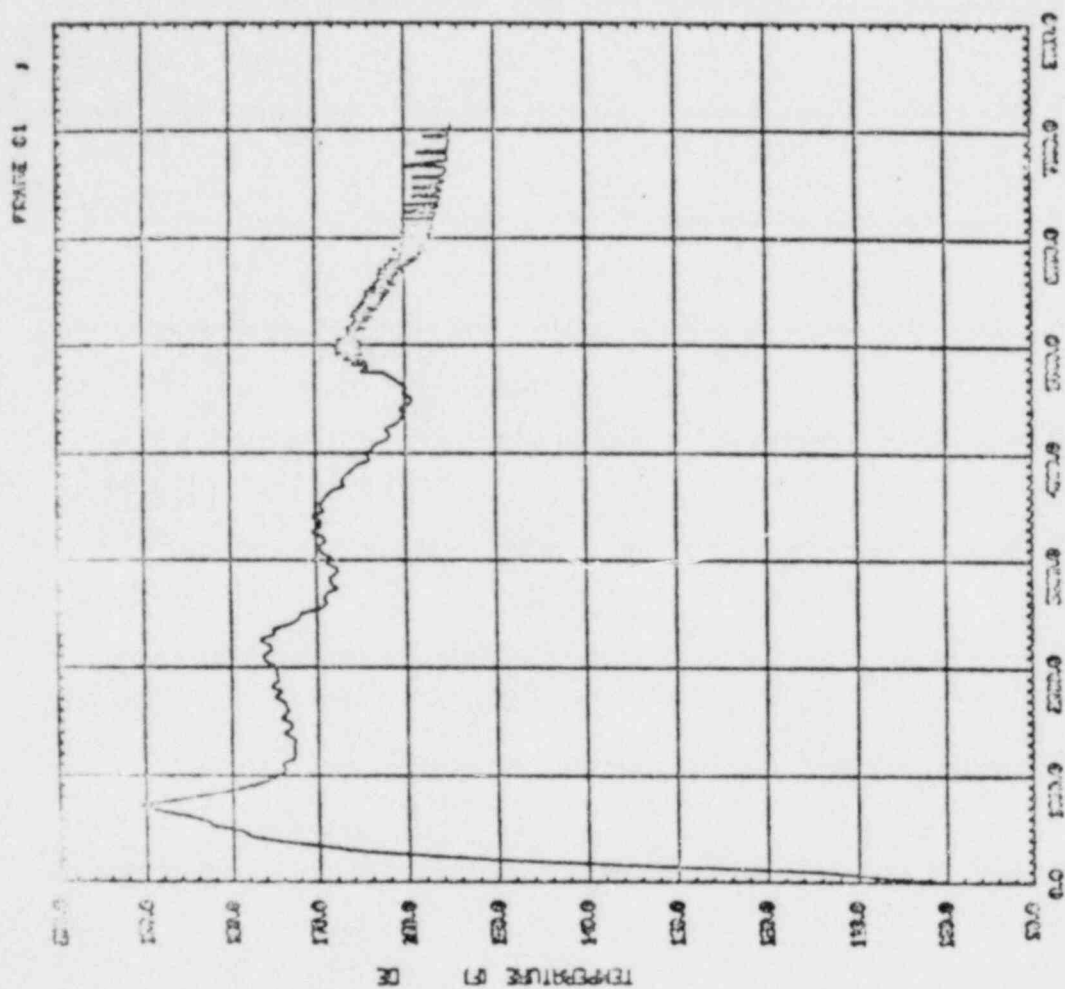
POOR ORIGINAL



THE (CROSS)  
 FOR 500 WILL OPEN STOPPER FOR DETECTOR SPRAY BUSH 10000 AT 12000

FIGURE 2.1-4

POOR ORIGINAL



TEMPERATURE (°F)

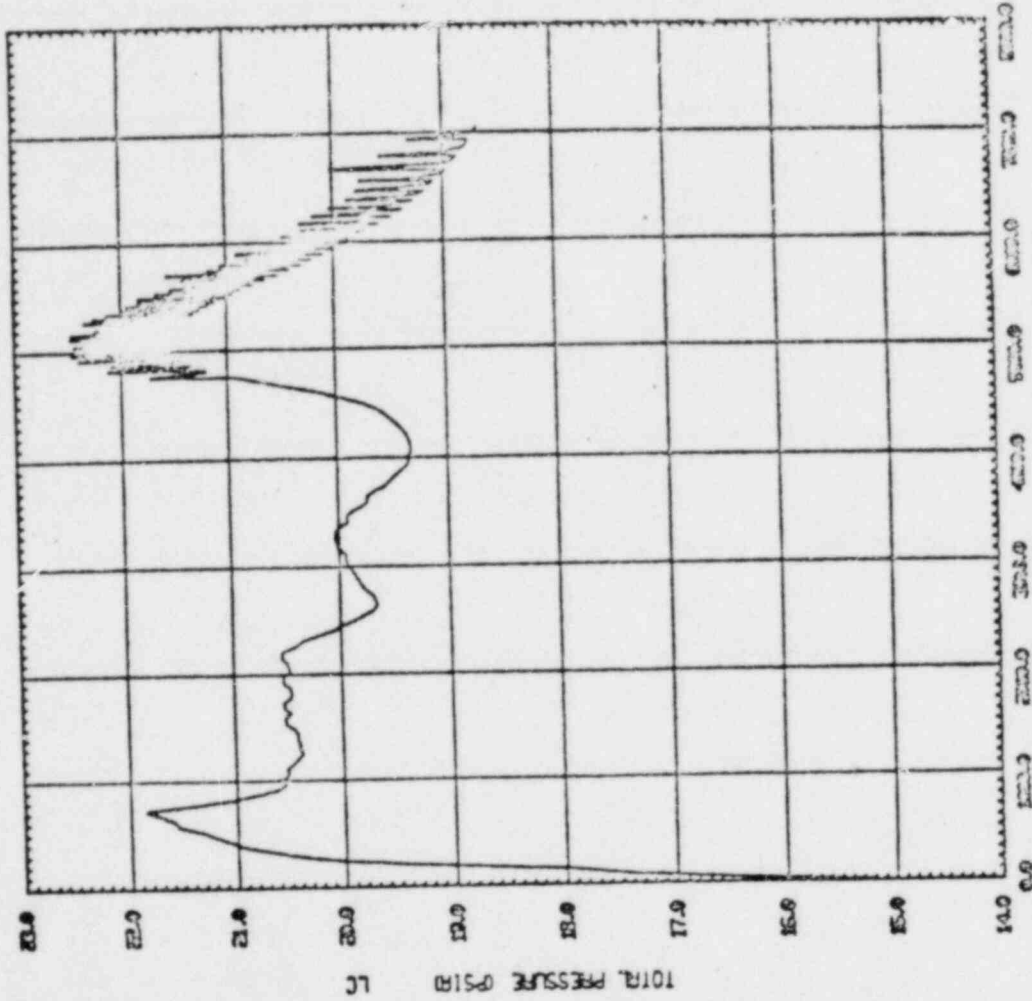
TIME (SECONDS)

TIN BED WELL CURED SECTION FOR BOTTOM STAY BURN TEST AT 1000

FIGURE 2.1-5

POOR ORIGINAL

FIGURE 2.1-6

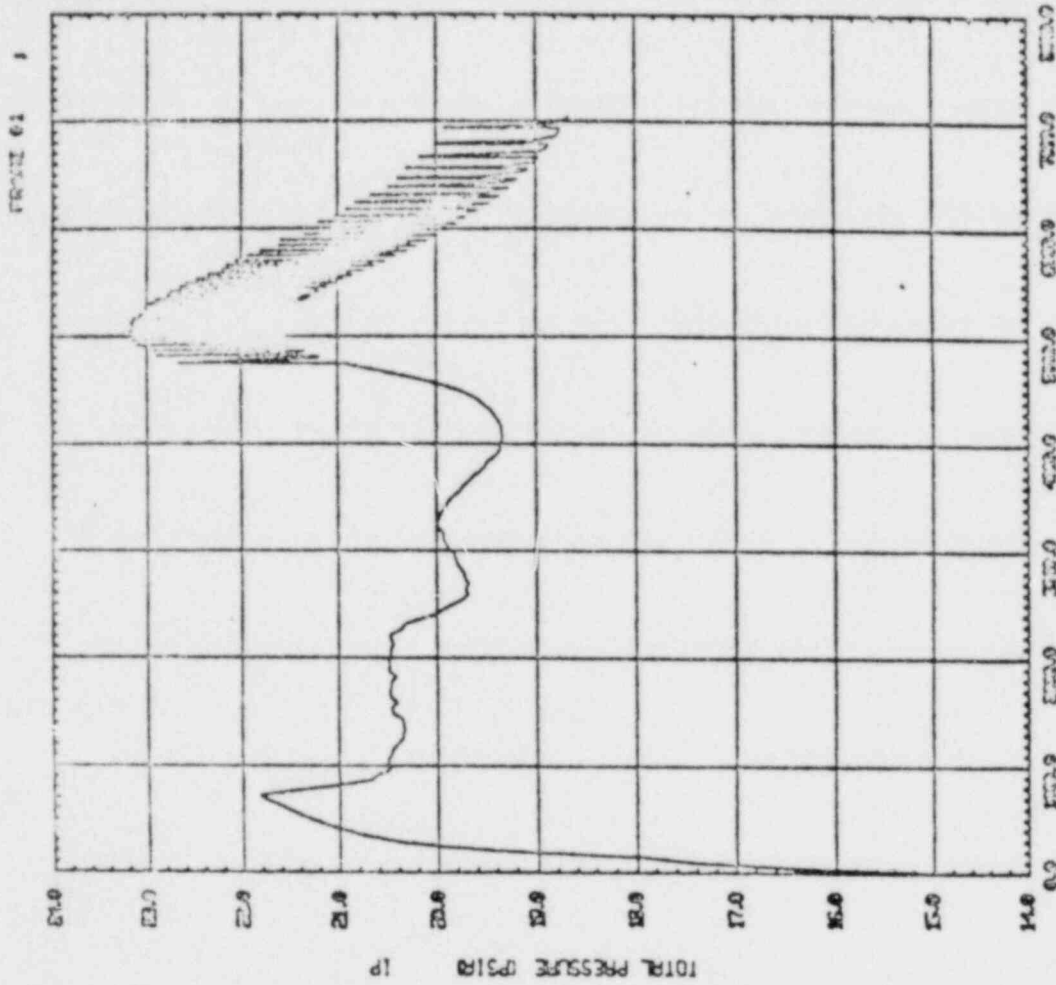


TIME (SECONDS)  
TWA SED WALL CASE1 2000007 FPM 0500007 FPM 100007 AT 10000  
FIGURE 2.1-6

READY-



POOR ORIGINAL



THIS SET WAS OBTAINED FROM EXISTING SURVEY DATA AT 1000  
FIGURE 2.1-7



**WZADY-**

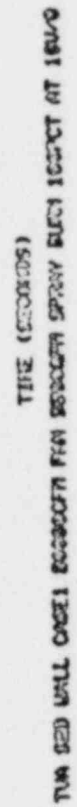
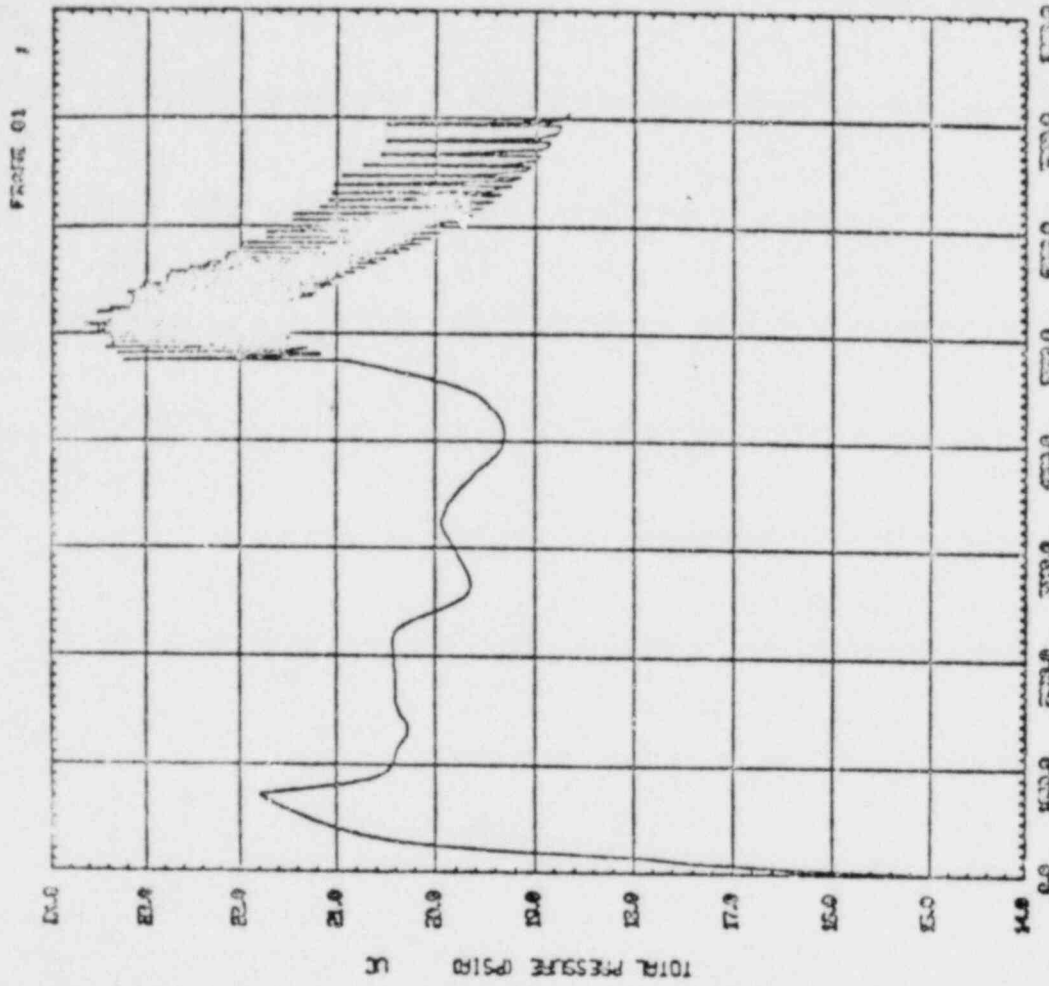


FIGURE 2.1-8

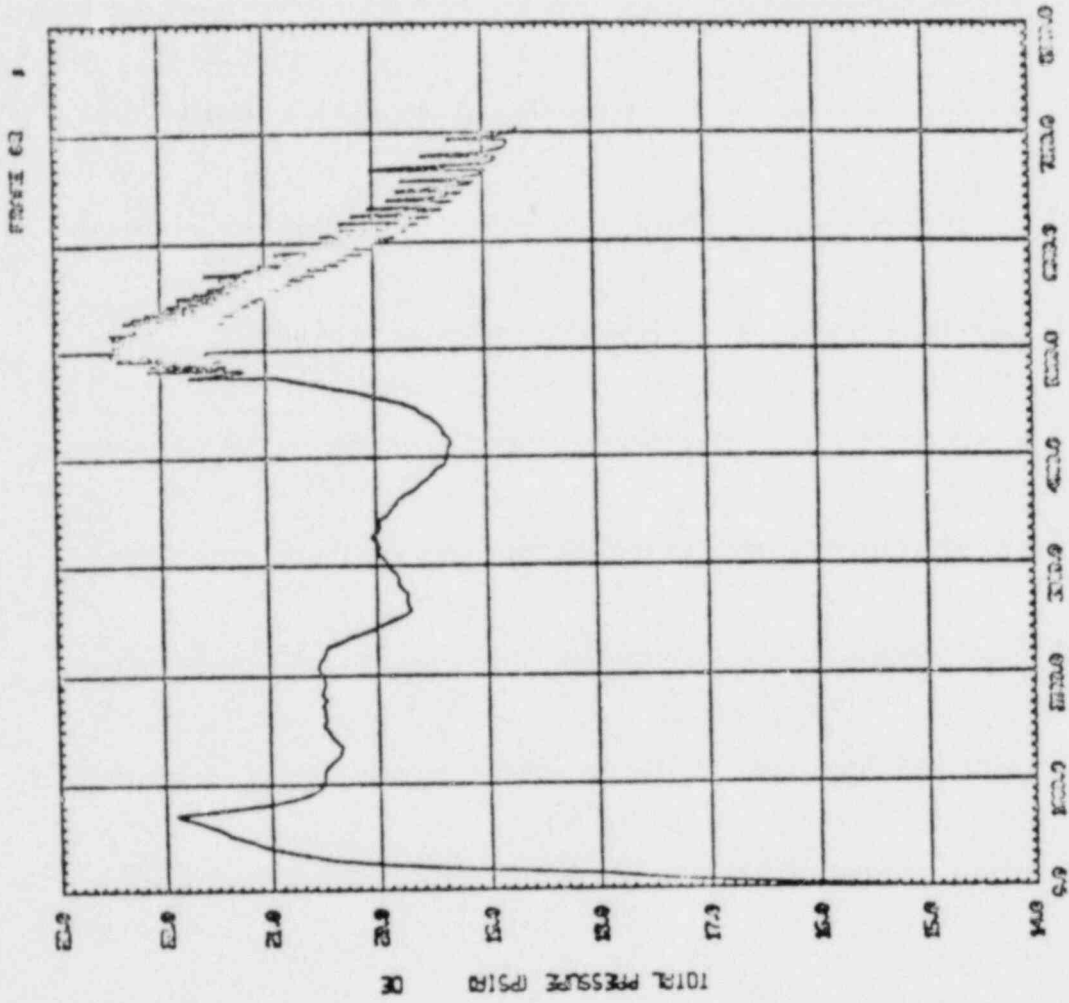
POOR ORIGINAL



THE (SECONDS)  
TWO END WILL CORRELATE FOR SENSITIVE STUDY DURING 1000 FT AT 1000

FIGURE 2.1-9

POOR ORIGINAL

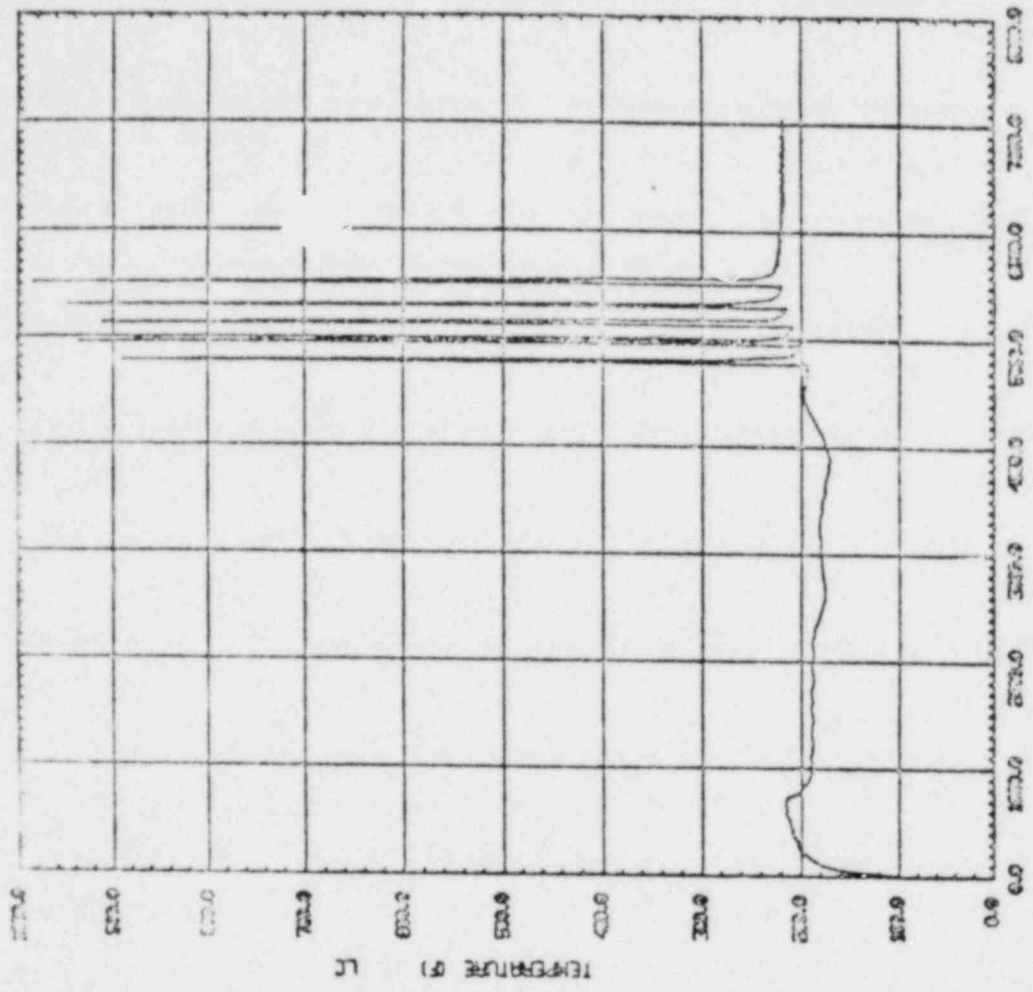


TYPE (SLOVES)  
TUN RED WALL OCEAN STATION FAN EIGHTH STAY RUN 1000 FT AT 1000

FIGURE 2.1-10

READY-

POOR ORIGINAL



TIME (SECONDS)  
TUNED WALL OF THE SPECTROMETER FOR DETECTION OF THE EFFECT AT TWO CTS

FIGURE 2.1-11

POOR ORIGINAL

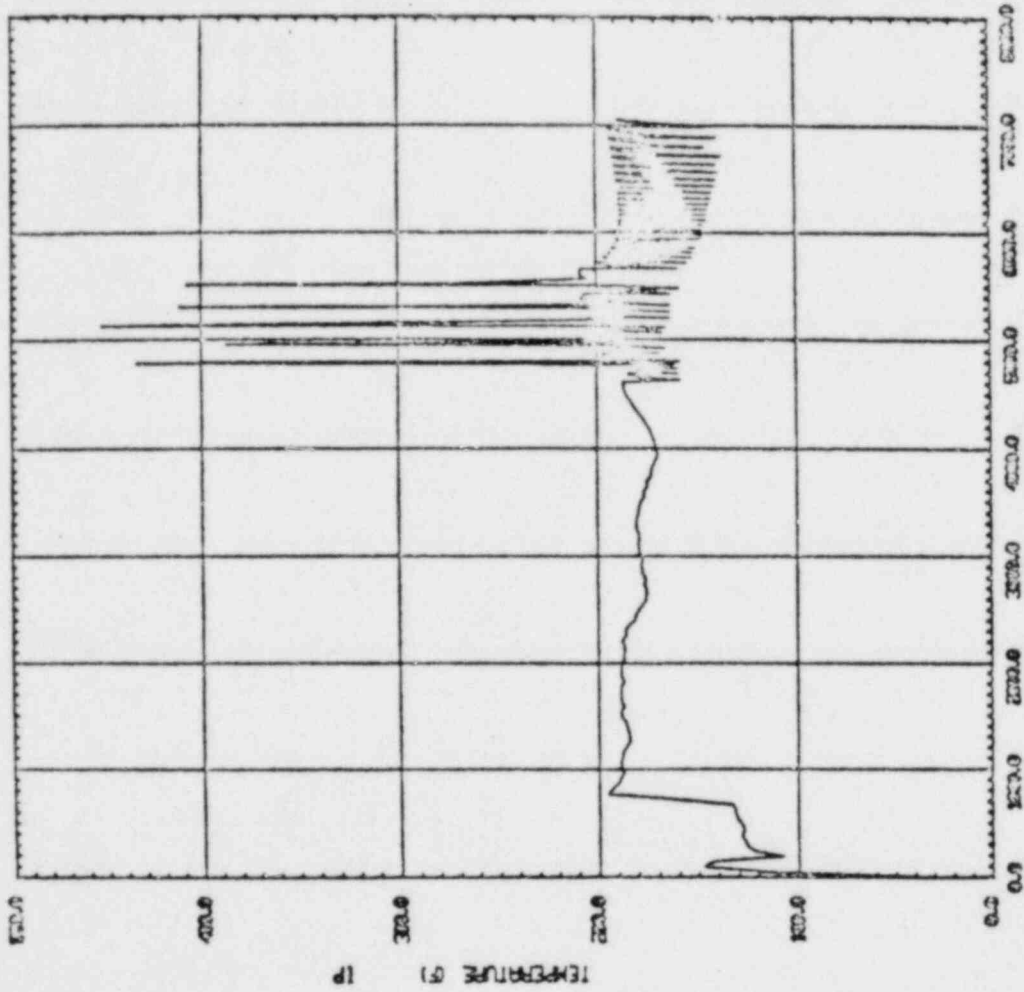
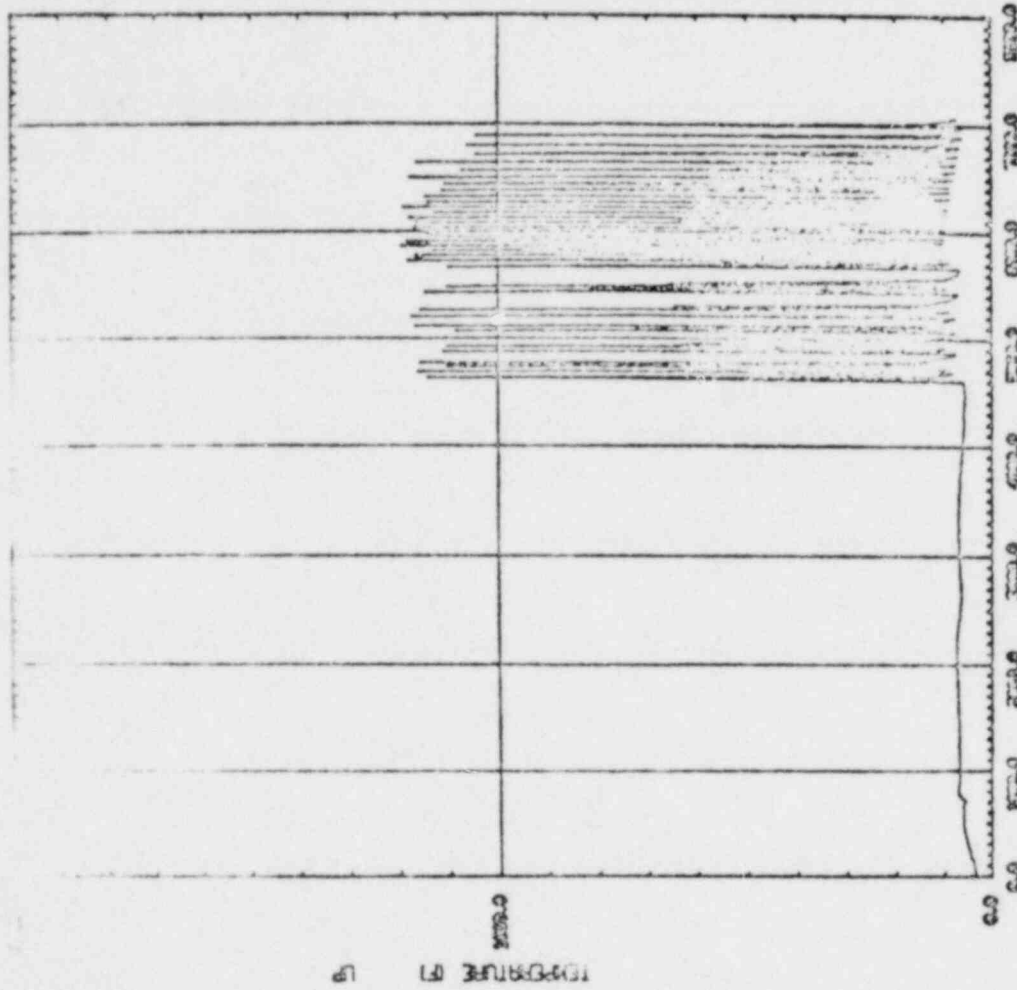


FIGURE 2.1-12  
TUN SED WALL CRACK EXPOSURE FOR RESISTANCE STUDY RUN AT 8000 GPPS

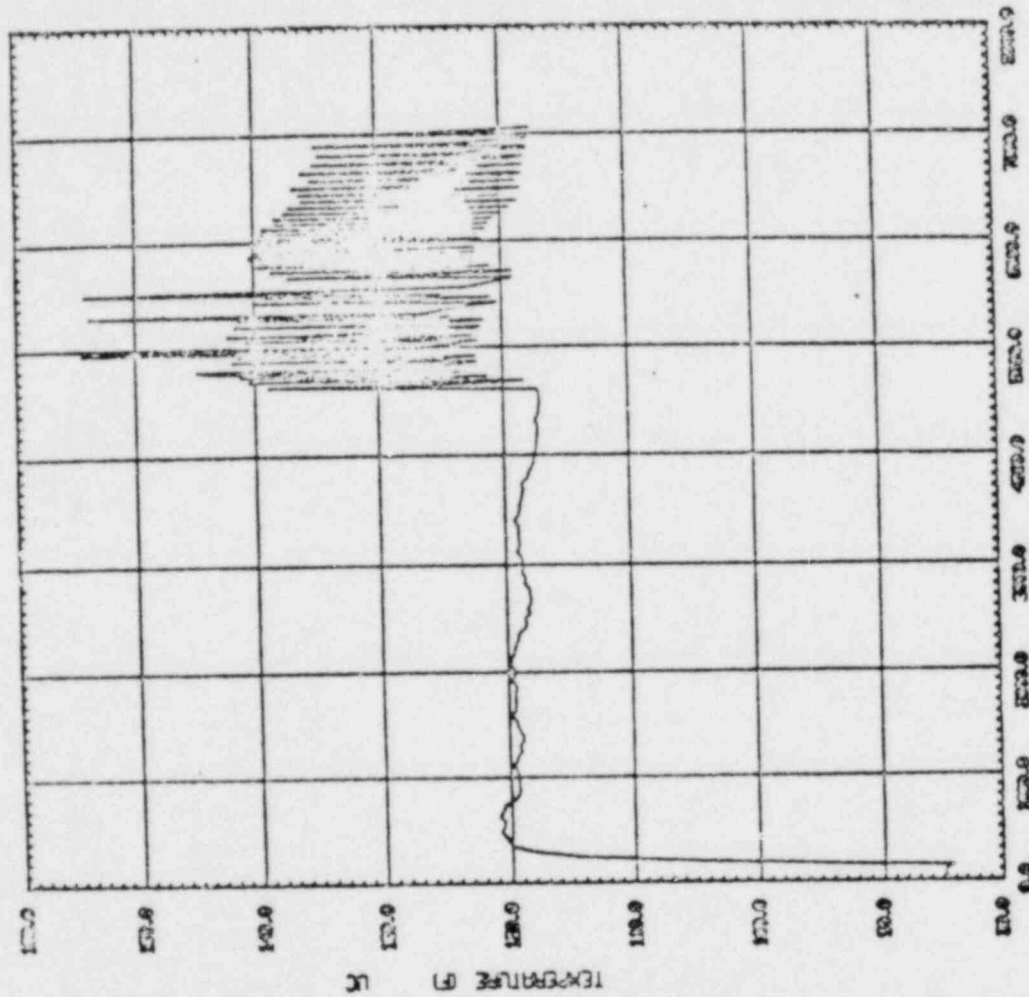
POOR ORIGINAL



TYPE (SECONDS)  
THERMISTOR (SECONDS) FOR THERMISTOR (SECONDS) AT 100.0 (SECONDS)

FIGURE 2.11-13

POOR ORIGINAL



TIME (SECONDS)

TWO SED WALL COVERED CONCRETE WITH SMOKESTAIN FROM BURNING AT 1000 CFS

FIGURE 2.1-14



A Differential Scanning Calorimetry (DSC) thermogram of polypropylene. The y-axis is labeled 'HEAT FLOW' and the x-axis is labeled 'TEMPERATURE (°C)'. The plot shows a baseline shift (glass transition) around 10°C and a sharp endothermic peak (melting) around 165°C. The baseline is relatively flat from 180°C to 200°C.

TIME (HOURS)

FIGURE 2.1-15

POOR ORIGINAL

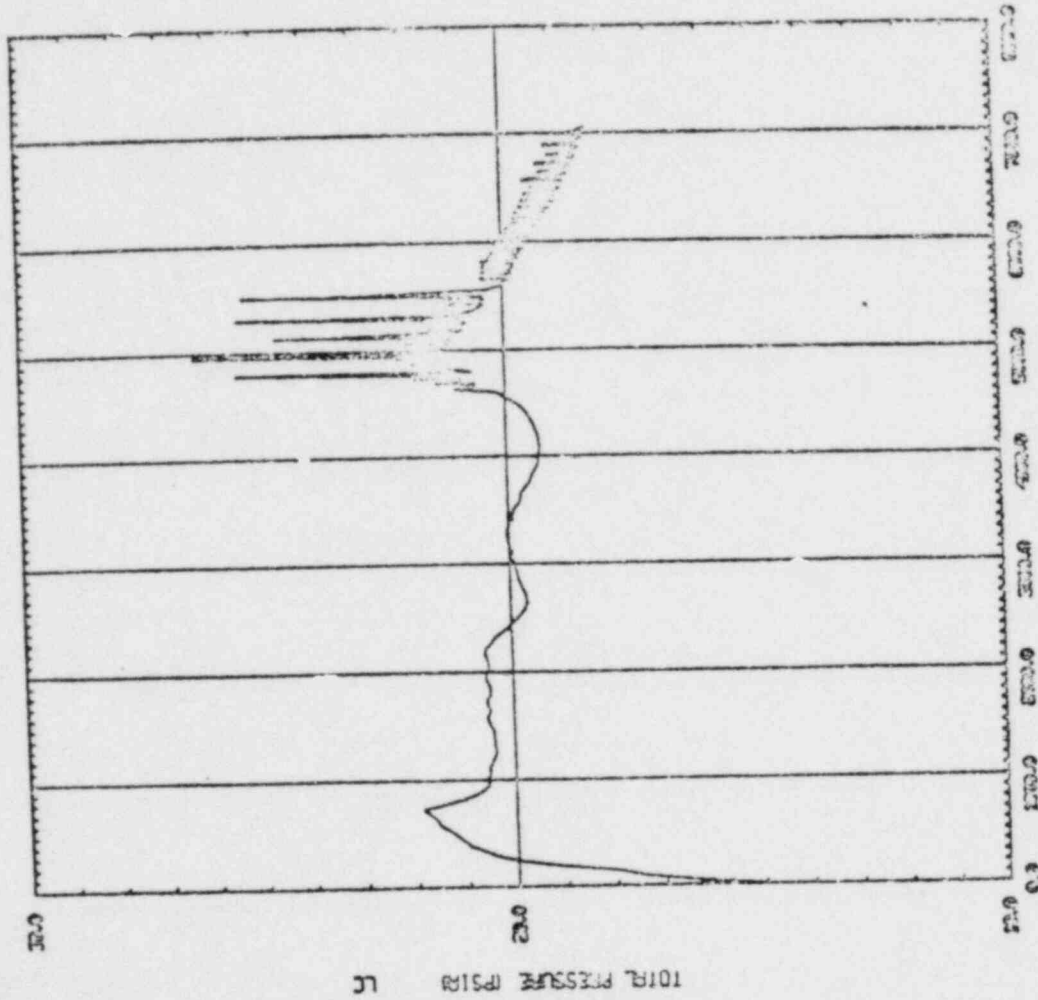
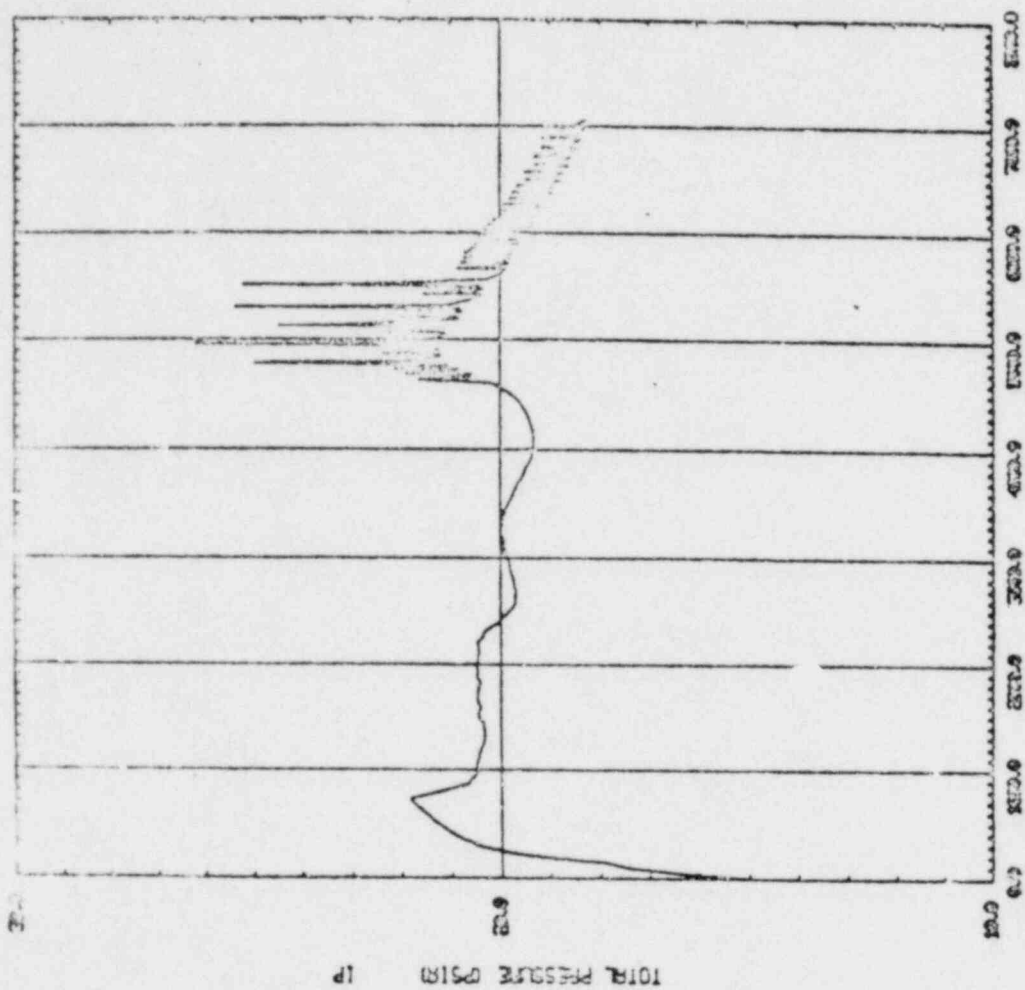


FIGURE 2.1-16

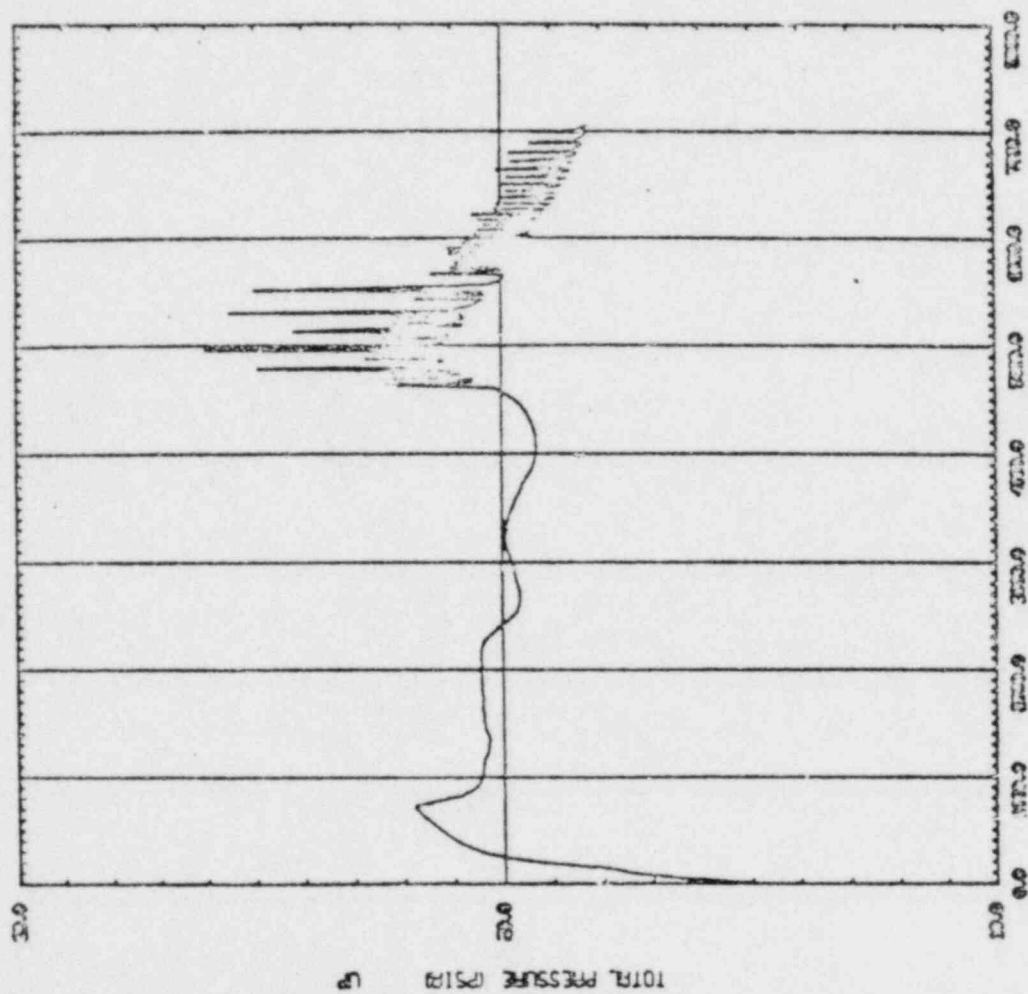
POOR ORIGINAL



THIS SET WILL CORRELATE DOWNHOLE WITH LENGTH OF RUN (NOT AT 2000 FT)

FIGURE 2.1-17

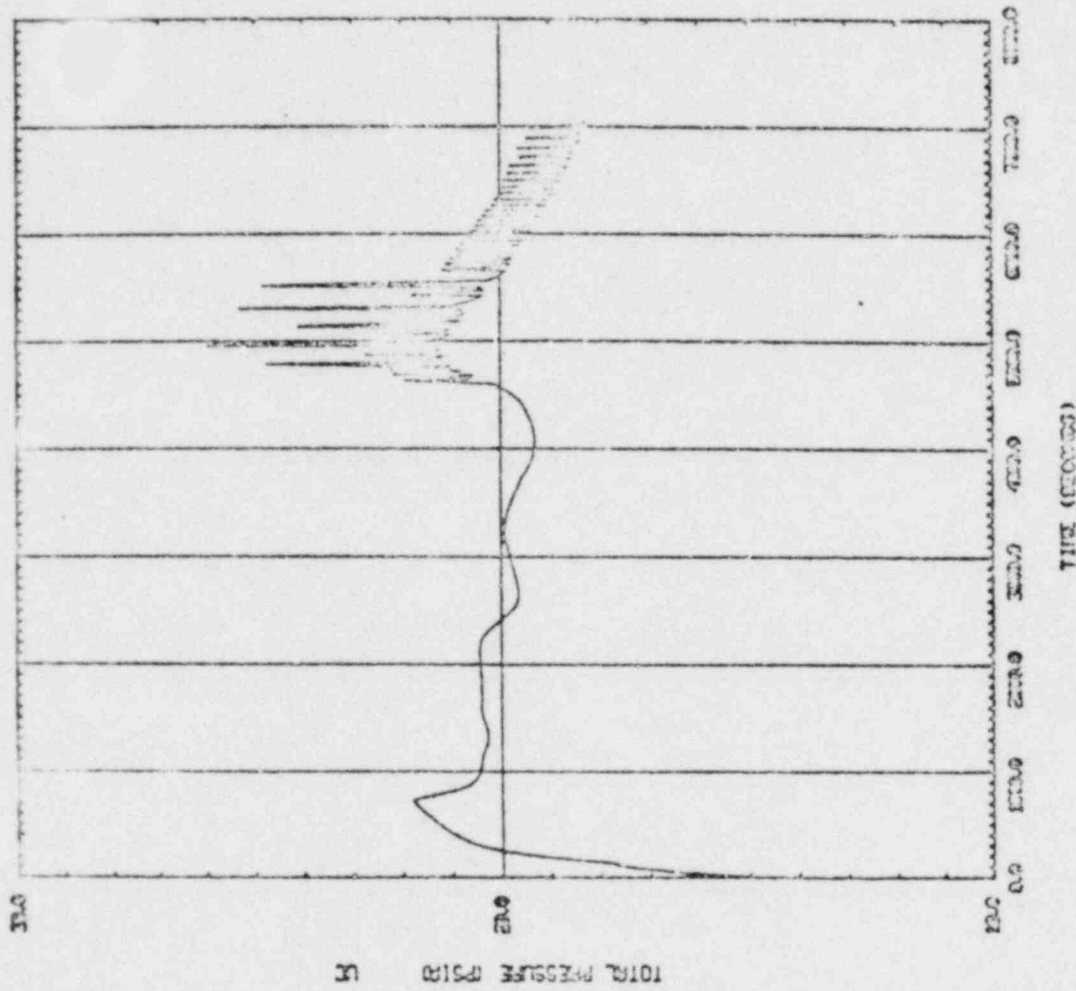
POOR ORIGINAL



TWO SED WALL COVER ESTIMATED FOR DESIGNER'S BEST GUESS AT 100 GFS

FIGURE 2.1-18

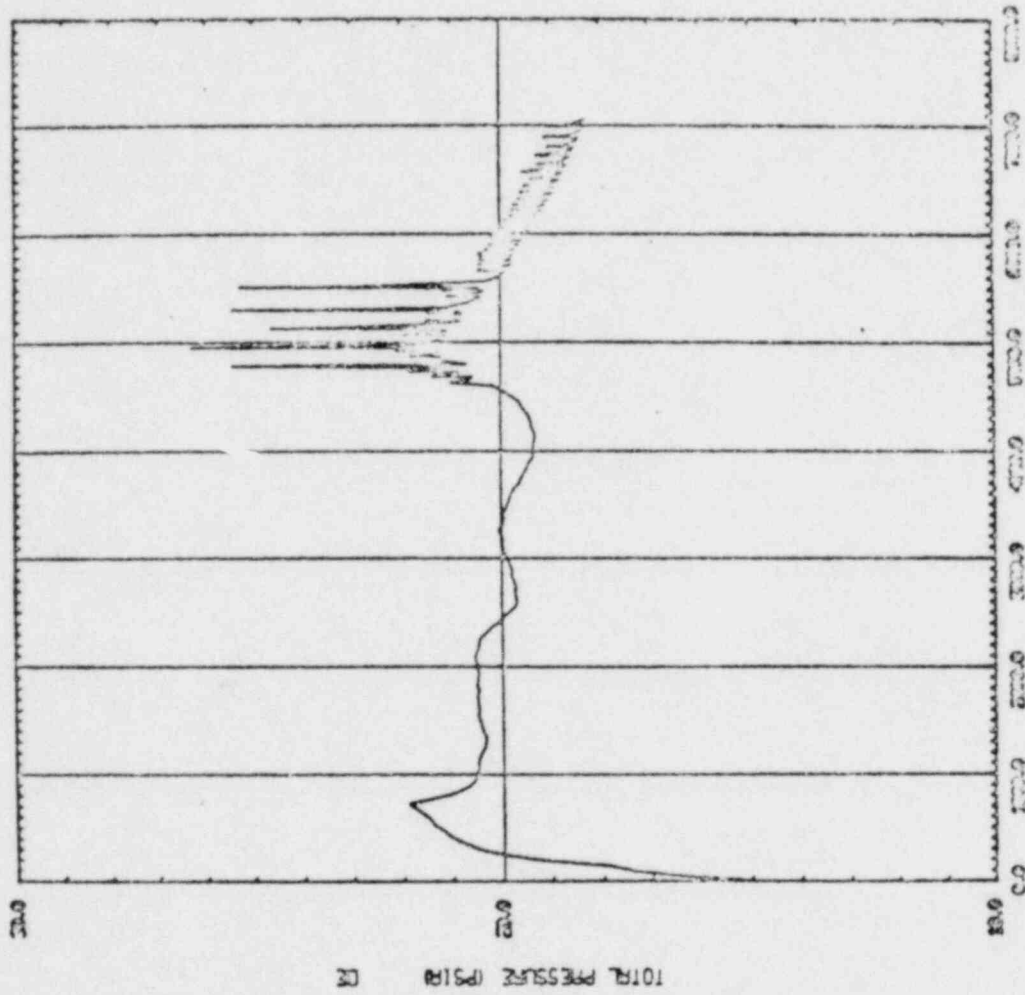
POOR ORIGINAL



TWO SET WILL CORREL CORRELATION FOR KINEMATIC STRESS FROM FIRST AT 600 CPS

FIGURE 2.1-19

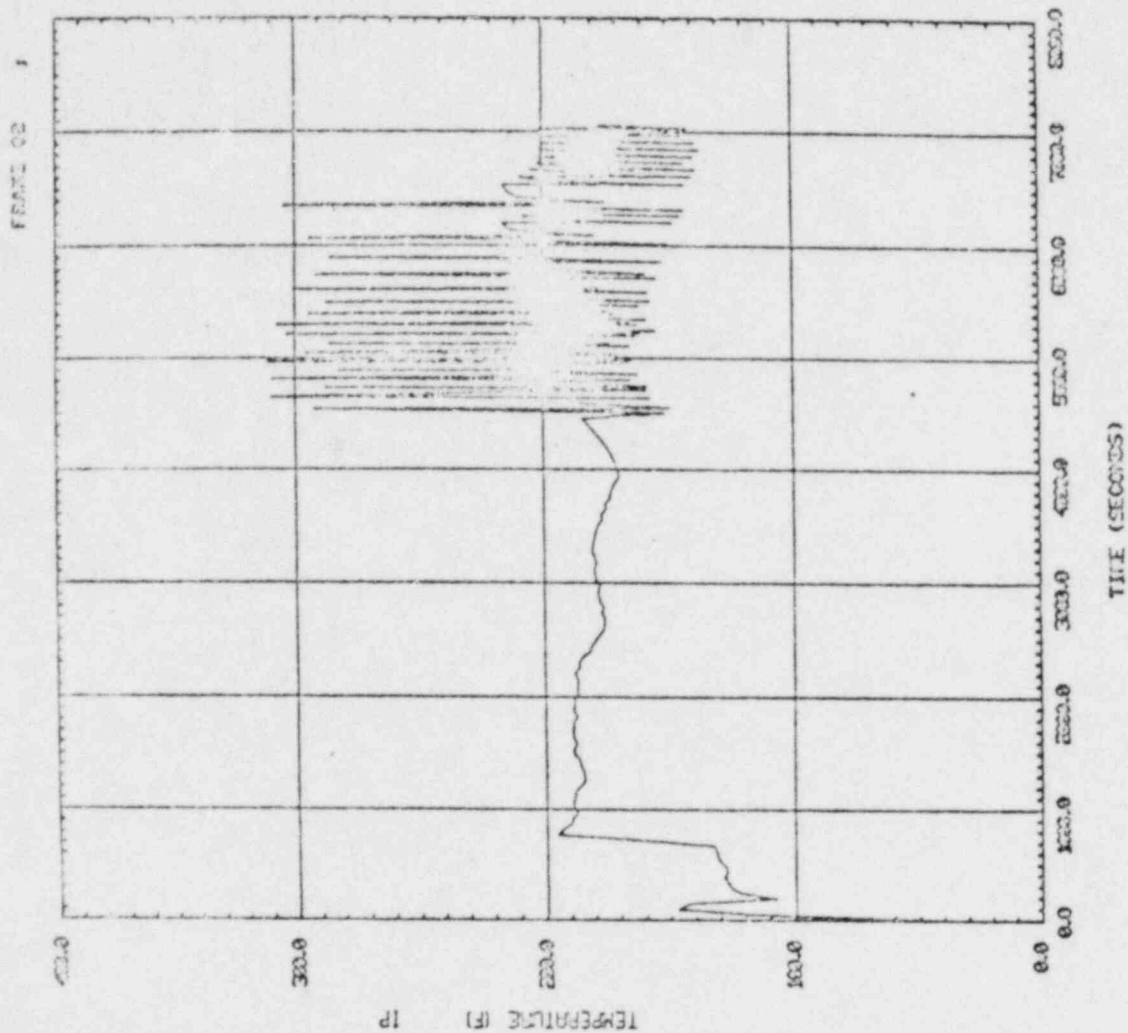
POOR ORIGINAL



THE (FIGURE)  
TWO AND WILL CAME (FIGURE) FOR (FIGURE) SHOW (FIGURE) AT (FIGURE)

FIGURE 2.1-20

POOR ORIGINAL



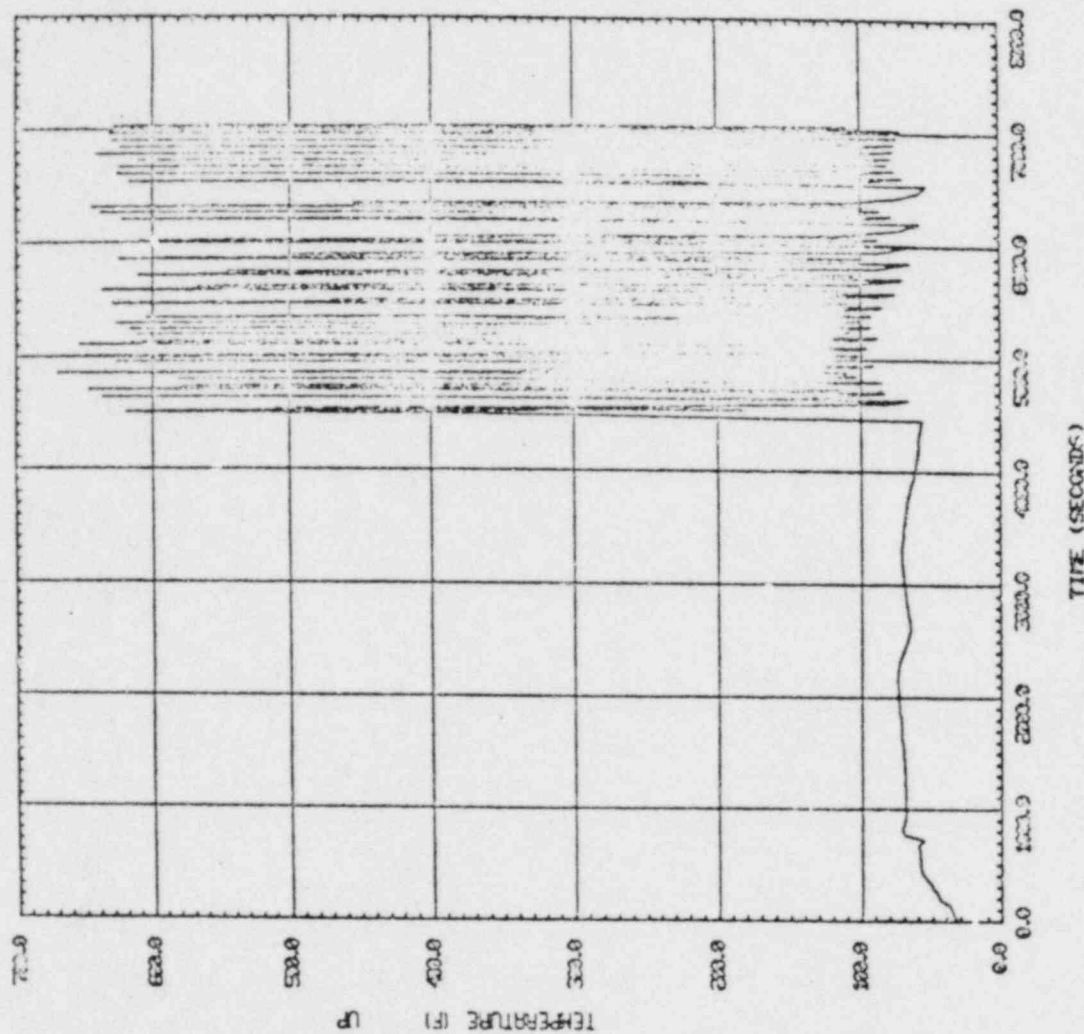
TWO SED WALL CASES 800000FT FAN 1500000FT STAY BLIN 600CT AT 6000 CTS

FIGURE 2.1-22



POOR ORIGINAL

FRAME 03

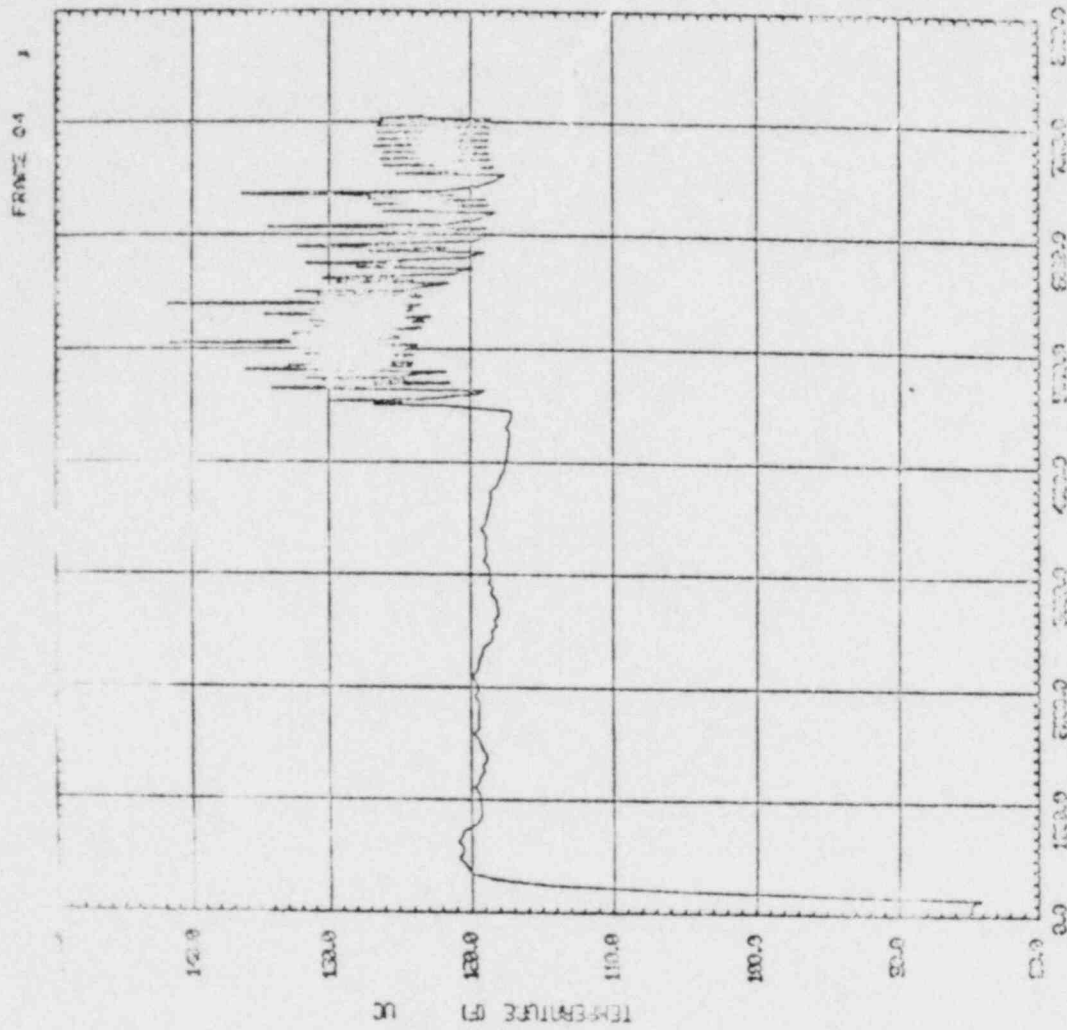


TVA 52D WALL CASE3 800000FT FM 050000FT SPRAY ELNEN 600CT AT 6J/0 67PS

FIGURE 2.1-23

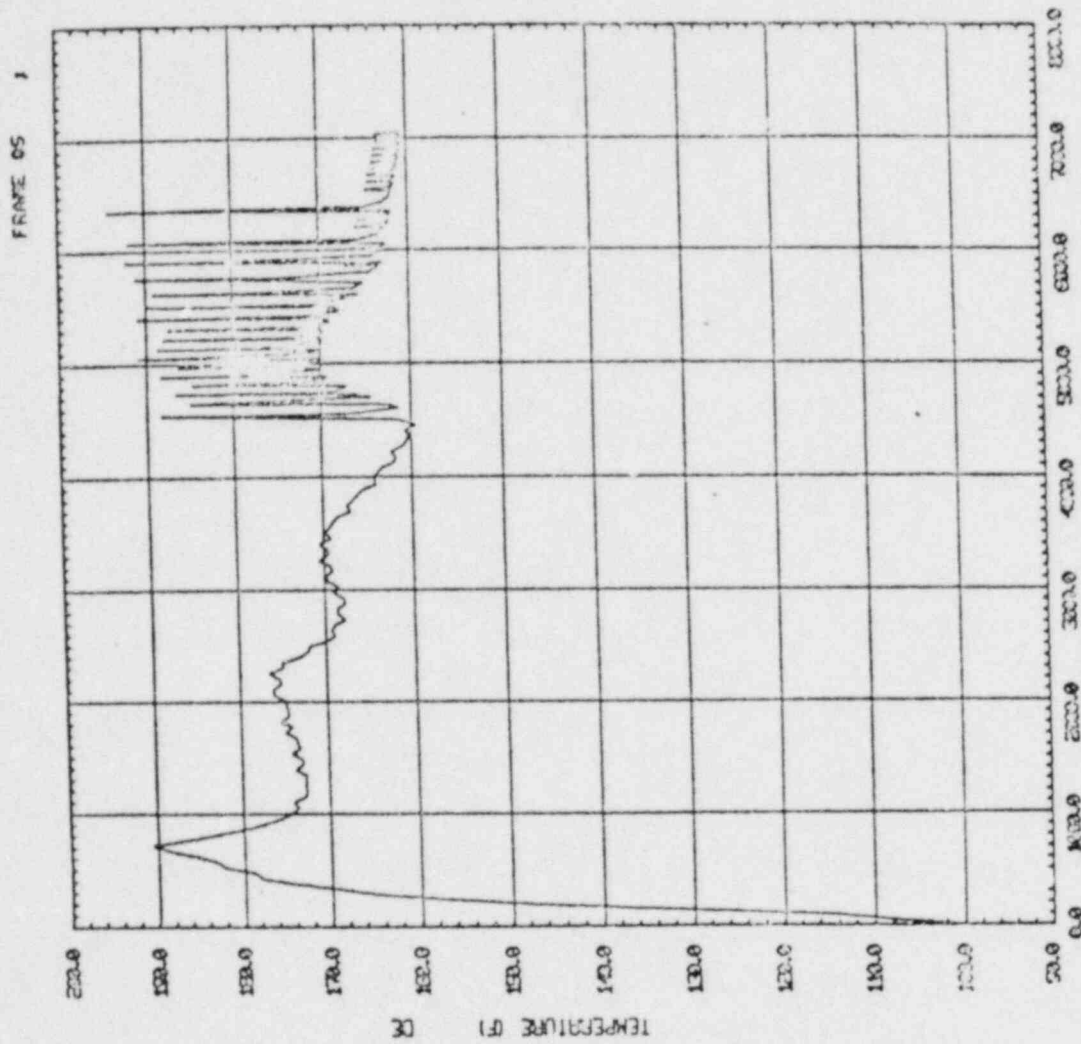
READY-

POOR ORIGINAL



TWA 52D WALL CAGE3 800000FH FAN 850000TH SPRAY BLUM GASET AT 80/9 GFS  
FIGURE 2.1-24

POOR ORIGINAL



TUN SED WILL CASE3 BEGSDOFT FAN SCODEN STLOW ELEN ESOT AT GUD GPS  
FIGURE 2.1-25

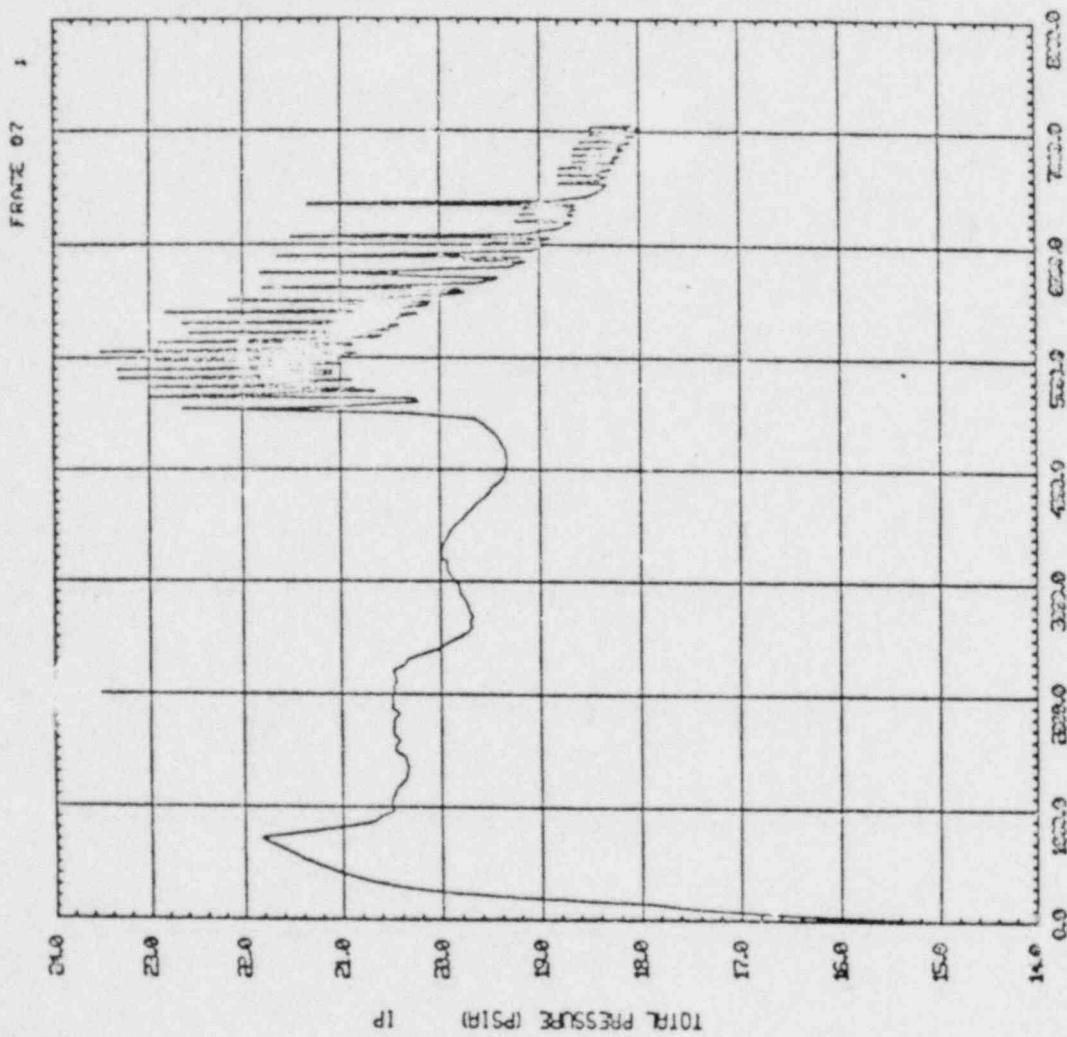
028623

TIME (SECONDS)

TUN SED WALL CAGES E800000H FMH E800000H STAY WITH OBJECT AT 6140 GFS

FIGURE 2.1-26

POOR ORIGINAL

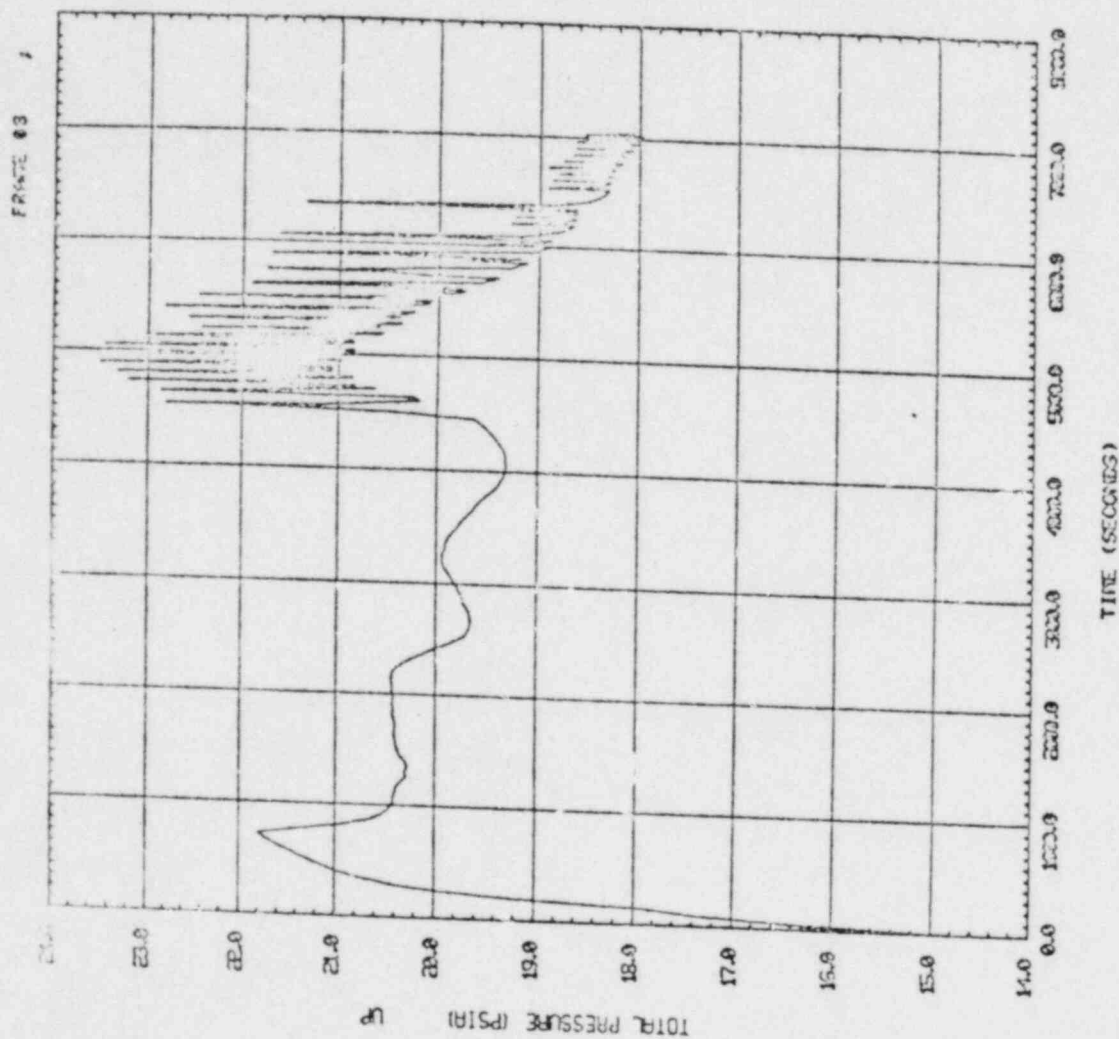


TIME (SECONDS)

TVA SED WALL CAGED 800000FT FWH 800000FT SPRAW DURN 6000 FT AT 6000 GPPS

FIGURE 2.1-27

POOR ORIGINAL

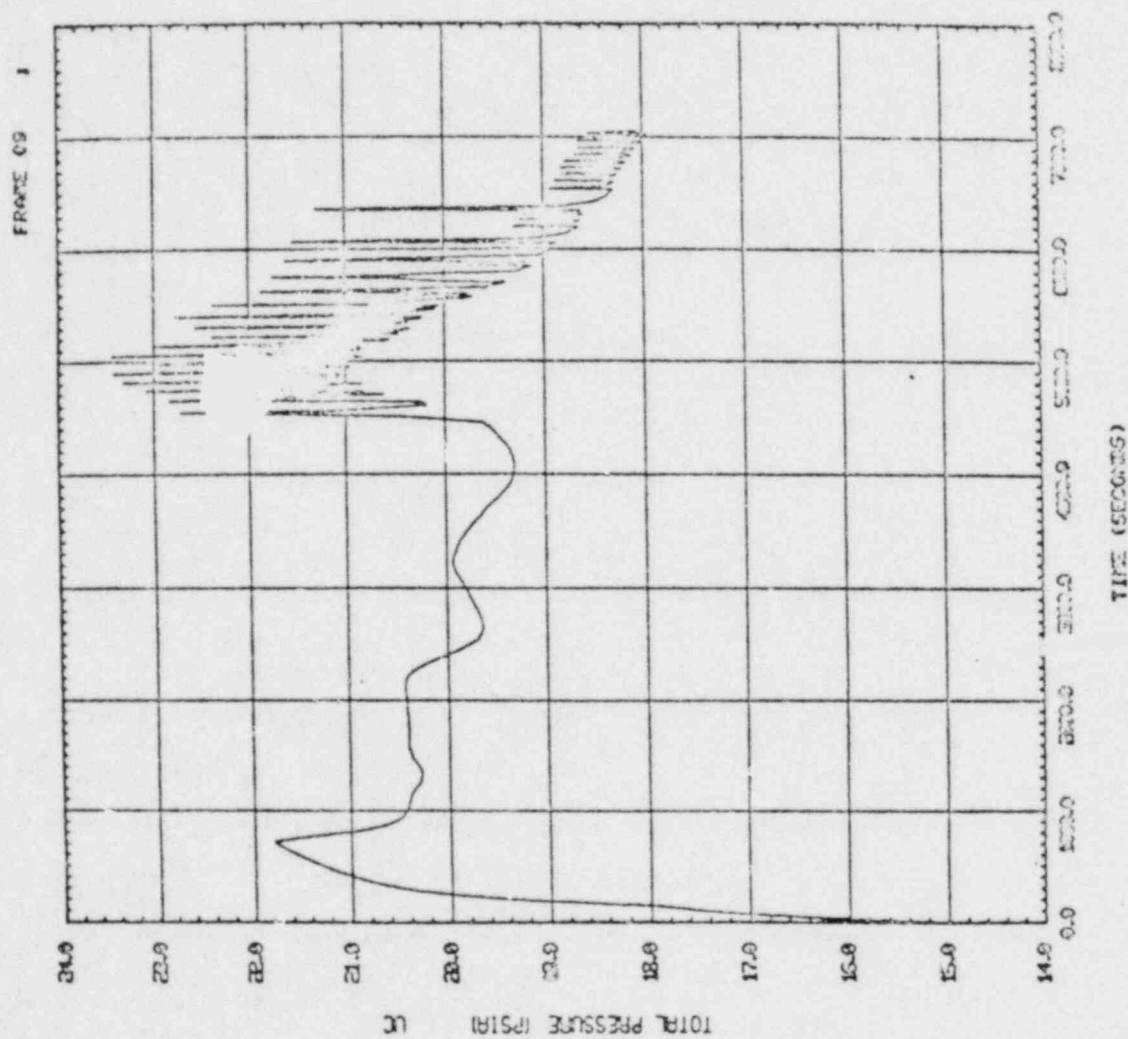


TWO SED WALL CASED ESSEX/ORTH FAN ESSEX/ORTH SPRAY BURST EXPCT AT 6000 SECS

FIGURE 2.1-28



POOR ORIGINAL



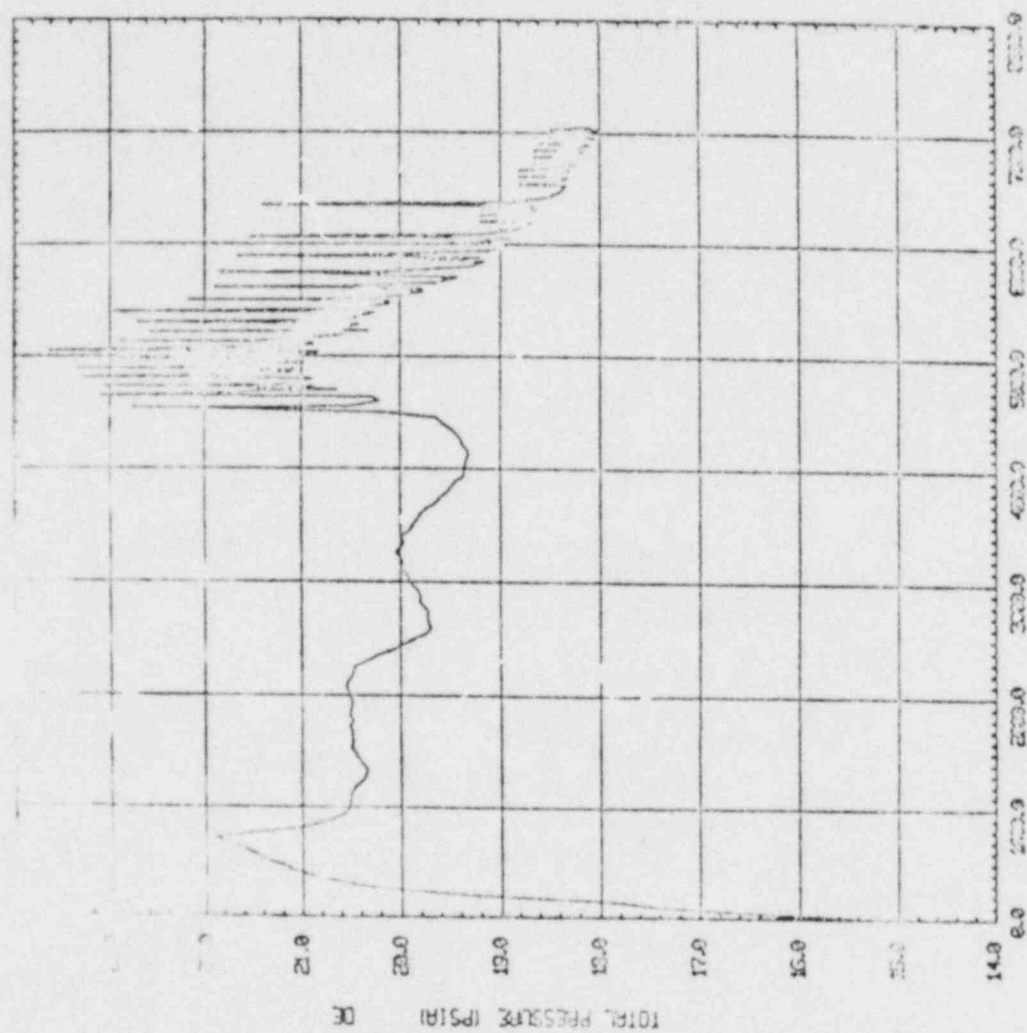
TWA 520 WALL CASE3 000000TH FWH 000000TH SPTRY EAX: 600CT AT 0000 GFS

FIGURE 2.1-29



POOR ORIGINAL

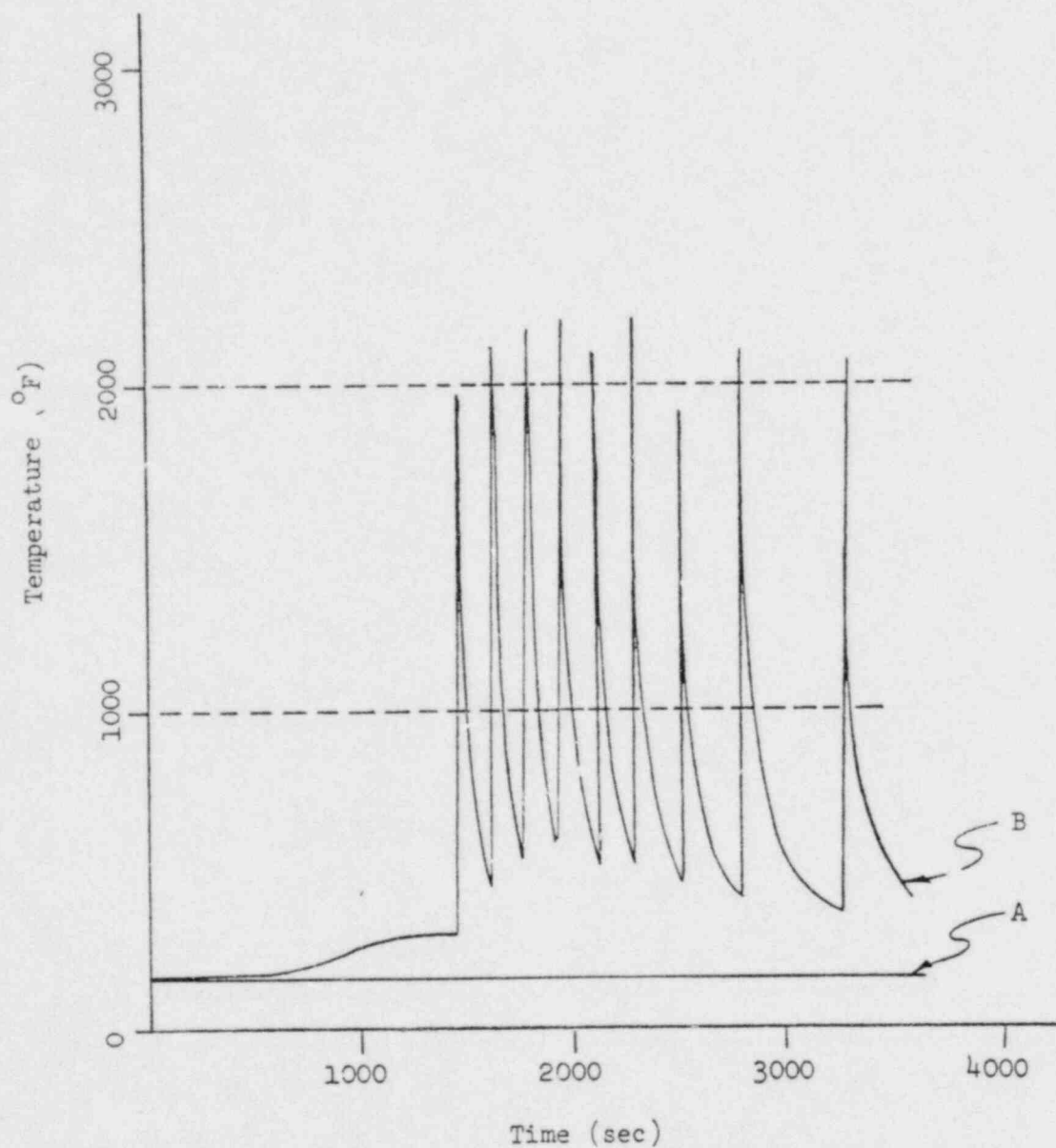
FRAME 10



TIME (SECONDS)

TWA SED WALL CASED 500000FT FWH 500000FT STWY DEN SPT AT 6000 FT

FIGURE 2.1-30



- A-- Calculated Heat Sink Temperature with Burn
  - TVA analysis
  - maximum heat sink temperature (275°F)
- B - Calculated Atmospheric Temperature with Burn
  - CLASIX S<sub>2</sub>D case
  - no structural heat sinks

Figure 2.3-1

LOWER COMPARTMENT ATMOSPHERIC TEMPERATURE

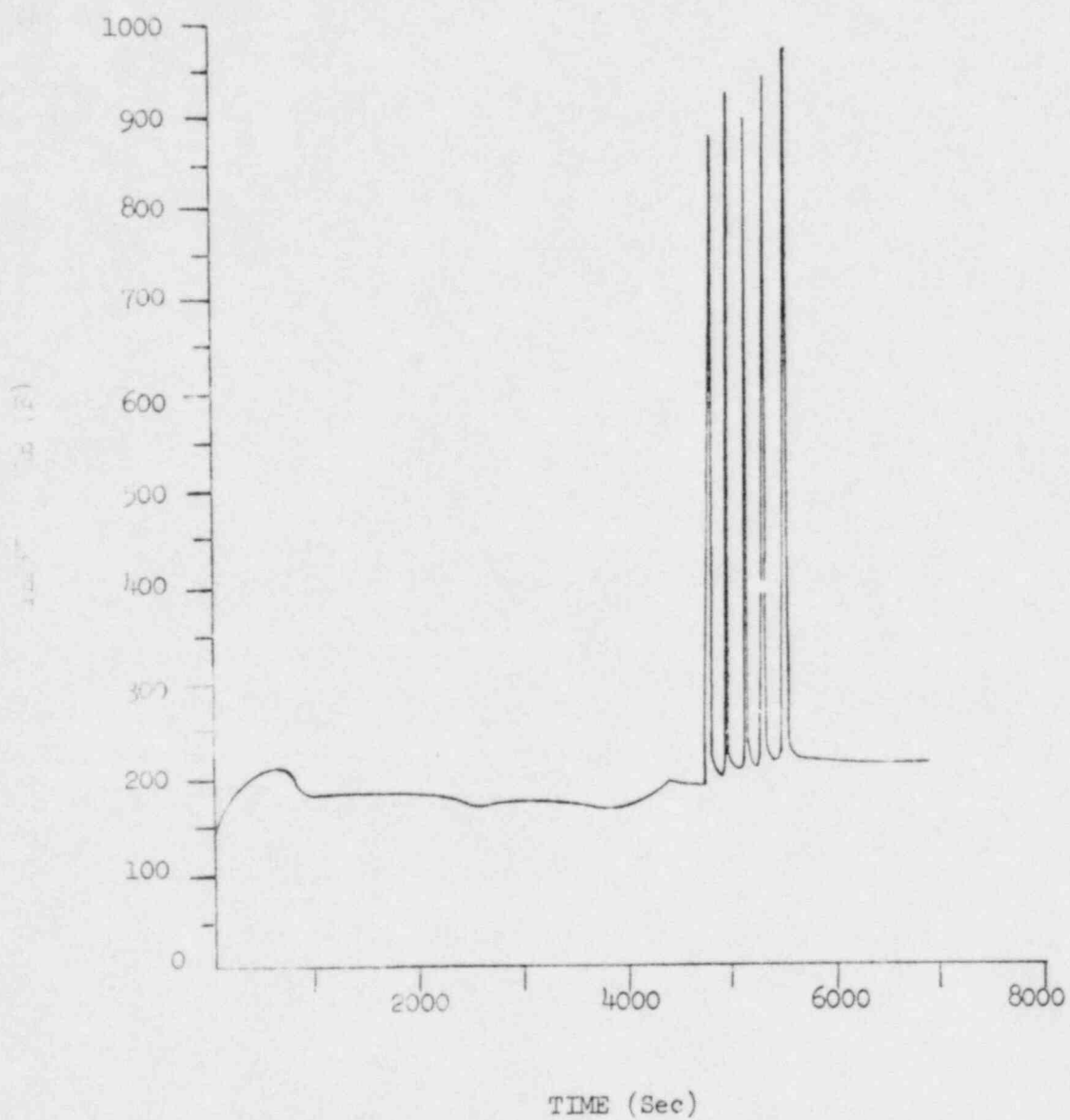


FIGURE 2.3-2

UPPER PLENUM ATMOSPHERIC TEMPERATURE

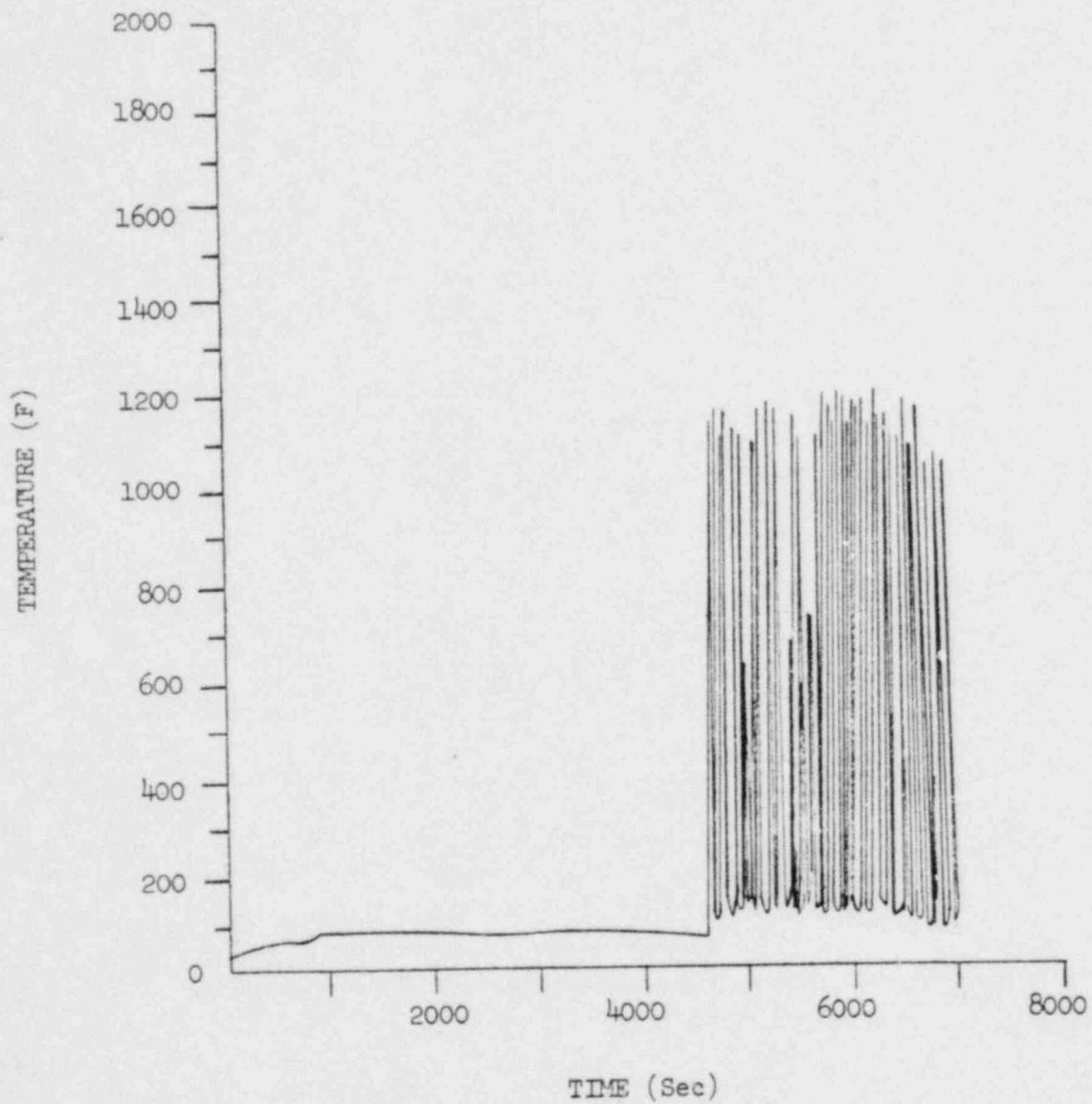
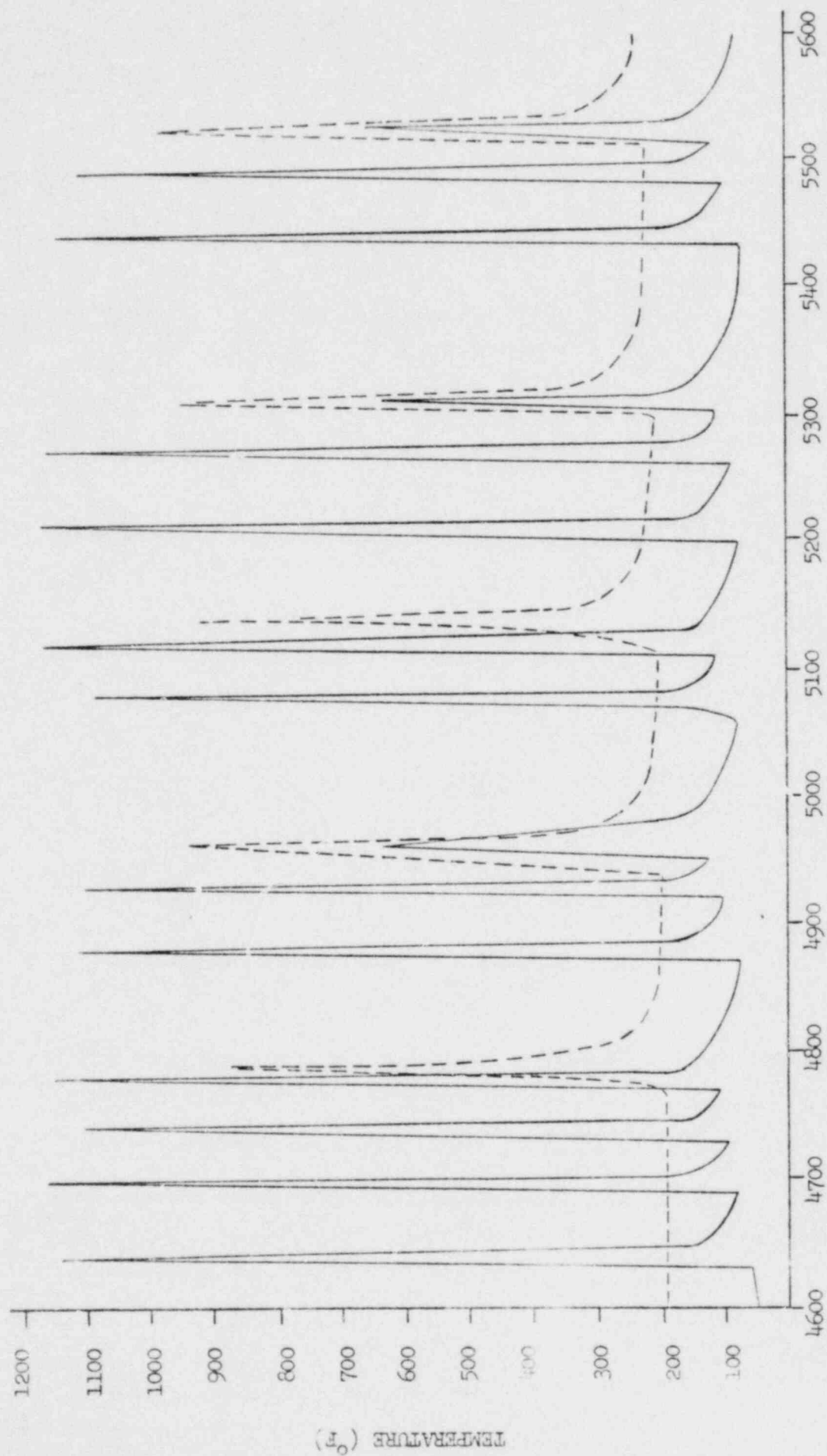


FIGURE 2.3-3

ATM F-4C CONTROLS

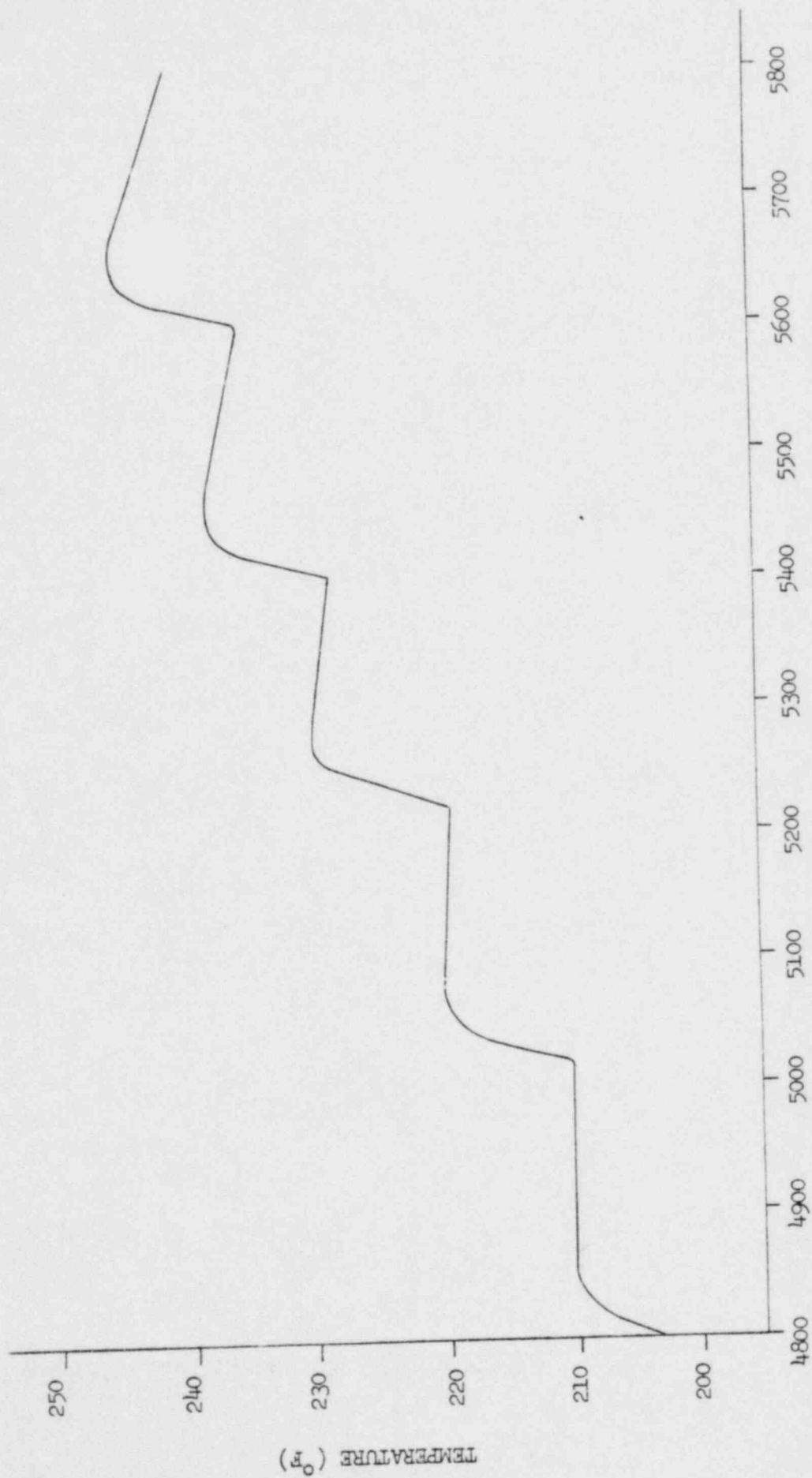
Upper Plenum  
Lower Compartment  
(Burn at 8%)



TIME (Sec)

FIGURE 2.3-4

TRANSMITTER CASE  
(CLASIX 8v/o-85%)



TIME (Sec)

FIGURE 2.3-5

WESTINGHOUSE PROPRIETARY CLASS 2

TEST CHAMBER TEMPERATURE

Figure 2.3-6



SAMPLE  
GLASS (v/o-85%)



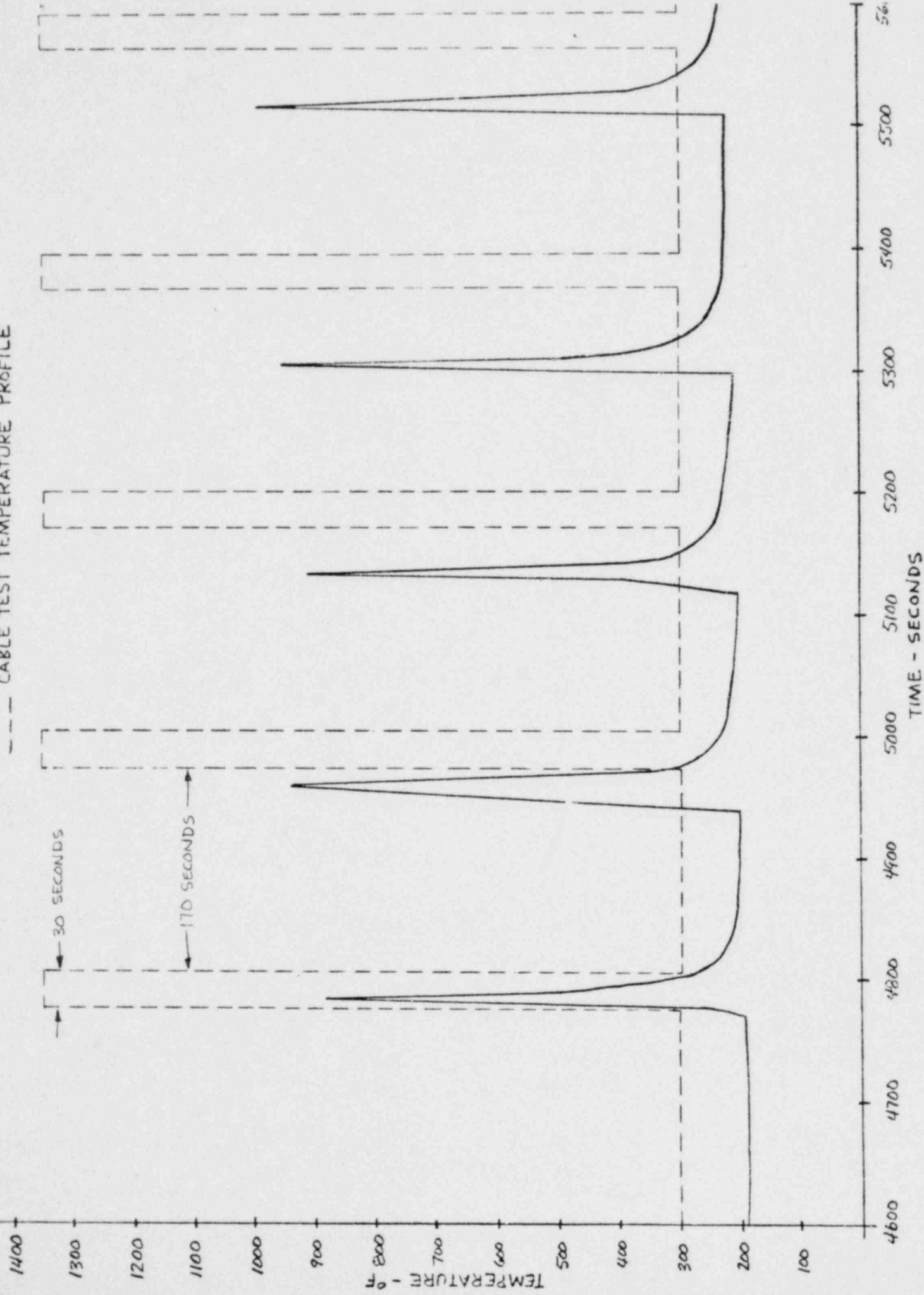
TIME (Sec)

FIGURE 2.3-7

LOWER COMPARTMENT BURNS (8%)

FIGURE 2.4-1

CABLE TEST TEMPERATURE PROFILE



ATTACHMENT A.