



- I. LER NUMBER: 83-022/03L-0
- II. LASALLE COUNTY STATION: Unit 1
- III. DOCKET NUMBER: Q50-373
- IV. EVENT DESCRIPTION:

Following a Reactor Scram, which occurred at 0750 on 17 March 1983, the Reactor Recirculation Pump Suction Temperature dropped from 530°F to 378°F in one hour, as a result of flooding the reactor vessel to approximately 140" on the Shutdown Range Level Instrument. This exceeds Technical Specification 3.4.6.1.b which sets a maximum cooldown limit of 100°F in one hour.

V. PROBABLE CONSEQUENCES OF THE OCCURRENCE:

General Electric reviewed the Combustion Engineering stress report for the Reactor Pressure Vessel which shows that the reactor vessel flange bolts are the limiting component based on fatigue usage factor calculated in the report. Based on the information that the water level never reached the vessel flange and the saturated steam temperature taken from Attachment B, which shows reactor pressure during this event, it was concluded that this transient was less severe than a regular shutdown with vessel flooding event in which water quenching of the reactor pressure vessel flange occurs. Based on this, it was determined that this event had negligible effect on vessel integrity.

Further supporting evidence of this conclusion can be seen in the enclosed Attachment A which shows Reactor Recirculation Pump Suction Temperature versus Time. After the initial temperature drop to 320°F, the water temperature rose slowly for the next 2 hours, indicating that reactor metal temperature had not decreased significantly during the initial cool down. It was also observed that the reactor vessel upper flange metal temperature exhibited only a gradual decrease, typical of a normal shut down, during this transient. Other vessel metal temperatures could not be determined, during this transient, due to improper operation of the temperature recorder. This recorder has since been repaired.

VI. CAUSE:

Following the scram, recovery proceeded normally until reactor pressure decayed to approximately 700 psig when the water level began to increase. Since the operator concentrated mainly on obtaining proper level control with the feedwater regulating valve, there was a delay in recognizing that the water input was from the condensate/condensate booster pump, which will inject water to the vessel through the tripped turbine driven feedwater pumps at approximately 700 psig reactor pressure. Vessel level increased to 140" on the Shutdown Range Level instrument, which cooled the Reactor Recirculation Pumps Suction Temperature from 530°F to 320°F in 15 minutes, before the 1A TDRFP discharge valve was closed, which terminated the water level increase.

VII. CORRECTIVE ACTION:

General Electric and the Station Nuclear Engineering Department performed an engineering evaluation to determine the effects on the structural integrity of the reactor coolant system. This evaluation determined that the event had negligible effect on the reactor vessel.

AIR 1-83-88 has been written to determine if a modification to the plant is necessary to prevent this from occurring again.

This transient will be reviewed with each shift during an operator retraining session.

Prepared by: John Ullrich

ATTACHMENT A  
REACTOR RECIRCULATION PUMP SUCTION  
TEMPERATURE

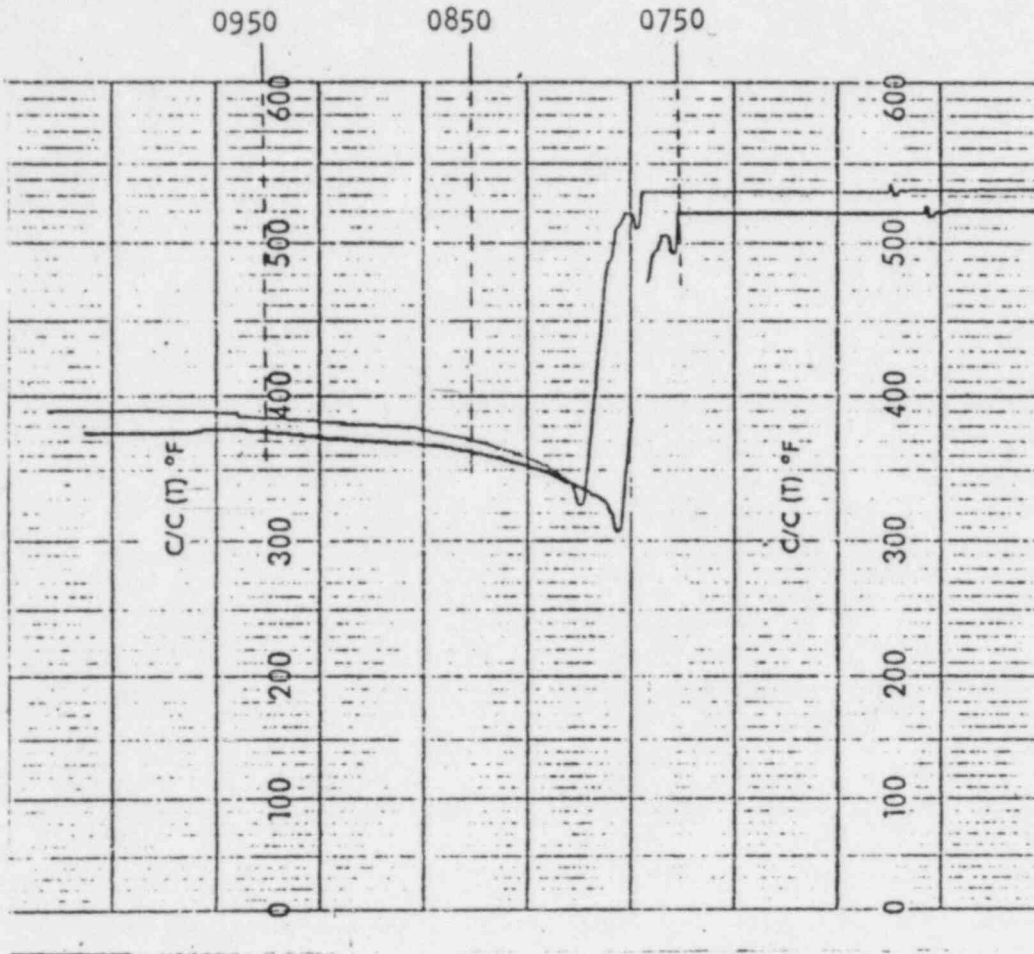
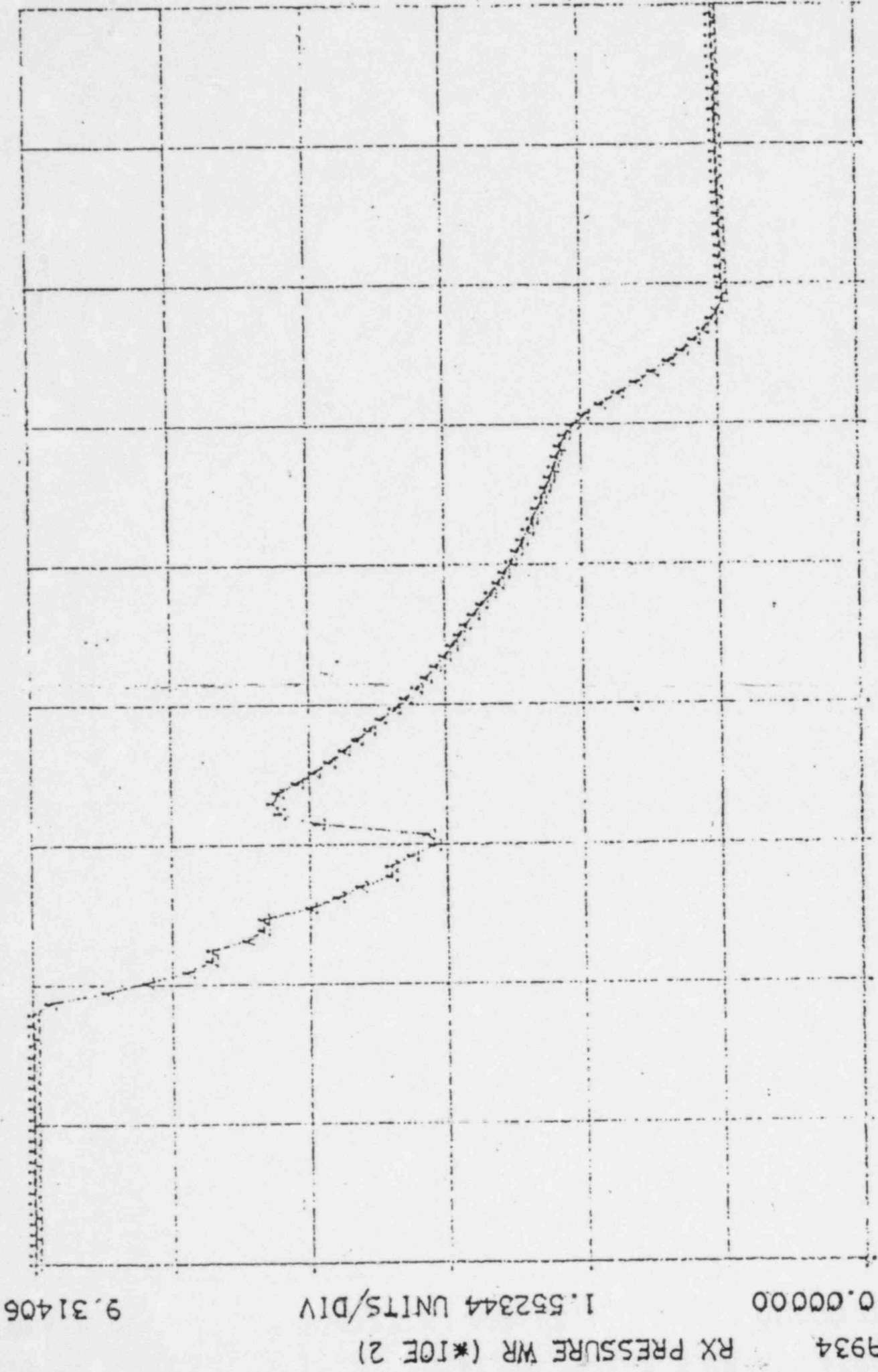


CHART SPEED 1 inch/hour



ATTACHMENT B



9.31406

1.552344 UNITS/DIV

0.00000

RX PRESSURE WR (\*IOE 2)

A934

0.00000

0.133333 UNITS/DIV

1.20000

MINUTES FROM DATE/TIME 03-17-83 0730 (\*JOE 2)