

Submitted: _____
(Section Head)

SP Number 29.023.03

Approved: _____
(Plant Manager)

Revision: C

Effective Date _____

CONTAINMENT CONTROL EMERGENCY PROCEDURE

DRAFT

1.0 PURPOSE

The purpose of this procedure is to control primary containment temperatures, pressure and level. This procedure will be performed concurrently with the procedure from which it was entered.

2.0 ENTRY CONDITIONS

The entry conditions for this procedure are any of the following:

		Paragraph
2.1	Suppression Pool Temperature	Above 90°F 3.1
2.2	Drywell Temperature	Above 135°F 3.2
2.3	Drywell Pressure	Above 1.69 psig 3.3
2.4	Suppression Pool Level	Above 26' 8" 3.4
2.5	Suppression Pool Level	Below 26' 0" 3.4

NOTE

Enter the paragraphs of this procedure as required by the entry condition. The paragraphs can and should be performed concurrently with each other as the entry conditions dictate.

3.0 OPERATOR ACTIONS

3.1 Monitor and control suppression pool temperature. _____

3.1.1 Attempt to close any stuck open SRV per SP23.116.01. _____

CAUTION

If continuous LPCI is required to assure adequate core cooling, do not divert RHR pumps from the LPCI mode.

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- 3.1.2 Operate available suppression pool cooling per SP 23.121.01 when suppression pool temperature exceeds 90°F. _____
- 3.1.3 If suppression pool temperature reaches 110°F, scram the reactor per SP 29.010.01, Emergency Shutdown. _____

CAUTION

Cooldown rates above 100°F/HR may be required to accomplish this step.

CAUTION

Do not depressurize the RPV below 100 psig (HPCI low pressure isolation setpoint) unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

CAUTION

Observe NPSH requirements for pumps taking a suction from the suppression pool.

SUPPRESSION POOL		
PUMPS	MAXIMUM TEMPERATURE	MINIMUM LEVEL
HPCI	(Later)	(Later)
RHR	(Later)	(Later)
CS	(Later)	(Later)
RCIC	(Later)	(Later)

- 3.1.4 If suppression pool temperature cannot be maintained below the heat capacity temperature limit, maintain RPV pressure below the limit of Figure 1. _____
- 3.1.5 If suppression pool temperature and RPV pressure cannot be restored or maintained below the heat capacity temperature limit, proceed to SP29.023.05 (Rapid RPV Depressurization). _____

3.2 Monitor and control drywell temperature.

- 3.2.1 Operate available drywell cooling when drywell temperature exceeds 135°F.

CAUTION

DO NOT DIVERT RHR PUMPS FROM THE LPCI MODE UNLESS ADEQUATE CORE COOLING IS ASSURED.

- 3.2.2 If DRYWELL TEMPERATURE approaches 296°F, SHUTDOWN the Reactor Recirculation Pumps and Drywell Fans and initiate Drywell Sprays

CAUTION

Do not depressurize the RPV below 100 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

CAUTION

Cooldown rates above 100°F/HR may be required to accomplish this step.

- 3.2.3 If DRYWELL TEMPERATURE reaches the RPV Saturation Limit, Figure 2, enter SP29.023.05 (Rapid RPV Depressurization).

- 3.2.4 If drywell temperature cannot be maintained below 296°F, proceed to SP23.023.05 (Rapid RPV Depressurization).

3.3 MONITOR AND CONTROL primary containment pressure with the following systems as required:

- 3.3.1 IF PRIMARY CONTAINMENT PRESSURE REACHES 1.69 psig operate THE POST LOCA HYDROGEN RECOMBINATION SYSTEM per SP23.402.01.

- 3.3.2 Operate the MSIV Leakage Control System per SP23.406.01.

CAUTION

ELEVATED SUPPRESSION CHAMBER PRESSURE MAY TRIP THE RCIC TURBINE ON HIGH EXHAUST PRESSURE, 25 psig.

- 3.3.3 VENT the primary containment through the RBSVS system per SP23.418.01 only when the drywell temperature is below 212°F. ENSURE Rad/Chem samples and analyzes primary containment atmosphere prior to venting.

CAUTION

DO NOT DIVERT RHR PUMPS FROM THE LPCI MODE UNLESS ADEQUATE CORE COOLING IS ASSURED.

- 3.3.4 INITIATE suppression pool sprays before the Suppression Chamber pressure reaches the suppression pool spray limit, Fig. 3.
- 3.3.5 If Suppression Chamber pressure approaches the Pressure Suppression Limit, Fig. 4 SHUTDOWN the Reactor Recirculation Pumps and the Drywell Fans and INITIATE Drywell Sprays as necessary to maintain Suppression Chamber pressure below the curve.
- 3.3.6 If Suppression Chamber pressure cannot be maintained below the pressure suppression limit Fig. 4, ENTER SP 29.023.05 (Rapid RPV Depressurization).

3.4 MONITOR and CONTROL suppression pool water level

- 3.4.1 MAINTAIN suppression pool water level between 26'0" and 26'8". ENSURE Rad/Chem samples and analyzes suppression pool water prior to lowering of Suppression Pool Level.

CAUTION

Do not depressurize the RPV below 100 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

CAUTION

Cooldown rates above 100°F/HR may be required to accomplish the following steps.

- 3.4.2 If suppression pool water level is less than 26'0" and level can be maintained above the heat capacity level limit, Fig. 5, initiate suppression pool makeup per SP (later).
- 3.4.3 If suppression pool cannot be maintained above the heat capacity level limit, Fig. 5, proceed to SP 29.023.05 (Rapid RPV Depressurization).

CAUTION:

If high suppression pool level (26'8") exists or low condensate storage tank level (3'4") exists, VERIFY/MANUALLY transfer RCIC and HPCI suction from the CST tank to the Suppression pool.

- 3.4.4 If the Suppression Pool water level is above 26'8" and adequate core cooling is assured, TERMINATE injection into the reactor vessel from sources external to the primary containment.
- 3.4.5 If suppression pool water level cannot be maintained below the suppression pool load limit, maintain RPV pressure below the limit of Figure 6.

CAUTION

Observe NPSH requirements for pumps taking a suction from the Suppression Pool.

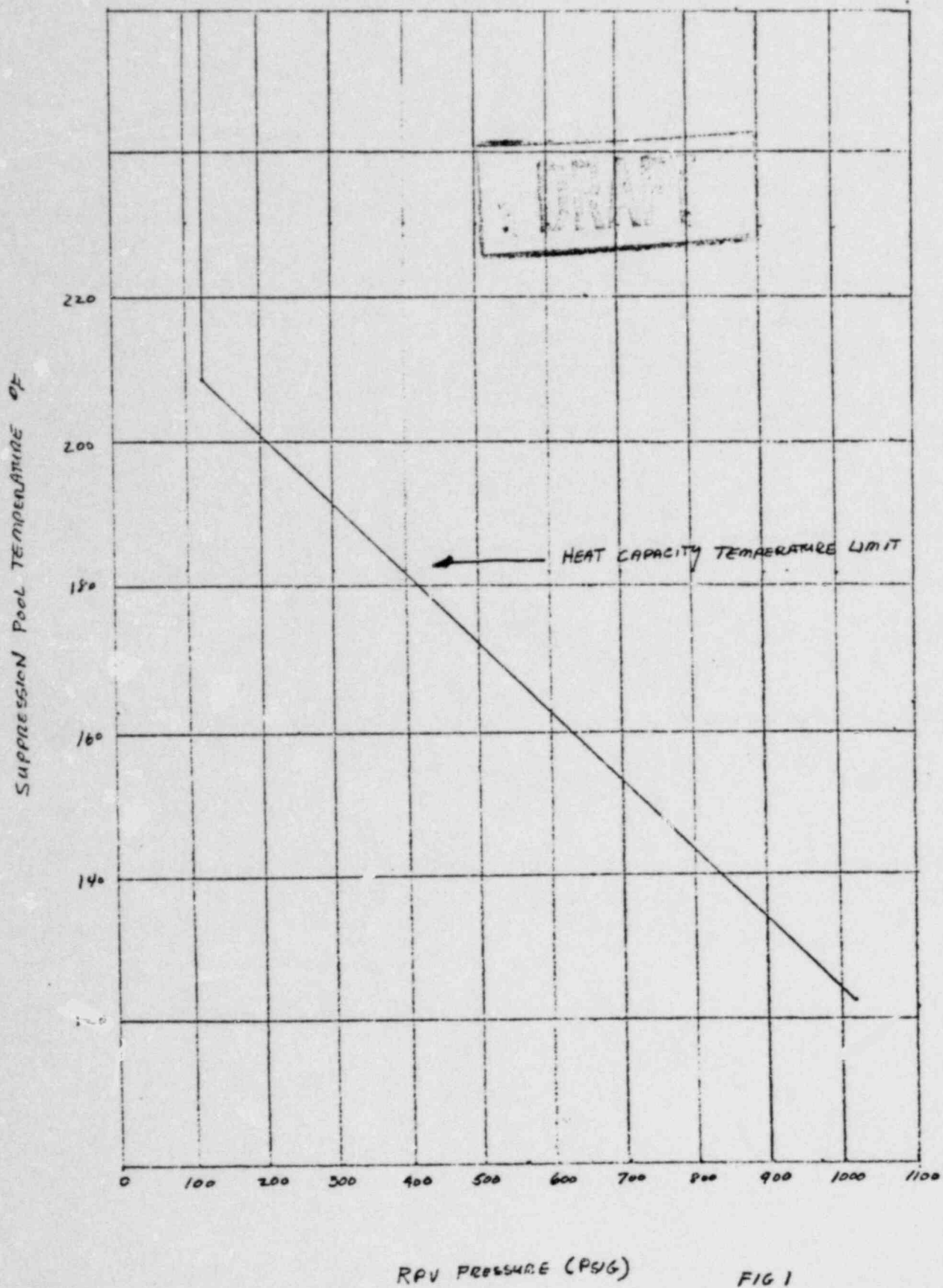
SUPPRESSION POOL		
PUMPS	MAXIMUM TEMPERATURE	MINIMUM LEVEL
HPCI	(Later)	(Later)
CS	(Later)	(Later)
RHR	(Later)	(Later)
RCIC	(Later)	(Later)

- 3.4.6 If suppression pool water level and RPV pressure cannot be restored or maintained below the suppression pool load limit, proceed to SP 29.023.05, rapid RPV depressurization.

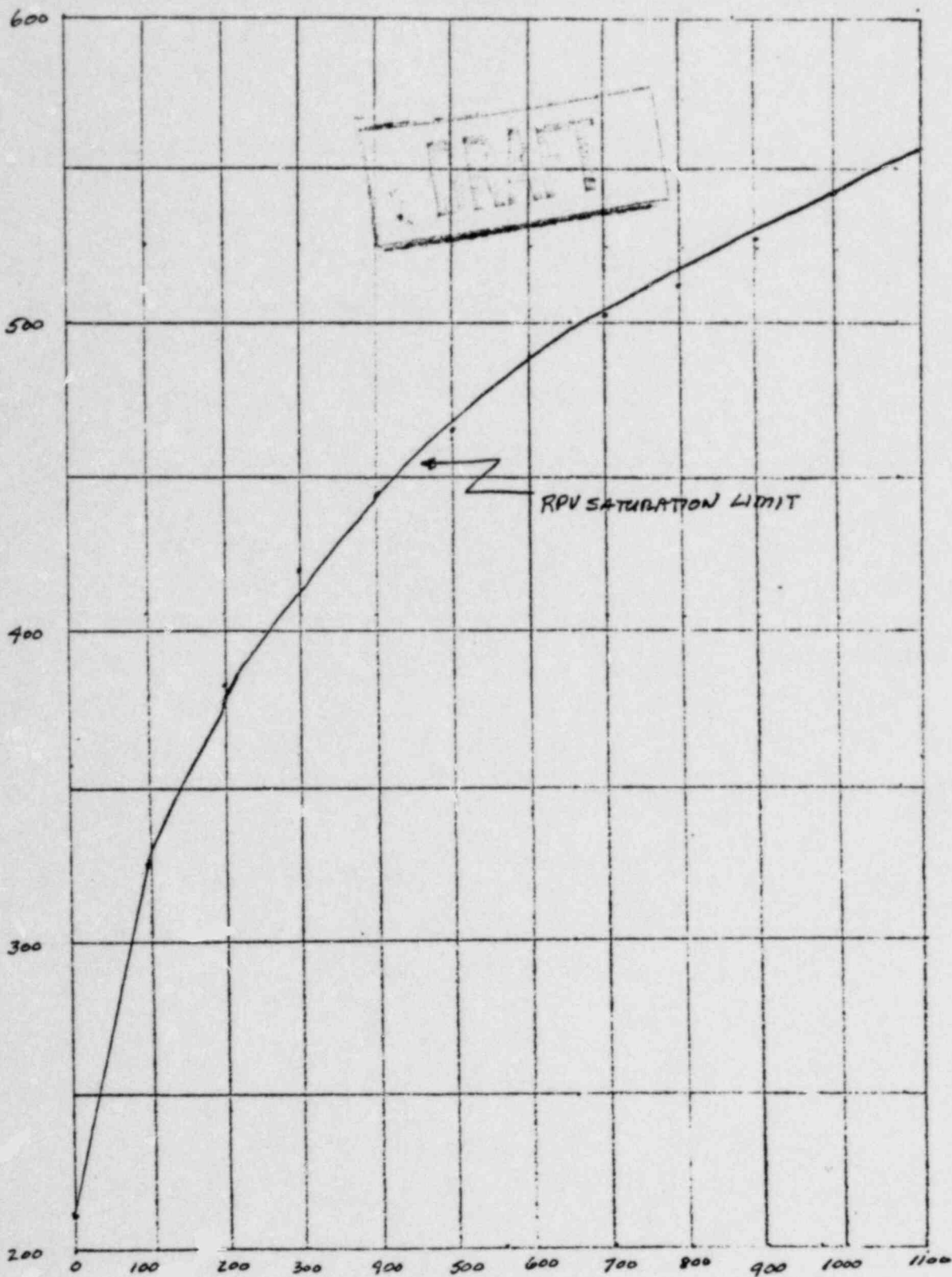
- 3.4.7 When primary containment water level reaches later feet terminate injection into the RPV from sources external to the primary containment irrespective of whether adequate core cooling is assured.
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4.0 REFERENCES

- 4.1 SP 23.116.01 Main and Auxiliary Steam
- 4.2 SP 23.121.01 Residual Heat Removal (RHR) System
- 4.3 SP 29.010.01 Emergency Shutdown
- 4.4 SP 29.023.05 Rapid RPV Depressurization
- 4.5 SP 23.402.01 Primary Containment Post LOCA Hydrogen Recombination
- 4.6 SP 23.418.01 HVAC Reactor Building



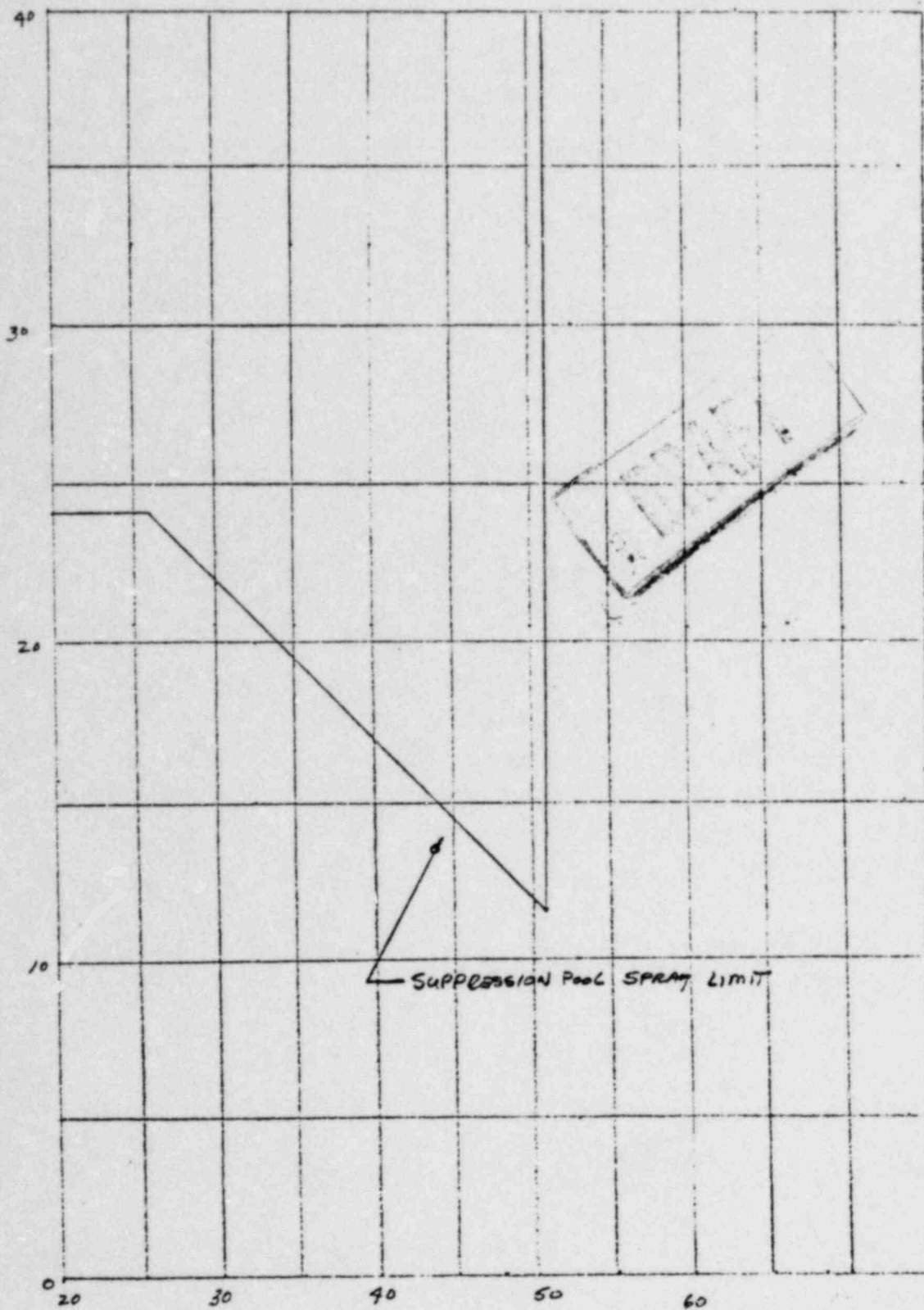
TEMPERATURE (°F)
(NEAR COLD REFERENCE LEGS - INDICATING VERTICAL RUNS)



RPV PRESSURE (PSIG)

FIG 2

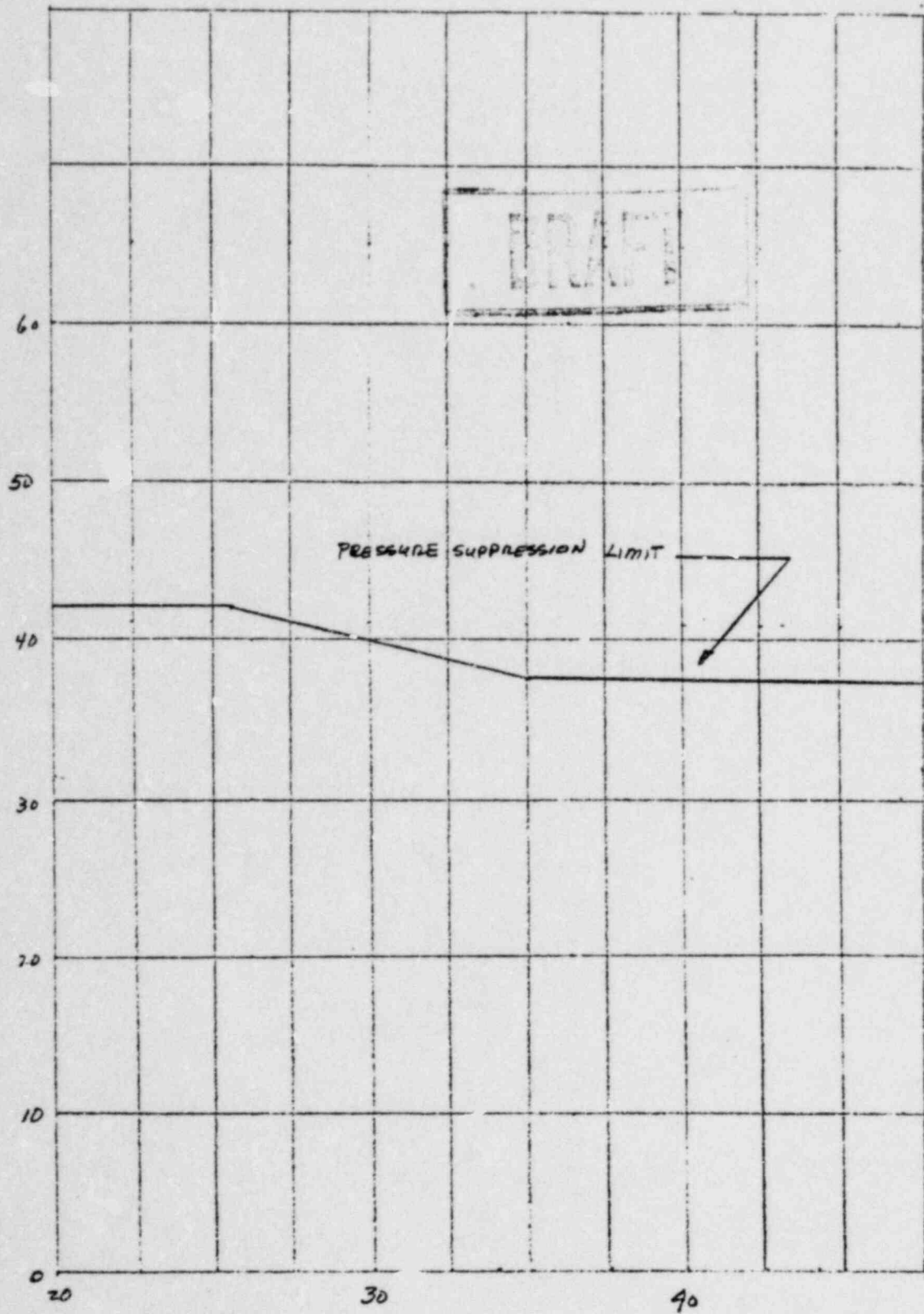
SUPPRESSION CHAMBER PRESSURE (PSIG)



SUPPRESSION POOL LEVEL (FT)

FIG 3

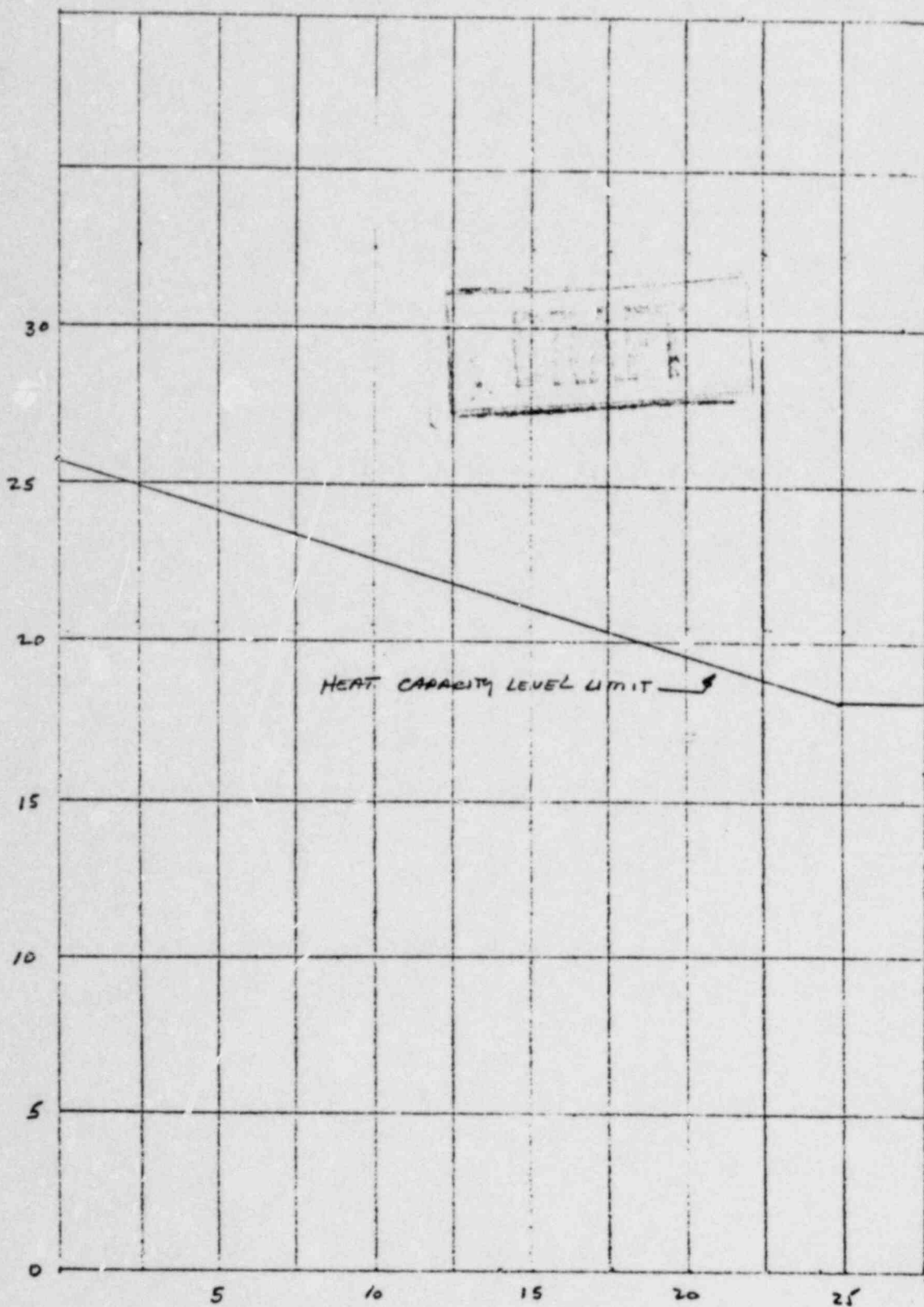
SUPPRESSION CHAMBER PRESSURE (PSIG)



SUPPRESSION POOL WATER LEVEL (FT)

FIG 4

SUPPRESSION POOL LEVEL (FT)



$\Delta T_{Hc} (^{\circ}F)$

FIG 5

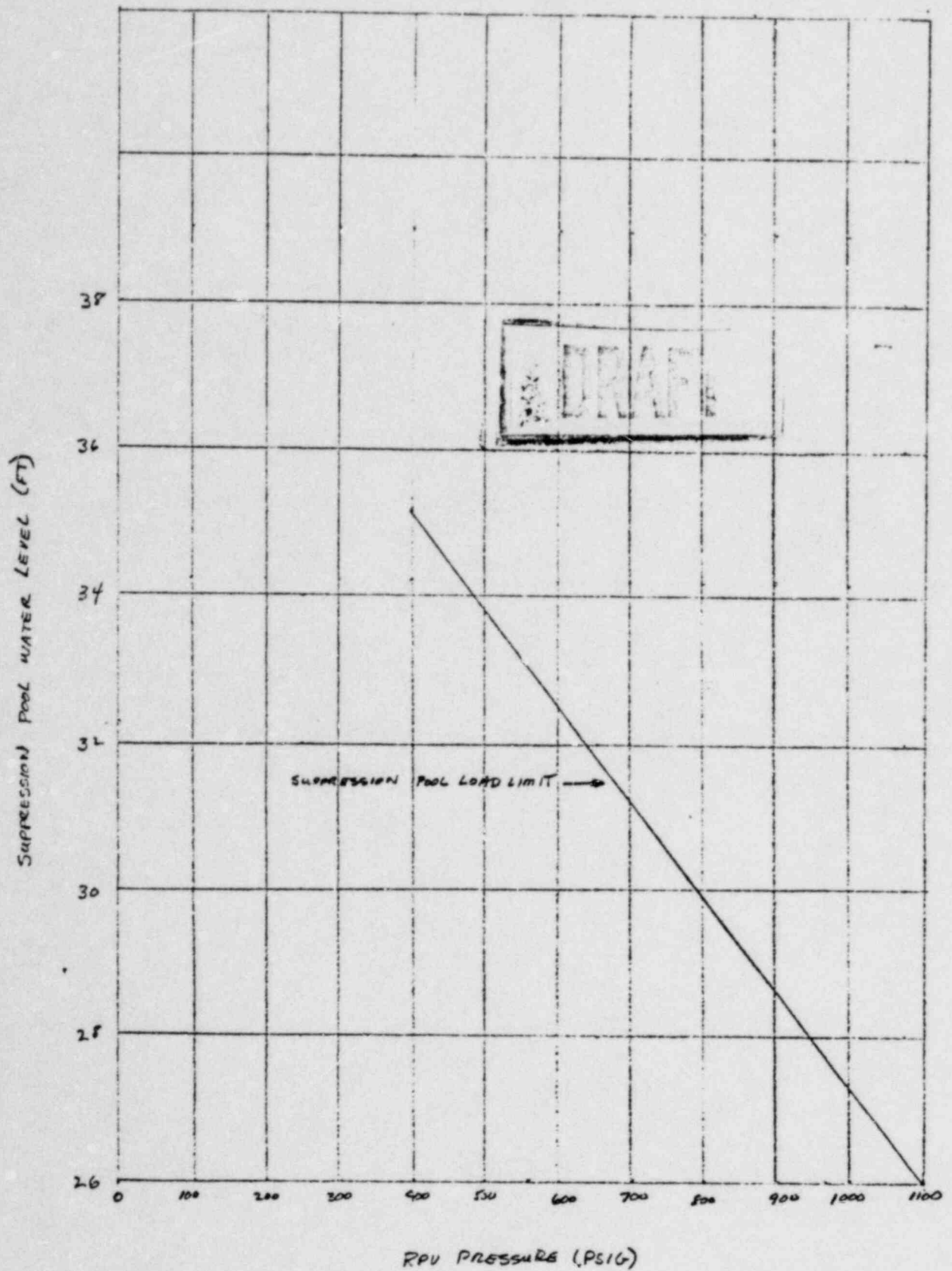


FIG 6