Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

May 4, 1982

Mr. A. Schwencer, Chief
Licensing Branch #2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: LaSalle County Station Units 1 and 2
Completion of Vendor Review of
Emergency Procedures
NRC Docket Nos. 50-373 and 50-374

References (a): NUREG 0737, Item I.C.7

(b): NUREG 0519, SER For LaSalle County Station Chapter 22, Item I.C.7

(c): C. Schroeder letter to A. Schwencer dated April 5, 1982, "Completion of Vendor Review of Emergency Procedures"

Dear Mr. Schwencer:

The purpose of this letter is to transmit to you additional information regarding Reference (a), Vendor Review of Emergency Procedures.

In Reference (b), the staff stated: "The nuclear steam supply system vendor, General Electric Company, is reviewing the power-ascension test procedures and emergency procedures. The applicant has committed to ensuring the review is completed and vendor recommendations addressed prior to the beginning of low-power testing. The staff must review the final draft procedures to determine if the vendor review has been completed acceptably. We will condition the operating license such that our review must be complete before full power."

Commonwealth Edison Company has ensured that the vendor review has been completed. This was documented in Reference (c).

Although not specifically required by Reference (b), during a telecon on April 28, 1982, Dr. A. Bournia and Mr. R. Urban of your staff requested that the detailed comments from the vendor review also be submitted to the staff for review. Enclosed please find the additional information, as requested.

B001
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1/40

If there are any further questions in this matter, please contact this office.

One signed original and thirty-nine (39) copies of this letter and the enclosure are provided for your use.

Very truly yours,

CW Schroeder 5/4/82

C. W. Schroeder
Nuclear Licensing Administrator

lm

Enclosure

cc: NRC Resident Inspector - LSCS

4042N

GENERAL ELECTRIC

NUCLEAR ENERGY

BUSINESS GROUP

GENERAL ELECTRIC CO., LASALLE COUNTY NUCLEAR STATION, P.O. BOX 240
MARSEILLES, ILLINOIS 61341, Phone (815) 357-6807

Nuclear Services Department

LEH-819
February 8, 1982

Mr. R. H. Holyoak
Station Superintendent
Commonwealth Edison Company
LaSalle County Nuclear Station

Subject: LaSalle Site Emergency Procedure (LGA) Review

Reference: (1) NUREG 0737, Section 1.C.7

Dear Mr. Holyoak,

In accordance with the requirements of Reference (1), a General Electric review of the LaSalle Emergency Procedures has been completed.

A copy of the specific revision of procedures that were reviewed is included as Enclosure 1. Emergency Procedure Guidelines (Revision 1B) were used as the primary reference document in conducting this review.

The LaSalle procedures have been found to be in general compliance with the Emergency Procedure Guidelines (Revision 1B) with specific General Electric comments included as Enclosure 2.

J. E. Ellis

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Operations Superintendent
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Enclosures

cc: E. F. Karner - M/C 884
D. R. Pankratz - M/C 884
S. T. Rogers - M/C 738
J. J. Sheehan - M/C 884
R. E. Spencer - GE, LaSalle
R/F

GENERAL PRECAUTIONS

NOTE

The following precautions are generally applicable at all times. Conformance to these cautions ensures that the LGA's will be most efficiently executed.

1. Inform the Shift Supervisor if an abnormal increase in Drywell radiation levels is observed.

2. Monitor the general state of the plant. If an entry condition for either LGA-01 or LGA-03 occurs, enter that LGA. When it is determined that an emergency no longer exists, enter an LGP or LOA.

3. Monitor RPV water level and pressure and primary containment temperature, pressure, and level from multiple indications. Be aware that all indicators of these parameters have not been tested to verify that they will meet new environmental standards.

4. If a safety function is initiated automatically, assume a true initiating event has occurred unless otherwise confirmed by at least two independent indications.

5. Whenever RHR is in the LPCI Mode, inject through the heat exhangers as soon as possible.

6. Do not secure or place an ECCS component in MANUAL mode, unless by at least two independent indications, misoperation in AUTOMATIC mode is confirmed, or adequate core cooling is assured.

   a. If an ECCS component is placed in MANUAL mode, it will not initiate automatically.

   b. Make frequent checks of the initiating or controlling parameter.

   c. When manual operation is no longer required, restore the system to AUTOMATIC/STANDBY mode if possible.

7. Do not throttle RCIC below 2100 RPM since insufficient bearing lubrication may occur.

8. Under unlikely, degraded temperature conditions in the drywell an onscale level reading may occur when level is actually below the lower instrument tap. This phenomenon is only conceivable in the Upset Range and Shutdown Range. If the Shutdown Range indicates a level above 31 inches, then this phenomenon is not postulated to occur.

   If the Drywell Temperature is less than 175°F then this phenomenon is not postulated in the Upset Range.

LEVEL CONTROL

A. PURPOSE

The purpose of this procedure is to restore and stabilize RPV water level.

B. ENTRY CONDITIONS

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

1. RPV water level less than 12.5"
2. Drywell pressure greater than 1.69 psig
3. An isolation condition exists which requires or initiates reactor scram

C. OPERATOR ACTIONS

CAUTION
NOTIFY SHIFT SUPERVISOR TO CLASSIFY THE EVENT AND INITIATE GSEP IF APPROPRIATE

___ 1. VERIFY reactor scram and PERFORM LGP 3-2, Reactor Scram, concurrently with this procedure.

___ 2. VERIFY system isolations consistent with plant parameters (LOP-PC-03).

___ 3. VERIFY automatic initiation of ECCS systems and SBGT system consistent with plant parameters.

___ 4. VERIFY diesel generators start consistent with plant parameters.

CAUTION

AVOID RPV HIGH WATER LEVEL TRIP (+54.5") OF FW PUMPS, RCIC AND CLOSURE OF THE HPCS INJECTION VALVE.

__C.5. RESTORE and MAINTAIN RPV water level between +12.5" and +54.5" with one or more of the following systems:

__ a. Condensate/Feedwater . . 1076 to 0 psig

__ b. CRD . . . . . 1076 to 0 psig

__ 1) INCREASE flowrate to maximum, OPERATE two pumps if possible (LOA-RD-07).

__ c. RCIC . . . . . 1076 to 57 psig

__ d. HPCS . . . . . 1076 to 0 psig
1550 to 6350 gpm

__ e. LPCS . . . . . 440 to 0 psig
0 to 6350 gpm

__ f. LPCI . . . . . 260 to 0 psig
0 to 7450 gpm

__ 6. If RPV water level can be restored and maintained above +12.5"

AND

it is determined that an emergency does not exist

Then ENTER appropriate LGP as determined by the Shift Supervisor.

__C.7. If RPV water level cannot be maintained above +12.5"

Then MAINTAIN RPV water level above T.A.F. (-161" on Fuel Zone Indicator).

___ 8. If RPV water level cannot be maintained above T.A.F. (-161" on Fuel Zone Indicator)

OR

RPV water level cannot be determined

Then ENTER LGA-04, Level Restoration

AND

EVACUATE nonessential personnel from the reactor building.

___ 9. When RPV water level has stabilized

Then ENTER LGA-02, Cooldown.

D. REFERENCES

1. LGP 3-2, Reactor Scram
2. LGA-04, Level Restoration
3. LGA-02, Cooldown
4. LOA-RD-07, Simultaneous Operation of Both CRD Pumps
5. LOP-PC-03, Primary Containment Isolation Status Panel

COOLDOWN

A. PURPOSE

The purpose of this procedure is to depressurize and cool down the RPV to cold shutdown conditions while maintaining RPV water level within a satisfactory range.

B. ENTRY CONDITIONS

This procedure is entered from LGA-01, Level Control, after the RPV water level has been stabilized.

C. OPERATOR ACTIONS

CAUTION

IF HIGH DRYWELL PRESSURE (1.69 PSIG) IS PRESENT WHILE DEPRESSURIZING THE RPV AND ADEQUATE CORE COOLING IS ASSURED.

THEN PREVENT INJECTION FROM THE LPCS AND LPCI SYSTEMS PRIOR TO REACHING THE RPV PRESSURE AT WHICH THEY WILL INJECT. WHEN THE HIGH DRYWELL PRESSURE CONDITION CLEARS, DEPRESS INITIATION LOGIC RESET PUSHBUTTON AND RESTORE LPCS AND LPCI TO THE STANDBY CONDITION (LOP-RH-11, LOP-LP-02).

___C.1. Continue maintaining RPV water level between T.A.F. (-161" on Fuel Zone Indicator) and +54.5" with one or more of the following systems:

___ a. Condensate/Feedwater . . 1076 to 0 psig

___ b. CRD . . . . . 1076 to 0 psig

1) INCREASE flowrate to maximum, OPERATE two pumps if possible (LOA-RD-07).

___ c. RCIC . . . . . 1076 to 57 psig

___ d. HPCS . . . . . 1076 to 0 psig
1550 to 6350 gpm

___ e. LPCS . . . . . 440 to 0 psig
0 to 6350 gpm

___ f. LPCI . . . . . 260 to 0 psig
0 to 7450 gpm

___ 2. <u>If</u> high suppression pool water level, 26'10", (+3") occurs

<u>OR</u>

low CY tank level (3'1") occurs

<u>Then</u> VERIFY HPCS <u>and</u> RCIC suctions transfer from CY tank to the suppression pool.

___ 3. <u>If</u> RPV water level cannot be maintained above T.A.F. (-161" on Fuel Zone Indicator)

<u>OR</u>

RPV water level can <u>not</u> be determined

<u>Then</u> ENTER LGA-04, Level Restoration.

___C.4. DEPRESSURIZE and COOLDOWN the RPV at less than 100°F/hr (LGA-C1, RPV Pressure Reduction - Preferred Method). The 100°F/hr cooldown rate may be exceeded to conserve RPV inventory, protect primary or secondary containment integrity, or limit radioactive release to the environment.

___ 5. When the RHR Shutdown Cooling interlocks clear

Then INITIATE the Shutdown Cooling mode of RHR (LOP-RH-07, Shutdown Cooling System Startup and Operation).

___ 6. If the RHR Shutdown Cooling mode cannot be established and further cooldown is required

Then continue to cooldown using one or more of the systems used for depressurization (LGA-C1). MAINTAIN RPV water temperature above 80°F for Unit 1 or 86°F for Unit 2.

___ 7. If RPV cooldown is required but cannot be accomplished

Then PERFORM the following:

___ a. INITIATE suppression pool cooling.

___ b. CLOSE the following valves:

1) MSIV's 1B21-F022A/B/C/D (2B21-F022A/B/C/D) and 1B21-F028A/B/C/D (2B21-F028A/B/C/D).

2) Main Steam Line Drains 1B21-F016 (2B21-F016) and 1B21-F019 (2B21-F019)

3) RCIC Isolation valves 1E51-F063 (2E51-F063) 1E51-F076 (2E51-F076) and 1E51-F008 (2E51-F008)

4) RHR Steam Condensing isolation valve 1E51-F064 (2E51-F064).

___C.7. c. OPEN two SRV's.

___ d. SLOWLY RAISE RPV water level to establish water flow through the open SRV's back to the suppression pool.

___ e. START one LPCS or LPCI pump with suction from the suppression pool.

___ f. Slowly increase LPCS or LPCI flow.

___ g. If RPV pressure does not stabilize above 47 psig

Then Start another LPCS or LPCI pump.

___ h. If RPV pressure does not stabilize below 131 psig

Then OPEN another SRV.

___ i. CONTROL suppression pool temperature to maintain RPV water temperatures above 80°F for Unit 1 or 86°F for Unit 2.

___ 8. When plant conditions permit:

Then Proceed to Cold Shutdown in accordance with LGP 2-1, Normal Unit Shutdown.

D. REFERENCES

1. LGA-01, Level Control
2. LGA-04, Level Restoration
3. LGA-C1, RPV Pressure Reduction.
4. LGP 2-1, Normal Unit Shutdown
5. LOA-RD-07, Simultaneous Operation of Both CRD Pumps
6. LOP-RH-07, Shutdown Cooling System Startup and Operation.
7. LOP-RH-11, Preparation for Standby Operation of the Low Pressure Coolant Injection System
8. LOP-LP-02, Preparation for Standby Operation of the Low Pressure Core Spray System.

CONTAINMENT CONTROL

A. PURPOSE

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

B. ENTRY CONDITIONS

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

1. Suppression Pool Water Temperature . above 100°F
2. Drywell Atmosphere Temperature . . . above 135°F
3. Drywell Pressure . . . . . above 1.69 psig
4. Suppression Pool Water Level . . . . above 26' 10" (+3")
5. Suppression Pool Water Level . . . . below 26' 2.5" (-4.5")

C. OPERATOR ACTIONS

CAUTION

IRRESPECTIVE OF THE ENTRY CONDITION, ENTER THIS PROCEDURE AT STEPS C.1, C.2, C.3 and C.4 AND PERFORM THESE STEPS CONCURRENTLY WITH ONE ANOTHER.

> **CAUTION**
>
> NOTIFY SHIFT SUPERVISOR TO CLASSIFY THE EVENT AND INITIATE GSEP IF APPROPRIATE

C.1. MONITOR and CONTROL Suppression Pool water temperature

___ a. CLOSE any SRV's that are stuck open per LOA-NB-02, Stuck Open Safety Relief Valve.

> **CAUTION**
>
> IF CONTINUOUS LPCI OPERATION IS REQUIRED TO ASSURE ADEQUATE CORE COOLING, DO NOT DIVERT RHR PUMPS FROM THE LPCI MODE.

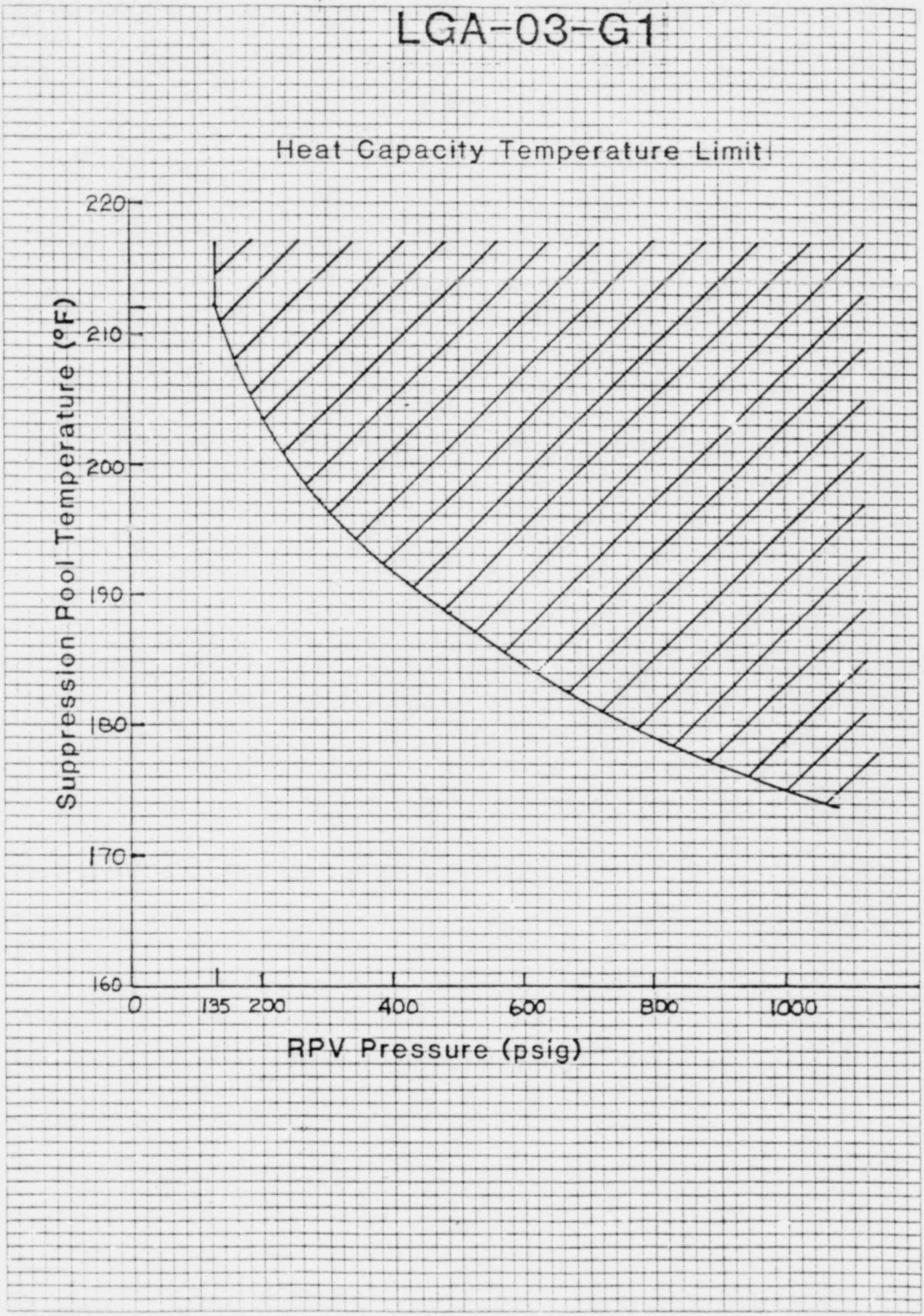
___ b. If Suppression Pool water temperature reaches 100°F

Then START Suppression Pool cooling.

___ c. If Suppression Pool water temperature reaches 110°F

Then SCRAM the reactor and PERFORM LGP 3-2, Reactor Scram, concurrently with this procedure.

LGA-03-G1


Heat Capacity Temperature Limit
Suppression Pool Temperature (°F)
220
210
200
190
180
170
160
0
135
200
400
600
800
1000
RPV Pressure (psig)

LGA-03-G1

Heat Capacity Temperature Limit

> **CAUTION**
>
> DO NOT DEPRESSURIZE THE RPV BELOW 57 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.

__C. 1. d. If Suppression Pool water temperature cannot be maintained below the Heat Capacity Temperature Limit, LGA-03-G1

Then MAINTAIN RPV pressure below the limit using the methods in LGA-C1, RPV Pressure Reduction - Preferred Method.

___ e. If Suppression Pool water temperature and RPV pressure cannot be maintained or restored below the Heat Capacity Temperature Limit, LGA-03-G1.

Then OPEN all ADS valves.

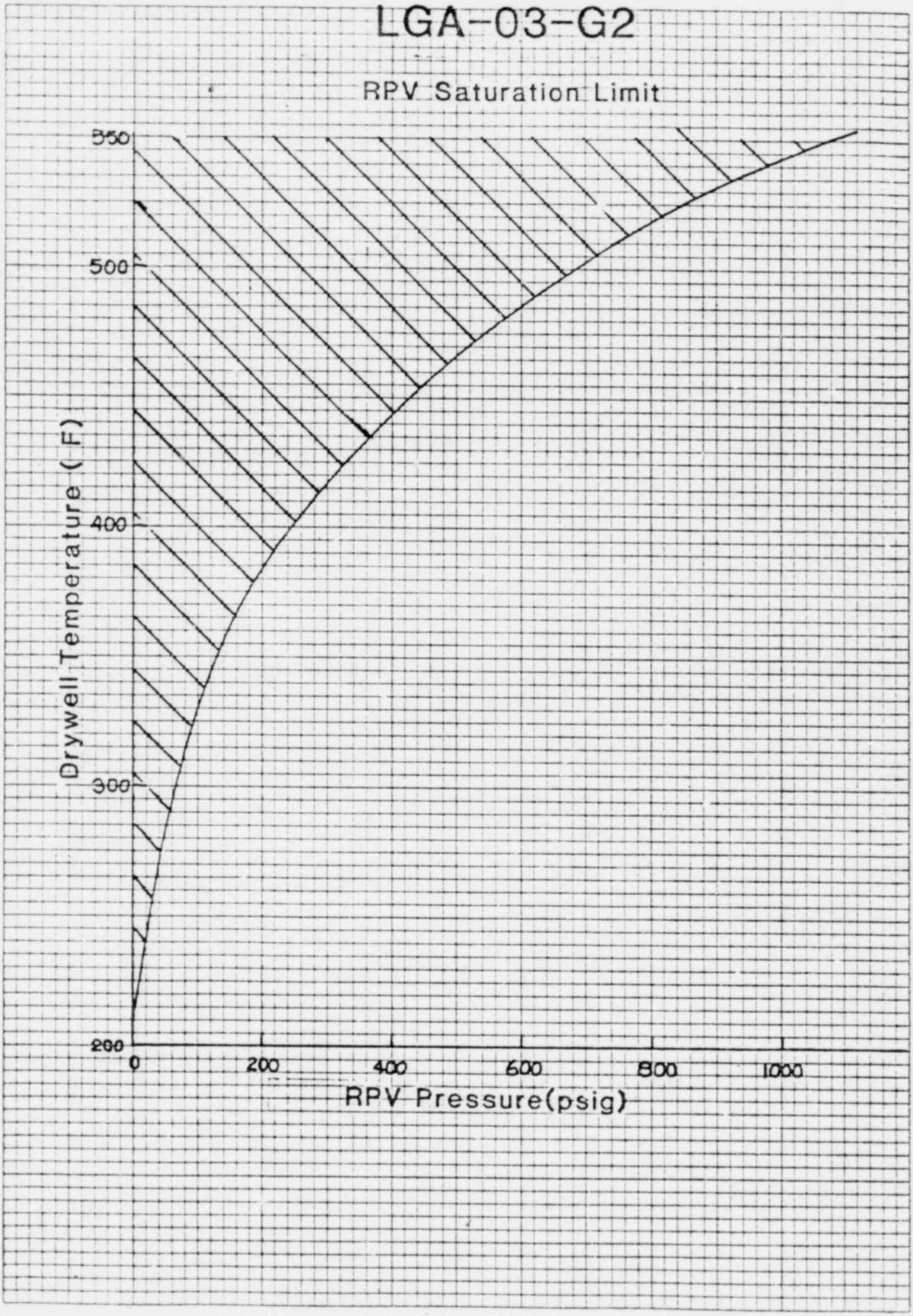
___ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

___ 2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

LGA-03-G2



LGA-03-G2

RPV Saturation Limit

C.2. MONITOR and CONTROL drywell temperature

___ a. If DRYWELL TEMPERATURE exceeds 135°F

Then VERIFY that a Primary Containment Cooling Loop is operating.

___ b. If the operating loop is determined to provide insufficient cooling

Then START the standby loop. (LOP-VP-02, Startup and Operation of Primary Containment Chill Water System).

___ c. If DRYWELL TEMPERATURE reaches the RPV Saturation Limit, LGA-03-G2

Then ENTER LGA-05, RPV Flooding.

IF CONTINUOUS LPCI OPERATION IS REQUIRED TO ASSURE ADEQUATE CORE COOLING, DO NOT DIVERT RHR PUMPS FROM THE LPCI MODE.

___ d. If DRYWELL TEMPERATURE approaches 340°F

Then SHUTDOWN Reactor Recirculation Pumps and Drywell Fans

AND

INITIATE Drywell Sprays.

__C.2. e. If DRYWELL TEMPERATURE can not be maintained below 340°F

Then OPEN all ADS valves.

___ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

___ 2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

C.3. MONITOR and CONTROL Primary Containment pressure with the following systems, as required:

> **CAUTION**
>
> IF PRIMARY CONTAINMENT PRESSURE REACHES 1.69 PSIG
>
> THEN VERIFY THAT THE POST LOCA CONTAINMENT AIR MONITORING SYSTEM HAS INITIATED.

> **CAUTION**
>
> START THE HYDROGEN RECOMBINER SYSTEM PRIOR TO PRIMARY CONTAINMENT HYDROGEN CONCENTRATION EXCEEDING 3.3 PERCENT BY VOLUME (LOP-HG-02 STARTUP AND SHUTDOWN OF POST LOCA COMBUSTIBLE GAS CONTROL SYSTEM).

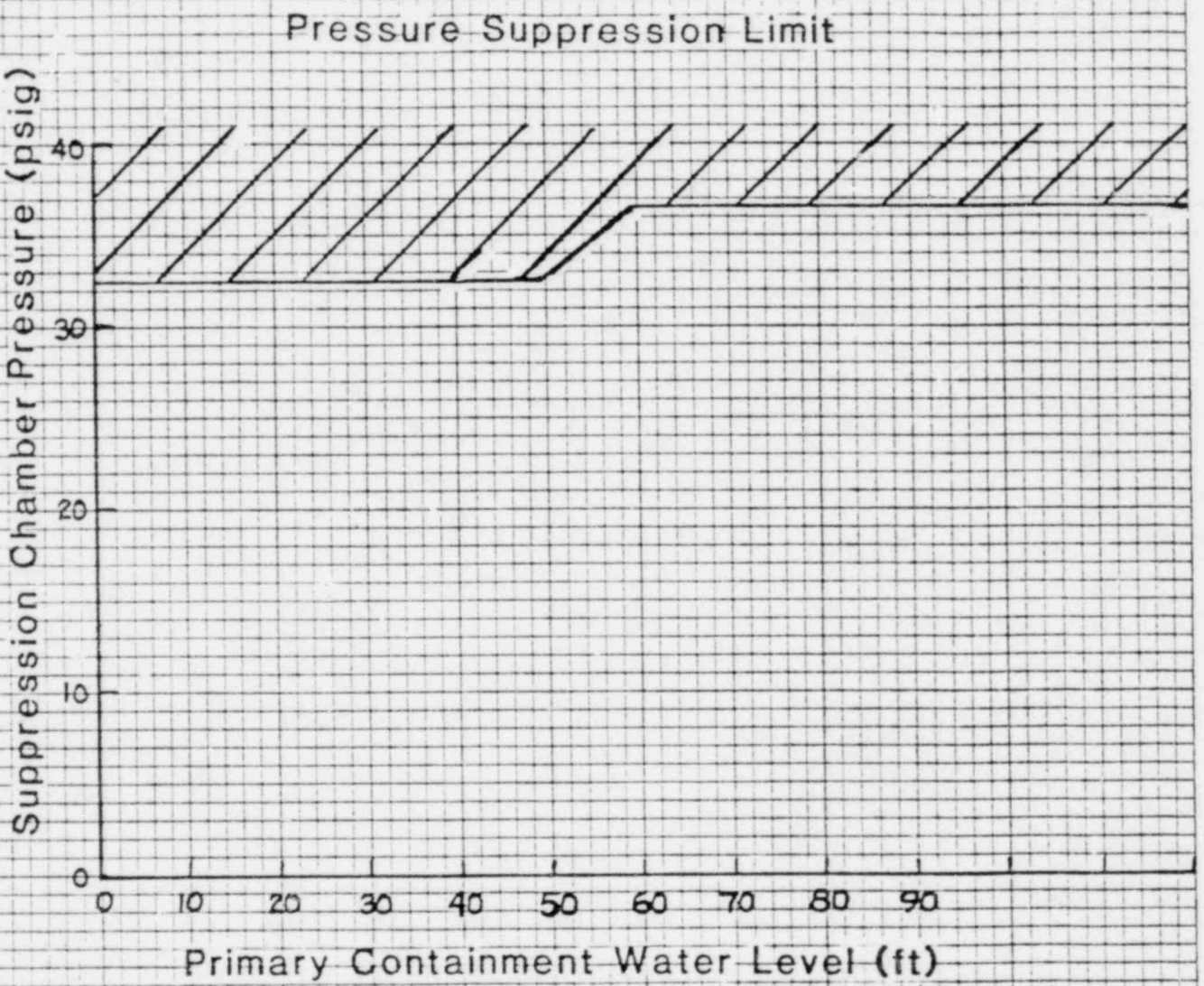
> **CAUTION**
>
> ELEVATED SUPPRESSION CHAMBER PRESSURE MAY TRIP THE RCIC TURBINE ON HIGH EXHAUST PRESSURE, 25 PSIG.

> **CAUTION**
>
> DEFEATING ISOLATION INTERLOCKS MAY BE REQUIRED TO ACCOMPLISH THIS STEP

___ a. Primary Containment Cooling System (REFER to LOA-VP-02, Primary Containment Pressure Reduction - Drywell Cooling).

___ b. Venting through SBGTS (REFER to LOA-VQ-01, Primary Containment Pressure Reduction - Venting).

LGA-03-G3



LGA-03-G3

Pressure Suppression Limit

CAUTION

IF CONTINUOUS LPCI OPERATION IS REQUIRED TO ASSURE ADEQUATE CORE COOLING, DO NOT DIVERT RHR PUMPS FROM THE LPCI MODE.

__C.3. c. If Suppression Chamber pressure cannot be maintained below 22 psig

AND

Suppression Pool level is below 49'8"

Then INITIATE Suppression Pool Sprays.

___ d. If A Suppression Pool to Drywell vacuum breaker is STUCK OPEN

Then Manually ISOLATE the vacuum breaker per LOA-PC-03, Stuck Open Suppression Pool to Drywell Vacuum Breaker.

___ e. If Suppression Chamber pressure approaches the Pressure Suppression Limit, LGA-03-G3

Then SHUTDOWN the Reactor Recirculation Pumps and the Drywell Fans

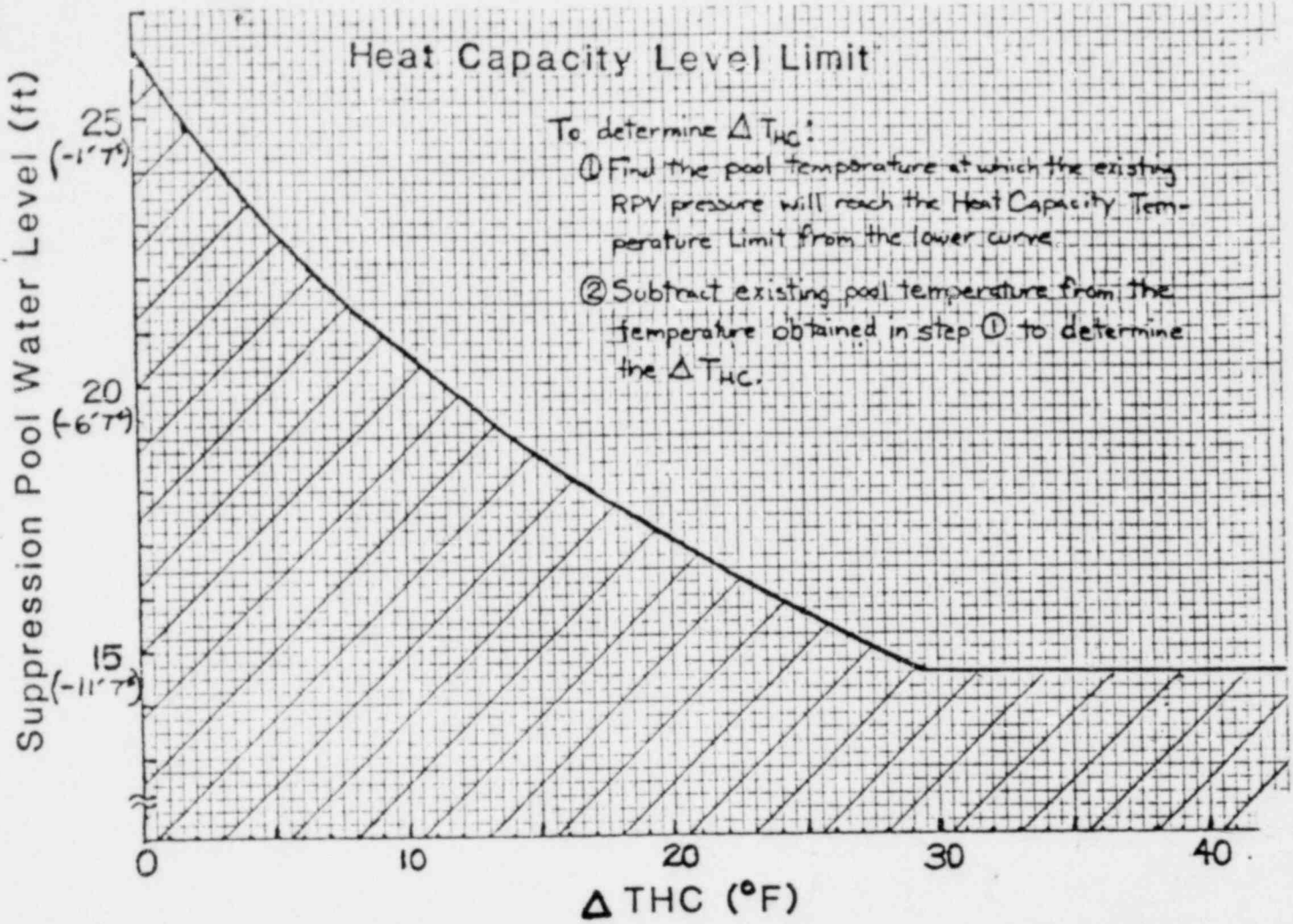
AND

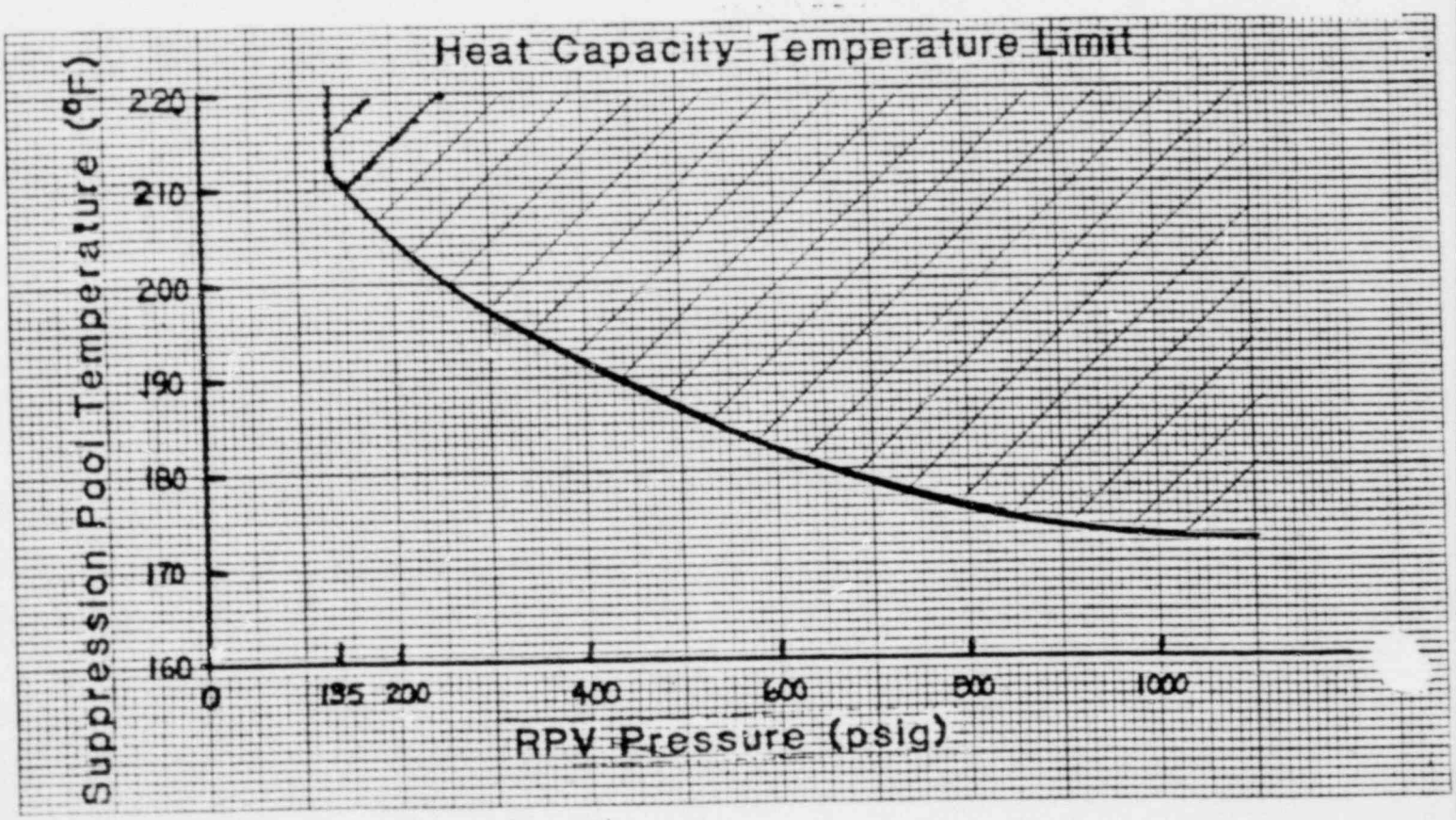
INITIATE Drywell Sprays and OPERATE as necessary to maintain Suppression Chamber pressure below the curve.

___ f. If Suppression Chamber pressure cannot be maintained below the Pressure Suppression Limit, LGA-03-G3

Then ENTER LGA-05, RPV Flooding.

LGA-03-G4


Heat Capacity Level Limit
To determine ΔTHC:
① Find the pool temperature at which the existing RPV pressure will reach the Heat Capacity Temperature Limit from the lower curve.
② Subtract existing pool temperature from the temperature obtained in step ① to determine the ΔTHC.
Suppression Pool Water Level (ft)
25 (-1'7")
20 (-6'7")
15 (-11'7")
0
10
20
30
40
ΔTHC (°F)


Heat Capacity Temperature Limit
Suppression Pool Temperature (°F)
220
210
200
190
180
170
160
0
135
200
400
600
800
1000
RPV Pressure (psig)

LGA-03-G4

Heat Capacity Level Limit

C.4. MONITOR and CONTROL suppression pool water level

___ a. MAINTAIN Suppression Pool water level between 26'2.5" (-4.5") and 26' 10" (+3") (LOP-RH-16, Lowering of Suppression Pool Level or LOP-HP-05, Raising of Suppression Pool Level).

___ b. If Suppression Pool water level cannot be maintained above -4.5"

Then MONITOR Suppression Pool Temperature from the Process Computer, point L124 or from the Remote Shutdown Panel.

AND

MAINTAIN the ΔT_{HC} above the Heat Capacity Level Limit, LGA-03-G4, by

1) Raising Suppression Pool Level

2) Reducing Suppression Pool Temperature

3) Reducing RPV Pressure using the methods in LGA-C1, RPV Pressure Reduction - Preferred Method.

___ c. If ΔT_{HC} cannot be maintained above the Heat Capacity Level Limit, LGA-03-G4,

Then OPEN all ADS valves.

1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

2) If less than 3 SRV's can be opened

Then Rapidly DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

___ a. If high suppression pool level 26'10" (+3") occurs

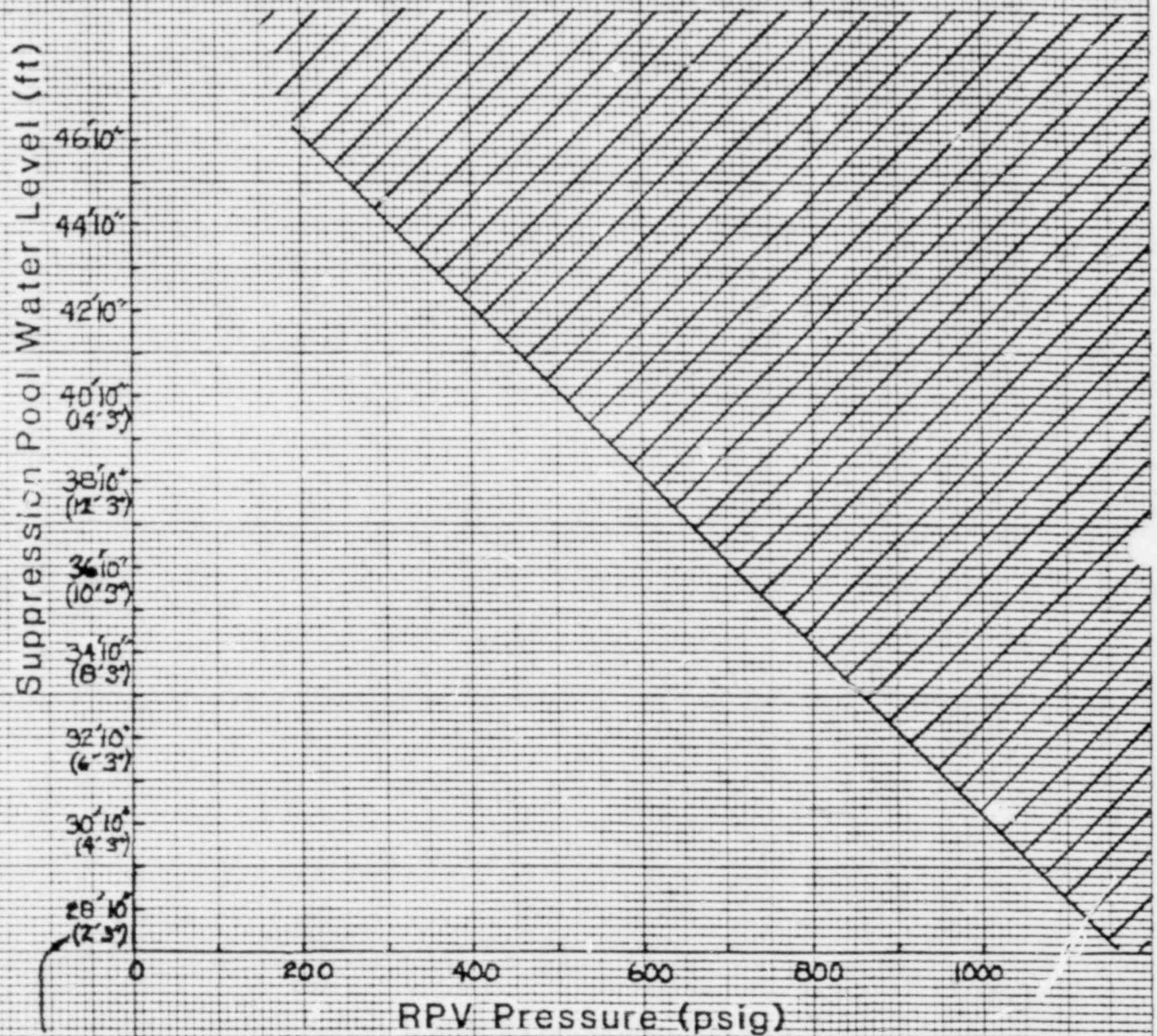
OR

low CY tank level (3' 1") occurs

Then VERIFY HPCS and RCIC suctions transfer from CY tank to Suppression Pool.

LGA-03-G5

Suppression Pool Load Limit



Note: Values in parentheses ( ) are indicated levels above suppression pool instrument zero [26' 7½"] as indicated on 1(2)PM13J recorders 1(2)UR-CM029 and 1(2)UR-CM031

LGA-03-G5

Suppression Pool Load Limit

__C.4. e. If the Suppression Pool water level can not be maintained below 26'10" (+3")

AND

adequate core cooling is assured

Then TERMINATE injection into the reactor vessel from sources external to the Primary Containment.

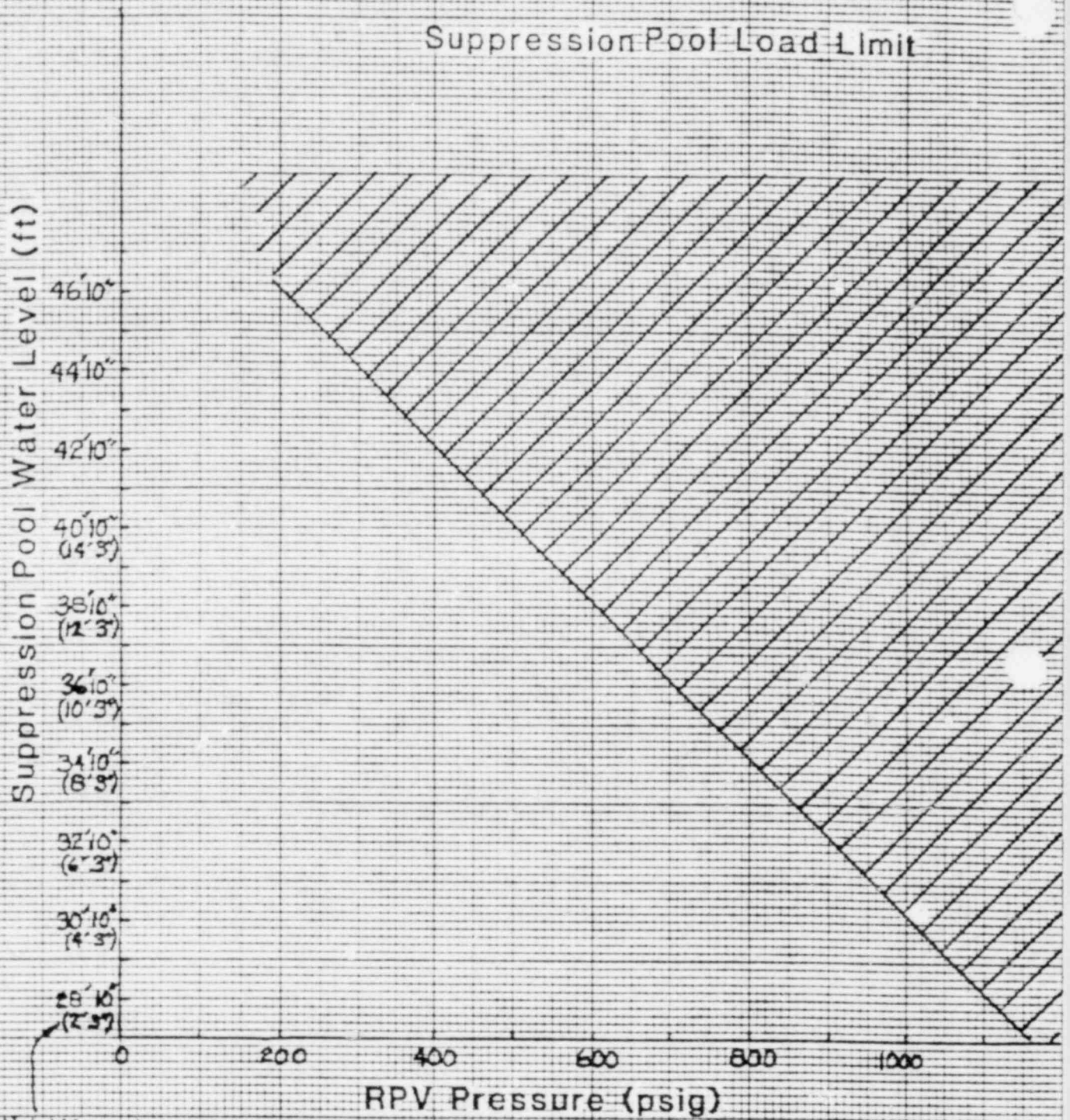
CAUTION
COOLDOWN RATES ABOVE 100°F/HR MAY BE REQUIRED TO ACCOMPLISH THIS STEP.

___ f. If Suppression Pool water level cannot be maintained below the Suppression Pool Load Limit, LGA-03-G5

Then MAINTAIN RPV pressure below the limit using methods in LGA-C1, RPV Pressure Reduction - Preferred Method.

LGA-03-G5

Suppression Pool Load Limit



Note: Values in parentheses ( ) are indicated levels above suppression pool instrument zero [26' 7"] as indicated on 1(2)PM13J recorders 1(2)UR-CM029 and 1(2)UR-CM031

LGA-03-G5

Suppression Pool Load Limit

CAUTION

DO NOT DEPRESSURIZE THE RPV BELOW 57 PSIG UNLESS MOTOR DRIVEN PUMPS SUFFICIENT TO MAINTAIN RPV WATER LEVEL ARE RUNNING AND AVAILABLE FOR INJECTION

__C.4. g. If Suppression Pool water level and RPV pressure cannot be restored or maintained below the Suppression Pool Load Limit, LGA-03-G5,

Then OPEN all ADS valves.

___ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

___ 2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

___ h. If Primary Containment water level reaches level corresponding to 809' above sea level (REFER to LOA-PC-04, Primary Containment Level Determination, for a method to determine level)

Then TERMINATE injection into the RPV from sources external to the Primary Containment whether or not adequate core cooling is assured.

D. REFERENCES

1. LOA-NB-02, Stuck Open Safety Relief Valve
2. LGP 3-2, Reactor Scram.
3. LOP-VP-02, Startup and Operation of Primary Containment Chill Water System.
4. LGA-05, RPV Flooding.
5. LGA-C1, RPV Pressure Reduction - Preferred Method
6. LGA-C2, RPV Pressure Reduction - ADS Failure
7. LOP-HG-02, Startup and Shutdown of Post LOCA Combustible Gas Control System.
8. LOP-RH-16, Lowering of Suppression Pool Level.
9. LOP-HP-05, Raising of Suppression Pool Level.
10. LOA-VP-02, Primary Containment Pressure Reduction -Drywell Cooling.
11. LOA-VQ-01, Primary Containment Pressure Reduction -Venting
12. LOA-PC-03, Stuck Open Suppression Pool to Drywell Vacuum Breaker.
13. LOA-PC-04, Primary Containemtn Level Determination

LEVEL RESTORATION

A. PURPOSE

The purpose of this procedure is to restore RPV water level.

B. ENTRY CONDITIONS

This procedure is entered from LGA-01 (Level Control) or LGA-02 (Cooldown) when RPV water level cannot be maintained above T.A.F. (-161" on the Fuel Zone Indicator) or whenever level cannot be determined.

C. OPERATOR ACTIONS

1. LINE UP for injection and START pumps in 2 or more of the following Normal Injection Systems:

___ a. Condensate/Feedwater

___ b. HPCS

___ c. A RHR (LPCI Mode)

___ d. B RHR (LPCI Mode)

___ e. C RHR (LPCI Mode)

___ f. LPCS

__C.2. If less than 2 of the Normal Injection Systems can be lined up

Then COMMENCE LINING UP as many of the following Alternate Injection Systems as possible:

___ a. Fuel Pool Emergency Make Up to Reactor, LOA-FC-03.

___ b. Reactor Fill from SBLC, LOA-SC-03

___ c. ECCS Water Leg Pumps

___ d. Cycled Condensate Makeup to the Reactor, LOA-CY-02

___ e. Suppression Pool Makeup to the Reactor, LOA-SF-01

___ f. Diesel Fire Pump Makeup to the Reactor, LOA-FP-03

__C.3. If at any time RPV water level cannot be determined

AND

no system or Normal Injection System is lined up for injection with at least one pump running

Then START pumps in Alternate Injection Systems that are lined up for injection.

a. If no system, Normal Injection System, or Alternate Injection System is lined up for injection with at least one pump running

Then ENTER LGA-04, Level Restoration at Step C.9.d. and PERFORM the Steam Cooling operation.

__C.4. If at any time RPV water level cannot be determined

AND

at least one system, Normal Injection System, or Alternate Injection System is lined up for injection with at least one pump running

Then ENTER LGA-05, RPV Flooding.

TABLE I

RPV Pressure Region

	440 HIGH	440 to 57 INTERMEDIATE	57 LOW
RPV LVL. INC.	C.6	C.7	C.8
RPV LVL. DEC.	C.9		C.10

C.5. MONITOR RPV water level and pressure

a. REFER to Table 1 to determine the step to enter for existing RPV level and pressure conditions.

b. If RPV water level trend reverses

OR

RPV pressure trend reverses

OR

RPV pressure changes region (in Table 1)

Then RETURN to Step C.5 of this procedure.

__C.6. RPV level increasing and RPV pressure greater than 440 psig (High Region)

a. ENTER LGA-01, Level Control at Step C.5.

__C.7 RPV level increasing and RPV pressure between 440 and 57 psig. (Intermediate Region)

> **CAUTION**
>
> DO NOT DEPRESSURIZE THE RPV BELOW 57 PSIG UNLESS MOTOR DRIVEN PUMPS SUFFICIENT TO MAINTAIN RPV WATER LEVEL ARE RUNNING AND AVAILABLE FOR INJECTION.

___ a. If RCIC is not available

AND

RPV pressure is increasing

Then OPEN all ADS valves.

___ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

___ 2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

___ b. If RCIC is not available

AND

RPV pressure is not increasing

Then ENTER LGA-01, Level Control at Step C.5.

___ c. When RPV water level reaches +12.5"

Then ENTER LGA-01, Level Control at Step C.5.

__C.8. RPV level increasing and RPV pressure below 57 psig (low region).

___ a. If RPV pressure is increasing

Then OPEN all ADS valves.

___ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

___ 2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

___ b. When RPV level exceeds T.A.F. (-161" on the Fuel Zone Indicator)

Then ENTER LGA-01, Level Control at Step C.5.

C.9. RPV level decreasing and RPV pressure greater than 57 psig (Intermediate/High region).

a. If RCIC is not operating

Then RESTART RCIC.

b. If CRD is not operating

BUT

at least 2 Normal Injection Systems are lined up for injection with pumps running

Then OPEN all ADS valves.

1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 SRV's are open.

2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure reduction - ADS Failure.

c. If CRD is not operating

AND

No Normal Injection System is lined up for injection with at least one pump running

Then START pumps in Alternate Injection Systems that are lined up for injection.

C.9. d. If the RPV water level drops to T.A.F. (-161" on the Fuel Zone Indicator)

AND

CRD not operating,

AND

RCIC not operating

AND

No Normal Injection System is lined up for injection with a pump running,

AND

No Alternate Injection System is lined up for injection with a pump running

Then PERFORM the following steps:

1) When RPV water level drops to the minimum zero injection RPV water level (-236" on the Fuel Zone Indicator)

OR

RPV water level cannot be determined (Do not Enter LGA-05, RPV Flooding)

Then OPEN one SRV.

2) When RPV pressure drops below 500 psig

Then OPEN 6 additional SRV's.

__C.9. e. If the RPV water level drops to -161" on the Fuel Zone Indicator

AND

CRD is operating, OR a Normal Injection System OR an Alternate Injection System is lined up for injection with a pump running

Then OPEN all ADS valves.

__ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

__ 2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction, - ADS Failure.

C.10. RPV level decreasing and RPV pressure less than 57 psig (low region).

___ a. If No Normal Injection System is lined up for injection with at least one pump running

Then START pumps in the Alternate Injection Systems that are lined up for injection

___ b. If RPV pressure is increasing

Then OPEN all ADS valves.

1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

2) If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction, - ADS Failure.

___ c. If RPV pressure is not increasing

AND

RPV water level drops to T.A.F. (-161" on the Fuel Zone Indicator)

Then OPEN all ADS valves.

___ 1) If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

___ 2) OPERATE LPCS and HPCS with suction from the suppression pool.

C.10. c. 3) When either LPCS or HPCS is operating with suction from the suppression pool

AND

The differential pressure between the suppression pool and the RPV is less than 122 psi

Then TERMINATE injection into the RPV from sources external to the Primary Containment.

D. REFERENCES

1. LGA-01, Level Control
2. LGA-02, Shutdown
3. LGA-05, RPV Flooding
4. LOA-FC-03, Fuel Pool Emergency Make Up to Reactor
5. LOA-SC-03, Reactor Fill from SBLC
6. LGA-C2, RPV Pressure Reduction - ADS Failure
7. LOA-CY-02, Cycled Condensate Makeup to the Reactor
8. LOA-SF-01, Suppression Pool Makeup to the Reactor
9. LOA-FP-03, Diesel Fire Pump Makeup to the Reactor

RPV FLOODING

A. PURPOSE

The purpose of this procedure is to assure adequate core cooling and containment integrity by flooding the RPV.

B. ENTRY CONDITIONS

This procedure is entered from LGA-03 (Containment Control), or LGA-04 (Level Restoration) when:

RPV water level cannot be determined

OR

DRYWELL TEMPERATURE reaches the RPV Saturation Limit

OR

SUPPRESSION CHAMBER PRESSURE cannot be maintained below the Pressure Suppression Limit.

CAUTION

DO NOT DEPRESSURIZE THE RPV BELOW 57 PSIG UNLESS MOTOR DRIVEN PUMPS SUFFICIENT TO MAINTAIN RPV WATER LEVEL ARE RUNNING AND AVAILABLE FOR INJECTION.

__C.1. OPEN all ADS valves.

__ a. If all ADS valves can not be opened

Then OPEN other SRV's until a total of 7 valves are open.

__ b. If less than 3 SRV's can be opened

Then RAPIDLY DEPRESSURIZE the RPV per LGA-C2, RPV Pressure Reduction - ADS Failure.

__ 2. If at least 3 SRV's are open

OR

HPCS Pump is available for injection with high level trip bypassed (LOA-HP-01, RPV Flooding - High Level HPCS Isolation Bypass).

OR

Motor Driven Feedwater Pump is available for injection with high level trip bypassed (LOA-FW-02, RPV Flooding - High Level MDRFP Pump Trip Bypass)

Then CLOSE the following valves:

__ a. MSIV's 1B21-F022A/B/C/D (2B21-F022A/B/C/D) and 1B21-F028A/B/C/D (2B21-F028A/B/C/D).

__ b. Main Steam Line drains 1B21-F016 (2B21-F016) and 1B21-F019 (2B21-F019).

__ c. RCIC isolation valves 1E51-F063, (2E51-F063), 1E51-F076 (2E51-F076), and 1E51-F008 (2E51-F008).

__ d. RHR steam condensing isolation valves 1E51-F064 (2E51-F064).

__ e. RWCU isolation valves 1G33-F001 (2G33-F001) and 1G33-F004 (2G33-F004).

C.3. If RPV water level cannot be determined

Then Perform the following steps:

a. COMMENCE and INCREASE injection into the RPV with the following systems until:

RPV pressure is stable or increasing

AND

RPV pressure is greater than 90 psig above Suppression Pool Pressure

1) HPCS (with high level trip bypassed - LOA-HP-01 RPV Flooding - High Level HPCS Isolation Bypass)

2) Motor Driven Reactor Feed Pump (with high level trip bypassed - LOA-FW-02, RPV Flooding - High Level MDRFP Trip Bypass)

3) LPCS

4) LPCI

5) Condensate/Condensate Booster Pumps

6) CRD

7) Reactor Vessel Fill from SBLC, LOA-SC-03

8) ECCS Water Leg Pumps

9) Cycled Condensate Makeup to the Reactor, LOA-CY-02

10) Suppression Pool Makeup to the Reactor, LOA-SF-01

11) Diesel Fire Pump Makeup to the Reactor, LOA-FP-03

12) Fuel Pool Emergency Makeup to the Reactor, LOA-FC-03

__C.3. b. When RPV pressure is greater than 90 psig above Suppression Pool Pressure

Then Injection may be reduced so long as RPV pressure is maintained above 90 psig.

__C.4. If RPV water level can be determined

Then COMMENCE and INCREASE injection into the RPV with the following systems until RPV water level is increasing:

a. HPCS

b. Motor Driven Reactor Feed Pump

c. LPCS

d. LPCI

e. Condensate/Condensate Booster Pumps

f. CRD

g. ECCS Water Leg Pumps

h. Cycled Condensate Makeup to the Reactor, LOA-CY-02

i. Suppression Pool Makeup to the Reactor, LOA-SF-01

j. Reactor Vessel Fill from SBLC, LOA-SC-03

k. Diesel Fire Pump Makeup to the Reactor, LOA-FP-03

l. Fuel Pool Emergency Makeup to the Reactor, LOA-FC-03

__C.5. If Drywell Pressure exceeds 45 psig

AND

Containment Radiation Levels indicate 10CFR100 limits will not be exceeded

Then VENT the Drywell through valve 1(2)VQ035, Drywell Vent/Purge Outlet Downstream Isolation, to SBGTS in accordance with LGA-VP-03, Emergency Primary Containment Pressure Relief.

__C.6. If Drywell Pressure cannot be maintained below 132 psig (Primary Containment Pressure Limit)

Then INITIATE the following systems irrespective of whether adequate core cooling is assured:

a. Drywell Sprays

b. Suppression Pool Sprays (ONLY when Suppression Pool water level is below 49 ft. 8 in. - LGA-PC-04).

CAUTION

DEFEATING ISOLATION INTERLOCKS MAY BE REQUIRED TO ACCOMPLISH THIS STEP

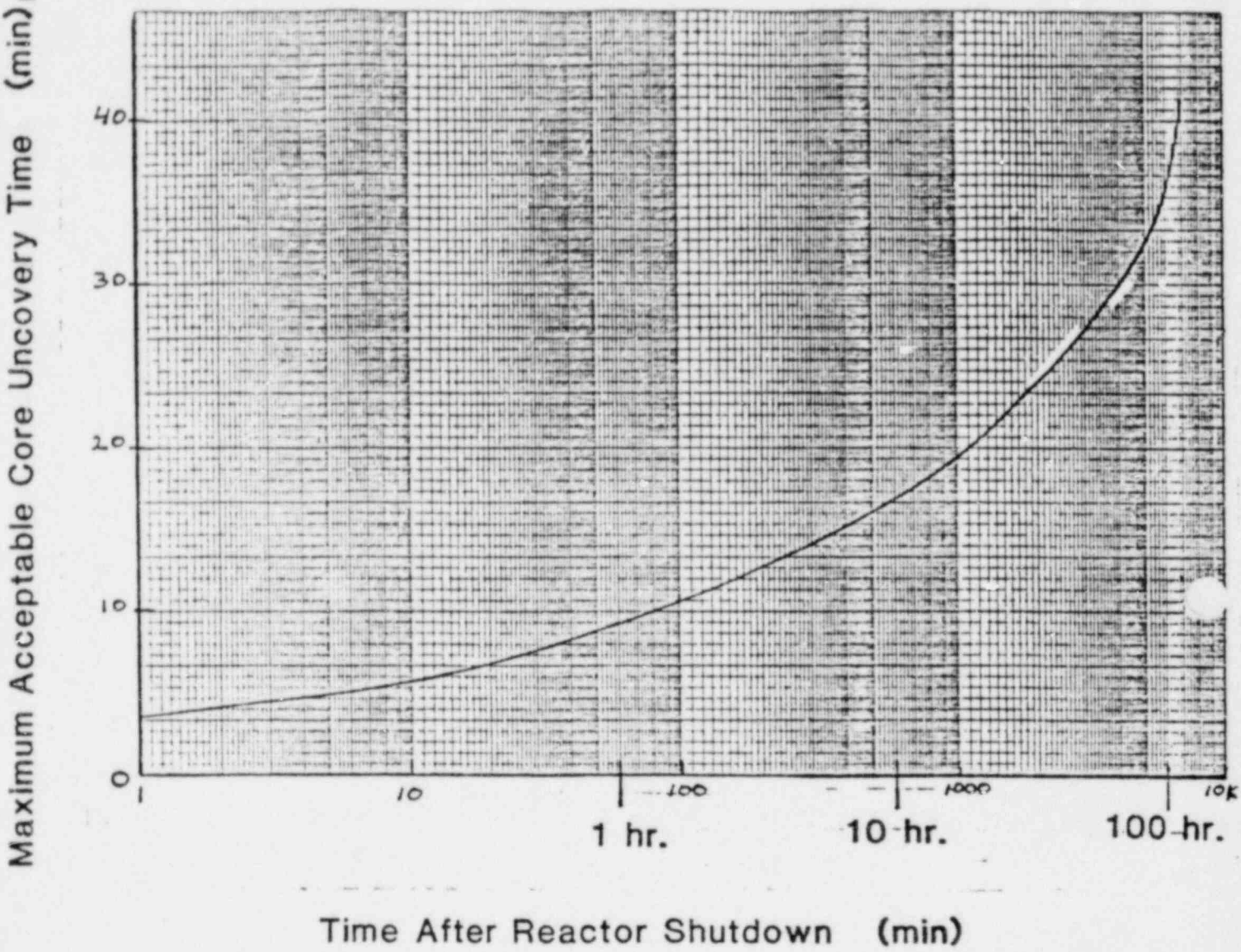
___ 7. If Drywell Pressure exceeds 132 psig (Primary Containment Pressure Limit)

Then VENT the Primary Containment in accordance with LGA-VP-03, Emergency Primary Containment Pressure Relief, to reduce pressure below the limit.

___ 8. CONTINUE injecting water into the RPV until DRYWELL TEMPERATURE is below 212°F AND RPV water level instrumentation is available.

LGA-05-G3

MAXIMUM ACCEPTABLE CORE UNCOVERY TIME



LGA-05-G3

Maximum Acceptable Core Uncovery Time

__C.9. If it can be determined that the RPV is filled

OR

RPV pressure is at least 90 psig above Suppression Pool pressure

Then TERMINATE all injection into the RPV

AND

REDUCE RPV water level

a. If RPV water level indication is not restored within the Maximum Acceptable Core Uncovery Time, LGA-05-G3, after commencing termination of injection into the RPV

Then RETURN to Step C.3 of this procedure.

b. If RPV water level indication is restored within the Maximum Acceptable Core Uncovery Time, LGA-05-G3, of commensing termination of injection

AND

Drywell Pressure is less than 45 psig

Then ENTER LGA-01, Level Control at Step C.5.

D. REFERENCES

1. LGA-01, Level Control
2. LGA-02, RPV Pressure Reduction - ADS Failure.
3. LGA-03, Containment Control
4. LGA-04, Level Restoration
5. LOA-FC-03, Fuel Pool Emergency Make Up to Reactor
6. LOA-SC-03, Reactor Vessel Fill from SBLC
7. LOA-CY-02, Cycled Condensate Makeup to the Reactor
8. LOA-SF-01, Suppression Pool Makeup to the Reactor
9. LOA-VP-03, Emergency Primary Containment Pressure Relief
10. LOA-FP-03, Diesel Fire Pump Makeup to the Reactor.
11. LOA-HP-01, RPV Flooding - High Level HPCS Isolation Bypass
12. LOA-FW-02, RPV Flooding - High Level MDRFP Trip Bypass

RPV PRESSURE REDUCTION - (PREFERRED METHODS)

A. PURPOSE

The purpose of the procedure is to list preferred methods to reduce RPV pressure at a controlled rate.

B. OPERATOR ACTIONS

> CAUTION
>
> DO NOT DEPRESSURIZE BELOW 57 PSIG UNLESS MOTOR DRIVEN PUMPS SUFFICIENT TO MAINTAIN RPV WATER LEVEL ARE RUNNING AND AVAILABLE FOR INJECTION

1. Main Condenser Available:

___ a. Use Main Turbine Bypass Valves to DEPRESSURIZE and COOLDOWN the RPV at less than 100°F per hour.

___ b. Pressure reduction may be augmented with one or more of the following systems.

___ 1) RCIC (LOP-RI-02)

> CAUTION
>
> DO NOT USE THE RHR STEAM CONDENSING MODE UNLESS:
>
> 1. THE SUPPRESSION POOL TEMPERATURE CAN BE MAINTAINED BELOW 120°F
>
> AND
>
> 2. BOTH A AND B RHR LOOPS ARE AVAILABLE.

___ 2) RHR steam condensing mode (LOP-RH-09).

B.1. D. 3) Other steam driven equipment

a) Steam Jet Air Ejectors

b) Steam to Turbine Driven Reactor Feed Pumps

c) Steam to Radwaste Reboiler

d) Steam to Offgas Preheater

e) Steam to Gland Seal Steam Reboiler

f) Main Condenser Deaerating Steam

___ 4) RWCU recirculation mode (LOP-RT-02)

___ 5) Main Steam Line Drains

___ 6) RWCU coolant rejection (LOP-RT-09)

RPV PRESSURE REDUCTION - ADS FAILURE

A. PURPOSE

The purpose of this procedure is to list the systems available to reduce RPV pressure when an ADS actuation is required and less than 3 SRV's can be opened.

B. OPERATOR ACTIONS

1. RAPIDLY REDUCE RPV pressure using one or more of the following systems (use in order which will minimize radioactive release):

> CAUTION
>
> DEFEATING ISOLATION INTERLOCKS MAY BE REQUIRED TO ACCOMPLISH THIS STEP (LGA-MS-C1, MAIN STEAM ISOLATION BYPASS FOR EMERGENCY DEPRESSURIZATION).

a. Main Turbine Bypass Valves

B.2. Main Condenser not available

a. DEPRESSURIZE and COOLDOWN RPV at less than 100°F/Hr using one or more of the following systems:

___ 1) RCIC (LOP-RI-02)

> CAUTION
>
> DO NOT USE THE RHR STEAM CONDENSING MODE UNLESS:
>
> 1. THE SUPPRESSION POOL TEMPERATURE CAN BE MAINTAINED BELOW 120°F
>
> AND
>
> 2. BOTH A AND B RHR LOOPS ARE AVAILABLE.

___ 2) RHR steam condensing mode (LOP-RH-09)

___ 3) RWCU recirculation mode (LOP-RT-02)

> CAUTION
>
> IF DRYWELL PNEUMATIC SUPPLY TO THE SRV'S IS LOST (DRYWELL PNEUMATIC BOTTLE HEADER LOW PRESSURE ALARM)
>
> THEN DEPRESSURIZE THE RPV WITH SUSTAINED SRV OPENING

___ 4) Pressure reduction may be augmented by:

a) SRV's (in alphabetical sequence)

b) RWCU (coolant rejection). (LOP-RT-09)

b. Steam Driven Equipment

1) Steam Jet Air Ejectors.

2) Turbine Driven Reactor Feed Pumps

3) Rad Waste Reboiler

4) Off Gas Preheater

5) Gland Seal Steam Reboiler

6) Main Condenser Deaerating Steam

c. RCIC

d. Main Steam Line Drains

e. RWCU (coolant rejection)

f. RCIC Steam Line

g. RPV Head Vent

h. RHR Steam Condensing Mode

ENCLOSURE 2

LEH-819

CATAGORIES OF COMMENTS

I. An opinion offered for information purposes only; the utility should consider taking action consistent with the reviewer's recommendation if such action is not inconsistent with the general practices followed by the utility. Generally, these comments have little or no implication as to the procedure's technical compliance with the BWR Emergency Procedure Guidelines (EPG).

II. Comments which bear (directly or indirectly) on the procedure's technical compliance with the EPGs, or identify an unnecessarily restrictive interpretation of the EPGs, G.E. recommends that action should be taken consistent with the recommendation; however, failure to incorporate the reviewer's recommendations would not adversly affect safety of operation.

III. Comments which identify questionable implementation of the EPGs which could result in inadequate guidance being given to the operator. Failure to incorporate the comment/recommendation could, in the opinion of the reviewer, diminish the associated procedure's technical adequacy.

LEVEL CONTROL -LGA-01

1. PAGE 1,2 - CAUTIONS — CATAGORY I

These are not used in the EPG because it is a general EPG intention to avoid using cautions in Level Control. Consideration could be given to removing these cautions.

Additionally, the caution relating to the +54.5" trip on Page 2 is unnecessary and redundant because the number 54.5" is specifically mentioned in Step C.5.

2. PAGE 2, STEP C.6 — CATAGORY II

This step is redundant and unnecessary. It is true that the EPG may be exited whenever, in the opinion of operating personnel, an emergency condition no longer exists. However, the EPG do not require level to be above +12.5". "Stable" water level can be anywhere between TAF and +54.5". This step, as written, is an unnecessarily conservative interpretation of the EPG.

3. PAGE 3, STEP C.7 — CATAGORY I

In the "If" portion of this step, the EPG stated "If RPV water level cannot be restored and maintained above +12.5" ".

4. PAGE 3 — CATAGORY II

LaSalle has deleted EPG Step LC-2.5 which references cycling SRVs. LaSalle has the Low Level Set (LLS) function installed and therefore considers the step unnecessary. However, LaSalle must remember that even if LLS is working properly, 1 SRV will preferentially cycle and it may be necessary to take manual control of SRVs to prevent excessive localized heating in the S/P.

5. PAGE 3 CATAGORY II

Comment #4 is also applicable here (between Steps C.3 and C.4), concerning cycling SRVs.

6. PAGE 4, STEP C.7 CATAGORY I

While the EPG say to open 1 SRV at this point (EPG Step C.7.c), Sargent & Lundy has supporting calculations that demonstrate that 2 SRVs will be required to pass the necessary shutdown cooling flow. This should be entirely satisfactory and should pose no problem with respect to EPG conformance. The intent of the EPG is met by the LaSalle approach.

7. PAGE 4, STEP C.7 CATAGORY II

EPG Step C5-6 specifies increasing flow "to the maximum" in Step C.7.f. EPG Step C5-6.3 also refers to throttling injection flow if a 100° F/hr cooldown rate were exceeded.

8. PAGE 6, STEP C.2.c CATAGORY II

The EPG recommends a more detailed method of determining D/W temperature - i.e. noting the temperature near each cold reference leg vertical run. CECo currently intends to use bulk D/W temperature and this approach should be satisfactory for temporary use, but the feasability of adding additional temperature elements (with each channel of temperature indication referenced to the appropriate channel of water level indication) should be considered. Furthermore, the existing channels of temperature indication in the D/W should be identified with respect to proximity to the cold reference leg vertical runs.

9. PAGE 10, STEP C.3.c CATAGORY I

The numbers 22 psig and 49' 8" replace the EPG SPSL. This approach is entirely satisfactory and fully meets the intent of the EPG.

10. PAGE 10, STEP C.3.d CATAGORY I

This step is not per the EPG, but reflects LaSalle Tech. Spec. article 3.6.4.a which requires a stuck open vacuum breaker to be manually isolated within 4 hours. Therefore this step should not constitute a problem with respect to the EPG.

11. PAGE 10, STEP C.9.d.1) And C.9.d.2) CATAGORY II

The minimum zero injection RPV water level used here is the middle of the active fuel. This is a conservative estimate that may be used until final EPG calculations are completed and released by the BWR Owner's Group Emergency Procedures Committee.

Similarly the minimum single SRV steam cooling pressure used here is also a preliminary conservative value, satisfactory for use now, but one that may change when final EPG calculations are completed.

12. PAGE 11, STEP C.9.e CATAGORY III

RCIC is not strictly covered by the existing step. EPG Step C1-7.2 (second box) directs the operator to the Rapid Depressurization Procedure if RCIC (even if only RCIC) were running. LaSalle has not mentioned RCIC here because opening ADS valves is the next step and they feel that this will negate the usefullness of RCIC. Retaining this step, per the EPG, should be considered because pressure should be reduced at this point, consistent with EPG Caution #14, to enhance the operability of low pressure injection systems by reducing brake flow. This can be done without compromising the operability of RCIC.

13. PAGE 3, STEP C.3 CATAGORY I

"Perform the following steps" is unnecessary and could be removed from the "Then" part of this step.

14. PAGE 3, STEP C.3.a. CATAGORY II

The minimum RPV flooding pressure used here (90 psig) is for 3 open SRVs. Since this procedure will most likely be performed with 7 SRVs open and since the pressures are known for the cases where 3,4,5,6 or 7 SRVs are open, this additional information should also be given to the operator.

15. PAGE 5 CATAGORY II

The EPG includes a step (between existing Steps C.7 and C.8) that directs filling RPV level instrument reference columns. My understanding is that: (1) CECo will delete the reference to filling instrument reference legs because there is presently no means of providing a source of high pressure water to accomplish the back fill, and (2) the feasibility of adding a means of force filling the reference legs with a high pressure source such as CRD will be examined with possible implementation as a long term solution.

Consideration should be given to retaining this step, per the EPG, in case this situation should be encountered during low pressure conditions, where the standard low pressure backfill technique will work. The high pressure backfill technique should also be pursued and implemented when and if possible. Furthermore, since the minimum RPV flooding pressure for the case where 7 SRVs are open is only 26.4 psig, and since this is well within the pressure range for normal low pressure backfill methods, there may be situations where high pressure backfill would not be necessary. Without this step in the procedure the operator will not be reminded to attempt the backfill and this is not what the EPG intended.

16. PAGE 7 CATAGORY II

The EPG includes Step C6-6.3 between the existing Steps C.8 and C.9. Consideration should be given to using this step per the EPG: (1) to ensure maximum consistency with the EPG, (2) to ensure that the reference to the PCPL (in EPG Step C6-7) is considered before returning to Level Control, and (3) to ensure that the chances are minimized of inadvertantly terminating RPV injection and reducing RPV water level as directed by LaSalle's Steps C.9 and C.9.a.

It is LaSalle's belief that EPG Caution #1 and the present Step C.9 adequately cover this point.

GENERAL COMMENTS

17. CATAGORY II

As noted earlier for D/W temperature (Comment #8) and high pressure backfilling of reference legs (Comment #15), the feasability of adding instrumentation to measure containment water level up to the containment vent elevation (809' above Sea Level) is also being evaluated be CECo.

It is recommended that this item (containment level indication) be given high priority and be implemented as soon as practicable because alternate methods of determining this level (such as approximating containment level by multiplying injection flow rate times time of injection) are of questionable accuracy.

18. CATAGORY III

The calculations supporting all EPG Appendix B curves were based on draft revisions of the Appendix. While satisfactory for implementation at this point, these calculations should be double checked to be in accordance with the final revision of the Appendix when it is issued by the BWR Owner's Group Emergency Procedure Committee.

Similarly, the text of the procedures should be reviewed and revised as necessary to ensure compliance with the final revision of the EPG.

19. CATAGORY II

EPG Caution #18 does not appear to have been incorporated into the LaSalle procedures.

20. CATAGORY I

With respect to the implementation of EPG Cautions; LaSalle's approach of incorporating the majority of the cautions directly into the procedures, upgrading control room panels to facilitate implementation of items such as Caution #6 and #12, the inclusion of all EPG Cautions as an addendum to the LGA package, and the detailed nature of their training program appears to be a very satisfactory method.

21. CATAGORY II

LGA-T1 "General Precautions" item #3 includes a reference to environmental standards. This item will most likely confuse the operator and make him unsure of which, if any, indications should be used. This confuses the operator by questioning the reliability of some instruments and thereby indirectly questions all indications. Consideration should therefore be given to removing this statement.