ENCLOSURE #2
NSLD
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Safety Related - Yes

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IMPLEMENTATION OF BWR EMERGENCY PROCEDURE GUIDELINES INTO SPECIFIC EMERGENCY PROCEDURES

Illinois Power Company
Clinton Power Station-Unit 1
Project No. 6114-24

Project File No. 24 (MPMD)

9. Primary Containment Pressure Limit (BWROG Procedure C14.0) | 2

A. Purpose

The purpose of this procedure is to determine the primary containment pressure limit which provides for containment pressure control before the ultimate strength of the containment is exceeded.

B. Assumptions and Information

1. The primary containment pressure limit was based on the stress capacity of the containment spherical head equipment hatch which was determined to be the limiting structural component (Reference 9). Taking into account the recommended 1.2 load reduction factor (Reference 3), the total load of 63 psig was determined to be the stress capacity of the equipment hatch and therefore represents the ultimate strength of the Clinton containment.

2. Throughout these calculations, the elevation of the bottom of the equipment hatch will be used as the limiting containment stress location.

3. The containment water level of approximately 68.5 ft (above the basemat) should be considered the maximum containment flooded condition based on the containment spherical equipment hatch as the limiting structural component (Reference 13).

C. Method of Analysis

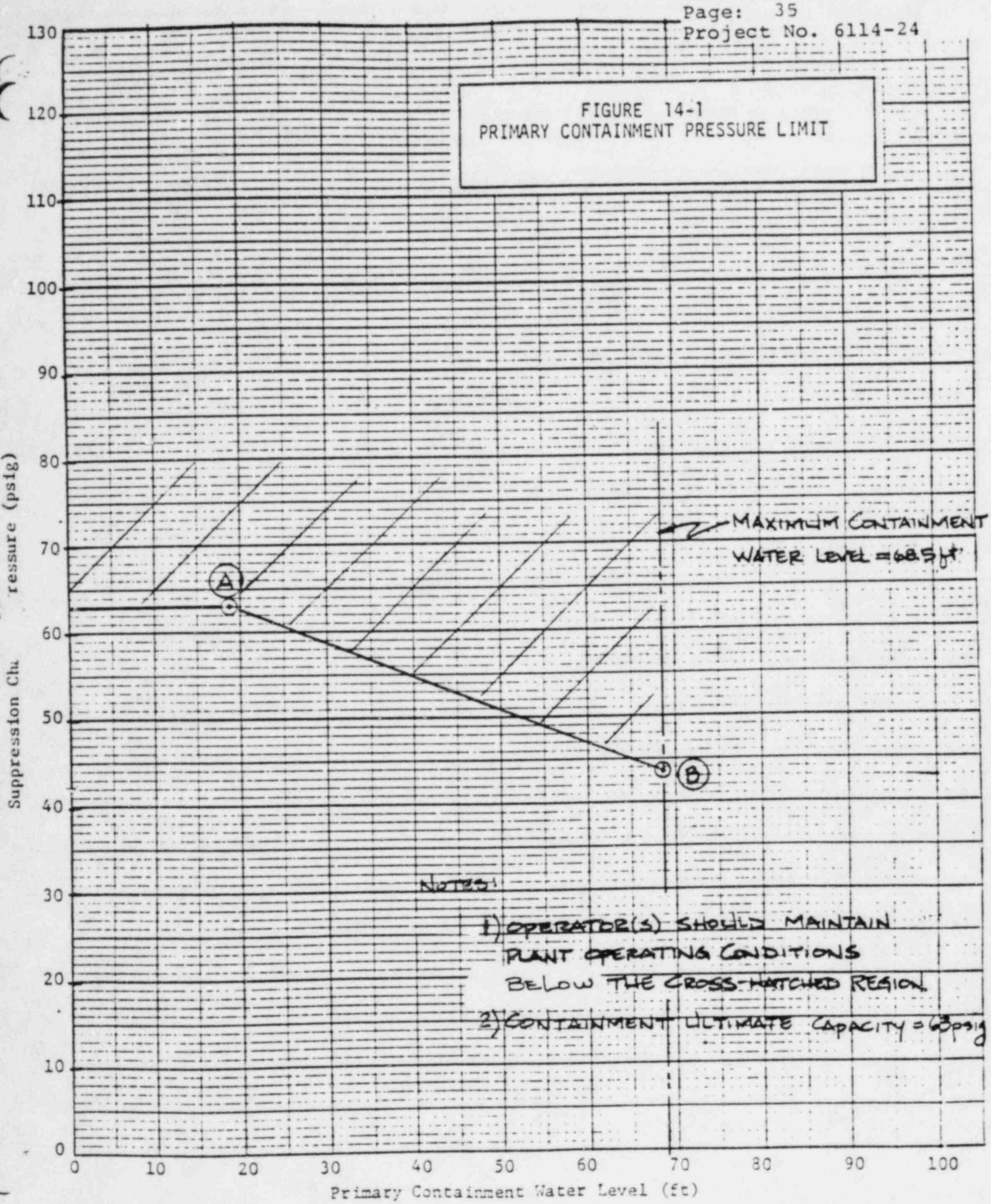
The calculational method is described in Calculational Procedure C14.0 of Reference 1.

D. Results and Discussion

The primary containment pressure limit is shown in Figure 14-1. To maintain the stress on the equipment hatch below its ultimate load capacity, the combined loads due to containment pressurization and containment flooding must be maintained in the region bounded below the primary containment function (outside the cross-hatched area).

The containment pressure can be measured by two pressure transmitters, 1PT-CM034 located at elevation 782'-6" or 1PT-CM035 at elevation 792'-0" (Appendix B, Reference 6). The containment water level is never expected to exceed approximately the 780'-6" elevation (Reference 13).

The complete set of calculational worksheets used for this procedure can be found in Appendix A of this report.



Revision 2 (draft)
7/1/82

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The following calculational worksheets and design parameters were used to evaluate the above referenced BWR Procedure Guideline. All relevant graphs and tables have been included for reference purposes.

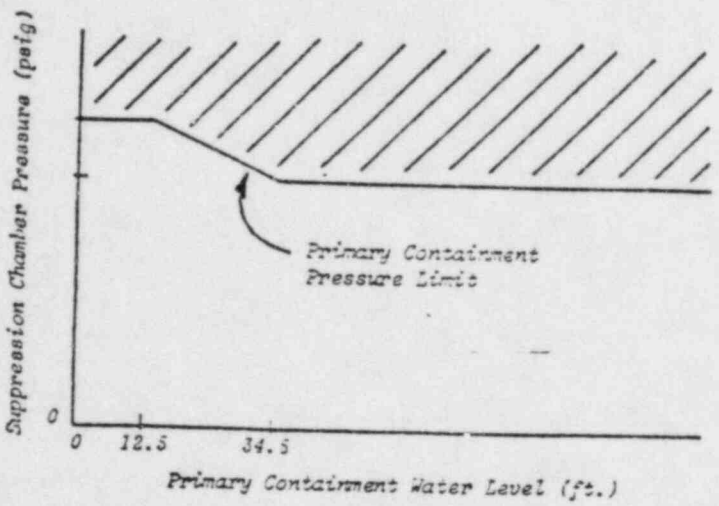
APPENDIX C

CALCULATIONAL PROCEDURES

14.0 PRIMARY CONTAINMENT PRESSURE LIMIT

14.1 APPLICABLE GUIDELINE STEPS

PC/P-6 *If suppression chamber pressure cannot be maintained below the Primary Containment Pressure Limit, then irrespective of whether adequate core cooling is assured ...*



PC/P-7 *If suppression chamber pressure exceeds the Primary Containment Pressure Limit, vent the primary containment in accordance with [procedure for containment venting] to reduce and maintain pressure below the Primary Containment Pressure Limit.*

C6-6 *When suppression chamber pressure can be maintained below the Primary Containment Pressure Limit, enter [procedure developed from the RPV Control Guideline] at [Steps RC/L and RC/P-4] and execute these steps concurrently.*

14.2 INPUT PARAMETERS AND PHYSICAL CONSTANTS

$E_{SP,FSAR}$ Elevation corresponding to the suppression pool water level assumed in FSAR transient analyses*

$E_{SP,FSAR}$ = 18.92 ft

$P_{SC,MAX}$ Maximum pressure at which the suppression chamber is not expected to fail with suppression pool water level at $E_{SP,FSAR}$

$P_{SC,MAX}$ = 63 psig

E_{SCPI} Elevation of the suppression chamber pressure instrument top*

INSTRUMENT	CONTAINMENT PENETRATION
1PT-CM034	1MC-150
1PT-CM035	1MC-157

E_{SCPI} = 70.5 (1PT-CM034) 80.0 (1PT-CM035) ft

E_{EH} ELEVATION OF THE BOTTOM OF THE SPHERICAL HEAD EQUIPMENT HATCH.**

E_{EH} = 24.0 ft

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* ELEVATION 0.0 IS DEFINED TO BE THE BOTTOM OF THE SUPPRESSION POOL.

** ANALYSIS OF THE ULTIMATE CAPACITY OF THE CLINTON CONTAINMENT IDENTIFIED THE SPHERICAL HEAD EQUIPMENT HATCH AS THE LIMITING STRUCTURAL COMPONENT. THE ELEVATION OF THE BOTTOM OF THE EQUIPMENT HATCH WILL BE USED AS THE LIMITING CONTAINMENT STRESS LOCATION WHEN THE CONTAINMENT IS FLOODED UP TO 68.5 ft.

14.3 TECHNICAL DESCRIPTION AND DERIVATION OF THE CALCULATIONAL PROCEDURE

The Primary Containment Pressure Limit is the maximum pressure at which failure is not expected to occur at the most limiting containment location. Calculation of the limit is based on the same considerations discussed in the Primary Containment Design Pressure calculational procedure, Appendix C, Section 13. If the maximum allowable pressure is substituted for design pressure, the two procedures are identical.

4. Complete construction of the Primary Containment Pressure Limit Curve as follows:

(1) Extend a horizontal line from Point (A) to the graph's vertical axis.

✓ (✓)

(2) Layout $\overline{AB}$.

✓ (✓)

(3) Extend a horizontal line to the right from Point (B).

N/A (✓)