MAY 22 1979

MEMORANDUM FOR: G. Knighton, Chief, Environmental Evaluation, Division of Operating Reactors

FROM: G. Lainas, Chief, Plant Systems Branch, Division of Operating Reactors

SUBJECT: CONTAINMENT DEPRESSURIZATION FOR SURRY POWER STATION UNITS 1 & 2

REFERENCES:

1. Memorandum for W. Butler from B. Grimes, Determination of Surry 1 & 2 Containment Leak Rate for LOCA Reevaluation, dated July 28, 1977.

2. Memorandum for A. Schwencer from G. Lainas, Draft Safety Evaluation: Net Positive Suction Head Available to Containment Recirculation Spray and Low Head Safety Injection Pumps, dated March 5, 1979.

Plant Name: Surry Nuclear Power Station Units 1 and 2.
Docket Nos.: 50-280/281
Responsible Branch: PSB, EEB, ORB #1
Project Manager: D. Neighbors

Enclosed is a figure, which presents the containment LOCA depressurization for Surry plants, submitted by the licensee during our review of the adequacy of NPSH for the containment recirculation spray and the low head safety injection pumps. We have reviewed the input parameters used by the licensee to perform the depressurization analysis and concluddd (Ref. 2) that the analysis would result in a reasonably conservative calculation of the containment depressurization time. The times at which the containment atmosphere returns to 1/2 of the peak calculated pressure, 1/4 of the peak calculated pressure and subatmospheric condition are 1150 seconds, 1750 seconds and 2662 seconds, respectively.

The flow through leakage paths from the containment to the atmosphere depends on the path geometry and flow regime both of which are not very well defined. However, we believe it would be conservative to assume that the flow is in the turbulent regime and the leakage is a function of the square root of the ratio of the reduced pressure over the containment calculated peak pressure. Thus, we recommend that in performing the analysis of the radiological consequences following a LOCA, a reduction of 50 percent in containment leakage rate be assumed at the time the containment atmosphere returns to 1/4 of its peak calculated pressure

7906290642

OFFICE						
SURNAME						
DATE						

Our SE on NPSH may be used to support this pressure transient for the DBA LOCA.

G. Lainas, Chief,
Plant Systems Branch
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DATE	5/21/79	5/21/79	5/21/79			

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Our SE on NPSH may be used to support this pressure transient for the DBA LOCA.

G. Lainas

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Plant Systems Branch
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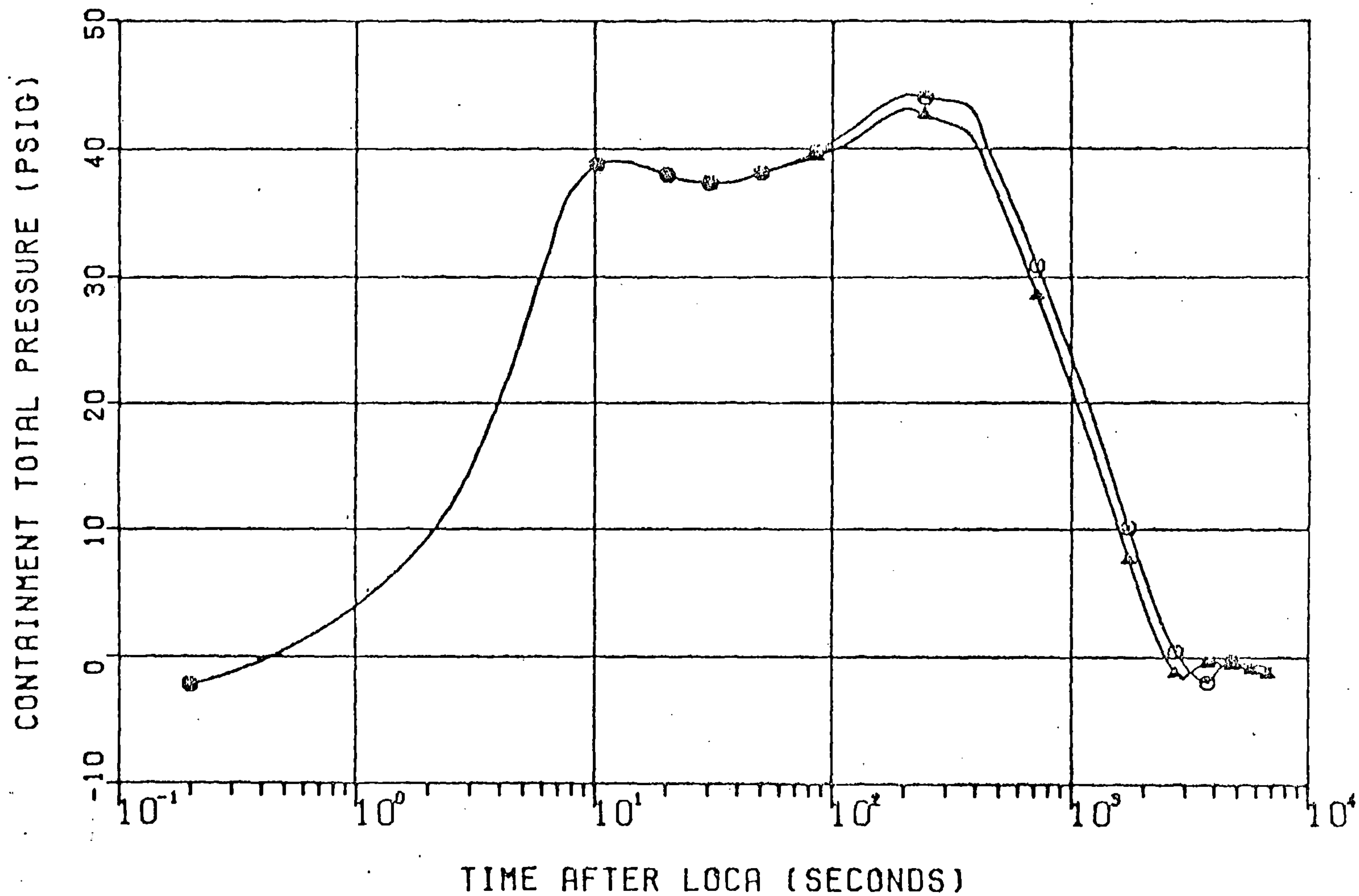

FIG. 10.0-1 PRESSURE TRANSIENTS
CONTAINMENT INTEGRITY LOCA
△ PRESENT SPRAY SYSTEM
○ PROPOSED SPRAY SYSTEM