



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39215-1640

July 19, 1985

NUCLEAR LICENSING & SAFETY DEPARTMENT

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
License No. NPF-29
File: 0260/L-860.0
Safe Shutdown Systems, Supplemental
Information on Use of Safety
Relief Valves
AECM-85/0222

Exception to certain requirements of 10 CFR 50 Appendix R III.L was requested by Mississippi Power and Light Company (MP&L) in its letter to the NRC (AECM-85/0194), dated June 18, 1985. As requested in early June by your staff, MP&L included in AECM-85/0194 a discussion of the results of an analysis using six (6) safety relief valves (SRV). The revised safe shutdown system listing developed to support MP&L's Appendix R review program (AECM-85/0174, May 30, 1985) assumed and established the availability of three (3) SRV's for reactor depressurization. The later six (6) SRV analysis concluded that the more rapid depressurization results in a relatively low peak clad temperature (less than 700°F). This letter provides additional information on this analysis.

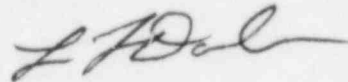
Subsequent to the completion of this later analysis, Bechtel Power Corporation performed an evaluation to determine if six (6) SRV's (versus three) could be shown to be protected from any plant exposure fire. The methodology employed in this evaluation was consistent with the rigorous component/area Fire Hazard Analysis reviewed by the NRC in the course of its Appendix R audit of Grand Gulf Nuclear Station (GGNS) during the week of May 20, 1985. This evaluation concluded that six (6) SRV's are protected from the effects of an exposure fire in any plant fire area. These SRV's can be controlled from control room or remote shutdown panels.

8507240239 850719
PDR ADOCK 05000416
F PDR

It should be noted that MP&L's Appendix R reanalysis of Fire Area 25 (containment and drywell) was in progress at the time of submittal of the review effort's Summary Report (AECM-85/0129, May 7, 1985). That reanalysis is now essentially complete and is undergoing final review by a qualified fire protection engineer consultant and MP&L's Nuclear Plant Engineering. The Fire Area 25 reanalysis supports the conclusion regarding the availability of six (6) SRV's. The results of the Fire Area 25 reanalysis will be provided to the NRC following the completion of the above mentioned reviews.

The addition of three (3) SRV's to the minimum safe shutdown system listing will require certain revisions to the Fire Hazards Analysis (AECM-85/0129, May 7, 1985). These revisions are currently under development and will be provided to the NRC in a later submittal. Necessary changes to the GGNS Final Safety Analysis Report (FSAR) to reflect the inclusion of six (6) SRV's into the minimum safe shutdown systems listing will be incorporated into the initial FSAR update on or before December 1, 1985.

Yours truly,



L. F. Dale
Director

MLC/JGC:dmm
Attachment

cc: Mr. J. B. Richard (w/a)
Mr. O. D. Kingsley, Jr. (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. G. B. Taylor (w/o)
Mr. R. C. Butcher (w/a)

Mr. James M. Taylor, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. J. Nelson Grace, Regional Administrator (w/a)
U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N. W., Suite 2900
Atlanta, Georgia 30323

bcc: Mr. L. E. Ruhland (w/o)
Mr. R. W. Jackson (w/a)
Mr. R. D. Couse (w/o)
Mr. J. F. Hudson, Jr. (w/o)
Mr. T. H. Cloninger (w/a)
Mr. T. E. Reaves (w/o)
Mr. J. E. Cross (w/a)
Mr. S. M. Feith (w/a)
Mr. A. R. Smith (w/o)
Mr. L. L. Kintner (w/a)
Mr. M. D. Archdeacon (w/a)
Mr. J. C. Roberts (w/o)
Mr. L. F. Daughtery (w/a)
MSS Nuclear Activities (w/a)
File (LCTS) (w/2)
File (NS) (w/a)
File (Central) (w/a) [9]

SUPPLEMENTAL INFORMATION:
SAFE SHUTDOWN ANALYSIS UTILIZING
SIX SAFETY RELIEF VALVES

I. INTRODUCTION

A plant specific analysis describing the performance of CGNS given a worst case exposure fire was provided to the NRC in MP&L letter AECM-95/0194, dated June 18, 1985. This analysis was performed by General Electric on behalf of MP&L.

This "base case" described in Attachment 3 of AECM-85/0194 assumed the availability of three (3) SRV's. An analysis was also conducted to determine the effects of employing six (6) SRV's for rapid depressurization. The results of the six (6) SRV case were summarized in Attachment 3 of AECM-85/0194. Additional detail on the six (6) SRV case is provided below to support NRC review of the exception to 10 CFR 50 Appendix R III.L requested by MP&L in AECM-85/0194.

II. ADDITIONAL ANALYSIS: DEPRESSURIZATION USING SIX SRV's

All methods and initial conditions for this analysis are identical to the Base Case except for the availability and use of three (3) additional SRV's. The initial progression of this case is the same as for Base Case, up to the time of the SRV opening. For this case six (6) SRV's are manually opened at Level 1 instead of three (3), resulting in a more rapid vessel depressurization and earlier LPCI initiation, at about 18 minutes. Due to the more rapid reactor depressurization and the larger LPCI flow which results, the vessel water level reaches a minimum of about eight feet above the bottom of the active fuel. The pressure and water level histories for this case can be found in Figures 1 and 2 respectively (enclosed). The fuel node having the highest calculated peak clad temperature (PCT) is uncovered for only two and one-half minutes which produces a PCT of less than 700°F. This low PCT is only slightly higher than at normal operating conditions and will not result in cladding perforations.

Figure 1 - Pressure Response For Six SRV Case

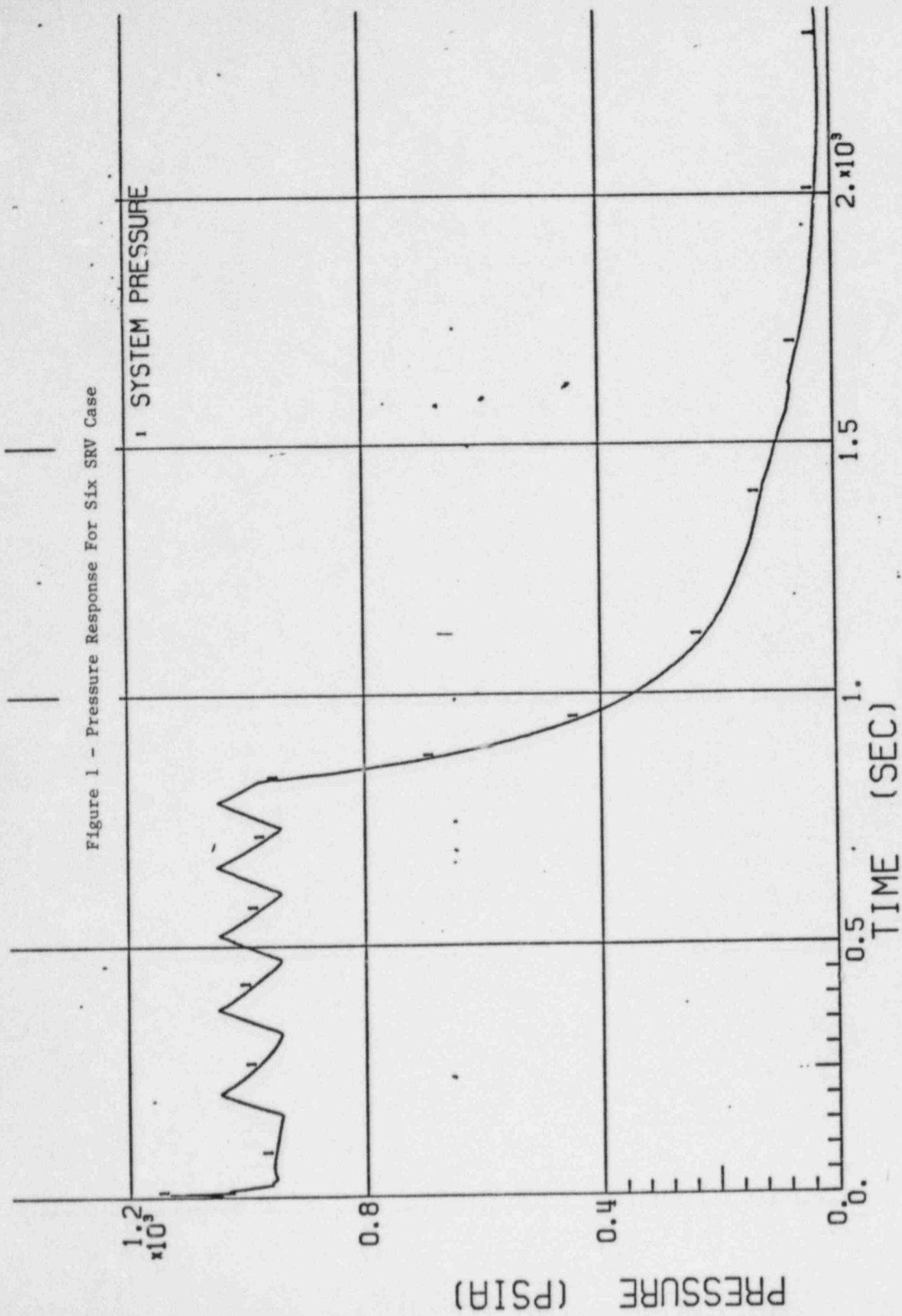


Figure 2 - RPV Water Level Response For Six SRV Case

WATER LEVEL (FT)

