



MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

May 14, 1984

NUCLEAR PRODUCTION 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-13
File: 0260/L-860.0
GGNS Containment Pressurization and
Core Performance Time Plots
AECM-84/0276

This letter is provided in response to an informal request for additional information from Mr. Tom Novak of your staff pertaining to diesel generator reliability issues.

In Attachment 4 to AECM-84/0271, dated May 6, 1984, MP&L presented the results of analyses which were conducted to ascertain the effects of a design basis accident (DBA) coincident with a partial station blackout (SBO) on certain key design parameters. The key parameters evaluated were containment pressure and peak clad temperature.

The purpose of this submittal is to provide figures which denote the response of various parameters, as a function of time, which were analyzed for the above referenced non-design basis event. A cross-reference between the tables provided in AECM-84/0271 and the figures attached to this letter is also provided.

Please contact this office if you have any questions.

Yours truly,

L. F. Dale
Manager of Nuclear Services

MLC/JGC:rg
Attachment

cc: See next page

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MISSISSIPPI POWER & LIGHT COMPANY

AECM-84/0276

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cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. N. S. Reynolds (w/o)
Mr. G. B. Taylor (w/o)

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

Mr. J. P. O'Reilly, Regional Administrator (w/a)
U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

The figures provided in this attachment present time plots of key parameters analyzed in the containment pressurization and core performance analyses, which were summarized in Tables 1 and 3 of Attachment 4 to AECM-84/0271, dated May 6, 1984. A cross-reference between the analyzed cases listed in the above referenced tables and the attached figures is provided below.

CONTAINMENT PRESSURIZATION

Table to Figure Cross-Reference

<u>AECM-84/0271 Attachment 4 Table 1</u>	<u>AECM-84/0276 Figure</u>	<u>Title</u>
Cases 1 & 2 (5% Power Analyses)	Figure 1-1 Figure 1-2 Figure 1-3	Cont. Pressure vs. Time Cont. Temp. vs. Time Suppression Pool Temp. vs. Time
Cases 3 & 4 (100% Power Analyses)	Figure 2-1 Figure 2-2 Figure 2-3	Cont. Pressure vs. Time* Cont. Temp. vs. Time* Suppression Pool Temp. vs. Time*

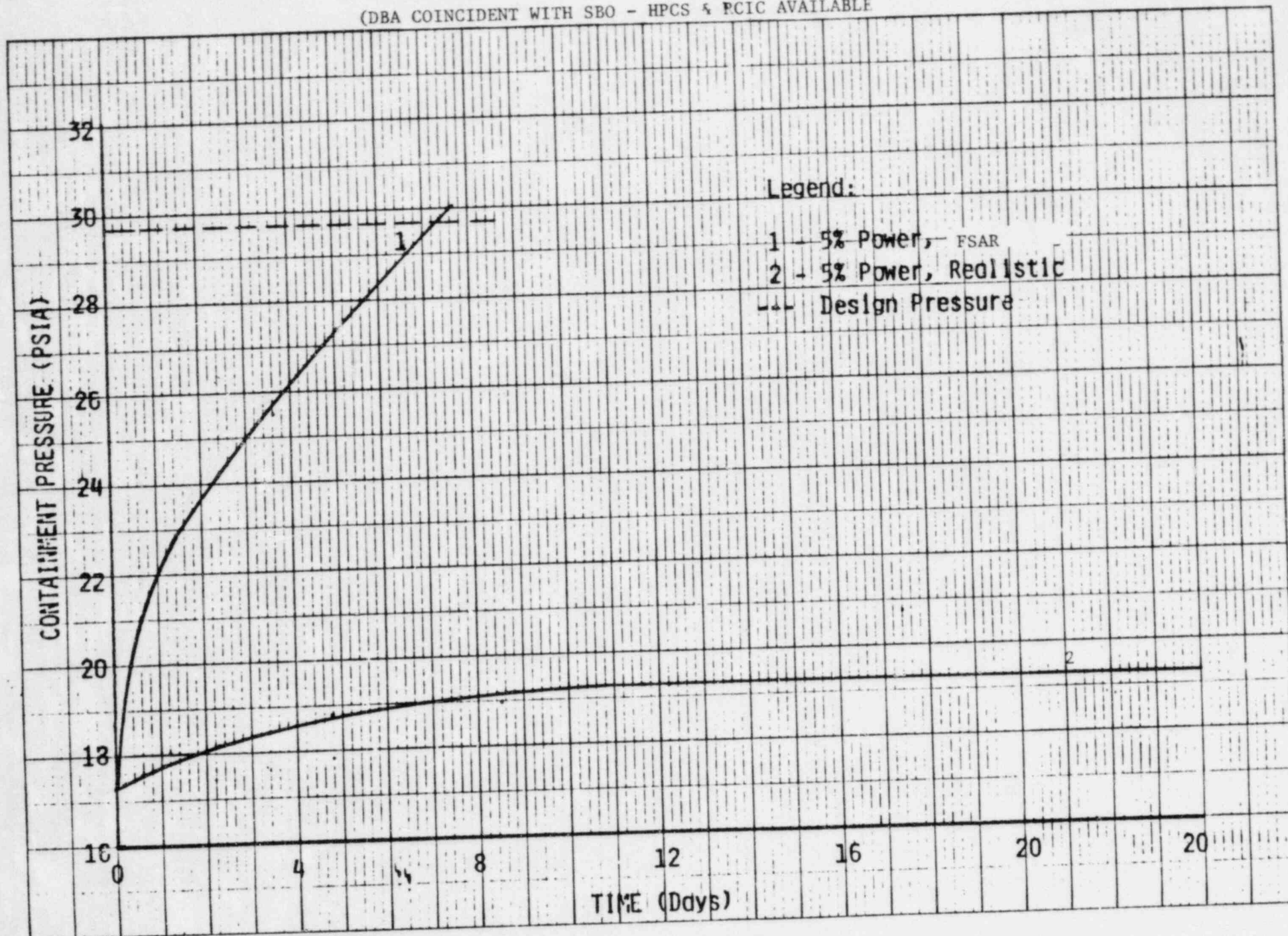
CORE PERFORMANCE

Table to Figure Cross-Reference

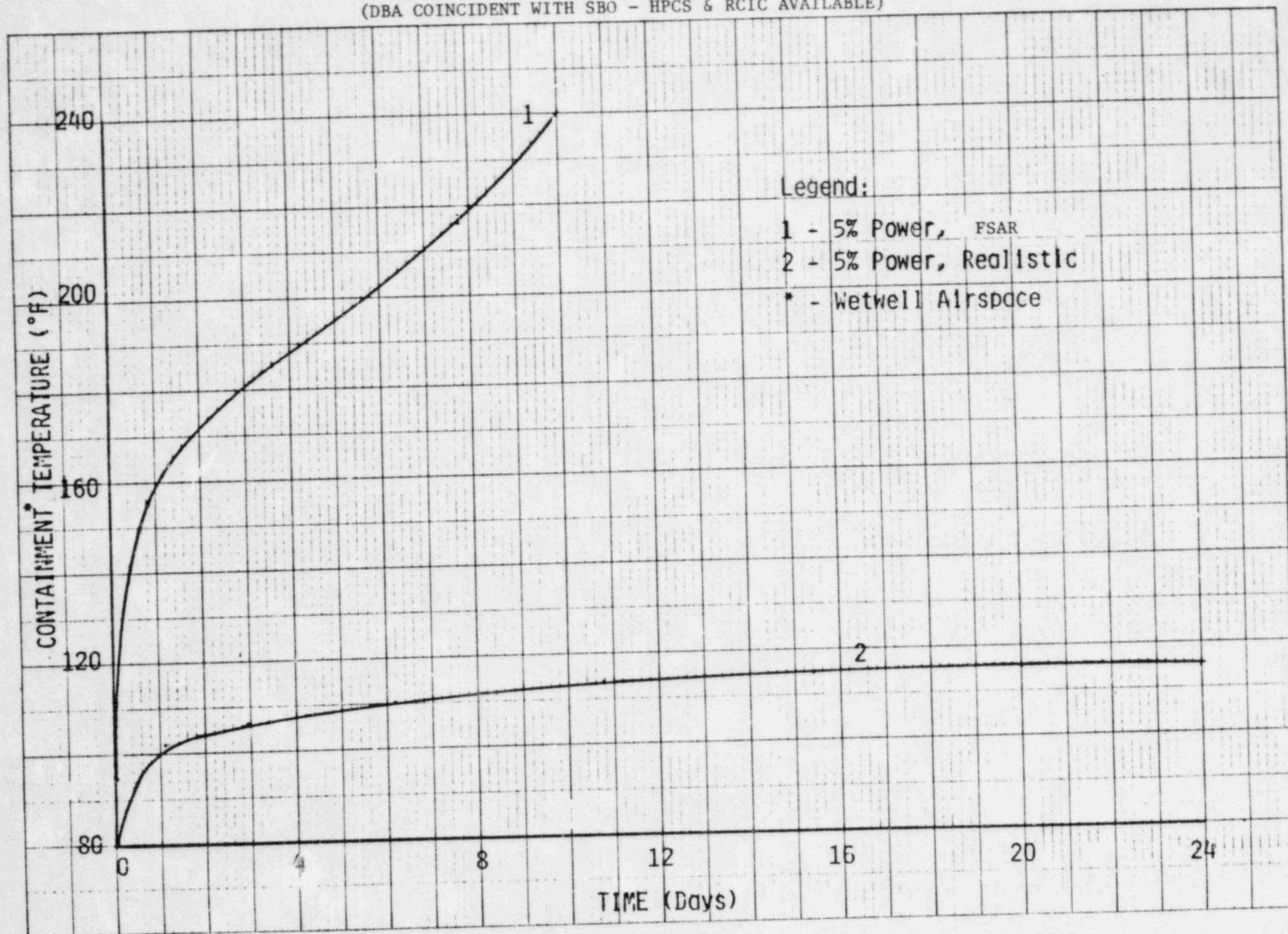
<u>AECM-84/0271 Attachment 4 Table 3</u>	<u>AECM-84/0276 Figure</u>	<u>Title</u>
Case 1.b	Figure 3-1 Figure 3-2 Figure 3-3	Wtr. Level Inside Shroud vs. Time RPV Pressure vs. Time Peak Clad Temp. vs. Time
Case 2.a	Figure 4-1 Figure 4-2 Figure 4-3	Wtr. Level Inside Shroud vs. Time RPV Pressure vs. Time Peak Clad Temp. vs. Time
Case 3.a	Figure 5-1 Figure 5-2 Figure 5-3	Wtr. Level Inside Shroud vs. Time RPV Pressure vs. Time Peak Clad Temp. vs. Time

*NOTE: These figures also show the results of analyses based on the "Realistic" assumptions stated in Attachment 4 of AECM-84/0271 which were not addressed in that submittal. These additional analyses were conducted using initial power assumptions of 50 and 75% of rated power.

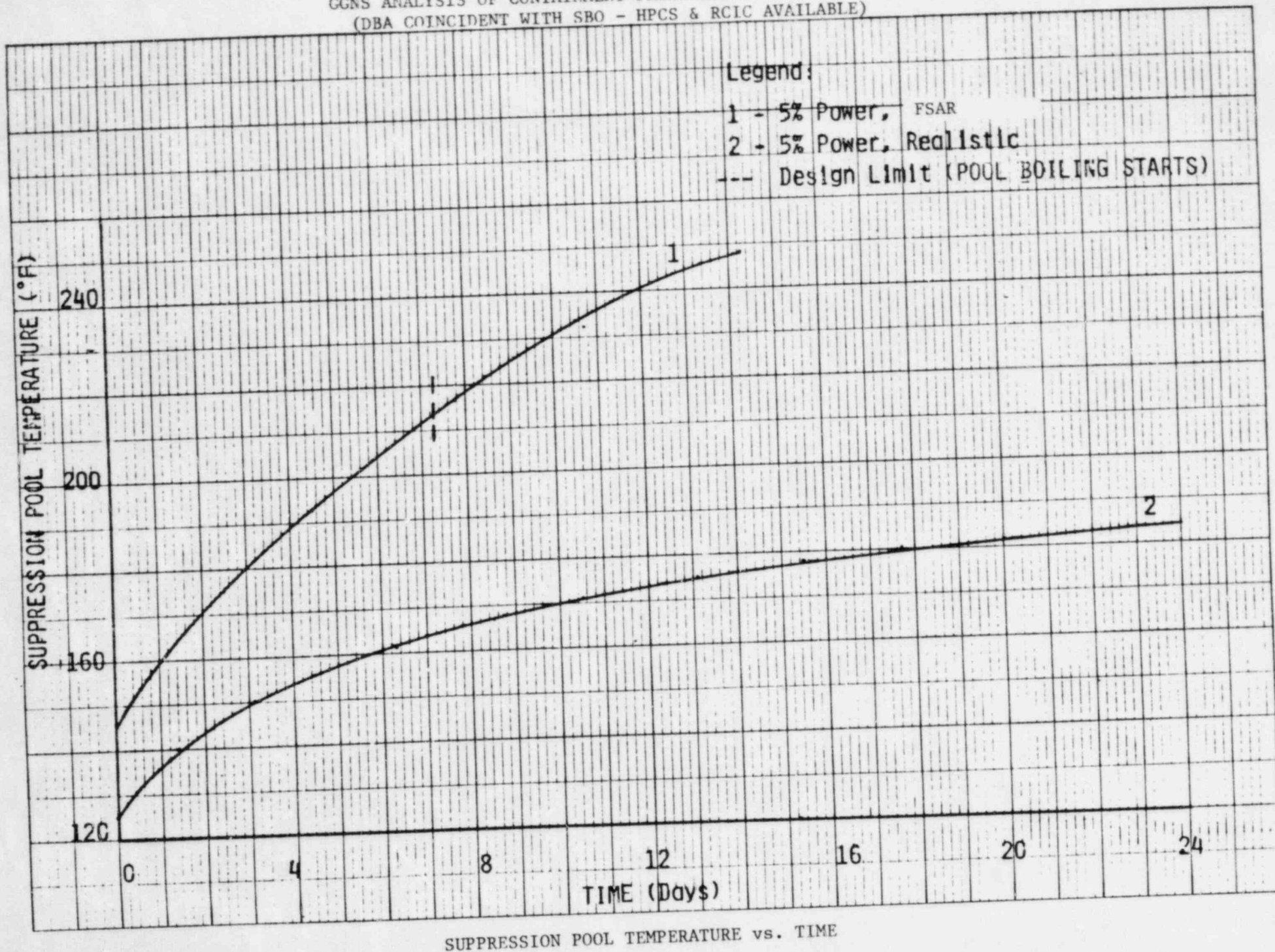
GGNS ANALYSIS OF CONTAINMENT PRESSURIZATION (5% POWER)
(DBA COINCIDENT WITH SBO - HPCS & PCIC AVAILABLE)

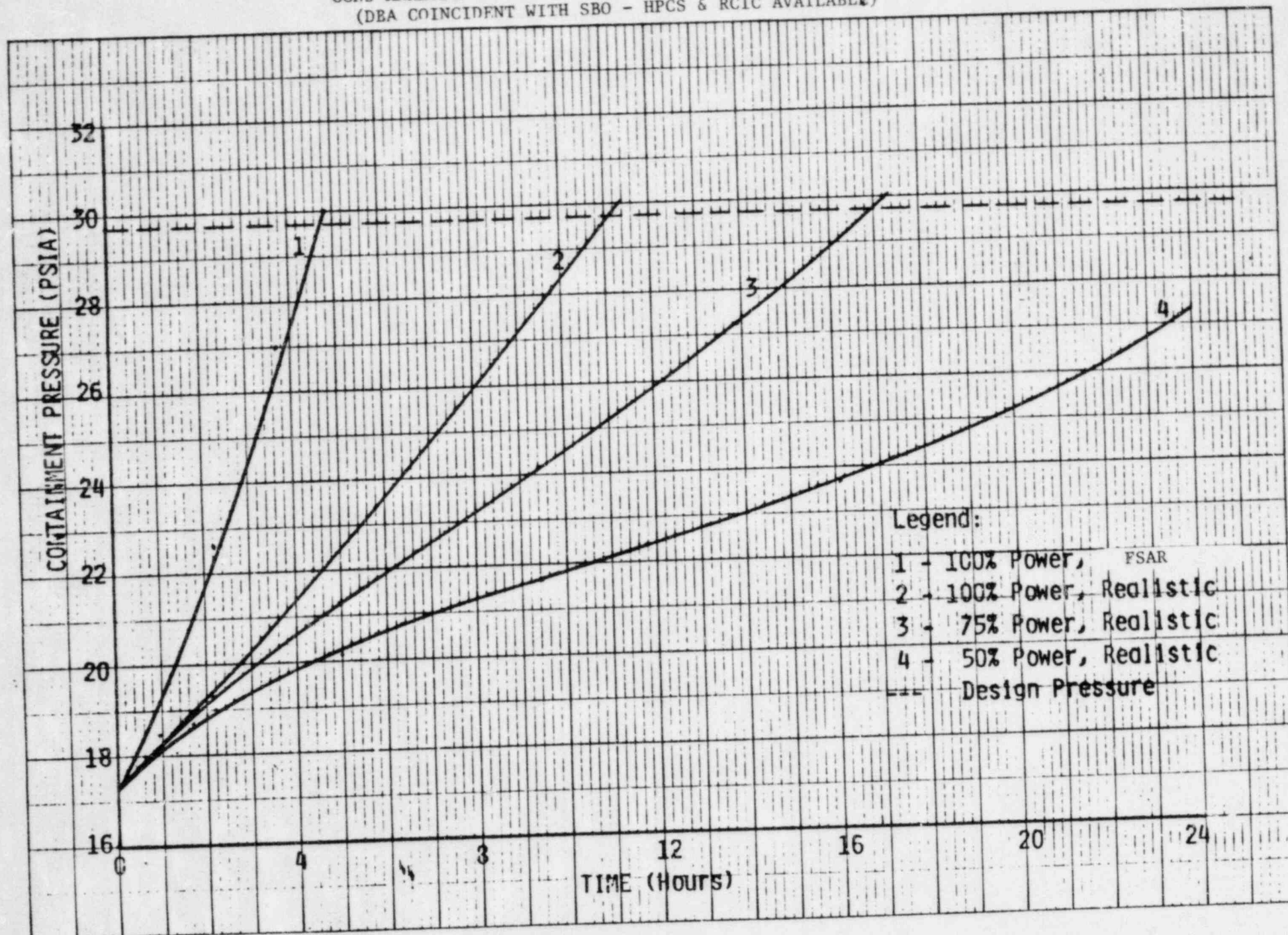


CONTAINMENT PRESSURE vs. TIME

GGNS ANALYSIS OF CONTAINMENT PRESSURIZATION (5% POWER)
(DBA COINCIDENT WITH SBO - HPCS & RCIC AVAILABLE)

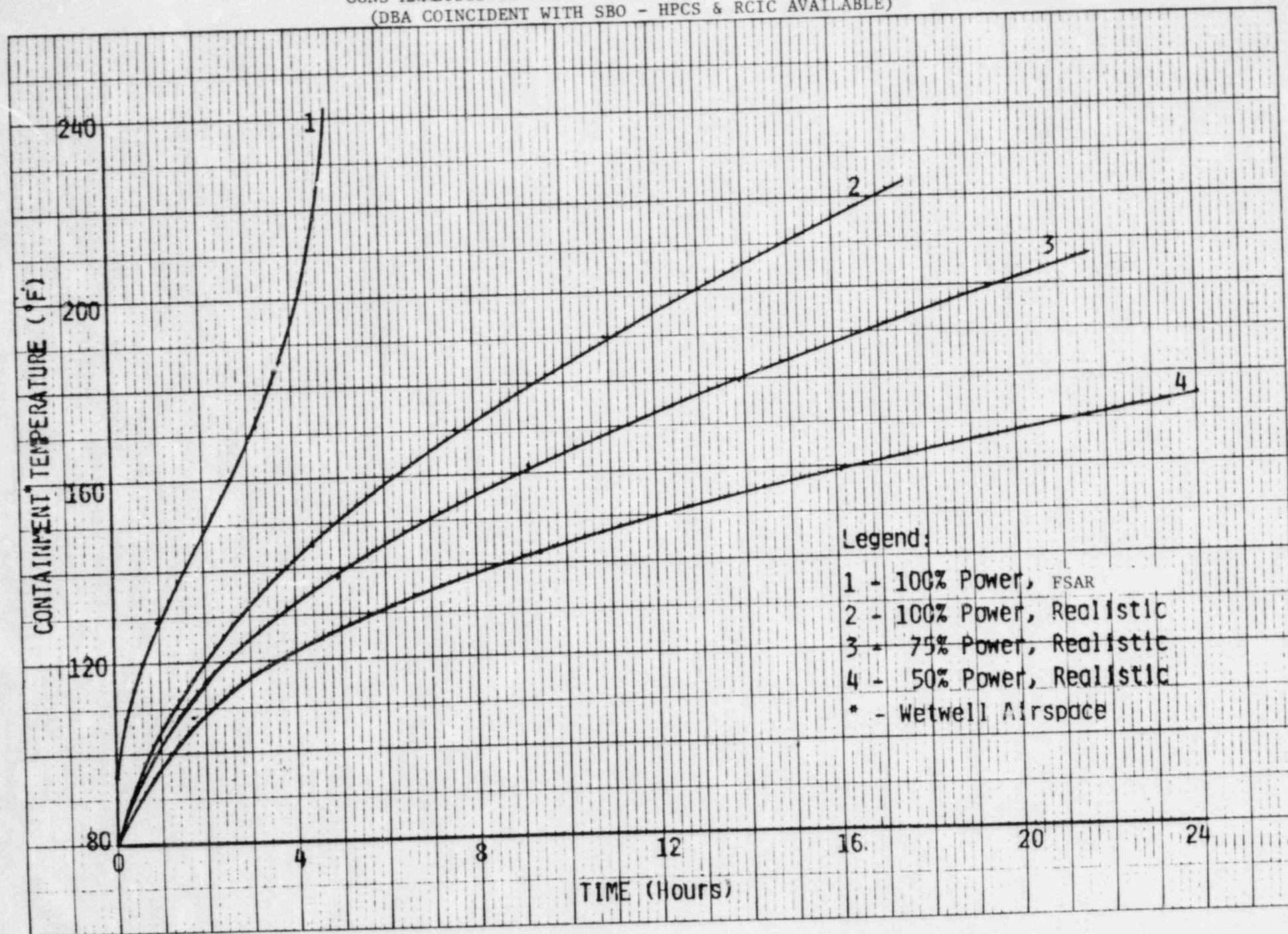
CONTAINMENT PRESSURE vs. TIME

GGNS ANALYSIS OF CONTAINMENT PRESURRIZATION (5% POWER)
(DBA COINCIDENT WITH SBO - HPSC & RCIC AVAILABLE)

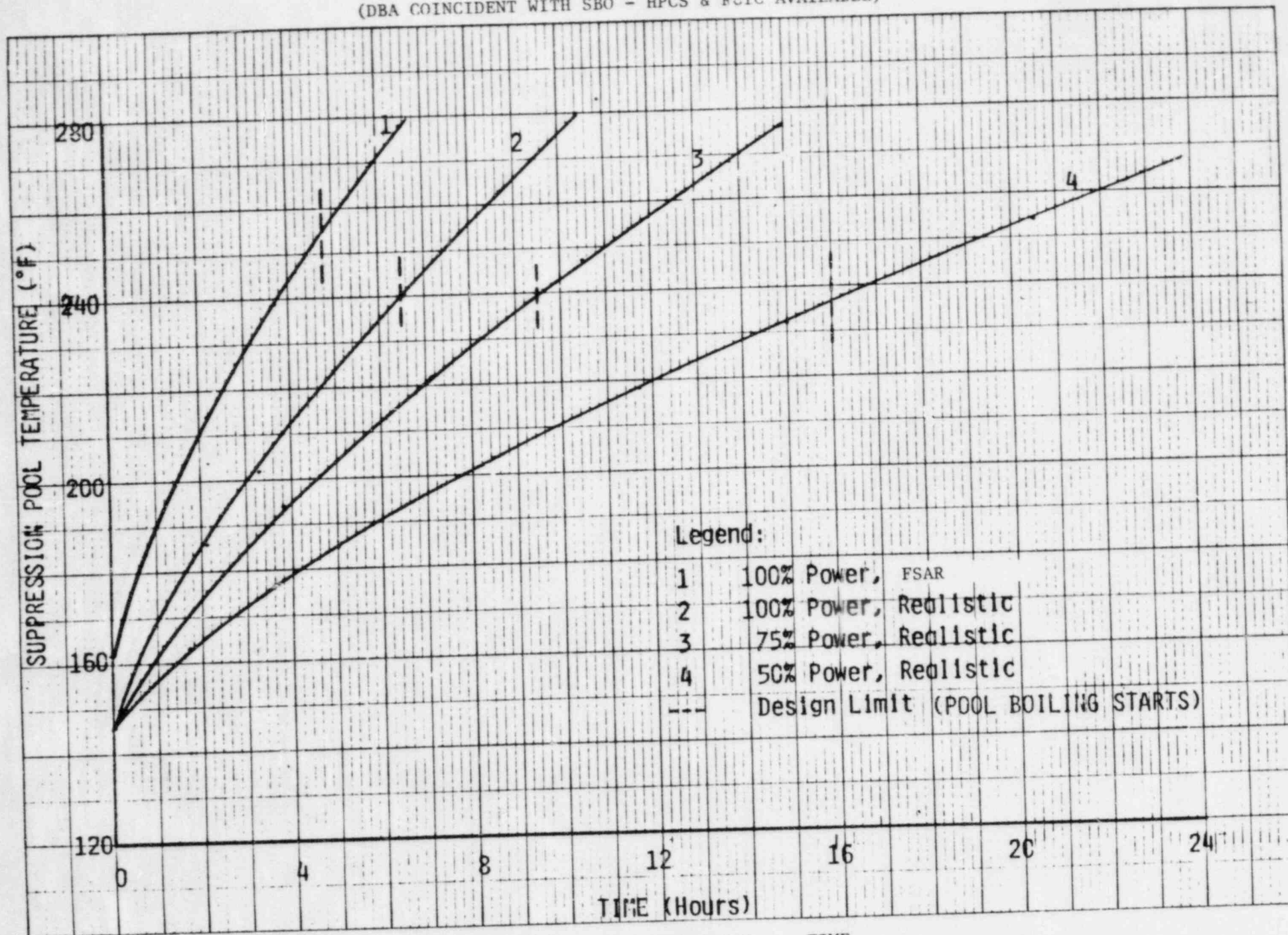
GGNS ANALYSIS OF CONTAINMENT PRESSURIZATION (HIGHER POWER LEVELS)
(DBA COINCIDENT WITH SBO - HPSC & RCIC AVAILABLE)

CONTAINMENT PRESSURE vs. TIME

GGNS ANALYSIS OF CONTAINMENT PRESSURIZATION (HIGHER POWER LEVELS)
(DBA COINCIDENT WITH SBO - HPCS & RCIC AVAILABLE)



CONTAINMENT TEMPERATURE vs. TIME

GGNS ANALYSIS OF CONTAINMENT PRESSURIZATION (HIGHER POWER LEVELS)
(DBA COINCIDENT WITH SBO - HPCS & RCIC AVAILABLE)

SUPPRESSION POOL TEMPERATURE vs. TIME

FIGURE 3-1

WATER LEVEL INSIDE THE SHROUD VERSUS TIME AFTER BREAK

GRAND GULF

— 1.0 SQ. FT. BREAK (LARGE BREAK METHOD), RECIRCULATION SUCTION BREAK, FPCS AND RCIC AVAILABLE
(HIGH POWER WITH APPENDIX K ASSUMPTIONS)

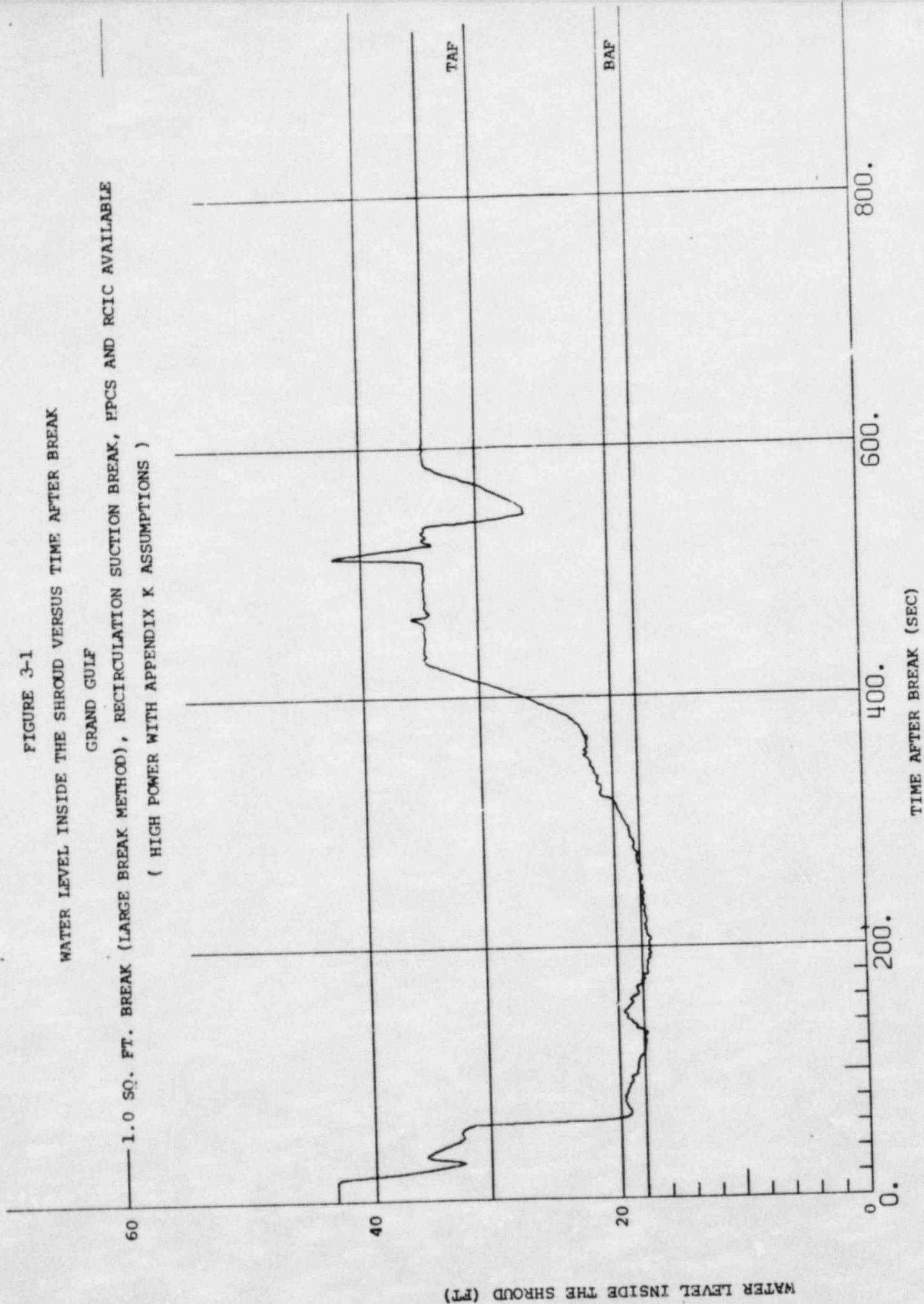


FIGURE 3-2
REACTOR VESSEL PRESSURE VERSUS TIME AFTER BREAK
GRAND GULF
1.0 SQ. FT. BREAK (LARGE BREAK METHOD), RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE
(HIGH POWER WITH APPENDIX K ASSUMPTIONS)

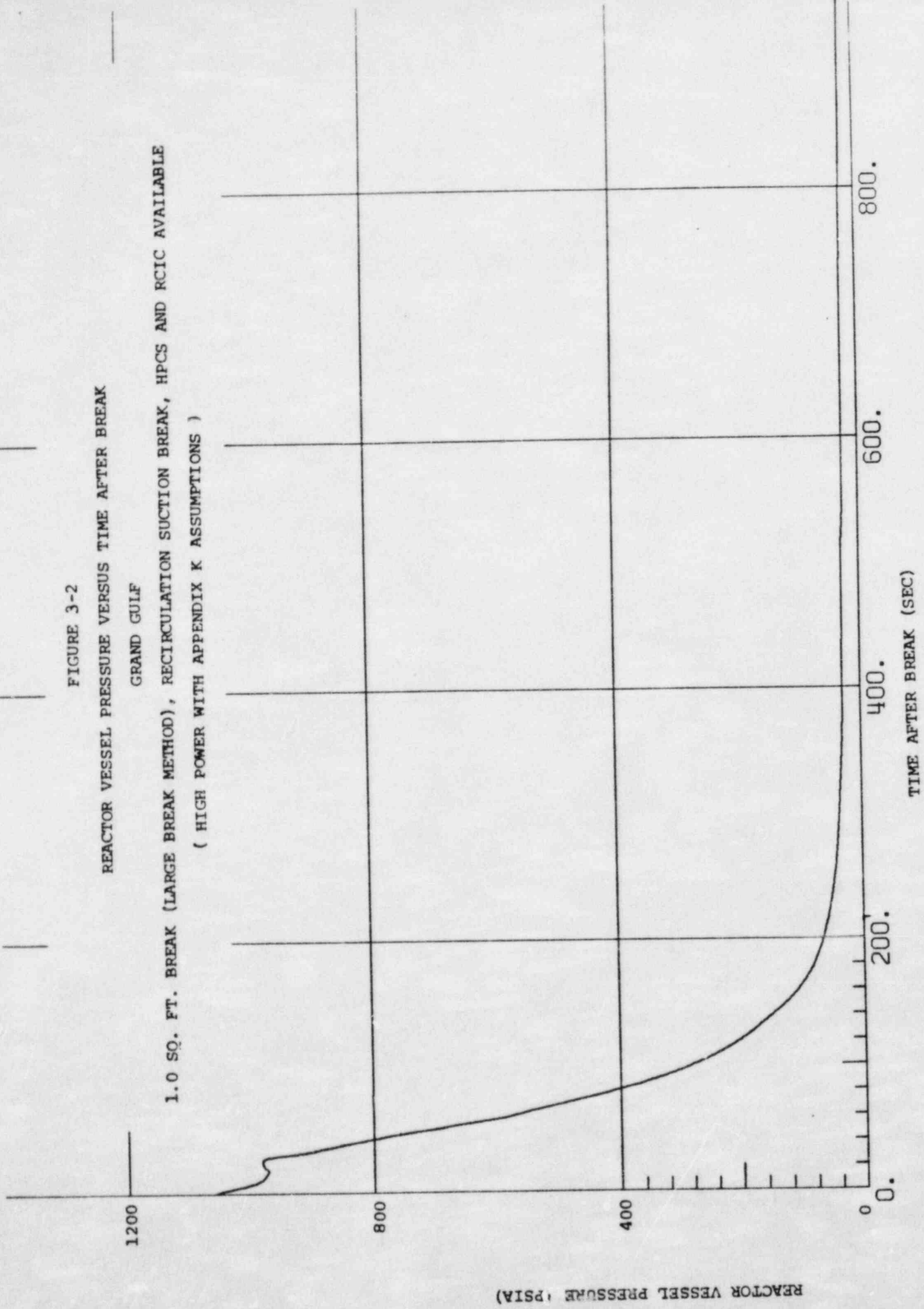


FIGURE 3-3

PEAK CLADDING TEMPERATURE VERSUS TIME AFTER BREAK

GRAND GULF

1.0 SQ. FT. BREAK (LARGE BREAK METHOD), RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE
(HIGH POWER WITH APPENDIX K ASSUMPTIONS)

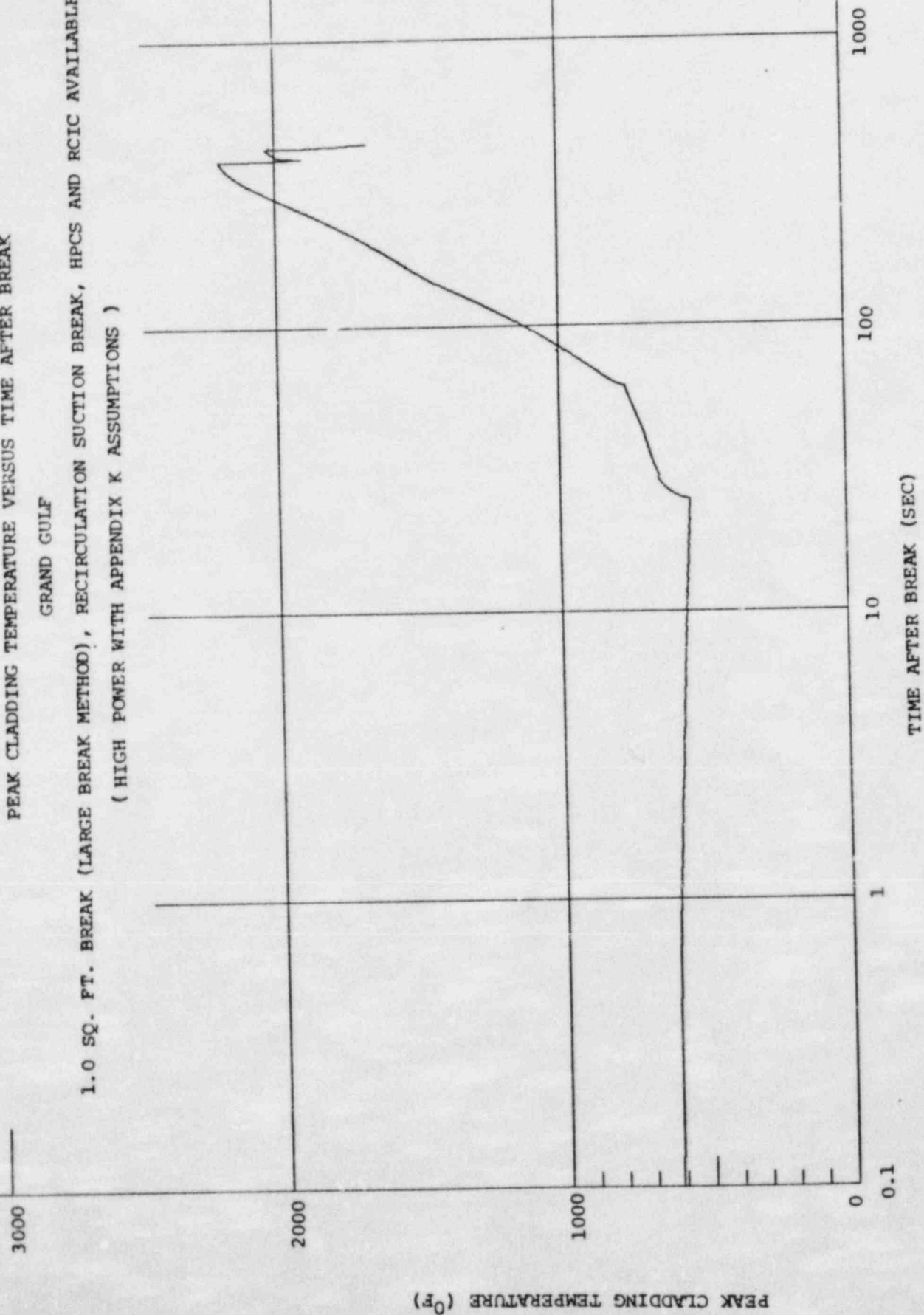


FIGURE 4-1

WATER LEVEL INSIDE THE SHROUD VERSUS TIME AFTER BREAK

GRAND GULF

DESIGN BASIS ACCIDENT, RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE
(5% POWER WITH APPENDIX K ASSUMPTIONS)

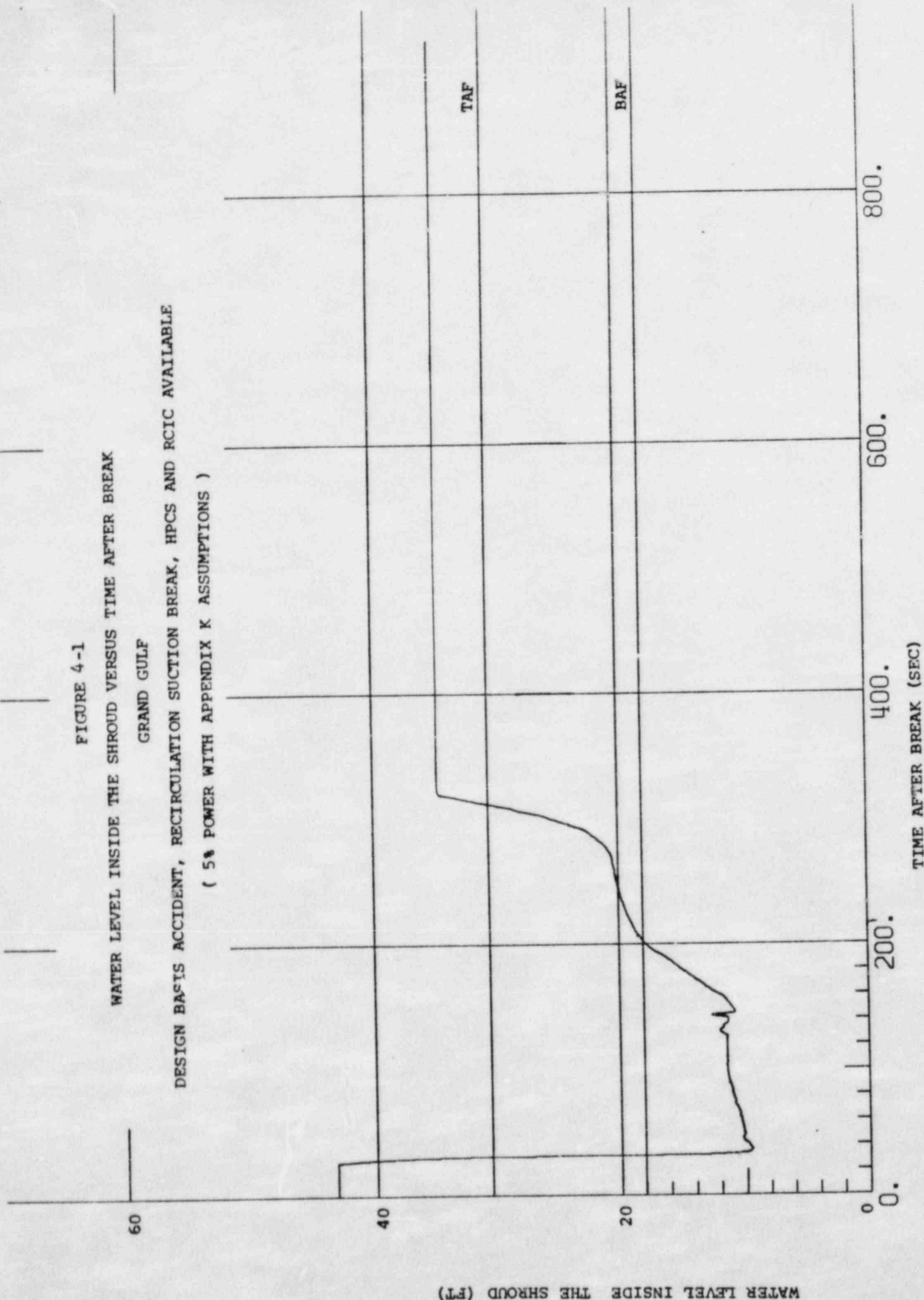


FIGURE 4-2

REACTOR VESSEL PRESSURE VERSUS TIME AFTER BREAK

GRAND GULF

DESIGN BASIS ACCIDENT, RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE

(5% POWER WITH APPENDIX K ASSUMPTIONS)

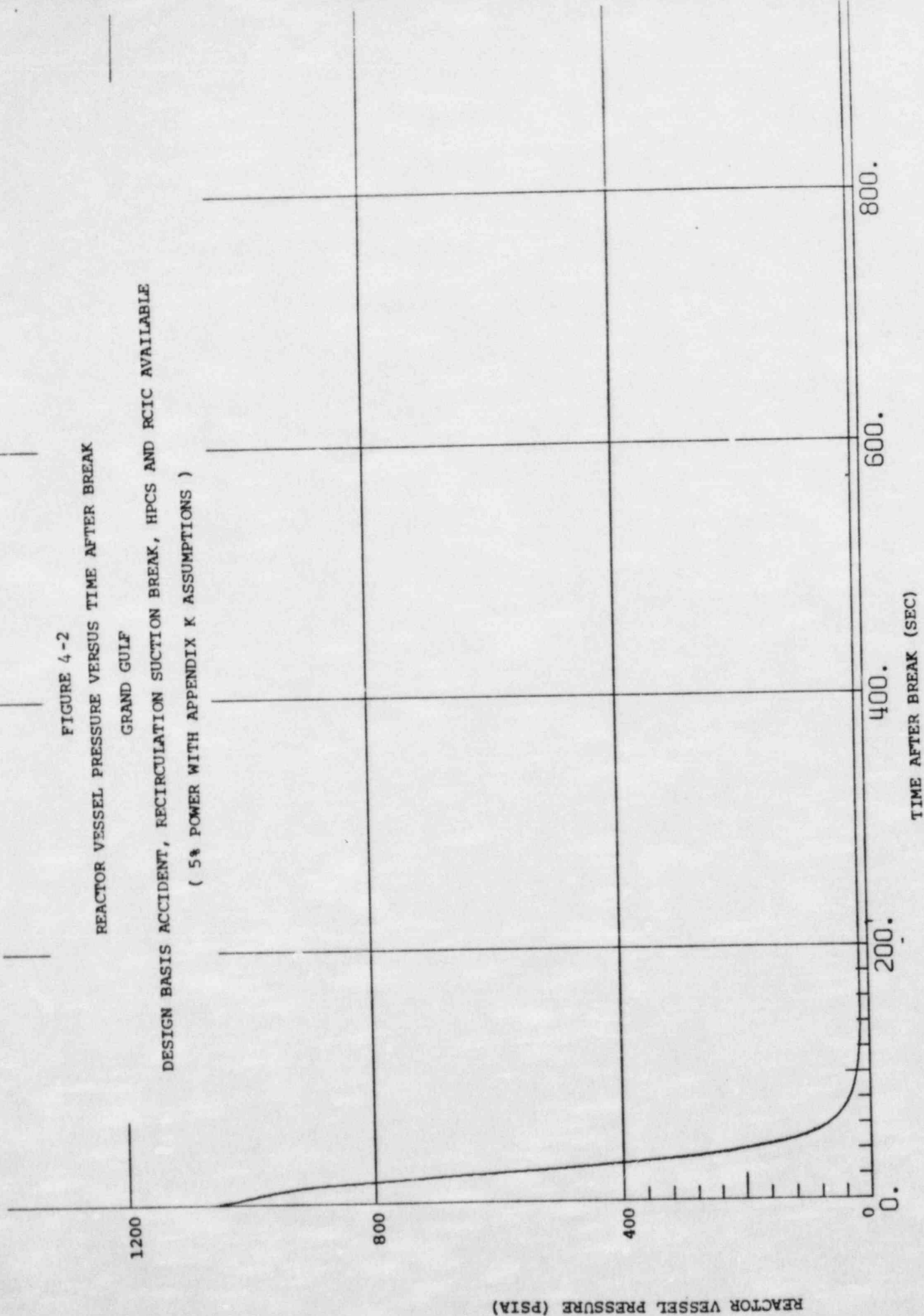


FIGURE 4-3

PEAK CLADDING TEMPERATURE VERSUS TIME AFTER BREAK

GRAND GULF

DESIGN BASIS ACCIDENT, RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE

(5% POWER WITH APPENDIX K ASSUMPTIONS)

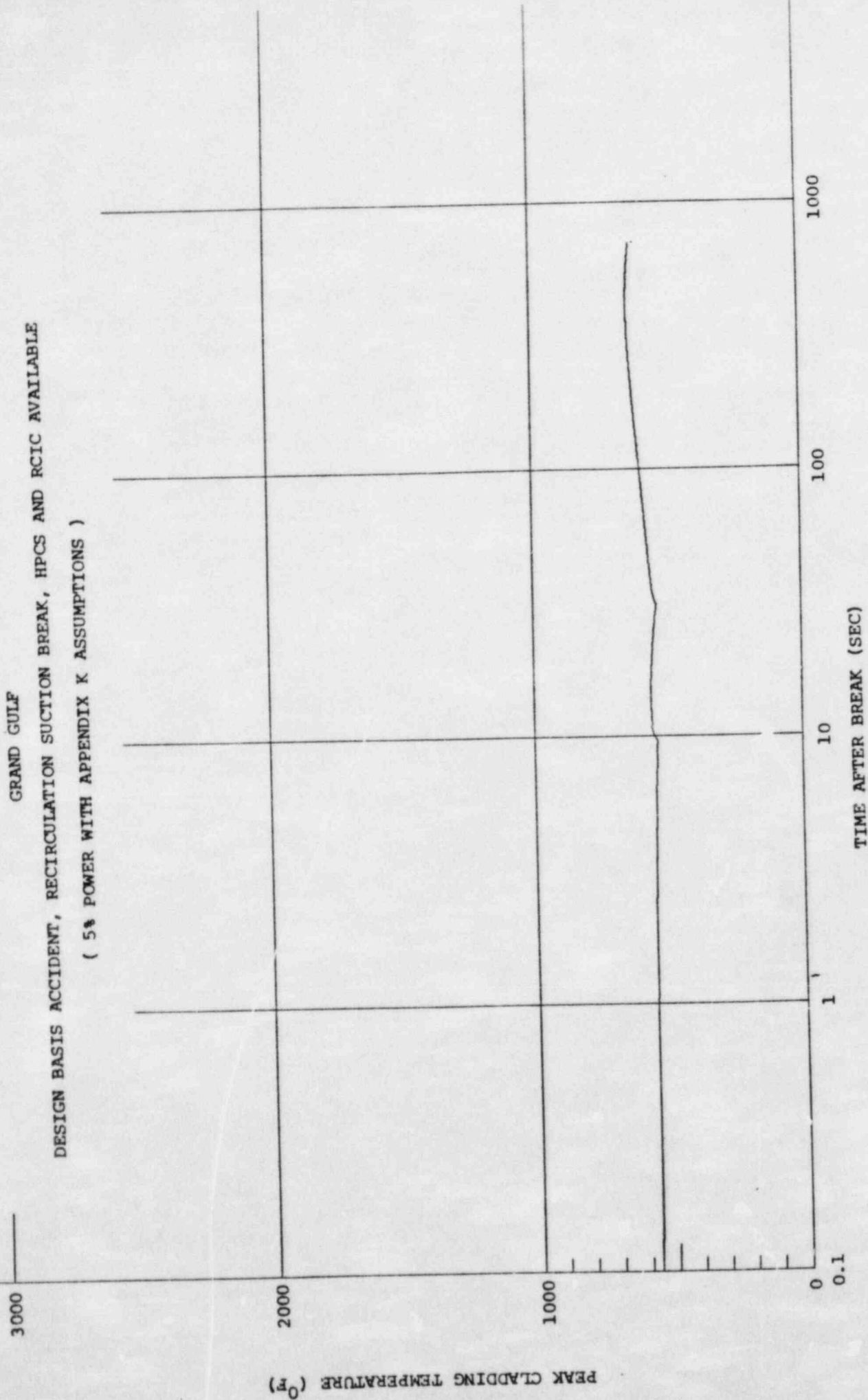


FIGURE 5-1

WATER LEVEL INSIDE THE SHROUD VERSUS TIME AFTER BREAK

GRAND GULF

DESIGN BASIS ACCIDENT, RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE
(100% POWER WITH REALISTIC ASSUMPTIONS)

60

WATER LEVEL INSIDE THE SHROUD (FT)

40

20

0

200.

400.

600.

800.

TIME AFTER BREAK (SEC)

BAF

TAF

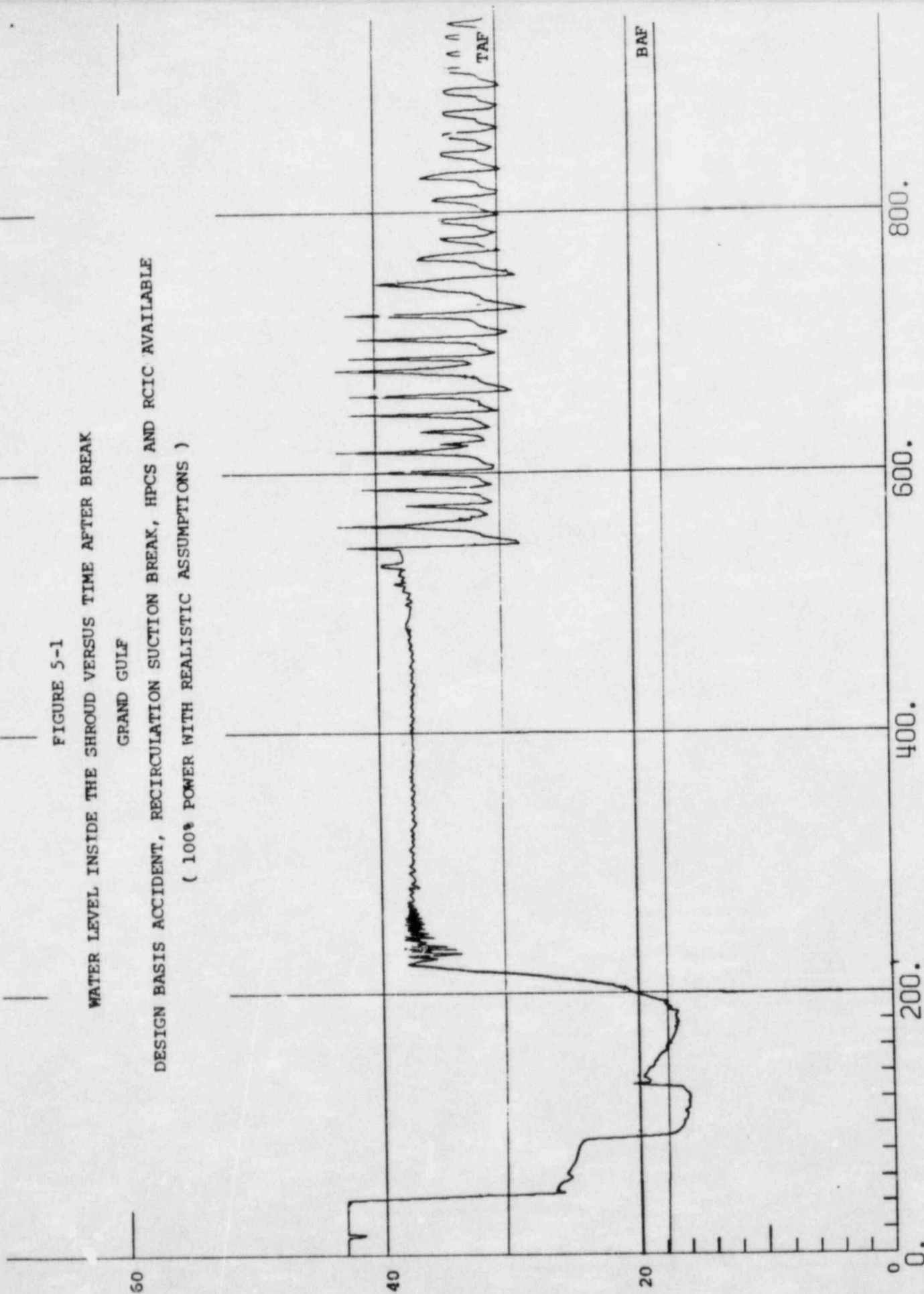


FIGURE 5-2

REACTOR VESSEL PRESSURE VERSUS TIME AFTER BREAK

GRAND GULF

DESIGN BASIS ACCIDENT, RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE
(100% POWER WITH REALISTIC ASSUMPTIONS)

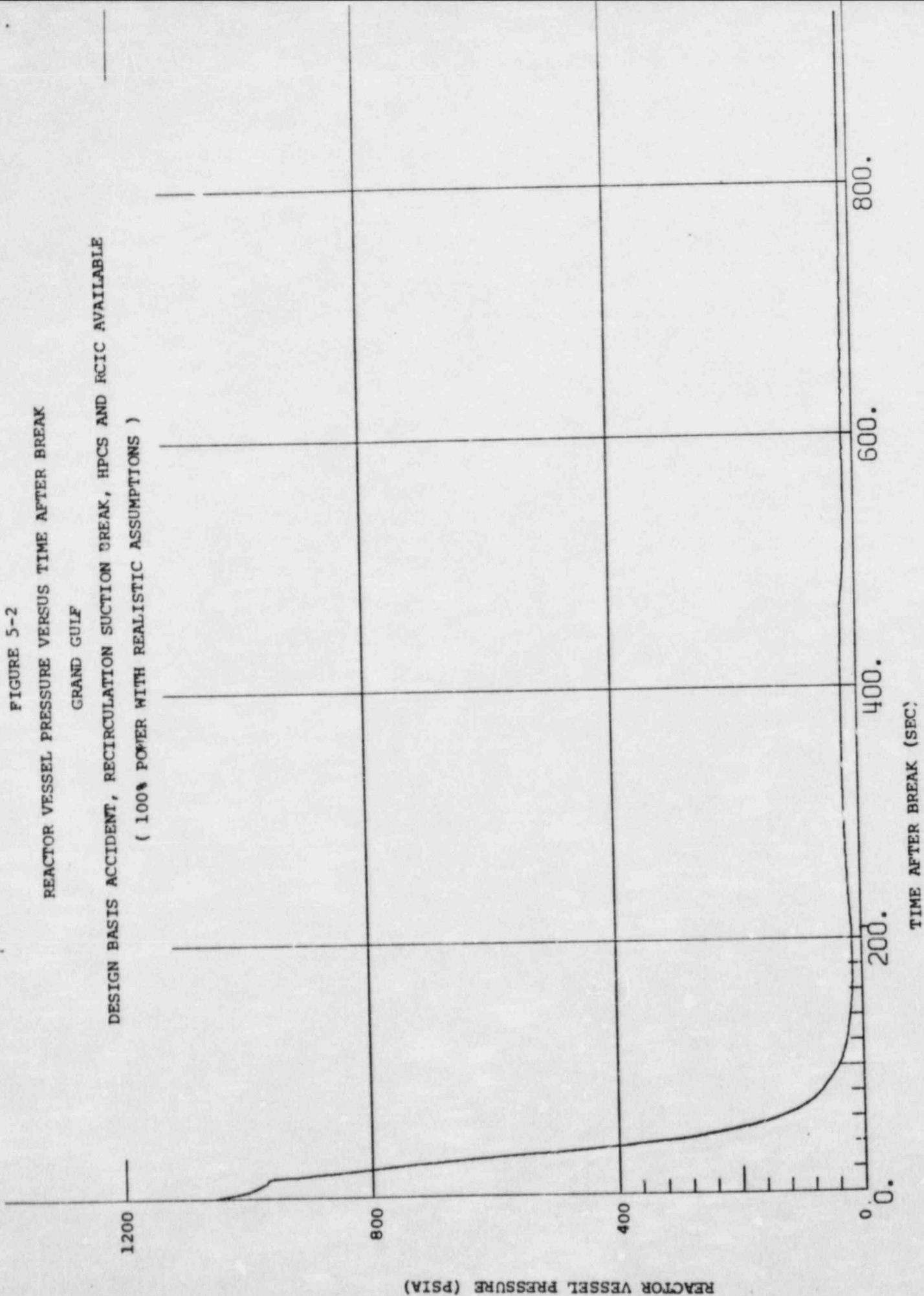


FIGURE 5-3

PEAK CLADDING TEMPERATURE VERSUS TIME AFTER BREAK

GRAND GULF

DESIGN BASIS ACCIDENT, RECIRCULATION SUCTION BREAK, HPCS AND RCIC AVAILABLE
(100% POWER WITH REALISTIC ASSUMPTIONS)

