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MANGAN, C. V. Niagara Mohawk Power Corp.
RECIP. NAME RECIPIENT AFFILIATION
ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Forwards responses to NRC comments re proposed changes to FSAR submitted in util 860819 ltr. Marked up FSAR pages encl.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

September 19, 1986
(NMP2L 0881)

Ms. Elinor G. Adensam, Director
BWR Project Directorate No. 3
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Washington, DC 20555

Dear Ms. Adensam:

Re: Nine Mile Point Unit 2
Docket No. 50-410

The NRC staff forwarded two comments to Niagara Mohawk related to our proposed changes to the Final Safety Analysis Report which were submitted by our letter dated August 19, 1986 (NMP2L 0825). This letter provides responses to these comments and, where necessary, marked-up pages of the Final Safety Analysis Report.

Very truly yours,

C. V. Mangan
Senior Vice President

LL/ps
2060G
Enclosure

xc: W. A. Cook, NRC Resident Inspector
Project File (2)

2060G

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
Niagara Mohawk Power Corporation) Docket No. 50-410
(Nine Mile Point Unit 2))

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Senior Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C. V. Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 17th day of September, 1986.

Janet Pacheco
Notary Public in and for
Onondaga County, New York

My Commission expires:
JANIS M. MACRO
Notary Public in the State of New York
Qualified in Onondaga County No. 4784555
My Commission Expires March 30, 1987

1. FSAR Table 6.2-32

Comment: No basis provided. Some value deleted.

Response: These changes are made to reflect as-built calculations and correction of typographical errors. The values in the Table are not intended to be deleted. The enclosed marked-up page to Table 6.2-32 is provided to clarify the proposed change.

2. FSAR Table 6.2-59D

Comment: Zinc primer number is not accurate.

Response: A footnote which clarifies the consideration of the zinc primer for hydrogen generation was inadvertently left out. Although the consideration of additional hydrogen generation from zinc primer was considered in the calculations, this table and the associated hydrogen generation curves were not updated. In order to resolve your concern, this table, the hydrogen generation curves in figures 6.2-72D, E, H and I, and text pages 6.2-76a and 6.2-81 are updated and are provided in this enclosure. The attached changes will be included in a subsequent Final Safety Analysis Report update. There is no Technical Specification change necessary.

In order to make the Safety Evaluation Report consistent to the above changes, we suggest a change be made to page 6-25, 7th paragraph, of the Safey Evaluation Report from "approximately 2.75 days" to "approximately 2.5 days."

TABLE 6.2-32

SUBCOMPARTMENT NODAL DESCRIPTION

24-Inch Recirculation Suction Line Break
Drywell Head Subcompartment

Volume No.	Volume (ft^3)	Initial Conditions: Temp (°F)	Initial Conditions: Pressure (psia)	Initial Conditions: Humidity (%)	DBA Break Conditions: % Break in Vol.	DBA Break Conditions: Break Line	DBA Break Conditions: Break Area (ft^2)	DBA Break Conditions: Break Type	Calculated Peak Pressure Difference[1] (psid)	Design Peak Pressure Difference[1] (psid)	Design Margin[2] (%)	
1	8,620	150	14.2	0	0				0.00	-	-	
2	276,000	150	14.2	0	100	Recirc. Suction	2.54	DER	~~6.02~~ 6.77	7.22	~~16.6~~ 6.2	18

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(1) Peak pressure difference [(P2-P1) peak] is shown on Figure 6.2-33B. 18

(2) Design margin: 1-(calculated Δ peak/design Δ peak).

The recombiner unit, which requires a 1 1/2-hr warmup period, is initiated manually from the control room prior to primary containment oxygen or hydrogen concentrations reaching 4.5 volume percent. This occurs for the hydrogen concentration, approximately 2.75 days after the design basis | 15

2.5

The combustible gases in the drywell and the suppression chamber would approach the flammability limit, if uncontrolled, after 4.75 days. Prior to this, pressure and temperature within the primary containment are shown by analysis (Section 6.2.1) to have dropped to a level that will permit operation of the recombiner. The recombiner system is manually activated when oxygen or hydrogen concentration reaches 4.5 percent. The recombiner system takes suction from the primary containment atmosphere, recombines the hydrogen and oxygen to form water vapor, and returns the exhaust to the suppression chamber. This results in a small pressure buildup in the suppression chamber that causes the opening of the vacuum breaker valves between the drywell and suppression chamber. As a result, the flow of the gas mixture from the suppression chamber to the drywell is established. This arrangement of recombiner suction and discharge promotes mixing of the two volumes in the primary containment. | 15

6.2.5.3.3 Analysis

Based on the preceding hydrogen and oxygen generation sources and the accident description, the oxygen and hydrogen concentration in the drywell and suppression chamber is obtained as a function of time. To calculate the redistribution of the hydrogen and oxygen between the drywell and suppression chamber, a two-region computer model of the primary containment system is used. This model takes into consideration hydrogen and oxygen generation from the metal-water reaction and radiolysis. The calculation determines the inventory, partial pressure, and mole fraction of each atmospheric constituent in both regions as a function of time.

Tables 6.2-58, 6.2-59, 6.2-59C, and 6.2-59D present the parameters used in the analysis of the oxygen and hydrogen buildup within the primary containment. Figures 6.2-72H and 6.2-72I present hydrogen and oxygen concentration transients in the primary containment, assuming only one recombiner is operating. The recombiner is required to be functional approximately 2.75 days after the design basis accident. | 15 | 15

2.5

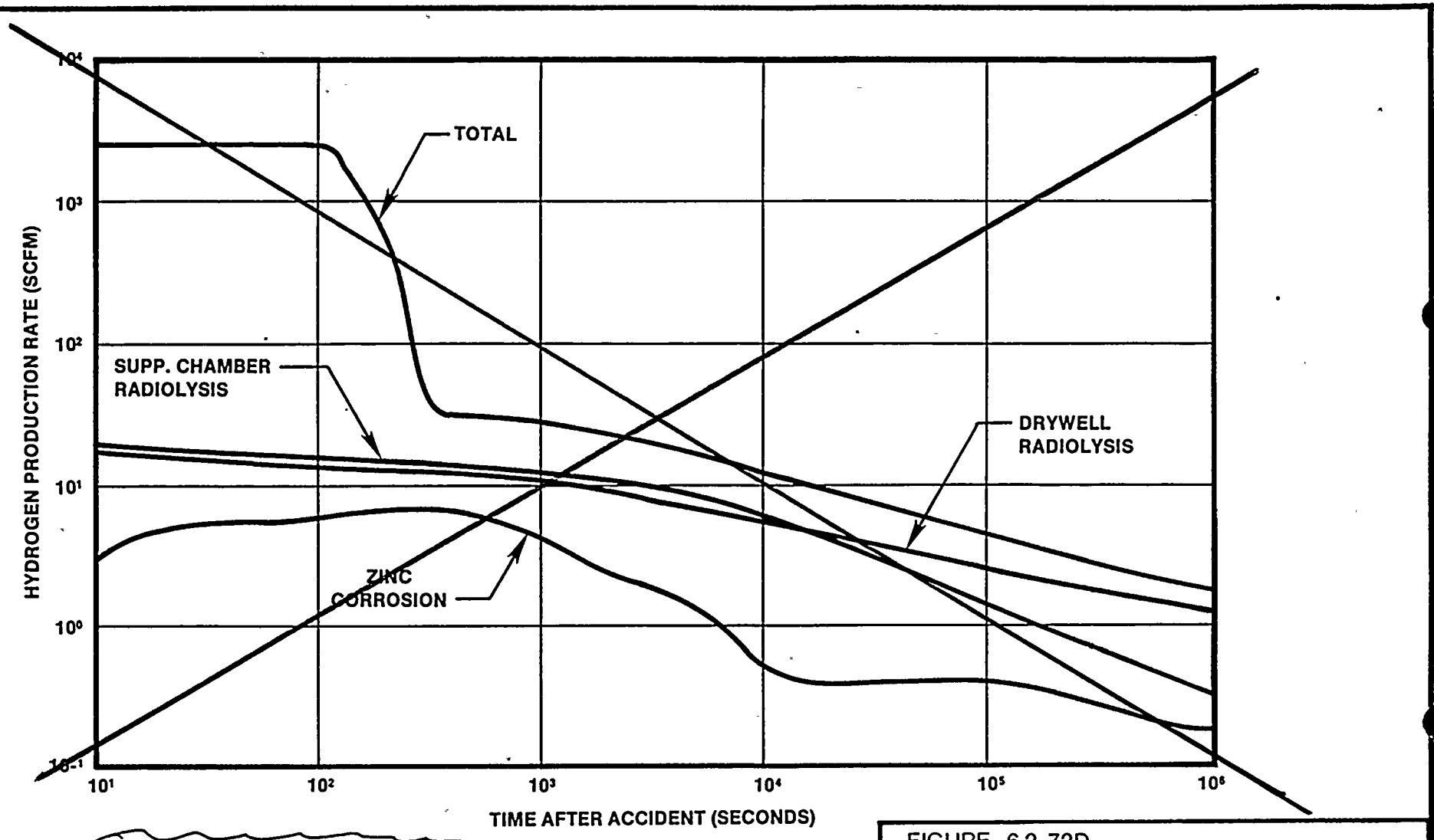
TABLE 6.2-59D

ALUMINUM AND ZINC INVENTORY EXPOSED TO SPRAYS

Material Type	Surface Area (ft^2)	Weight (lbm)
Aluminum	650	~~41,500~~ 40,300
Galvanized steel	~~58,540~~ 57,600*	~~6,968~~ 5,370*
Zinc primer	~~2,400~~ 39,400*	~~230~~ 3,780*

15

* The hydrogen generation / control analysis considers 15 percent larger surface area and weight as a conservative allowance for the uncertainty of these inventories.

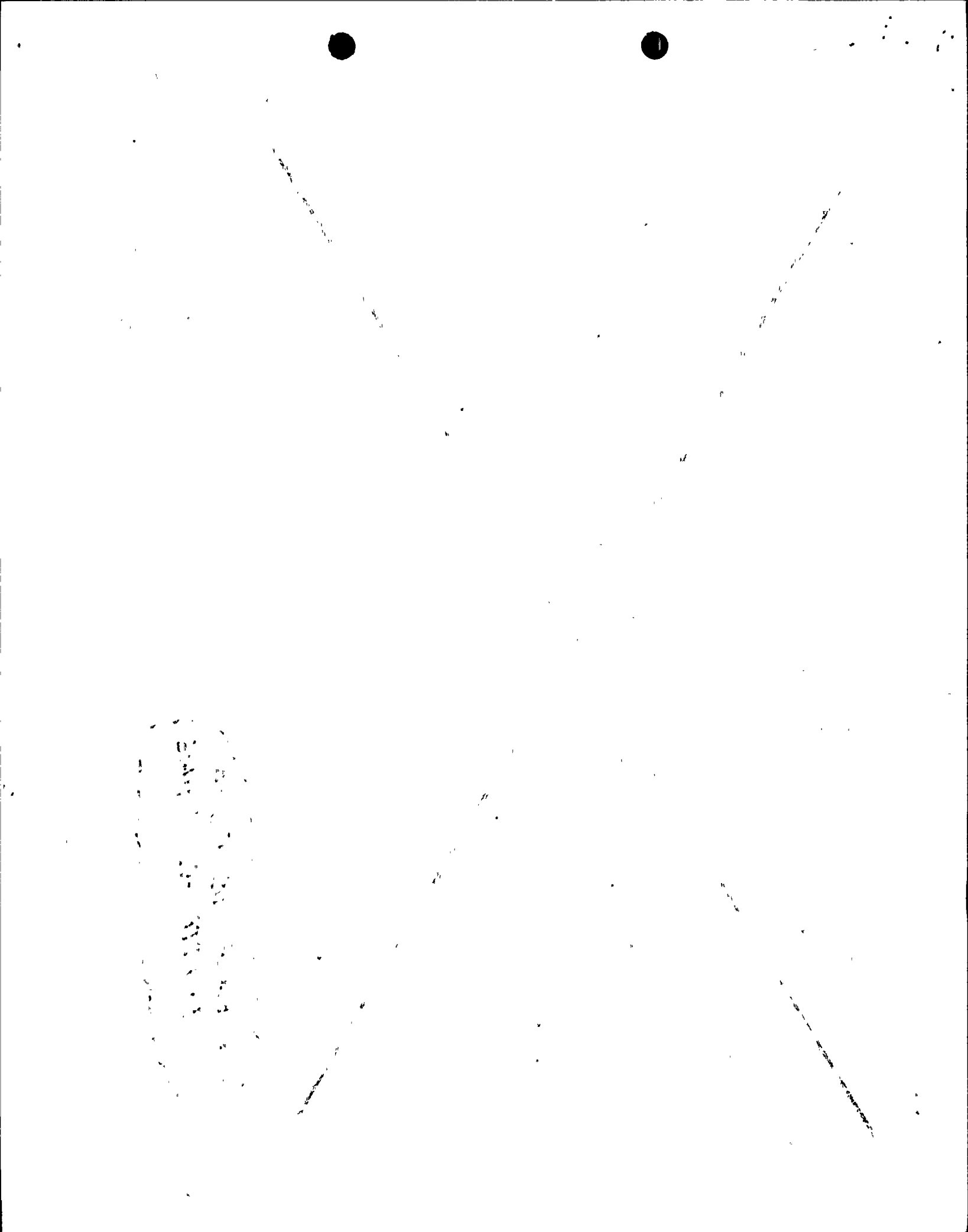


REPLACE THIS FIGURE WITH ATTACHED FIGURE

FIGURE 6.2-72D

HYDROGEN GENERATION RATES FOLLOWING DBA

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



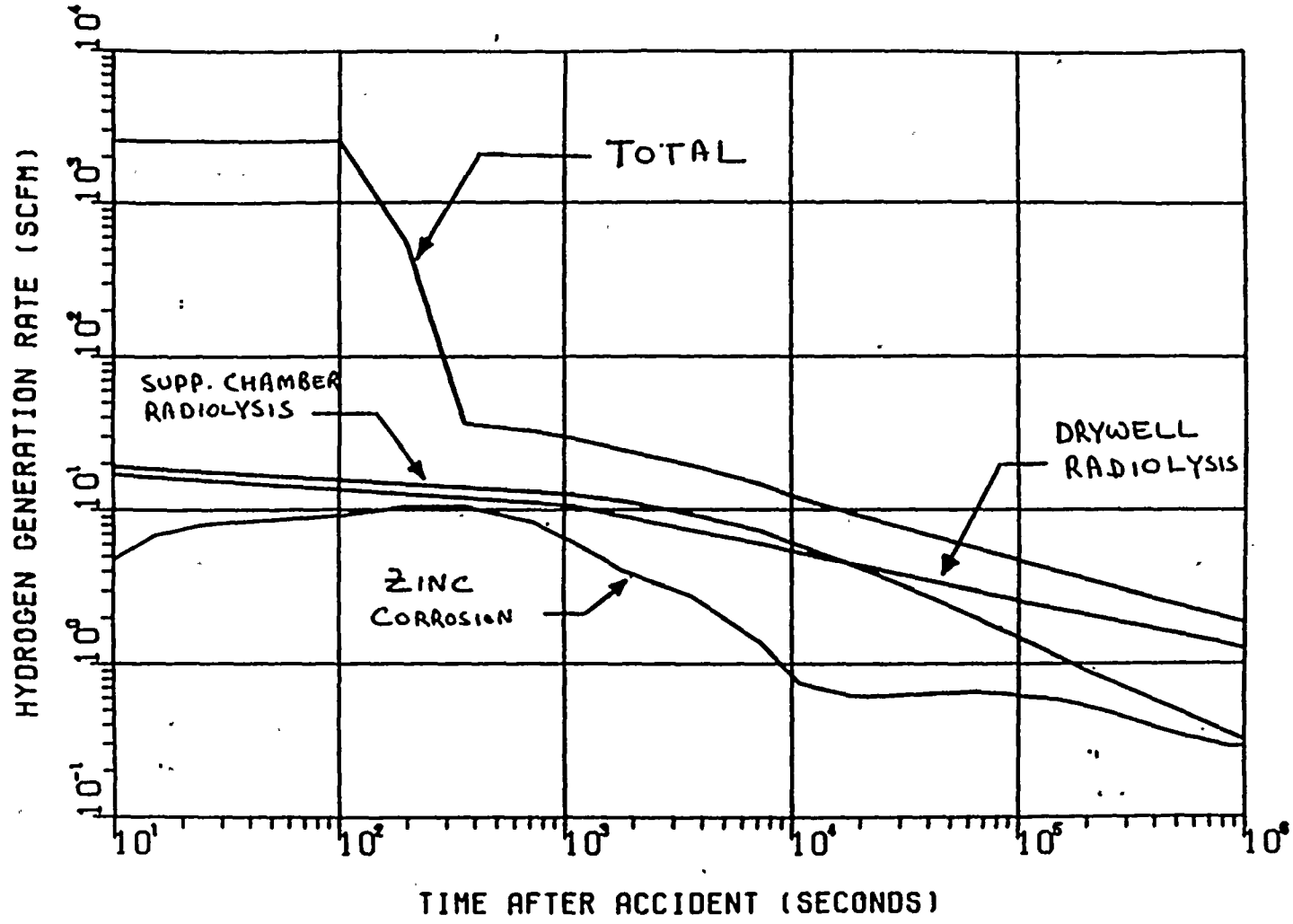


FIGURE 6.2-72D

HYDROGEN GENERATION RATES FOLLOWING DBA

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NINE MILE POINT-UNIT 2
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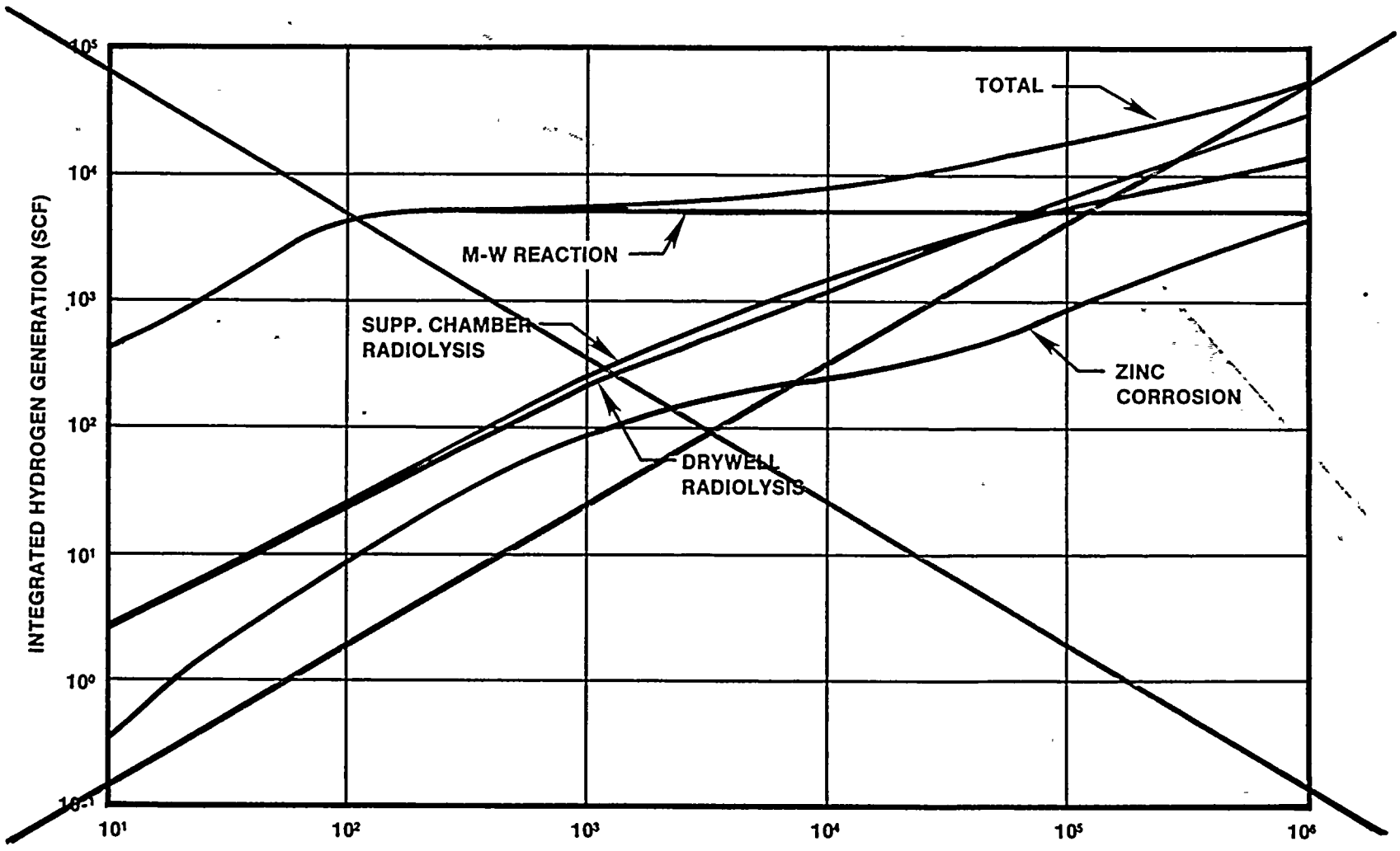

REPLACE THIS FIGURE WITH ATTACHED FIGURE

FIGURE 6.2-72E

INTEGRATED HYDROGEN GENERATION FOLLOWING DBA

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NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

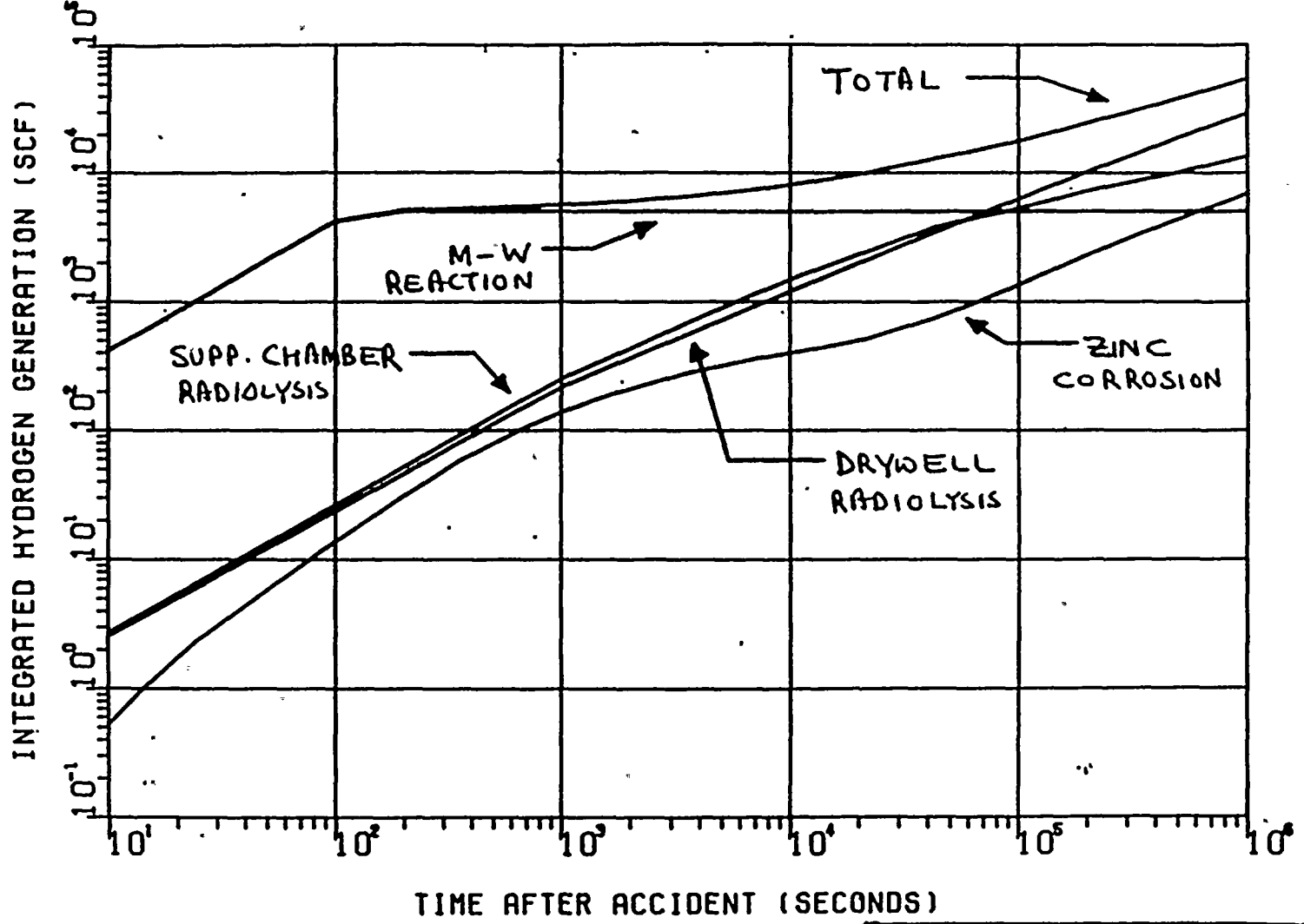
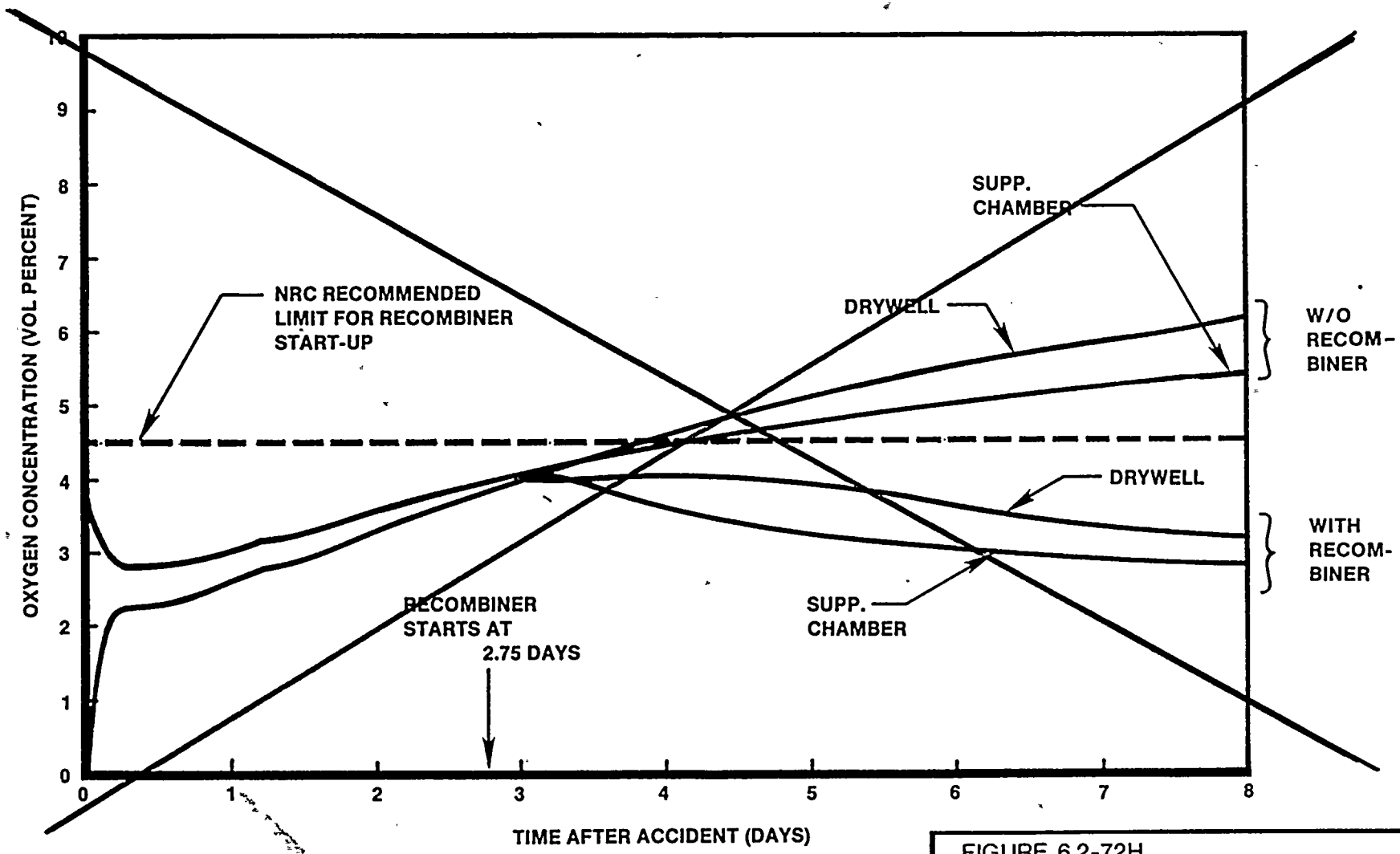


FIGURE 6.2-72E

INTEGRATED HYDROGEN GENERATION FOLLOWING DBA

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



REPLACE THIS FIGURE WITH ATTACHED FIGURE

FIGURE 6.2-72H

OXYGEN CONCENTRATION FOLLOWING DBA

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

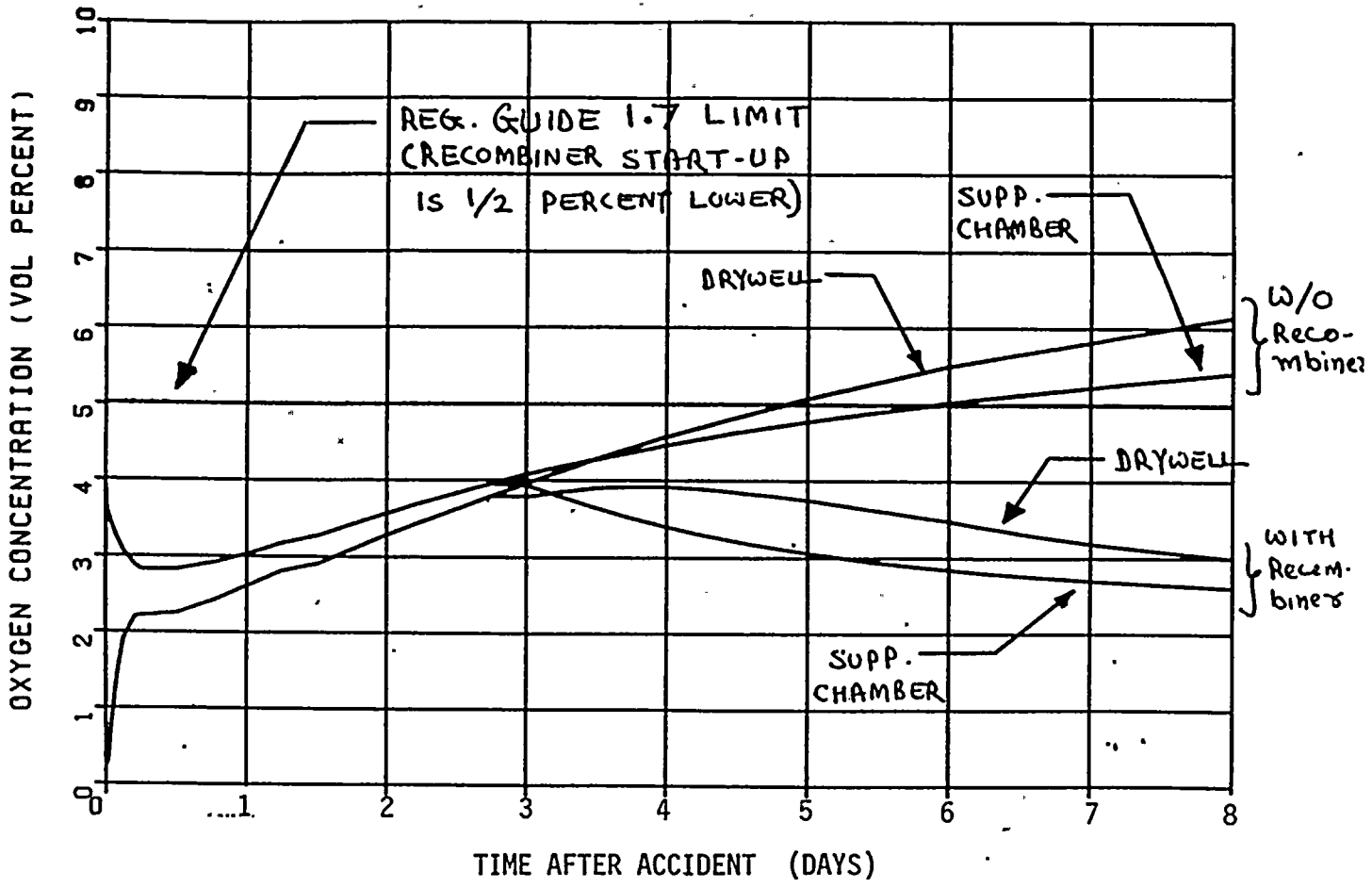
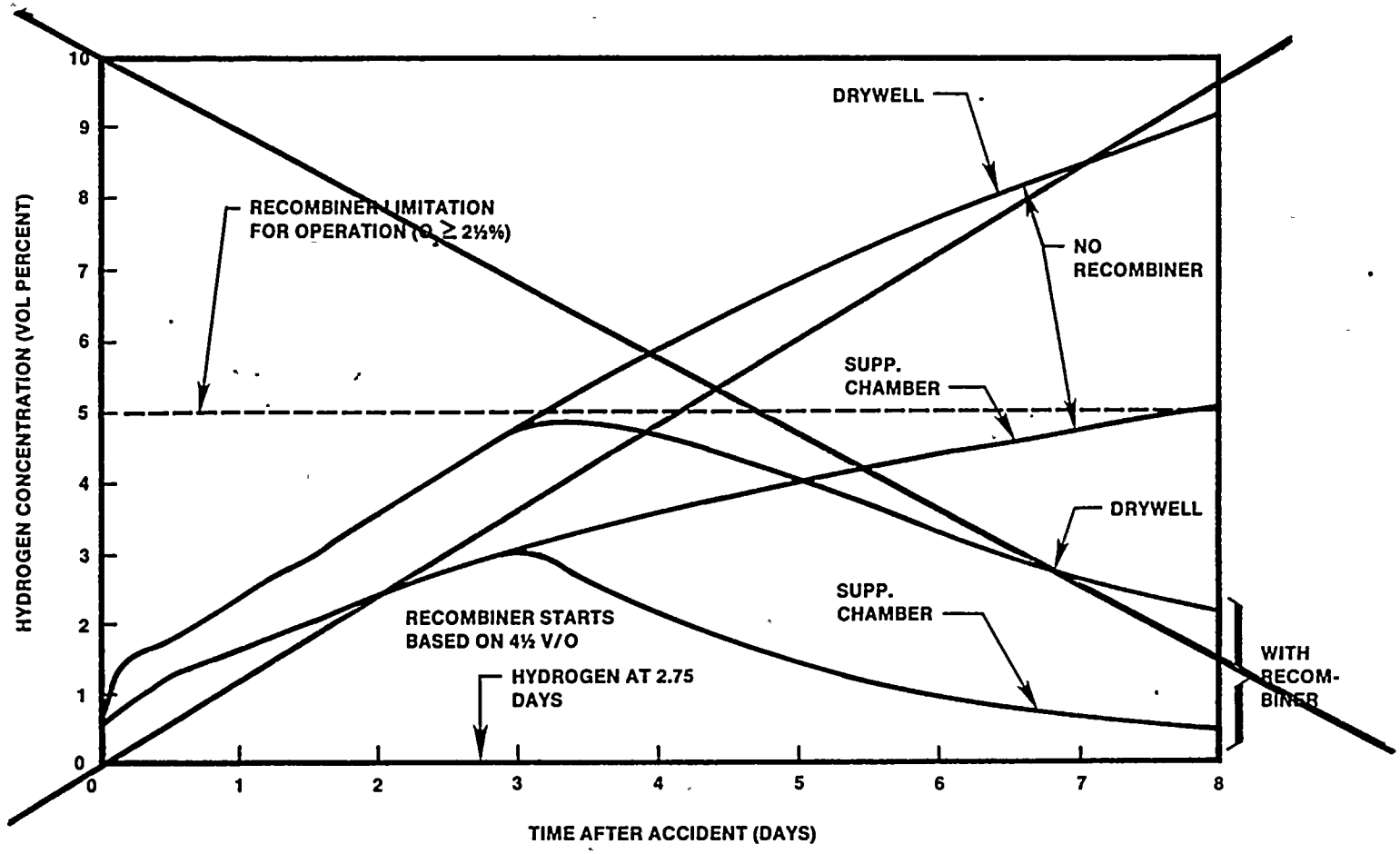


FIGURE 6.2-72H

OXYGEN CONCENTRATION
FOLLOWING DBA

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



REPLACE THIS FIGURE WITH ATTACHED FIGURE

FIGURE 6.2-72I

HYDROGEN CONCENTRATION FOLLOWING DBA

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

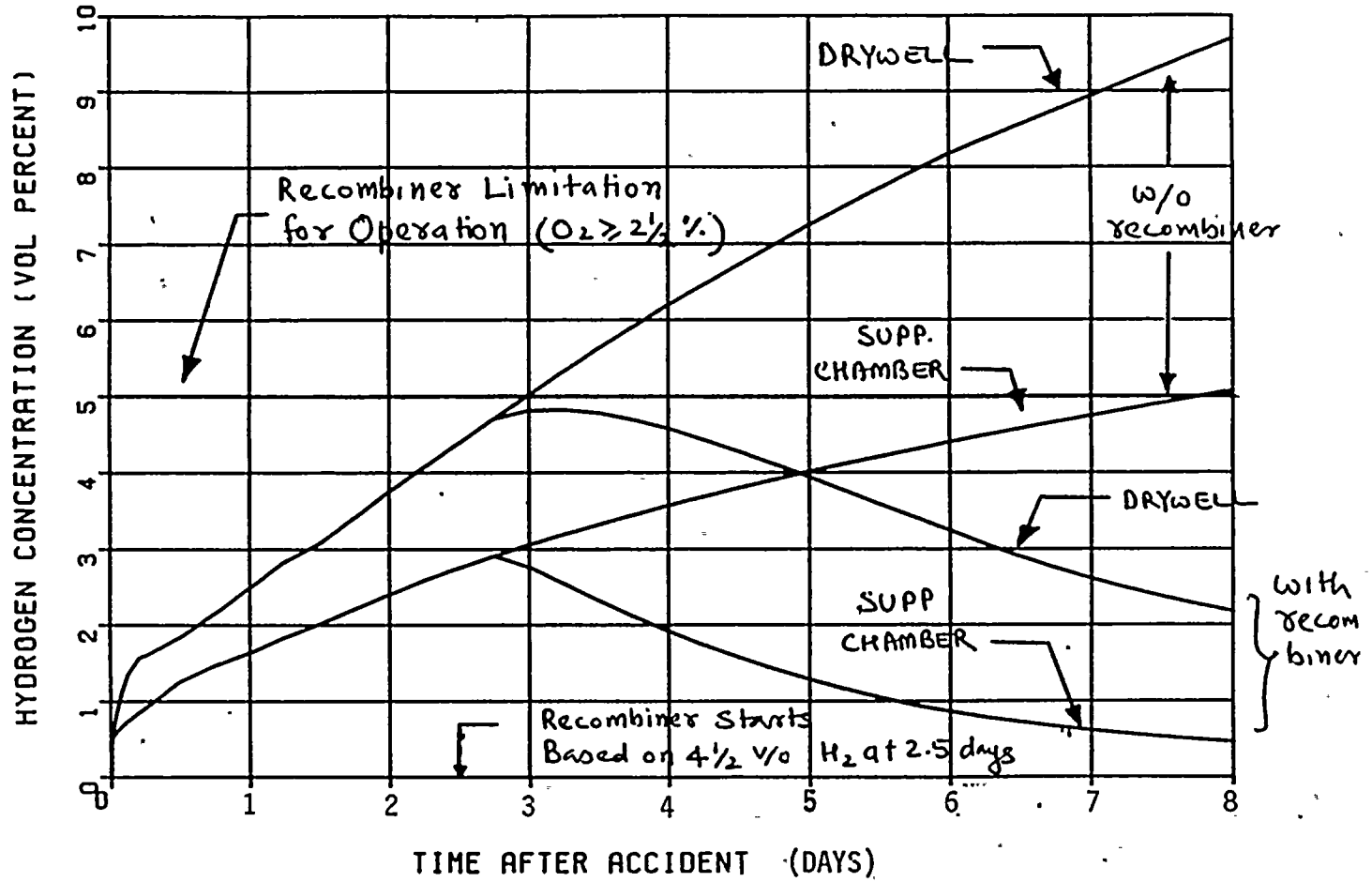


FIGURE 6.2-72I

HYDROGEN CONCENTRATION FOLLOWING DBA

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT