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RECIP. NAME RECIPIENT AFFILIATION
ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Provides addl justification re Section II, Item 88 to NRC 860903 responses to SER comments identified in util 80716 ltr. Required FSAR change encl.

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NIAGARA MOHAWK

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

October 9, 1986
(NMP2L 0897)

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

In a September 3, 1986 letter from M. F. Haughey to C. V. Mangan, the Nuclear Regulatory Commission staff provided responses to a number of the Safety Evaluation Report comments we identified in our letter dated July 16, 1986. We submitted formal responses to those comments in our letters dated September 12, 1986 (NMP2L 0878) and September 18, 1986 (NMP2L 0872 and NMP2L 0879). This letter provides additional justification relating to Section II, Item 88. The required FSAR change is also enclosed with justification.

Very truly yours,

C. V. Mangan
Senior Vice President

TS/pns
2105G
Enclosures
xc: W. A. Cook, NRC Resident Inspector
Project File (2)

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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 9th day of October, 1986.

Christine Austin
Notary Public in and for
Onondaga County, New York

My Commission expires:

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 1987

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4727007
My Commission Expires March 30, 19__

design temperature of 150°F. This 7-hr duration does not include taking credit for heat loss from the surface of the spent fuel pool by evaporation and convection. Seven hours is sufficient time to restore spent fuel pool cooling under the worst-case scenario, which consists of a loss of one SFC loop due to a break in an adjacent high energy RWCU pipe with a loss of the other loop due to a single active failure of a component in that loop. This situation would require the use of one loop of the residual heat removal (RHR) system, to restore cooling of the spent fuel pool. 23

INSERT A

Each loop of the SFC system is capable of providing cooling for the maximum normal heat load described above. Should spent fuel cooling be lost due to a single failure in one loop, the other loop can be placed into service within 1 hr. During the 1 hr, the pool temperature will not increase substantially to exceed 140°F.

For a full-core offload condition 12 days after reactor shutdown and 6 months after the last normal refueling, the heat load in the spent fuel pool would be approximately 31.2×10^6 Btu/hr. This condition may require the RHR system to be used for additional spent fuel pool cooling capacity. Should spent fuel pool cooling be lost under this condition, it would take approximately 2 hr for the temperature of the spent fuel pool to approach its maximum design temperature of 150°F. This 2-hr duration does not include taking credit for heat loss from the surface of the spent fuel pool by evaporation and convection. Two hours is a sufficient amount of time for spent fuel pool cooling to be restored under this condition. All that is required to restore spent fuel pool cooling in this situation is to switch to the other loop of the RHR system. Refer to Section 9.1.2.2 for a discussion of determination of spent fuel decay heat loads.

In addition to the redundancy provided in the spent fuel pool cooling system, it is possible to remove more heat than the design heat removal capabilities of the heat exchangers by virtue of cooling with service water instead of reactor building closed loop cooling water due to the lower service water temperature.

Since the service water system is always available and provisions are included to use service water as makeup water for the spent fuel pool, adequate water coverage of spent fuel in the spent fuel pool is assured at all times. Design features of the SFC system also include check valves and siphon breakers in the spent fuel pool cooling return lines

INSERT A

...which consists of a loss of a portion of one Spent Fuel Pool Cooling loop due to a break in an adjacent high energy RWCU pipe with one additional single active failure. This situation would require the use of one of the cross-ties between the two redundant Spent Fuel Pool Cooling loops located upstream and downstream of the Spent Fuel Pool Cooling pumps and may require valve realignments. The remotely actuated cross-connect valves and the pumps are located in a room not affected by the postulated high energy line break. Valves which could require manual/local isolation action depending on the leak location could be reached after 1 hour even if located in the secondary containment break area. Plant operating procedures describe how to utilize the cross-connect capability of the Spent Fuel Pool Cooling system. These cross-ties permit each Spent Fuel Pool Cooling pump to take suction from either skimmer surge tank and to discharge back to the fuel pool through either heat exchanger. Figure 9.1-5 shows the Spent Fuel Pool Cooling system and the cross-connect capability.

2105G

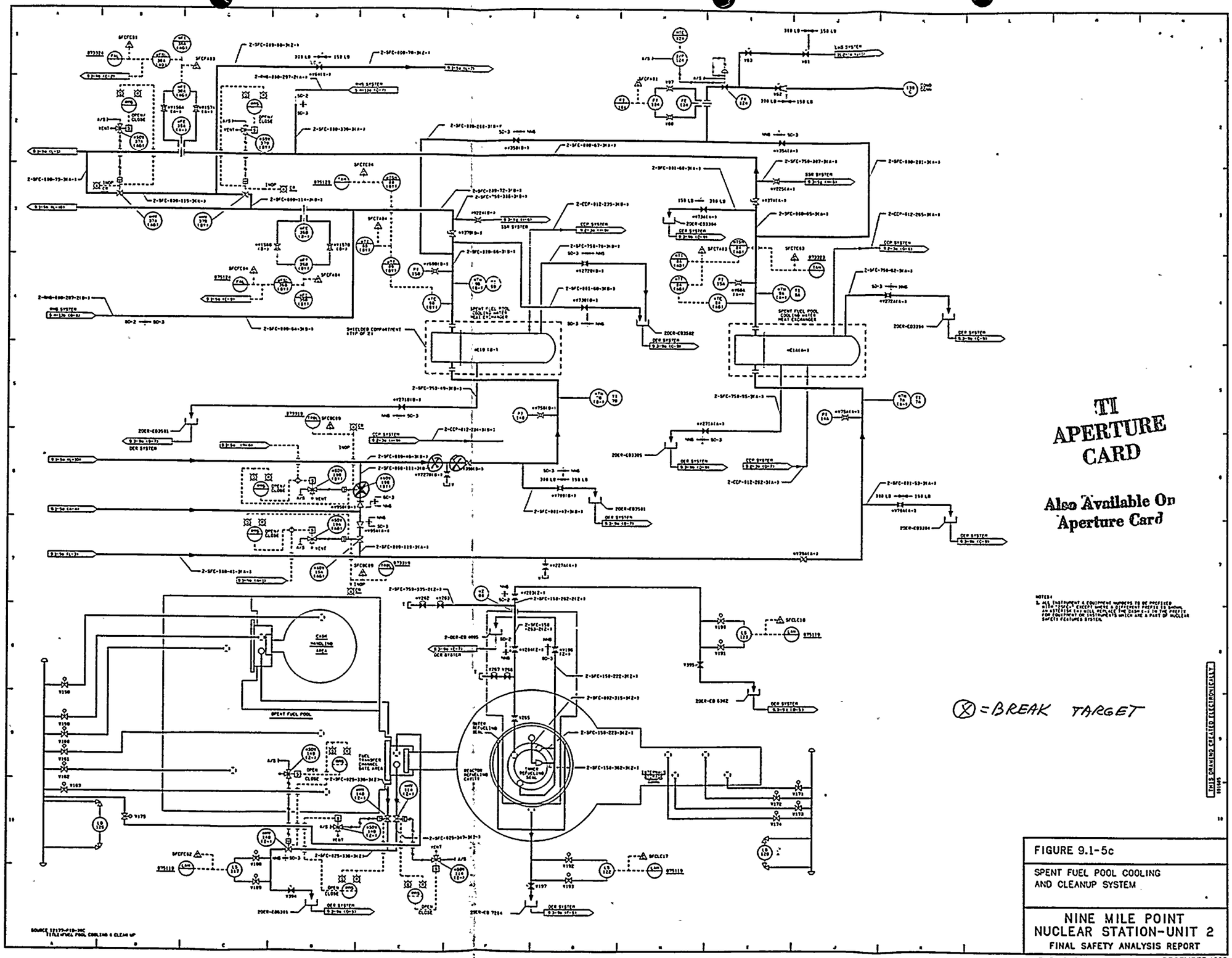
Summary of Change	Justification for Change
Change wording to reflect the results of the HELB Analysis	The Amendment 23 FSAR change to 9.1-15 was submitted prior to the completion of the High Energy Line Break (HELB) Analysis. That submittal concluded that at least one loop of the Residual Heat Removal System would be required following a high energy line break. Subsequently, it has been determined that a high energy line break in the spent fuel pool cooling (SFC) area could potentially affect one loop of SFC. However, considering a HELB in the area of one SFC loop and a single failure on the other loop, SFC can still be used to cool the SFC pool. This requires that the Division 1 and Division 2 loops be cross connected. The attached drawings, FSAR Figures 9.1-5a and 9.1-5c, indicate the postulated SFC Targets as a result of the High Energy Line Breaks. This information will not be included in the FSAR and is for information only.

⊗ = BREAK TARGET

FIGURE 9.1-5a

SPENT FUEL POOL COOLING
AND CLEANUP SYSTEM

NINE MILE POINT
NUCLEAR STATION-UNIT 2
FINAL SAFETY ANALYSIS REPORT



⊗ = BREAK TARGET

FIGURE 9.1-5c

SPENT FUEL POOL COOLING
AND CLEANUP SYSTEM

NINE MILE POINT
NUCLEAR STATION-UNIT 2
FINAL SAFETY ANALYSIS REPORT