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May 31, 1991

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Quarterly Status Report - March 1991 "Degraded Core Accident Hydrogen Control Program"

GNRO-91/00094

Gentlemen:

The Grand Gulf Nuclear Station (GGNS), Unit 1 Facility Operating License (License No. NPF-29) requires that Entergy Operations, Inc. submit to the NRC quarterly reports on the status of the "Degraded Core Accident Hydrogen Control Program." In response to that requirement, Entergy Operations, Inc. is submitting the attached report covering the period from January 1, 1991 through March 31, 1991.

Should you have any questions concerning this report, please contact W. K. Hughey at (601) 437-6557.

Yours truly,

WTC/WKH/mtc
attachment: Quarterly Status Report for Quarter Ending March 31, 1991
cc: (See Next Page)

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Quarterly Status Report for
Quarter Ending March 31, 1991

"Degraded Core Accident
Hydrogen Control Program"

Grand Gulf Nuclear Station
Docket No. 50-416

Entergy Operations, Inc.

Quarterly Status Report - March 31, 1991

"Degraded Core Accident Hydrogen Control Program"

1.0 Introduction

This quarterly status report is submitted to comply with a requirement in the Grand Gulf Nuclear Station (GGNS), Unit 1 Facility Operating License (License No. NPF-29). This requirement specifies that Entergy Operations, Inc. should provide quarterly reports outlining the status of the ongoing research program to address degraded core hydrogen control requirements. This report covers the first calendar quarter of 1991 ending March 31, 1991.

This report includes brief summaries of any submittals made by Entergy Operations, Inc. during this quarter along with summaries of any meetings between the NRC Staff and Entergy Operations, Inc. Entergy Operations, Inc. is participating in the Hydrogen Control Owners Group (HCOG) which is conducting generic research and completing generic analyses to resolve the degraded core hydrogen control issue. Since the work completed by HCOG complements Entergy Operations, Inc.'s program to resolve this issue, this report also includes summaries of meetings between the HCOG and the NRC. The summaries of these meetings included in this report do not reflect a formal HCOG position with respect to any issue and represent only the Entergy Operations, Inc. interpretation of the meetings.

2.0 Summary of Entergy Operations, Inc. Submittals

Entergy Operations, Inc. submitted a letter to the NRC dated February 28, 1991 stating that it was Grand Gulf's intent to submit its Hydrogen Control Final Analysis within six months after submittal of the HCOG Accepted Topical Report.

3.0 Summary of HCOG and NRC Meetings

On March 21, 1991, a conference call was held between HCOG and the NRC. The purpose of the call was to determine an acceptable closure path for the SER issues of pressure survivability and spray/unit cooler availability and acceptance of TBU sequences as a hydrogen generation event.

4.0 Hydrogen Control Program Status

The summaries and status of the Hydrogen Control Program as stated herein do not reflect the HCOG position with respect to any program and represent only an Entergy Operations, Inc. interpretation of these programs.

The generic research and generic analyses conducted by HCOG to resolve the degraded core hydrogen control issue are complete. In accordance with this, the NRC issued a Safety Evaluation Report (SER) on the generic Hydrogen Control Program on August 10, 1990. The SER documented the NRC's review of the generic Hydrogen Control Program and delineated which issues were considered closed by the NRC and which required additional action by the HCOG and/or the individual utilities.

4.1 Status of Significant Issues

During the HCOG/NRC conference call on March 21, 1991 the following actions were agreed to for the remaining open issues.

a. The SER identified that the TBU sequence described in NUREG-1150 and NUREG-4550 was an appropriate hydrogen generation event (HGE) for use in the HCOG program. While the TBU sequence is similar to the HCOG HGE, several aspects of the TBU sequence need clarification prior to its incorporation, in whole or part, into the generic Hydrogen Control Program.

   It is HCOG's opinion that only TBU sequences that have recovery of power and the core should be considered an acceptable HGE. It is also HCOG's opinion that the NRC should acknowledge this clarification in a supplement to the Hydrogen Control SER.

b. The SER indicated that credit for containment sprays/coolers cannot be considered in plant unique survivability analyses. This is considered inconsistent with the HCOG program and past HCOG-NRC discussions.

   HCOG has tentatively agreed to address the no spray cases in finalizing the equipment survivability analysis. It was agreed by both HCOG and the NRC that unit coolers would be available during a HGE. HCOG does however intend to issue a letter to the NRC dealing with spray/cooler availability.

c. The pressure survivability value identified in the SER was considered inconsistent with the value that HCOG assigned as the appropriate containment criterion for survivability. HCOG considers the use of 23 psig to be an acceptable criterion for the evaluation of containment equipment. HCOG intends to submit a letter to the NRC stating why 23 psig is an appropriate evaluation criterion.

4.2 Planned Activities for the Second Quarter of 1991

As noted above, HCOG plans to develop and issue to the NRC letters dealing with spray/cooler availability, pressure survivability criteria and acceptance of TBU sequences as a HGE. Following acceptable resolution of these issues with the NRC, Entergy Operations will review its schedule for submittal of the GGNS Final Hydrogen Control Report, identify the remaining work necessary for this submittal and initiate work on the remaining plant specific tasks.