

1982
Revised Version for Israel Fishman Davis NREP
file
1.b. INTERIM RELIABILITY EVALUATION PROGRAM (IREP)

NATIONAL RELIABILITY EVALUATION PROGRAM (NREP)

BACKGROUND:

THE INTERIM RELIABILITY EVALUATION PROGRAM (IREP) WAS SPONSORED BY RES AND CONSISTED OF PRAs CONDUCTED ON FIVE PLANTS (CRYSTAL RIVER 3, ARKANSAS NUCLEAR ONE 1, BROWNS FERRY 1, CALVERT CLIFFS 1, AND MILLSTONE 1). THE PURPOSES OF THE RES-SPONSORED PRAs WERE TO FURTHER THE DEVELOPMENT OF APPROPRIATE METHODOLOGY, TO TEST IT AGAINST VARIOUS DESIGNS OF PLANT SYSTEMS AND CONTAINMENTS AND TO TRAIN THE STAFF IN THE CONDUCT OF PRAs. THE PROPOSED EXTENSION OF IREP IS THE NATIONAL RELIABILITY EVALUATION PROGRAM (NREP) WHICH WOULD BE PLANT SPECIFIC PRAs PERFORMED BY THE UTILITIES.

ISSUES:

THE IREP PRAs HAVE BEEN USED IN EVALUATING SEP ISSUES. NREP UNDER DEVELOPMENT BY NRR. A DECISION REGARDING COMBINING NREP AND THE CONTINUATION OF SEP WILL BE MADE IN FY83.

CURRENT STATUS: THREE IREP STUDIES HAVE BEEN PUBLISHED: CRYSTAL RIVER 3, BROWNS FERRY 1, AND ARKANSAS NUCLEAR ONE 1. THE CALVERT CLIFFS 1 AND MILLSTONE 1 STUDIES ARE EXPECTED TO BE PUBLISHED IN EARLY 1983. A DRAFT PROCEDURES GUIDE FOR THE PERFORMANCE OF THE NREP PRAs HAS BEEN ISSUED FOR PUBLIC COMMENT.

FUTURE ACTION: UTILITIES WHICH HAVE COMPLETED PRAs FOR THEIR FACILITIES WILL BE REQUESTED TO PROVIDE THEIR ASSESSMENT OF THE DOMINANT ACCIDENT SEQUENCES IDENTIFIED IN THE PRAs. SUBSEQUENTLY, THE STAFF WILL MAKE A DETERMINATION IF ANY ACTIONS ARE WARRANTED TO REDUCE THE RISK AT THESE SITES IN A COST EFFECTIVE MANNER. THE STAFF IS PREPARING A NREP/SEP-III COMMISSION PAPER REQUESTING APPROVAL TO IMPLEMENT THIS PROGRAM.

CONTACT:

ASHOK THADANI NRR/DST/RRAB



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

March 5, 1982

NUCLEAR PRODUCTION DEPARTMENT

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

Attention: Mr. Harold R. Denton, Director

Dear Sir:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
File 0260/0277/L-860.0/L-401.0
Response to Request for
Additional Information
Reference: AECM-81/154 & 81/449
AECM-82/69



This letter supplements Mississippi Power & Light Company's response to IE Bulletin 80-06 and the additional information requested by Mr. Robert Tederco of your office by letter dated December 12, 1980.

Attachment A of AECM-81/449, dated December 7, 1981, identified five items which had been evaluated to determine requirements for hardware modification. The required changes for Problem #8 and Additional Items #1 and #2 have been implemented. Modification commitments for Problems #1 and #2 were: "The control circuits for these valves shall be modified to prevent the valves from reopening when the appropriate reset button is pushed."

Subsequent to issuance of AECM-81/449 we have determined it to be more practicable to postpone these two hardware modifications until after fuel load and utilize administrative controls (including operating and emergency procedure revisions, as necessary) to provide interim corrective actions. This is consistent with our SER commitments.

Accordingly, Grand Gulf Plant Staff will implement administrative controls (prior to fuel load) in lieu of the following suggested hardware changes:

AECM-81/449, Attachment A, Problem No. 1
Control circuits for valves E12F060A, B, E12F075A, B, B33F019, B33F020 are to be modified to prevent the valves from reopening when the appropriate reset button is pushed. To accomplish this each valve control circuit will have the existing maintained handswitches replaced with a spring return model and a relay with associated PGCC modification.

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AECM-81/449, Attachment A, Problem No. 2
Control circuits for valves E51F063 and E51F064 are to be modified to prevent the valves from reopening when the appropriate reset button is pushed. To accomplish this, an additional relay and associated PGCC modifications are required for each valve control circuit.

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Member Middle South Utilities System

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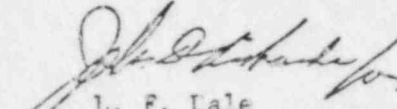
AECM-82/69

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Consistent with GGNS SER commitments, we will complete all required ESF reset hardware modifications prior to restart after the first regularly scheduled refueling outage.

Should you have any further questions regarding this matter, please advise.

Yours truly,



L. F. Lale
Manager of Nuclear Services

DEW/SHH/JDR:ph

cc: Mr. N. L. Stampley
Mr. R. E. McGehee
Mr. T. B. Conner
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
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Mr. J. P. O'Reilly, Regional Administrator
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MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

March 25, 1982

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
File: 0260/L-860.0/16684
RSSMAP Study
AECM-82/109

Mississippi Power & Light Company (MP&L) has, in response to a telephone request from Dean Houston and Sarah Davis (NRC) to Sam Hobbs (MP&L), evaluated the "proposed design changes" listed in the last paragraph of page 6-36 of NUREG/CR-1659 Volume 4 of 4 Reactor Safety Study Methodology Applications Program: Grand Gulf #1 BWR Power Plant (RSSMAP).

These items and our comments are listed below:

| <u>ITEM</u> | <u>COMMENT</u> |
|-------------------------------|--|
| 1. Hydrogen control devices - | The Grand Gulf Nuclear Station (GGNS) design incorporates a Hydrogen Ignition System (HIS) in response to NRC requests initiated in October 1980. Attachment One lists the information provided with regard to system design and evaluation of design adequacy. |
| 2. Containment venting - | There is a containment vent path which can be used for venting. The containment isolation valves receive a permissive to open 24 hours after the initial isolation and can be opened by operator action from the control room. The auxiliary building isolation valves (i.e., the filter train exhaust valves) must be electrically bypassed and can then be opened by operator action from the control room. Such venting would only be undertaken under extreme conditions with appropriate management consultation (in accordance with the GGNS Emergency Plan) and with due consideration given to conditions in the plant and the surrounding area. |

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PDR/2PDR

3. Automatic restart of the - RCICS and LPCIS
- As discussed in FSAR Section 18.1.30.2 in response to TMI concern II.K.3.13 identified as a requirement in NUREG-0737, RCIC automatic restart is being incorporated into the GGNS design.

The "LPCIS automatic restart" referred to on RSSMAP page 6-36 is also a NUREG-0737 concern (II.K.3.21) and for GGNS, the relevant system is the HPCS. According to recent discussions with Mr. Collins of the NRC Reactor Systems Branch, HPCS automatic restart is not required for GGNS.

4. ATWS 3A Implementation -

The NUREG-0460 ATWS alternates are not yet required. Current requirements are for recirculation pump trip and an ATWS procedure as discussed in the March 4, 1981 letter to MP&L from Mr. Robert Tedesco of the NRC. The recirculation pump trip for ATWS protection has been a long standing design feature of GGNS as described in FSAR Section 7.7.1.3.3.2. The procedure for ATWS reactivity control was transmitted to the NRC on July 31, 1981 by letter AECM-81/255.

The RSSMAP study on GGNS was reviewed extensively by MP&L during its development as a draft. During this review process, extensive information was provided to the report authors informally during meetings and phone calls and formally by submission of information directly to Sandia National Laboratories. During this period of time, MP&L repeatedly suggested areas of improvement where the approach being used in RSSMAP was conservative and unrealistic. We formally documented these concerns in letter AECM-81/184 to Dr. Robert Bernero of the NRC on July 23, 1981.

Following this correspondence, RSSMAP was published with essentially no technical changes from the drafts then existing. On September 3, 1981, in letter AECM-81/346 to Mr. Frank Rowsome of the NRC, MP&L formally documented their major concerns with RSSMAP as it was finally published in October 1981. At this time, we believe note should be taken of the cautionary statements made in the second paragraph of the Foreword (RSSMAP p. iii) and of RSSMAP Section 6.3.1 Conclusions and Section 6.3.2 Limitations where there is general concurrence with many of the MP&L concerns.

In addition, the MP&L concerns were discussed extensively at the GGNS ACRS subcommittee on September 17, 1981.

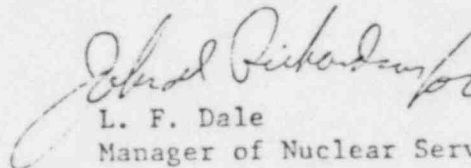
During the lengthy process of reviewing and commenting on the draft version of RSSMAP, MP&L reviewed the dominant accident sequences in RSSMAP several times. We do not believe that there are simple or straightforward design modifications which would significantly reduce the risk of the RSSMAP dominant sequences. In this regard, we believe that the following items should be identified:

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1. Success criteria used in RSSMAP are generally conservative FSAR success criteria and lead to an overestimate of core melt frequency.
2. In several areas the WASH-1400 Reactor Safety Study gave credit for BWR features which were not allowed in the GGNS RSSMAP study.
3. Nevertheless, core melt frequency was estimated in RSSMAP to be similar for GGNS and the WASH-1400 BWR.
4. The RSSMAP core melt frequency meets currently proposed safety goals despite the conservatisms.
5. MP&L has identified sufficient areas to the NRC to require re-evaluation of the dominant accident sequences prior to making use of such information for design evaluations.

Based on the above considerations, design changes to GGNS as a result of RSSMAP are not warranted.

Yours truly,



L. F. Dale
Manager of Nuclear Services

SHH/JDR:rg

Attachment

cc: Mr. N. L. Stampley (w/a)
Mr. R. B. McGehee (w/a)
Mr. T. B. Conner (w/a)
Mr. G. B. Taylor (w/a)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
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Mr. J. P. O'Reilly, Regional Administrator (w/a)
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Attachment One
GGNS Hydrogen Control Submittals
to the NRC

| <u>DATE</u> | <u>NUMBER</u> | <u>SUBJECT</u> |
|--------------------|---------------|---|
| March 2, 1982 | AECM-82/60 | Hydrogen Test Program |
| March 2, 1982 | AECM-82/25 | Report on "Study of Hydrogen Control in the Grand Gulf Nuclear Station" |
| January 21, 1982 | AECM-82/32 | Report on the effects of Hydrogen Detonation as the Result of a Hydrogen Generation Event. |
| January 19, 1982 | AECM-82/26 | Report on Equipment Survivability for a Hydrogen Generation Event |
| January 15, 1982 | AECM-82/24 | Hydrogen Control - Containment Response Sensitivity Analysis |
| December 21, 1981 | AECM-81/505 | Response to NRC Hydrogen Review Questions discussing: HIS Surveillance Testing and Inspection, CLASIX-3 Input data, Actuation of Safety Systems, Hydrogen Ignitor placement and operation, and Base Case discussion |
| September 11, 1981 | AECM-81/353 | Hydrogen Action Items identified in AECM-81/298. Discussing: Ignitor location, operation, and design, equipment survivability, and a review of industry testing programs |
| August 31, 1981 | AECM-81/336 | Hydrogen Control discussions including: Bounding analyses, for Containment Response, base case scenario, burn parameters, HIS Description, HIS component qualification, Containment Ultimate Capacity, Equipment Survivability, and Industry Testing. |
| August 18, 1981 | AECM-81/298 | Hydrogen Action Status Report. |
| June 19, 1981 | AECM-81/221 | Description of Hydrogen Control Measures - updated by AECM-81/336 |
| April 9, 1981 | AECM-81/139 | Preliminary description of Hydrogen Control Measures including: an evaluation of potential Hydrogen Control concepts, preliminary design and evaluation, and preliminary hydrogen control evaluations. |