



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Enclosure

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
AND REGION II

RELATING TO POST WARRANTY RUN OPERATIONAL READINESS

MISSISSIPPI POWER & LIGHT COMPANY

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

License Condition 2.C.(4)(a) required that a subcommittee of the MP&L Safety Review Committee (SRC) review and evaluate seven areas of operational readiness of plant equipment and operating staff prior to exceeding 50 percent of full power and following completion of the warranty run and submit reports of these reviews to the NRC. The 50 percent power readiness report was submitted to the NRC by letter dated December 21, 1984, and the staff's evaluation of the report was transmitted to the licensee by letter dated March 13, 1985. By letter dated October 10, 1985, the licensee submitted a report entitled "Grand Gulf Nuclear Station Unit 1 Post Warranty Run Operational Readiness Review" prepared by the MP&L SRC Special Subcommittee for Review of Plant Operational Readiness (Readiness Report).

The NRC staff in the Office of Nuclear Reactor Regulation (NRR) and in Region II reviewed the October 10, 1985 Readiness Report. The NRR staff's review focused on the plant staff readiness as reported in the submittal. The Region II staff's review is based on the close observations of plant operations by the Resident Inspectors and Regional staff members during the period following completion of the 50% power operational readiness review.

In general, the staff is in agreement with the conclusions reached by the subcommittee in their Readiness Report. The conclusion that with normal procedural controls, the plant and personnel are ready to continue with commercial operation has been substantiated by Regional observations. The Readiness Report is well written and adequately covers the relevant aspects of operational readiness. The recommendations of the subcommittee are well founded and should receive management attention for necessary action.

The Readiness Report consists of three major sections, besides an Introduction, that address; (1) the seven areas listed in Paragraph 2.C.(4)(a) of the Grand Gulf operating license NPF-29, (2) resolution of comments and recommendations that were contained in the 50 percent Power Operational Readiness Review Report, and (3) recommendations for continued improvements. Our comments and evaluation of each of these three major sections are given below.

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1.0 Review and Evaluation of Seven Areas Listed in Operating License

1.1 Status and Readiness of the Plant and Systems Needed to Support Intended Modes of Operation and/or Testing

We agree with the subcommittee's conclusion that the equipment and systems are in a satisfactory state of readiness to support continued operation. The cleanliness and material condition of the plant is good. Management has provided timely and prudent decisions with regard to operational and equipment problems. With regard to the fouling of heat exchangers in the plant service water system, we note that there were several ESF room coolers with reduced flow capacity. This is a serious problem which should be aggressively addressed. We also note that the leaking flanges of the feedwater flow venturi discussed in the report have been corrected. Correction of this deficiency will enhance ALARA results.

During the first three months of commercial operation, safety-related equipment operated in a satisfactory manner and the primary water chemistry was maintained at a high level of purity and within levels specified by the Technical Specifications and by the chemistry procedures. The licensee has been slow in filling key chemistry personnel positions, and is in the process of a major reorganization program that includes training of technicians and revision of chemical procedures. The licensee has committed to water chemistry goals for 1986 that meet the EPRI guidelines and guidelines developed by the NRR Owners Group.

The Readiness Report notes the demonstrated ability of the plant staff and the support elements to work together as a team, as demonstrated during an unscheduled outage to repair the main condenser. The subcommittee considered that the performance during this outage reflected favorably on plant management. We agree.

1.2 Readiness of Personnel to Conduct Intended Operation and Testing

The staffing of operating and support organizations has increased to 723 budgeted positions, of which 632 are filled by MP&L employees. Others, except for 34 new trainee positions, are filled by contractors and consultants.

Each of the five operating shifts includes two SROs and three ROs. The third RO is in excess of NRC requirements. The Operations Superintendent and his two assistants are SRO-licensed. There are also four SROs in the Training Department. There are enough license candidates in training to enable the licensee to move to a six-shift operation in the spring of 1986. We agree with the subcommittee that this is desirable and in line with industry good practice.

Each shift also includes nonlicensed Nuclear Operators-B (NOB) and Auxiliary Operators-Nuclear (AON), as well as Production Aides and an STA. The NOB and AON groups are large enough to support a six-shift operation, but the STA group and the Production Aides group may have to be increased to support a six-shift effort. Use of shift advisors was discontinued on August 1, 1985, with the consent of the NRC staff, since the regularly assigned SROs now have sufficient operating experience.

The Readiness Report notes continuing improvements in training programs, supported by the new facilities and SRO-licensed instructors. The generally poor opinion of training held by the operations staff several years ago has now changed to general approval. The operator training and requalification programs have now been submitted to INPO for accreditation, and other training programs are scheduled to be submitted. Training is being given to managers and supervisory personnel, and to QA personnel. The health physics training has been upgraded.

The Readiness Report states that the plant staff has demonstrated its ability to operate the plant and that the other nuclear department organizations have demonstrated they can support such operation. However, there is room for improvement, particularly in the area of support by Nuclear Plant Engineering, where communication with plant operations remains a problem. The subcommittee notes that training of NPE engineers in plant operations (by taking the SRO course) would result in a definite improvement, as would the assignment of some SRO-trained people to the Quality Assurance group. We agree.

As noted earlier, the budgeted staffing for the operations and support elements has been increased. However, problems still remain in some areas. In particular, the Mechanical Maintenance Section is forced to rely on the services of more than 20 contractor personnel even though the section is essentially fully staffed with its budgeted positions (89). The workload simply exceeds the planned effort. This appears to be an area needing early management attention. The maintenance force must be able to keep up with the station's preventive and corrective maintenance needs. Section management is aware of the problem and is taking steps to correct it. Other particular problems, such as the difficulty in filling the Plant Chemist position, still remain. The subcommittee notes that the company is making special efforts to recruit and train MP&L employees so as to be able to reduce dependence on contractors.

Overall, the subcommittee concludes that staffing in all essential groups is adequate to support safe plant operation. Some additional strengths in the supporting organizations are desirable, but they still can provide adequate support to the plant. This is a judgment by the subcommittee which seems reasonable, but we would urge that the support staffs be increased as necessary to fully support the plant. This is particularly true for the maintenance area so that a backlog of maintenance does not develop.

1.3 Morale and Attitudes of Plant Personnel

The Readiness Report states that interviews with and observation of personnel indicate that morale has continued to improve. Since we were not privy to those interviews and observations, we have no basis for evaluating the conclusion. The report notes the beneficial effect the new Nuclear Human Resources Manager has had on the organization. This individual is now the Employment Manager for the entire company, with sufficient resources that he can devote most of his time to supporting, hiring and developing effective personnel policies and programs for the Nuclear Production Department. The single, most negative morale factor uncovered by the subcommittee is the problems MP&L and its sister companies are having in securing rate increases for Grand Gulf. The employees are bombarded by negative attitudes toward the plant, which is bound to affect their morale. However, the subcommittee still is of the opinion that morale remains quite high.

Based on its observations in the plant, the NRC staff agrees with the subcommittee that the morale of plant personnel has steadily improved. Plant management has demonstrated a very positive attitude toward safe operation of the plant. Management's presence is evident throughout the plant. Providing continued educational opportunities to plant personnel, and SRO training to senior managers, as well as the impending staffing for six-shift operation have all had very positive effects on morale and attitude.

1.4 Past Performance in Plant Operations and Adherence to Procedures and Administrative Controls

The Readiness Report notes improvements in the number of LERs generated and in the quality of and adherence to plant procedures. Plant supervision continues to personally monitor plant operations, to observe various activities. The overall management philosophy continues to emphasize safety. As operations have matured, management has implemented a program which focuses on overall goals for the Nuclear Production Department. These are indicative of improved quality of operation, although we cannot quantify such improvement.

A preventive maintenance backlog continues, although it has been reduced substantially since the time of the 50% Operational Readiness Report. The corrective maintenance backlog has increased during the period, partially as a result of system modifications or improvements determined to be desirable during the system testing. Improvements have been made to the Maintenance Planning Scheduling System to enable the plant to accomplish maintenance work during forced outages, which should help the backlog problem. We note that the shortages of adequate numbers of personnel in the Maintenance area (see 1.2 above) will continue to impact the maintenance backlog until this situation is corrected.

The NRC staff agrees with the subcommittee that the performance of the plant staff with respect to plant operations and adherence to procedures and administrative controls has been satisfactory and demonstrates a readiness to proceed with routine full power operation. However, there are still instances of failure to adhere to procedures and administrative controls. While improvement is evident, management attention should continue, especially with regard to instilling the attitude that independent verification of plant conditions is a prerequisite for sound plant operation.

1.5 Organizational and Personnel Changes

A number of changes in organization and management personnel have taken place since our report on the 50% Operational Readiness Review. We reviewed some of these changes when they occurred and concluded that they improved the organization. Other changes reported by the subcommittee appear to be beneficial in that they add depth and experience to the plant and corporate management.

The staff agrees with the subcommittee conclusion that managerial and supervisory changes that have been implemented are positive and should result in continuing performance improvement. We also note that recent changes with regard to establishing the position of Site Director should result in better coordination among site organizations in support of plant operation and readiness.

1.6 Results and Effectiveness of the Plant Safety Review Committee (PSRC)

The Readiness Report states that the PSRC appears to be conducting credible document reviews consistent with their administrative commitments and the plant technical specifications. The backlog of review documents has been essentially eliminated. Most meetings are chaired by the PSRC chairman and, in about 60% of the meetings, at least five permanent PSRC members have been present. Controls have been implemented to ensure that reviews are performed in a timely manner, using subcommittees where necessary. The impact of PSRC activities on the supervisory responsibilities of PSRC members has been reduced, with the onset of commercial operations, and the subcommittee expects this improvement to continue.

Problems have been encountered in the functioning of the PSRC, such as not routing review documents to members early enough to allow sufficient review time prior to meetings. However, the subcommittee concludes that overall, the PSRC is functioning satisfactorily.

The staff still considers the minimal attendance at PSRC meetings (50% having only a quorum present, and only about 60% with five or more permanent members present) to be a matter of concern which the plant management should attempt to improve. Further emphasis should also be given to maintaining better records of PSRC meetings.

1.7 Status of Plant as Compared to Other BWR Start-Ups

The subcommittee considers Grand Gulf to be about average or above when compared to other BWR start-ups. The start-up test program took longer than for other BWRs, but the subcommittee feels that much of this was due to the conservative approach of plant management. Several extended delays occurred as a result of equipment malfunction. The number of unplanned scrams at Grand Gulf compares favorably to other BWRs at similar stages. The competence of the operating staff, the training programs and the pipelines to fill plant positions with trained MP&L employees are considered to be above average. We have no basis to dispute the subcommittee views.

2.0 Follow-Up from the 50% Power Operational Readiness Review Report

This section of the Post Warranty Run Operational Readiness Review Report generally repeats, in summary, the information presented in Section 1. We see no need to comment on Section 2 in light of our comments on Section 1.

3.0 Recommendations

The Readiness Report lists ten recommendations, nine of which have to do with improved staffing, training, or management controls. We have reviewed these recommendations and we agree that, if implemented, they would be beneficial to plant operations and to plant safety.

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L. Crocker, Licensee Qualification Branch
R. Butcher, Senior Resident Inspector, Grand Gulf



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