



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report No.: 50-416/83-53

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-13

Facility Name: Grand Gulf 1

Inspection at Grand Gulf site near Port Gibson, Mississippi

Inspectors: <u>B. A. Wilson</u>	<u>12/13/83</u>
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<u>C. A. Julian</u>	<u>12/13/83</u>
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<u>L. J. Watson</u>	<u>12/13/83</u>
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A. F. Gibson, Operational Programs Branch Chief	Date Signed
Division of Engineering and Operational Programs	

SUMMARY

Inspection on October 31 through November 4, 1983

Areas Inspected

This special, announced inspection involved 181 inspector-hours on site in the areas of Training Organization, Evaluation of Licensed Operators, Reviews of Licensee Action to Resolve Items Identified in Previous Training Assessment and Use of Contractors in Training Program.

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Results

Of the four areas inspected, no violations or deviations were identified in two areas. Two apparent deviations were found in two areas (Failure to complete qualification cards to meet FSAR commitments, paragraph 6.d; Failure of Operator Training Evaluation Committee to conduct records review of candidates' training for operator licenses, paragraph 7.b.). One apparent violation was found in one area (Failure to perform adequate 10 CFR 50.59 evaluation, paragraph 7.a.4.)

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. B. Richard, Senior Vice President
J. P. McGaughy, Jr., Vice President
C. K. McCoy, Plant Manager
J. E. Cross, Assistant Plant Manager
J. W. Yelverton, Assistant Plant Manager
D. Hunt, Training Superintendent
T. E. Reaves, Jr., Manager, QA
J. D. Bailey, Compliance Coordinator

Other licensee employees contacted included operators, instructors and office personnel.

NRC Resident Inspector

A. G. Wagner

2. Exit Interview

The inspection scope and findings were summarized on November 4, 1983, with those persons listed in paragraph 1 above. The inspectors stated that several identified discrepancies would be reviewed by regional management for enforcement actions. The licensee acknowledged the inspection findings. Licensee representatives agreed to remove from licensed duties three individuals who exhibited deficiencies during plant walkthroughs and one recently licensed individual whose qualification card signoffs were suspect.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Training Organization

The current MP&L training organization was discussed with the licensee. The Training Superintendent, Mr. D. L. Hunt, assumed his responsibilities in February 1982. MP&L has increased the size of the training organization from twelve people in early 1982, to its present allocation of 42. The organization is responsible for all areas of training including security, health physics, general employee training and licensed operator training. Of the 21 positions devoted primarily to RO and SRO training, 18 are occupied by Quadrex contractor personnel. The position of Operations Training Superintendent was recently vacated by an MP&L employee, although a

qualified replacement has been identified from the ranks of SRO licensed personnel and is scheduled to occupy the position in the near future. The other two MP&L employees who perform licensed training are currently licensed SROs. It is MP&L's intention to replace the Quadrex instructors with MP&L SROs over the next three years.

MP&L has initiated programs with Hinds Junior College of Clinton, MS and Memphis State University to provide college level trained personnel to the Operations Department. Their plans appear to provide for adequate staffing, for SRO degree requirements and to meet INPO criteria including accreditation. They have completed their accreditation self-evaluation and have tentatively scheduled INPO meetings and discussions with a view toward accreditation in early to mid-1984.

In addition, the training organization is making progress towards replacing antiquated records keeping systems with more up-to-date automated systems and expect to move into modern training facilities in early 1984.

There appears to be a division in the present training organization since it is physically divided between two buildings. Most of the supervisors, clerical staff and unlicensed training instructors occupy offices in the old training building while those devoted to licensed personnel training are located in the new building which also houses the simulator. This physical division has apparently created an organizational division. Several examples of lack of coordination were observed by the inspectors during this inspection. This problem is expected to be alleviated when the entire training organization is moved to the new building.

6. Evaluation of Licensed Operators

a. Plant Modification/Design Change Training Program

As identified during the February 1983 NRC Training Assessment of GGNS (IE Report 416/83-06), an effective program did not exist to evaluate Design Change Packages (DCPs) for required training, retraining, changes to Lesson Plans (LP) and/or changes to System Descriptions (SD). As a result of these findings, MP&L committed to evaluate the outstanding DCPs and conduct training as required prior to re-start of Unit 1. MP&L was also to establish a more effective program for evaluation and training on future DCPs. NRC inspections during July and August 1983 confirmed that progress had been made on implementation of these commitments. However, in an inspection on September 26 - October 14, 1983, the resident inspector identified eight DCPs for which training had not been given for all operating personnel. This apparent deviation is discussed in Inspection Report 416/83-50. During this inspection, the newly instituted program for evaluating DCPs and implementing required training and training material changes was reviewed.

GGNS Administrative Procedure 01-S-07-4, "Plant Modifications", requires as part of the DCP processing, a review of the DCP by both Operations (or other affected departments) and Training to determine applicable training. The Operations Superintendent is responsible for providing for the immediate training of his personnel prior to the change being declared operable and turned over to operations. The Training Superintendent is responsible for incorporating the change as required into the training and retraining programs. The Training Department implements this requirement in accordance with Training Section Instruction (TSI) 14-S-02-11, "Design Change Package Review."

A review of TSI 14-S-02-11, Revision 0, dated September 7, 1983, determined that the procedure appeared to adequately outline training personnel responsibilities regarding the review of DCPs and incorporation of identified materials into the training program. Subsequent implementation review determined that all DCPs were being reviewed by a training person holding a senior reactor operator license and required changes were being identified for incorporation into the training and retraining program materials. During this implementation review, the following inspector concern was identified.

Subsequent to the DCP training review, those DCPs determined to require training material changes are routed to an instructor who actually prepares the required LP or SD change. Once the training material change is prepared, it is placed in the applicable master LP or SD file pending rewrite of the LP or SD. The concern here is with the absence of controls to ensure that the identified changes are incorporated into the LPs utilized by the instructors. At the time of this review, the master LP/SD files were located in the old training building while the instructors were located in the new training building. As a result of the physical separation, the instructors maintained their own LP files in the new building and utilize these files for preparing their training. It is readily apparent that a significant potential exists for the identified changes not finding their way into the classroom. This situation was discussed with the licensee and the licensee committed to resolve this concern. This concern will remain open pending licensee resolution. This concern is not applicable to the DCP training conducted prior to Unit 1 restart as that training was implemented using different procedures. This is identified as Inspector Followup Item 416/83-53-01.

b. Operator Interviews

During the conduct of this inspection, walkthrough type interviews were conducted by NRC operator licensing examiners for thirteen randomly selected licensed operators. The group of licensed operators interviewed included six senior reactor operators (SRO) and seven reactor operators (RO). These interviews were conducted at the GGNS simulator and "in plant" at GGNS. Six operators (3-RO, 3-SRO) were evaluated using the simulator, and seven operators (4-RO, 3 SRO) were evaluated "in plant".

The purpose of these interviews were threefold:

1. Evaluate the ability of licensed operators to perform selected practical factors and knowledge factors from the GGNS Licensed Operator Qualification Card.
2. Evaluate whether these operators possessed the necessary "background" or system knowledge required to perform the selected procedures.
3. Evaluate the effectiveness of recent plant modifications (DCP) training received just prior to GGNS restart.

The results of these evaluations are as follows. Three individuals exhibited significant weaknesses with regard to both procedural performance and related basic system knowledge. The following specific observations were made by the assessment team as a result of these walkthroughs:

- Two licensed operators could not perform the daily surveillance procedure, Jet Pump Functional Test (06-OP-1B33-D-0001). Both operators had difficulty discerning the proper instrumentation reading and related units for data recording. In addition, confusion existed at times as to the significance of these readings, as well as their process instrumentation flow path. One operator could not complete the procedure due to an admitted lack of understanding.
- One senior operator could not locate the Remote Shutdown Panel during a walkthrough of the Off-Normal Event Procedure, 05-1-02-II-1. In addition, this operator did not understand the capabilities of the RHR system on the panel, nor could he locate the local copy of the procedure once the panel was located. The remote shutdown panel was located following another operator's directions to the panel.
- One operator could not properly walkthrough a local paralleling operation of the HPCS diesel generator with offsite power source, Procedure 04-1-01-P81-1. The operator checked the wrong instrumentation, identified incorrectly a switch required to be re-positioned, and skipped a required procedure step.
- One operator (evaluated in the simulator) was unable to diagnose a "tripped" condition of a reactor feedpump (RFP) indicated by lights on the main control board. Consequently, the operator failed to reset the RFP trip and was unable to perform a RFP startup, Procedure 04-1-01-N21-1.

It should be noted that the above walkthroughs were all conducted with the operator utilizing the referenced procedures. The above evaluations were discussed with the licensee at the exit interview and three individuals who demonstrated extensive deficiencies were removed from the licensed duties by the licensee pending retraining.

As identified above, one of the purposes of these interviews was to evaluate the effectiveness of the recently completed DCP training. To perform this evaluation, the licensed operators were questioned to determine knowledge of seven DCPs selected from those on which training had been conducted. Most of the interviewees demonstrated adequate familiarity with approximately 2/3 of the selected DCPs. None of the operators could recall all seven DCP's. Based on these results, the effectiveness of the DCP training conducted just prior to the restart is considered marginal. Further evaluation of the DCP training will be made considering the licensee's response to the apparent deviation identified in Inspection Report 416/83-50 as discussed in 6.a. above.

c. Additional Concerns Identified During Evaluations

During the conduct of the walkthrough interviews several concerns not directly associated with the stated purpose of these evaluations were identified:

1. The inspectors noted the general lack of pertinent procedures at local control stations. With the exception of the procedures for shutting down the plant from the remote shutdown panel, which was kept under lock and key near the remote shutdown panel, no other procedure copies were found at local control stations. The present GGNS program for procedural control requires the operator to have a copy of the applicable procedure xeroxed and stamped prior to proceeding to the local panel. This situation, although not regulatorily incorrect, may result in an operator performing local operations without the procedure rather than working under the present time consuming and cumbersome program.
2. Component labeling (valve numbers) of switches at local panel 1H22-P175 for feedwater system valves was found incorrect. Interviews with operators determined that other labeling deficiencies may exist on other panels. This is identified as Inspector Followup Item 416/83-53-02.
3. Three operators improperly frisked per the posted procedure for radioactive contamination control during plant tours. This is identified as Inspector Followup Item 416/83-53-03 and will be reviewed during future inspections.

d. Deficiencies in Implementation of Qualification Cards

In August, 1983, MP&L requested the NRC to reschedule the exam date for six SRO candidates from November to September. This required acceleration of their training schedule by six weeks. To meet exam eligibility requirements, all candidates were required to meet the FSAR commitments (Section 13.2) including completion of qualification cards (qual cards). Through discussions with the MP&L staff and examination of records, the inspection team determined that the qual cards for four of the six candidates were completed from primarily August 30 to September 1, 1983. These four candidates were "Instant" SROs whereas the other two were previously licensed ROs who completed their qual cards over a more lengthy period of time.

During discussions with the Quadrex instructors the inspector found that Quadrex was directed by MP&L to complete the qual cards for the four instant SROs by the first week in September. Section I of the two section qual card requires approximately 500 signatures for all four individuals. Inspection of the completed cards showed 143 of these signatures made on September 1, 1983. All of the evaluations were made in the Grand Gulf simulator and in classroom discussions with all four individuals in a group and apparently none of the evaluations were made during in-plant walk-thrus.

The Grand Gulf FSAR, Section 13.2.1.1.5.3, states that each licensed candidate shall spend a period of time on-shift in a training status under the direct supervision and guidance of a licensed control room operator. The FSAR states that each candidate is provided with a control room operator qualification card which contains knowledge factors and practical factors to be accomplished/discussed while in an on-shift training status. It appears that the methods used to complete the qual cards, i.e. examination and signoff of multiple students in very short periods of time by unlicensed instructors without actual plant walkthrus did not result in the type of evaluation committed to in the FSAR. This is identified as Deviation 416/83-53-04.

Two of the four instant SROs and both of the upgrade SRO candidates passed the NRC examination in September. Only one license was issued while the other three were held pending completion of other requirements for supervisory training and observation of actual plant operation at a comparable facility. Since the completion of the qual cards was accomplished in a manner which appeared to deviate from the FSAR, NRC requested and MP&L agreed to remove the one recently licensed individual from licensed duties and was informed that the remaining licenses would not be issued until the qual card issue was resolved.

7. Reviews of Licensee Actions to Resolve Items Identified in Previous Training Assessment

A special training assessment for the Grand Gulf facility was conducted by the NRC in February 1983. The training assessment was documented in NRC Inspection Report 416/83-06 and 417/83-03 dated March 29, 1983. The inspectors reexamined the areas reviewed during the February 1983 training assessment to determine the status of the training program in those areas.

a. Licensed and Non-Licensed Operator Training

1. Classroom Training

Concerns identified with utilization of contract instructors are discussed in Section 8 of this report.

2. Simulator Training

The results of GGNS administered requalification training utilizing the GGNS simulator are reviewed. The simulator evaluations identified marginal and unacceptable performance in certain areas for three of the individuals reviewed. An independent assessment of operators performance, discussed in Section 6.b., showed that the same operators continued to exhibit lack of sufficient knowledge in the areas identified by the simulator evaluations. In addition it appeared from review of all of the records that generic deficiencies may exist, in that there were marginal levels of knowledge in secondary plant controls such as feedwater control and in nuclear instrumentation on several evaluations. There was no mechanism identified to the inspectors to provide additional training in marginal and unacceptable areas, as long as the operator passed the overall requalification evaluation. Criteria for judgements on what constitutes an acceptable requalification evaluation were also not identified to the inspectors. This weakness in the training program was acknowledged by the licensee during the exit interview. This is identified as Inspector Followup Item 416/83-53-05 pending incorporation by the licensee of methods to improve marginal and unacceptable performance and identify generically weak areas in the training program. It was noted that those operators relieved of licensed duties, as discussed in Section 6.b., could have received additional training to eliminate their weak areas had this type of program been in use.

3. Training Materials

One weakness identified in the preparation of lesson plans and system descriptions is discussed in Section 6.a.

4. Qualification Card Program

Reviews of actual implementation of the qualification card (qual card) program is discussed in Section 6. A review was also conducted of the control and documentation procedures for the qual card. The following procedures, including older revisions of the procedures and instructions were reviewed to determine the evolution of the license candidate qual card and the content of current qual cards:

01-S-04-1	Rev. 4, September 13, 1983	Licensed Operator Training and Quali- fication Program
01-S-04-1	Rev. 0, November 14, 1980	Licensed Operator Training and Quali- fication Program
01-S-04-1	Rev. 5, (Proposed Rev.)	Licensed Operator Training and Quali- fication Program
14-S-02-06	Rev. 0, August 11, 1983	Licensed Operator Training Program Implementation
01-S-04-14	Rev. 6, August 31, 1983	Training Records

Procedure 01-S-04-1 is a plant administrative procedure providing general requirements for qual card implementation. A review of Rev. 4 of this procedure dated September 13, 1983 against FSAR commitments indicated that FSAR commitments had been eliminated in the approved revision. An example of a commitment eliminated was the deletion of the practical factors section of the qual card as committed in FSAR Section 13.2.1.1.5.3. In addition wording in the procedure on experience levels for licensed operators is ambiguous and it is not clear that the procedure meets the requirements of ANSI N18.1-1971 as required by Technical Specification 6.3.

In addition, other areas were identified where FSAR commitments were not clearly addressed or had been changed. A discussion with the licensee indicated that an FSAR review had been completed for previous revisions and that FSAR change requests were in progress for many of the changes. However, for some of the FSAR commitments modified or deleted by Rev. 4, changes in the program were not backed up by FSAR change requests.

Revision 4 of 01-S-04-1 is stamped with a "Safety Evaluation Applicability Review" designation which indicates that the revision contains no change to procedures as described in the FSAR and that no safety evaluation was necessary. It is apparent that at least one change, i.e., the elimination of training on practical factors is a substantive change to FSAR commitments. Failure to perform a safety evaluation as required by 10 CFR 50.59 is identified as Violation 416/83-53-06.

The inspector also reviewed the proposed Revision 5 and noted that this procedure also deviated from FSAR commitments. The inspector recommended that the FSAR commitments be reviewed by the licensee in detail to assure that the efforts being made to improve the training program are incorporated into the FSAR and that substantive changes be given appropriate safety evaluations as required by 10 CFR 50.59.

Instruction 14-S-02-6, Revision 0, dated August 11, 1983, is a training section instruction which addresses the qual cards. Attachment I confused (reversed) the nuclear power plant experience levels required for ROs and SROs with on site experience requirements and did not document technical training credited toward experience levels. No other significant concerns were identified.

Procedures 01-S-04-14, Revision 6, dated August 31, 1983, is an administrative procedure on training records. This procedure and selected training records were reviewed. It was noted that the licensee had made numerous corrections to the training records to agree with existing documentation and to eliminate duplicate entries. The licensee stated that the records were being reviewed for deficiencies and would be placed back in order according to procedure upon completion of the review. No other concerns were identified.

5. Fifth Week Training

The licensee was utilizing a four shift schedule at the time of the inspection. The licensee stated that five shifts with one shift designated for training would begin when licensed operators were reinstated and withheld licenses were issued.

6. Requalification Training

Procedure 01-S-04-2, "Licensed Operator Requalification Training," Revision 2, dated July 14, 1983, is an administrative procedure providing requirements for requalification training. The following concern was identified. Section 6.7.3 of the procedure states that license holders must stand one watch every four months to satisfy the minimum requirements for on-shift duty to maintain their licenses. The NRC maintains that an individual must stand

one 8-hour watch at least once per month to be considered on "active status." This item will be discussed further with the licensee and is identified as Inspector Followup Item 416/83-53-07.

b. Review of Training Audits and Operator Training Evaluation Committee (OTEC) Results

The inspectors reviewed the NRC style comprehensive written examinations and OTEC evaluations given to licensed operators. The following comments were made during the review. The licensee does not appear to review the results of the examinations or OTEC evaluations for generic weaknesses or to identify weak areas in an individual's knowledge. FSAR Section 13.2.1.1.6 states that an operator training evaluation board will review the candidate's training record to verify that all NRC license examination prerequisites are met and to evaluate the candidate's ability to safely and competently operate the plant and obtain the required license. A review of the training records and discussions with the licensee indicate that the evaluation board was established and examined candidates by oral examination prior to recommendation for the NRC exam. However, it appears that the board did not conduct nor delegate the responsibility for a records review of license examination prerequisites. This is identified as Deviation 416/83-53-08.

The licensee was in the process of formalizing the evaluation board's oral exam criteria. Forms utilized for the oral exam for the six SRO candidates tested by the NRC in September 1983, were reviewed. It was noted that the individuals who failed the NRC exam received marginal ratings in some categories but were considered as acceptable candidates.

The records of the NRC style examination given to the first group of operator license candidates by a contractor, were reviewed. According to the contractor's results, of the 33 individuals examined only two scored high enough in all areas to meet the NRC pass/fail criteria.

The inspector questioned why those individuals were considered ready for the NRC exam. The Plant Manager stated that another contractor was brought in to give individual one-on-one help to all candidates in all weak areas. The inspector confirmed by interviews of several individuals that supplementary contractor training was done, but there was apparently no records kept of such training.

c. Training on Procedural Changes, Design Changes and Significant Events

The review of this area is addressed in Section 6.a.

8. Extent of Involvement of Contractors and Effectiveness of Utilization

MP&L established a three year contract with Quadrex Corporation to provide 18 instructors "to perform training and instruction for non-licensed operators training, licensed candidate training, requalification training, and Reactor Operator to Senior Reactor Operator upgrade training (classroom and simulator)." The term of the contract is until December 31, 1985. Quadrex is very heavily involved in all phases of the MP&L licensed personnel training programs. Only two of the people assigned as operator training instructors are MP&L employees. Consequently, many of the routine tasks not directly involved with instruction or evaluation of licensed candidates are handled by Quadrex people. It is MP&L's intention to replace all Quadrex instructors with MP&L instructors who hold SRO licenses. The rate of replacement is currently projected at about 5 per year until early 1986. In the meantime Quadrex instructs MP&L personnel about six hours per day with two hours per day plus overtime allotted for preparation for their upcoming NRC certification examination. Additional overtime is often used in support of other routine MP&L training functions.

The previous training assessment report (IE Inspection Report 416/83-06) found that due to deficiencies observed by an inspector in a training class "...close supervision/auditing of contracted training will be necessary to ensure a consistent high level of training is achieved." Although MP&L identified several mechanisms in place which are intended to evaluate the quality of training provided by Quadrex, it appears that their auditing and supervision is inadequate due to the present lack of qualified MP&L staff. Three MP&L people were identified by the licensee who are designated to perform audit functions on Quadrex training, only two of which were SRO licensed. One of these licensed individuals however, did not recall sitting in on classes conducted by Quadrex or reviewing quizzes or examinations. MP&L's intention of relieving some of the administrative burdens on the Training Superintendent and filling the Operations Training Supervisor's vacancy should help to relieve this problem.

The requirement that instructors who teach systems, integrated plant response, transients and simulator courses demonstrate their competence by successful completion of an NRC SRO examination is contained in NUREG-0737, GGNS FSAR Section 13.2.1.1.8 and internal Grand Gulf procedures. Twelve of the current 18 Quadrex instructors were previously licensed at other BWR facilities. The remaining six are either RO licensed or SRO certified by GE. Nine of the previously licensed Quadrex instructors were scheduled to take the NRC SRO examination during the week of December 5, 1983. This certification requirement was based on letters from D. H. Beckham, Chief Operator Licensing Branch, NRR to MP&L dated September 15, 1982 and October 15, 1982. This correspondence exchange took place before the contract was awarded to Quadrex and therefore, before the credentials of their instructors were identified. The NRC has historically interpreted the NUREG-0737 instructor certification to not require re-examination of people who hold or have held SRO licenses on comparable facilities. MP&L, therefore, questioned the necessity for the NRC December exams of the Quadrex instructors. MP&L intends to conduct their own certification exams

prior to the above date. This item was subsequently resolved with the licensee in a meeting held on November 18, 1983, in the NRC Regional office. The NRC stated at that meeting that individuals who have held SRO licenses on comparable facilities need not complete the NRC instructor certification if these individuals are involved in a requalification training or an equivalent program.