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Facility Name: Vogtle 1

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VOGTLE ELECTRIC GENERATING PLANT UNIT 1
READINESS REVIEW PROGRAM

MODULE 2
OPERATIONS TRAINING AND QUALIFICATION

SUMMARY

The readiness review program is being conducted at the initiative of Georgia Power Company management to assure that all design, construction, and operational commitments have been properly identified and implemented at the Vogtle Electric Generating Plant Unit 1. Module 2, Operations Training and Qualification, which was submitted on August 19, 1985, presented an assessment by the applicant which concluded that operations training and qualification as implemented at Vogtle complied with Final Safety Analysis Report (FSAR) commitments and regulatory requirements. The NRC conducted an evaluation of the applicant's assessment to determine if the program review of the operations training and qualification presented in module 2 was an effective and accurate assessment. The NRC evaluation was conducted to determine if requirements are being properly identified and implemented at Vogtle and to determine if the resolutions of the findings identified in module 2 were appropriate.

This evaluation was performed by NRC reviewers and inspectors from the Office of Inspection and Enforcement (IE), the Office of Nuclear Reactor Regulation (NRR), and Region II (henceforth, personnel from these offices will be referred to as the staff). The evaluation was accomplished through a detailed review of all sections of the module by:

1. Verifying that commitments identified in the module properly reflected FSAR commitments and regulatory requirements.
2. Verifying, by review of a comprehensive and representative sample of approved procedures, that the commitments were being implemented into procedures.
3. Verifying, by accomplishment of a comprehensive training assessment that program implementation was in accordance with commitments and regulations and was effective.
4. Reviewing the module findings identified by the applicant and evaluating the correctness of their resolution.

As discussed in NRC Inspection Reports 50-424/85-45 and 50-424/85-51, and as discussed in the conclusions section of this report, the staff finds that some aspects of training and qualification were adequate, some aspects were inadequate and are being corrected by the applicant to achieve full resolution, and some

aspects are inadequate and still require resolution to assure that training and qualification programs will effectively support plant operation. With regard to those aspects of training considered to be adequate:

- Interviews with Georgia Power Company employees at all levels reflected that these employees were committed to Georgia Power Company and to Vogtle and were complimentary of the quality of training they had received. The staff considers this to be a noteworthy observation at this stage of pre-operation which is indicative of quality instruction and instructors.
- With the exception of walkthrough training, Technical Specification training, emergency planning training, and training for mitigation of core damage, as described below, training content, quality, and effectiveness appeared to be satisfactory.
- Efforts towards INPO accreditation had been initiated and appeared to be progressing in a proper direction.
- Resource allocation for training space, materials and staffing was considered to be satisfactory.

With regard to those aspects considered to be inadequate but currently being corrected by the applicant:

- Some regulatory requirements for operations training and qualification were not adequately addressed in the FSAR and module 2. Additionally, although commitments delineated in module 2 were correct with respect to the FSAR, there were cases where the module did not fully describe the FSAR commitments in all areas of the module. Corrective actions have since been initiated by the applicant to resolve these concerns.
- Significant administrative deficiencies existed with training program implementation. Corrective actions have since been initiated by the applicant which should resolve this concern. These corrective actions should be completed by the applicant and evaluated by the NRC prior to plant licensing.
- At the time of this evaluation training conducted in Technical Specifications and emergency planning did not appear to be adequate. The applicant indicated that prior to the NRC assessment, they had already planned to conduct additional training in these areas. Planned activities associated with improving Technical Specification and emergency planning training should be completed by the applicant and evaluated by the NRC prior to plant licensing.

With regard to those aspects of training considered by the staff to be inadequate and which require further resolution, the resolution should be integrated into the plant licensing process. These concerns include walkthrough training and preoperational and hot functional testing participation, instructor qualifications and requalifications, and training for mitigation of core damage.

The findings identified during this evaluation are discussed in detail in Sections 3 and 4 of this report and are summarized below.

- ° (IFI 424/85-51-35) One FSAR commitment for evaluation of training programs was not included in module 2.
- ° (IFI 424/85-45-01) Ten examples were noted where regulatory requirements and guidance were not properly established in the FSAR or module commitments.
- ° (IFI 424/85-51-36) Several FSAR and module commitments were not in one procedure as designated by the implementation matrix but were in uncontrolled lesson plans associated with that document.
- ° (IFI 424/85-51-02) There was no effective comprehensive course of study established within training procedures.
- ° (IFI 424/85-51-03)
(IFI 424/85-51-04)
(Open SER Item) Deficiencies were noted in training record maintenance.
- ° (IFI 424/85-45-02)
(IFI 424/85-51-05)
(IFI 424/85-51-06) Deficiencies were noted with regrading examinations.
- ° (IFI 424/85-51-07)
(IFI 424/85-51-08) Errors were noted in tabulating points and recording grades for examinations of two license candidates.
- ° (IFI 424/85-51-10) Weaknesses existed in establishing criteria in training procedures for remedial training and retesting.
- ° (IFI 424/85-51-11)
(IFI 424/85-51-26)
(IFI 424/85-51-32) Examples were noted where essentially identical examinations were being administered to different groups at different times.
- ° (IFI 424/85-51-12) Weaknesses existed in the security of examinations.
- ° (IFI 424/85-51-15) Weaknesses existed in establishing adequate guidance for updating lesson plans.
- ° (IFI 424/85-51-19) Improvements are required in walkthrough training for all license candidates to ensure operational readiness for licensing.
- ° (IFI 424/85-51-21)
(Open SER Item) Weaknesses existed in establishing adequate criteria for qualification and requalification of licensed and certified instructors.
- ° (IFI 424/85-51-23)
(Open SER Item) Improvements are required in training for mitigation of core damage.

- ° (IFI 424/85-51-27) Inadequacies existed in training for nonlicensed and
(IFI 424/85-51-32) quality control personnel.
(Open SER Item)

1. Scope of Review

Module 2 delineates program commitments for operations training and qualification.

Prior to the NRC evaluation, the applicant had initially performed a program verification to ascertain whether the nuclear operations training and qualification programs complied with commitments contained in the FSAR, responses to generic letters, and official correspondence to the NRC, and whether compliance was verifiable with existing documentation.

The scope of module 2 encompassed the training and qualification programs for the permanent plant operations staff. These programs were for managers, supervisors, foremen, operators, shift technicians, quality control specialists, instructors and general employee training. Exceptions included: initial test program training, which is in module 3A; fire protection training in module 7; and emergency plan training in module 15. Security and associated training was not considered to be within the scope of the readiness review program.

Four experienced readiness review team members participated in the applicant's program verification of module 2. The applicant's readiness review team first prepared a description of the work process for employee training and qualification that translated commitments into implementing documents such as procedures, lesson plans, and topical outlines. The readiness review team then reviewed the training and qualification records to ascertain whether documents demonstrated compliance with procedures and implementation of commitments.

Two types of reviews were conducted by the applicant's readiness review team:

- ° Programmatic review of the training and qualification process to ascertain whether commitments were properly incorporated into plant procedures.
- ° A review of training and qualification records to ascertain whether documentation was adequate to show acceptability of the work.

The NRC evaluation of module 2 was focused on ensuring that commitments addressed all regulatory requirements and guidance associated with training, with emphasis on licensed operator training, that commitments were being satisfactorily implemented, that documentation was adequate to demonstrate satisfactory completion of training for selected individuals, that training programs were being administered effectively, and that the training provided to applicant personnel was effective.

The scope of this NRC evaluation included the following elements:

- a. A review by NRR and IE reviewers of the applicant's commitment matrix, table 3.0-1 of module 2, to ensure that all licensing commitments identified in the FSAR were included in the commitment matrix and that all module 2 commitments accurately represented the status of licensing requirements.
- b. A review by Region II inspectors of section 4.0 of module 2, FSAR Section 13, and proposed Technical Specifications Section 6.0 to verify that regulatory requirements and guidance associated with training were adequately addressed by the applicant for proper implementation.
- c. A review by Region II inspectors of the implementation of 55 commitments delineated in table 3.0-2 of module 2 in order to verify that the commitments were being implemented into procedures. This constituted 76% of those commitments for which an approved implementing procedure was identified in the matrix and 30% of all commitments within the matrix.
- d. An inspection of in-place training programs by a Region II inspection team to assess effectiveness of training, adequacy of program administration, progress towards INPO accreditation, and adequacy of documentation of training.
- e. A review by Region II inspectors of the applicant's readiness review verification packages to determine if module 2 accurately reflected the review findings.
- f. A review by Region II inspectors of all verification processes review findings to evaluate resolution.

The NRC evaluation excluded Health Physics and Radiochemistry training. These training programs will be evaluated during NRC evaluation of readiness review modules 9A and 9B.

2. Methodology

- a. The NRR and IE evaluation of the Vogtle readiness review module 2 was initiated by an evaluation of the applicant's commitment matrix, table 3.0-1. The criteria for this aspect of the evaluation included the applicant's FSAR Section 13.2 and other licensing commitments regarding personnel training and qualifications. This evaluation was to ensure that all licensing commitments identified in the FSAR were included in the commitment matrix and that all module 2 commitments accurately represented the status of licensing requirements. Subsequently, the applicant's findings from the readiness review and their proposed resolution (chapters 6.2 and 7.0) were reviewed. The acceptance criteria for this phase of the NRR evaluation were the acceptance criteria of the Standard Review Plan (NUREG 0800), Section 13.2 of the FSAR and other relevant regulatory requirements from NUREG 0737 and

portions of 10 CFR Parts 50 and 55. Since chapter 3.0 of the module contained insufficient technical information to serve as the sole basis for evaluation, the review encompassed other relevant sections of module 2.

- b. The Region II inspector review of section 4.0 of module 2, FSAR Section 13 and proposed Technical Specifications Section 6.0 to verify compliance with training regulations and guidance was conducted by comparing the information within those document sections to the training regulations and regulatory guidance delineated in 10 CFR 50, 10 CFR 55, NUREG 0737, Regulatory Guide 1.8, ANSI N18.1, NUREG 0094, and Generic Letter 84-10.
- c. The evaluation by Region II inspectors of the implementation of those commitments selected for review was conducted by reviewing the approved implementing documents for selected commitments in table 3.0-2 of the module and verifying that the selected commitments were completely implemented within those documents. The review was restricted to only approved documents.
- d. The assessment of inplace training programs was conducted by:
 - ° Reviewing all training records associated with a minimum of 10 randomly selected individuals enrolled in the licensed operator qualification program.
 - ° Attending selected training classes conducted by the applicant during the course of this inspection.
 - ° Reviewing efforts towards INPO accreditation.
 - ° Reviewing selected texts, lesson plans, and examinations for technical adequacy.
 - ° Conducting system walkthroughs and a simulator exercise for selected licensed operator candidates.
 - ° Reviewing simulator modification control and validation.
 - ° Reviewing administrative procedures and controls associated with training.
- e. The review by Region II inspectors of the applicant's readiness review verification packages was conducted by comparing the program verification section of the module with the verification packages to confirm that the module correctly reflected the readiness review team members' methodology and findings.
- f. The review by Region II inspectors of the readiness review findings delineated in the module was conducted by performing an evaluation of the applicant's resolution of each finding.

3. Evaluations

The evaluation of each section of the module reviewed is provided below. For each module section, a description of the section, a description of the review conducted on that section, and a description of the results of each review is provided.

a. Section 1.0 - Introduction

This section discussed the scope of the module and the status and schedule of training and qualification programs. Although this section was reviewed primarily for content and information only, the staff noted some inconsistencies within this section of the module which required further clarification by the applicant. Comments on this section were presented to the applicant during an inspection on September 30 - October 4, 1985. The comments and applicant's responses to those comments were documented in NRC Inspection Report 50-424/85-45 and are delineated below:

- (1) (NRC Question) In table 1.2-2 of module 2, the initial qualification for Operations Superintendent, Operations Supervisor, Shift Supervisor, and Shift Technical Advisor did not cite ANSI N18.1-1971 or Regulatory Guide 1.8. In table 1.2-3, plant operator initial qualification did not cite ANSI N18.1-1971. In table 1.2-5 Plant Engineering Supervisor's initial qualification did not cite ANSI N18.1-1971. In table 1.2-6, mechanics, electricians, instrument technicians, chemical-radiation technicians, and health physics personnel initial qualification did not cite ANSI N18.1-1971. The staff requested that the applicant identify the reasons for not citing appropriate standards and regulatory guidance in these tables.

(Resolution) The applicant stated that where the readiness review module specifically broke down the ANSI N18.1-1971 requirement in either the tables or in the program descriptions, no specific reference to ANSI N18.1-1971 was considered necessary in these tables. The applicant stated that it was not considered to be a program element of readiness review to make editorial changes to the readiness review module. The staff has reviewed selected position qualification checklists, proposed FSAR changes and selected individual qualifications (delineated in NRC Inspection Report 50-424/85-51) and has concluded that this is only an editorial problem with the module itself and is not indicative of a failure to comply with ANSI N18.1-1971.

- (2) (NRC Question) In Table 1.2-7, the qualifications of methods and training specialists must include SRO certification if these personnel are instructors of systems, integrated plant response, transients, or simulator courses. In addition, such instructors must be enrolled in requalification training. Is it intended that any of these methods and training specialists be used to instruct systems, integrated plant response, transients, or simulator courses?

(Resolution) The applicant stated that methods and training specialists do not teach systems, integrated plant response, transients, or simulator courses and consequently are not required to be SRO certified. A review of paragraph 2.2 of the readiness review module confirmed this. The staff is aware of one case where the instrument and control methods and training specialist teaches some specific instrument and control system courses in licensed operator training as a guest lecturer. The staff considers this specific application of guest lecturer to be acceptable pending NRR approval of appropriate sections of a proposed FSAR amendment forwarded by letter from Georgia Power Company to the NRC dated April 4, 1986.

- (3) (NRC Question) In table 1.2-2, of module 2, the number of employees completing STA training was listed as 13. If only 8 STAs are planned for Vogtle Unit 1 fuel load, why was the number so great? Does this number include STAs for both units?

(Resolution) The applicant stated that it was intended to develop depth in the ranks of STAs in order to be able to fill Shift Supervisor positions from these ranks. The staff has no further comment.

- (4) (NRC Question) In table 1.2-2 of module 2, the additional training for the operations supervisor gave a program development date of August 1986 for general employee training (GET) while all other GET dates are listed as August 1985. Was there a reason for this difference in dates?

(Resolution) The applicant stated that this was a typographical error and that the correct date was August 1985. The applicant stated that they do not intend to revise the readiness review module. The staff has no further comment.

- (5) (NRC Comment) In table 1.2-6 of module 2, the commitment that continuing training is "to be determined" did not correspond to the FSAR commitment for continuing training to include courses as listed in curriculum outlines for mechanics, electricians, technicians, and quality control specialists (FSAR Sections 13.2.2.1.1 through 13.2.2.1.4). Also, in table 1.2-8 of module 2, continuing training for supervisors and foremen in

health physics, chemistry, controls and instrumentation, mechanical and electrical maintenance was listed as at the discretion of their superintendents. This did not correspond to the FSAR commitment for continuing foreman training "unless they have already completed the offered course" according to the curriculum outline. This same comment was also noted in section 4.0 of the module for various nonlicensed supervisors and foremen.

(Resolution) The applicant stated that the specific continuing training programs have yet to be developed as the module tables indicate and will not be developed until the program development date indicated in the table. Consequently, the readiness review did not attempt to provide specific program descriptions. NRC review of continuing training programs, once developed, will be accomplished during the routine inspection program. Although this is not a finding, accomplishment of this review is identified as an inspector followup item (424/85-54-01).

b. Section 2.0 - Organization and Division of Responsibility

This section discussed the organizations involved in the training and qualification of nuclear operations employees at Vogtle. This section of the module was reviewed for content only with no comment by the staff.

c. Section 3.0 - Commitments

This section of the module defined commitments as project obligations to regulatory guides, industry standards, branch technical positions, and other licensing requirements to the extent defined in the FSAR and other official documents. This section also identifies the source of commitments to be the FSAR, Chapter 6 of proposed Technical Specifications, responses to NRC questions associated with the FSAR, responses to generic letters, and self-initiated correspondence. As defined, commitments which were considered by the applicant to be most appropriately categorized in this module were tabulated in a commitment matrix identified in table 3.0-1 of the module. The applicant identified 182 commitments in this module.

This section of the module also identified procedures which implemented commitments as being training department procedures, plant administrative procedures, startup manual procedures, and other various department procedures. Implementing documents were identified for each of the 182 commitments in an implementation matrix identified in table 3.0-2 of the module.

The evaluation of this section consisted of a review of the commitment matrix delineated in table 3.0-1 and a review of the implementation matrix delineated in table 3.0-2 as discussed below.

(1) Evaluation of The Table 3.0-1 Commitment Matrix:

The commitments in table 3.0-1 were reviewed by the staff in conjunction with other sections of the module in order to ensure all licensing commitments identified in the FSAR were included in the commitment matrix and to ensure that all of the module 2 commitments represented the status of licensing requirements. Additionally, a review of FSAR Chapter 13, proposed Technical Specifications Section 6, and all of module 2 was conducted to determine if all regulatory requirements and guidance were appropriately identified within the Vogtle training program. Where deficiencies were noted, the commitment matrix was reviewed to determine if it contained the requirements.

In some cases this review generated comments associated with other sections of the module. These comments are included in the paragraph of this report which addresses the applicable section.

Specific comments associated with table 3.0-1 and the applicant's response to those comments are delineated below:

- (a) (NRC Comment) FSAR Section 13.1.3.1 and table 3.0-1 of module 2 stated that personnel will either meet the minimum education and experience recommendations of ANSI N18.1-1971 or will complete a qualification program commensurate with their level of responsibility which will demonstrate their ability to perform their job functions. With regard to the alternate qualification program, the staff was unaware of any regulatory basis for allowing provisions for such a qualification program and considered that the applicant should provide justification for such a provision. This item was also deemed unacceptable by the NRC and left as an open item in NUREG 1137, Safety Evaluation Report (SER), dated June 1985. This concern is addressed further in paragraph 3.d.(8) of this report.

(Resolution) The issue of personnel qualifications has been addressed through a proposed FSAR amendment forwarded by letter from Georgia Power Company to NRC dated April 4, 1986.

- (b) (NRC Comment) The commitment matrix does not appear to contain the following FSAR commitments:
- (1) A commitment to have operators and senior operators relieved of licensed duties to participate in accelerated requalification training if they score less than 80% overall or 70% on any category of annual requalification examinations (FSAR Section 13.2.1.3.2.3).

- (2) A commitment to give written requalification lecture examinations with criterion scores of 80%. Scores of less than 80% require additional training within 3 months.
- (3) A commitment for cold license applicants to have 6 weeks of hot participation experience at a same type plant and at least 6 weeks of Vogtle shift experience including walkthrough training (per FSAR Tables 13.2.1-1 through 13.2.1-5).
- (4) A commitment for specific training topics not yet included in training which are to be taught just prior to precritical license examinations as specified in FSAR Section 13.2.1.1.9.
- (5) A commitment for evaluation of training program effectiveness per FSAR Section 13.2.2.9.

(Resolution) With regard to items (1) through (4), the applicant demonstrated that the commitment matrix contained the particular commitment. In the case of item (5), the applicant stated that the Vogtle readiness review team consciously did not include this item in the matrix due to its generality. The staff did not consider that module 2 adequately addressed evaluations for training program effectiveness pursuant to FSAR Section 13.2.2.9 within the commitment matrix. This is considered a finding which is discussed further in paragraph 3.d.(10) of this report, and which was previously identified as inspector followup item 424/85-51-35.

- (c) (NRC Comment) In the staff's SER, the NRC noted that the applicant had not committed to provide for retesting of simulator response as specified in Section 5.4 of ANSI/ANS 3.5-1981, Nuclear Power Plant Simulators for Use in Operator Training, which is used to verify software capability and modeling of plant dynamics based on analyses of plant transients and accidents. Therefore, this aspect of the applicant's simulator was not found to be fully in compliance with provisions of Regulatory Guide 1.149. Upon review of the applicant's description of proposed simulator performance testing provided by letters dated May 10, May 28, and July 29, 1985, it was concluded that the applicant's simulator testing program, as described, did not meet the objective of testing design analysis data and showing correlation between the complete plant data base and the simulator data base. This item was discussed in the staff's SER and SSER-1. With regard to readiness review of module 2, the staff noted that in table 3.0-2, the applicant stated that "simulator testing will be continuous while in

use. Operators and instructors will identify problems which shall be documented, investigated and corrected." The applicant's simulator testing program was not considered to be acceptable since it did not meet the intent of ANSI/ANS 3.5. The staff also noted that Sections 1, 4, 6, and 7 of the module did not adequately address retesting of simulator response.

(Resolution) The applicant indicated that readiness review was conducted to be current with the FSAR as submitted and consequently would not reflect the concern generated in the FSAR as an open item. The staff considered that the applicant's program for simulator testing was deficient in that it did not meet the intent of ANSI/ANS 3.5. Although Supplement 1 of the staff SER has since deleted the open item on this matter, the staff still has concern that simulator performance testing does not meet the intent of ANSI/ANS 3.5 and recommends that the applicant re-evaluate the testing criteria to ensure fully adequate simulator performance. Although not considered a finding, further NRC review in this area is identified as inspector followup item (424/85-54-02).

- (d) (NRC Question) NUREG 0737, Item I.A.2.1 required hot license SRO candidates who are non-degreed to have held a reactor operator's license for one year. It was not clear how this requirement was implemented through either the module 2 commitment matrix or the FSAR. The staff noted that the requirement was addressed in table 4.1-3 of module 2 as part of the program description, however, the concern was assurance that program requirements were in the commitment tracking system.

(Resolution) The applicant stated that the commitment matrix contained a commitment that the licensed operator qualification program be in accordance with NUREG 0737, Item I.A.2.1, which, as a result of the reference to I.A.2.1, included the requirement for non-degreed hot license SRO candidates to have held an operator's license for one year. Although this does not specifically identify each element of I.A.2.1 as a separate commitment, the applicant stated that it considered this item to be adequately addressed. A review of the SRO qualification checklist reflected that the particular requirement addressed above was in the checklist. This item is considered resolved.

(e) (NRC Comment.) Several deficiencies were noted where regulatory requirements were not adequately addressed in the commitment matrix of module 2 as well as other sections of the module. The staff noted that the reason for these deficiencies was that the requirements were not adequately addressed in the FSAR. The specific deficiencies were as follows:

- (1) (NRC Concern) ANSI N18.1-1971 and Regulatory Guide 1.8 states qualification and experience criteria for the radiation protection manager and the radiochemistry supervisor. It was the staff's understanding that the responsibilities for these positions were combined under the cognizance of the Health Physics Superintendent. Based upon review of module 2 and FSAR table 13.1.3-1, it did not appear that requirements for the position of Health Physics Superintendent conformed to ANSI N18.1-1971 and Regulatory Guide 1.8. The staff questioned the applicant's intent to satisfy all ANSI N18.1-1971 and Regulatory Guide 1.8 requirements for this position. Additionally, the staff considered that FSAR Section 13.1 should be clear in delineating requirements for this position.

(Resolution) The applicant stated that the Health Physics Superintendent position referenced in the FSAR had been changed to be comprised of two positions as reflected in readiness review module 5, Health Physics Superintendent and Nuclear Chemistry Superintendent. Additionally, the applicant stated that the requirements of ANSI N18.1-1971 and Regulatory Guide 1.8 were intended to be satisfied and, in actuality, are satisfied for these positions. The applicant committed to revise the FSAR in order to recognize the two superintendent positions and to more specifically address the requirements of ANSI N18.1-1971 and Regulatory Guide 1.8.

- (2) (NRC Concern) The criteria delineated in FSAR Section 13.2.1.3.2.2.B, concerning individuals assuming shift duties after being inactive for greater than four months, were not in compliance with the requirements of 10 CFR 55.31(e) in that there were no provisions for demonstrating satisfactory knowledge of the individual to the NRC. The staff questioned whether it was the applicant's intent to place people who are in this circumstance back on shift prior to requesting and receiving specific NRC approval in each individual case, and if so, what was the basis for that action?

(Resolution) The applicant indicated that the FSAR did not fully address 10 CFR Part 55.31(e) and committed to change the FSAR and applicable draft procedures to properly implement that requirement.

- (3) (NRC Concern) In FSAR Section 13.2.1.3.2.3, what was the basis for exempting personnel who achieve a minimum section grade of 80% from both lectures and lecture examinations pertinent to that section? This appeared to be in contradiction to 10 CFR 55, Appendix A, introduction section and paragraph 4.b.

(Resolution) The applicant indicated that the FSAR did not fully implement 10 CFR Part 55, Appendix A, requirements with respect to lecture examinations and committed to revise the FSAR and applicable draft procedures to properly implement the requirement. With regard to lecture exemption, the applicant indicated that this practice has been in effect at other utilities and that satisfactory grades on annual requalification examinations and lecture examinations should be sufficient to allow for such an exemption. The staff has again reviewed the provisions for allowing lecture exemptions and, in light of the fact that lecture examinations are now to be administered to all personnel, has no further comment on lecture exemptions.

- (4) (NRC Concern) In FSAR Section 13.2.1.3.2.3, what was the basis for excluding the Operations Superintendent, Manager-Unit Operations, Deputy General Manager, General Manager, and certified simulator instructors from the requirement to have observation reports documenting the evaluation of their simulator performance? If an individual is licensed or certified, observation reports for this facet of training should be part of the records pursuant to 10 CFR Part 55, Appendix A, paragraph 5.

(Resolution) The applicant indicated that all licensed personnel should have simulator performance observation reports included in training records pursuant to 10 CFR Part 55, Appendix A, paragraph 5. Additionally, the applicant stated all personnel referenced above, with the exception of certified simulator instructors, would have simulator performance observation reports included as part of their training records and committed to revise the FSAR and draft procedures to implement this. With regard to certified simulator instructor's observation reports, the applicant stated that since a simulator instructor can fulfill his simulator requalification training by evaluation of licensed personnel undergoing this phase of requalification and since the

evaluator completes the observation report, it is not considered appropriate that an observation report be completed on the instructor. As identified in paragraph 3.d.(3) of this report, revisions to training procedures are required to resolve concerns with instructor qualification and requalification programs.

- (5) (NRC Concern) Paragraph 4.e of 10 CFR Part 55, Appendix A, required provisions for participation in accelerated requalification should evaluations indicate a need. This included the evaluations of paragraph 4.b of 10 CFR Part 55, Appendix A, which constitute the lecture examinations. The provisions of FSAR Section 13.2.1.3.2.3 for a lecture examination grade of less than 80% appear adequate for an individual who does not completely fail the examination (e.g., a grade of 70% to 80%) or for subjects that may involve future modification that are not yet in place. In other instances, however, it may be necessary to remove someone from licensed duties and place them in accelerated requalification if a lecture examination is failed (e.g., if an individual received a substantially low lecture examination grade on a subject such as emergency procedures). General provisions should be established for circumstances such as these.

(Resolution) The applicant concurred with this assessment and committed to revise the FSAR and draft procedures to address this concern.

- (6) (NRC Concern) In FSAR Section 13.2.1.3.2.2, what was the basis for defining active and extensive engagement of a reactor operator or senior reactor operator as eight hours per quarter active participation in operation of the plant or Vogtle simulator? In the SER, the NRC considered eight hours per quarter insufficient. Additionally, the staff considered that all participation directed toward maintaining active status should be at the plant. Credit should not be taken for time spent at the simulator.

(Resolution) The applicant committed to revise the FSAR and draft procedures to direct that participation in operation for maintaining active status shall be at the plant only. The applicant indicated that eight hours per quarter was still considered sufficient time for proficiency maintenance and noted that the SER did not designate the eight hours per month recommendation as an open item. The staff has again reviewed the eight hours

per quarter provisions for maintaining active status and has no further comment pending publication of the revised 10 CFR Part 55.

- (7) (NRC Concern) Module 2, and FSAR Table 13.2.1-1 required three weeks of walkthrough training for applicants who had been previously licensed or certified. It was considered that these previously licensed or certified candidates should have the same hot participation and shift experience, including walkthrough training, that other candidates addressed in FSAR Tables 13.2.1-2 through 13.2.1-4 have. Previously licensed personnel could take credit for prior hot participation. The applicant should address this concern.

(Resolution) The applicant indicated that this was an FSAR error only and that the in-place program required full hot participation experience, on shift experience and walkthrough training for previously licensed and certified SRO candidates. The applicant committed to revise the FSAR to correct this error.

- (8) (NRC Concern) Table 13.2.1-1 of the FSAR indicated that hot license applicants who had previously held an SRO license would not be required to complete the three months of observation training. They would complete three weeks of Vogtle walkthrough training instead. This was not in compliance with NUREG 0737 which required three months shift training as extra man on shift for hot license training. ES-111 of NUREG-1021 states:

Up to a maximum of one month of the three months on shift in training can be waived for determining eligibility to sit for an examination. The waiver should be granted only if there is good cause (i.e., good faith effort by utility to complete training, no other exam administration planned for some time, license needed to meet NRC requirement), the candidate has completed all other eligibility requirements, and the utility agrees to complete training in a timely manner and certify in writing as to successful completion prior to final licensing action. The region should ensure that the utility's schedule for completion is compatible with the schedule for finalizing licensing actions.

This was the only regulatory guidance that the staff was aware of for waiving on shift training and the staff noted that this could only be done on a case basis and that this must be clearly delineated with basis on NRC Form 398.

(Resolution) The applicant indicated that this was an FSAR error only and that it was intended that all hot license candidates participate in three months of observation training in accordance with NUREG 0737. The applicant committed to revise the FSAR to correct this error.

- (9) (NRC Question) In module 2, supervisors of health physics, chemistry, and instrument and control did not appear to be required to have training for mitigating core damage listed as a commitment as described in FSAR Section 13.2.2.3 if they met qualification requirements of ANSI N18.1-1971.

(Resolution) The applicant stated that the FSAR was editorially incorrect and committed to correct the FSAR such that all the requisite supervision would be required in the FSAR to have training for mitigating core damage. The applicant stated that supervision qualification checklists would have ensured that the supervisors did, in fact, receive this training.

- (10) (NRC Concern) NUREG 0737, Item I.A.2.3 required that facility instructors who taught systems, integrated response, transients, and simulator courses be enrolled in appropriate requalification programs. It is not understood how completion of the annual written SRO audit examination as delineated in module 2 will, by itself, accomplish these requirements.

(Resolution) The applicant stated that this was, in fact, the basis for Vogtle readiness review finding 2-7 and that the resolution to that finding would eliminate this concern. The staff reevaluated finding 2-7 to confirm the applicant's statements and had no further comment with respect to the specific question; however, during the evaluation of this particular concern, the staff noted that the applicant had included provisions for renewal of certification in the event of extended absence from instructor requalification in FSAR Section 13.2.1.3.3. These provisions allowed certification to be renewed by preparing for and taking or conducting a comprehensive written audit examination. The staff considered that "preparing for and conducting" an audit examination is not sufficient for certification renewal

since this provides a very limited basis for demonstration of knowledge to teach. The staff considered that renewal should be based on the instructor "preparing for and taking" an audit examination and additionally in the instructor becoming completely current with required reading and training administered in the areas of feedback of operating experience, plant modifications, procedures changes, administrative limitations, and problems. The applicant committed to revise FSAR Section 13.2.1.3.3 to resolve this concern. The subject of instructor requalification is addressed further in paragraph 3.d.(3) of this report.

These ten examples of failure to properly identify regulatory requirements and guidance as commitments within the FSAR, and consequently within the modules were considered a finding which was identified as inspector followup item 424/85-45-01 within NRC inspection report 50-424/85-45.

A review of the proposed FSAR amendment forwarded by letter from Georgia Power Company to NRC dated April 4, 1986, indicates that with the exception of instructor qualification and requalification concerns, the resolution of deficiencies identified herein is adequately addressed in the proposed FSAR amendment. Concerns with instructor qualification and requalification are now adequately covered by inspector followup item 424/85-51-21 and consequently are not required to be followed by inspector followup item 424-85-45-01. Inspector followup item 424-85-45-01 is considered closed pending approval of the appropriate sections within the proposed FSAR amendment.

(2) Evaluation of the Table 3.0-2 Implementation Matrix

During review of the module 2 implementation matrix, the staff noted that 110 of the 182 commitments (60%) did not have approved implementing documents associated with them. The staff noted that the applicant's readiness review team had also identified problems with implementing procedures not being approved as a finding (2-9). The NRC evaluation of the implementation matrix was restricted to commitments which had approved documents associated with them and focused on commitments associated with Section 13 of the FSAR. Fifty-five commitments were selected for review which constituted 76% of those commitments with approved implementing documents. One concern was noted with procedure 00700-C which addressed general employee training. The implementation matrix indicated that commitments with regard to radiation protection, ALARA, and operational risk were implemented in procedure 00700-C, when, in fact, this procedure merely stated that the radiation protection orientation would include information necessary for employees who will enter or work in radiation control areas. This is a brief "umbrella" statement that does not adequately implement

the commitments. The staff was able to ascertain that the commitments were, in fact, fully addressed in lesson plans GE-LP-001 through -009. These lesson plans were not controlled documents and, consequently, did not appear to be an appropriate vehicle for implementation of FSAR commitments. A review of checklists used by Vogtle reviewers during readiness review reflected that they confirmed the commitments to be in lesson plans rather than the stipulated document, but did not report this as a finding. The staff considered that the review was satisfactory; however, it was considered that this circumstance should have represented a finding. The staff considered that the applicant should evaluate the appropriateness of delineating FSAR commitments solely in lesson plans or other uncontrolled documents. Where commitments are required to be proceduralized, they should be implemented in procedures. Where commitments are not considered necessary to be proceduralized and are delineated in uncontrolled documents, measures must be established to ensure these documents are reviewed against the commitments tracking system to ensure they are not changed without reviewing applicable commitments for impact. This concern is considered a finding which was previously identified as inspector followup item 424/85-51-36.

The staff noted in NRC Inspection Report 50-424/85-51 that these discrepancies were not identified as findings by the applicant's readiness review team. This concern was identified as a part of inspector followup item 424/85-51-01. In a letter from Georgia Power Company to the NRC Region II, dated January 10, 1986, the applicant stated that Georgia Power Company acknowledged that failure to incorporate general employee training commitments into procedure 00700-C should have been part of finding 2-9, in which 11 other examples of procedures were cited as lacking or not adequately implementing commitments. The applicant stated that the current policy of readiness review is to issue findings regarding operational commitments whenever commitments are inadequately addressed by approved procedures, are not identified for implementation in planned procedures, or are not in the nuclear operations commitment tracking system. Further, the applicant stated that it is the policy of Georgia Power Company to implement commitments in controlled documents. The applicant stated that the commitments would be incorporated into procedures. Since actual accomplishment of this action is followed with inspector followup item 424/85-51-36, and since the applicant's response is considered adequate, this portion of inspector followup item 424/85-51-01 is considered closed.

d. Section 4.0 - Program Description

This section of the module addressed the Georgia Power Company training and qualification programs for managers, senior reactor operator (SRO) licensed candidates, reactor operator (RO) licensed candidates, engineers, maintenance personnel, quality control specialists, instructors, nonlicensed foremen and supervisors, and general employees.

The NRC evaluation of this section consisted of:

- ° an office review of material in the section, generation of comments from this review, presentation of comments to the applicant, and evaluation of the applicant's resolution of those comments.
- ° accomplishment of an onsite Region II team inspection of in-place training programs to assess effectiveness of training, adequacy of program administration, progress towards INPO accreditation, and adequacy of documentation of training.

The results of these evaluations were documented in NRC Inspection Reports 50-424/85-45 and 50-424/85-51 and are summarized herein. Additionally, the corrective actions taken by the applicant in order to resolve deficiencies noted during this evaluation are addressed.

(1) Program Definition, Record Retention, Handling of Examinations, and Miscellaneous Administrative Observations for Licensed Operator Training

(a) Program Definition

The NRC evaluation indicated that training procedures failed to delineate a comprehensive course of study for initial licensing training. Consequently, a clear description of how required courses and training interrelated, how instruction would be presented, and what examinations and evaluations determined satisfactory completion of the training were not procedurally evident. It was noted that the applicant's FSAR delineated general course requirements with integral durations of classroom or self study. There was no indication of relative contact hours required for classroom lectures for the required courses nor were the courses sequenced. It was also noted that course outlines were developed for each course for the various license training groups. These course outlines were not consistent from group to group, and again, the relative contact hours for classroom lecture attendance were not delineated. The applicant had individual checklists for requisite cold license training, but these simply verified that each element delineated in the FSAR was completed. They did not ensure that requisite

contact hours of lecture attendance were identified as completed nor did they sequence the various courses. Additionally, there was no specification of required examinations and evaluations necessary to demonstrate satisfactory completion of training. Because of the lack of a course of study, there was little consistency in what materials were retained for any given individual's record of training. The use of a course of study was considered necessary by the staff to standardize required training, identify and quantify the specific methods of instruction, and standardize and identify those items necessary for evaluating performance to determine whether a candidate has satisfactorily completed training. Proper specification of these factors should establish the basis for determining those items necessary for retention in training records. This, in turn, should result in providing a readily accessible record of any given operator's progress towards licensing. The staff considered that procedural establishment of a course of study as defined herein was necessary in order to assure proper administration of a training program. This concern was identified as inspector followup item 424/85-51-02 and is considered a finding. In letters to the NRC dated January 10, 1986, and March 13, 1986, the applicant stated that development of program description procedures which will delineate the content and conduct of courses of study is under development and has been accelerated as a result of the emphasis placed on the necessity of these procedures by the NRC. The staff considers that once fully implemented, the committed actions should resolve the concern addressed in this finding.

(b) Record Retention

The staff noted that FSAR Section 13.2.1.3.2 stated that records of requalification shall be maintained for two years. This is in compliance with 10 CFR 55, Appendix A. The staff also noted, however, that proposed Technical Specifications require records of training and qualification to be retained for the duration of the plant operating license. The applicant was informed that the requirements contained in the Technical Specifications must be complied with regardless of less conservative FSAR commitments.

The staff's evaluation noted that Vogtle procedures did not require the maintenance and retention of completed examinations as records of individual training and qualification. The applicant stated that it was their intent to computerize examination grades and retain only the master examination and answer key. The staff stated that this was unacceptable and that completed examinations which determine qualification status are considered to be quality assurance records which

must be maintained pursuant to 10 CFR Part 50, Appendix B, 10 CFR Part 55, Appendix A, and Technical Specifications. The applicant was able to provide, in those cases requested, completed examinations for selected license candidates. However, the applicant also indicated that there may be cases where completed examinations were not retained for some license candidates. The staff considered that Vogtle procedures should identify what examinations and evaluations are used to determine satisfactory completion of training, and require retention of each individual's completed examinations and evaluations as training records when they are used for this purpose. Resolution of this concern was identified as inspector followup item 424/85-51-03. Additionally, the staff considered that the applicant should define and implement corrective actions associated with individual training records where completed examinations were not retained. Resolution of this concern was identified as inspector followup item 424/85-51-04. The concerns associated with these two followup items are considered to be a finding. In letters to the NRC dated January 10, 1986, and March 13, 1986, the applicant stated that selected student examinations are now being retained in personnel training files and that requirements associated with this practice are being proceduralized. Additionally the applicant stated that where completed examinations were not previously retained, the applicant would review individual training records of each license candidate and evaluate their adequacy to justify the satisfactory completion of training. The applicant stated that corrective actions would be taken if appropriate.

The staff noted some problems with the computerized list of training records appearing to be incomplete. The applicant indicated that the computerized listing had not yet been validated and that when such validation was accomplished, this type of problem would be rectified. Although this item is not considered to be a finding, completion of the performance of this validation was identified as inspector followup item 424/85-51-16.

The staff considers that once fully implemented, the committed actions should resolve the concerns addressed in these findings.

(c) Handling of Examinations

The staff identified numerous examples of examinations being regraded with no justification given for additional points awarded and, in some cases, no indication of who regraded the examination. In some cases, correction tape was used to delete the old grades and the new grades were written over

the correction tape. In one case, regrading resulted in an individual's grade being raised 10% on one section of the examination and, in many cases, the regrading resulted in individuals who had initially failed, being brought up to a passing level. The applicant stated that as a result of readiness review, action was initiated to have the person regrading the examination initial his corrections and to make corrections by lining out. Additionally, the applicant stated that they had recently been directed by corporate management to implement a program similar to that in place at the Hatch facility which provided for documenting the basis for changing grades or deleting questions. The staff considered that criteria for regrading examinations should be established in procedures and that the practice of regrading examinations should be controlled such that it is not the common mode of operation. Resolution of these concerns with regard to regrading of examinations was originally identified as inspector followup items 424/85-51-05 and 424/85-45-02. Additionally, the staff considered that where regrading was previously accomplished without documenting the basis for the regrade and where such regrading resulted in personnel being upgraded from failing to passing, that management should reevaluate those specific examinations in order to ascertain acceptability of the examinations in demonstrating satisfactory completion of the training. Results of the evaluations should be documented and retained in training records. Resolution of this concern was identified as inspector followup item 424/85-51-06. The concerns of these inspector followup items is considered a finding.

In letters to the NRC dated January 10, 1986, and March 13, 1986, the applicant committed to regrade examinations in a controlled and documented manner and stated that administration policy procedure 60001-C had been revised to control the regrading of examinations. Additionally the applicant stated that to ensure the integrity of past examinations, an audit of at least 20% of major examinations on file for licensed operator candidates would be independently regraded and that significant deviations would result in progressively increasing the sample size until the integrity of examination grading has been established. A review of procedure 60001-C, revision 2 reflected that procedural control for regrading examinations has now been adequately established and inspector followup items 424/85-51-05 and 424/85-45-02 are considered closed.

With respect to inspector followup item 424/85-51-06, the staff will review the results of the applicant's audit and will review corrective actions associated with resolution of this finding during the Near Term Operating License (NTOL) inspection program.

The staff noted numerous cases where the reviewer block on the examination cover sheet was not signed, thus indicating that a review of the grading or point tabulation had not been conducted. In two cases, the staff noted that points had been totaled incorrectly resulting in the recorded grade being higher than it actually should have been. The proper totaling of points for one candidate's senior reactor operator (SRO) certification, annual requalification examination resulted in the candidate's grade being reduced from passing to failing. The staff stated that attention to detail should be paramount in handling of licensed operator qualification examinations and that grading should be correct and verified correct through independent review. Additionally, since the NRC review was a sampling review, other examinations required for evaluation should be reviewed to determine accuracy. Resolution of these concerns was identified as inspector followup item 424/85-51-07. In the case of the individual who failed his SRO certification annual requalification examination, the staff stated that required remedial training and reexamination should be identified and documented when completed. Resolution of this concern was originally identified as inspector followup item 424/85-51-08. The concern addressed in these inspector followup items is considered a finding.

In a letter to the NRC dated January 10, 1986, the applicant stated that aforementioned audit by the applicant of examination regrading would encompass problems with point tabulation identified in inspector followup item 424/85-51-07. The staff will review the results of the applicant's audit and corrective actions associated with resolution of this finding during the Near Term Operating License inspection program.

In the case of the individual who failed his SRO certification annual requalification examination, the applicant had issued a formal letter to the individual dated March 4, 1986, noting that he may not teach any classes requiring SRO certification until his certification was renewed. This action is considered sufficient for closure of inspector followup item 424/85-51-08 and that item is closed.

The staff noted one case where a candidate's reactor operator (RO) audit examination had been regraded twice to new, higher grades; yet the grade was still below the minimum passing criterion of 80% for that examination. However, the individual was considered to have passed based on a committee review as specified in an applicant letter dated March 1985 on grading criteria. The staff considered that the practice of allowing individuals to pass examinations where minimum grade criteria were not met was unacceptable and should not be allowed. When minimum criteria were not met, retraining which is defined by the applicant on a case by case basis

and reexamination should have been required. The staff also considered that grading criteria should have been defined procedurally rather than in a policy memorandum. Resolution of these concerns was identified as inspector followup item 424/85-51-09. In a letter to the NRC dated January 10, 1986, the applicant stated that they were unable to find any instances where an individual was given credit for a course without meeting the 80% passing criteria. Subsequent review revealed that the specific problem was that an individual had failed the RO certification audit examination in March 1985 by scoring less than 80% overall and less than 70% on one section. The failure in that one section is what brought the overall grade below 80%. Rather than requiring remedial training followed by a complete reexamination, the applicant chose to provide remedial training and reexamine the candidate in only the section which was originally failed with a grade of less than 70%. Although this reexamination policy was properly documented, it was inconsistent with the current FSAR commitments regarding passing of audit examinations. The staff notes that this reexamination policy would not be allowed during administration of NRC examinations. Additionally, this policy is not allowable for requalification examinations pursuant to NRC letter (H. Denton) of March 28, 1980.

In a letter to the NRC dated April 4, 1986, the applicant forwarded a proposed amendment to the FSAR which clarified the extent of reexamination required in initial license training to be as determined by Georgia Power Company management. Approval of this portion of the proposed FSAR amendment should resolve this concern.

Several cases were noted where individuals failed examinations and there was no indication in the records presented for these individuals that any remedial training had ever been required and/or satisfactorily completed. In some cases, failures in a given area such as systems training were repeated with still no indication of remedial training. The staff was unable to identify procedural requirements stating the criteria required for remedial training and retesting of individuals failing major training. The staff considered that criteria for remedial training and retesting should be established in procedures and implemented. The applicant provided a copy of a new retraining package which, if standardized in procedures and properly implemented, appeared to be a satisfactory method for documenting remedial training. The staff considered that in all cases where individuals had failed required examinations, remedial training and retesting should be identified and documented upon completion. Resolution of these concerns for establishing procedure requirements and for identifying retraining and retesting for failed tests was identified as inspector followup item 424/85-51-10. This is considered a finding.

In letters to the NRC dated January 10, 1986 and March 13, 1986, the applicant indicated that if an individual failed to meet the established course completion criteria, no credit would be given for completing the course and in most cases, the individual would simply repeat the course. As a result of subsequent discussion with the Superintendent of Training, the staff now considers that the reason remedial training records were not apparent may have been that the individuals reviewed had not yet retaken the course. Additionally, the applicant stated that a remedial training action form has been generated to document required remedial training and a new procedure, 60001-C, had been issued to delineate procedural guidance for remedial training. The staff has reviewed these procedural requirements and considers remedial training to be adequately addressed. Inspector followup item 424/85-51-10 is considered closed.

The 1985 SRO certification, annual requalification examination administered to one group of candidates on June 14, 1985, was compared by the staff to that administered to another group of candidates on June 21, 1985. This review determined that the examination questions were the same except for some minor reordering. Similar problems were also noted with GET and quality control examinations. The staff considers this to be unacceptable in that the same test questions should not be administered to different groups of candidates at different times in close proximity. Resolution of this concern was originally identified as inspector followup items 424/85-51-11, 424/85-51-26, and 424/85-51-32. This concern is considered a finding.

In letters to the NRC dated January 10, 1986 and March 13, 1986, the applicant acknowledged the deficiency and committed to establish policies governing reuse of questions on examinations. The applicant stated that procedure 60001-C had been revised to establish examination question reuse policy. Additionally the applicant stated that the GET question bank had been greatly expanded. A review of procedures 60001-C and 00700-C determined that this concern has been resolved by establishment of procedural requirements for licensed operator training and GET training. Inspector followup items 424/85-51-11 and 424/85-51-26 are considered closed. Inspector followup item 424/85-51-32 remains open pending completion of corrective actions in the area of Quality Control inspector training.

The staff noted that examination security was weak. Access to question bank questions and answers and, in some cases to examinations themselves, could easily be obtained through a training clerical office. During the course of the inspection, the office was observed to be unlocked and unmanned with the examination material accessible. Increasing security for examinations was originally identified as inspector followup item 424/85-51-12. This concern is considered to be a finding.

In letters to the NRC dated January 10, 1986, and March 13, 1986, the applicant stated that procedure 60001-C had been revised to strengthen security of the examination process to prevent compromising of examinations.

A review of revised procedure 60001-C indicates adequate procedural guidance for examination security has now been established. Additionally, observation of work practices associated with administrative handling of examinations during the week of March 3, 1986, indicates that significant improvement has been made in this area. Inspector followup item 424/85-51-12 is considered closed.

(d) Miscellaneous Administrative Observations

The staff noted that there were no individual records of control manipulations performed on the simulator for any license candidates. Additionally, the staff was unable to find procedural requirements associated with maintaining individual records of control manipulations. The applicant stated that they intended to maintain individual records for control manipulations for annual requalification training in accordance with 10 CFR Part 55, Appendix A and that this would be addressed in the procedure governing requalification training when developed. The applicant also stated that they had not intended to maintain individual records of control manipulations during initial license training and that documentation of a candidate's participation in simulator training was maintained in a simulator log. The staff considered that the use of the simulator log does not specifically address a given individual's active participation in specific simulator exercises. Individual records of control manipulations were considered to be desirable in that they more fully demonstrated the actual simulator training received by a given individual and further substantiated evaluations of an individual's performance during simulator training. Procedural definition and implementation of

control manipulation records for annual requalification training and evaluation, and resolution of the concern associated with maintaining records of control manipulations associated with initial license training was identified as inspector followup item 424/85-51-13.

The staff reviewed student system texts and noted that the system texts currently being used by the Vogtle staff are well written and should prove very useful to the plant operating personnel. There were, however, no procedures written to ensure the review and update of these texts on a regular basis. The staff considered that procedural control of review and update is necessary to provide quality, technically correct learning materials to plant operators for their qualification. The staff also considered that composition of a book containing drawings of all the plant's mechanical, electrical, instrumentation, and logic drawings would be a great asset to the qualification process at the Vogtle station. Resolution of these recommendations was originally identified as inspector followup item 424/85-51-14. This item does not constitute inadequacy in fulfilling regulatory requirements and consequently is not considered to be a finding. A review of procedures 60005-C, Revision 1, 60002-C, revision 2, and 60502-C, revision 0 reflects that the applicant has established adequate procedural control over review and update of training materials. Additionally the applicant has stated that drawings would be maintained in the simulator room. Inspector followup item 424/85-51-14 is considered closed.

The staff reviewed heat transfer and fluid flow and mitigating core damage instructional lesson plans. The heat transfer and fluid flow lesson plans were in satisfactory format with clearly defined objectives. These lesson plans were well written in an easy to follow instructional outline. SRO mitigating core damage instructor's lesson plans were examined and were determined to either not be dated or were recently dated. Further investigation determined that the lesson plans were in the process of being rewritten. The format of approximately half of the lesson plans was unacceptable; there were no written objectives and the lesson plans were merely copies of a General Physics student mitigating core damage text. The other SRO mitigating core damage lesson plans were written in revised format. These were determined to be very well written. The revision of the SRO mitigating core damage lesson plans in this new format should improve the effectiveness of instruction. A review of RO mitigating core damage lesson plans revealed that they were merely the old copies of the unacceptable SRO lesson plans and, as such, were also in an unacceptable format. The applicant stated that the RO lesson plans had not yet been

revised. The inspectors noted that formal procedural definition for revising and approving revisions to lesson plans was not evident and that such procedural control should be implemented. Resolution of this concern was originally identified as inspector followup item 424/85-51-15. This concern is considered to be a finding. In letters to the NRC dated January 10, 1986 and March 13, 1986, the applicant stated that procedure 60502-C has now been established to control review and update of lesson plans. A review of revised procedure 60502-C indicates that adequate procedural controls have now been established for control of training material. Inspector followup item 424/85-51-15 is considered closed.

The staff noted that provisions existed for the Superintendent of Training to grant waivers of training without pretesting. The applicant also stated that such waivers not only included the course training but also included the course examination. The staff noted that one such vehicle for waiver is if a similar course was completed at another utility. In this case, the waiver could be granted without consideration of time duration since that course was given. The staff considered that when waivers of training are dispensed, this should not include waiver of the course examination, and that all candidates should complete all course examinations satisfactorily. Although this was not considered a finding, resolution of this concern was originally identified as an inspector followup item 424/85-51-17. In a letter to the NRC dated March 13, 1986, the applicant stated that procedure 60002-C had since been revised to provide for procedural control of course waivers. A review of Revision 2 to procedure 60002-C as well as a proposed FSAR amendment forwarded by letter dated April 4, 1986, indicates that these waivers are now based on either completion of an examination which is equivalent to the course final examination or completion of a previous course of equal duration containing the same topics within the preceding three years. Although the staff considers that three years may be, in general, excessive, the staff noted that the applicant is using this waiver mechanism judiciously and primarily for training such as GET. The staff did not note evidence of abuse in this area. Inspector followup item 424/85-51-17 is considered closed.

(2) Systems, Technical Specification, Hot Participation, Observation and Walkthrough Training

A review of selected records indicated that failing grades on systems examinations were quite common and that remedial training documentation was lacking in this area. The staff walked down plant systems with selected license candidates to determine

operator familiarity with systems. Although the candidates knew the location of major components, they were unable to satisfactorily describe interconnections and system flow paths. Additionally, the candidates exhibited weaknesses in turbine and pump classifications, operating characteristics of turbines and pumps, generator excitation, switchgear layout, and electrical distribution. The staff observed the performance of a select group of license candidates in response to a simulated steam generator tube rupture on the plant simulator. Some weaknesses in operator actions and communication were noted during this evolution which were indicative of inexperience in control room operation. The staff did not consider the observed weaknesses to be unusual at this stage of the applicant's training program. However, it was considered that additional simulator training, systems training, emergency and abnormal procedure training, and normal plant operations training were required to ensure readiness for licensing.

During observations of this simulator exercise, the staff noted several hardware problems with the simulator. Annunciator tones were different from that in the plant's control room. These audible alarms need to be compatible to ensure no confusion on the part of operators. The applicant indicated awareness of this and indicated action would be taken to make the annunciator tones compatible. Nuclear Service Cooling Water (NSCW) valve cycling was noted to be excessive. The operators stated that the simulator valve cycling for these valves was far longer than plant valve cycling. The applicant indicated that a deficiency report had previously been initiated on this problem and that it was programmed for correction. The staff noted that radiation panels were not present in the simulator. The applicant indicated awareness of this and stated that planning was in progress to provide for radiation panels in the simulator. Although this is not considered to be an finding, completion of these simulator upgrades was identified as inspector followup item 424/85-85-51-18.

The applicant had scheduled license candidates for six weeks of hot participation training where the candidates participated as an extra shift person at a similar type operating plant. Additionally, candidates were to participate in six weeks of on shift assignment at Vogtle. In conjunction with the on shift assignment at Vogtle, walkthrough training was conducted for a minimum three-week duration where candidates were acquainted with equipment locations using structured checklists. Time spent in walkthrough training could be counted toward part of the six weeks of on shift assignment. A review of initial walkthrough training checklists indicated several system and building walkthroughs were signed off in a single day. As evidenced by observation of simulator operations and actual system walkthroughs, this training, as conducted to date, does not adequately demonstrate the degree of knowledge or experience necessary for proper plant operation.

The applicant provided new checklists which had recently been issued and which required candidates to walkdown systems with an instructor in a manner which demonstrated adequate knowledge of the systems, as well as component location. These checklists were to be utilized after system turnover to operations, and were to supplement the initial walkthrough checklist. The staff considered that proper implementation of these checklists for all license candidates would substantially help in achieving sufficient knowledge of systems necessary for proper plant operation. The staff also considered that implementation of the new walkthrough checklists should be coupled with a structured program for active participation of all license candidates in preoperational testing and hot functional testing in order to achieve sufficient operational knowledge for proper plant operation. The applicant stated that except for licensed staff personnel, all licensed operators would complete the new systems checklists. The applicant stated that licensed staff personnel would receive systems training which was comparable to that provided with completion of the new systems walkthrough checklists. The applicant acknowledged the staff's comment with respect to structured participation in preoperational testing and hot functional testing. The staff interviewed selected license candidates who had utilized these new systems walkthrough checklists and confirmed that the candidates considered the walkthrough by instructors conducted with these checklists to be thorough and positive, and use of these checklists resulted in development of confidence with respect to systems knowledge. The staff observed a variance in the number of systems each selected candidate had completed. With approximately 40 systems turned over, some candidates had completed in excess of 20 systems while others had only completed as few as 5 systems. It was noted that individuals with little progress were already working overtime and were heavily involved in plant preparations such as secondary hydrostatic testing. There appeared to be no driving force managing completion of this walkthrough program; accomplishment of system walkthroughs appeared to be student initiated. The staff noted that the work load for operations personnel at Near Term Operating License reactors tends to increase geometrically as the project approaches licensing and that if the system walkthroughs were not properly managed to ensure early initiation and orderly progress, such training could be overcome by events and result in an ineffective program. In summary, the staff considered that improvement should be fully implemented for walkthrough training as described below to ensure operational readiness for licensing:

- (a) Provide proper management direction for ensuring orderly completion of new system walkthrough checklists for license candidates.

- (b) If licensed staff personnel are not to be required to complete new systems walkthrough checklists, develop and implement additional systems training for these individuals comparable to that afforded by completion of the checklists.
- (c) Implement a formal structured program for participation in preoperational testing and hot functional testing for all license candidates.

Resolution of concerns with walkthrough and on shift experience training and subsequent evaluation of the applicant's progress in improving this training was identified as an inspector followup item (424-85-51-19). This is considered to be a finding.

Discussions with the Superintendent of Training on March 5, 1986, reflected that the applicant does not consider that licensed staff personnel need the same degree of training afforded by the new systems walkthrough checklists since they consider that the initial walkthrough training satisfied FSAR commitments and was satisfactory. The staff noted that the FSAR states that walkthrough training is a systematic program to become familiar with plant equipment and layout which is to be included with at least 6 weeks of shift experience. The staff considers that the initial training provided by the applicant was not adequate in providing sufficient familiarity with plant equipment and layout and consequently does not satisfy FSAR commitments. The staff considers that adequacy of training in this area is especially important for licensed staff candidates since they are not normally achieving familiarity with systems and equipment during day to day operations associated with Near Team Operating License plants. The staff considers that resolution of this concern should be specifically pursued to ensure that staff personnel have sufficient inplant system and equipment knowledge.

With regard to hot participation, the staff noted that the Vogtle FSAR required that prior to achieving 20% power, applicants for a cold license shall have six weeks of hot participation experience, as defined in Generic Letter 84-16, at a same type plant. During a review of individual training records associated with this training, the staff identified one individual who, during the six weeks of observation training, spent one day at GET, one day working at Vogtle, one day on holiday leave, and one day on vacation leave. This represented approximately one week of the six-week period. The staff considered that the amount of hot participation experience received by this particular individual should be evaluated by the applicant to determine acceptability. Additionally, the applicant should document the results of this evaluation. The applicant committed to perform such an evaluation and completion of this action was originally identified as inspector followup item 424/85-51-20. In a proposed FSAR amendment forwarded to the NRC by letter from Georgia Power Company dated

April 4, 1986, the applicant added a clarification to the FSAR to indicate that hot participation experience would be 216 hours during the 6 week period. In the case of the individual in question, 216 hours was accounted for only after crediting time spent in GET training to the individual's total hours. The Superintendent of Training stated that he considered this to be acceptable. The staff considers that the applicant's conclusions in this matter lack substance but does not consider this particular issue to be significant enough to warrant further consideration. The staff has no further comment and inspector followup item 424/85-51-20 is considered closed.

(3) Instructor Qualification and Instructor Evaluations

NUREG 0737, Item 1.A.2.3 requires that instructors who teach systems, integrated responses, transient, and simulator courses shall demonstrate their competence to the NRC by successful completion of a senior reactor operator examination. Section 13.2.1.3.3 of the FSAR and item 13.2.1.3.3.A of the module 2 commitment matrix do not contain the "systems" section of this NUREG requirement. A review of the applicable training procedures and training schedules indicated that teaching of systems is actually being performed by certified instructors; however, the above references do allow non-certified instructors to teach systems and should be revised in order to properly implement NUREG 0737.

Training procedure 60100-C, Revision 1, contained a statement allowing non-certified members of the training staff to teach licensed personnel in their area of expertise. This exception may be applied to such areas as health physics, reactor theory, or GET, but cannot include the teaching of systems, integrated responses, transient or simulator courses. NUREG 0737, Item 1.A.2.3, also provides that experts on particular subjects may act as guest lecturers in license training without an SRO certification. This exemption for guest lecturers, however, should not apply to full-time or contract instructors of the licensed operator training staff. A review of course records and internal training audits indicated that certified instructors are presently being utilized to teach areas addressed in Item 1.A.2.3 of NUREG 0737 although non-certified instructors had previously taught license candidates very early in the training program. Also refer to paragraph 3.a.(2) of this report for additional information on this subject.

It was noted by the staff that one contract instructor who taught the simulator course and other areas covered under NUREG 0737, Item 1.A.2.3 had never been certified on Vogtle but was certified on a similar Westinghouse plant. Outside of self-study, his training record contained no plant-specific training or evaluation by GPC prior to teaching license candidates. Interviews with license candidates, however, indicated that this particular instructor is one of the most capable and technically proficient on the training staff. In the future, the applicant should provide formal plant specific training and evaluation for instructors certified or licensed at other plants prior to their utilization as initial license or license requalification instructors. This requirement should be procedurally defined, and the training should be concentrated on the differences in the plants and include in-plant and control room familiarization.

NUREG 0737, Item 1.A.2.3 requires that instructors who teach systems, integrated responses, transient and simulator courses be enrolled in appropriate requalification programs. This requirement is essential to ensure that instructors teaching licensee personnel remain technically competent, and that the information provided to students is correct and accurate. Their participation in appropriate requalification programs is also to ensure that they are cognizant of current operating history, problems, and changes to procedures and administrative limitations. Since license instructors often tend to specialize (i.e., teach one or two specific subjects for long periods of time in license or requalification training), they can lose proficiency in other areas in which they are qualified to teach. Licensed and certified instructors should attend all requalification lectures and simulator sessions for which they are not responsible to teach. At the very least, these instructors should be required to successfully complete the lecture examination for the segment of requalification training which they do not teach or cannot attend. This requirement should be proceduralized. To ensure continued proficiency and successful completion of requalification training, these instructors should also be required to satisfactorily pass the annual written requalification examination and simulator performance evaluations. Training procedure 60100-C appears to exempt instructors from taking the requalification examinations, if they conduct comprehensive examinations. Assuming the comprehensive examinations addressed are, in fact, the annual written requalification examination and simulator performance evaluation, exempting instructors who prepare, administer, and grade the examinations is acceptable with certain restrictions. The number of instructors exempted annually should be a reasonable number of no more than two or three. Additionally, the exemption assignment should be rotated annually in order that all licensed and

certified instructors will demonstrate continued proficiency by successfully completing at least one annual written requalification examination and simulator performance evaluation in each two-year requalification cycle. These requirements should be clearly defined in the applicable procedure. Revisions to training procedures covering licensed and certified instructor qualifications and active participation in license requalification training was identified as inspector followup item 424/85-51-21. This is considered to be a finding.

NRC Inspection Report 50-424/85-45 delineated a concern that module 2, sections 6.2.3 and 7.1.2, finding 2-7 did not appear to give an appropriate resolution to the problem of "contract instructors" not being enrolled in a requalification program. The applicant responded to this concern, as documented in NRC Inspection Report 50-424/85-45 that the corrective action of finding 2-7 addressed the fact that "all" SRO licensed or certified instructors would be enrolled in instructor requalification and that "all" included contract instructors. In subsequent discussions with the Superintendent of Training, it was learned that the applicant considered that enrollment in instructor requalification for contract instructors meant literally "instructors shall be enrolled in appropriate requalification programs to assure they are cognizant of current operating history, problems, and change to procedures and administrative limitations," as delineated in an NRC letter from H. Denton to all power reactor applicants and licensees dated March 28, 1980. The applicant considered that this was all that was required and that this was in compliance with NUREG 0737. The staff considers that all certified and licensed instructors (including contract instructors) are required to fully participate in the operator requalification program as previously stated and that the applicant's position on this matter is contrary to the intent of NUREG 0737. This is considered to be a part of the finding associated with inspector followup item 424/85-51-21.

The staff notes that the applicant has included provisions in a proposed FSAR amendment forwarded to the NRC by letter dated April 4, 1986, for contract instructors to participate in requalification only to the extent required to ensure they are cognizant of current operating history, problems, and changes to procedures and administrative limitations. The staff considers these provisions to be unacceptable.

Interviews of license candidates including reactor operators, senior reactor operators, and STAs indicated a high degree of confidence in instructor expertise. Observations by the staff of classroom and simulator training lended support to the conclusion that training instructors for licensed operator candidates

appeared to be well qualified and dedicated. Interviewees indicated a high degree of confidence in contract instructors, as compared to applicant instructors, due to the fact that contract instructors had more plant operation experience. This observation concerning experience among applicant instructors should be self-correcting as the plant becomes operational. A review of the instructors' evaluation practices by the applicant, of both technical skills as well as instructional skills, indicated that they had not been formal or proceduralized in the past. A recent training procedure revision now requires that inspector evaluations be performed semiannually for all license instructors. The staff requested that the applicant provide past instructor evaluations for review. Subsequent to this request, however, a number of these evaluations were discarded by the applicant, who later indicated that a misunderstanding resulted in the loss of these evaluations. The staff cautioned the applicant on the implications of such actions whether advertent or inadvertent and the seriousness of consequences which could result from this type of incident. In the case of the evaluations in question, it was considered by the staff that findings associated with these evaluations would not have contributed significantly to the results of the inspection effort and the staff recommended that no further action be taken with regard to the incident. The staff did review a small number of recent informal instructor evaluations. One deficiency noted on several of the evaluations was the presentation of incorrect or "made-up" information to students when the instructor did not know the correct information or response. It is essential to the safety of the plant, as well as the credibility of the instructor, that only correct and accurate information be provided. An instructor who is not sure of, or does not know the answer to a student's question must recognize his lack of immediate knowledge and commit to obtain the correct answer and provide feedback to the students. Evaluations of instructor teaching techniques and of technical proficiency should be performed by staff personnel who are qualified in each of these specific areas. The minimum acceptable qualifications for these instructor evaluators should be procedurally defined. The acceptable standards for each criterion of evaluation should also be procedurally defined under performance based training. Additionally, the addition of a section for instructor response on the evaluation form could be beneficial in assessing the effectiveness of the evaluation. The staff was unable to identify procedural requirements for retention of instructor evaluation records. The staff considered that these evaluation records should be retained for a reasonable time frame to allow evaluative trending.

Although this item is not considered a finding, subsequent review of the semiannual evaluations of instructors who teach license or license requalification training was addressed as inspector followup item 424/85-51-22. The applicant has subsequently

established procedural requirements for retention of instructor evaluations pending development of program evaluation summaries in procedure 60504-C. The staff considers these requirements to be adequate and considers inspector followup item 424/85-51-22 closed.

(4) Mitigation of Core Damage Training

NUREG 0737, Item II.B.4, requires applicants to develop and implement a program to teach the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged to Shift Technical Advisors (STAs), and operating personnel from the plant manager through the operations chain to the licensed operator. This training shall include all the training indicated in Enclosure 3 to NRC letter from H. R. Denton to all licensees and applicants dated March 28, 1980. Additionally, managers and technicians in the instrument and control, health physics, and chemistry departments are required to receive training commensurate with their responsibilities.

During the in office review of module 2, documented in NRC Inspection Report 50-424/85-45, the staff noted several concerns with mitigation of core damage training. These concerns, which were presented to the applicant, are delineated below. Additionally the applicant's response as documented in NRC Inspection Report 50-424/85-45 is presented.

- ° (NRC Question) In section 4.1.1.2 of module 2, training for managers and superintendents was described as being limited to GET and emergency plan training. Beyond that, training is at the direction of the General Manager-Nuclear Operations. This description does not appear to be acceptable since applicable managers and superintendents must have training for mitigating core damage per NUREG 0737, Item II.B.4.

(Resolution) The applicant stated that this was an editorial oversight in section 4.1.1.2 of the readiness review module and that the training was actually required as reflected in table 1.2-1 of the module. A review of this table reflected appropriate managers and superintendents were designated for mitigating core damage training. The applicant stated that it was not considered to be a readiness review program element to make editorial changes to the readiness review module.

- ° (NRC Question) In table 1.2-1 of module 2, there was an apparent inconsistency in dates given for mitigating core damage training program development; e.g., December 1985 was the date given for General Manager, Manager Unit Operations, Maintenance Supervisor and Health Physics Superintendent, while April 1985 was the date given for Superintendent of

Regulatory Compliance, Superintendent-Nuclear Training, Operations Superintendent, and Shift Supervisor. The FSAR stressed that training for mitigating core damage is "not a separate program but is integrated into licensed personnel training..." and that personnel "will complete training in mitigating core damage commensurate with their responsibilities" (FSAR Section 13.2.2.3). This same comment was noted in table 1.2-6 for instrument technicians and chemical-radiation technicians. The staff did not understand the reason for the different program development dates for this training nor how this related to the FSAR Section 13.2.2.3 commitment. The staff noted that FSAR Section 13.2.2.3 stated that the plant manager would complete training in mitigating core damage commensurate with his responsibilities. The staff inquired if it was the applicant's intent to reduce that training required for the plant manager to less than the delineated in Enclosure 3 of NRC (H. R. Denton) letter of March 28, 1980.

(Resolution) The applicant stated that there is one program development date for one initial program and that the differences in dates is an editorial error. The applicant stated that the plant manager would receive all of the training delineated in Enclosure 3 of NRC (H. R. Denton's) letter of March 28, 1980 since that is "commensurate with his responsibilities." Although initial training is to be conducted as a single program, the applicant stated that provisions are underway to individualize training for specific replacement personnel where NUREG 0737, Item II.B.4, recognizes this as appropriate.

- ° (NRC Concern) Table 6.1-1 of module 2 reflected that the applicant's readiness review team did not inspect FSAR Section 13.2.2 (Training for Mitigating Core Damage for Supervisors). As noted herein, the staff had some concerns that in some cases, NUREG 0737, Item II.B.4, requirements may not be properly implemented.

(Resolution) The applicant noted this concern and indicated that the readiness review was not intended to do a 100% review. The applicant indicated that this area was not specifically inspected since the applicable procedure, 00742-C, was in draft status and not issued.

During the onsite inspection of training programs, the staff reviewed the training for mitigation of core damage which was being administered. In reviewing training for STAs and operating personnel, the staff noted that the course which had been developed and implemented at Vogtle was an eight-hour course which appeared to be primarily self-study. Although the staff did not observe this course and evaluate content, they had definite

concern as to whether this subject could be covered to the depth intended in just eight hours. The applicant maintained that the course was adequate and covered sufficient material for licensed personnel. While the course may cover all general areas listed in NUREG 0737, Item II.B.4 (this was not verified by the staff), the question remains as to whether an eight-hour course which appears to be primarily self-study can provide the same level of training as the forty-hour lecture courses taught at most other utilities. These courses normally contain lecture sessions, discussions, problem solving and calculations, simulator training, and use of the process computer. The Westinghouse vendor course on mitigation of core damage is also a comprehensive forty-hour course. The shortest course observed by the inspectors in Region II, prior to Vogtle, contained 16 hours of lecture. This licensee had to justify to the NRC in the FSAR why 16 hours was adequate because past guidance has been 80 hours of combined training between mitigation of core damage and heat transfer, fluid flow, and thermodynamics. With 8 hours of mitigating core damage training and 40 hours of thermo-fluid flow training, Vogtle is nearly 50% below this guideline. The applicant should compare the content, depth of coverage, and training effectiveness of their abbreviated program with the requirements of Item II.B.4 and with either the Westinghouse mitigation of core damage course or courses taught at other utilities. Effectiveness could be determined by administration of a comprehensive examination such as that given by Westinghouse at the end of the course. The interviews with ROs and SROs indicated that additional training in mitigation of core damage was needed. Specifically, the interviewees indicated that increased lecture and simulator usage was needed, coverage of smaller accidents in addition to the major design basis accidents was needed, and more emphasis on the applied aspects of instrumentation and control usage was needed. The staff was informed that the last group of SRO candidates who participated in cold license training did not receive mitigating core damage training due to lack of time. Although the use of training and qualification checklists should ensure that all license candidates will have this training prior to submittal of license or certification applications, the staff had concern with the applicant's apparent lack of formal programming for this training. This concern in the area of training for mitigation of core damage is considered to be a finding and resolution of concerns associated with course content adequacy, assurance that all required personnel receive this training, and formal implementation of this training in the licensing curriculum was identified as inspector followup item 424/85-51-23.

Followup of this item and verification of full and adequate training for mitigation of core damage will be accomplished as part of the Near Team Operating License inspection program. In the area of nonlicensed training the staff reviewed mitigation of core damage training for instrumentation and control technicians.

The staff noted that the instrumentation and control training program required a course in mitigating core damage. During the inspection, this course was in developmental stages and had not been implemented. The staff was informed by the instructor who was developing the course that it was going to be approximately eight-hours long and that INPO guidelines for training to recognize and mitigate the consequences of core damage were being used to develop the course. The staff was concerned that the course which was under development appeared to lack practical factors such as demonstration of the various actions that may be required to be performed in order to mitigate core damage. Additionally, the planned eight hours of instruction appeared, on the surface, insufficient to adequately cover all the needed subject material. Further evaluation of this training, once developed, was addressed as inspector follow-up item 424/85-51-28. The applicant stated that an evaluation of this training was conducted by the applicant in a letter to the NRC from Georgia Power Company dated March 13, 1986. The applicant concluded that the course conformed to NUREG 0737 and compared favorably to other utilities. In an interoffice memorandum dated March 3, 1986, the applicant indicated that practical factors for instrument and control technicians would be contained in regularly scheduled classes on instruments and systems. The staff considers that inspector followup item 424/85-51-28 is closed based on the applicant's evaluation. Further review in this area for adequacy of implementation and training content will be followed through inspector followup item 424/85-51-23.

(5) Technical Specification and Emergency Planning Training

The staff noted that Vogtle had not established and implemented a formal Technical Specification training course. Technical Specification training in the applicant's cold license training program appeared to have been addressed in systems training and only to the degree that the system limiting conditions for operation (LCOs) were discussed as each system was taught. Interviews with license candidates indicated that this LCO training was primarily self-study. Technical Specifications are a very complex and interrelated set of requirements and often require judgmental interpretation. Training should not be limited to single system LCOs, but should include the structure and general use, definitions, motherhood action statements, administrative requirements, record keeping and action statement tracking, and the use of tables, particularly in the instrumentation section. Open workbook sessions should be conducted with the emphasis on the loss of systems or equipment which affect multiple LCOs and require an SRO to determine which course of action is required. Work sessions should also be utilized to ensure that SROs can utilize the graphs, tables, and formulas, such as those contained in the reactivity control, power distribution limits, and radioactive

effluent sections to determine appropriate actions. Although the STAs may in reality perform most of these calculations and evaluations, it is essential that the responsible SROs also understand and are capable of performing these actions independently.

Interviews with license candidates indicated that they considered that additional Technical Specification training was required prior to licensing and plant operation. They appeared to be most concerned with the proper actions to take where multiple LCOs are involved, and with management's interpretation of various Technical Specification LCOs, action statements, and definitions. Management interpretations of some Technical Specifications will evolve as plant operations progress; however, it would be very beneficial to provide some philosophy input to SROs prior to plant operation. Some areas which might be stressed would include definitions such as "operability," expected course of action when an action statement requires shutdown in a given time frame, interpretation of instrument tables and associated action statements, and interpretation of concurrent multiple LCOs and action statements. Observation of a simulator exercise also indicated a need for additional training in this area. Although the training addressed here is not a regulatory requirement, it can significantly enhance the safe and efficient operation of the plant and has been addressed as a licensing issue at most Near Term Operating License reactors in the recent past. The staff noted that an increase of licensee event reports (LERs) has been observed in Region II which are directly attributable to Technical Specification training deficiencies. Examples include failure to recognize entry into LCOs or to complete action statement requirements, particularly where multiple LCOs or the loss of supporting systems to equipment not directly covered by Technical Specifications are involved. Additionally, examples include failure to adequately meet time constraints with respect to LCO action statements, and misinterpretation of Technical Specification action statement requirements. The need for development and conduct of additional Technical Specification training prior to licensing and plant operation is not considered a finding due to the applicant's prior plans to improve this training. This is, however, addressed as inspector follow-up item 424/85-51-24 and will be reviewed during the Near Term Operating License inspection program.

In the area of emergency planning training the staff noted that the training was only a two hour overview of emergency planning and considers that more training was required in event classification, notifications, and other applied aspects of emergency planning. The applicant stated that license candidates would

receive more training in the emergency plan operating procedure during interim requalification. Evaluation of the adequacy of this training when administered was identified as inspector follow-up item 424-85-51-25 which will be accomplished during the Near Term Operating License inspection program.

(6) Shift Technical Advisor (STA) Training

A review of Vogtle's FSAR, implementing procedures, and qualification checklist; interviews with three STAs; and a review of selected training records were conducted. The STA training program was noted to be based on the SRO training program. The STA must complete the SRO program and the additional requirements as outlined in procedure 11955-C, Shift Technical Advisor Qualification Checklist. The overall program appears adequate in providing STAs with the required training. However, since the major portion of the training is tied to SRO training, the programmatic weaknesses noted in the license operator training program also apply to STA training.

Interviews with STAs indicated that they considered that the program was providing adequate training with the exception of mitigating core damage training. One STA stated that mitigating core damage training was not conducted for his cold license training group due to a lack of time and that it would be taught at a later date. Other STAs indicated that more training in mitigation of core damage was required with increased lecture and simulator usage time. Additionally, they indicated that smaller accidents should be covered in addition to the major design basis accidents and that more emphasis on the applied aspects of instrumentation and control usage was required. These comments were observed to be the same as those expressed by operators and senior operators interviewed. This concern is already adequately addressed through inspector follow-up item 424/85-51-20.

(7) General Employee Training

The staff conducted a review of the GET program as defined by the FSAR and Vogtle's administrative procedure 00700-C, General Employee Training. Additionally, the staff reviewed GET lesson plans and tests, and observed one class room lecture. The staff noted the following:

- Lesson Plan GE-LP-017, Quality Assurance Orientation, lacks information concerning what employees can do if their reported quality concern is not answered to their satisfaction by the Quality Concerns Program Committee, that is, to report the concerns to higher management or to the NRC. The GET instructor informed the staff that this information is provided to the students even though it is not specified in the lesson plan.

- The staff observed a lecture entitled, Exposure Control (Part 1). The lecture was well prepared, the class was attentive, and the material presented was accurate and informative. Additionally, the instructor administered a quiz at the end of the lecture to reinforce the material covered.
- There were seven GET final examinations which are administered to different GET classes, each consisting of 100 site specific and INPO-generated questions. A review of the questions reflected that all of the site-specific questions were the same in each of the final examinations and approximately 80% of the INPO-generated questions were the same. Each final examination consisted of three subsections and each subsection had a makeup examination associated with it. The makeup examinations associated with two of the subsections were noted to have the same identical questions as each of the final examinations (all site-specific questions). The makeup examination associated with the third subsection had the same identical site specific questions and approximately 80% identical INPO-generated questions as each of the final examinations. The staff was informed that the GET question bank was being expanded to include a greater variety of questions. The staff considered that the final examinations, and particularly the makeup examinations, need to be more diverse in question makeup when administered at different times in close proximity to one another. This concern has already been addressed as a finding in paragraph 3.d.(1) of this report.

(8) Nonlicensed Training

The staff conducted a review of Vogtle's FSAR in the areas of instrumentation and control, mechanical maintenance, and electrical maintenance training. Additionally, the staff reviewed the proposed maintenance training implementing procedures, interviewed six maintenance personnel, and observed an electrical maintenance class in session. The staff noted that the Vogtle FSAR allowed maintenance personnel who met the education and experience requirements of ANSI N18.1-1971 to perform independent tasks if they completed GET and one week of on-the-job (OJT) training. A review of the proposed one week OJT checklist indicated it was an administrative procedure review list. It did not require the maintenance personnel to perform or demonstrate ability as maintenance technicians or repairmen. Additionally, the FSAR stated that those maintenance personnel who did not meet the ANSI N18.1-1971 requirements must have completed initial training in order to demonstrate their ability to perform specific tasks. The initial training for instrument and control technicians consisted of approximately five weeks; for mechanical

maintenance technicians, approximately six weeks; and for electrical maintenance technicians, approximately nine weeks of training. The staff expressed the concern that the training requirements specified in the FSAR for ANSI N18.1-1971 experienced personnel and non-ANSI N18.1-1971 personnel was very minimal and would not ensure an adequately trained maintenance force. As discussed in paragraph 3.c.(1)(a) of this report, the SER addressed the concern of non-ANSI N18.1-1971 qualified personnel and stated that the provision for an alternate qualification program was unacceptable to the staff because such a program has not been described or justified. The applicant should revise the FSAR to eliminate reference to an alternative qualification program or provide a detailed discussion of the alternate program to demonstrate a level of equivalency to ANSI N18.1-1971.

Discussions with the applicant and a review of the proposed implementing training procedures indicated that the training program was intended to be performance based and in excess of commitments listed in the FSAR. This program would require ANSI N18.1-1971 qualified personnel and non-ANSI qualified personnel to complete certain training and demonstrate maintenance abilities prior to performing independent job duties. The program was still in developmental stages and the complete program structure had not yet been determined at the time of the inspection. It appeared that once developed, this program would ensure adequate training for maintenance personnel. The staff considered that resolution of the open item in the FSAR would resolve the concern with the alternate qualification program for non-ANSI N18.1-1971 personnel. The staff further considered that training specified in the FSAR for ANSI N18.1-1971 personnel was inadequate and in essence represented no training. The applicant was informed that action should be taken to delineate acceptable training criteria in the FSAR for all nonlicensed personnel. This concern is considered a finding and resolution of this concern was identified as inspector followup item 424/85-51-27. A review of a proposed amendment to the FSAR forwarded to the NRC by letter dated April 4, 1986, indicates that the commitment for initial training of nonlicensed personnel appears to be satisfactory for those individuals indicated in FSAR Table 13.2.2-1 for support of preoperational testing. The staff still has concern that the provisions for nonlicensed replacement personnel to normally complete initial training requirements within one year of assignment to the position is not completely adequate. Additionally, the staff finds that it is unacceptable for initial training to not be required for nonlicensed supervisors and foremen. Inspector followup Item 424/85-51-27 will remain open pending resolution of these concerns.

Other observations of the applicant's nonlicensed training program included:

- A 125V DC switchgear class was observed in progress. The class was performing a breaker alignment in a laboratory setting. The laboratory facilities were excellent. The instructor was well prepared and the course material appeared adequate.
- Interviews with the maintenance personnel indicated that they considered the training provided by the training center to be adequate and beneficial and aided them in performing their required jobs. Additionally, the personnel considered that the systems training was very useful to them.

The staff reviewed the applicant's training program for quality assurance (QA) auditors contained in corporate procedure QA-03-02, Training and Personnel Qualification. The procedure was reviewed for completeness, adequacy for development of competent auditors, and for implementation of the appropriate requirements of ANSI N45.2.12-1977. The staff noted that phase VI of the training program in QA-03-02, which covered continuing education, had not been implemented at the site. Although the minimum requirements of ANSI N45.2.12 for continuing education were met and were documented in individual records pursuant to another procedure, QA-03-01, the staff considered that the current program did not meet QA-03-02 requirements and additional actions were required to either revise or implement these requirements. Although this concern is not considered to be a finding, resolution of this concern was identified as inspector follow-up item 424/85-51-30.

The staff noted that the Quality Assurance certification examination questions for both phase III and phase V examinations were not revised with each new group to which examinations were administered. The staff considered it unacceptable in that different groups should not be administered the same test questions at different times which are in close proximity. Additionally, the staff identified that a completed phase V certification examination was accidentally released to an individual at the completion of his oral evaluations and was being maintained at the individual's desk. The staff considered that this represented a lack of control of examination security which was particularly significant since the same examination was administered from group to group. Additionally, this type of incident precluded the maintenance of adequate training records. These types of concerns have already been addressed as findings in paragraph 3.d.(1) of this report. Resolution of these concerns was identified as inspector followup item 424/85-51-31.

FSAR Section 13.2.2.1.10, Quality Control Training Program, described the requirements for qualification and certification of quality control (QC) inspectors. The staff had two concerns with this section. As stated, the FSAR allowed new inspection personnel to become certified without meeting the requirements of ANSI N45.2.6-1978 by completing an initial training program. The Quality Control Superintendent agreed with the staff that this was inadequate and stated that the wording would be changed such that the requirements of ANSI N45.2.6-1978 would be met in all cases. Additionally, there was concern over who should attend the initial training program. The FSAR commitments only required personnel who did not meet the level 1 inspector verification requirements to attend initial training. However, the initial training program covered basic system training, training on fire protection, and codes, standards, and procedures training. The staff considered that this type of training should not be eliminated from the curriculum of certified personnel coming from another industry or another vendor's plant. The applicant agreed with the staff and committed to require all permanent QC employees to receive this training. The staff performed a records review of 25% of the operations' QC personnel and found their training to be well documented and complete. The staff also reviewed procedure 85001-C, Qualification and Certification of Quality Control Inspection Personnel; 85002-C, Quality Control Departmental Training; and 85003-C, Training and Qualification of Quality Control Non-Destructive Testing Personnel. These procedures appeared to adequately meet the requirements of ANSI N45.2.6. The staff interviewed several of the QC inspection personnel. All individuals indicated that they had sufficient training when they had entered the section. Current training on systems and components was considered to be highly satisfactory by the interviewees. The staff identified that in the past, the same certification by examination tests were given to different groups at different times. The applicant indicated that because of concern with individuals discussing examination questions, action was taken to revise the tests monthly. The potential for individuals being administered the same examination at different times in close proximity to one another still exists; consequently, it is not considered that monthly revision of the test is sufficient. The staff considers that use of an expanded question bank and question rotation in making up examinations is necessary to ensure proper examination administration. These concerns with FSAR commitments and examination administration for QC personnel are considered additional examples of findings previously identified in paragraph 3.d.(1) and resolution of this concern was identified as inspector follow-up item 424-85-51-32.

The applicant's commitments on the training of professional personnel were documented in FSAR Section 13.2.2.1.11, Engineering and Technical Support. The staff reviewed the current lesson plans for the engineer training program. These lesson plans

appeared to be adequate and appeared to meet the FSAR commitments; however, there were no procedures developed to govern this program. The applicant had designated procedure 0743-C for future preparation in order to delineate requirements for engineering and technical support training. The staff noted that no pass/fail criteria existed for either individual courses or the entire program. Examples were noted where individuals had received less than 50% on weekly tests. There was no indication of these individuals having received remedial training or reexamination. Other examples were noted where grades in the low to mid seventies were received for the entire training program. There was no indication of whether this constituted satisfactory training completion or whether remedial training and reexamination was required. The staff noted that all examinations from previous courses had been returned to the individuals or destroyed. As stated previously, the staff considered that completed examinations used to determine qualification of an individual are training records that are required to be maintained in accordance with 10 CFR 50, Appendix B, and Technical Specifications. These concerns were identified as inspector follow-up item 425/85-51-33. In a letter to the NRC dated January 10, 1986 the applicant stated that an interoffice memorandum dated January 9, 1984 and followup discussions between the training department and Superintendent of Engineering established criteria for passing the course. The applicant stated that individual performance in the course was used as a basis for conducting annual personnel performance evaluations and for making job assignments. Individuals obtaining below 70% were not given credit for the course. The staff considers that training requirements should be established in procedures and should address all of the concerns associated with engineer and technical support training. Again, these types of concerns have already been addressed as findings in paragraph 3.d.(1) of this report.

(9) Feedback of Operating Experience

During the in office review of module 2, the staff questioned how feedback of operating experience per NUREG 0737, Item I.C.5 was factored into the operations requalification training program. The staff noted that it did not appear to be identified as a necessary part of training in FSAR Section 13.2.1.3.2.2. In response, the applicant stated that procedures 60005-C, 00709-C, and 10016-C governed required reading for operations personnel and factoring of operating experience into the requalification program. The staff identified the need for further NRC review in this area as inspector followup item 424/85-45-03. During the onsite training inspection, a review of procedures and interviews with maintenance personnel was conducted to determine the status of operating experience training for the maintenance department. Procedure 00414-C, Operations Assessment Program, requires that Regulatory Compliance provide operational experience information

to each department. Each department is required to evaluate the information to determine the appropriate actions. A review of maintenance procedures indicated that a method for ensuring that operational experience information was provided to all maintenance personnel had not been developed. The staff was informed by the Plant Engineering Supervisor that a procedure was under development for the maintenance department. The operational experience information would be covered by a maintenance newsletter that would be produced on a routine basis, and this information would be presented to all maintenance personnel. The staff was informed that the above process would be proceduralized to ensure that a program is implemented and that the presentation of the information would be documented. Although not considered a finding, the verification of program implementation and an evaluation as to its effectiveness was addressed as inspector follow-up item 424/85-51-29. Training department procedure 60005-C, Incorporation of Changes in Training Material and Simulator, is the implementing procedure for ensuring that feedback of operating experience is factored into future lesson plans. The incorporation of this information is documented to ensure it receives the appropriate actions.

Feedback of operating experience will be reviewed as part of the Near Term Operating License inspection program.

(10) Efforts Towards INPO Accreditation

The staff reviewed the applicant's efforts towards INPO accreditation in the area of licensed operator training. The applicant had identified approximately 700 training modules for licensed operator training and had approved approximately 14% of the task analyses associated with these modules and approximately 2% of the modules themselves at the time of the onsite inspection. Administrative procedures governing job task analysis and performance based training were, for the most part, in draft format; however, if implemented as conceived, it appeared that these procedures would ensure systematic development of task analysis and performance based training materials. The staff noted that most of the material being developed was in a self-paced format which appeared to lend itself more easily to self study rather than lectures. Since the majority of modules approved dealt with either on-the-job or simulator training, and since the quantity of material approved at the time was so small, there was insufficient data to draw conclusions from this observation. The applicant stated that they intended to maintain objectivity with regard to selection of instructional methods. The staff considered that further NRC evaluation of instructional methods employed by the applicant was warranted following additional development in this area. Although this is not considered to be a finding the necessity for this evaluation was identified as inspector follow-up item 424/85-51-34.

The staff reviewed implementation of course evaluations with the Superintendent of Training. The applicant stated that implementation of course evaluations had not yet been established; however, it was intended, conceptually, that the following elements be included in course evaluations:

- Trainee course evaluations
- Feedback from job incumbent through job survey questionnaires. The applicant indicated that this could not be accomplished until incumbent expertise through job experience was in place
- Feedback from supervision of job incumbents by utilizing them as special training committee members involved in course evaluation
- Independent evaluations of course effectiveness by corporate training personnel
- Instructor evaluations

The staff considered these elements were positive attributes for course evaluation. Additionally, the staff considered that once conceptually established, techniques and methods for evaluation of courses and documentation of results of these evaluations should be defined in procedures. Establishing criteria for course evaluation in procedures was originally identified as inspector follow-up item 424/85-51-35.

In a letter to the NRC dated March 13, 1986, the applicant stated that a new procedure, 60504-C, had been established to provide, in part, for training program evaluations. A review of this procedure reflected that adequate criteria for course evaluation had been proceduralized. Inspector followup item 424/85-51-35 is considered closed.

e. Section 5.0 - Audits and Special Investigations

This section summarized the results of audits and special investigations of operations training and qualification performed in 1985 by the applicant's Quality Assurance department and readiness review team, by General Physics Corporation, and by INPO. This section of the module was reviewed for information only.

f. Section 6.0 - Program Verification

This section of the module described the activities undertaken by the applicant to ascertain that operations training and qualification programs adequately implemented licensing commitments. The verification plan was developed and implemented by the operations training and qualification readiness review team. The applicant stated that four members having approximately 102 combined years of nuclear, fossil, and quality control experience (including 58 years involving training and qualification), reviewed 199 commitments in developing the plan. One hundred and thirty eight commitments were chosen for indepth review based on the existence of an approved procedure implementing the commitment or a training program governed by the commitment.

The commitment matrix within the module was the foundation for the applicant's verification plan. An implementation matrix was developed by the applicant which correlated each commitment to an associated implementing document (either approved or in draft). Additionally, the applicant ascertained that approved procedures incorporated designated commitments and that training programs complied with commitments, even in cases where implementing procedures had not yet been issued. The applicant's readiness review confirmed and documented the effectiveness of the operations training and qualification programs, but also identified specific concerns that were identified as four readiness review findings. These findings were in addition to those identified in section 5.0 of the module from earlier readiness review inspections. Corrective action responses for the findings were prepared by the applicant, reviewed by the readiness review team, and found to be acceptable.

In evaluating the verification process and results obtained by the readiness review team, the staff conducted a two phase review. Phase 1 involved a review of approximately 75% of the applicant's readiness review checklist packages in order to determine if the methodology and concerns noted by the individual applicant reviewers on their checklists were properly reflected in section 6.0 of the module. Phase 1 also included interviews with the readiness review team leader and one other member of the readiness review team. Based on this review, the staff considers that the module adequately addressed the methodology and concerns of the individual reviewers.

Phase 2 of this evaluation involved a review of each of the applicant's verification process findings and the proposed corrective actions for these findings. Based on this review the staff noted the following concerns:

- ° Readiness review finding 2-5 addressed corrective actions associated with failure to demonstrate adequate simulator testing following modifications performed after initial acceptance testing. The staff notes that inspector followup item 424/85-54-02, delineated

in paragraph 3.c.(1)(c) of this report, additionally addresses the fact that implementing procedures still do not provide for retesting of simulator response pursuant to Regulatory Guide 1.149.

- ° Readiness review finding 2-7 addressed, in part, the non-participation of some certified or licensed instructors in an appropriate requalification program and addressed corrective actions associated with resolving this finding. NRC finding n, delineated in Section 4 findings of this report, addresses additional inadequacies in this area which are required to be resolved.
- ° Readiness review finding 2-8 addressed significant administrative deficiencies and weaknesses associated with administration of training programs and addressed corrective actions associated with this finding. In light of additional training program administrative weaknesses and deficiencies noted by an NRC assessment team and documented in NRC Inspection Report 50-424/85-51, the staff considered that the applicant's response, corrective actions, and acceptance of readiness review finding 2-8 may have been weak and not appropriately justified. This concern was addressed as a part of inspector followup item 424/85-5i-01. In a letter dated January 10, 1986, the applicant stated that Georgia Power Company believed the acceptance of readiness review finding 2-8 was justified. The applicant indicated that readiness review's stated purpose was to conduct a self-assessment of work processes and verification of compliance with regulatory commitments. The only regulatory guidance governing records of training and qualification simply stated that records of training and qualification shall be maintained. Records were evaluated by readiness review and weaknesses were identified as stated in finding 2-8. Resolution of the finding was considered adequate to ensure that records of training and qualification were maintained and were identifiable and retrievable. Record retention requirements of the scope and magnitude indicated by the NRC assessment team were not considered necessary by readiness review to document training and qualification in view of the existing regulatory guidance.

The staff understands the applicant's position that at the time of readiness review the scope and magnitude of record retention requirements was bounded by what the applicant considered would satisfy regulations. As a result of concerns associated with the training assessment, the applicant has since committed to actions, and, in many cases, implemented actions which, if properly implemented, should resolve the types of deficiencies noted. The staff has no further comment and inspector followup item 424/85-51-01 is considered closed.

- o Readiness review finding 2-9 identified the fact that many procedures which were to implement commitments associated with training currently in progress were not approved and that several examples were noted where commitments were not adequately addressed in approved procedures. Corrective actions associated with this finding were addressed. The staff had the same concern with the fact that many training procedures were not approved for in progress training and considers that this may have been contributory to the large number of findings associated with the training assessment documented in NRC Inspection Report 50-424/85-51. The staff notes that progress is currently being made in the issue of training procedures. Additionally the staff considers that, except where training is specifically addressed as a finding for weaknesses, this condition did not result in inadequate training. The staff also notes that NRC finding c., delineated in Section 4 findings of this report, addresses another example of commitments not being implemented appropriately in approved procedures.

With exception of the concerns delineated herein, responses and corrective actions associated with the applicant's readiness review findings appeared to be appropriate. Where further action is required to completely resolve the concerns addressed herein, the specific problems are adequately addressed as NRC findings in Section 4.0 of this report and will be evaluated further during the Near Term Operating License inspection program.

g. Section 7.0 - Assessment

This section of the module contained a summary of open corrective actions associated with the readiness review findings. Additionally, statements assessing the acceptability of the readiness review from the readiness review quality assurance representative, the General Electric technical consultant group, the nuclear operations organization, and the readiness review board were included. Resumes of the personnel instrumental in the development of module 2 were also included. This section was reviewed for content only with no comment by the staff.

4. Findings

The findings listed below (findings a. through o.) were identified from the staff's evaluation of this module. The staff considers that findings b, e, g, i, j, l, m, and n, as discussed below, are significant and could have had an impact on operator and plant licensing. In the case of findings b, e, g, i, and j, below, the staff notes that corrective actions have been established or initiated by the applicant which, if properly implemented, should result in adequate resolution of the finding. With regard to findings l, m, and n, below, the staff notes that resolution is still pending and consequently should be incorporated into the plant licensing process.

Findings a, c, d, f, h, k, and o, below, are considered to be deficiencies which have minimal safety significance but which, if not already closed, should be evaluated further to preclude safety problems. Finding o. is also identified as an open item in SSER 2.

The findings have been identified as inspector followup items and SER open items and resolution of the specific findings will be addressed during the Near Term Operating License inspection program unless designated as closed in the finding.

Finding a. (IFI 424/85-51-35 Closed) Module 2 did not address the FSAR 13.2.2.9 commitment for evaluation of training programs. Procedure 60504-C has since been established and proceduralizes adequate criteria for course evaluation. Inspector followup item 424/85-51-35 is considered closed.

Finding b. (IFI 424/85-45-01 Closed) Ten examples were noted where the FSAR and module 2 failed to properly identify regulatory requirements and guidance. These concerns have since been adequately addressed in a proposed FSAR amendment forwarded to the NRC by letter dated April 4, 1986, or are otherwise addressed by other findings in this report. Inspector followup item 424/85-45-01 is considered closed.

Finding c. (IFI 424/85-51-36 Open) Commitments with regard to training on radiation protection, ALARA, and operational risk were not in the procedure designated in the implementation matrix but were in uncontrolled lesson plans associated with that procedure.

Finding d. (IFI 424/85-51-02 Open) Training procedures failed to delineate a comprehensive course of study for initial licensing training.

Finding e. (IFIs 424/85-51-03 Open and 424/85-51-04 Open) Training procedures did not require the maintenance and retention of completed examinations as records of individual training. Additionally, the applicant did not intend to retain such records. The applicant has initiated action to resolve this concern.

Finding f. (IFIs 424/85-45-02 Closed, 424/85-51-05 Closed, and 424/85-51-06 Open) Numerous cases were noted where examinations were regraded with no justification given for additional points awarded and, in some cases, no indication of who regraded the examination. Procedure 60001-C has since been revised to adequately establish procedural control for regrading examinations and inspector followup items 424/85-45-02 and 424/85-51-05 are considered closed.

Finding g. (IFIs 424/85-51-07 Open and 424/85-51-08 Closed) Two examples were noted in which examination points had been totaled incorrectly resulting in the recorded grades being higher than they actually should have been. In one case proper totaling of points resulted in the candidate's grade being reduced from passing to failing. With regard to inspector followup item 424/85-51-08, the individual who failed has been formally removed from

teaching duties requiring SRO certification pending renewal of his certification. This action is considered sufficient for closure of inspector followup item 424/85-51-08. With regard to item 424/85-51-07, the applicant has initiated actions to resolve this concern.

Finding h. (IFI 424/85-51-10 Closed) Training procedures failed to delineate criteria for remedial training and retesting of individuals failing major training. Procedure 60001-C has since been issued to delineate procedural guidance for remedial training. Inspector followup item 424/85-51-10 is considered closed.

Finding i. (IFIs 424/85-51-11 Closed, 424/85-51-26 Closed, and 424/85-51-32 Open) Examples of license candidates requalification examinations, GET examinations, and Quality Control examinations were noted to be essentially unchanged and yet were administered to different groups of people at different times in close proximity. A review of procedures 60001-C and 00700-C reflects that this concern has been resolved for license candidate examinations and GET examinations by establishment of procedural requirements. Inspector followup items 424/85-51-11 and 424/85-1-26 are considered closed.

Finding j. (IFI 424/85-51-12 Closed) Weaknesses were noted with the security associated with maintenance of license candidate examinations. Procedure 60001-C has since been revised to establish adequate procedural guidance for examination security. Inspector followup item 424/85-51-12 is considered closed.

Finding k. (IFI 424/85-51-15 Closed) Training procedures failed to establish adequate requirements and guidance for updating lesson plans. Procedure 60502-C has since been revised to provide for adequate control of training material. Inspector followup item 424/85-51-15 is considered closed.

Finding l. (IFI 424/85-51-19 Open) Improvements are required in walk-through training for license candidates to ensure operational readiness for licensing. This includes providing proper management direction for ensuring orderly completion of system walkthrough checklists for operations department personnel, ensuring adequate training for staff personnel who are license candidates, and implementing a formal structured program for participation in preoperational testing and hot functional testing for all license candidates.

Finding m. (IFI 424/85-51-21 Open and SSER 2 open item) Training procedures failed to establish adequate guidance for qualification and requalification of licensed and certified instructors. This finding includes the fact that contract instructors are not required to fully participate in the operator requalification program.

Finding n. (IFI 424/85-51-23 Open and SSER 2 open item) Improvements are required in training for mitigation of core damage in order to assure course content adequacy, full participation by all required personnel, and formal implementation of this training.

Finding o. (IFIs 424/85-51-27 Open, 424/85-51-31 Open, 424/85-51-32 Open, 424/85-51-33 Open and SSER 2 open item), Inadequacies were noted in nonlicensed and quality control and quality assurance training in the use of unspecified alternate qualification programs in lieu of fulfilling ANSI-N18.1 qualifications or ANSI-N45.2.6 qualifications, in the initial training required for ANSI-N.18.1 qualified personnel, in record retention, and in administration of examinations.

5. Conclusions

- a. Based on interviews with Georgia Power Company employees at all levels, the staff has concluded that these employees are committed to Georgia Power Company and to Vogtle and are complimentary of the quality of training they have received. The staff considers this to be a noteworthy observation at this stage of pre-operation which is indicative of quality instruction and instructors.
- b. The staff has concluded that resource allocation for training space, materials and staffing appears to be satisfactory.
- c. The staff has concluded that the Vogtle licensing commitments delineated within module 2 were correct with respect to the FSAR but in some cases did not fully describe FSAR commitments. Additionally, examples were noted where regulatory requirements were not adequately addressed in either the FSAR or module. The staff considers that with the exception of specific examples noted in conclusion g, below, and with the exception of remaining concerns with nonlicensed training, the applicant has initiated corrective actions which should resolve these concerns if properly implemented.
- d. The staff has concluded that, with the exception of specific weaknesses in systems, walkthrough, mitigating core damage, and Technical Specification training; training content, quality of training provided, and effectiveness of training presentations appeared to be satisfactory. Those courses noted above as being weak are further addressed in conclusions g. and h. below.
- e. The staff has concluded that efforts towards INPO accreditation have been initiated and appear to be progressing in a proper direction.
- f. The staff has concluded that serious administrative deficiencies existed with training program implementation. The applicant has initiated corrective actions which should resolve this concern if properly implemented. These actions should be completed by the applicant and reviewed by NRC Region II prior to plant licensing.
- g. The staff has concluded that the concerns delineated below, which are addressed as NRC findings in Section 4 of this report, have not yet been satisfactorily resolved and that resolution of these concerns

should be integrated into the plant licensing process. These concerns will be specifically addressed in the Near Team Operating License inspections performed by Region II.

- ° Finding m - Resolve inspector followup item 424/85-51-19 associated with walkthrough training and participation in preoperational and hot functional testing.
 - ° Finding n - Resolve inspector followup item 424/85-51-21 associated with concerns of qualification and requalification of licensed and certified instructors including contract instructors.
 - ° Finding o - Resolve inspector followup item 424/85-51-23 associated with the need to improve training for mitigation of core damage.
- h. The staff has concluded that the applicant's planned activities associated with improving training for Technical Specifications and Emergency Planning should be completed and evaluated by NRC Region II, as identified in inspector followup items 424/85-51-24 and 424/85-51-25, prior to plant licensing.

6. References

- a. Vogtle Electric Generating Plant, Readiness Review, Module 2, Operations Training and Qualification.
- b. August 2, 1985 letter from D. O. Foster, Georgia Power Company, forwarding module 2 for NRC evaluation.
- c. NRC Inspection Report 50-424/85-45 issued November 6, 1985.
- d. NRC Inspection Report 50-424/85-51 issued December 13, 1985.
- e. January 10, 1986 letter from D. O. Foster, Georgia Power Company forwarding responses to concerns noted in NRC Inspection Report 50-424/85-51.
- f. March 13, 1986 letter from D. O. Foster, Georgia Power Company forwarding additional supplemental information in response to concerns noted in NRC Inspection Report 50-424/85-51.
- g. April 4, 1986 letter from J. A. Bailey, Georgia Power Company, forwarding proposed changes to FSAR Section 13.2 to the NRC for review.