UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report No.: 50-302/85-01

Licensee: Florida Power Corporation
3201 34th Street, South
St. Petersburg, FL 33733

Docket No.: 50-302 License No.: DPR-72

Facility Name: Crystal River 3

Inspection Conducted: January 14-18, 1985

Inspector: H Christensen for 4-25-85
S. D. Stadler, Lead Inspector Date Signed

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Approved by: C. A. Julian 4-25-85
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Division of Reactor Safety

SUMMARY

Scope: This special unannounced training assessment involved 280 inspector-hours on site in the areas of licensed operator replacement training, requalification training, general employee training, support engineer training, maintenance training, quality control inspector training, shift technical advisor training, and management training. Certain weaknesses were identified in each training area assessed with major programmatic deficiencies having been identified in the general area of licensed operator training and retraining.

A systemmatic reduction in the scope of the approved licensed operator requalification program was apparent. The reductions in program scope were not submitted to the NRC for review and approval resulting in an overall failure to implement the requalification program as approved by the NRC. All licensed personnel were not required to fully participate in the requalification program, and licensed instructors were regularly exempted from the attendance of requalification lectures and the participation in annual requalification examinations.

The licensee had failed to adequately assess the performance and competency of licensed personnel including the evaluation of actions to be taken during abnormal and emergency conditions. Semiannual evaluations of operator competence had not been properly performed in some cases in that the required frequency was not met, results were not evaluated by management, and instructors evaluated themselves.

Procedures had not been developed or implemented to control the preparation, administration, and grading of examinations and quizzes utilized to demonstrate adequate performance in license training and retraining. As a result, numerous deficiencies were identified in reviewed examinations including invalid questions having been deleted after administration, ungraded examinations, unsigned examinations, and unsubstantiated upgrading of failed examinations.

In addition, the licensee had failed to ensure that individuals successfully completed all required training prior to the administration of the NRC license examination or applying for a license renewal. Numerous discrepancies identified in the training records of a group of license candidates who were administered license examinations in December 1984, support this conclusion. Also, a review of past license renewal applications indicated that training deficiencies such as the failure to complete 12 weeks on shift, or to successfully complete required requalification training, were not being specifically noted on the license applications.

A significant weakness was identified in the licensee's record storage and retrieval system. The system did not permit the assembly of an individual's complete training file in a reasonable period of time. Retrieval and review of a complete training file required several man-hours with many of the microfilmed documents being illegible and many of the hard copy documents having been destroyed or lost. This inadequacy resulted in the review of individual performance by the utility's training staff being difficult, and the audit of training records by the licensee's QA staff or the NRC for completeness and accuracy being nearly impossible.

Finally, multiple examples of the licensee's failure to adequately implement commitments concerning NUREG 0737 requirements and a previous violation indicated a general lack of management control over the tracking and maintenance of commitments made to the NRC.

In summary, the failures (1) to fully implement the requalification program, (2) to conduct valid and regular evaluations of operations personnel, (3) to adequately control the preparation and grading of examinations, (4) to maintain adequate and readily retrievable training records, (5) to provide indepth QA audits for training records and training program requirements, and (6) to take adequate corrective actions on identified deficiencies are evidence of a breakdown in the management controls necessary to ensure the performance and qualifications of licensed personnel.

Five violations, four unresolved items, and several inspector follow-up items were identified.

Violation 302/85-01-01 - Failure to take adequate corrective action to prevent recurrence of violations as required by 10 CFR 50, Appendix B, Criterion XVI. Three examples are discussed in paragraphs 5.a, 7.a and 9.b.

Violation 302/85-01-02 - Failure to implement an NRC approved requalification program for licensed individuals as required by 10 CFR 50.54 (i-1) and 10 CFR 55, Appendix A. Four examples are discussed in paragraphs 5.b, 7.a, 9.a, and 9.b.

Violation 302/85-01-04 - Failure to follow training procedures as required by 10 CFR 50, Appendix B, Criterion V. Three examples are discussed in paragraphs 7.b, 10, and 14.

Violation 302/85-01-07 - Failure to implement NUREG 0737 training items as required by NRC order. Three examples are discussed in paragraphs 7.c, 11.b, and 16.

Violation 302/85-01-09 - Failure to maintain training records and conduct adequate audits as required by 10 CFR 50, Appendix B, Criteria XVII and XVIII. This item is discussed in paragraph 8.

Unresolved Item 302/85-01-05 - Training record discrepancies. Three examples are discussed in paragraphs 6.b, 7.e, and 9.c.

Unresolved Item 302/85-01-08 - Missing instructor training records. This item is discussed in paragraph 7.d.

Unresolved Item 302/85-01-13 - Revision of training department procedures. This item is discussed in paragraph 17.

Unresolved Item 302/85-01-14 - Shift Technical Advisor does not hold a degree. This item is discussed in paragraph 18.

Inspector Follow-up Item 302/85-01-03 - No simulator evaluations for license candidates. This item is discussed in paragraph 6.a.

Inspector Follow-up Item 302/85-01-06 - Verify correctness of Confirmation of Action items. This item is discussed in paragraph 6.c.

Inspector Follow-up Item 302/85-01-10 - Incomplete engineer training. This item is discussed in paragraph 12.

Inspector Follow-up Item 302/85-01-11 - Incomplete management training. This item is discussed in paragraph 13.

Inspector Follow-up Item 302/85-01-12 - General employee training improvements as discussed in paragraph 15.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*E. M. Howard, Director, Site Nuclear Operations
*P. F. McKee, Plant Manager
*G. L. Boldt, Nuclear Plant Operations Manager
*J. P. Alberdi, Manager, Site Nuclear Operations Technical Services
*J. R. Kraiker, Nuclear Operations Superintendent
*D. H. Smith, Nuclear Maintenance Superintendent
*W. K. Bandhauer, Nuclear Safety Supervisor
*W. L. Rossfield, Site Nuclear Compliance Specialist
*J. L. Bufe, Site Nuclear Compliance Specialist
*B. E. Crane, Manager, Nuclear Operations Training Manager
*K. R. Wilson, Supervisor, Site Nuclear Licensing
*J. T. Telford, Director, Quality Programs
*K. F. Lancaster, Manager, Site Nuclear QA
*D. D. Betts, Supervisor, Quality Audits
*B. J. Hickle, Assistant Operations Manager
*J. R. Cuneo, Nuclear Operations Training Supervisor

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

NRC Resident Inspectors

T. Stetka, Senior Resident Inspector
J. Tedrow, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 18, 1985, with those persons indicated in paragraph 1 above. The licensee acknowledged their understanding of the findings and took no exceptions.

The question of proprietary information was not discussed at the exit interview. During a telephone conversation of April 22, 1985, FPC management told Region II representatives they knew of no proprietary material provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

One violation was identified for failure to take adequate corrective action to prevent recurrence of previous violations.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraphs 6, 7, 9, 17 and 18.

5. Licensed Operator Requalification Training

References:
(a) 10 CFR 55, Appendix A, Requalification Programs
(b) 10 CFR 55, Operator's Licenses
(c) 10 CFR 50.54 (i-1), Conditions of Licenses
(d) 10 CFR 50, Appendix B, Criterion XVI, Corrective Action
(e) Crystal River Technical Specification 6.4.1, Training
(f) Crystal River FSAR, Section 12D, Requalification Training Program
(g) Training Department Procedure (TDP) 203, Licensed Operator Requalification Program
(h) Crystal River Operating License Amendment No. 35, November 20, 1973, and Amendment No. 42

The inspector reviewed requalification training records, interviewed a number of training staff and licensed personnel, and observed three requalification classroom lectures. The requalification records were difficult to retrieve and assemble and contained numerous deficiencies as detailed in paragraph 8 of this report. Interviews with licensed operators indicated that the quality of requalification training had improved in the last year. The new lesson plans, with clearly stated objectives, and increases in training staff appeared to have contributed to this improvement. The operators and supervisors interviewed complimented the technical expertise of the licensed instructors, and classroom observation by the inspectors demonstrated these compliments to be well founded.

Crystal River has no plant-specific simulator. The licensed personnel interviewed indicated that they would like to have a readily accessible plant-specific simulator for requalification training. Due to the numerous differences between the Crystal River Plant and the Babcock and Wilcox (B&W) Simulator, as well as the simulator's distant location in Lynchburg, Virginia, a plant-specific simulator would prove to be a definite asset to the requalification and replacement license training. There are a number of required evolutions which can not be adequately performed on the B&W

simulator due to the number of differences in plant controls and systems. This provides the licensee with some degree of difficulty in evaluating individual performance, and in ensuring that licensed operators are well prepared to handle all plant operating contingencies.

One area of concern was the absence of a requirement for remedial training and retest when a requalification quiz is failed. Reference (g), revisions 1 and 2 indicate that a quiz failure is simply an indication to the individual of a weakness that will be tested again on the annual exam or when the lecture is repeated again a year or two later. A quiz may be on a specific concept or system which may not be tested again in the annual requalification examination since it is a relatively small sampling of overall knowledge. Waiting until the next annual lecture for training on the specific item, or placing the total burden for correcting the deficiency on the individual, is a poor practice. It is essential that individual weaknesses identified through requalification quizzes be promptly resolved, and that upgraded knowledge in the area of the weakness be assured by the licensee. This is necessary to ensure satisfactory completion of requalification training and continued safe plant operation. Remedial training and retest requirements for requalification were previously required by the NRC approved requalification program, and is further addressed in violation (302/85-01-01) below.

a. Failure to Take Adequate Corrective Actions to Resolve a Previously Identified Deficiency and to Fulfill a Commitment to the Commission

Reference (a) allows that, in lieu of re-examination every two years, licensed operator competence may be demonstrated by participation in a requalification program that has been approved by the Commission. Reference (c) requires that any change in an approved requalification program which results in a decrease in the scope, time allotted for the program, or frequency of conducting different parts of the program be approved by the Commission. Contrary to the above, the licensee reduced the scope of the requalification program described in Section 12 of the FSAR as approved by the Commission in reference (h). This decrease was accomplished between October 11, 1981, and January 10, 1985, through revisions 0 through 2 of reference (g). Changes implemented through reference (g) which represent a decrease in scope include the deletion of the following requirements:

(1) The utilization of the results of the annual requalification examination to determine topics to be emphasized in the following years requalification schedule.

(2) Personnel who fail a requalification exam with a score of less than 80 percent shall be provided with remedial training and be re-examined. This 80 percent requirement had been reduced to 70 percent, and no remedial training or retest was required.

(3) Prior to the license renewal date, the Nuclear Plant Training Manager will review the licensee's entire training record and evaluate the level of understanding.

(4) Instructional sessions and emergency drills shall be conducted by the Shift Supervisor for all shift members to ensure that information contained in abnormal and emergency procedures is covered annually. The Operations Superintendent shall conduct emergency drills for the Shift Supervisor.

(5) Individuals who do not complete procedure reviews and operations assigned by the end of a quarter will be walked through the operations by the Shift Supervisor utilizing the procedure.

(6) A minimum of 40 hours of requalification lectures shall be attended by each licensed operator and back-up operator per year.

(7) Individuals who fail the annual requalification examination shall be removed from licensed duties.

(8) All 12 pages of the requalification program description contained in the FSAR were deleted. This was accomplished by an FSAR amendment in July 1984.

In 1979, the licensee received a violation (302/79-23-01) for failing to obtain Commission approval prior to decreasing the scope of the approved requalification program through the implementation of a procedure. In response to this violation, the licensee committed to not change the approved requalification program in the future without prior Commission approval. Reference (d) requires that in the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined, and corrective action is taken to preclude repetition. The identification and cause of the condition and the corrective action taken shall be documented and reported to the highest levels of management. The failure to take and to document adequate corrective action to preclude a repetition of this previous violation, and to fulfill the resultant commitment to the Commission, is a violation (302/85-01-01).

b. Failure to Implement the Approved Licensed Operator Requalification Program

Reference (a) allows that in lieu of re-examination every two years by the Commission, competence be demonstrated by satisfactory completion of a requalification program approved by the Commission. Reference (c) requires that within three months after issuance of an operating license, the licensee shall have in effect an operator requalification program which shall, as a minimum, meet the requirements of reference (a). Reference (e) states that "A retraining and replacement program for the facility staff shall be maintained under the direction of the Nuclear Plant Manager and shall meet or exceed the requirements and

recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR, Part 55." The Crystal River Operator Requalification Program was approved by the Commission under License Amendment Nos. 35 and 42.

During a previous NRC inspection (302/83-04), the licensee indicated to the inspector that the requalification program in Section 12D of the FSAR had been submitted to the Commission for review and approval. The inspector compared this requalification program with implementing procedure TDP 203 and noted several inconsistencies between the two as Inspector Followup Items (IFIs). In an annual FSAR update implemented by the licensee on July 2, 1984, the 12 pages of previously approved requalification training described in reference (f) were replaced by a single statement in FSAR Section 12.2.3.4 stating that requalification training meets all requirements of 10 CFR 55, Appendix A, and ANSI-N18.1-1971. A program should define how the regulations are going to be implemented including responsibilities, subject matter, course length, and pass/fail criteria. The single statement contained in the FSAR does not constitute a requalification program description, and the licensee failed to submit this change to the requalification program to the Commission for approval. Procedure TDP-203, which has been utilized as the requalification program since the FSAR amendment, was never submitted for Commission review and approval.

Reference (b) Section 33.a.4 requires that an applicant for license renewal provide a statement that during the term of his current license the applicant has satisfactorily completed the requalification program for which the operator license is sought. Satisfactorily completed means that the applicant has been administered the annual examination, has participated in the lecture series, has participated in on-the-job training, has been evaluated by supervision regarding performance during abnormal and emergency situations, and has participated in all other portions of the approved requalification program. Reference (b) Section 10.7.d requires that each application or statement shall contain complete and accurate disclosure as to all matters and all things required to be disclosed. If the applicant has not completed all portions of the approved requalification program, those portions <u>not</u> completed should be enumerated in the application for license renewal. In addition, the facility management should indicate what action has been taken, or is being taken, to compensate for the nonparticipation.

Contrary to all of the above, the licensee has not fully implemented the requalification program as approved under reference (h), and has not ensured that each licensed individual has completed all portions of the program prior to license renewal. In addition, the licensee has not specified on the license renewal applications which portions of the approved program have not been completed and what actions have been taken to resolve the deficiencies. It is essential that required training not completed by an individual be included in the license renewal application since the Commission does not require the applicant to furnish details of his participation in the program. It is expected

that the applicant has fully participated in the program, as approved by the Commission, unless otherwise stated.

This failure to implement the approved requalification program and to ensure that licensed individuals successfully complete the program prior to license renewal is a violation (302/85-01-02).

Examples of this violation include the following:

(1) Licensed instructors, who are considered by the facility management to be backup licensees, have been routinely exempted from both the annual requalification lectures and the annual requalification examinations. Additional details regarding this area are contained in paragraph 7, Instructor Qualifications.

(2) Attendance at scheduled requalification lectures on operational experience feedback has been voluntary for licensed individuals with no attendance taken, no examinations, and no requirement to make-up lectures missed. Additional details regarding this area are contained in paragraph 11, Operational Experience Feedback.

(3) Procedures have not been established to ensure that requalification lectures, which are unavoidably missed, are made up by rescheduling the individual or by some other method. In addition, the licensee renewal applications have not listed lectures missed, even for an individual that had not attended lectures for seven consecutive months.

(4) Examinations have not been provided for each requalification lecture, and remedial training and re-examination have not been required for individuals failing lecture quizzes.

(5) Systematic evaluation of the performance and competency of licensed operators and senior operators has not been performed at the prescribed frequency nor in the prescribed manner. Additional details regarding this area are contained in paragraph 9, Testing and Evaluations.

(6) The Operations Superintendent and/or the Training Manager have not conducted an adequate review of each applicant's training file prior to license renewal application to detect deficiencies in requalification training, testing, evaluations, and records. Additional details regarding this area are contained in paragraph 8, Records, and paragraph 9, Testing and Evaluations.

(7) Records indicate that some licensed individuals have not completed assigned quarterly procedure reviews and have not been walked through the procedures by the Shift Supervisor as required.

(8) Between July 2, 1984, when the approved requalification program was deleted from the FSAR section 12D and the time of this inspection, the licensee did not have an approved requalification program in effect. License renewal applications during the period did not reflect this deficiency.

6. Replacement License Training

References: (a) Training Department Procedure (TDP)-204, Senior Reactor Operator Training Program

(b) H. Denton letter on Qualification of Reactor Operators dated March 28, 1980

(c) Training Department Procedure (TDP)-202, Replacement Operator Training Program

a. The replacement operator and senior reactor operator training programs are divided into five steps including:

(1) Classroom Training

(2) On-Shift Training

(3) Reactor Training

(4) Simulator Training

(5) U. S. NRC Examination

Interviews with licensed personnel and the success rate on NRC license examinations indicate that this training is effective. The on-shift section of the training requires three months or 60 working days on shift to perform plant evolutions and reactivity changes. This section of training for replacement operators and senior operators also meets the requirements of reference (b) for three months on shift as an extra man. A review of the documentation of this training for several individuals provided some difficulty in determining whether the number of required days had been completed. The form utilized (Attachment 2 to references (c) and (a)) is designed more to record evolutions completed than to document time on-shift. In addition, there were no procedurally defined core of evolutions required to be performed by all license trainees. One license trainee had only five in-plant evolutions documented during license training, and part of those evolutions were balance of plant.

Section 5.2.4 of references (c) and (a) requires that simulator training include normal, abnormal, and emergency transient operations and a startup certification examination. This simulator training is

conducted on the B&W simulator by B&W simulator training instructors. The inspectors reviewed the simulator training records for several licensed operators. In addition to the startup certification, B&W performs these evaluations of each trainee and documents each evaluation item on the three checklists as satisfactory or unsatisfactory. For one individual record reviewed, two of these evaluations were never performed, and the third had several significant items and the overall rating marked unsatisfactory. Areas which were marked by B&W as unsatisfactory included:

(1) Understands and follows emergency operating procedures.
(2) Understands annunciator alarms and responds with proper corrective action.
(3) Demonstrates understanding of interrelationship of plant system.
(4) Recognizes instrument trends and uses them to control the reactor.
(5) Can predict plant response to specific maneuvers or casualties.

The licensee considers these evaluations to be unofficial and indicated that they normally send their own staff to the simulator to evaluate each trainee performing these evolutions; however, no FPC training representative observed the performance of those evolutions by this individual. The licensee also stated that they consider this non-specific simulator to be only marginally applicable due to numerous differences from Crystal River. For this reason, they do not consider these evaluations to be significant. Since the B&W evaluations for this individual were not utilized, and all of the evaluations in attachment 3 of reference (c) were not required to be performed in-plant and evaluated, it is not clear what criteria was used to ensure that he could perform normal, abnormal, and emergency evolutions prior to certification to write for an NRC license. This matter will be reviewed during future inspections and is an inspector follow-up item (302/85-01-03).

b. Inconsistencies and Deficiencies in the Training Records of the December 1984 License Replacement Class

A review of the training records for the license replacement group which wrote for NRC operator and senior operator licenses in December 1984, revealed several inconsistencies and discrepancies. Examples in this area included:

(1) Four individuals who failed comprehensive weekly examinations were given a make-up examination. The make-up examination was never graded prior to writing for the NRC examination and still had not been graded at the time of this inspection.

(2) An individual who failed an oral board on March 9, 1984, was given a second oral board which he passed. The original board was made up of three training staff members and one member of the operations staff. The second oral board consisted of only one member, a non-licensed training staff supervisor. TDP-203 requires that

an oral board consist of at least two instructors and one supervisor. This item is an example of a violation (302/85-01-04 - Failure To Follow Procedures).

(3) An individual failed an oral board on August 20, 1984. The scores were substantially upgraded by follow-up questioning by a single unlicensed training staff supervisor, and the grade changed to passing.

(4) The examination test record for weekly examination RO-6 for an individual was whited out on one category and on the overall grade. The grade for that category was changed from 78 to 88 percent and the overall grade was changed to greater than 80%, but the changes were not reflected in the examination cover sheet, nor was justification provided for these changes.

(5) A make-up examination for examination RO-1 which was administered to one individual was never graded.

(6) An individual's oral walkthrough conducted on December 4, 1984, was never graded, and there was no indication of who had performed the walkthrough.

(7) Several individuals' records indicate that they did not complete all of the required 12 weeks on shift as an extra RO or SRO.

The items listed above and other related deficiencies will be collectively identified as an unresolved item (302/85-01-05) pending additional review by the NRC.

c. Confirmation of Action Letter

In reference to the above concerns, the NRC issued a Confirmation of Action Letter (50-302/85-02) on January 29, 1985. The letter confirmed the understanding that Florida Power Corporation will complete the following actions:

(1) Recertify to the NRC that the operator and senior operator applicants examined by the NRC in December 1984, are qualified pursuant to 10 CFR 55.10(a)(6). This recertification will be based upon verification of the completion of all applicable hot license training and experience requirements; review and evaluation of hot license training and experience requirements; review and evaluation of all written and oral audit examinations; and resolution of all identified training deficiencies. Licenses for individuals who passed the NRC examinations will be withheld pending receipt of this recertification.

(2) Conduct a quality assurance review of Crystal River operator training procedures and activities and meet with NRC in Region II to discuss the results of this review.

The future verification of the actions addressed in the Confirmation of Action Letter will be an inspector follow-up item (302/85-01-06).

7. Instructor Qualifications

References:
(a) 10 CFR 55, Appendix A, Requalification Programs
(b) Technical Specifications, Section 6.4.1, Training
(c) NUREG-0737, Item I.A.2.3
(d) H. Denton letter on Qualifications of Reactor Operators dated March 28, 1980
(e) December 15, 1980, letter from FPC to NRC on NUREG-0737 items
(f) February 21, 1983, letter from FPC to NRC on NUREG-0737 items
(g) September 15, 1980, letter from FPC to NRC on NUREG-0737 items
(h) FSAR, Section 12D, Revision 3
(i) Training Department Procedure (TDP)-203 - Licensed Operator Requalification Training Program
(j) Plant Policy Statement 84-01
(k) 10 CFR, Appendix B, Criterion V
(l) Training Department Procedure (TDP)-107, Revision 0, Training Methods and Evaluations

The inspector observed several classroom presentations by instructors in licensed operator requalification training. Overall, the technique and technical abilities of the instructors observed were very good. A class presented on January 15, 1985, on the integrated control system (ICS) was excellent, and demonstrated a good understanding of a complex control system by the instructor.

a. Failure of SRO Licensed Instructors To Attend License Requalification Lectures and to Participate in the Annual Requalification Examinations.

Reference (a) requires "that each licensed individual must demonstrate his continued competence every two years in order for his license to be renewed. Competence may be demonstrated, in lieu of re-examination, by satisfactory completion of a requalification program which has been approved by the Commission. Periodic requalification for all licensed operators is necessary for the personnel to maintain competence, particularly to respond to abnormal and emergency conditions." References (b) and (c) require that instructors shall be enrolled in an appropriate requalification program to assure that they are cognizant

of current operating history, problems, changes to procedures, and administrative limitations.

Contrary to the above, the licensed instructors at Crystal River have not been required to attend requalification lectures except for those which they were responsible. This exemption included the training on operational experience required by reference (d). FSAR section 12.2.3.4 requires that "all licensed personnel will participate in the requalification training program. The program consists of preplanned lectures, quizzes, self-study, and annual written exams." In reference (g), FPC stated that the licensed nuclear operator instructors and supervisors are enrolled in the operator requalification program. In reference (f), the licensee stated that "the instructor requalification program is the same as the license operator requalification program". There is nothing in the regulations, or in applicable correspondence, which provides exemption from active participation in requalification. This blanket exemption is significant since SRO licensed instructors are considered by the licensee to be back-up licenses in the event of a strike by represented operators. The failure of licensed personnel to attend requalification training was previously cited as a violation (302/79-23-02) in 1979. Failure to correct this violation is another example of a violation (302/85-01-01).

The licensee has also exempted all licensed instructors from taking the annual requalification examinations. References (h) and (i) only allow exemptions for those instructors who prepare or grade the annual examination. This type of exemption, when applied to all licensed instructors, is unacceptable. The failure of SRO licensed instructors (backup licensees) to attend requalification training lectures and to take the annual requalification examinations is another example of violation (302/85-01-02 - Failure to Implement the Approved Requalification Programs).

b. Failure to Implement Procedures to Perform Semi-Annual Evaluations (twice per year) of Instructors.

Reference (i), section 1 and reference (l), section 5.4.2 require that evaluations of all instructors be conducted twice per year and documented on the instructor evaluation forms. Reference (k) requires that activities affecting quality be accomplished in accordance with documented procedures. Reference (j) requires that one evaluation be performed by the Nuclear Operations Support Supervisor and one by another responsible supervisor. The evaluation form provides for rating on various instruction techniques and effectiveness as well as technical competence. Contrary to the above, a review of the training files of several licensed instructors and interviews with training staff members indicated that these evaluations were not being conducted as required. The failure to implement procedures requiring the performance of these instructor evaluations is an example of a violation (302/85-01-04).

c. Failure to Require an SRO License or Certification to Teach Systems, Integrated Response, and Transient Response.

Reference (c) and section 2.d of enclosure 1 to reference (d) require that instructors who teach systems, integrated responses, transient and simulator courses shall demonstrate their competence to the NRC by successful completion of a senior operator examination and be enrolled in an appropriate requalification program. Contrary to the above, at least three instructors without these qualifications taught classes to RO and SRO candidates and licensed operators in 1981 and 1982. One instructor taught a hot license class on August 6, 1981, and an SRO upgrade class on August 27, 1981. This instructor held an RO license and wasn't licensed at the SRO level until March 9, 1982.

Another instructor who held an RO license, and who had been certified at the SRO level by a vendor on a Combustion Engineering plant simulator (Crystal River is a B&W Plant), taught three classes. On September 22, 1981, the licensee received a letter from the NRC accepting this instructor's experience as a basis to teach plant systems, integrated response, and transient behavior at Crystal River 3. As part of the acceptance letter for this individual to teach these areas, the NRC stated that "we also understand that in addition to his participation in the SRO requalification program, that he is scheduled to be administered an NRC SRO certification examination in December 1981." This instructor never took an NRC SRO examination and has not attended SRO requalification training except for lectures which he has taught. In addition, his RO license was allowed to lapse shortly after the waiver was granted by the NRC.

Another RO licensed instructor who left employment for 16 months and returned to Crystal River in November 1982, stated that he had taught systems classes to licensed operators prior to receiving his SRO license on August 19, 1983. The licensee's commitment to this TMI item is contained in reference (e) and confirmed by NRC order dated July 10, 1981. Failure to meet the order by the failure of instructors teaching systems, integrated response, and transient response to hold an SRO license or certification is a violation (302/85-01-07).

d. Missing Training Records

The inspector reviewed the training record folders supplied by the licensee for four licensed instructors. This review identified a number of missing records which indicates that either the training was not conducted or that the training was not documented and placed in the files. Missing training records from the instructor's training files included:

(1) Record of SRO training for one instructor.

(2) Simulator requalification training attendance.

(3) Three months as SRO in the control room prior to writing for an NRC SRO license.

(4) Instructor qualification training course completion.

(5) Operational experience (special) training attendance.

(6) Records of eight hours per quarter on shift to maintain active back-up NRC license.

The determination as to whether these items are just record keeping deficiencies, or whether required training was not completed will be reviewed further as an unresolved item (302/85-01-08).

e. Reference (d), enclosure 1, section 2a requires that applicants for a senior operators license have three months on shift as an extra man observing SRO activities. Contrary to this requirement, an individual who applied for an NRC SRO license in October 1982, had not completed the three months on shift prior to writing for the license. In a letter which accompanied his license application dated October 19, 1982, the licensee stated that all applicants (with the exception of one individual other than the one in question) had a minimum of three months on shift at Crystal River Unit 3 as shift supervisor/control room operators in training, and they had participated in major plant evolutions such as startup, shutdown, control rod exercising, fuel handling, and refueling. This item will be reviewed further as another example of unresolved item (302/85-01-05).

8. Training Records

References:

(a) 10 CFR 50, Appendix B, Criterion XVIII, Audits

(b) 10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records

(c) 10 CFR 55, Appendix A, Item 5.b., Record Maintenance

(d) Technical Specification, Section 6.10.2

(e) Training Department Procedure (TDP) 203, Revision 1, Licensed Operator Requalification

(f) Training Department Procedure (TDP) 109, Revision 3, Training Program Documentation

(g) 10 CFR 50.71(d)(1), Records

The inspectors reviewed a number of training records for licensed operators and instructors. Some of the records reviewed were hard copy files, while others were on microfilm disk storage. The hard copy training files appeared to be in a state of disarray. According to the licensee, some

original training records, particularly pre-1982 records, had been shipped to document control for storage. Document control, in turn, had discarded or lost a number of these original records. Attempts by the inspector to retrieve and assemble a particular individual's total current training file from disk storage were time consuming and very difficult. Single training documentation items such as a test record or a procedure check-off list are entered randomly on microfilm disks along with a multitude of other types of records. To retrieve a single record item, such as an annual requalification examination, requires taking the disk on which that item is stored, advancing to the proper frame and obtaining a print-out. To assemble an entire training record to audit an individual's training status and performance is much more difficult. First, determination must be made of all training items which should be in the individual's file, the items then retrieved from a number of disks and disk frames, and finally, the record assembled in a logical sequence. This makes an audit by training, QA/QC, or the NRC a very demanding task, increases the chances that important record items may not be retained, and causes difficulty in tracking an individual's overall performance or deficiencies. Keeping hard copy record folders in a retrievable storage with defined contents, orderly assemblages, and regular content audits would be a definite improvement. If microfilm storage is utilized, it would be better to place a single individual's training record on microfilm sheets used exclusively for that person. These microfilm sheets, in turn, could be stored in the individual's training folder, thus facilitating easy audit and tracking of progress.

Reference (b) requires that records such as qualifications of personnel shall be identifiable and retrievable. Reference (c) Item 5b and Reference (g) allow requalification training records to be placed on microfilm if they are authenticated by authorized personnel and the microfilm is capable of producing a clear and legible copy. Reference (d) requires that records of training and qualification for current members of staff be retained for the duration of the facility operating license. Reference (e), Section 5.6 lists records which shall be maintained for requalification training and requires that the records be maintained in an auditable manner. Reference (f) requires that all training conducted at the Crystal River facility be performed in a fashion which provides audibility and states "A significant portion of that audibility is the ability to readily produce the records or documents which serve as evidence that training has transpired."

Contrary to all of the above, the review of the training records of licensed operators and instructors identified multiple examples of incomplete documentation, missing or unretrievable entries, numerous discrepancies and errors, and difficult to retrieve or very poor microfilm copies of illegible quality.

The specific record discrepancies were numerous, but examples of the types of problems encountered included:

(1) Missing original hard copy training files which were apparently lost.

(2) Inconsistencies in hard copy training file contents of individuals with apparently the same qualifications.

(3) Ungraded examinations and oral boards or walkthroughs.

(4) Unsigned examinations.

(5) Unsubstantiated examination grade changes.

(6) Incomplete on-shift time sign-offs by backup licensees.

(7) Incomplete quarterly procedure review sign-offs.

(8) Missing documentation for instructor qualifications training.

(9) Missing documentation for three months control room experience prior to writing for NRC SRO license.

(10) Microfilm training records stamped poor copy with sections illegible.

(11) Missing SRO license training records.

(12) Missing records of Engineer Training

A review of the QA/QC audits performed in 1984 did not reveal any note of these multiple record keeping problems. The failure to maintain accurate, complete, legible and readily retrievable records of training as required by reference (b), and to identify multiple record discrepancies during QA/QC audits as required by reference (a) is a violation (302/85-01-09).

9. Testing and Evaluations

References:

(a) 10 CFR 55 Appendix A - Requalification Programs

(b) 10 CFR 55, Operators Licenses

(c) 10 CFR 50, Appendix B, Criterion V

(d) Technical Specification, Section 6.5.2.a, Audits

(e) Technical Specification, Figure 6.2.2

(f) FSAR, Section 12D, Licensed Operation Requalification Training

(g) Training Department Procedure (TDP) 203, Revision 1, Licensed Operator Requalification Training Program

(h) Operations Section Implementation Manual (OSIM) 4, Revision 40, Interface Policies and Practices

(i) Training Department Procedure (TDP) 102, Revision 0, Conduct of Training

The inspectors reviewed a number of licensed operator training records and identified numerous deficiencies in both testing and performance evaluations. The licensee has no procedurally defined method for test preparation, approval, grading, and reviewing. Prepared tests were not required to be reviewed and approved to ensure that questions were correct and complete and that reasonable point values were assigned. The grading of completed examinations was not required to be verified by a second instructor, and the Training Manager's signatures on the test cover page did not, according to the licensee, indicate a review of the test. In addition, the make-up quiz and examinations are, in most cases, identical to the original test which was failed. This type of remedial examination merely tests memory versus actual knowledge in a given area. Procedures and the approved requalification program contained in reference (f) require that the licensee perform semi-annual evaluations of all licensed operators to verify satisfactory knowledge of plant operation, procedures, and systems. These in-plant evaluations have added significance due to a letter from the Commission to FPC Crystal River dated June 30, 1978. That letter required that "evaluations of an individual's competence must be made at your facility, in accordance with Paragraph 4.c (10 CFR 55 Appendix A) since the B&W Simulator does not closely parallel your control board." The performance evaluations for licensed personnel were not being performed at the procedurally required frequency, and several alternate methods of evaluation appeared to have been deleted during recent procedure revisions or have not been properly utilized as follows:

(1) QA/QC audits only a selected sample of licensed operator training records with emphasis on completion of courses rather than performance.

(2) A requirement in the approved requalification program which required the shift supervisors to conduct emergency drills on all abnormal and emergency procedures has been deleted.

(3) The current status of training records makes it very difficult to determine an individual's training performance.

(4) The NRC approved requalification program required that individuals who achieve less than 80% on a requalification exam would receive remedial training and be retested. This requirement helped to ensure that proficiency was maintained in specific areas, but it has since been deleted.

(5) The licensee considers the B&W Simulator a part-task simulator since it is not site specific. Evolutions other than start-ups and shutdowns, such as transients, are not formerly evaluated.

(6) Reference (d) requires an audit at least once per year of the performance, training, and qualification of the entire facility staff. It is difficult to determine how these annual audits are being accomplished in view of the failure to perform the semi-annual evaluations at the required frequency, and the additional factors listed above.

a. Failure To Establish Adequate Examination Controls and To Ensure Satisfactory Completion of Requalification Training

Reference (b) requires that each licensed individual demonstrate his continued competence every two years in order for his license to be renewed. Reference (a) allows competence to be demonstrated, in lieu of NRC re-examination, by satisfactory completion of a requalification program which has been reviewed and approved by the Commission. Reference (b), Section 33b, requires that a statement accompany a renewal license application which verifies that during the effective term of the current license that the applicant has satisfactorily completed the requalification program. On April 4, 1984, a SRO licensed individual at Crystal River was administered a make-up annual requalification examination. The original annual requalification examination had been failed by the individual. This make-up examination was graded at a passing score of 80.3 percent and the individual was allowed to return to his normal position of Operations Superintendent. His NRC SRO license, which would have expired on November 14, 1984, was renewed by the NRC on the basis of the licensee's signed statement that he had successfully completed the licensee's requalification program. The inspectors re-totaled the individual question scores on this make-up annual examination; however, the points totaled 79.1 instead of 80.3. The scores were independently totaled by the licensee resulting in the same grade of 79.1. A minimum of 80 is required to pass the examination.

The licensee voluntarily removed this individual from licensed duties on January 18, 1985, and placed him in accelerated requalification training. On January 22, 1985, the NRC issued a Confirmation of Action Letter (CAL) (50-302/85-01) to Florida Power Corporation. The letter stated that the NRC understands that the licensee has taken or will take the following actions:

> The senior reactor operator who failed the facility's annual requalification examination was prohibited from performing duties requiring a senior reactor operator's license effective January 18, 1985. He will not be returned to licensed duties until he has satisfactorily completed an accelerated requalification program and passed an examination approved by the NRC.

Subsequent to this action, the licensee reviewed the original examination and informed the Region that they had neglected to change the category value for a category in which two questions had been deleted.

In addition, they felt that he should have received an additional one-half point for another question. The two changes, if justified, would have increased the grade to a passing 80.55 percent. The Region considered this regrading inappropriate and required that another requalification examination, approved by the NRC, be administered per the Confirmation of Action Letter.

This examination did not have the procedural quality control that should be employed in the preparation, administration and grading of an examination designed to demonstrate satisfactory completion of a license requalification program, nor the necessary proficiency to perform safety related duties. The licensee stated that TDP 106 "Examination Preparation and Evaluation" was cancelled on January 10, 1985, prior to being written. In Reference (i), section 5.6, it is stated that testing will be an integral part of each training program and examinations will be developed utilizing TDP-106 "Examination Preparation and Evaluations." If this procedure was never written, the licensee has not had an established procedure in place covering this area since at least 1982 when this cross-reference was made.

In the case of this particular examination, there was no review or approval required prior to administration as indicated by two questions that required deletion and another question that was administered with parts of the question missing. Furthermore, the grading of this examination did not receive an adequate review prior to certification to the Commission that the individual had satisfactorily completed requalification training.

Reference (c) requires that activities affecting quality shall be prescribed by documented instructions and procedures and shall be accomplished with these instructions and procedures. Responsibility for the direction of the operation of a nuclear power plant and the determination of continued proficiency as an SRO does affect quality. Reference (g), section 5.9.4.2 requires that any individual failing to meet the required performance standards on the annual requalification examination (greater than 80% overall, no less than 70% on any category) will be removed from shift duties and placed in an intensive upgrade program. This individual had not demonstrated successful participation in the annual requalification program due to his failure of the annual examination. Reference (e) requires that the Operations Superintendent maintain an SRO license. Prior to his license expiration date on November 14, 1985, he should have demonstrated satisfactory completion of the requalification program per reference (a). This failure to establish adequate procedural controls over a licensed requalification examination, and to remove an individual from license duties following examination failure is another example of a violation (302/85-01-02 - Failure to Implement the Approved Requalification Program).

b. Failure To Take Adequate Corrective Actions and Conduct Semi-Annual Evaluations of All Licensed Operators

Reference (c) requires that instructions and procedures be established and implemented. Reference (a), item 4c requires a systematic evaluation of the performance and competency of all licensed operators and senior operators by supervisors and/or training staff members including evaluations of actions taken, or to be taken during actual or simulated abnormal and emergency conditions. Reference (g), section 5.9.2 and reference (h), section F require that semi-annual evaluations (twice per year) of all licensed personnel be performed, and that these evaluations be reviewed by the Operations Superintendent for needed special training, and by the Training Supervisor for implementation of the training, signatures, and placement in the training file. A review of several licensed operator training files and interviews with training staff indicated that these evaluations are not being performed at the required frequency, reviewed for corrective action, nor documented by the procedures. In addition, reference (h) requires that evaluations of backup licenses will be conducted by an SRO assigned by the Nuclear Operations Training Supervisor and submitted to the Operations Superintendent for review and recommendation. The inspector noted numerous instances where backup licensees had performed these evaluations on themselves including the completion of all evaluation criteria, recommended training, and signatures with no review having been completed by the Operations Superintendent. This failure to perform semi-annual evaluations was previously cited by the NRC as a violation (302/79-23-03). The licensee, in response to this violation, committed to complete the semi-annual evaluations by November 30, 1979. 10 CFR 50, Appendix B Criterion XVI states that in the case of significant conditions adverse to quality, measures shall assure that the cause of the condition is determined and corrective action is taken to preclude repetition. The cause in this case, according to the licensee, has been a shortage of personnel to conduct the evaluations.

The failure to take adequate corrective actions to preclude numerous repetitions of a violation cited in 1979 is another example of a violation (302/85-01-01 - Failure to Take Corrective Actions). The failure to conduct and review semi-annual evaluations of licensed personnel by approved procedures, is another example of a violation (302/85-01-02 - Failure to Implement Approved Requalification Program).

c. Test Record Deficiencies

Multiple examples of test record deficiencies in identified licensed operator replacement and requalification training records include:

(1) Unjustified upgraded scores on written examinations.

(2) Unjustified upgraded scores on oral boards and walkthroughs.

(3) Unsigned examinations.

(4) Unsubstantiated examinations, oral boards, and walkthroughs including self-evaluations.

These test record deficiencies will be identified as another example of an unresolved item (302/85-01-05 - Training Record Deficiencies).

10. Lesson Plans

References: (a) 10 CFR 50 Appendix B, Criterion V

(b) Training Department Procedure (TDP)-102, Conduct of Training, Revision 0

(c) Training Department Procedure (TDP)-105, Lesson Plan Development, Revision 4

(d) Training Department Procedure (TDP)-202, Replacement Operator Training Programs, Revision 2

The inspector reviewed the licensee's lesson plans for a number of courses and also observed several classroom presentations. At the time of the inspection, the lesson plans were undergoing revision to a new format which proved to be a substantial improvement over the previous lesson plans. The new lesson plans contained clear and measurable objectives, and a table of contents with a list of figures included. Training aids utilized with the lesson plans had excellent color graphics. The use of references for course sections in the lesson plans was also an improvement.

An outline format for the lesson plans, rather than the detailed text form being utilized, would be easier to teach from. The present format usually results in each instructor developing his own outline and can lead to inconsistencies in material presented on the same subject by different instructors. In addition, consideration might be given to referencing questions to the learning objectives.

Section 5.4 of reference (b), requires that training programs be taught by instructors using approved lesson plans. "These lesson plans are intended to provide continuity, guidance, direction and consistency of program presentation." Reference (c), section 5.5.1 requires that for each course subject, a lesson plan will be provided in accordance with TDP-105. On January 14 and 15, 1985, an inspector observed three separate classes of licensed requalification training in which no lesson plans were utilized and no objectives were provided to the students. An interview with each of these instructors indicated that no lesson plan was available for these classes. Lesson plans have not been written for all license training and license requalification courses including heat transfer and fluid flow. Reference (c), section 5.2 states that "the Nuclear Operations and Nuclear Training Supervisors are responsible for the implementation, documentation, evaluation, and final approval of all Training Department lesson plans." The inspector reviewed several lesson plans which did not have completed approval pages and had been utilized in the classroom.

This failure to utilize approved lesson plans in the conduct of licensed operator training and requalification per approved training procedures in references (b) through (d) as required by reference (a) is another example of a violation (302/85-01-04 - Failure to Implement Procedures).

11. Operational Experience Feedback (Special Training)

References:
(a) NUREG-0737, Item 1.C.5, Procedures for Feedback of Operating Experience to Plant Staff.

(b) H. Denton letter on Qualifications of Reactor Operators dated March 28, 1980, Enclosure 1, Item 2.e.

(c) 10 CFR 55, Appendix A Requalification Programs.

(d) Training Department Procedure (TDP) 203 - Requalification Training, Revision 2

(e) Technical Specifications, Section 6.4.1

(f) FPC letter to NRC dated December 15, 1980, committing to implementation of post TMI related issues.

(g) NRC Order 7590-01 confirming licensee commitments on post-TMI related issues.

a. Reference (a) requires that licensees prepare procedures to assure that operating information pertinent to plant safety is continually supplied to operators and other personnel, and is incorporated into training and retraining programs. Crystal River distributes this type of information by two methods; a required reading list and training classes when necessary. Required reading is distributed by the operations department under the control of the Operations Superintendent. Operational experience material such as Licensee Event Reports (LERs), Significant Operating Event Reports (SOERs), design changes, procedure changes, and NRC Information Notices are distributed to shift personnel and other licensed personnel. A signature page is attached to each required reading package, and applicable personnel are required to read and sign within 60 days of distribution. The completed packages are sent to the training department to be filed as training records.

This area of operational experience feedback was not reviewed in detail during this inspection, but interviews with licensed personnel, and review of completed lists in the training files, indicated the material is being distributed on a timely basis. The STAs have been assigned responsibility for tracking the required reading on shift. Utilization of the STA to provide additional training on required reading subjects including event scenarios and control room walkthroughs based on the reading assignments report could be very beneficial at Crystal River since there is no readily accessible site specific simulator on which to perform these activities.

Operational experience feedback may sometimes require changes in training courses on systems or other areas. In addition, when the concepts of technical issues involved in this material, or the specific applicability to the plant are not readily understandable or apparent, training lectures may be required. Until July of 1984, this special training, as it is termed at Crystal River, was processed and taught on an informal basis without an approved implementing procedure. A review of several months of records for that earlier period indicated only one LER from outside the corporation had been presented as training. This type of training is now procedurally controlled and all required reading information is forwarded to a training supervisor. The supervisor in turn distributes the information to instructors who decide if training is required on the particular item. If training is required, an information dissemination tracking form is completed and the item is then tracked by a computer until the training is completed. This appears to be an effective process, but the information dissemination form should be procedurally controlled.

Information which requires specific training is grouped into the special training category of requalification training in Section 5.3.2.2. of reference (d). A number of licensed personnel interviewed felt that these special training lectures were of little benefit, particularly with one instructor who simply read the information word for word. Since attendance at the special training lectures in requalification training is considered voluntary by the licensee, many regularly exempt themselves. Once training is deemed necessary on operational experience feedback, lesson plans should be developed and actual training provided, as opposed to reading the material to the class.

b. Failure To Provide Operational Experience Feedback Training

Reference (c) requires that all licensed operators and senior operators participate in requalification training. Reference (e) requires that the requalification training meets all requirements of reference (c). Reference (d), section 5.3.2.2, and reference (b), list operational experience feedback as part of requalification training for licensed operators and instructors. As an identified requalification training lecture category, and an integral part of requalification training, this special training requires attendance by all licensed personnel. Contrary to the above, the licensee has made special training lecture attendance voluntary, and has not taken attendance to document who has received the training, or provided make-up training.

Reference (a) requires that operating experience feedback be provided on a regular basis to all applicable personnel. Contrary to the above, the licensee has excluded backup licensees from the required reading list. These backup licensees are eligible to perform licensed duties in the event of a strike by represented operators. Since they are not involved in the day to day control room operations, it is essential that they be included in required reading, and that completion be

documented so that the effectiveness of the feedback program can be regularly audited as per position 7 of reference (a). The licensee's commitment to TMI item I.C.5 is documented in Reference (f) and confirmed by a NRC Order, Reference (g).

This failure to provide operational experience feedback training to all licensed personnel, and to include backup licensees in the required reading program is another example of a violation (302/85-01-07 - Failure to meet NUREG 0737 requirements).

12. Engineer Training

References: Training Department Procedure (TDP)-308, Engineer Training Program

The introduction to TDP-308 specifies the on-site Engineering Training Program for Florida Power Corporation Crystal River Unit 3. At the time of the inspection, however, there were a number of problems with the implementation of this program. The courses listed in the reference have not been completely developed, resulting in engineers at Crystal River having completed no more than approximately 50 percent of the prescribed program. In addition, due to numerous problems with documentation and records retrieval for this training, the licensee could not readily demonstrate how many engineers had completed specific sections of the training, or which engineers had not started the training at all. There was an effort underway by the training staff to determine the training status of all site engineers with a projected completion date of January 31, 1985. A review of this effort once completed will be inspector follow-up item (302/85-01-10).

The training staff estimated that probably less than 40 percent of the on-site engineers had completed the portion of the program which is available. If the goals of the Engineer Training Program as stated in TDP-308 are to be achieved, there are a number of actions which may be required:

a. Once the present training status of all engineers is determined, an orderly method of attendance documentation and record keeping should be initiated.

b. Engineers who were on-site prior to the implementation of this program should receive backfit training with priority to those involved in safety-related functions.

c. Newly assigned engineers should receive the training prior to assuming responsibility for safety-related areas such as surveillance reviews and plant modifications.

13. Management Training

Reference: FPC Human Resources Development Program

A review of the course outlines for the corporate management program contained in the reference indicated that the courses are excellent in content and applicable to nuclear plant management. The courses are categorized into three phases for first line, middle, and upper management levels. Courses in the program which appeared to have applicability to plant management included the following:

a. Interaction Management

b. Science of Skillful Thinking and Communications

c. Report Writing

d. Management Administrative Skills

e. Management and Motivation

f. Kepner Tregoe

g. Managing Human Performance

h. Key to Effective Supervision

i. Supervising the Problem Employee

The inspector reviewed the computer print-out records of the management training courses that had been completed by individuals in various classifications such as shift supervisors and section supervisors. It was noted that there were many variations within given supervisory classifications, both in the number and type of training courses that had been completed. The training staff indicated that there was a problem with inadequate corporate management training quotas to meet the needs of plant supervision. Nominations are made corporate wide each year for available training class quotas. Selection of nominees for course attendance is based on various factors including development needs, program availability, department priorities, and budget. To ensure that each supervisor and manager involved in the operation of Crystal River possess at least the minimum skills necessary for their specific responsibilities, it would be beneficial to identify a basic group of courses to be completed by all individuals in a given position.

The training staff indicated that they are developing a required management training plan for each supervisor and manager. Once developed, these plans will help provide priority on corporate training quotas to ensure plant management personnel receive necessary training on a timely basis. A review of these efforts during a future inspection will be identified as an inspector follow-up item (302/85-01-11).

The inspector reviewed the computer records for aberrant behavior recognition and for emergency plan training. The records indicated that applicable personnel have completed these two areas of training and the annual requalification course.

14. Quality Control Training

References: (a) FSAR, Section 1.7, Quality Program

(b) Plant Procedure QAP-10, Indoctrination, Training and Certification of Materials QC Inspection Personnel, Revision 8

(c) Plant Procedure NQR 01, Training Qualification of Nuclear Quality Control Inspector Personnel, Revision 3

The quality control training program requires all inspectors to meet the requirements of ANSI N45.2.6-1978 for Level II Inspector certification. The inspector conducted a review of the references listed above and selected training records in the Materials and Site Nuclear Quality Control Departments.

The materials quality control training consists of completing a general and technical training qualification list. This list contains topics on basic regulations, FPC program and organization, and general training for materials QC inspectors. On completion of each section, a written examination is administered. A new employee should complete the training requirements of the qualification list within six months. The Materials QC Supervisor may waive certain training requirements upon evaluation of an individual's previous experience or prior certification.

The site nuclear quality control training is similar to material QC training. The site nuclear QC training has training requirement qualification lists, which are sections 1 through 4F of reference (c). The new QC inspector has to complete the training and examinations on these training requirement sections to be qualified as a quality control inspector for multi-discipline inspection activities. The multi-discipline activities include basic regulations, FPC program and organization, general training, electrical inspector technical training, I&C inspector technical training, civil/structural inspector training, fuels inspector training, and radwaste shipments inspector training. Certain training requirements may be waived by the NQC supervisor due to the individual's previous experience or prior certifications. Once an individual is qualified, he receives a certification which is effective for one year. The site nuclear QC inspector is re-evaluated yearly and recertified based on evidence of continued satisfactory performance.

The inspector observed that the present quality control training programs lack the following:

a. An on-the-job qualification guide, so that the supervisor and the QC inspector can track the type of inspections he needs to perform to become certified. The licensee does have an activity log to maintain a record of the inspections each inspector has performed, but it does not list all required inspections for qualification.

b. A training program for qualifying and advancing Level II inspectors to Level III.

c. A program for formal training (i.e., lectures and classroom instructions). The QC supervisors do have their inspectors attend select courses provided by the training department in the maintenance area.

d. An established requalification program for these inspectors. The QC department re-evaluates the inspectors on a yearly basis for recertification, but requalification training is not included.

The inspector reviewed two material QC inspector training records. Both records contained new training requirements qualification lists which were not completed. The inspector was informed that the qualification lists were reissued for the material QC inspectors to complete. The inspector observed that tests were given for each topic that had been completed by the individuals.

The inspector conducted a review of three site nuclear QC (NQC) inspector training records. The inspector noted that one NQC inspector's technical training requirement was waived based on previous experience and prior certification. The NQC inspector was certified as a Level II inspector on December 31, 1983. A review of the individual's training record revealed that he had had no prior experience or certification in the I&C discipline.

10 CFR 50, Appendix B, Criterion II as implemented by reference (a), section 1.7.1.2 requires that a program be provided for the indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

Contrary to the above, an NQC inspector was I&C certified prior to having technical training as required by procedure NQC 1, Training and Qualification of Nuclear Quality Control Inspector Personnel. This is another example of a violation (302/85-01-04 - Failure to Implement Procedures).

15. General Employee Training (GET)

References: (a) FSAR, Section 12.2.3.1, General Employee Training

(b) Training Department Procedure (TDP)-301, General Employee Training Programs, Revision 1

The inspector conducted a review of the references listed above along with the GET lesson plan, test materials and selected training records.

General Employee Training is offered at two levels at Crystal River. Green badge training is for those workers who require access to the protected areas and non-radiation controlled vital areas. A green badged individual cannot enter the radiation controlled areas unless escorted by a yellow badged employee. Yellow badge training is for personnel who have access to the protected and vital areas and work in areas controlled for radiological protection purposes.

Green badge training includes plant organization and administration, physical plant description, plant security and security safeguards, industrial safety, quality assurance, radiation protection and emergency procedures. The yellow badge training includes green badge training and additional training for workers who perform their jobs in radiologically controlled area.

The inspector observed portions of both categories of training. Most of the GET is accomplished with video tapes followed by classroom discussion by an instructor. The overall quality of the tapes is good, and the instructor portion is helpful in reinforcing the material presented by the video tapes.

The inspector observed that the following topics were absent from GET training.

a. A statement of plant policy for when and how individuals should report observed potential problems to QA.

b. The safety training video informs individuals to report safety problems, but it does not tell them the organization or individual that should receive the report.

Another area of concern is GET testing. The training department has only one test for each of the categories of training. When an individual fails a test, he is retrained in that area and then administered the same test. This method of testing does not test knowledge as much as memorization of the answers to the test.

GET was judged to be acceptable, however additional improvements are recommended. Improvements to the licensee's GET program will be examined during a future inspection and will be identified as inspector follow-up item (302/85-01-12).

16. Maintenance Training

Reference: (a) FSAR, Section 12.2.3.7, Technical Training

(b) FSAR, Section 12.2.4.3, Maintenance Section Retraining

(c) Training Department Procedure (TDP)-306, Nuclear Electrician Training Program, Revision 2

(d) Training Department Procedure (TDP)-309, Nuclear Electrician Training Program, Revision 2

(e) Training Department Procedure (TDP)-310, Nuclear Technical Support Technician Training Program, Revision 3

(f) Maintenance Procedure (MP)-601, On-The-Job Training of Maintenance Shop Personnel, Revision 1

(g) Administrative Instruction (AI)-600, Conduct of Maintenance, Revision 26.

(h) NUREG-0737, Item II.B.4, Mitigation of Core Damage

A review of the above references was made to assure that the licensee met requirements of NUREG-0737, Item II.B.4 and commitments made in the FSAR. The inspector also conducted interviews with six maintenance technicians. The maintenance training areas reviewed were electrician, mechanic, technical support technician and on-the-job (OJT) training.

The maintenance training program is divided into three categories of training; fundamental programs, plant specific programs and requalification training programs. The fundamental programs contain General Employee Training, systems training, basic procedures, first aid and various fundamental courses for the different maintenance disciplines. The plant specific programs contain specific in-depth courses on plant equipment, such as reactor protection, engineering safeguards, emergency/main feed pumps and emergency diesel generators. The requalification program contains annual and biannual training. The annual training consist of the annual GET training and selected fundamental and plant specific training. The biannual training stresses selected plant specific training.

The on-the-job training of maintenance personnel is controlled by the maintenance shop supervisor. He is responsible for assigning the jobs to experienced and non-experienced personnel. This is accomplished by reviewing the OJT computer printout, which documents the jobs that each maintenance person has completed. The computer file receives the information from completed work requests, preventative maintenance control sheets, and training class attendance records.

The inspector noted the following aspects of the maintenance training program:

- Approximately 35 percent of the formal training is conducted by self-paced modules. The interviews indicated that maintenance personnel would prefer more instructor participation. They recommended that the

instructor present a brief overview of the course, and after the module is completed, that the instructor review the topics covered.

- The licensee has established laboratory facilities for the various maintenance disciplines. All interviewed personnel indicated they would prefer more hands-on training. Examples of requested training included vendor training on the diesels and training on new equipment before it is installed in the plant.

- The inspector was informed that the maintenance training program is a two-year program. The fundamental and plant specific programs are considered the initial program, and one complete cycle will be provided. Once the initial program is completed the requalification program will repeat portions of the initial program on a continuing basis. The licensee informed the inspector that the requalification program has been developed, but not implemented because the initial training has not yet been completed.

- On-the-job training lacks a qualification card or guide. A maintenance supervisor can monitor the jobs that an individual has performed on an OJT computer printout, but has no guide to ensure that the trainee receives exposure to all types of jobs and that he gets training in basic fundamentals. The licensee informed the inspector that a qualification guide was being developed for each of the maintenance disciplines and that it would be implemented in September 1985.

- The present OJT computer tracking system has a column indicating for the amount of time that the maintenance technician spent for on-the-job training. The inspector conducted a review of this area, and the documented times show inconsistencies. There are numerous examples of workers apparently spending more than 24 hours working on a job in one day.

NUREG-0737 Item II.B.4, Training for Mitigating Core Damage, requires that the licensee 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. Managers and technicians in the instrumentation and control (I&C) group shall receive training commensurate with their responsibilities. NUREG-0737 Item II.B.4 was implemented at Crystal River by a Confirmatory Order 7590-01, dated July 10, 1981. In a letter to the NRC, dated May 5, 1982, the licensee stated that lectures and quizzes on accident mitigation are given to the Shift Technical Advisors and operating personnel from the managers down through the operations chain to the licensed operators. The titles of personnel who attend the training included instrument and control technicians.

The inspector reviewed the nuclear technical support technician training program (I&C) for mitigating core damage training. The training program did not contain quizzes or adequate training for mitigation of core damage.

Contrary to the requirements of NUREG-0737 Item II.B.4, which were implemented by an NRC order, the licensee has not implemented training on mitigation of core damage for I&C technicians. This is another example of a violation (302/85-01-07 - Failure to Meet NUREG 0737 Requirements).

17. Procedures and Commitment Tracking

The inspector identified procedures which referenced other procedures that no longer contained the referenced material, or had been cancelled. In one instance a TDP referenced an OSIM for details, and the OSIM referenced the TDP, but neither contained the details referenced. This problem seems to have been in existence for some time as indicated by Inspection Report 302/83-04 which identified an inspector follow-up item concerning the requalification program referencing AI-500 for information that was not contained in that procedure. In 1982, TDP-102 referenced TDP-106, Examination Preparation and Evaluation. According to the licensee, TDP-106 has never been written. Tighter controls need to be implemented over the revision of procedures and of procedure cross-referencing.

Another problem area observed by the inspector was the failure to take adequate long-term actions on commitments regarding previous violations (302/79-23-01, 02, and 03) as detailed in paragraphs 5, 7, and 9, respectively. The licensee is in the process of attempting to implement a computer tracking program for commitments. A brief review was conducted of this program. The program will track the commitment, the origination requirements, the due date, and action completed. With several thousand commitments to track, this program could prove very beneficial once fully instituted. To ensure that procedure changes or plant modifications do not negate commitments, each procedural change or design change form should contain a requirement to check this system prior to implementation.

On January 10, 1985, one week before this inspection, the licensee revised or cancelled most training department procedures (TDPs). Many of these revisions or cancellations represented reductions in the scope of programs contained in the previous revisions. The responsibility for some training areas was transferred from the Nuclear Training Manager to training supervisors. The negative effect of these mass changes on programs and commitments, the problems in procedural cross referencing which resulted, and the transfer of training responsibilities will be identified as an unresolved item (302/85-01-13).

18. Shift Technical Advisor (STA) Training

References:
(a) Crystal River FSAR
(b) Training Department Procedure (TDP)-206, Revision 0, Shift Operations Technical Advisor.
(c) NUREG-0737, Item I.A.1.1, Shift Technical Advisor.

(d) FPC Letter to NRC dated October 15, 1982, on Shift Technical Advisors.

The Shift Technical Advisors at Crystal River are designated as Nuclear Operations Technical Advisors (NOTAs). The NOTA training program, as defined in Section 12E of reference (a), was submitted on January 30, 1981, for NRC review and approval. This training program outlined the responsibilities of this position, as well as the training courses required. The submitted program was accepted by the NRC with the understanding that the NOTAs shall have a bachelors degree, or equivalent, in a scientific or engineering discipline. Section 12E of reference (a) which contained the NOTA training program was deleted in an annual update in July 1984. This program was apparently replaced by a single paragraph in Section 12.2.3.6 of reference (a). This section commits that the NOTA training program satisfies the intent of the INPO guidelines.

Reference (b) was implemented on January 10, 1985. This procedure does not list the responsibilities of the NOTA position or outline the courses to be taught. Reference (b) in Section 5.3 states that the NOTA Training Program Program will utilize training material from either the Non-Licensed Operator, Replacement Operator, or Senior Operator Training Program. Reference (b) further states "The Senior Reactor Operator Training Program classroom material shall be the baseline for which topics shall be covered."

The inspectors noted that one NOTA did not have a bachelors degree in a scientific or engineering discipline. Reference (c) requires that the STA shall have a bachelors degree or equivalent in a scientific or engineering discipline. In reference (d) the following statement was made:

"FPC intends, for the foreseeable future, to continue with our present STA concept, i.e., employ individuals, for the STA position, who possess Bachelor of Science degrees with significant nuclear power experience, trained at the SRO level and subsequently license them at that level. These individuals are and will be utilized in a 24-hour on-site rotation scheme." In addition, the letter stated "Our current class of STA candidates, all holding Bachelor of Science degrees with a minimum of five years nuclear experience, is expected to complete our SRO training program in December 1982."

The licensee considers the individual to have had the "equivalent" to a bachelors degree in 1981. The licensee's decision of equivalency was based on operating experience and completion of a number of correspondence courses. The equivalency to a bachelors degree allowed in reference (c) has not been defined by the Commission. This utilization of a non-degreed individual as an STA is an unresolved item (302/85-01-14) pending further review of equivalency by the NRC.