



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

Report No.: 50-302/85-22

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: April 29 to May 1, 1985

Inspectors:	<u>C. A. Julian</u>	<u>5/30/85</u>
	C. A. Julian	Date Signed
	<u>S. D. Stadler</u>	<u>5.29.85</u>
	S. D. Stadler	Date Signed
	<u>S. Guenther</u>	<u>5/29/85</u>
	S. Guenther	Date Signed
Approved by:	<u>A. F. Gibson</u>	<u>6/3/85</u>
	A. F. Gibson, Branch Chief Division of Reactor Safety	Date Signed

SUMMARY

Scope: This special announced inspection involved 48 inspector-hours on site in the area of verification of licensee actions regarding recertification documentation for December 1984, operator license applicants per Confirmation of Action Letter (302/85-02) and Florida Power Company response letter dated April 4, 1985.

Results: No violations or deviations were identified. As discussed in the details, documentation did not fully support that all required training had been done.

8507110412 850618
 PDR ADOCK 05000302
 Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *P. F. McKee, Plant Manager
- *J. T. Telford, Director, Quality Programs
- *J. P. Alberdi, Manager, Site Nuclear Operations Technical Services
- *L. C. Kelley, Manager, Nuclear Operations Training
- *R. M. Bright, Manager, Nuclear Licensing
- *M. F. Penovich, Nuclear Operations Training Supervisor
- *D. D. Betts, Supervisor, Quality Audits
- *T. W. Catchpole, Senior Nuclear Quality Audits Specialist
- *J. L. Bufe, Nuclear Compliance Specialist
- *E. R. Carlson, Consultant to Florida Power Corporation (FPC)

Other licensee employees contacted included training department and office personnel.

NRC Resident Inspector

- *T. Stetka, Senior Resident

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 1, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. Licensee representatives acknowledged their understanding of the findings. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.

The inspector discussed the status of Inspector Follow-up Item (IFI) 302/85-01-10 Site Engineer Training Status. The licensee has determined the training status of all site engineers as detailed in a letter dated March 12, 1985. IFI 302/85-01-10 is closed.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

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 paragraph 6.

5. Recertification Process

In an inspection conducted at Crystal River January 14-18, 1985, discrepancies were noted in the training records of nine individuals who took and passed NRC operating license examinations in December 1984 (Inspection Report 50-302/85-01 Unresolved Item 85-01-05). On January 29, 1985, the NRC issued a Confirmation of Action Letter (50-302/85-02) in response to these deficiencies which confirmed that the licensee would complete the following actions before the NRC would issue licenses to those individuals:

- a. 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.
- b. 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.

In a letter dated April 4, 1985, Florida Power Corporation provided the following response to this Confirmation of Action Letter:

Pursuant to your Confirmation of Action Letter dated January 29, 1985, to Florida Power Corporation (FPC), this letter recertifies that the operator and senior operator applicants who were examined by the NRC in December 1984, and who successfully completed the examination are qualified pursuant to 10 CFR 55.10(a)(6).

The FPC Nuclear Operations Training Department has:

- (1) Verified the completion of all applicable hot license training and experience requirements;
- (2) Reviewed and evaluated all written and oral examinations given during the hot license training program; and
- (3) Resolved all training deficiencies identified during the accomplishment of Items 1 and 2 above.

The documentation of Items 1 through 3 above is available at the FPC Nuclear Operations Training Facility for your review if desired.

This inspection was conducted April 29 to May 1, 1985, to review this recertification documentation and to verify that all training and experience requirements are met for each of these individuals prior to issuance of licenses.

Licensee representatives told the inspectors that the basis they established for this recertification effort was 10 CFR 55.10(a)(6), as stated in the Confirmation of Action Letter, and all commitments they had previously made to the NRC in the license training area. A Training Department Procedure, (TDP 210), "Interim Licensed Operator Replacement Certification Program," (Rev. 0), dated March 22, 1985, was written to guide this recertification of the nine license candidates. The inspectors noted that the procedure does not include all requirements of the approved training procedures that were in place during the conduct of license training for these candidates, nor the replacement license training program in Section 12c of the Crystal River FSAR. The justification provided by the licensee for this exclusion was that the NRC had pointed out numerous discrepancies in the training procedures during the January training inspection and therefore they were not used as input to TDP 210. The inspectors stated at the exit interview that this does not appear to be a valid or acceptable exclusion.

10 CFR 55.10(a)(6) requires that evidence be provided by the licensee that an applicant for a license has learned to operate the controls in a safe and competent manner. A statement on the license application (NRC form 398), signed by the highest levels of corporate management for plant operation, certifies that the applicant has or will have completed by the time of the examination all the required training, and has learned to operate the controls in a safe and competent manner.

This required training is not defined in detail in 10 CFR, but within the licensee's operator training program as contained in approved procedures and/or the FSAR. The requirements contained in the licensee's training program should, therefore, be utilized as the basis for recertifying these applicants prior to issuance of licenses.

In addition, the licensee has an obligation to evaluate the license candidates to ensure that they have learned to operate the plant in a safe and competent manner prior to examination by the NRC. These evaluation measures and the minimum acceptable levels of performance are normally defined in the licensee's training program. At Crystal River, TDP 202, "Replacement License Training Program", TDP 204, "Senior Reactor Operator Training Program", and Section 12c of the FSAR contain this information. All of these original evaluation requirements were not incorporated into TDP 210.

TDP 210 does not address specific evaluation of the candidates on abnormal and emergency operating procedures. The candidates' knowledge in this area should be evaluated to properly recertify their previous training. The inspectors noted that the requalification program contains a semiannual evaluation form that is of a type which could be used for recertification.

The inspector was informed that few deficiencies were found during the licensee's review of these operators' training records. The only remedial training deemed necessary was to give three candidates additional on shift

training time. The maximum required for any candidate was an additional 18 days on shift.

The inspectors examined the completed TDP 210 procedure and the supporting records and discussed these documents with licensee representatives to assess the adequacy of the recertification program. Significant discrepancies were identified and are detailed in paragraph 6. The nature of these discrepancies was discussed in detail with licensee representatives in a meeting on April 30 and again in the exit interview on May 1, 1985.

6. Observed Discrepancies in Recertification Process

a. Classroom Training

TDP 210, paragraph 2.0, "Training Requirements," addresses the documentation of grades made by the candidates on previous written exams. The acceptance criteria stated in paragraph 2.a. are as follows:

Phase 1 - Classroom Training must be satisfactorily completed by having at least an 80 percent average overall and 70 percent in each category when all written examinations are averaged together. This training shall include 42 hours of HT/FF/Thermo and 16 hours of Control and Mitigation of Accidents.

During the January 1985 NRC inspection, it was noted that the number of written examinations given to this licensee training class had been reduced from previous classes by approximately 60 percent. Remedial examinations, when necessary, were exactly the same as the original examinations. With knowledge of this practice and access to his original examination, a candidate could invalidate the examination process. This would be unacceptable. It was additionally noted that some remedial examinations were never graded prior to the NRC examination in December.

By letter dated May 5, 1982, the licensee stated that the FPC training program includes 40 hours of training in Heat Transfer, Fluid Flow, and Thermodynamics (HT/FF/Thermo) and 16 hours of Mitigating Core Damage (MCD) training. TDP 210 specifies 42 and 16 hours respectively. Through procedure revision, however, the licensee training program now contains only 28 and 12 contact hours, respectively, in these subjects. Licensee representatives stated that these candidates took the shorter courses. TDP 210 includes these items as requirements, and they are initialed as being complete.

As justification for the acceptability of shortened courses for reactor operator candidates, the licensee states that the current RO Replacement Program includes 28 hours of HT/FF/Thermo (RO-19 through 25) and 2 hours of Natural Circulation training (RO-46). Additionally, as a prerequisite for RO positions, each candidate must complete the Non-Licensed Operator (NLO) course or equivalent. As part of that course, each NLO receives 12 hours of HT/FF (ANAO-10). Thus, RO candidates do

receive at least 42 hours of HT/FF/Thermo. In addition to the above training for an RO, an Upgrade SRO candidate receives 28 more hours of HT/FF/Thermo (SRO-19 through 25) and 2 more hours of Natural Circulation training (SRO-46). Thus, Upgrade SROs have at least 72 hours of HT/FF/Thermo training. Instant SROs, without previous RO experience, currently receive 28 hours of HT/FF/Thermo (SRO-19 through 25), plus 2 hours of Natural Circulation ATOG training (SRO-46). The licensee reviewed each Instant SRO candidate's college transcript and training history to determine if the additional 12 hours of HT/FF/Thermo training was received. Both Instant SRO candidates were considered by the licensee to have exceeded the 42-hour HT/FF/Thermo requirement.

The licensee justified the shortened MCD training program in a similar manner. The current RO Replacement Program teaches 12 hours of Degraded Core (RO-44) which was developed by B&W. This is supplemented with 2 hours of Plant Computer training (RO-97), 8 hours of Emergency Procedures training (RO-74 through 76) on loss of feedwater, loss of coolant, and inadequate core cooling, 12 hours of transient training (RO-47 through 49) on loss of coolant and over/under cooling, and 4 hours of Post-Accident Sampling System (RO-105) training. In total, the ROs receive 38 hours of training in the mitigation and control of core damage. Upgrade and Instant SROs receive training identical to the ROs and, therefore, have also had at least 38 hours of training (SRO-44, 47, 49, 72, 73, 74, 101, 109).

The inspectors stated at the exit interview that the acceptability of taking credit for previous training outside of the established program would require further review by NRC management. It appears, however, that the current training program, as implemented by training department procedures, does not meet the commitment made to the NRC by the May 5, 1982 letter. The inspectors stated at the exit interview that this discrepancy should be corrected promptly by revisions to the TDPs. This is an unresolved item (50-302/85-22-01).

b. On-Shift Training

TDP 210, paragraph 2.b., states the following acceptance criteria for RO candidates:

Phase 2 - On-shift training shall be satisfactorily completed by having at least sixty (60) work days as an extra person on-shift in the Control Room in training and must have completed at least five (5) major reactivity changes and/or plant manipulations as described in the Requalification Training Program TDP-203. At least two (2) reactor startups must be performed either as part of this phase or Phase 3 - Simulator Training.

For SRO Upgrade candidates the criteria are:

Phase 2 - On-shift training satisfactorily completed by having at least sixty (60) work days on-shift as an extra person in training

and must have directed at least five (5) significant plant evolutions.

For the Instant SRO candidates the criteria are:

Phase 2 - On-shift training shall be satisfactorily completed by having at least sixty (60) work days on-shift as an extra person in training. During these sixty (60) days at least five (5) significant reactivity changes must be performed and/or directed.

The March 1980 H. Denton letter on "Qualifications of Reactor Operators" and NUREG 0737 Item I.A.2.1 require that candidates for an RO license spend three months as an extra man training in the control room, and SRO candidates spend three months on shift as an extra man training as an SRO. Item I.A.2.1 was implemented at Crystal River by an NRC Confirmatory Order dated July 10, 1981.

During the record review conducted as part of this inspection, the inspectors determined that one SRO Upgrade candidate had not officially entered the license training program until August 1984. During the January NRC training inspection there was no record that this individual had completed the three months on shift as an extra SRO. The licensee has, as part of the recertification effort, reconstructed a record of this training. Credit was given, per the control room logbook, for days on which this individual was assigned as a Chief Nuclear Operator (CNO) prior to entering license training. Although this position is not required by the facility's Technical Specifications, it is a normally filled, procedurally required position with designated duties and responsibilities. The inspectors stated at the exit interview that this time as CNO is, therefore, not considered to fulfill the extra SRO in training criterion.

Two Instant SRO candidates had 60 days of documented on-shift training time, however, most of that time was spent as a non-licensed operator or an RO trainee. Cycling these individuals through these non-SRO positions for training should have been in addition to, and not in place of, the required SRO training.

Other on-shift training records, which were deficient by as much as two of the required twelve weeks of training, have had new documentation added since the January inspection. Much of this reconstructed documentation also assumes credit for on-shift positions which are not applicable to RO or SRO training.

The NRC inspectors stated that the three months training as an extra RO or SRO on shift should include the following attributes:

- The objectives of the training should be established in writing.
- The candidate should be in a training status and supervised by training department personnel or designated operations personnel.

- The training should be structured and scheduled in advance to the extent possible (i.e., the program can be broken into segments to provide simulator training or classroom training on evolutions conducted or to be conducted during observation training).
- If the training is not continuous, then 3 months equates to 65 - 8 hour shifts (5 days per week, 4.3 weeks per month).

It does not appear that the on-shift time which the licensee credits toward recertification meets this guidance. Although the control room logbook establishes that the candidates were on shift at the credited times, the candidates were often signed in as filling a role other than that for which a license is sought. Some entries designate the candidates as trainees, but most do not.

The records, original and reconstructed, do not clearly support the contention that the candidates have fully met the requirement to complete 3 months on shift in training for the licensed position they seek. The inspectors cannot conclude that this requirement was fully met.

TDP 210, paragraph 2.b. requires that five major reactivity manipulations be performed by RO candidates and directed by SRO candidates. Only four of the candidates had original Reactivity Record Forms to document their manipulations. Forms have been partially reconstructed for some of the other five candidates, but they are not specific. Credit was frequently taken for routine feed and bleed boron concentration changes. The inspectors stated they do not consider those to be major reactivity changes.

The on-shift training records for several candidates indicate that most days were spent in the performance of "normal operations." The licensee, therefore, utilized the manipulations listed in the control room logbook as the basis for recertifying that those candidates had performed the required control manipulations. The records are contradictory and do not indicate what training was actually done. It cannot be concluded from a review of the records that the required reactivity manipulations have been completed.

c. Oral Examination and Walk-through

TDP 210 states that all candidates shall have satisfactorily completed a walk-through and an oral examination. The description of replacement operator training in Section 12c of the FSAR requires that areas of deficiency identified in oral examinations be strengthened as required. An oral board is defined in TDP 203, "Licensed Requalification Training," and TDP 202 (Revision 0), "Replacement Operator Training," as consisting of at least three members, including a supervisor and two instructors. The licensee indicated during the January training inspection that an oral examination, by definition, was the same as the oral board referenced in TDP 202 and 204, and, therefore, should meet

the same requirements. Numerous one and two-man oral examinations were conducted for these candidates. Particularly in the case of one-man oral examinations, the grades appeared to increase substantially over those conducted with the required number of training and operations staff. TDP 204 (Revision 0) required that a license candidate pass a final oral audit examination to be eligible to take the NRC examination. This requirement was removed by later revision. The December 1984 license applicants did not receive a final oral audit examination or evaluation.

During the recertification process, to date, no new oral examination or walk-throughs have been conducted. The inspectors examined the records of previous oral exams and walk-throughs. The oral exams were conducted with varying numbers of examiners. They were generally short and of marginal quality. Candidates took varying numbers of exams, ranging from one to four. With one exception, the grades were averaged to achieve a grade for documentation per TDP 210.

One RO candidate was recertified despite an average oral exam grade of less than 80 percent. Licensee representatives explained that, for this candidate, credit was only taken for oral exam number 3, which he passed. The inspectors stated that the same criteria should be applied to all candidates, rather than varying methods for different candidates. The licensee countered that if the scores on oral exams taken prior to the 1984 license training class were omitted, the candidate met the passing criteria. The candidate had taken oral examinations previously but was withdrawn from the 1983 license class.

The candidates' oral exams appeared to have several deficiencies. Oral exam number 3, mentioned earlier, was conducted by one individual. There was no weighting of point value with respect to a question's importance. In the area of normal, abnormal, and emergency procedures the only question asked was to determine the turbine roll speed for a given plant condition. The candidate scored 100 on this question and thus the area of procedures overall was graded 100. This single question is clearly inadequate to assess the candidates' knowledge in this area. Even when there were multiple examiners, they did not each grade all questions, but rather each graded an area alone. The exam records often contain multiple comments on significant candidate knowledge deficiencies, but no retraining or other remedial action is documented.

The replacement operator training program in Section 12c of the Crystal River FSAR required walk-through examinations to be given at random intervals throughout the course of the program. TDP 202 (Revision 0) required that each individual pass a final walk-through examination, normally conducted by an outside contractor, prior to taking the NRC examination. Most individuals in this class were administered only one or two walk-through examinations. A licensee representative stated that all walk-through examination scores were averaged to recertify the candidates per TDP 210. The inspector noted minor discrepancies in the

mathematics of this process, but no instances were found in which these errors resulted in a false determination of satisfactory performance.

One SRO candidate apparently received no walk-through examination during his SRO training. Licensee representatives stated they consider this acceptable because the candidate had a walk-through during his previous RO training. The TDP 210 evaluation completed for the candidate reflects that the training staff has waived the requirement for this candidate. The inspectors stated they do not consider this acceptable since the RO walk-through was long ago and an SRO walk-through should test for different knowledge levels and emphasis than the RO walk-through.

One SRO candidate apparently received only a partial walk-through since only 30 percent of the checklist was complete. The walk-through had been graded, however, and credit was taken in the TDP 210 evaluation.

Three license candidates received 13 to 15 negative comments on walk-through examinations including significant deficiencies, such as not knowing the required immediate actions of an abnormal operating procedure or the location of essential plant equipment. Despite these significant deficiencies, all three individuals passed the walk-throughs at 81.5 percent. In addition, there was no specific remedial training documented, nor a follow-up walk-through examination given, to ensure that the deficient areas were upgraded.

One individual failed a walk-through examination with a 67 percent about one week before the NRC examination. No remedial training or retest was apparently given.

No final walk-through was administered to these nine individuals to ensure that all deficiencies were resolved, and that they were, in fact, knowledgeable of the plant and its emergency and abnormal procedures. TDP 202 (Revision 0) required that each student demonstrate satisfactory knowledge of all nuclear plant systems and equipment by completing a system check-off list. This list contained an instructor signature slot for each major system to verify individual knowledge and qualification. TDP 202 (Revision 1), which was implemented near the end of this license class, no longer contained this system qualification requirement.

TDP 202 and 204 (Revision 0) required that all license candidates demonstrate the ability to competently manipulate the controls during all normal, abnormal, and emergency operations, and to understand the indications available during each evolution. These abilities would be certified as part of the simulator training program. Babcock and Wilcox (B&W) certified by letter to FPC only that reactor startups had been successfully completed by each individual on the simulator. B&W also performs evaluations on trainees' abilities to recognize and respond to abnormal and emergency conditions. When these evaluations were

marked unsatisfactory for an individual in the past, however, the licensee had elected to ignore them on the basis of the B&W simulator not being plant specific.

In a letter dated June 30, 1978, Paul Collins of the NRC informed FPC that evaluations of an individual's competence must be made at the facility, in accordance with paragraph 4.c (10 CFR), since the B&W simulator does not "closely parallel" the Crystal River control boards. The only in-plant evaluations in the area of emergency and abnormal operations, as well as systems, conducted for this license group were the walk-through examinations. These oral exams and walk-throughs do not appear adequate, however, to assure that the candidates have achieved all required knowledge.

d. Conclusions

As stated at the exit interview, the inspectors conclude that the recertification process was not adequate to ensure that the nine candidates have successfully completed all the required training. Problem areas are as follows:

- (1) Classroom training in Heat Transfer, Thermodynamics, Fluid Flow, and Mitigation of Core Damage was shorter than committed to by the licensee.
- (2) Records do not support that all of the candidates completed three months on shift as an extra person in training for the license sought.
- (3) Records do not support that all of the candidates have completed the requirement for performing or directing five major reactivity manipulations.
- (4) No additional comprehensive oral examinations or walk-throughs were conducted as part of the recertification process. Previous oral examinations were marginal in scope and of questionable validity.
- (5) One license candidate received no walk-through examination as an SRO, and another received only 30 percent of a single walk-through.

As of the date of this inspection, the inspectors cannot conclude that the recertification process was acceptable. The licensee has not been able to adequately demonstrate that all required training has been satisfactorily completed, and that there has been adequate evaluation to ensure that individuals have learned to operate the plant in a safe and competent manner.