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NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199



Report Nos.: 50-269/94-37, 50-270/94-37, and 50-287/94-37

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket Nos.: 50-269, 50-270, and 50-287

License Nos.: DPR-38, DPR-47,
and DPR-55

Facility Name: Oconee Nuclear Station Units 1, 2, and 3

Inspection Conducted: December 12-16, 1994

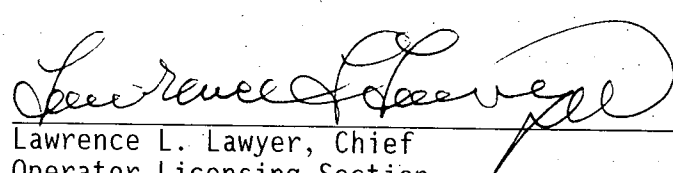
Inspector:


D. Charles Payne

1/11/95
Date Signed

Accompanying Personnel: R. F. Aiello, RII
J. R. Lynch, SEA, Inc.

Approved by:


Lawrence L. Lawyer, Chief
Operator Licensing Section
Operations Branch
Division of Reactor Safety

1/11/95
Date Signed

SUMMARY

Scope:

This special, announced inspection was conducted in the areas of the Non-Licensed Operator (NLO) and Instrument and Controls (I&C) training programs during the period December 12-16, 1994. The purpose of the inspection was to determine the effectiveness of training and qualification programs in these areas by focusing on personnel performance. This was accomplished through observations of actual work in progress and by use of interviews of operators, technicians, instructors and supervisors. Inspection Procedure 41500, which implements NUREG-1220, Rev. 1, defined the scope of the inspection and specified the methods and techniques utilized by the inspectors. In addition, the training programs associated with the Keowee Hydro Generators and the Generic Fundamentals Examination were reviewed.

Results:

The inspectors found both the NLO and I&C technician training programs to be SAT based and adequate (paragraphs 2.b and 2.c).

The inspectors opened an Inspector Follow-up Item (IFI) to assess the adequacy of NLO lesson plan materials due to concerns expressed by instructors during the interview process (paragraph 2.b).

The inspectors reviewed the status of four KHG operator training commitments. All four were found to have been completed satisfactorily (paragraph 2.d).

The inspectors reviewed the apparent root causes and corrective actions for poor candidate performance on the Generic Fundamentals Examination. The root cause analysis and planned corrective actions were found to be comprehensive and adequate. An Inspector Follow-up Item was opened to track improved performance in this area (paragraph 2.e).

The inspectors identified one violation with two examples in which I&C technicians failed to follow plant procedures (paragraph 3.a).

The inspectors identified an additional violation concerning an inadequate procedure in which a safety-related surveillance of the Reactor Building Spray System failed to specify independent verification of component manipulations as required by site administrative requirements (paragraph 3.b).

The inspectors expressed concern that despite observing and inspecting a SAT based I&C training program, significant I&C technician performance deficiencies were observed in the plant; particularly with regard to procedure use and adherence (paragraph 3.d).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

R. Bugert, System Operations Specialist, ESS-Training
E. Burchfield, Regulatory Compliance Manager
*K. Chea, Instrument and Controls Manager
J. Deardorff, Instructor, ESS-Training
*L. Garrett, Director, Maintenance Training
*J. Hampton, Vice President, Oconee Nuclear Station
*D. Hibbard, Maintenance
*B. Jones, Site Training Manager
S. Lynch, Manager Maintenance Programmatic Support
*B. Peele, Station Manager
M. Ramey, ETQS Team Leader Supervisor
*G. Ridgeway, Operations Support Manager
*G. Rothenberger, Operations Superintendent
S. Severence, Procedure Team Supervisor
J. Smith, Regulatory Compliance
R. Stone, Training Services Manager, ESS-Training
*P. Stovall, Operator Training Manager
G. Washburn, License Preparation Team Leader
A. Whitener, Non-Licensed Operator Training Supervisor

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

NRC Personnel

P. Harmon, Senior Resident Inspector
L. Keller, Resident Inspector
K. Poertner, Resident Inspector

*Attended exit interview

Acronyms and initialisms used in this report are listed in the last paragraph.

2. Training and Qualification Effectiveness (41500)

a. Summary

A special, announced inspection was conducted in the areas of the NLO (auxiliary operator) and I&C training programs during the period December 12-16, 1994. The purpose of the inspection was to determine the effectiveness of training and qualification programs in these areas by focusing on personnel performance. This was accomplished through observations of actual work in progress, observations of training in progress, and by use of interviews of operators,

technicians, instructors, and supervisors. Inspection Procedure 41500, which implements NUREG-1220, Revision 1, defined the scope of the inspection and specified the methods and techniques utilized by the inspectors. In addition, the training programs associated with the KHG and the GFE were reviewed.

The inspectors found both the NLO and I&C technician training programs to be based on the SAT process and to be adequate. However, the inspectors did open an IFI to assess the adequacy of NLO lesson plan materials due to concerns expressed by instructors during the interview process. The inspectors found all four KHG training commitments to have been completed satisfactorily. Additionally, the inspectors found that the licensee identified root causes and corrective actions for poor candidate performance on the Generic Fundamentals Examination were comprehensive and adequate. An IFI was opened to track improved performance in this area. The inspectors identified one violation, with two examples, in which I&C technicians failed to follow plant procedures. The inspectors also identified that administrative requirements were violated in that a surveillance of the Reactor Building Spray System failed to specify independent verification of safety-related component manipulations.

Finally, the inspectors expressed concern that, despite observing and inspecting an adequately implemented SAT-based I&C training program, significant I&C technician performance deficiencies were observed in the plant; particularly with regard to procedure use and adherence.

b. NLO Training and Performance

During the inspection, the inspectors observed two classroom training sessions and interviewed three NLO instructors, five incumbent NLOs, the Training Manager and the Operations Superintendent. The inspectors also observed a class of NLOs participate in OJT at the Safe Shutdown Facility diesel generator and one NLO while he performed his normal duties in the plant. Additionally, the inspectors reviewed the scope and content of requalification training recently administered to NLOs. The inspectors concluded that the NLO training program was based on the SAT process and further detailed inspection per IP 41500 was not warranted; however, one IFI concerning the content of NLO lesson plans was opened.

NLO Classroom Training and OJT

The inspectors observed that NLO instructors maintained good command and control of the classroom and frequently solicited class input to ensure proper speed of presentation and understanding of the material. The NLOs were encouraged to participate in classroom discussions and share their personnel experiences from the field. The inspectors did not identify any animosity between NLOs or between NLOs and instructors. The NLOs were observed to maintain a positive attitude.

towards training, both in the classroom and during OJT. The inspectors concluded from interviews, that the NLOs considered the continuing training program, which included some hands-on training in the Control Room simulation facility, to be a vital component for maintaining their ability to perform safely and efficiently in their jobs. The inspectors also noted that the NLOs were satisfied with the training feedback process. The instructors formally addressed the NLOs' previous class comments, both negative and positive, at the beginning of each training segment to the NLOs' satisfaction.

The NLOs conducted themselves in a professional manner both during OJT and while on the job. During observation of the NLOs' performance in the plant and during training, the inspectors recognized the NLO's pride and feeling of worth in performing an important job function as well as their sense of responsibility to and "ownership" of the plant.

Inspection Procedure 41500 requires that inspectors determine whether further evaluation of the inspected area is necessary. Based on the results of the above observations, the inspectors concluded that further evaluation of the SAT process, as applied to the NLO program, was not warranted. Furthermore, the inspectors concluded that Oconee Nuclear Station NLOs have qualifications commensurate with the performance requirements of their job.

Instructor Continuing Training

The inspectors also reviewed the operations instructor certification and continuing training program. Plant requirements in this area are specified in Procedure OTG-011, "Instructor Qualification, Certification, and Continuing Training." The inspectors identified a deficiency in instructor certification record keeping. Many of the instructors' log sheets, which documented hours and types of instruction conducted, contained overwrites or improper line-out corrections.

The inspectors identified, through instructor interviews and record examination, that the instructors' continuing training program met the requirements of Procedure OTG-011. However, the instructors stated that they had to rely on their experience and background to teach due to the lack of detail in the lesson plans. Instructor-revised lesson plans are sent to the responsible systems engineer for a technical review. The instructors stated that even though the lesson plan revision and review process was getting better, there remained room for improvement. The instructors also stated that the training material, training aids, and instructional settings could be improved by placing more resources into the training program. The inspectors did not make a detailed review of training materials. However, based on their observations, the inspectors did not find the program to be deficient in its capability of providing adequate NLO continuing training. Nevertheless, a significant loss of experienced training

personnel could rapidly lead to degradation in the training provided if training materials are inadequate. This area will be reviewed in more detail during a subsequent inspection. This item will be tracked as IFI 50-269,270,287/94-37-01, "Review Adequacy Of NLO Program Lesson Plans."

Dynamic Accelerated Learning System

The inspectors were briefed on and observed a new learning technique, called Dynamic Accelerated Learning System, that the facility has implemented throughout all training programs including NLO and I&C training. DALs incorporates a specific combination of baroque music, games during breaks and a summary of the learning objectives for the week posted around the room. The facility stated that the DALs program was too new to draw any conclusions yet regarding its effectiveness but were optimistic that the program would yield positive results.

c. I&C Technician Training and Performance

The inspectors observed three surveillance activities and two training sessions while inspecting this area. Three I&C maintenance technicians and two I&C instructors were interviewed using the interview protocols in NUREG 1220. The inspectors also reviewed records and lesson plans of selected training given to the I&C staff associated with procedure use and adherence. The inspectors concluded that the I&C training program followed a SAT process and was being conducted by a staff of qualified instructors.

Observation of Surveillance Tests and Maintenance Operations

The inspectors observed two Motorola pressure transmitters (3PT-41P and 3PT-150P) for Unit 3 Steam Chest pressure being calibrated in accordance with Oconee Procedure IP/O/B/0270/001U "Main Steam System Turbine Chest Cavity Instrument Calibration." The inspectors noted that the guidance for this work, paragraph 10.5 of the procedure, was never viewed by the workers in the field. Only the data sheet for the work was used. Details of this noncompliance with facility administrative requirements and NRC regulations are provided in paragraph 3.a below.

The inspectors also observed monthly surveillance on RIA Cabinet 4RIA-45/46, conducted in accordance with Oconee Procedure IP/O/B/0398/016 "Rad Waste Facility, Kaman Process Radiation Monitor Functional Test." The I&C technicians determined the test to be unsatisfactory, when in step 10.13.17, the system did not promptly reset to low range as required by procedure. The technicians appropriately advised their supervisor and initiated corrective

maintenance. The inspectors observed several procedure use and compliance deficiencies in the performance of the corrective maintenance. Details of this noncompliance with NRC regulations are provided in paragraph 3.a below.

Finally, the inspectors observed a portion of Surveillance Procedure IP/O/A/0305/001D, "Reactor Protective System Channel D Pump Power Monitor Instrument Calibration" performed on Unit 2. Again a procedure problem was identified by the inspectors. However, in this case both the licensee and the NRC inspectors concluded that the procedure, while adequate, needed to be clarified to better reflect the correct technician actions during testing. Details of this issue are provided in paragraph 3.b below.

Training Session Observation

The inspectors observed the teaching of Lesson Plan EP-ONS-SPOC-01/94, "SPOC Team Duties and Responsibilities" and inspected it in accordance with the requirements of NUREG 1220. The class was well conducted; however, two minor deficiencies were noted.

- (1) In a class of 11 students, three arrived after the class had started. One individual was 7 minutes late, another was 12 minutes late, and the last was 31 minutes late.
- (2) From class discussion, it became apparent that hand held radios used by response teams, in some cases, had batteries that were incompatible with spares kept in the OSC. The instructor advised the class that spares required by the procedure might either be obtained at the warehouse or at a local commercial department store.

The inspectors are concerned that sufficient emergency equipment support materials may be lacking at the OSC.

The inspectors also observed the teaching of Lesson Plan "Field Planning Training" by one of the I&C staff instructors. The inspectors concluded that, in general, the training conducted was excellent. There was considerable interest in the subject matter by the students and good interaction with the instructor.

I&C Training Record Review

Because of the concerns identified during the observation of I&C plant activities, the inspectors reviewed records of I&C maintenance staff training associated with management expectations for procedural use and compliance. They found that Course TT0925, "Technical Procedure Use and Adherence," was last given on December 15, 1993. All of the primary individuals observed by the NRC inspectors conducting plant maintenance or surveillance during this inspection had attended this

training in late 1993. Inspector review of the lesson plan revealed no concerns. The lesson material included management expectations as well as review of Duke Power Procedure NSD 704, "Technical Procedure Use and Adherence." The inspectors concluded that neither lack of training nor inadequate training appeared to be the cause of the procedure use deficiencies observed in the field as described in paragraph 3 below.

The inspectors also reviewed records of feedback from students who had been given classroom training. The inspectors questioned the instructors whether students were required to submit written feedback forms at the end of classroom training. The instructors stated this was the practice, but could not find a specific reference requiring such feedback. Duke Power Procedure ETQS 1101.0, Revision 4, paragraph 5.7.4, requires trainees to submit candid feedback following training but does not specify a mechanism. Some instructors were using an old form (dated 1982) to collect and document student feedback. The feedback records were not systematically retained. Paragraph 7.1 of ETQS 1101.0 required documentation associated with training evaluation to be maintained by the training division, as appropriate.

Of the student feedback forms made available for review (50 individual forms dating from July 1982 to September 1994, covering 6 different classroom sessions), no substantive comments were noted to have been made by the students. However, in interviews, I&C technicians stated that feedback forms were always filled out following formal training. They were unanimous in saying that feedback items were always resolved and they were happy with the responses to their inputs.

Additionally, the inspectors reviewed the computer data base for maintenance of qualification records for I&C staff. The system appeared to provide all data required. For the maintenance tasks discussed in paragraph 3 below, the inspectors reviewed the JTA and Training and Qualification guide information. No concerns were identified other than the lack of qualified I&C technicians for work on the RIA cabinets.

The inspectors reviewed the I&C maintenance training plans for 1994 and 1995. The planning process was in transition to new methods, but appeared to focus on the specific needs of individual staff members. The inspectors concluded that a SAT approach was in use. There was no document that detailed the process, format, or responsibilities for development of the I&C training plan. If the personnel presently involved with this complex process left their positions, maintenance of program continuity could be difficult.

Based on the results of the above observations, the inspectors concluded that further evaluation of the SAT process, as applied to the I&C training program, was not warranted.

d. Keowee Operator Training Program

Keowee operators were observed operating the KHGs and performing the weekly and monthly maintenance on KHG Units 1 and 2. In general, performance was evaluated as good. Procedures were followed, and communications were satisfactory. The inspectors reviewed and verified the four Keowee training commitments made in response to the October 1992 Augmented Inspection Team report. Each commitment item is addressed separately below. The inspectors concluded that all four commitments were completed satisfactorily.

Task Analysis Development - The inspectors found that a documented SAT training program had been developed to fold Keowee operator training into the Oconee training organization. An analysis of seventy-five operator and twenty-three technician tasks had been performed to cover the responsibilities for these positions. Training and Qualification guides, including learning objectives, were developed for KHG specific operator tasks, where appropriate.

Keowee Operator Knowledge and Skills Assessment - The inspectors confirmed that the knowledges, skills and abilities of all Keowee qualified operators were reviewed by management against the new T&Q guides and found to be satisfactory. No additional training needs were identified by Keowee supervision. However, during observed KHG operator performance of unit operation and routine surveillances, the inspectors noted that communication skills, while adequate, were substantially weaker than those of NLOs in the plant. Plant management concurred in this assessment and indicated continuing efforts to improve operator performance in this area.

Keowee Remote Startup Refresher Training - The inspectors reviewed the refresher training provided to licensed Oconee operators for remote startup and operation of the KHG units from the Oconee control room. Records were provided documenting that all licensed operators had received this training during Segment 23 of the 1993 requalification cycle. Also, training staff review of the task analysis identified this training as being required on an "every four year" basis. The inspectors observed KHG remote operation on December 15, 1994, and no performance weaknesses were noted.

All Shift Operators Qualified to Task 001745801 - Finally, the inspectors confirmed that all Oconee shift operators (both licensed and non-licensed) had been qualified to task 001745801 based on direct training records review. This task involved performance of KHG emergency startup actions in accordance with Abnormal Procedure AP/O/A/2000/002, "Keowee Hydro Station - Emergency Start." The task was developed to cover the contingency of failure of the KHG units to emergency start under the condition that the Keowee operator was incapable of responding to this failure to emergency start. The inspectors observed three NLOs, two ROs and one SRO perform a JPM

designed to verify operator skill required by this task. The JPM involved restoration of power to the KHG 600 volt switchgear IX following a failure. All operators performed satisfactorily on the JPM though the inspectors noted that the NLOs appeared to be the most familiar and comfortable with performing the task.

Keowee Operator Performance - The inspectors noted one KHG operator performance weakness during their observation of Keowee unit activities. While performing Oconee Procedure MP/1/A/2000/018, "Unit No. 1 Turbine and Governor Monthly Preventive Maintenance," step 11.1.9 directed the operator to swap the governor actuator pilot valve duplex strainer to the filter out of service. When the operator performed this step, actuator oil began spraying from the off-line strainer at the interface between the gasketed strainer body and its cover. Upon investigation, the operator found that three of the five fastening bolts had not been adequately tightened following the last swapping and cleaning of the strainer. The operator tightened the bolts to stop the leak and reported the deficiency to his supervision. An investigation of the cause of this problem was begun but not concluded by the end of the inspection. The inspectors concluded that, while operator conduct of this monthly maintenance lacked attention to detail, the Keowee Hydro Generator Unit 1, in this case, could have performed its intended safety function in an emergency because the on-line strainer and governor assembly had been operating satisfactorily and the unit had successfully generated power to the grid on many occasions prior to discovery of the problem.

e. GFE Training Program

The inspectors interviewed members of the licensee staff responsible for the content and conduct of GFE training for the Oconee Nuclear Station. They also reviewed the root cause and planned corrective actions for prior poor candidate performance in this area. In addition, the inspectors reviewed, with the Operations Superintendent, the promotion criteria used to advance personnel from the position of Nuclear Operations Specialist to the position of licensed Nuclear Control Operator to determine whether this may have contributed to the performance problem. The inspectors concluded that the effect of the promotion criteria used was indeterminable and that the issue was moot since the criteria had subsequently been changed.

Background - Licensed operator candidates must pass the GFE as a prerequisite for taking a NRC site specific RO or SRO license examination. NLOs selected as candidates for the RO program receive reactor and thermodynamic theory, as well as pump, valve, component, and instrument fundamentals training to prepare them for the GFE. For Oconee, the training was conducted in Charlotte, NC, by the staff of the ESS Department. The inspectors were informed that Catawba Nuclear Station also utilizes ESS to conduct GFE training; however, McGuire Nuclear Station currently conducts GFE in-house with their own

training resources. Historical trends and, particularly, the June 1994 Oconee GFE examination results raised NRC concerns as to the adequacy of NLO training in this area. The Oconee training staff had similar concerns.

Root Cause Analysis and Corrective Actions - In July 1994, ESS initiated a review to identify the root cause and develop corrective action. Their conclusions, as presented to the inspectors, are listed below.

- (1) The GFE training program was improperly focused on a "review" of fundamentals topics rather than teaching the candidates with a "bottom to top" approach. While fundamentals material was included in Duke Power's Basic Operator training program, some very experienced Oconee NLOs had not substantially used or reviewed portions of this information in 10 or more years. Complete "retraining" would have been more appropriate.
- (2) The training materials needed improvement to support the candidates' study efforts. The scope and depth of present training handouts approached fundamentals training as a "review." Many graphs, charts, diagrams and illustrations used during presentations were not provided in handout materials.
- (3) Many candidates placed too much emphasis on "studying" the exam banks of previously administered GFE exams rather than reviewing the principles taught in class. Thus, when fundamentals material was tested in a different way during the GFE, the candidates were unable to determine the proper response.
- (4) An additional instructor with expertise in the pumps, valves and electrical areas was needed to better support the development and presentation of course materials.

The inspectors concluded that the utility's plan of corrective action to address the above issues appeared to be comprehensive and adequate. NRC inspectors will continue to monitor progress in this area to verify the effectiveness of the licensee's actions. This item will be tracked as IFI 50-269,270,287/94-37-02, "Monitor GFE Results For Improved Performance."

NLO Promotion Criteria Review - The inspectors also reviewed NLO promotion criteria with the Operations Superintendent to determine whether this process may have contributed to the poor GFE results by sending "weak" candidates to the licensed operator training program. The inspectors found that, until recently, licensed operator candidate selection was based on peer recommendations. The facility revised Oconee Procedure OMP 2-10, "Promotion Criteria for Non-exempt Shift Personnel," regarding RO and SRO selection process eligibility on December 13, 1994. According to these new criteria, an RO candidate

must be a Nuclear Operations Specialist with four years experience in operations at a Duke Power Station. The last two years of operations experience must be performed immediately prior to the date of class selection at ONS as a 100 percent qualified NLO. The NLO must have an average requalification test grade greater than 80 percent over 9 of the last 10 written tests immediately prior to the date of the selection process start (the lowest score of the previous 10 tests may be excluded). And, the individual must express a desire to attend license class and be approved by the Operations Superintendent. The inspectors could not determine whether the previously used peer review selection of licensed operator candidates actually contributed to the poor GFE performance results; however, the inspectors feel that because new promotion criteria have been implemented, this is now a moot question.

3. Operational Safety Verification (71707)

a. Procedure Compliance

On December 13 and 14, 1994, the inspectors accompanied various I&C technicians while they performed surveillances in the plant. On December 13, the inspectors identified two examples where the I&C technicians failed to follow plant procedures. In the first example, the inspectors observed two technicians calibrate two Motorola pressure transmitters (3PT-41P and 3PT-150P) for Unit 3 Steam Chest pressure. The calibration was conducted in accordance with Ocone Procedure IP/O/B/0270/001U, "Main Steam System Turbine Chest Cavity Instrument Calibration." Paragraphs 10.5.3 and 10.5.4 called for insertion of the test signal at the test "T" between the shutoff valve and the pressure transmitter. For each instrument, the technicians signed off and independently verified these procedure steps as being completed, even though they actually inserted the signal directly into the transmitter. The inspectors identified this item as one example of VIO 50-269,270,287/94-37-03, "Failure To Follow I&C Procedures."

Other procedure compliance irregularities were noted by the inspectors during this surveillance. Step 2.b of Procedure IP/O/B/0270/001U directed the attachment of a poly bag beneath the test tee because the system was potentially contaminated. Instead, the technicians placed, but did not attach, a bag under the joint broken at the transmitter. Also during the testing of both pressure instruments, the technicians performed steps 6 and 7 in reverse order. The performance of steps 14 and 15 were reversed as well. Duke Power NSD 704, "Technical Procedure Use and Adherence," paragraph 704.6.3.b (for continuous use and reference procedures), required that steps performed out of sequence be reviewed by a knowledgeable supervisor, initialed, and documented as to the reason for the out-of-sequence step performance. This was not done by the technicians.

The second example of failure to follow procedure was identified while the inspectors observed the monthly surveillance on RIA Cabinet 4RIA-45/46. This testing was conducted in accordance with Oconee Procedure IP/O/B/0398/016, "Rad Waste Facility, Kaman Process Radiation Monitor Functional Test." The inspectors identified that an I&C supervisor and his technicians failed to follow Procedure WPM 700, "Execute the Work Plan," Revision 1, step 700.5.2.3 and Procedure MD 3.2.2, "Requirements for Qualifying to Maintenance Procedures/Tasks," paragraph 4.9 prior to performing the monthly surveillance on the RIA Cabinet. Qualifications for work on this RIA cabinet were established on July 16, 1992. The inspectors reviewed the ETQS computer data base of qualified personnel to support this work and found that no one was listed as qualified to do the work. The inspectors confirmed via subsequent discussions with Oconee ETQS staff that work under this surveillance procedure had been conducted by personnel who were not administratively qualified to perform the task. Furthermore, the I&C supervisor was not cognizant of the fact that the personnel assigned were not qualified. The inspectors did not note any technician performance errors during observation of this particular surveillance. The inspectors identified this item as another example of violation VIO 50-269,270,287/94-37-03, "Failure To Follow I&C Procedures."

Additionally, the inspectors noted that procedure IP/O/B/0398/016, "Rad Waste Facility, Kaman Process Radiation Monitor Functional Test," step 10.13.14, required the technicians to observe a voltmeter reading of 0 (no tolerance specified). The technicians obtained an actual reading of 0.12 vdc but continued with the procedure. When the inspectors discussed this issue with licensee management, the licensee stated that when a tolerance was not provided, a reading of +/- 2 percent of meter scale was acceptable. However, when the inspectors interviewed two senior I&C instructors, each one stated that the technicians are taught to stop work and advise their supervisor when problems are encountered. The inspectors identified that there is a difference between management expectations and what is being taught by the I&C training staff which may have contributed to the cause of violation 50-269,270,287/94-37-03.

b. Inadequate Procedures

The inspectors accompanied one NLO during the morning of December 14, 1994 to observe his performance of normal duties in the turbine building. The NLO satisfactorily performed his normal rounds which included log keeping and a general equipment and housekeeping inspection. The SRO directed the NLO to tag out the 3A RB spray pump so I&C technicians could perform Oconee Surveillance Procedure PT/O/A/0150/22D, "Individual Valve Stroke Test" on the suction header isolation valve 3BS-1. The NLO removed and restored the 3A RB spray

pump exactly in accordance with the procedure as written. However, the inspectors identified that the surveillance procedure was inadequate in that it failed to direct the operators to perform an independent valve and clearance tag verification.

Duke Power NSD 700, "Independent Verification," paragraph 700.5, "Applicability," states, in part, that independent verification applies to removal from and restoration to operability of all systems or components which affect the ability of a system to perform a safety-related function. The inspectors identified this item as VIO 50-269,270,287/94-37-04, "Failure Of PT/O/A/0150/22D, 'Individual Valve Stroke Test' To Include Independent Verification At Steps Affecting Safety-Related Components."

The inspectors also observed two I&C technicians perform Surveillance Procedure IP/O/A/0305/001D, "Reactor Protective System Channel D Pump Power Monitor Instrument Calibration." During step 10.5.27 of the procedure, the technicians could not cause the bistable to trip within the range of the test circuit. Instead of proceeding per step 10.5.31 for out of tolerance "as-found" readings, the technicians returned to step 10.5.23 and off-set the test circuit input signal towards one side of the tolerance band. They again performed steps 10.5.24 through 10.5.27 (achieving a trip) and this time found the reading (per step 10.5.28) to be in specification. A facility engineer investigated this issue and determined that the technicians' action was technically correct, though not in strict compliance with the procedure. The engineer stated the intent of the step was only to exercise the bistables and not to test their setpoints. He concluded that there was no issue of equipment operability associated with the technicians' action. The inspectors agreed with this assessment. Licensee management also acknowledged that there was a procedural problem with Procedure IP/O/A/0305/001D that would be reviewed and resolved. The inspectors considered the technicians' practice of intentionally offsetting a test parameter to one side of the tolerance band to achieve acceptable test results to be a poor engineering practice. While having no negative impact in these circumstances, such a practice could possibly reduce design basis safety margins if inappropriately used in safety-related circumstances.

Additionally, while observing performance of Oconee Procedure IP/O/B/0270/001U, the inspectors noted the following procedure discrepancy. For instrument 3PT-150P, the data table showed positive (+) volts as the sign for correct data. The meter readings obtained by the technicians were negative (-) volts, but (+) values were recorded. Licensee management stated that this is not a problem because Oconee convention is that if polarity is not specified in a data table, values can be either (+) or (-). However, they indicated additional procedure guidance would be appropriate. The inspectors concurred with this conclusion.

c. Other Plant Observations

The inspectors identified minor deficiencies in the material condition and general housekeeping of the plant. The following are two examples:

- In Cabinet 3T DC 5 0-2789-E, there were pieces of insulation adrift on the cabinet bottom. One transmitter connection cover and an identification label were found lying on the cabinet bottom. Also, some transmitters had no permanent identification marking attached (other than that by magic marker inscription). The technicians did not reinstall the cabinet door securing bolts when work was completed.
- In Cabinet 3T DC 6 0-2789-F, there was a considerable amount of dirt on the cabinet bottom. This included absorbent material, copper tubing, and tie-wraps. One cabinet closure bolt and its associated hardware were missing. When the door was opened, the locking handle broke off in the technician's hand.

d. Conclusions

Technician performance in the field was observed to be contrary to the training that had been provided. This was particularly true in the area of procedure use and adherence. The inspectors concluded that Ocone Nuclear Station I&C technicians appeared to selectively follow their training when it did not delay the performance of their tasks. The NRC is concerned that despite having an apparently good training program in place, deficiencies of this magnitude are occurring, apparently without management awareness. The NRC is also concerned that the occurrence of these variations from plant and management guidelines may be more widespread than these observed examples reflect. Additional management attention to this area is warranted.

4. Exit Interview

At the conclusion of the site visit, the inspectors met with representatives of the plant staff listed in paragraph one to discuss the results of the inspection. The licensee did not identify as proprietary any material provided to, or reviewed by the inspectors. The inspectors further discussed in detail the findings listed below. The licensee did not express any dissenting comments.

<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
IFI 94-37-01	Open	"Review Adequacy Of NLO Program Lesson Plans" (paragraph 2.b)

IFI 94-37-02	Open	"Monitor GFE Results For Improved Performance" (paragraph 2.e)
VIO 94-37-03	Open	"Failure To Follow Instrument and Controls (I&C) Procedures" (paragraph 3.a)
VIO 94-37-04	Open	"Failure Of PT/O/A/0150/22D, 'Individual Valve Stroke Test' To Include Independent Verifications At Steps Affecting Safety-Related Components" (paragraph 3.b)

5. List of acronyms and initialisms:

DALS	Dynamic Accelerated Learning System
ESS	Electric System Support
ETQS	Employee Training and Qualifications System
GFE	Generic Fundamentals Examination
I&C	Instrument and Controls
IFI	Inspector Follow-up Item
IP	Inspection Procedure
JPM	Job Performance Measure
JTA	Job Task Analysis
KHG	Keowee Hydro Generators
MD	Maintenance Directive
NLO	Non-Licensed Operator
NSD	Nuclear System Directive
OJT	on-the-job training
OSC	Operation Support Center
RB	Reactor Building
RIA	Radiation Instrument Alarm
RO	Reactor Operator
SAT	Systems Approach to Training
SRO	Senior Reactor Operator
T&Q	Training and Qualification
VIO	Violation
WPM	Work Plan Manual