



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

Report Nos.: 50-348/85-15 and 50-364/85-15

Licensee: Alabama Power Company
600 North 18th Street
Birmingham, AL 35291

Docket Nos.: 50-348 and 50-364

License Nos.: NPF-2 and NPF-8

Facility Name: Farley Nuclear Plant

Inspection Conducted: March 11-15 and March 26-28, 1985

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5-20-85
Date Signed

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5/20/85
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SUMMARY

Scope: This special, announced inspection entailed 305 inspector-hours on site in the areas of licensed and nonlicensed operator and requalification training, shift technical advisor training, management training, support engineer training, QA/QC training, general employee training, instructor qualifications, simulator training, and maintenance training.

Results: In the areas inspected, several apparent violations were identified; however, as a result of the current NRC policy statement on training and qualification of nuclear power plant personnel, these items will be carried as unresolved pending further NRC evaluation.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *T. Davis, Safety Audit and Engineering Review Engineer
- *N. Maddox, Senior Plant Instructor
- *J. McGowan, Manager Safety Audit and Engineering Review
- *C. Nichols, Safety Audit and Engineering Review Engineer
- *W. Shipman, Assistant Plant Manager
- *W. Ware, Safety Audit and Engineering Supervisor
- *R. Wiggins, Section Supervisor, Training
- *L. Williams, Training Director
- *J. Woodard, Plant Manager

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

NRC Resident Inspector

- *W. Bradford

*Attended exit interview of March 15 and March 28, 1985

2. Exit Interview

The inspection scope and findings were summarized on March 15 and March 28, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. The licensee acknowledged the inspection findings.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Violation 50-348/83-13-01, 50-364/83-11-01. Failure to provide qualitative or quantitative acceptance criteria for licensed operator requalification. The inspector reviewed the licensee corrective actions for this violation and verified them to be complete.
- b. (Closed) Violation 50-348/83-13-02, 50-364/83-11-03. Failure to receive all reactivity manipulation training and failure to properly grade an examination as required by section A and C of Enclosure 1 of the March 28, 1980, NRC letter to all licensees. The inspector reviewed the licensee's corrective actions for this violation and verified them to be complete.

- c. (Closed) NRC letter from D. Verrelli dated August 25, 1983, concerning operator and senior operator requalification examinations of June 9 and June 10, 1983. The inspector reviewed the corrective actions taken on one individual who failed the examination and determined that the individual was removed from licensed duties, retrained and satisfactorily reexamined prior to his resuming licensed duties.

4. Unresolved Items

Nine unresolved items were identified during this inspection:

85-15-01: Failure to implement an INPO accredited training program (paragraph 7.b);

85-15-02: Failure to provide certified contract instructors and to require that they attend requalification training (paragraph 7.d);

85-15-04: Failure to provide annual training on all abnormal procedures (paragraph 7.d);

85-15-05: Failure to provide mitigating core damage training to licensed operators and I&C technicians (paragraphs 7.d and 11);

85-15-07: Failure to provide management training to STA candidates (paragraph 8);

85-15-08: Failure to provide GET to members of plant management (paragraph 9);

85-15-10: Failure to provide feedback of operational experience to maintenance personnel (paragraph 11);

85-15-11: Failure to establish a training program for QC inspectors (paragraph 13).

5. Farley Nuclear Plant Training Assessment

Farley Nuclear Plant training programs were assessed to determine their effectiveness in supporting licensed activities. The assessment consisted of the review and evaluation of policy documents, procedures, lesson plans, system descriptions, training materials, and individual training records. Interviews of training and plant staff constituted a major portion of the assessment. The assessment was conducted by a seven member team on March 11 - 15, 1985. Due to the licensee's difficulty in assembling complete training files for requested personnel, a followup inspection of training records was conducted by a three member team on March 26 - 28, 1985.

6. Training Program Administration

The Training Group organizes and directs the overall Farley Nuclear Plant training program. The Training Director is responsible to the Assistant Plant Manager - Plant Support and directs the administration of plant training programs through the training group.

Administrative control of plant training programs is provided through Administrative Procedure (AP) - 45, Farley Nuclear Plant Training Plan. AP-45 identifies those training programs to be conducted, specifies the minimum frequency of presentation, and delineates responsibilities for development, scheduling and presentation. AP-45 also gives general instructions for training documentation, attendance, and examination administration.

The Master Training Plan (FNP-0-M-015) provides the plans and schedules for annual training, quarterly training, course development, and curricula for the individual plant training programs. The curricula section of the plan is designed to provide an overview of the individual curricula. More detailed information concerning the curricula is specified in the Curriculum Guides for each training program.

On December 20, 1984, the Accreditation Board of the Institute of Nuclear Power Operations notified Alabama Power Company that it was awarding accreditation for the operations training programs taught at the Farley Nuclear Plant.

The training programs receiving accreditation were:

- System Operator Training (non-licensed)
- Operator License Training (licensed)
- License Upgrade Training (licensed)
- Shift Technical Adviser Training (non-licensed)
- Shift Supervisor Training (licensed)
- License Retraining (licensed)

The inspectors reviewed the licensee's administration of plant training programs including administrative procedures, documentation and records requirements, personnel responsibilities and qualifications, curriculum content, and examination requirements. Within the area of program administration, the inspectors noted several general concerns.

- a. Administrative procedures implementing various training requirements do not, in general, contain adequate specificity. Various training program controlling instructions lacked details concerning remedial training, corrective actions and examinations, evaluation of student progress, examination pass/fail criteria, required instructional contact hours, and necessary documentation retention requirements.
- b. The current system utilized for training record storage and retrieval is cumbersome, does not lend itself to program or record audits, and

impairs the ability to readily assess an individual's overall training adequacy or performance.

- c. The training organization lacks an effective method of tracking licensee commitments as evidenced by the multiple examples of failure to meet NUREG 0737 commitments detailed in subsequent paragraphs of this report.

7. Operator Training

a. Replacement License Training

The Master Training Plan, FNP-0-M-015, provides the training curriculum, program content, program schedules, and the training department goals and objectives. This describes and implements the lecture series commitments from FSAR Section 13.2.3.1, Program Content for Licensed Personnel Replacement - Lecture Series.

The Farley Nuclear Plant Training Plan, FNP-0-AP-45, Appendix A, provides only general terminology for the program description for operator replacement training. The procedure does not provide for the pass/fail criteria, nor does it provide for any remedial action for the failing of an examination. An example of the above was noted during the review of examination results for Hot License Class 11, where students achieved less than the examination cover sheet passing grade on certain courses and no remedial action appeared to have been taken, or documented as being taken. The licensee has a procedure change in route through the approval chain establishing pass/fail criteria for the final examination. The procedure change does not address the individual course examination pass/fail criteria, or specify remedial action. The procedure should address individual course examination, as well as the final examination, pass/fail criteria and remedial action.

The inspectors reviewed selected audit examinations that were administered to reactor operator candidates in 1983, 1984 and 1985. The candidates took an Alabama Power Company (APCO) generated examination or a Westinghouse audit examination prior to taking the NRC licensing examination. In some cases, the candidate participated in both the APCO and Westinghouse audit examinations. In two examples, the licensee candidates failed the audit examinations and were still allowed to take the NRC test. There was no documentation to indicate the type or extent of retraining conducted in order to improve weak areas of knowledge identified by the audit examinations. In one case, an audit examination was failed just ten days prior to the NRC examination, with no documentation available of additional licensee effort to assess the suitability of the candidate for taking the NRC examination. At the time of this inspection, the licensee had not implemented revision 6 to FNP-0-AP-45. This revision will require, among other prerequisites, that the license candidate pass an APCO written examination for successful completion of the Operator License Training Program. Therefore, the proposed revision to FNP-0-AP-45 would provide

definitive criteria for what constitutes successful completion of the License Training Program.

The Training Material Development, Revisions and Approvals Procedure, FNP-0-TCP-15.0, Paragraph 3.3, states that training materials purchased through vendors often comprise a major portion of a course or training module. When this occurs, an approved instructor's guide is still required for each course. The instructors guides for the thermodynamics and theory courses, taught from NUS Plant Performance and Reactor Operations manuals, have not been approved and require approval prior to the next class. Also, the NUS training manuals do not cover all elements of NUREG 0737, item 1.A.2.1, March 1980, Denton Letter, Enclosure 2. An example of this is the failure to provide instruction in the basic introduction to matter and its property.

- Systems Training (Classroom)

Overall, the classroom portion of the training program was very well structured. The curriculum of the training program had a logical flow from one course into another. The system lesson guides were clearly defined and stated. The instructor guide format paralleled the system lesson guides, and were complete with visual aids. Consequently, the system lesson guides were judged to be of excellent quality.

- Formal Training Observation

Three hours of formal replacement, one hour of RO/SRO hot license classroom training, and two hours of RO/SRO hot license simulator training, were observed during the assessment. The students were attentive and motivated. The instructor was well prepared and responsive to the students. A professional atmosphere conducive to learning was maintained by all throughout the observed training. The observed instruction was judged to be of excellent quality. Classroom instruction for each plant evolution is followed by simulator training utilizing plant operating procedures. This method of training reinforces the classroom training with hands-on training, increasing the value of the lessons to the students.

The inspectors conducted interviews with several licensed operators. Significant comments included:

- Licensee training was satisfactory, and has continued to show improvements from year to year.
- Instruction on the utilization and interpretation of plant technical specifications should be increased. The basis for limiting conditions for operation (LCOs); as well as the basis for precautions and limitations in plant procedures should be emphasized.

- Plant walkthrough examinations should begin earlier in the training program to enhance confidence prior to the administration of the NRC examination.
- The new site-specific simulator greatly improves the training program.
- Increased emphasis should be placed in the areas of radiation control and chemistry.
- The current licensee instructors are very knowledgeable and professional.

Seventeen examination cover sheets with a pass/fail criterion of 80% were reviewed from the most recently completed hot license class. On eleven occasions, the student failed to receive an 80% or greater score with no indicated followup action.

The plant's administrative procedures were reviewed to identify the actions necessary for a student who failed to receive a passing grade on an examination. It was found that there was no established formal program in this area. Training personnel stated that followup actions were taken verbally with the student, but no documented remedial programs were administered.

- License Shift Training Checklist

Six shift training checklists for license operators were examined from the last hot license training group. There were no specific guidelines identified by the plant for administering this checklist, and the following concerns and inconsistencies were noted;

- (1) There were no provisions for dates on the checklists (e.g.; issue date, signature date, completion date, etc.)

The new checklist that is currently being implemented contains an issued date, and date blocks by most, but not all, signature blocks. There is no provision indicated on the checklist for review of successful completion by the training staff.

- (2) Numerous changes had been made to the completed checklists such as deleting one section, adding additional checkouts, and changing section numbers and words with no consistency between the checklists, and no indicated authorization for the changes.
- (3) One checklist had a specific item signed off, while the other five had the item NA'ed, or marked as not existing.
- (4) Three cards did not have item 27.1 signed off as completed.

The inspector reviewed the on-the-job training (OJT) records of seven students from the last hot license class. The records indicated that all the students had received a minimum of 480 hours of on-shift time. The records also documented all routine or abnormal evolutions performed while on shift as well as indicating specific control manipulations performed. All records indicated that the students had performed at least five reactivity control manipulations as required.

b. License (SRO) Upgrade Training Program

As of April 1, 1985, Farley Nuclear Plant had not established or implemented a license (SRO) upgrade training program. On December 20, 1984, Farley received accreditation from the Institute of Nuclear Power Operations (INPO) for a license (SRO) upgrade program. The inspector was informed by the licensee that the accredited program consists of 38 weeks of training, divided into 12-13 weeks of on-shift training, 4 weeks of simulator training, and the balance as classroom training on various topics. From interviews with various personnel, the inspector learned that the program has not yet been implemented due to objections from the operations group. INPO apparently reviewed the program description prior to its implementation.

The licensee's apparent reluctance to implement the INPO accredited program is significant, because of the Commission's recent policy statement on training and qualification of nuclear power plant personnel. If a licensee fails to implement INPO approved training programs, the INPO accreditation process may have negligible effect on improving the training of plant personnel.

For the January 1985, NRC license examinations, Farley had three upgrade SRO candidates. These candidates were placed in a seven week upgrade program consisting of a few formal classes and a majority of self-study. During the self-study phase, the licensee could not provide documentation of what the candidates were required to study, and no documented periodic monitoring of the candidates' training progress. At the completion of the self-study phase, the candidates were given an audit examination to determine competence. The licensee management considered the training adequate, and the audit examination sufficient to determine progress. They also stated that self-study does not require documentation.

The inspector expressed a concern over the lack of an established and documentable license (SRO) upgrade program. The licensee was informed that a lack of a license (SRO) upgrade program will be an unresolved item (348, 364/85-15-01).

c. Simulator Training

This portion of the license and license requalification training programs correlates simulator exercises with classroom topics, familiarizing the student with system operation and integrated plant response. Use of normal, abnormal, emergency procedures, emergency plan and technical specifications are all factored into the simulator training program.

The hardware condition of the simulator was good, with excellent modeling of the plant control boards. The instructor was abreast of the latest plant modifications to the plant and was awaiting hardware in order to effect these modifications to the simulator. Implementation of the Farley Simulator Modifications procedure, FNP-O-TCP-14.0, provides feedback for timely updating of the simulator by use of the Production Change Notice (PCN). The PCNs are tracked by the Training Impact Status Log. If the PCN requires a simulator modification, a Software Change Request and/or Hardware Work Request is generated. These same request forms are also used for feedback from instructors, licensed operators, and other qualified individuals.

d. Licensed Operator Requalification Training

Requalification Lectures

The Operator Requalification Training Program is subdivided into five retraining cycles annually. Each cycle consists of a series of lectures, the total of which exceed the required six lectures per year as specified in procedure FNP-O-AP-45. Each cycle has a set or well defined objectives for the material to be taught in that cycle. There is also a partial student text compiled for the students, containing material to be covered in the requalification cycle. Providing the students with clear objectives and text references informs the student what is expected of him and where the material may be found.

One problem with the current requalification lecture program is that the texts provided to students for a cycle are not always complete. For Cycle 5 of 1984, a text was provided for several areas of study, but not for the reactor theory portion. It is recommended that texts be expanded to cover all subject areas to prevent students from having to rely totally on notes for study.

Another area of concern was the absence of formal instructor guides for requalification lectures. FNP-O-TCP-15 requires instructor guides to be available for all courses listed in the FNP Master Training Plan (MTP). Requalification courses are listed in the operations section of the MTP under Tab 500, Specialized Training. An instructor guide is necessary to insure that the continuity and consistency of a repetitive training program, like requalification training, is maintained. At present, FNP training utilizes the student texts as an instructor guide. This is undesirable because excessive material is contained in

the student text, and no reference is available as to the use of visual aids. One interviewee stated that objectives were also used as the instructor guide for a cycle. This is also undesirable in that no supportive material from which to teach is contained in objectives.

Requalification Training Lecture Attendance

A review of the 1984 requalification training cycle 5 revealed several inconsistencies between the requalification training practices and Farley's training procedures. Procedure FNP-0-AP-45, Appendix B, Section F, states that requalification lectures are required for all operators and that, if a lecture is missed, the operator is responsible for the material covered in the lecture. Section H.3 of the same appendix requires an operator who misses a mandatory lecture to either attend a special lecture covering the missed material, or to be assigned studies covering that material. In cycle 5 of 1984, there were several individuals who missed lectures and received no remedial training. This has been attributed by the licensee to a lack of detail in revision 4 of AP-45.

Revision 5 of procedure AP-45 contains a requirement for remedial training when lectures are missed; however, there appears to be no established method of insuring all licensed operators attend requalification training. Attendance sheets from the various requalification classes are retained, however, no attempt is made to cross-reference names from the attendance sheets to a master list of licensed personnel required to attend requalification training.

Requalification Examinations

An examination is given at the conclusion of each retraining cycle on the material covered during that period. If an individual fails one of the examinations, the instructor completes a memorandum to that individual explaining his deficiencies and his required corrective action. The individuals corrective action is documented. This practice is well structured and ensures the operators have the knowledge needed from the cycle material. Procedure AP-45, however, establishes 70% as the pass/failure criteria for these lecture examinations. Since concentrated training on a specific subject is being tested, and not a category on an examination with long-term retention required, it would appear that this pass/failure criteria should be changed to 80%.

The annual requalification examination is given at the end of the 5 requalification cycles. This examination is prepared and graded by exempted individuals. Several different examinations are used to ensure all operators do not receive identical questions, but the majority of the questions are identical. It is recommended that further question differential be established to help ensure test integrity. The use of a different examination for each cycle is good, however, and should be continued.

10 CFR 55, Appendix A requires that the results of the annual requalification examination be utilized to help determine the following years requalification schedule emphasis. This process was not formalized and documented at Farley.

Licensed Requalification Instructors

The licensed operator instructional staff at Farley is not diligent in their attendance of training lectures during the requalification cycles. Several members of the training department staff did not attend Cycle 5 requalification lectures in 1984. These individuals did not teach Cycle 5, and therefore, received no training in this specific area. They did, however, take and pass the annual requalification examination.

Several onsite Westinghouse licensed operator instructors have no NRC SRO certification or SRO license, but are teaching SRO/RO requalification. There were no current provisions for contracted instructors to learn plant specific material. It appears that these individuals are training themselves, but this should not replace formal training and evaluations. The Westinghouse instructors also do not attend the requalification lectures, nor are they required to take the annual requalification examination. NUREG 0737 items 1.A.2.1, the H. Denton letter of March 1980 - enclosure 1, and item 1.A.2.3 require that facility instructors who teach system, integrated responses, and transient and simulator courses shall demonstrate their competence to the NRC by the successful completion of a senior reactor operator examination and shall be enrolled in appropriate requalification programs. This includes members of other organizations who routinely conduct training at the facility. In a letter of response to the NRC dated January 14, 1981, Alabama Power Company committed to the following:

Current plant instructors involved in training programs for licensed operators are SRO licensed. Instructors obtained from other sources or future plant instructors will be SRO licensed or certified as per NRC 3/28/80 letter from Harold Denton.

Instructors are required to attend retraining programs. All licensed SRO instructors attend the SRO requalification program.

Several Westinghouse instructors have not been SRO licensed or certified per the NRC 3/28/80 letter, and have not attended the retraining program. This will be an unresolved item (348, 364/85-15-02) pending further evaluation against the NRC Training Policy Statement.

On February 8, 1985, the NRC notified Farley management by telecon that licensed instructors who had not stood watch for an extended period of time were not considered "actively and extensively" engaged in licensed activities per 10 CFR 55.31(e). Farley management committed that licensed instructors would stand at least one watch per quarter in the

control room. At the time of the inspection procedure AP-45 had not been revised to reflect this change. Verification of appropriate procedure revisions will be an inspector follow-up item (348, 364/85-15-03).

Control Manipulations

Required control manipulations are listed on a single sheet of paper and it is common practice to simply circle all completed manipulations on that sheet. The instructor then signs the back of the sheet to document completion. In many instances, the entire manipulation sheet has been signed and dated indicating that all the manipulations were accomplished in that single day. Further review showed this not to be the case, but rather, that the manipulations were done over the course of several days and simply signed off on the last day of manipulation training. This problem can be resolved by providing a date space for each manipulation which can then be dated as the manipulation is completed. The entire time period covered by the manipulation training could then be entered on the date space at the top of the page.

The inspector also identified four individual 1984 control manipulation sheets that were not signed off by the instructor as completed.

Operational Experience Feedback Training

Operational experience feedback requalification training is being performed including Licensee Event Reports (LERs), Significant Operating Event Reports (SOERs), etc. Indications are, however, that the information is being read verbatim and not being taught in a classroom setting. Some significant operational experience requires classroom training because the information needs to be discussed with students as to the potential effects on Farley operations. By instructors only reading this information aloud, the responsibility for interpretation, analysis and synthesis of how the LER could effect the plant are totally upon the student and is redundant to required reading.

The process of integrating operational experience feedback information and changes to plant design and procedure into training material, including texts and lesson plans, appeared to be adequate at Farley. To ensure timely implementation of the information, however, the process should be procedurally controlled including action item due dates, assignment of responsible individuals, and tracking to completion.

Annual Procedure Review

Annual procedure training is presently conducted simultaneously with the control manipulations. This method of training does ensure that the operators utilize the abnormal and emergency operating procedures, but does not ensure that they have read and understand all portions (contents) of all the AOPs and EOPs because the procedures are utilized

in team response to simulator transients. Not all students utilize every procedure, and every procedure is not utilized in it's entirety. The EOP/ERP and AOP review should be conducted separate from other training functions, thus ensuring all portions of the procedures are reviewed (notes, cautions, initial conditions, references, etc.). It is further recommended that the unit operating procedures be reviewed on an annual basis to allow operators to refamiliarize themselves with all portions of these instructions which are not frequently utilized. During the inspection of the 1984 annual procedure review, the inspectors identified several AOP's which were not reviewed by licensed operators. This item will be identified as an unresolved item (348, 364/85-15-04).

Simulator Retraining

Although the site-specific simulator is a very recent acquisition at Farley, the instructors appeared to have quickly become proficient on its utilization. Licensed individuals interviewed noted a steady improvement in the instructors ability in the area, and that they were now very adept. Prior to the installation of the simulator, the requalification training had been accomplished one week per year at the Zion Simulator. This simulator control board was substantially different from Farley's, and as a result of the new simulator, training effectiveness has greatly improved. All licensed individuals interviewed felt that they needed more time on the simulator, as the present schedule still only allows one week per year for each person. With the simulator located at the site, it would be much more effective to utilize the simulator one or two days each requalification cycle to maintain control board proficiency. In addition, individuals licensed prior to acquisition of the site-specific simulator expressed a desire for an extended training period to gain more familiarity with the simulator. Personnel licensed after the simulator was installed, gained this familiarity through their initial license training. Despite this simulator scheduling problem, the simulator retraining course is well structured and designed. The instructor guides direct the instructors through all major evolutions of the simulator in ordered steps. Interviews indicated that the instructors are very willing to "freeze" the simulator at a trainee's request, and to critique individual and group performance in detail. Simulator retraining is also enhanced by the providing of a simulator schedule in advance to licensed personnel. This schedule allows adequate preparation time, as well as an opportunity for individuals to request additional simulator training in specific areas.

Master Training Plan (MTP)

The Master Training Plan (MTP) uses FNP-FSAR-13 as a reference. The FSAR states that the retraining program is broken into two parts; classroom and simulator. The FSAR further states that instruction will cover the areas of "...plant design, plant modifications, or installation of new equipment." The aforementioned areas are presently

covered in a required reading format and not in either of the FSAR described manners. The FSAR also states that lectures must be given in the retraining program on "mitigation of accidents involving a degraded core," however, this is not taught in requalification training as a specific lecture or simulator subject.

NUREG 0737, Item II.B.4 required the licensee to develop and to implement a training program to teach the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged.

The licensee's January 14, 1981 submittal letter committed to complete NUREG 0737, Item II.B.4 by October 1, 1981, and referenced a September 25, 1980 submittal that states that the training program for mitigating core damage will commence on September 29, 1980, and will also become part of the requalification program. Personnel attending the program will include licensed operators. However, since completing initial training in mitigating core damage in May of 1981, replacement licensed operators have not received equivalent training in mitigating core damage pursuant to NUREG 0737 Item II.B.4, nor has training in mitigating core damage been specifically conducted as part of license requalification training.

This will be an unresolved item (348, 364/85-15-05) pending evaluation against the NRC training policy statement.

e. Nonlicensed Operator Training

The nonlicensed operator (NLO) training is undergoing transition to a performance based program. NLO training is separated into theory/fundamentals training, systems training concurrent with watch station qualifications, and retraining.

Theory/Fundamentals Training: This is a 17 week course designed to give the system operator in training (SOIT) a theoretical and fundamental background in nuclear power related topics and fire brigade training. This course is beneficial to both the utility and the system operator (SO), as it aids in the SOs pursuit of a licensed position as well as allowing him to better understand his function and responsibilities in the plant. This segment of the course is waived for nuclear power experienced personnel, usually ex-Navy, without a verification examination to ensure that they possess equivalent theoretical knowledge. The establishment of an accelerated program (self-study may be appropriate) with an examination for these personnel is recommended, ensuring that topics not associated with Navy nuclear power plants are emphasized.

Interviews with SOs indicate a very strong appreciation of the theory/fundamentals training as relating to both present job performance and future licensed operator courses. This course is not viewed by the licensee as being directly job-related, and has been waived in the past

to accelerate qualification. It is recommended that this training be made mandatory, with the modification mentioned above for personnel with prior experience.

Systems Training: This consists of nine weeks of classroom training interspersed with six-weeks of on-shift training for watch station qualifications and systems tracing. This is a well-conceived course that provides for in-plant reinforcement of recently covered systems. The system instructor guides and texts are comprehensive with appropriate system drawings. There is no formalized remedial training for individuals failing weekly examinations. Recent improvement of the qualification requirements (QRs), as a result of job analysis efforts, has given the SOIT a better guideline for watch station qualifications. A recurring theme in SOIT evaluations of courses is that having an instructor available during the on-shift training period would aid them in system training and operations discussions. Having an instructor on-shift could also enable the training department to monitor the SOIT's performance and progress, and to interface with operations personnel. An increasing number of QRs are anticipated as a result of ongoing job and task analysis, and the preferred method is to perform, vice simulate or discuss these QRs. One qualification record was reviewed, and only 12 of approximately 200 QRs were performed. Many other QRs could have been performed with little or no effect on plant operations, but were discussed or simulated instead. This same record had 45 QRs, encompassing five different systems signed off in one day, which is stretching the bounds of credibility. The six weeks of on-shift training time appears to be too short of a time frame to achieve quality system tracing and operational training experience. Discussions with SOs indicated that they felt uncomfortable during their first several months of watch standing due to general unfamiliarity with system operations and equipment location. It is recommended that the in-plant phase of system training be expanded, at least several more weeks, to allow SOITs a greater opportunity to perform QRs, to become more comfortable with system operations and procedures as well as specific equipment locations.

After completion of systems training, the SOIT is given a comprehensive written examination and then an oral walkthrough by the shift foreman operating (SFO), an SRO licensed individual. The SFO uses an oral examination summary sheet as a guideline for conducting this final qualification examination. There are however, no guidelines established for the conduct of the oral examination, and the summary sheet provides very little direction to indicate the depth of questioning. The transition to performance based training will require establishing acceptable standards of performance for each evaluation item. Due to other operational commitments, it sometimes takes the SFO several weeks to complete this examination. Having operational people involved in the testing process is encouraged, but training personnel should also be involved to help expedite the testing and provide for immediate identification of areas requiring further training. Currently, no such additional training is conducted, as the SOIT is

essentially divorced from training department control once the written examination is completed. Neither the oral summary sheet nor any pertinent comments are retained in the training record.

Requalification Training (non-licensed operations): Generally, requalification training is being conducted in accordance with the FSAR and applicable instructions; however, some improvements can be made. A 20 week period out of each calendar year is designated for requalification training, exclusively. This allows approximately four weeks of retraining per person. Training topics are actively solicited from supervisors and NLOs alike prior to this retraining period. Few courses in areas geared towards preparing NLOs for licensed operator training have been taught in the past, despite a large demand for them. The training staff has become more aware of this need and will be emphasizing these topics in future NLO retraining. Testing is conducted where appropriate following retraining instruction, but there is no formalized remedial training program in existence for those who fail these examinations. Formalized instruction in emergency/abnormal operations, as it relates to NLOs, does not exist. This would be beneficial if it could focus on why specific SO actions are required during abnormal/emergency operations, and what their specific responsibilities are under these conditions. This training would enable them to get a feel for how they fit into integrated plant operations. Much of the framework for these lessons already exists in current licensed operator systems training.

Job and Task Analysis: NLO job analysis is complete, and task analysis is well underway and being conducted in a conscientious and professional manner. This effort has already resulted in major improvement in SO training. Use of licensed operators could aid the SO and the instructor technician (IT) task analysis team in analyzing highly complex and involved procedures.

NLO Record Review: Due to the difficulties encountered in auditing microfiche disk training records which are not maintained in individual operator files, very few records were examined. A review of a recent SOIT course revealed no documentation of remedial self-study training for two individuals who missed the early part of the course. This missing documentation included mandatory written examinations for verification of student understanding of the material presented.

8. Shift Technical Advisor Training

The licensee's shift technical advisor (STA) training program was developed pursuant to NUREG 0737, and was submitted to the NRC by letter dated January 14, 1981. The training is divided into two segments. The first segment consists of NRC hot license class, and provides instruction in the design, function, arrangement and operation of plant system. The second segment consists of a four week Westinghouse STA training course designed to provide required instruction in chemistry, metallurgy, reactor physics, heat transfer, fluid flow, thermodynamics, and transient and accident response.

For retraining, the STAs participate in the operator requalification program.

The inspectors reviewed the Farley STA training program and several individual STA training records to determine program adequacy, and to verify that training and retraining were being provided in accordance with regulatory requirements and licensee commitments. The inspectors identified the following concerns:

- a. The licensee has not developed administrative procedures detailing the implementation of the STA training program. The STA training program description submitted to the NRC pursuant to NUREG 0737 was never incorporated in AP-45, Farley Nuclear Plant Training Plan, or any other plant administrative procedures or documents.
- b. Criteria have not been established to determine successful completion of the STA training program. The Westinghouse course did not include an examination until the fifth STA class. The licensee has not formally established passing criteria or remedial training requirements for this recently added examination. Successful completion criteria for the license training portion of the STA training program have not been established. The inspector identified several cases of poor performance by STA candidates in license training which were never subject to remedial training and did not delay their qualification as STAs. Examples included three STA candidates in hot license class 6, who scored 48.5 percent, 44.5 percent and 19.3 percent, respectively, on the systems final examination. No remedial training was provided, nor was an examination readministered prior to these candidates being certified as qualified STAs.
- c. Criteria have not been established for the successful completion of STA retraining. STAs participate in the operator requalification program; however, they are not held to a pass/fail or remedial training requirements (licensed personnel are required to achieve a 70/80 percent passing criteria and are removed from licensed duties and placed in accelerated requalification as remedial action). The inspectors identified several cases of poor performance by STAs in operator annual requalification examinations. These STAs never received remedial training nor reexamination. Examples included an STA who scored 73 percent overall, and 61.6 percent in one category of the 1982 annual requalification examination, and another STA who scored 74.2 percent overall, and 62.8 percent in one category of the 1983 annual requalification examination.

In summary, the licensee's STA program is not well defined due to the lack of detailed administrative implementing procedures. This lack of definition has resulted in the training and retraining programs being administered without established performance criteria, and without remedial training being provided to obvious poor performers. In response to these findings, the licensee made the following commitments.

- a. To provide adequate procedural controls for the STA training and retraining programs. This will include successful completion criteria for all segments of STA training and retraining, and provisions for remedial training as required.
- b. To review the qualifications of current STAs to ensure that they meet the established criteria, or to provide justification for their continued certification.

These commitments will be identified as inspector followup item (348, 364/85-15-06) pending implementation.

During a review of STA training records, the inspectors identified two certified STAs who had not received management training pursuant to the licensee's STA training program. These two STAs have stood watch since 1981 and 1982, respectively.

NUREG 0737, item I.A.1.1 establishes the requirements for the STA position and endorses the INPO recommendations for an STA training program. Licensee letter, dated July 29, 1980, responding to NUREG 0737, detailed the Farley STA training program, and required 40 hours of management training for the STA position.

The failure to provide 40 hours of management training pursuant to NUREG 0737 as described above is an unresolved item (348, 364/85-15-07) pending evaluation against the NRC training policy statement.

9. General Employee Training (GET)

The GET program, as stated in the Operations Curriculum Guide, Revision 5, dated March 25, 1985, is divided into ten courses. These courses are as follows: General Orientation, General Plant Safety, Security Orientation, Radiation Worker Training, Operations Quality Assurance, Respiratory Protection Training, General Employee Emergency Plan, Systems Introduction, Fire Protection, and Personal Planning and Productivity. Farley procedure FNP-0-AP-45, Revision 5, dated November 26, 1984, describes the initial GET and the General Employee Retraining Program. The GET curriculum meets the minimum requirements of ANSI N18.1-1971, Selection and Training of Nuclear Power Plant Personnel. The GET program is modified for temporary maintenance and service personnel to the extent necessary to assure safe execution of their duties.

The licensee conducts approximately 26 GET classes during the year to new APCO employees. The course lasts five days, with a comprehensive examination administered on the last day. FNP-0-AP-45 states that upon completion of the training program, each employee will be examined by means of a written examination. This procedure does not state the minimum grade required to complete the course nor does it specify necessary remedial actions. Passing criteria for all training center courses, however, is stated in general terms in Training Center Procedure (TCP) 0.0, dated

February 2, 1983. The passing grade for GET is 70 percent. GET presentations are normally a combination of video tapes and formal classroom presentations. Students must demonstrate basic radiation and contamination control fundamentals during radiation worker training.

General employee retraining is required on an annual basis. The retraining course is conducted once a week for approximately four hours. The retraining emphasizes security, radiological protection, emergency plan, and operations quality assurance. Appendix E of FNP-0-AP-45 states that a minimum grade of 70 percent is required for satisfactory completion of the retraining program.

The final examination for the GET course provided to APCO employees actually consists of a series of tests which must be successfully completed. The employee must take four examinations in the following areas: Radiation Worker Training, Security Training, Respiratory Protection Training, and the balance of training week (Emergency Plan, Fire Protection System) Topics. If an employee fails one or more of these examinations, the individual must be reexamined in order to complete the GET program. The licensee identified to the inspector that only a single examination has been written for Security Training and the balance of training topics. In the event an employee should fail these particular sections, they would receive the exact same test that they previously failed. This would not adequately test the employee's understanding of these topics.

The licensee has six different examinations for Radiation Worker Training. This allows for an individual to receive a different examination should a retest be required. It is recommended that the licensee consider implementing different examinations for use during other retests.

During the review of plant personnel training records, the inspectors identified two members of plant management who did not receive general employee retraining during the 1984 calendar year and had continued to maintain active plant access and radiation dosimetry. This failure to provide annual GET retraining pursuant to administrative procedure AP 45 is an unresolved item (348, 364/85-15-08) pending evaluation against the NRC training policy statement.

10. Support Engineer Training

Farley has no formalized training program established for support engineers. A new engineer will receive the plants general employee training and then be assigned to his new job. The licensee informed the inspector that a majority of the engineers have received system training or have participated in the licensed operator training program. The lack of an established training program is a concern and will remain an inspector followup item (IFI 348,364/85-15-09).

11. Maintenance Training

The Mechanical, Electrical, Instrument and Control Maintenance Training programs were reviewed to determine if they met the requirements of the plant's Technical Specification, FSAR and licensee commitments. The inspector reviewed Farley Administrative Procedures, Master Training Plans, General Curriculum Guide, lesson plans, on-the-job training program, selected training records and interviewed eight maintenance personnel.

The maintenance training program for each discipline are similarly organized. They consist of six levels of training. The levels are, Entry Level, Basic, Transition, Fundamental, Advanced and Specialized Training. The transition level training is for personnel who transfer from one discipline to another. The maintenance training programs are presently conducting training in the advanced levels. This level is divided into seven phases, and each phase lasts for a three week period. On completion of the advanced level training, the maintenance personnel will commence specialized training, this training includes retraining or continuing training, and specialized training on specific types of equipment. The formalized training at Farley consists of lectures, supported by visual aid and laboratory (hands on) training. Interviews with maintenance technicians indicate satisfaction with the program and they stated that the hands-on training is very useful and helpful.

The on-the-job training (OJT) program consist of a training guide and record card, which are used to evaluate and document the progress of assistant or apprentice maintenance technicians. The tasks set forth in the record guide can be completed by using oral, walk-through, simulated performance, or actual performance evaluations. The individuals foreman signs off the major portion of the record, but an instructor who covered specific portions of the card during formal training may also sign the record.

The inspector conducted a review of the licensees commitments on NUREG 0737, concerning Mitigating Core Damage Training for Instrumentation and Control personnel. In an Alabama Power Company letter dated February 9, 1981, the licensee committed to training instrumentation and control personnel in the mitigation of core damage. The following topics would be covered; ESF features, ECCS Systems, ECCS systems response to accident conditions, emergency operating procedure, emergency plan implementing procedures, excore NIS, incore NIS, incore thermocouple, post accident hydrogen analyzers, containment environment effects on vital instrumentation, alternate methods for pressure, flow, temperature, and level determination, and finally, I&C calibration and surveillance procedures. The inspector determined that the initial training for I&C personnel was conducted but that replacement training for new personnel had not taken place. The inspector reviewed the attendance sheets for the initial mitigation of core damage training. Of the 50 I&C technicians qualified journeyman or above, 41 had not received the initial training. The licensee informed the inspector, that the present training program incorporated mitigation of core damage training into the various courses. The licensee did not conduct a formal evaluation of the present training program to determine if all required

topics are covered. Pending this evaluation, replacement training for mitigation of core damage will remain a part of the previously mentioned unresolved item (348, 364/85-15-05).

NUREG-0737, Item I.C.5 requires that operational experience from both within and outside the organization be continually provided to plant personnel, including maintenance, and that it be incorporated into training and retraining programs. It also requires periodic internal audits to ensure that the feedback program functions effectively at all levels. In a response to the NRC on March 26, 1980, the licensee committed that procedures for the various functional groups would be revised to assure timely distribution of information and to provide for periodic internal audits. Item I.C.5 was implemented at Farley by NRC Order dated July 19, 1981. The plant procedures address the formal distribution and documentation of operational experience for the maintenance and instrumentation and control groups only to the superintendent level. Distribution of this information to the individual mechanics and instrument technicians is informal, uncontrolled, and not documented. Operational experience is not incorporated into the training and retraining programs for maintenance and instrument and control personnel. In addition, the periodic internal audits of the program conducted by QA do not assess the effectiveness at all levels since the audit stops at the superintendent's level. This item will be unresolved (348, 364/85-15-10) pending evaluation against the NRC training policy statement.

12. QA Auditor Training

The inspector reviewed procedure SAER-AP-07, Qualification and Training to determine if it met the requirements of the accepted QA program, FSAR, Technical Specifications and licensee commitments. Additionally, the inspector reviewed the training records of selected QA auditors to determine adequacy of training and completeness of documentation. The following items were noted:

- All QA auditors receive a qualification card for guidance and documentation of required training.
- The QA qualification program includes training in plant systems and procedures.
- Once an individual is qualified as a "Lead Auditor" a continuing training program is implemented.
- All auditors attend a formalized course on auditing techniques and must participate in four quality assurance program audits and additionally upon completing all qualification requirements, a trainee must conduct a nuclear QA audit under the supervision of a qualified lead auditor prior to qualifying.

The QA auditor qualification and training program appears adequate and meets the requirements for QA training.

13. QC Training

The inspector reviewed the licensee's QC training program to assure that it met requirements of the accepted QA program, FSAR, Technical Specifications and licensee commitments. Additionally, the inspector reviewed a selected number of QC inspector certifications and conducted interviews with four QC inspectors, one maintenance supervisor and the Quality Control supervisor.

A review of administrative procedures and interviews with QC inspectors indicate that Farley Nuclear Plant has no established training program. The QC supervisor and one maintenance supervisor, the individuals who recommend and grant final approval for QC inspector certifications, informed the inspector that QC certification is based solely on experience gained as a maintenance technician and education required to become a technician. A review of selected inspector certifications indicate that individuals receive certification with no training or experience in inspection techniques. Additionally, interviews with one QC Level II inspector indicated that he did not know that he was a certified Level II inspector and another Level II inspector stated that he had never performed QC inspections.

A typical QC training program generally contains an indoctrination in various regulations and standards (i.e. - 10 CFR 50, App. B, 10 CFR 21, FSAR, Technical Specifications, OQAM, ANSI standard, Regulator Guides and NUREG's) concerning quality control. The program also contains training in inspection techniques (i.e. - blueprint reading, use of inspection, measuring and test equipment, hydrostatic test, cable pull, snubber inspections, valve stroke timing, and limiter torque settings to name a few examples). The overall training program is governed by procedure and an individuals participation and completion in the program is documented.

10 CFR Part 50 Appendix B, Criterion II, Quality Assurance Program states in part, that the program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

Farley FSAR Section 17.2.2, Quality Assurance Program, Revision 2, states in part, "All plant staff who are assigned the responsibility and authority to approve inspection and test procedures, implement these procedures, and evaluate and report the results of the tests and inspections shall be certified as to their levels of capability in compliance with the requirements of Regulatory Guide 1.58, dated August 1973, which references ANSI N45.2.6-1973 guidance as amplified by regulatory positions 5, 6, 7, 8 and 10 of Regulatory Guide 1.58, Rev. 1, September 1980. The plant manager shall determine the acceptance of experience qualifications, based on the guidelines presented in ANSI N45.2.6-1973 for capability levels in areas of testing and inspection other than NDE".

ANSI N45.2.6-1973, section 2.2.1, states; "When training programs are required they shall include indoctrination of personnel with the technical objectives of the project, the codes and standards that are to be used and

the quality assurance elements that are to be employed with guidance regarding their limitations and capabilities. On the job participation shall also be included in the program with emphasis on first hand experience gained through actual performance of processes, test, examination and inspections".

Contrary to the above, the licensee does not have an established program for the indoctrination and training of QC inspectors. The inspector informed the licensee that a lack of a QC training program as required by 10 CFR 50 Appendix B, Criterion II and ANSI N45.2.6-1973, which was endorsed by the licensees' QA program, was an unresolved item (348, 364/85-15-11) pending further evaluation against the NRC training policy statement. The licensee management stated that they felt the present method of QC certification is adequate.