



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

Report No.: 50-261/86-11

Licensee: Carolina Power and Light Company
 P. O. Box 1551
 Raleigh, NC 27602

Docket No.: 50-261

License No.: DPR-23

Facility Name: H. B. Robinson

Inspection Conducted: April 28 - May 2, 1986

Inspectors:	<u><i>F. R. McCoy</i></u>	<u>6/29/86</u>
	F. R. McCoy	Date Signed
	<u><i>W. K. Poertner</i></u>	<u>6/26/86</u>
	W. K. Poertner	Date Signed
	<u><i>C. L. Vanderniet</i></u>	<u>6/29/86</u>
	C. L. Vanderniet	Date Signed
Approved by:	<u><i>D. P. Johnson for</i></u>	<u> </u>
	B. Wilson, Acting Section Chief Operational Programs Section Division of Reactor Safety	Date Signed

SUMMARY

Scope: This routine, unannounced inspection was conducted on site in the areas of licensed operator training and training of non-licensed personnel.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. Beatty, Manager Robinson Nuclear Project
- *D. R. Quick, Manager - Maintenance
- *A. R. Wallace, Manager - Technical Support
- *R. M. Smith, Manager - Engineering and Radiological Control
- *C. A. Bethea, Director - Training
- *H. J. Young, Director - Quality Assurance/Quality Control
- *F. L. Lowery, Manager - Operations
- *J. C. Sturdavant, Regulatory Compliance
- *G. Honma, Regulatory Compliance
- *A. M. McCauley, Onsite Nuclear Safety Group
- *S. Allen, Training
- *V. L. Smith, Training

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

NRC Resident Inspectors

- *H. P. Krug
- *R. Latta

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 2, 1986, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

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

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Review of Licensee Operator Training

The inspectors reviewed the training and qualification associated with on shift licensed personnel involved in the following operational events:

- Initial criticality of March 20, 1986
- Licensee Event Report 86-006, Inadequate Engineered Safety Features Actuation of January 30, 1986
- Licensee Event Report 86-009, Reactor Trip, caused by Turbine Trip on Hi Steam Generator Level, of March 22, 1986

This review encompassed the activities of nine licensed individuals, three of whom were common to the two licensee event reports.

Additionally, the inspectors reviewed efforts towards INPO accreditation of licensed operator training programs, efforts towards site specific simulator program implementation, and pass rates associated with licensed operator requalification and hot license qualification.

The inspectors reviewed the licensee's requalification training program; reviewed training records associated with each of the licensed individuals selected for review; interviewed training staff members, and interviewed three of the individuals associated with the initial criticality of March 20, 1986. The inspectors concluded, based on these inspection activities, that the licensee is conducting licensed operator requalification in accordance with the training instruction, TI-200, which governs licensed operator requalification. Additionally, the inspectors concluded that this requalification program is in compliance with that approved by the NRC in a letter from Paul F. Collins, Operator Licensing Branch, Director of Licensing, dated January 30, 1974.

The inspectors noted that the licensee requires 80 hours of lecture attendance and 64 hours of simulator attendance each year, and four hours per month on shift for each licensed operator. The inspectors advised the licensee that 80 hours of lecture attendance each year is somewhat less than that observed at some other plants and recommended, in light of current industry standards, that the licensee consider increasing lecture attendance time in order to increase material coverage. The inspectors also noted that the licensee allows exemption of specific lectures and topical examinations for individuals who passed the specific section of the annual comprehensive examination with greater than 80%. The inspectors determined that even with exemption provisions in place for lecture attendance, licensed operators typically attend all lectures even if they satisfy the criteria for exemption. However, in all cases reviewed, licensed operators who satisfied the exemption criteria would not take the topical examination. Again, the inspectors advised the licensee to evaluate the continued desirability of waiving topical examinations during requalification, in light of current industry standards.

In reviewing records associated with class attendance the inspectors noted that in some limited cases the class attendance matrix did not reflect full attendance of all portions of a lecture series or reflected that the majority of a week's class time was completed in a single day. The inspectors reviewed other records associated with class attendance and interviewed individuals involved in order to determine the scope of the problem. Based on these activities, the inspectors concluded that the problem was not one of failure to attend required lectures, but was rather an administrative problem associated with accurately maintaining the lecture attendance matrix. The licensee acknowledged this deficiency and committed to take actions to correct specific discrepancies and ensure that all elements of future record keeping are complete and accurate. Resolution of this concern is identified as an inspector followup item (261/86-11-01).

The inspectors attended a requalification training lecture associated with nuclear instrumentation. The instructor was knowledgeable of the subject matter; lesson plans and student handouts were determined to be adequate; and students were attentive and participated actively in class.

The inspectors reviewed the accelerated requalification of selected persons who had done poorly on the annual requalification examinations for 1984 and 1985. In each case the individuals were given accelerated requalification for one week. This consisted of structured self study. The instructor developed a training guideline that outlined the procedures and lesson plans which needed to be studied, and at the end of the week the operator was retested. The retest appeared more comprehensive than the original section failed and did not contain the same questions asked in the original examination.

The inspectors reviewed selected annual requalification examinations administered in 1984 and 1985. The examinations appeared adequate. Answer keys were prepared and grading seemed consistent in most cases. The inspector identified one question in the 1984 requalification examination where the point values for parts of the question were changed after the examination had been administered and the question graded. This reassigning of point values allowed two individuals to receive greater than 80% overall when they would have received less than 80% if the point values had not been changed. Review of the examination showed that everyone did poorly on the first part of the question and everyone did extremely well on the second part of the question. After the question was graded originally, the point values were changed to make the second part of the question worth more points and to reduce the point value of the first part of the question. In interviews, the licensee stated that the point values were changed because the licensee considered the second part of the question to be of greater safety significance than the first part. The inspectors determined that this rearrangement of point values was done in an informal manner by the

instructor who had administered the exam. The inspectors commented to the licensee that the reassigning of point values, especially after an exam had been administered and the section graded, should be done in a structured and documented manner with at least the same level of review and approval as the original examination. The licensee acknowledged the comment and stated that the matter would be considered for incorporation into the training program.

In assessing the training and qualification of those individuals involved in the engineered safeguard feature actuation and reactor trip, reported in the licensee event reports which were reviewed, the inspectors considered it pertinent that interviews be conducted with the three individuals (one Senior Reactor Operator and two Reactor Operators) who were common to the two events. The licensee stated that these individuals were on their off shift and would not be on site at all during the week of the inspection. The inspectors consider that interviews with these individuals is necessary in order to complete this particular item of the inspection and identify the conduct of these interviews as an inspector followup item (261/86-11-02). In reviewing the qualifications of personnel, the inspectors noted that for the three individuals common to the two licensee event reports:

- a. The SRO had been licensed approximately one year as an SRO and had approximately 5½ years prior experience as a licensed RO.
- b. One RO had been licensed for approximately 1½ years and the other approximately 3½ years.
- c. Performance in requalification was very good for the SRO and one of the ROs. Performance in requalification for the other RO was marginal and required some accelerated requalification training.

With regard to prior training associated with the two events reviewed, the inspectors noted that LER 86-006 was an engineered safety features actuation on January 30, 1986 perpetuated by operators failing to block the high steam line differential pressure safety injection signal during cooldown in accordance with the Plant General Procedure (GP-007). The inspectors additionally noted that the 1984 and 1985 requalification examinations addressed the manual block for the high steam line differential pressure safety injection signal and that this feature had been covered in requalification training.

With regard to training provided following the events, the inspectors noted that the events had not yet been processed through the licensee's program for feedback of operating experience. The inspectors reviewed the licensee's program for feedback of operating experience and participation in this program for the 9 individuals selected for review over the past year. The inspectors ascertained that each of these individuals are currently participating in the program for feedback of operating experience. The inspectors observed that this program provides required reading information for procedure changes, modifications, and local and offsite operating experiences. In the case of operating experiences, the inspectors observed a tendency for the licensee to heavily screen operating experiences; much more so than other plants observed. The licensee acknowledged this observation

and noted that this condition was deliberate in order to prevent inundating personnel with so much required reading information that it becomes counter-productive. The licensee indicated a sensitivity to assuring proper implementation of operating experience feedback and stated that they are working towards effectively improving their implementation processes. A review of selected past events reflected that conscientious and detailed evaluations had been accomplished for each event reviewed. The inspectors were particularly interested in how Licensee Event Report 86-006 would be factored into the feedback of operating experience program and will review this once implemented. Accomplishment of this review is identified as an inspector followup item (261/86-11-03).

In the area of INPO accreditation, the inspectors noted that licensed operator training and licensed operator requalification training had been accredited on May 16, 1984.

The inspectors reviewed pass rates associated with hot license training and requalification training for the calendar years 1983, 1984, and 1985. In the area of hot license training four SRO and two RO classes were reviewed. There were no failures for any of the licensee's final comprehensive written audit examinations associated with these classes. This data was compared with NRC written examination results which indicated in February 1983, five of five SRO candidates passed the NRC written examination; in July 1984, four of four RO candidates passed the NRC written examination (one candidate failed the oral); in December 1984, three of three SRO candidates and three of four RO candidates passed the NRC written examination (the failure was a section 4 failure of 57.8 percent); and in June 1985, three of three SRO candidates passed the NRC written examination. These statistics compare favorably with the applicants audit exam results.

In the areas of requalification training, four of seven ROs and nineteen of twenty SROs passed the licensee's 1983 annual written requalification examination, five of six ROs and fifteen of seventeen SROs passed the licensee's 1984 annual written requalification examination, and seven of seven ROs and nineteen of twenty-one SROs passed the licensee's 1985 annual written requalification examination. Table 1 summarizes the grades for those examinations which were failed.

The inspectors noted that simulator training is currently provided at the Shearon Harris simulator for requalification. The licensee is in the process of acquiring a site specific simulator with a projected final completion date of July 1987 for having a fully operational and tested simulator in place. A review of the status of preparations in this area appears to support the licensee's schedule.

TABLE 1FAILED EXAMINATIONS IN OPERATOR
REQUALIFICATION

1983	THREE RO FAILURES	-	1 overall failure of 77.9, 1 overall failure of 78.2, 1 overall failure of 76.6
	ONE SRO FAILURE	-	1 overall failure of 77.8
1984	ONE RO FAILURE	-	1 overall failure of 74.3
	TWO SRO FAILURES	-	1 section failure of 55.3 in section 4, 1 section failure of 60.6 in section 2
1985	TWO SRO FAILURES	-	1 section failure of 68 in section 4, 1 section failure of 67.7 in section 4
	NO RO FAILURES		

6. Maintenance Training

The inspectors reviewed the training and qualification associated with mechanical, electrical and instrumentation maintenance personnel involved with the following operational and maintenance events:

- ° Licensee Event Report (LER) 86-002 Reactor Trip, caused by High Steam Generator Level.
- ° Licensee Event Report (LER) 86-004 Reactor Trip, caused by Nuclear Instrumentation High Neutron Flux.
- ° Reactor Coolant Pump internals inspection.

This review encompassed the activities of eight maintenance operators three of whom were involved in the LERs.

Additionally, the inspector reviewed efforts towards INPO accreditation of the maintenance training programs, the quality of maintenance training lesson plans, training prior to complicated maintenance evolutions, on-the-job-training (OJT), and Training Instruction 113.

The inspector reviewed the records of six of the maintenance personnel to ascertain the level and amount of training that they had received since commencing employment with the licensee. The records reviewed indicated that the six maintenance personnel had worked for the licensee for several years, a positive factor for the licensee in that the retention of qualified and experienced maintenance personnel would allow the licensee to continually have a high level of knowledge from which to draw. Each record contained a running log of the training attended by each employee. This list accounted for quality assurance, radiological controls, industrial safety, and mitigating core damage training, as well as plant system and procedure training. One weakness was noted however, in the area of site emergency plan training. Half of the records that were reviewed had no indication of this training, however, during interviews with the individuals, all stated that the training had taken place and that the problem was simply a failure to document the training. The licensee is currently rewriting the training for the site emergency plan. The rewrite appears to be an improvement over the current training. Other than the above documentation problem, training records of the maintenance staff appeared to be in order.

The inspectors reviewed the actions of the maintenance training department towards INPO accreditation. Training programs for all three types of maintenance personnel are currently undergoing revisions. The revisions appear to be strengthening existing programs by increasing the technical detail for mechanical, electrical, instrument and control personnel, with each program providing several levels of training dependent on the level of experience of the individual. Newly-hired employees are placed into the

programs at Level I and progress through Level V to complete the program. This will result in maintenance personnel in the mechanical area receiving a total of 756 hours of training, electrical personnel receiving 398 hours, and instrumentation personnel receiving 915 hours, each including a 200 hour course on basic plant systems. The program is a vast improvement over the old on-the-job-training used at the facility. It includes classroom training on plant procedures, plant drawings, and an introduction to nuclear power. This new training program will be in addition to the general employee training that maintenance personnel will continue to receive.

The inspectors reviewed several of the lesson plans to be used in the new program including the following: (1) PO-202R Basic Systems; (2) AD-201R Plant Drawings; (3) NI-4000R Nuclear Instrumentation; (4) TB-5000R Turbine Controls; (5) ME-502R Reactor Coolant Pump Seals; (6) CT-001R and CT-002R Maintenance Continuing Training. These lesson plans were developed on a performance-based model and utilize clear objective statements. Each lesson plan contains an instructor outline, transparencies, and any necessary handouts for the students. The exam banks for each lesson are maintained in locked file cabinets by the responsible maintenance instructor. The lesson plans appeared to be plant specific as well as being specifically oriented to the special needs of each type of maintenance personnel. The inspectors interviewed six maintenance personnel about the maintenance training programs. These individuals were involved in the evolutions listed at the beginning of this section and were questioned by the inspector about the training they received prior to performing the evolutions. The Instrumentation and Control (I&C) personnel stated that their training prior to the performance of an evolution was a self-review of the procedures that were to be used. All I&C personnel indicated that they did not receive sufficient training on the operations and safety significance of the systems prior to performing maintenance. They stated however, that it is a common practice to have experienced maintenance personnel oversee the performance of maintenance items by inexperienced personnel, and that the practice of keeping in communication with the reactor operator during the performance of maintenance affecting reactor plant instrumentation is currently being used. All I&C personnel requested more systems training and after conferring with the maintenance training supervisor the inspector was informed that all maintenance I&C personnel would be redirected through a systems training program. This item will be identified as an Inspector Follow-up Item (261/86-11-04).

Mechanical maintenance personnel were also interviewed. These personnel informed the inspector that there was no formal training for the most senior mechanical maintenance personnel. These individuals informed the inspectors that they would like to receive some technical training on an annual basis. This comment was forwarded to the training department by the inspector. It was noted however, that maintenance personnel, mechanical and others, were involved in a retraining series that covered new plant modifications, maintenance procedural changes, licensee event reports, and administrative procedures. Further information from the interviews referred to the preparation for major maintenance items. The interviewees stated that for

major maintenance items the licensee acquires the services of the vendor to assist and advise the mechanical maintenance personnel in the evolution. This practice ensures the availability of expertise during the evolution and should, be continued.

7. Review of Non-Licensed Operators Training

The inspectors reviewed the training and qualification associated with on-shift non-licensed personnel. This review encompassed the activities of seven non-licensed operators. The inspection included a review of Training Instruction (TI) No. 104 Qualification Program for Auxiliary Operators.

The inspector reviewed the records of seven non-licensed operators. During the review, the inspectors noted a discrepancy in the way personnel were exempted from the Basic Auxiliary Operator (BAO) and Nuclear Auxiliary Operator (NAO), portions of the Auxiliary Operator (AO) qualification program. TI-104 revision 21 states that individuals with six years of U.S. Navy nuclear or two years of commercial fossil or nuclear power plant experience may be exempted from the BAO portion of the AO program. The TI further states that an individual may be exempted from the NAO portion of the AO training program only through passing the NAO exemption test. Attachment 1 is included in TI-104 to document the completion of the BAO and NAO portions of the training and to document if the individual had been exempted from the training. After reviewing the training records of the seven AOs, only one contained Attachment 1 of TI-104. The inspectors questioned whether the others had completed the training or had they been exempted from the BAO and NAO portions. The training personnel informed the inspector that the individuals had been exempted. The inspectors then requested documentation that the AOs had met the requirements for exemption according to TI-104. The licensee responded by saying the TI had been revised several times and that during one of the revisions the requirements for BAO and NAO training had been changed. The inspectors requested to see the old revisions of the TI which the licensee was unable to provide prior to the inspector leaving the site. Subsequent to the site inspection, the licensee was able to submit to the inspectors revision 11 of TI-104 which called for the addition of the NAO program into the procedure dated July 18, 1983, a date which is after the date that two of the AOs in question had qualified and all the others had started the process of qualification. The licensee also included TI-104 revision 14 which called for the adding of the current requirements for the BAO and NAO portions of the AO program dated October 31, 1983. The licensee stated that the AOs in question were exempt from the new procedure because they were already in the process of qualifying as AOs when the changes to TI-104 took effect. This reasoning satisfied the inspectors, however, some form of documentation explaining the "grandfathering" of AOs qualified at the time of the revision should be included in their training records.

The inspectors found the rest of the non-licensed operator training, including retraining to be adequate, however, due to insufficient time, the inspector was unable to perform interviews.

8. Review of Shift Technical Advisor Training

The inspector reviewed procedure TI-111, Qualification Program for Shift Technical Advisor. The inspector reviewed the qualification folders of two Shift Technical Advisors. The inspector considers that both individuals appeared to meet the requirements of TI-111.