



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

Report Nos.: 50-280/94-20 and 50-281/94-20

Licensee: Virginia Electric and Power Company  
 Glen Allen, VA 23060

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry Power Station Units 1 and 2

Inspection Conducted: October 3-7, 1994

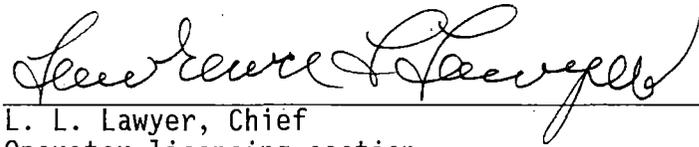
Inspector:

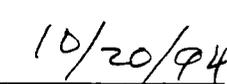
  
 Ronald F. Aiello

  
 Date Signed

Accompanying Personnel: Steve Johnson, INEL

Approved by:

  
 L. L. Lawyer, Chief  
 Operator licensing section  
 Division of Reactor Safety

  
 Date Signed

SUMMARY

Scope:

This was a routine announced NRC inspection in the area of licensed operator requalification training. The purpose of the inspection was to verify that the licensee's requalification program for Reactor Operators (ROs) and Senior Reactor Operators (SROs) ensured safe power plant operation by evaluating how well the individual operators and crews had mastered training objectives; and assess the licensee's effectiveness in ensuring that the individuals who were licensed to operate the facility satisfied the conditions of their licenses as specified in 10 CFR 55.53.

Results:

The inspector identified a weakness in operator knowledge of facility operating history (paragraph 2.b).

The inspector identified a strength in the relationship between training and operations, specifically in the area of ownership of training by management (paragraph 2.b).

Enclosure

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## REPORT DETAILS

### 1. Persons Contacted

- W. Benthall, Supervisor, Licensing
- \*A. Brown, Supervisor Nuclear Training; Operations
- D. Christian, Station Manager
- D. Hayes, Supervisor, Administrative Services
- \*B. Johnson, Station Safety Coordinator
- \*D. Llewellyn, Acting Superintendent, Nuclear Training
- \*H. McCallum, Supervisor, Operations Training
- \*J. McCarthy, Asst. Station Manager, Operations and Maintenance
- \*S. Sarver, Superintendent, Operations
- \*J. Spence, Lead LORP Instructor
- \*B. Stanley, Supervisor, Station Procedures
- J. Swintoniewski, Supervisor, Station Nuclear Safety

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

#### NRC Representatives

- M. Branch, Senior Resident Inspector
- \*D. Kern, Resident Inspector

#### \*Attended Exit Interview

### 2. Discussion (71001)

#### a. Summary

This was a routine, announced NRC inspection in the area of licensed operator requalification training. The purpose of the inspection was to verify that the licensee's requalification program for ROs and SROs ensured safe power plant operation by evaluating how well the individual operators and crews had mastered training objectives; and assess the licensee's effectiveness in ensuring that the individuals who were licensed to operate the facility satisfied the conditions of their licenses as specified in 10 CFR 55.53. This inspection included an NRC review of the facility operating history, examination development and administration, operator training, conformance with operator license conditions, remediation and retesting, facility initial examination question bank and the simulation facility. The inspector identified a weakness in operator knowledge of facility operating history and a strength in the relationship between training and operations.

#### b. Facility Operating History

The inspector reviewed recent examination and inspection reports related to operator performance. The inspector also reviewed other indications of potentially weak operator performance including Technical Specification (TS) violations and Licensee Event Reports (LERs). The inspector also reviewed management's commitment to operator training.

Enclosure

The inspector observed license related activities and conducted technical interviews to examine SRO knowledge of past LERs and 1993 licensed operator requalification special training issues. The inspector chose five SROs at random to be interviewed. The inspector identified a weakness in operator knowledge of facility operating history. None of the SROs knew how much time would be available for operator action following a design basis, postulated, cold shut down dilution accident. Two operators, given a set of initial conditions, could not determine how much dilution would occur if the primary grade water supply to the Charging and Volume Control System (CVCS) blender was left open for four hours following completion of makeup. Two operators did not know the immediate actions following a Loss of Semi-Vital Bus, AP-10.05.

Operations and Shift Technical Advisor (STA) management observed and critiqued both the performance of the operating teams and training's assessment of team performance during the examination week. As a routine practice, station and corporate management evaluated both operating teams and training staff on their performance. These observations covered all aspects of Licensed Operator Requalification training and evaluation. During 1993 and 1994 to date, there have been 92 management observations of operator requal training. Seventy six of these observations have been during simulator evaluation sessions. These observations helped ensure that management's expectations and standards were adhered to. This feedback continues to improve the operating teams' performance (examples are in STA performance, team participation during simulator debriefs and team communications). The inspector identified this item as a training department strength.

The NRC identified no violations or deviations.

c. Facility Licensee Requalification Examinations

The inspector assessed the facility licensee's examination materials, sample plan, examination security, and proposed and completed examinations under the guidance of NUREG-1021, "Operator Licensing Examiner Standards." The inspector found no items of departure from that guidance.

The inspector reviewed the examination security agreements for the operating tests that the facility administered during the weeks of September 27 and October 3, 1994. The inspector also reviewed the training schedules for the two crews that took their annual operating evaluation to determine if any individuals who signed security agreements were listed as an instructor since signing the agreement. The inspector concluded that the instructors had conducted no training for the licensed individuals to be examined by the facility. The facility procedure for security contained the necessary elements to comply with the guidance of ES-601, "Conduct of NRC Requalification Examinations."

The inspector reviewed the sample plan for the 1993 and 1994 requalification cycle and the facility's guidance for development and use of the sample plan. The inspector identified that the facility developed and used the sample plan consistent with the guidance of ES-601, "Conduct of Requalification Examinations," and ES-603, "Requalification Walk-Through Examination."

The inspector conducted a review of the written and operating examination that was administered during the week of October 3, 1994. The inspector identified one deficiency with respect to the written examination that the facility administered during the first week of the 1994 annual requalification examination. The inspector identified one question that was repeated in both the Part "A" and Part "B" sections of the written examination. The facility reported that the examination had received a normal process review for the examination which included two license instructors and the training supervisor. The facility resolved this issue by deleting the question from the part "A" examination that was given later in the day. The removal of this question did not affect the validity of the examination.

The NRC identified no violations or deviations.

d. Examination Administration

The inspector assessed the facility licensee's effectiveness in examination administration to verify that the facility had adequately addressed licensed operator and crew performance as required by 10 CFR 50.120, 10 CFR 55.59, and 10 CFR 55.4. The inspector examined the facility's conduct of operating tests, use of objective performance standards when conducting evaluations and critiques, adequacy of administrative procedures to ensure integrity of examinations, and examination administration. The inspector found no items of departure from the above requirements.

The NRC identified no violations or deviations.

e. Conformance With Operator License Conditions

The inspector conducted a review of the facility's program for maintaining active operator licenses and ensuring the medical fitness of its licensed operators as required by 10 CFR 55.53.

License Reactivation -

The inspector reviewed the security and health physics printouts and inactive to active certifications for five operators that returned to an active license status in the last two years. The inspector identified minor inconsistencies regarding the in-plant walkthrough portion of the operators reactivation. The inspector interviewed four of the five operators to determine what logic each one used to decide what should have been walked down to satisfy the requirements of

10 CFR 55.53(f) regarding a complete plant tour. All of the operators that the NRC interviewed, conducted their in-plant tours to the satisfaction of the inspector.

#### Medical Record Review -

The inspector reviewed Approximately 30 percent of the licensed operators' medical certifications in accordance with the requirements of ANSI/ANS-3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operator licenses for Nuclear Power Plants." The findings included minor inconsistencies in medical record documentation. The inspector informed the facility of these findings.

The NRC identified no violations or deviations.

#### f. Remediation and Retesting

The inspector reviewed the facility's evaluation of their previously administered written and simulator remedial training (February 1993 to September 1994), in accordance with Inspection Procedure 71001, to verify that the training department had adequately addressed licensed operator and crew performance weaknesses as required by 10 CFR 50.120, 10 CFR 55.59, and 10 CFR 55.4. The facility evaluators had effectively identified those individuals and crews that required remediation. The inspector determined that the facility appropriately indicated when removal from shift activities was warranted and was effectively using their remediation program.

The inspector identified several instances of multiple examination failures or concerns which required remediation. The facility removed one individual with an RO license from shift license duties four times due to unsatisfactory or deficient performance on simulator examinations within the past year. Additionally, the same individual required three sessions of remediation training and evaluation prior to achieving a satisfactory evaluation. The facility removed an individual with an SRO license from shift license duties three times due to unsatisfactory or deficient performance on simulator examinations within the past year. One instance involved an evaluation of "Satisfactory with remediation" for the crew. The inspector reviewed the procedures and process for handling repeat failures. The inspector concluded that appropriate procedures and programs were in place to identify those individuals and ensure that proper review of the circumstances were conducted.

The NRC identified no violations or deviations.

#### g. Simulation Facility

The inspector reviewed the licensee's record of simulator usage during calendar year 1993. The inspector found that the simulator was available for a total of 6240 hours based on a Monday through Friday

usage. During these hours of availability, the facility used the simulator for operator training related functions 41.8 percent of the time, non-operator training functions 5.3 percent of the time, and it was idle 52.9 percent of the time. The inspector concluded that the simulator availability for operator training usage was satisfactory.

The inspector also reviewed the facility's 1994 simulator configuration and fidelity report and noted that there were only two items that had not been closed out. The facility informed the inspector that these items were scheduled to be closed out prior to the end of calendar year 1994. The inspector determined that the licensee was maintaining control in keeping up with simulator deficiencies and making reasonable progress towards reducing the simulator facility deficiency backlog.

The facility examination team suspended the second scenario of the second dynamic simulator examination, before the operating team had the opportunity to complete the scenario critical task elements on October 5, 1994. During the last two minutes of the Reactor Coolant System (RCS) cooldown, RCS pressure suddenly and unexpectedly decreased from approximately 1570 psia to 950 psia and continued to decrease after completion of the cooldown. The facility suspended the examination to reset the simulator to allow the operators to complete the scenario. The facility wrote a simulator modification report to evaluate and correct the unexplained simulator response.

The NRC identified no violations or deviations.

#### h. Facility Examination Question Bank Review

The inspector reviewed the facility initial examination written question bank to determine if it was suitable for initial examination development. The inspector determined that the examination bank was well maintained and extremely useful for examination development with relation to the facility lesson plans. However, several items were noted that could lead to conformance problems with the guidance provided by NUREG-1021, "Operator Licensing Examiner Standards" and NUREG/BR-0122, "Examiners' Handbook for Developing Operator Licensing Examinations."

The inspector reviewed 11 sections of the 57 sections of the facility exam bank provided, and looked at 16 questions in detail, including tracking the question material to the source in the facility lesson plans. In 13 cases the inspector could trace the material to subject matter located in the lesson plan. In three instances the lesson plan material did not contain the information that was used for the question development. The inspector also noted that if the licensee's bank material were to be used by the NRC, substantial deficiencies would have to be resolved. The following deficiencies would affect qualified examination development.

- (1) Many of the questions in the exam bank sections are short answer type. In the Fire Protection (FP) section, 10 of the 15 questions were short answer or list, and 5 were multiple choice. In the Nuclear Instrument (NI) section, 22 of the 52 questions were short answer or list, 1 was matching, and 29 were multiple choice. In the Recirculation Spray (RS) section, 9 of the 12 questions, were short answer or list, and 3 were multiple choice. This is a departure from the guidelines of NUREG 1021.
- (2) In some questions the wording of the stem was inconsistent with the guidance in NUREG 1021 and NUREG/BR-0122. Some examples included, "Which is the most correct..."; and "Which one of the following is true concerning..."
- (3) In some instances the question had listed several Knowledge and Ability (K/A) numbers (up to four) for a single question asked.
- (4) None of the questions reviewed identified the particular lesson plan objective that it was testing.
- (5) Use of Word Perfect codes (font codes and character codes) was incompatible with the current Examination Question Bank (EQB) system used to develop and store examinations. The examiner would have to change or eliminate these codes prior to examination development or post examination uploading to the EQB.

The NRC identified no violations or deviations.

### 3. Action on Previously Identified Items (92700)

(Closed) IFI 91-23-01, Incomplete Items From Inspection Report 50-280,281/90-09 Regarding the Development and Implementation of ES-0.4, Natural Circulation Cooldown With Steam Void in Vessel Without RVLIS - The inspector reviewed the applicable procedures and found that the facility had adequately dispositioned this item.

### 4. Exit Interview

The NRC summarized the inspection scope and findings on October 7, 1994, with those persons indicated in paragraph 1. The NRC described the areas inspected and discussed in detail the inspection findings. No proprietary material is contained in this report. No dissenting comments were received from the licensee.