



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30303

Report Nos. 50-280/79-12 and 50-281/79-15

Licensee: Virginia Electric and Power Company  
P. O. Box 26666  
Richmond, Virginia 23261

Facility Name: Surry Power Station

Docket Nos. 50-280 and 50-281

License Nos. DPR-32 and DPR-37

Inspection at Surry Site near Williamsburg, Virginia

Inspectors: A. F. Gibson 3/29/79  
S. C. Ewald Date Signed

John R. Wray 3/29/79  
J. R. Wray Date Signed

Accompanying Personnel: E. L. Eckert

Approved by: A. F. Gibson 3/29/79  
A. F. Gibson, Section Chief, FFMS Branch Date Signed

SUMMARY

Inspection March 6-9, 1979

Areas Inspected

This routine unannounced inspection involved 93 inspector hours onsite in the areas of occupational exposures, special dosimetry, use of temporary containments, training, radiological aspects of Unit 2 condenser maintenance, followup on previously identified items, and followup on worker concerns expressed to the inspector.

Results

Of the seven areas inspected, no apparent items of noncompliance or deviations were identified.

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- W. L. Stewart, Station Manager
- \*J. L. Wilson, Superintendent Operations
- \*R. M. Smith, Health Physics Supervisor
- \*P. P. Nottingham, Health Physics Coordinator, SGRP
- \*T. A. Peebles, Technical Services Superintendent
- \*F. L. Rente, Onsite Quality Assurance Engineer
- \*S. Sarver, System Health Physicist

Other licensee employees contacted included eight technicians, two operators, and approximately 50 contract maintenance and construction workers.

#### NRC Resident Inspector

\*D. J. Burke

\*Attended exit interview.

### 2. Exit Interview

The inspection scope and findings were summarized on March 9, 1979 with those persons indicated in Paragraph 1 above. Specific items discussed included status of previous unresolved items with particular attention to ALARA aspects of the Steam Generator Replacement Project (SGRP).

### 3. Licensee Action on Previous Inspection Findings

(Open) (281/79-13-01) (Unresolved Item) Idle Workers in Containment. The inspectors observed idle workers in Unit 2 containment and discussed concerns with licensee representatives. This item is discussed further in paragraph 9.

(Closed) (281/79-13-02) (Unresolved Item) Additional Radiation Protection Training for Workers. The inspectors reviewed handouts used in conjunction with these additional training sessions and attended a session held March 7. Training is discussed further in paragraph 5.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Training

- A. An inspector reviewed training materials used for routine radiation protection training of new workers. The general employee training booklet was reviewed and the inspector verified, with one exception, that all items specified in 10 CFR 19.12 were addressed. The one item not included in the training booklet concerned advising workers of radiation exposure reports they may request pursuant to 10 CFR 19.13. The inspectors interviewed approximately 15 workers and verified all workers were aware of their right to request exposure reports. The inspectors had no further questions.
- B. During a previous inspection (RII Report Nos. 50-280/79-11; 50-281/79-13) an inspector discussed with licensee representative implementing a retraining program for the contract workers involved in the Steam Generator Replacement Project (SGRP). The licensee agreed to develop and implement such a program. The program was in progress and involved several informal discussion sessions conducted by the Health Physics Supervisor or the SGRP Health Physics Coordinator with 20 to 25 workers per session. Sessions were conducted twice per day and attendance recorded to assure complete coverage of the contract work force. The inspectors attended a session on March 7, 1979 lasting 2 1/2 hours. Discussion topics focused on worker concerns expressed to the licensee and the NRC. In addition, a handout addressing ALARA concepts, dose limits, radiation vs. contamination, and various feedback mechanisms for worker comments and suggestions was distributed. The inspector had no questions relative to this retraining program.

6. Unit 2 Condenser

- A. During a previous inspection (RII Report Nos. 50-280/79-9; 50-281/79-10) fixed contamination was found on the steam dump and air ejector lines in the Unit 2 condenser. Discussions with the NRC Resident Inspector revealed the lines in question had been cut for removal and had been tagged as contaminated material. The inspector observed several sections of the steam dump line outside the condenser and verified the tagging. Discussions with the Health Physics Supervisor revealed the licensee had analyzed shavings from the pipe and identified the contamination as cobalt-60 and cobalt-58. Air samples, witnessed by the inspector, taken during pipe cutting revealed no detectable airborne radioactivity. The inspector discussed disposal of the pipe sections with licensee representatives who stated tentative plans call for onsite storage. The inspector had no further questions.

7. Dosimetry-SGRP

- A. An inspector reviewed dose records (Form HP-1) for SGRP workers for 1979. This review revealed 12 individuals with whole body exposures in excess of 1250 mrem. An inspector examined personnel files for 9 of these individuals and verified appropriate dose history forms and accumulated exposures met the criteria of 10 CFR 10.101(b). In addition, dose extension forms, for these 9 files examined, were also verified.
- B. During the inspection, the licensee modified the administrative system for issuing pocket dosimeters to SGRP workers. Originally each worker had an assigned set of pocket dosimeters (a high and low range) that was kept with his TLD and dose summary cards (Form HP-2). However, problems with return of dosimeters, and the large number of contract workers made this system impractical. The modified system involves a worker being assigned a dosimeter set from a pool of dosimeters each time he passes dose control. All workers will continue to have assigned TLDs. The inspector commented that a faulty pocket dosimeter might be difficult to identify with the new system. The inspector discussed possible means to identify faulty dosimeters and health physics representatives agreed to record the pocket dosimeter identification numbers when they are assigned to a worker. If a significant discrepancy between pocket dosimeter dose estimates and TLD data is noted, the pocket dosimeters used by the worker could be identified and tested.
- C. The inspector discussed the use of special and/or extremity dosimetry for SGRP workers. Workers around primary piping (hanging lead shielding, installing gloveboxes, etc.) might be in non-uniform radiation fields requiring special dosimetry to assess doses to the head, lens of eye, or gonads and assure compliance with 10 CFR 20.101. Licensee representatives discussed various possible means of identifying workers requiring extra dosimetry and providing the dosimetry. Options discussed included: (1) more specific identification of variations in radiation fields by health physics technicians prior to starting work, (2) providing extra pocket dosimeters in containment for use when surveys performed during work indicate the need, and (3) requiring workers to exit containment and return to dose control to get extra TLDs. Licensee representatives stated the problem of special dosimetry would be promptly reviewed and provisions made to assure accurate assessment of occupational exposures. The inspector stated this item would be examined during subsequent inspections (281/79-15-01).

8. Use of Temporary Containments (Gloveboxes)

- A. Amendment No. 46 to the Unit 2 facility operating license includes license conditions applicable to the SGRP. Item 3.G(2)(b) requires temporary containment and ventilation systems to be operating for all cutting and grinding operations involving components with removable contamination in excess of 2200 dpm/100 cm<sup>2</sup>. Implementation of this requirement is accomplished by the use of special gloveboxes fabricated onsite for miscellaneous pipe cuts and the use of tents for large (i.e., reactor coolant) pipe cuts.
- B. The inspector discussed with licensee representatives the use of gloveboxes and operational experiences with installation, use, and removal. These discussions revealed licensee concerns as to whether the use of gloveboxes was consistent with the principles of maintaining occupational exposures as low as reasonably achievable (ALARA). Specific instances discussed included glovebox uses where installation and removal efforts resulted in approximately one man-rem of exposure while the pipe cut operation involved 0.01 man-rem exposure. In addition, licensee representatives stated samples of air and liquid contained by a glovebox had been analyzed with no significant levels of radioactivity identified. Licensee representatives stated a request for modification of the specification was being considered, however, it was not believed a change request would be completed prior to completion of miscellaneous pipe cuts in Unit 2. The inspector noted the licensee had apparently complied with the requirements of the specification.

9. Worker Briefings

- A. During a previous inspection (RII Report Nos. 50-280/79-11; 50-281/79-13), an inspector expressed concern at the large number of idle workers in Unit 2 containment and whether this practice was consistent with ALARA principles (Unresolved Item 281/79-13-02). During tours of Unit 2 containment, the inspectors noted a number of workers waiting in the designated low dose rate standby areas. The inspectors observed no idle workers who remained in various work areas where a significant radiation level existed.
- B. The inspector discussed the idle worker item with licensee representatives and questioned whether pre-work briefings were being conducted. The inspector stated part of the problem of idle workers in containment might stem from a lack of definite work assignment for time spent in containment. Discussions with licensee representatives revealed, in general, workers had not reviewed the Engineering Task Assignment (ETA) prior to entering containment. The inspector observed copies of ETAs were available near work locations. The inspector stated that while failure to conduct

pre-briefings was not consistent with licensee ALARA commitments, the inspector observed no instances where this failure resulted in unnecessary exposure as workers were waiting in designated low dose rate standby areas. The inspector stated that this item would continue to be examined during subsequent inspections.

10. Worker Concerns

- A. During the inspection a number of concerns were expressed to the inspectors by workers relative to radiological working conditions, precautions, and occupational exposures. The specific concerns and the inspectors review are summarized below.
- B. Several workers expressed concern at spending a significant amount of time in Unit 2 containment without performing any SGRP related work. This item was discussed in RII Report No. 50-281/79-13 and is also discussed in paragraph 9 of this report.
- C. Concerns were expressed relative to potential contamination of eating areas. An inspector surveyed the large eating area in the construction area and found no contamination.
- D. Several workers expressed concerns that while assisting in removal of the biological shield walls (removing broken pieces of concrete for disposal) that were not provided respirators while workers breaking the walls were required to wear respirators. The inspector discussed this item with the Health Physics Supervisor who stated respirators had been issued for dust protection and not for radiological reasons. This item was discussed by licensee representatives in a worker training session on March 7 (see paragraph 5) and the Health Physics Supervisor stated it was a topic in all such sessions to clear up any misunderstandings.
- E. Concerns relative to the use of mockup training were expressed to the inspector. The inspector noted mockup training was provided for workers involved in the large reactor coolant pipe cuts and for workers cutting lines in gloveboxes. No mockup training was apparently given for the installation and removal of gloveboxes. The inspector discussed this with licensee representatives who agreed to review the possibility of conducting such training.
- F. Several workers expressed concern that, due to escort requirements, workers in containment were unable to leave containment for extended periods of time. The inspector discussed escort requirements with licensee representatives who stated escorts are required as part of the facility security program and not for radiological reasons. ALARA aspects of individuals in containment are discussed in paragraph 9.