



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

JUN 28 1985

Report Nos.: 50-338/85-14 and 50-339/85-14

Licensee: Virginia Electric and Power Company  
Richmond, VA 23261

Docket Nos.: 50-338 and 50-339

License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Conducted: May 21-22, 1985

Inspectors:

*W.E. Cline*  
for T. Becker

*6-7-85*  
Date Signed

*A. Gooden*  
A. Gooden

*6-13-85*  
Date Signed

Accompanying Personnel: G. Stoetzel, C. Hawley, D. Schultz, and F. McManus

Approved by:

*W.E. Cline*  
W. Cline, Chief

*6-7-85*  
Date Signed

Emergency Preparedness Section

Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, unannounced inspection entailed 100 inspector-hours on site in the area of an emergency preparedness exercise.

Results: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*W. L. Stewart, Vice President - Nuclear Operations
- \*G. E. Kane, Assistant Station Manager
- \*M. L. Bowling, Assistant Station Manager
- \*A. L. Hogg, Manager - Quality Assurance
- \*R. O. Enfinger, Superintendent of Operations
- \*J. A. Stall, Superintendent of Technical Services
- \*G. E. Pederson, Supervisor - Training, PSS
- \*J. R. Harper, Superintendent - Maintenance
- \*W. W. Cameron, Director, Health Physics
- \*R. J. Hardwick, Manager - Nuclear Programs and Licensing
- \*A. H. Stafford, Superintendent - Health Physics
- \*L. L. Edmonds, Superintendent - Nuclear Training
- \*J. L. Wilson, Nuclear Specialist
- \*C. F. Wheeler, Coordinator - Security Programs

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

#### Other Organizations

M. Federline, EDO

#### NRC Resident Inspectors

- \*M. Branch
- \*J. Luehman

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on May 22, 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 did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

### 3. Exercise Scenario (82301)

The scenario for the emergency exercise was reviewed to determine that provisions had been made to test the integrated capability and a major portion of the basic elements existing within the licensee's emergency plan and organization as required by 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, paragraph IV.F and specific criteria in NUREG-0654, Section II.N.

The scenario was reviewed in advance of the scheduled exercise date and was discussed with licensee representatives on several occasions. Although problems with the scenario were identified during the review, several other inconsistencies became apparent during the exercise. These inconsistencies detracted from the overall performance of the licensee's emergency organization. Scenario problems were discussed with management representatives during the exercise critique on May 22, 1985.

No violations or deviations were identified.

4. Assignment of Responsibility (82301)

This area was observed to determine that primary responsibilities for emergency response by the licensee have been specifically established and that adequate staff was available to respond to an emergency as required by 10 CFR 50.47(b)(1), 10 CFR 50, Appendix E, paragraph IV.A, and specific criteria in NUREG-0654, Section II.A.

The inspectors verified that the licensee made specific assignments to the emergency organization. The inspectors observed the activation, staffing and operation of the emergency organization in the Control Room, Technical Support Center (TSC), Operations Support Center (OSC), and Emergency Operations Facility (EOF). At each of these centers, the assignment of responsibility and staffing appeared to be consistent with the licensee's approved procedures.

No violations or deviations were identified.

5. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to determine that the responsibilities for emergency response were unambiguously defined, that adequate staffing was provided to insure initial facility accident response in key functional areas at all times, and that the interfaces were specified as required by 10 CFR 50.47(b)(2), 10 CFR 50, Appendix E, paragraph IV.A, and specific criteria in NUREG-0654, Section II.B.

The inspectors determined that the licensee's onsite emergency organization was generally effective in dealing with the simulated emergency. Adequate staffing of the emergency response facilities was provided for the initial accident response and the interfaces between the onsite organization and offsite support agencies appeared to be adequate.

No violations or deviations were identified.

6. Emergency Response Support and Resources (82301)

This area was observed to determine that arrangements for requesting and effectively using assistance resources have been made, that arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and that other organizations capable of

augmenting the planned response have been identified as required by 10 CFR 50.47(b)(3), 10 CFR 50, Appendix E, paragraph IV.A, and specific criteria in NUREG-0654, Section II.C.

Accommodations were available for State and local staff at the near-site Emergency Operations Facility. Licensee contact with offsite organizations was acceptable and assistance resources from various agencies were prepared to assist in the simulated emergency.

No violations or deviations were identified.

7. Emergency Classification System (82301)

This area was observed to determine that a standard emergency classification and action level scheme was in use by the nuclear facility licensee as required by 10 CFR 50.47(b)(4), 10 CFR 50, Appendix E, paragraph IV.C, and specific criteria in NUREG-0654, Section II.D.

An inspector observed that the emergency classification system was in effect as stated in the Radiological Emergency Plan and in the Implementing Procedures. The system appeared to be adequate for the classification of the simulated accident and the emergency procedures provided for initial and continuing mitigating actions during the simulated emergency.

No violations or deviations were identified.

8. Notification Methods and Procedures (82301)

This area was observed to determine that procedures had been established for notification by the licensee of State and local response organizations and emergency personnel, and that the content of initial and followup messages to response organizations has been established; and means to provide early notification to the populace within the plume exposure pathway have been established as required by 10 CFR 50.47(b)(5), 10 CFR 50, Appendix E, paragraph IV.D, and specific criteria in NUREG-0654, Section II.E.

An inspector observed that notification methods and procedures had been established and were used to provide information concerning the simulated emergency conditions to Federal, State, and local response organizations and to alert the licensee's augmented emergency response organization.

No violations or deviations were identified.

9. Emergency Communications (82301)

This area was observed to determine that provisions existed for prompt communications among principal response organizations and emergency personnel as required by 10 CFR 50.47(b)(6), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.F.

Communications among the licensee's emergency response facilities and emergency organizations and between the licensee's emergency response organization and offsite authorities were adequate.

No violations or deviations were identified.

10. Public Education and Information (82301)

This area was observed to determine that information concerning the simulated emergency was made available for dissemination to the public as required by 10 CFR 50.47(b)(7), 10 CFR 50, Appendix E, paragraph IV.D, and specific criteria in NUREG-0654, Section II.G.

Information was provided to the media and the public in advance of the exercise. The information included details on how the public would be notified and what initial actions they should take in an emergency.

No violations or deviations were identified.

11. Emergency Facilities and Equipment (82301)

This area was observed to determine that adequate emergency facilities and equipment to support an emergency response were provided and maintained as required by 10 CFR 50.47(b)(8), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.H.

The inspectors observed the activation, staffing and operation of the emergency response facilities and evaluated equipment provided for emergency use during the exercise.

- a. Control Room - An inspector observed that control room personnel acted to initiate emergency response to the simulated emergency. Emergency procedures were available and the response was adequate.
- b. Technical Support Center (TSC) - The TSC was activated and staffed upon notification by the Station Emergency Manager of the simulated emergency conditions leading to an Alert emergency classification. The TSC staff appeared to be knowledgeable concerning their emergency responsibilities. The TSC appeared to have adequate equipment for the support of the assigned staff. Communications between the TSC and EOF have been improved; however, an Inspector Followup Item (84-42-03) regarding manual dose assessment remains opened. Manual dose calculations showed a significant difference between the site boundary dose (300 mr/hr) and the two mile dose ( $3 \times 10^{-3}$  mr/hr). In comparison, dose calculations based on vent monitors showed less disparity between the site boundary dose (200 mr/hr) and the two mile dose (60 mr/hr). The reason for the significant difference in results at site boundary and two miles using the manual procedure could not be determined during the exercise. These findings will be reviewed during a subsequent inspection.

- c. Operations Support Center (OSC) - The OSC was staffed upon activation by the Station Emergency Manager. An inspector observed that teams were formed, briefed, and dispatched efficiently.
- d. Local Emergency Operations Facility (LEOF)- The LEOF is located in the reactor simulator room at the training facility. This interim facility appeared to be adequately designed, equipped and staffed to support an emergency response.

No violations or deviations were identified.

12. Accident Assessment (82301)

This area was observed to determine that adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition were in use as required by 10 CFR 50.47(b)(9), 10 CFR 50, Appendix E, paragraph IV.B, and specific criteria in NUREG-0654, Section II.I.

The accident assessment program included both an engineering assessment of plant status and an assessment of radiological hazards to both onsite and offsite personnel resulting from the accident. During the exercise, the engineering accident assessment team analyzed the plant status so as to make recommendations to the Station Emergency Manager concerning mitigating actions to reduce damage to plant equipment, to prevent release of radioactive materials and to terminate the emergency condition.

Radiological assessment activities were spread over several groups. A group in the TSC was estimating the radiological impact in the plant based on inplant monitoring and onsite measurements. Radiological effluent data was received in the TSC. The results were also compared with the data obtained in the EOF from the offsite monitoring groups.

No violations or deviations were identified.

13. Protective Responses (82301)

This area was observed to determine that guidelines for protective actions during the emergency, consistent with Federal guidance, were developed and in place, and protective actions for emergency workers, including evacuation of nonessential personnel, were implemented promptly as required by 10 CFR 50.47(b)(10), and specific criteria in NUREG-0654, Section II.J.

An inspector verified that the licensee used the appropriate emergency procedures for formulating protective action recommendations for offsite populations within the 10 mile EPZ. The licensee's protective action recommendations were consistent with the EPA Manual of Protective Action Guides and other criteria. The notifications were made to the appropriate State and local authorities within 15 minutes.



An inspector observed that protective actions were instituted for onsite emergency workers which included periodic radiation surveys in the facility, evacuation of nonessential personnel, and continued accountability of emergency response personnel.

No violations or deviations were identified.

14. Radiological Exposure Control (82301)

This area was observed to determine that means for controlling radiological exposures in an emergency were established and implemented for emergency workers and that they included exposure guidelines consistent with EPA recommendations as required by 10 CFR 50.47(b)(11), and specific criteria in NUREG-0654, Section II.K.

An inspector noted that radiological exposures were controlled throughout the exercise by issuing emergency workers supplemental dosimeters, and by periodic surveys in the emergency response facilities. Exposure guidelines were in place for various categories of emergency actions and adequate protective clothing and respiratory protection were available and used as appropriate.

No violations or deviations were identified.

15. Medical and Public Health Support (82301)

This area was observed to determine that arrangements were made for medical services for contaminated injured individuals as required by 10 CFR 50.47(b)(12), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.L.

An inspector observed the emergency medical rescue activities at the accident scene. In all portions of the exercise, appropriate judgement was displayed with regard to first aid practices. The scenario was inadequate to demonstrate decontamination of the patient and contamination control.

No violations or deviations were identified.

16. Recovery and Reentry Planning (82301)

This area was observed to determine that general plans were made for recovery and reentry as required by 10 CFR 50.47(b)(13), 10 CFR 50, Appendix E, paragraph IV.H. and specific criteria in NUREG-0654, Section II.M.

The licensee developed general plans and procedures for reentry and recovery which addressed both existing and potential conditions.

No violations or deviations were identified.

## 17. Exercise Critique (82301)

The licensee's critique of the emergency exercise was observed to determine that deficiencies identified as a result of the exercise and weaknesses noted in the licensee's emergency response organization were formally presented to licensee management for corrective actions as required by 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.N.

A formal critique for exercise participants was held shortly following the exercise. Personnel in attendance included plant and corporate management, players, controllers, and NRC representatives. Strong points and weaknesses were briefly discussed by the licensee. The licensee's critique was not comprehensive and indicated a superficial treatment of the exercise comments by the licensee's staff. This finding will be reviewed during a subsequent exercise.

Inspector Followup Item (338, 339/85-14-01): Superficial treatment of the exercise findings by the licensee staff. A review of previous exercise comments in conjunction with recently completed exercise indicates the licensee has not taken corrective actions to utilize the exercise findings reported during critiques to enhance the overall effectiveness of the emergency preparedness program.

No violations or deviations were identified.

## 18. Inspector Followup (92701)

(Open) Inspector Followup Item (84-42-01): Correct scenario weaknesses. Scenario weaknesses were identified both during and prior to the exercise.

(Open) IFI (84-42-02): Emergency work tagout procedures. Due to the nature of the scenario, this issue was not inspected.

(Open) IFI (84-42-03): Improved dose assessment procedures. Errors in dose evaluation were noted during the exercise. This item is further discussed in paragraph 11.b.