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

OCT 29 1990

Report No.: 70-824/90-02

Licensee: Babcock and Wilcox Company
Naval Nuclear Fuel Division
Lynchburg, VA 24505

Docket No.: 70-824 License No.: SNM-778

Facility Name: Naval Nuclear Fuel Division

Inspection Conducted: September 17-21, 1990

Inspector: A. Gooden 10-26-90
A. Gooden Date Signed

Accompanying Personnel: J. Kahle
R. Marston

Approved by: W. Rankin 10-26-90
W. Rankin, Chief Date Signed
Emergency Preparedness Section
Emergency Preparedness and Radiation Protection
Branch
Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This routine, announced inspection was conducted in the area of emergency preparedness. Several areas within the emergency preparedness program were reviewed to determine if the program was being maintained in a state of operational readiness. Specific areas reviewed included the following: observation and evaluation of emergency drill; maintenance of select emergency and fire protection equipment; Radiological Contingency Plan (RCP) and emergency procedures update and distribution of changes to copyholders; training, periodic drills and exercises; and open items from previous inspections.

Results:

In the areas inspected, two non-cited violations (NCVs) were identified: 1) Failure to include a test of the communications links and notification procedures for early warning of the public between the site and the Commonwealth and local emergency units (Paragraph 6), and 2) Failure to perform monthly communications test of the Emergency Notification System (ENS) or Health Physics Network (HPN) during the Calendar Year 1989 (Paragraph 3).

During the drill, a weakness was identified as a result of the licensee's failure to adequately implement the RCP and Emergency Procedures to ensure that protective measures were taken in response to the postulated accident (Paragraph 6). The inspection also indicated the following:

- An effective licensee critique and self-identification of concerns.
- Timely notification of the Emergency Control Organization (ECO).
- Selected emergency equipment was included in a periodic maintenance program for ensuring operability.

The licensee agreed to implement immediate improvements in the radiological contingency program to correct the findings in the drill.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

A. Ambrose, Industrial Safety Coordinator
*R. Bennett, Manager, Safety and Licensing
*C. Boyd, Licensing and Compliance Officer
W. Camm, Technician, Health and Safety
*T. Grochowski, Health Physicist
*J. Noon, Manager, Safeguards and Security
*S. Schilthelm, Supervisor, Health Physics
*L. Trent, Manager, Safety and Safeguards
*D. Ward, Manager, Health and Safety
*W. Younger, Supervisor, Plant Engineering

Other licensee employees contacted during this inspection included security force members, technicians, and administrative personnel.

*Attended exit interview

2. Offsite Support Agencies (88050)

The inspector held discussions with licensee representatives regarding the coordination of emergency planning with offsite support groups and adjacent Babcock and Wilcox (B&W) facilities (Naval Nuclear Fuel Division [NNFD] and Commercial Nuclear Fuel). According to Section 8.2 of the RCP, the agreements with offsite support agencies are maintained by the Emergency Officer. Updated agreement letters were on file for the following offsite support agencies: Lynchburg General Hospital (dated February 1, 1989), Concord Rescue Squad (dated September 8, 1989) and Concord Volunteer Fire Department (dated January 10, 1990).

The inspector reviewed documentation for a site familiarization tour and training that was provided on October 23, 1989, to six members of the Concord Volunteer Fire Department. According to a letter dated August 25, 1989, members of the Concord Volunteer Fire Department and Rescue Squad were offered the referenced training and tour. Although calendar year 1990 training and site familiarization tour had not been conducted, a letter (dated August 1990) extending an invitation to conduct the referenced training and tour had been provided. In addition, members of the NNFD Emergency Response Team (ERT) were provided a tour during November and December 1989. A calendar year 1990 site familiarization tour had not been provided but was planned. When questioned regarding the Commercial Nuclear Fuel Plant (CNFP) ERT participation in the referenced training and tour, the inspector was informed that CNFP-ERT was not included. The licensee indicated that future site familiarization tours will include the CNFP-ERT. The licensee committed to at least annually

providing a site familiarization tour to neighboring ERT personnel (CNFP/NNFD). The inspector informed the licensee that this item would be tracked as an Inspector Followup Item (IFI) for review during a subsequent inspection.

IFI (70-824/90-02-01): Verify that at least annually, neighboring ERT personnel are provided a site familiarization tour.

No violations or deviations were identified.

3. Emergency Plans, Procedures, Facilities, and Equipment (88050)

a. Radiological Contingency Plan and Emergency Procedures (EPs)

The inspector reviewed documentation to verify that an annual review had been conducted of the RCP and EPs in accordance with Section 7.4 of the RCP. The current copy of the RCP is dated June 1987, Revision 2. The inspector noted that proposed revisions had been incorporated into a revised draft RCP for review by the Emergency Control Organization and subsequent submittal for NRC review and approval. Regarding the distribution of changes to the RCP and EPs, a formalized program had been implemented under an instruction maintained by the Licensing and Compliance Officer. The cover memo used for transmittal of changes to controlled copy holders required copy holders to return transmittal memo as an acknowledgement that changes were received and inserted into the appropriate document. To ensure that manuals were maintained current and up-to-date, the inspector reviewed selected procedures from controlled copies of the EPs (copy nos. 5, 13, and 17). No problems were noted; the randomly selected procedures were current and up-to-date. A licensee representative informed the inspector that full implementation of the revised NRC emergency planning rules were planned for the next license renewal (calendar year 1992). The inspector reviewed the emergency action levels (EALs) in the RCP and the emergency classification procedures (RL-EP-6 and RL-EP-7) for consistency and verification that the EPs adequately implemented the RCP classification scheme. The inspector noted that although the level of event classification was identical between the RCP and EPs, the conditions for declaring the emergency in the RCP were in some instances ambiguous and not as concisely stated as in the EPs. The inspector discussed this item with a licensee representative who acknowledges this matter and indicated that a commitment tracking number (90-46) was assigned to verify that conditions for declaring an emergency in the RCP are concise and consistent with conditions in the EPs. The licensee was informed that their actions to resolve the commitment item was considered an improvement item for review during a future visit.

b. Facilities and Equipment

Records of calibrations and/or surveillances performed during the period April 23, 1989 thru August 30, 1990, were reviewed for the emergency lockers, emergency power source, emergency communications system (ENS and HPN), and meteorological system. With two exceptions, no problems were noted. Inventories, calibrations, and/or operability checks were performed in accordance with procedures and the RCP. Surveillance records indicated that, for discrepancies, corrective actions were prompt and properly documented. The two exceptions involved the emergency communications testing and the periodic maintenance and testing of self-contained breathing apparatus (SCBA) used by emergency response personnel.

- Emergency communications equipment (ENS and HPN) was noted during a safety audit by the licensee as not being consistently tested and documented in accordance with procedural requirements found in RL-EP-3 (monthly) which were based on NRC Information Notice 86-97. There was no documentation available to confirm monthly testing was performed during calendar year 1989. This item was identified and properly documented, including the corrective action and date completed, in a memo dated February 9, 1990. Failure to conduct monthly checks of the emergency communications system was a violation of NNFD-RL Procedure No. RL-EP-3. However, the licensee identified violation described above is not being cited because criteria specified in Section V.G.1 of the NCR's Enforcement policy were satisfied. This finding is therefore considered a licensee identified non-cited violation (NCV).

  NCV (70-834/90-02-02): Failure to perform monthly communications test of the ENS or HPN during calendar year 1989.

- According to Section 5.4.3.1 of the RCP, the use of respiratory equipment was controlled pursuant to the site respiratory protection program. The site respiratory program was fully implemented via various procedures governing the use of respirators, periodic maintenance and testing, respirator training, etc. However, the routine program utilized different respiratory equipment from that assigned to the emergency cabinets for use by emergency response personnel. When questioned regarding the procedures governing the periodic maintenance and testing of this equipment, the inspector was informed that such procedure had not been developed and implemented. Although a written procedure was lacking, the inspector observed documentation to show that periodic pressure tests were performed. The inspector discussed the tests with the personnel assigned responsibility in this program area, and observed the performance of periodic maintenance by responsible personnel in accordance with the manufacturers recommendations. The licensee acknowledged the necessity of proceduralizing this

program, and committed to the development of a procedure governing the periodic maintenance, testing, and use of equipment. The inspector informed the licensee that this item would be tracked as an IFI for review during a subsequent inspection.

IFI (70-824/90-02-03): Procedural development governing the periodic maintenance, testing, and use of respiratory protection equipment used by emergency response personnel.

The inspector conducted an operability test of the ENS from Building D with the NRC Operations Center. No problems were noted with the quality of voice transmission, and the location of the ENS and HPN were in accordance with the facility layout description for Building D.

One NCV was identified.

4. Training (88050)

This area was inspected to determine if the licensee was providing training in accordance with the RCP. Section 7.2 of the RCP outlines the training program.

Training was reviewed for three individuals assigned to the Emergency Control Organization (ECO) since the last inspection. All three individuals were provided training on their respective role and responsibilities in the ECO. In addition, respiratory protection recertification and medical examinations were reviewed for several individuals assigned to the ERT. The records showed that the selected individuals were within their certification dates and had current medical examinations.

Regarding offsite support training, as discussed in Paragraph 2 above, members of the Concord VFD attended four hours of site familiarization/ training during October 1989. Members of the NNFD ERT received training during the fourth quarter of 1989.

No violations or deviations were identified.

5. Fire Protection (88050)

The inspector discussed this program area with a licensee representative and reviewed the appropriate documentation. The licensee's Fire Brigade Team was synonymous with the ERT. The Emergency Response Organization chart identified eight individuals assigned to the ERT. Since the last inspection, several training sessions involving classroom instructions and hands-on training were conducted as follows: Emergency Vehicle Occupancy Course (June 1990), Ladder Training (July 1990), Emergency Rescue (August 1990), and Hazardous Material I (September 1990).

The inspector reviewed several B&W Health and Safety Fire Protection Procedures for a description of the fire protection maintenance program. Surveillance documentation for the portable fire extinguishers, sprinkler system and valves, fire hydrants, and fire pump flow test was reviewed. The surveillance documentation covered the period September 1989 to August 1990, and disclosed that audits were conducted at the required frequency. The inspector discussed with the licensee as an improvement the implementation of a procedure governing periodic inspection of fire hose houses. This item was assigned a commitment tracking system number by the licensee (CTS No. 90-47) for followup.

No violations or deviations were identified.

6. Tests and Drills (88050)

Section 7.3 of the RCP required an annual emergency drill be conducted, to "test the adequacy of timing and content of implementing procedures and methods, to test emergency equipment and to ensure that emergency organization personnel are familiar with their duties." The calendar year 1990 drill was conducted on September 20, 1990, and did not involve any of the State, local, or federal agencies. The duration of the drill was approximately 30 minutes. The licensee identified 19 objectives for drill evaluation. One item not included as an objective, and which during previous drills had been inadequately tested, involved a test of the communications links and notification procedures. Section 6.2 of the RCP states that "the annual drill shall include as a minimum a test of the communications links and notification procedures for early warning of the public between the site and State and local emergency units." This matter was discussed with licensee management during the calendar year 1989 exercise as a test to be performed on a "real-time" basis during the drill (NRC Report No. 70-824/89-07). In response to the postulated accident, the licensee failed to test communications and notification with State and local emergency units. Consequently, the licensee was informed that this item was considered a violation. On October 23, 1990, the licensee was informed that based on plans to conduct a remedial drill within 3 months of the inspection ending date, this NRC identified violation is not being cited because critieria specified in Section V.A of tne NRC Enforcement Policy were satisfied.

NCV (70-824/90-02-04): Failure to perform a test of the communication links and notification procedure for early warning of the public between the site, State, and local emergency units during the annual drill.

The scenario required a response to a storage trailer fire involving paints and solvents. One employee working inside the trailer was postulated as incurring burns and a fracture to the forearm. In addition, a second individual located in a remote area from the fire, was simulated as suffering a heart attack. The inspector observed the licensee's actions in the following areas:

- ECO activation, staffing and operation
- Notification and communication onsite and offsite
- Facility evacuation and accountability
- On-scene response by ERTs (NNFD and NNFD-RL)
- On-scene command and control
- Access control

An inspector observed that notification methods and procedures had been established for NRC, State, and local response organizations. Although State and local response organizations were not notified (as discussed above), the licensee provided information to the NRC regarding the simulated emergency within the required time regime. Regarding onsite notifications, an artificiality was noted involving the notification and activation of the NNFD ERT. The details of the scenario were confidential; however, the ERT was informed prior to the exercise date regarding their participation and an anticipated starting time. Consequently, the response lacked real-time notification and deployment. The licensee acknowledged this item and committed to the performance of real time notification and deployment of the NNFD ERT during a future drill. The inspector informed the licensee that this item will be tracked as an IFI for review during a subsequent drill.

IFI (70-824/90-02-05): Perform real-time notification, activation, and development of NNFD ERT.

Based on the following observations, the licensee's ability to implement the RCP and EPs was considered a weakness:

- Failure to complete accountability for a simulated heart attack victim in accordance with RL-EP-7 Section 4.0. The simulated victim was never located nor identified as missing.

- Lack of access control to incident area. Non-essential persons were allowed complete entry into the area of hazard.

- Lack of coordination between the ECO and NNFD ERT. The NNFD ERT responded directly to the incident area rather than the assembly area (for instructions and/or personal dosimetry or health physics support).

- Delayed arrival by RL ERT to scene of incident and the additional delay in donning equipment for responding to the fire (total time approximately 25 minutes).

- Lack of coordination between ERTs (NNFD and NNFD-RL). RL ERT required controller prompting for on scene coordination.

- Improper response by NNFD ERT and Medical Team due to the lack of monitoring capability (had radioactive material been involved) and adequate information regarding the status of the incident and hazard potential.

Licensee observers noted similar findings during the critique. The weakness was discussed with licensee representatives before and during the exit. In response to the weakness, the licensee committed to the following near term actions: 1) Restructuring of the emergency organization (to combine expertise from the NNFD and RL organizations), 2) Conduct training for the emergency organization once identified, 3) Reorganize the Roll Taking Organization to enhance accountability procedures, and 4) Provide general emergency response training for all site personnel. The licensee committed to a redemonstration of emergency response capability once the aforementioned items are completed. According to licensee management, it is anticipated that a remedial exercise will be conducted in approximately three months. The licensee was informed that the weakness and corrective actions taken in response would be reviewed during a follow-up inspection.

Weakness (70-824/90-02-06): Failure to adequately implement the RCP and EPs in response to a postulated accident.

In addition to the weakness noted above, the inspector discussed the following improvement items with the licensee:

- Excessive prompting
- Assignment of personnel along the site access routes to provide directions to ERT personnel from support agencies
- Deletion of the names of controllers from the accountability drill
- Use of an emergency log book or event book by personnel assigned to the position Emergency Recorder
- Drillsmanship on the part of exercise evacuees

The licensee demonstrated a very effective and critical self-assessment of its emergency response capability. Included in the assessment discussions were long term and short term corrective actions to ensure an adequate capability for responding to various kinds of emergencies.

One NCV was identified.

7. NRC Information Notice (92703)

The inspector discussed with a licensee representative their response to the following Information Notices (IN):

- IN No. 90-01 "Importance of Proper Response to Self-Identified Violations By Licensees." The inspector reviewed documentation to show that the referenced IN was distributed to appropriate staff for review and action as necessary.

- IN No. 90-08 "Kr-85 Hazards from Decayed Fuel." According to documentation, the licensee reviewed the referenced IN in relationship to Section 3.3.3 of the RCP and determined that based on the concentration values, the offsite consequence of a ruptured fuel assembly at RL is not significant.

- IN No. 90-44 " Dose Rate Instruments Underresponding to the True Radiation Fields." The inspector was provided documentation to show an evaluation was conducted of onsite equipment which met the IN criteria, and the appropriate instrument manufacturer was contacted for resolution or corrective action.

8. Action on Previous Inspection Findings (92701)

a. (Closed) IFI 70-824/88-04-05: Develop a procedure to perform emergency radiological dose assessment using meteorological and source term input.

The subject procedure was issued during September 1989. The inspector reviewed Procedure No. RL-TP-464 "Emergency Procedure for Offsite Dose Assessment," Rev. 1, dated March 1, 1990, and noted that the procedure utilized changing meteorological source term, and actual field team monitoring results (if available) for performing offsite dose projection. The procedure also provided recommendations regarding protective actions based on the EPA PAGs.

b. (Closed) Violation 70-824/89-02-06: Failure to conduct monthly inspection of portable fire extinguishers during December 1988 and January 1989. By letter dated August 4, 1989, the licensee was informed by NRC (Region II) that based on the additional documentation including the corrective steps which were taken, the violation was rescinded.

c. (Closed) IFI 80-824/89-02-07: Ensure that CY-89 exercise include a comprehensive communications drill between the site, State, and local response personnel.

This item is closed by virtue of a violation discussed in Paragraph 6 of this report.

d. (Closed) IFI 70-824/89-07-01: Issuance of Update Emergency Procedures by October 31, 1989.

According to a memo dated October 17, 1989 (To: Copy Holders Distribution), revised pages were issued for the NNFD-RL Emergency Procedure Manual. Procedures formerly referred to as EP-1 thru EP-29 was removed/replaced with RL-EP-1 thru RL-EP-10. The discrepancies identified by both the NRC and licensee were resolved.

e. (Closed) NCV 70-824/89-07-02: Failure to adequately make required changes to the ECO roster.

The subject finding was opened and closed under Report No. 89-07, dated October 20, 1989. However, administrative actions to close item were completed under Report No. 70-824/90-02.

f. (Open) IFI 70-824/89-07-03: Consideration of a designated indoor location for an EOC.

The subject finding was discussed with licensee representatives and remains open pending further review and evaluation by licensee management.

9. Exit Interview

The inspection scope and results were summarized on September 21, 1990, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed below. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspetion. There were no dissenting comments from the licensee. Licensee management (Manager, Safety and Safeguards, and Manager Safety and Licensing) reiterated the concern for taking prompt and effective actions (as discussed in Paragraph 6) in response to the exercise findings.

The Manager, Safety and Safeguards further stated that an evaluation with higher level management at the B&W site would ensure reassessment of the role and responsibility of other site tenants in responding to emergencies.

On October 23, 1990, the inspector informed the Licensing and Compliance Officer that failure to test communications with State and local emergency units during the drill was considered a NCV rather than a cited violation as discussed during the exit.

Item Number	Description/Reference
70-824/90-02-01	IFI - Verify that at least annually, neighboring ERT personnel are provided a site familiarization tour (Paragraph 2).
70-824/90-02-02	NCV - Failure to perform monthly communications test of the ENS or HPN during calendar year 1989 (Paragraph 3).
70-824/90-02-03	IFI - Develop procedure governing the periodic maintenance, testing, and use of respiratory protection equipment used by emergency response personnel (Paragraph 3).
70-824/90-02-04	NCV - Failure to perform a test of the communication links and notification procedure for early warning of the public between the site,

	State, and local emergency units during the annual drill (Paragraph 6).
70-824/90-02-05	IFI - Perform real-time notification, activation, and deployment of NNFD ERT (Paragraph 6).
70-824/90-02-06	Weakness - Failure to adequately implement the RCP and EPs in response to a postulated accident (Paragraph 6).

Licensee management was informed that six open items from previous inspections were reviewed. Five items were closed and one remained open (Paragraph 8).

Attachment:
Scenario and Exercise Objectives

To: NRC

From: R. L. Bennett, Emergency Officer
J. A. Calvert, Industrial Safety Engineer

Subj.: 20-Day Notification for Annual NNFD-RL Emergency Exercise for 1990

August 30, 1990

The 45-day notification for the NNFD-RL's emergency exercise for 1990 was prepared on August 3, 1990. A copy of that notification is attached for information. Information for the 20-day notification is given below.

The planned time for the emergency exercise to begin is 1:00 PM on Thursday September 20, 1990 with an alternative date of September 21, 1990.

General instructions about the exercise will be provided to members of the RL's Emergency Control Organization on the morning of the exercise.

A telephone call will be made to the Receptionist at 1:00 PM informing her of an emergency exercise involving an explosion and fire in a storage trailer near the Garage Maintenance Building with a request for response by the Emergency Response Team. One man has been injured.

The emergency exercise will be announced over the PA system at 1:00 PM. The evacuation alarm will be sounded following this announcement. A few key operations will be informed about the upcoming exercise on Thursday morning to prevent injuries or spread of radioactive contamination.

Written information will be provided to members of the Emergency Teams as they arrive at the scene of the exercise. After the Emergency Response Officer arrives, all information will be relayed through him.

The exercise is based upon a driver backing a vehicle into the corner of a trailer where an electrical box is located. This causes sparking inside the trailer which ignites flammable vapors from solvents and paints stored there. Combustibles stored in the trailer ignite and a fire starts. An individual in the trailer is burned at the time of the ignition of the vapors, but is able to open the door and falls out of the trailer and down the steps to the ground. (A note will be placed on the individual identifying location and degree of burns and a broken right radius.) The driver notifies the Receptionist about the explosion, fire, and injury. If ten minutes elapse before effective firefighting is started, the Emergency Response Officer will be notified that fire has spread to an adjacent trailer. If adjacent vehicles, portable compressors, etc. have not been moved within an elapsed time period of twelve minutes, the

Emergency Response Officer will be notified that fire has spread to these items. If fifteen minutes elapse before effective firefighting is started, the Emergency Response Officer will be notified that fire has spread to an adjacent dumpster. If twenty minutes elapse before effective firefighting is started, the Emergency Response Officer will be notified that fire has spread to the Garage Maintenance Building. Also during the exercise, two individuals will attempt to pass through the fire lines to "get a better view of what is going on".

Coincident with the primary accident, an individual will suffer a simulated heart attack in Building C. This individual will not report for the roll call. This person will be conscious and will be able to inform rescuers about his condition.

Controllers will wear identification and will be present in the Assembly Area, at the scene of the accident, and will accompany the re-entry team to Building C.

The exercise will be terminated by the primary controller after proper emergency response has been completed. Injured personnel will be placed in emergency vehicles, but not transported to the hospital. It is anticipated that the exercise will last no longer than 30 minutes.

F. L. Bennett
D. A. Calvert

To: NRC

From: R. L. Bennett, Emergency Officer
J. A. Calvert, Industrial Safety Engineer

Subj.: Annual Emergency Exercise for 1990 August 3, 1990

Planned Date of Emergency Exercise: September 20, 1990 Alternate Date: September 21, 1990

Planned Time of Emergency Exercise: 1:00 PM

Description and Scope of Emergency Exercise: A minor accident propagates into a major fire. The scenario is progressive in that if control is not established within a fixed time frame, further incidents will occur.

Objectives to Be Fulfilled:

* Drill of employees in evacuation and roll call
* Timely and effective evacuation of facility
* Timely activation of the Emergency Control Organization
* Effective response of the Emergency Control Organization
* Drill of Alternate Emergency Officer
* Timely activation of the Emergency Response Team
* Effective response of the Emergency Response Team
* Timely notification of NNFD's Emergency Team
* Effective response of NNFD's Emergency Team
* Timely notification of NNFD's Spill Control Team
* Effective response of NNFD's Spill Control Team
* Timely notification of off-site emergency response groups
* Effective response of off-site emergency response groups
* Orderly and efficient control of response groups
* Timely and proper evaluation of need for off-site assistance
* Proper establishment of controlled area boundaries
* Effective use of communication systems
* Timely and proper classification of initial situation
* Timely and proper upgrade of developing situation
* Timely and proper use of the ENS