

U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 70-1100/90-09

Docket No. 70-1100

License No. SNM-1067

Licensee: Combustion Engineering, Inc.  
P. O. Box 500  
Windsor, Connecticut 06095

Facility Name: Nuclear Fuel Manufacturing and Nuclear Laboratories

Inspection At: Windsor, Connecticut

Inspection Conducted: December 3-4, 1990

Inspectors:

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Division of Radiation Safety and Safeguards

1/15/91  
date

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Inspection Summary: Inspection on December 3-4, 1990 (Inspection Report  
No. 70-1100/90-09

Areas Inspected: Routine, announced emergency preparedness inspection and observation of the licensee's biennial emergency exercise on December 3, 1990 and review of licensee actions taken in response to the November 29, 1990 fire in the nuclear fuel manufacturing facility. The inspection was performed by a team of two NRC Region I personnel.

Results: One apparent noncited violation was identified. Licensee emergency response actions demonstrated during the exercise were adequate to provide protective measures for the health and safety of the public.

## DETAILS

### 1.0 Persons Contacted

- \* W. D. Bennett, Manager, Training
- \* J. F. Conant, Manager, Nuclear Materials Licensing
- \* R. N. Duncan, Director, Product Development
- \* K. J. Keating, Manager, Site and Governmental Security
- \* C. M. Molnar, Nuclear Materials Licensing Engineer
- P. R. Rosenthal, Program Manager, Radiological and Industrial Safety
- R. W. Sharkey, Manager, Radiological and Industrial Safety
- \* R. E. Vaughan, Plant Manager

\* Denotes those present at the exit meeting on December 4, 1990. The inspectors also observed response actions and interviewed other licensee personnel during the inspection.

### 2.0 Evaluation of Licensee Response Actions to Building 17 Fire

About 12:20 p. m., on Thursday, November 29, 1990, a fire occurred outside the northwest corner of Building 17, the Nuclear Fuel Manufacturing Facility (NFMF). The inspectors reviewed the probable causes associated with the incident and held discussions with licensee staff regarding their response actions.

The fire started during a metal cutting operation when molten slag from a cutting torch ignited wooden composition material located inside the north wall of the building. While a licensee contractor was cutting reinforcement bar in the storage shed near the outer Building 17 wall, small fragments were drawn into wall voids via negative building pressure. Smoldering occurred but was confined to the outer portions of the wall. The inner wall which bounds the contaminated area was unaffected. Although this incident took place adjacent to the contaminated area, the inspectors found no evidence that radioactive material was involved and no contamination was found during follow-up radiological surveys.

The local fire department responded to the site and attended the fire, which was extinguished at approximately 1:30 p.m. Licensee response actions included a precautionary Building 17 evacuation and coordination activities between senior management personnel and firefighters. All personnel were evacuated safely and building damage was limited to a small area at the base of the wall.

The licensee conducted an investigation into the causes and circumstances relating to the incident. As a result of their investigation, the licensee determined that contractor personnel were not authorized to use a cutting torch to perform cutting operations and that qualified CE escorts were not assigned to observe and control

contractor activities. It was also found that hot working operations were conducted without the use of approved hot work procedures. Contractor personnel did not receive either site specific access training or information about escort requirements while on site. The facility Plant Manager took immediate corrective actions and stopped further cutting work by contractors. In addition, actions were also immediately taken to preclude unescorted entry of all untrained individuals (with the exception of truck drivers) into the fenced area of the plant.

The Training Manager was directed to establish the standards and training program for unescorted access of contractor personnel. These actions were completed by the licensee at the end of the inspection. The licensee stated that, whenever possible, contractor personnel will continue to be escorted upon entering the site. However, Section 2.5, "Training" to Part 1, "Criteria" of the NRC-approved license application states, in part, that visitors to the NFMF participate in formal (classroom) training programs to ensure a basic understanding of facility operations and safety requirements. Currently, escorted visitors do not require site access training. Contrary to the above, on November 29, 1990, visitors (contractor personnel) working in the storage shed adjacent to the NFMF were neither trained in safety requirements nor escorted by trained licensee personnel.

Since no radiological hazard appeared to be involved in this incident and actions were taken to immediately correct this inadequacy, this was identified as a noncited violation (70-1100/90-09-01), in that the criteria specified in 10 CFR 2, Appendix C, Section V.A., were met. These criteria included: 1) corrective actions immediately taken and completed by the licensee, 2) this was a Severity Level V violation, and 3) this violation was not willful. Adequate corrective actions were completed by the licensee prior to this inspection. In accordance with the criteria of 10 CFR 2, Appendix C, Section V.A., no Notice of Violation will be issued for this apparent violation.

### 3.0 Emergency Exercise

The Combustion Engineering biennial exercise was conducted on December 4, 1990 from 6:00 p.m. to 10:30 p.m. Local response was provided by the Windsor and Poquonock fire companies. The State of Connecticut did not actively participate but was notified by the licensee of scenario events.

#### 3.1 Pre-Exercise Activities

Prior to the exercise, the inspectors had telephone conversations with the licensee to discuss the objectives, scope and content of the scenario. It was found that the scenario was limited in scope (fire outside NFMF with evacuation of second shift personnel), but would involve activation of

response facilities and senior personnel from the Emergency Response Organization (ERO). Radiological consequences were not included in the scenario. Since the licensee did not submit objectives or the scenario for NRC review, an NRC evaluation was not performed regarding adequacy of planning areas the licensee expected to demonstrate. The inspectors explained that in upcoming exercises better coordination with NRC Regional staff is necessary during scenario development. Adequate time should be allotted for NRC review and comment of future proposed scenarios. This will ensure that submittals are comprehensive and provide for testing of major portions of the Plan. In addition, although the scenario was kept confidential, a memorandum was issued to ERO staff announcing that an evacuation drill was planned. Mobilization was adequately tested but announcing evacuation drills promotes a false state of readiness on the part of ERO staff. The licensee should consider holding some drills on an unannounced basis.

NRC exercise observers attended a licensee briefing on December 3, 1990 and participated in discussions of emergency response actions anticipated during the exercise.

### 3.2 Exercise Scenario

The exercise scenario was limited to the following events:

1. Fire on Building 17 loading dock containing drums of processed powder;
2. Loss of power to Building 17 security cardreaders;

### 3.3 Activities Observed

During the conduct of the exercise, two NRC team members made observations of the activation and augmentation of the emergency organization, activation of emergency response facilities, and actions of emergency response personnel during the operation of the emergency response facilities. The following activities were observed:

1. Detection, classification, and assessment of scenario events;
2. Direction and coordination of the emergency response;

3. Augmentation of the emergency organization and response facility activation;
4. Notification of licensee personnel;
5. Communications, information flow, and record keeping;
6. Provisions for in-plant radiation protection;
7. Performance of offsite and in-plant radiological surveys;
8. Maintenance of site security and access control;
9. Assembly, accountability and evacuation of personnel;

The licensee conducted a self-critique about one week after conclusion of the exercise which identified areas for improvement and possible corrective action. Subsequent discussions with licensee staff indicated that findings were not documented, therefore an NRC evaluation of the critique has not been made.

#### 4.0 Exercise Observations

The inspectors observed the licensee's emergency response actions during the exercise as noted below.

The NRC team found that the licensee's activation and augmentation of the emergency organization, activation of the emergency response facilities, and use of the facilities were generally consistent with CE Emergency Plan and implementing procedures. Performance strengths were noted in the areas of preliminary notifications, interface with the offsite fire companies, and information flow between response facilities via telephones and portable radios.

The following areas for improvement were identified.

1. The functional role of the Management Operations Center (MOC) was not effective in supporting the overall response. The lack of a useful implementing procedure did not allow senior management assigned to the MOC perform up to their full response potential. The licensee should re-evaluate the function and expected involvement of the MOC during emergencies.

2. No controller was designated to observe assembly and accountability of personnel and it could not be determined whether this objective was met.
3. Transmissions of status information to NRC via the "NRC Draft Incident Report Form" were incomplete.
4. Implementing procedures allowed response personnel to carry out emergency responsibilities adequately but reference checklists for key response roles were unavailable.
5. As noted in Section 3.1, the scenario was limited in its scope and content. Since exercises will now be conducted only once every two years, the licensee must ensure comprehensive testing of the following elements of the Plan in future exercises:
  - full range of postulated accidents including spills of uranium and other hazardous/toxic materials, adverse weather, major fire or explosion involving radioactive material, and criticality.
  - radiological dose assessment and evaluation of radioactive release to the environment.
  - involvement of other Windsor site support groups and services such as medical and ambulance staff, facility engineering services, industrial safety, and public information.

#### 5.0 Exit Meeting

The inspectors met with the licensee representatives listed in Section 1 of this report at the end of the inspection and summarized the observations made during the exercise.

The licensee was informed that no exercise related violations or deviations were observed. Notwithstanding the areas identified for improvements, the NRC team determined that within the scope and limitations of the scenario, the licensee's performance demonstrated that they could implement their Emergency Plan and Emergency Plan Implementing Procedures in a manner which could adequately provide protective measures for the health and safety of the public. Licensee management acknowledged the findings and indicated that they would evaluate the NRC comments and observations and take corrective actions as appropriate.