

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-315/94012(DRS); 50-316/94012(DRS)

Docket Nos. 50-315; 50-316

License Nos. DPR-58; DPR-74

Licensee: Indiana Michigan Power Company  
1 Riverside Plaza  
Columbus, OH 43216

Facility Name: Donald C. Cook Nuclear Power Plant, Units 1 and 2

Inspection At: Donald C. Cook Site, Bridgman, MI

Inspection Conducted: June 1-8, 1994

Inspector: D. Schrum  
D. Schrum

6/15/94  
Date

Approved By: W.D. Shafer  
W. D. Shafer, Chief  
Maintenance and Outages Section

6/15/94  
Date

Inspection Summary

Inspection on June 1-8, 1994 (Report Nos. 50-315/94012(DRS); 50-316/94012(DRS))

Areas Inspected: Routine fire protection inspection of surveillances, equipment, fire brigade training and drills, and fire protection audits. The inspector utilized selected portions of NRC inspection procedure 64704, 92902, and 92904.

Results: Overall, fire protection program activities were effectively implemented in meeting the safety objectives of the program. The fire protection program was rated excellent and improving. The staff was experienced and knowledgeable and had taken appropriate actions to correct most issues and problems. Strengths included a low number of impairments; a dedicated and well-trained fire brigade; the staff was being proactive in improving and maintaining fire protection equipment; and the audits performed were good. A violation was identified for the failure to remove combustible materials within 35 feet of a "hotwork" activities (paragraph 3.4). Additional weaknesses observed during this work activity was the use of herculite and untreated wood for a barrier. In addition, the fire watch, fire brigade, and maintenance supervisors did not enforce the 35 foot combustible free zone during their duties. A weakness noted during the fire drill was that updated fire strategies (pre-fire plans) were not made available to the fire brigade; however, updated plans are currently in the process of being issued.

## DETAILS

### 1.0 Persons Contacted

- \* A. Blind, Plant Manager
- \* K. Baker, Assistant Plant Manager-Production
- \* M. Greendonner, Fire Protection Coordinator-Operations
- \* J. Rutkowski, Assistant Plant Manager-Support
- \* W. Hodge, Plant Protection Superintendent
- \* P. Russell, Fire Protection Supervisor
- P. Jacques, Fire Protection Coordinator-Systems/Training
- \* M. Depuydt, License Coordinator
- \* B. Auer, Quality Assurance Auditor
- \* S. Gane, Production Supervisor
- \* G. Bladeren, PLE/Staff Assistant
- D. Johns, Appendix R Administrator
- \* J. Wiebe, Safety & Assessment Superintendent
- J. Murtha, Performance Engineer
- J. Schrader, Preventive Maintenance Supervisor
- \* J. White, SNS
- \* M. Barfelz, NS/A Supervisor

### U. S. Nuclear Regulatory Commission (NRC)

- \* D. Hartland, Resident Inspector

\* Denotes those individuals attending the exit meeting on June 8, 1994.

### 2.0 Inspection Follow-up Items

- 2.1 (Closed) Violation 315/316/93015-01: This item addressed a violation for improper scheduling of preventive maintenance tasks which were automatically scheduled late due to computer software, that used the job order close out date for scheduling rather than the date the preventive maintenance (PM) task was actually performed. A tracking system was implemented for the PM tasks which is reviewed by management on a daily basis to ensure timely close out of items. Those items that are delayed beyond the scheduled cycle are manually rescheduled to fall within their normal preventive maintenance cycle. The tracking system had corrected the stated problem and this item is closed.
- 2.2 (Closed) Violation 315/316/93015-02: This item addressed a violation for not properly controlling outdated maintenance procedures. The licensee performed a 100 percent inspection on the procedures in question. The above problem was corrected by causing the group making a major document change in a site library, responsible to ensure that documents no longer used are sent back to the issuing group, which ensures removal from the site library. No new problems of this type had been found. This item is closed.
- 2.3 (Closed) Violation 315/316/93015-03: This item addressed a concern with preventive maintenance being delayed for an extended period of time resulting in no corrective actions for inoperable emergency lights in the plant. Extensive actions had been taken to resolve emergency

lighting problems and surveillances are no longer delayed beyond their normal cycle. Those new problems identified with emergency lighting were corrected in a timely manner. This item is closed.

### 3.0 Routine Fire Protection Program Review

This inspection consisted of plant area observations and reviews of fire protection surveillances, maintenance on fire protection equipment, fire brigade training and drills, fire reports, deviation reports, work requests, safety evaluations, and audits of fire protection activities.

### 3.1 Plant Area Observations

The inspector toured the areas of the turbine building, the screen house, and the new fire pump building to observe the adequacy and control of combustibles, fire doors, hose stations, detection equipment, extinguishers, sprinkler systems, emergency lights, and housekeeping.

With the exception of "hotwork", the control of combustibles in the plant was good. This included control of transient combustibles. A minimal amount of combustible materials was noted in storage cages. Flammable liquids were stored in safety cans. Most wood and plastics used in the plant were fire resistant. Equipment oil leaks were minimal with oil being collected on absorbers and removed before becoming excessive.

The material condition of most fire protection equipment was good. This included dampers, fire extinguishers, hose stations, and fire pumps. A new building with new diesel and electric fire pumps had been built onsite with a dedicated water supply to ensure that biofouling would not effect the reliability of the fire protection system. Most fire doors in the plant were in excellent condition which included self-closure and latching. A site locksmith contributed to timely door repairs. A fire protection system valve replacement project is in the planning stage to correct problems with leakage when isolating specific sections of the fire protection systems for maintenance. Surveillances indicated that fire protection system equipment condition, for those surveillances reviewed, appeared to be good, except for emergency lighting. A large number of emergency lighting failures were occurring as a result of battery design. The batteries were replaced when they fail. Extinguishers had been inspected and had a current inspection date. Fire fighting foam was being replaced prior to the expiration date. A new fire truck had also been purchased during this assessment period.

The plant was clean and housekeeping was good. Transient combustibles were being tracked by a computer tracking system, with a daily update, and calculations were being maintained for fire loading in plant areas. Compensatory actions were taken for those areas exceeding the fire loading requirements.

### 3.2 Fire Barriers

Inoperable fire barrier penetration gap seals are currently a major problem. A barrier gap seal was found with untreated styrofoam behind the outer silicon sheeting rather than a required fire barrier material.

A proactive program was started to inspect 485 additional gap seals. So far 42 additional gap seals were found with untreated styrofoam and were being repaired during the inspection. Appropriate compensatory measures were taken by assigning a one hour fire watch until barrier gap seals were repaired. Also, minimizing the risk to the plant were fire detection and fire suppression available in most the effected areas. A review of other impairments indicated that the plant had been proactive in getting impairments repaired. The plant had very few impairments, excluding the recent gap seal problems.

### 3.3 Fire Watches

Missed fire watch inspections for impairments had been a problem during the early part of this year. A new contractor had been hired. As a result new fire watches lacked training and an awareness of the importance of their fire watch responsibilities. These problems were corrected. Some of the contractor's employment was terminated when they did not measure up to expectations. The licensee took additional corrective actions as needed. An improved fire watch training program was implemented to enhance the learning of fire watch tasks. In addition, all supervisors are now required to identify new impairments (and its location) to fire watch personnel to ensure the correct areas are inspected.

On a sample basis, fire protection management were making spot checks to ensure that fire watches were doing their job. Quality assurance (QA) surveillances were also being conducted on the fire watches as they made their inspections. No problems with the one hour fire watch requirement being violated were found during these QA surveillances. The corrective actions for the fire watch problems appeared to be effective.

### 3.4 Welding and Cutting Permits

There were a significant number of fires in the plant during the assessment period. The inspector reviewed the fire reports and noted that a larger than normal number of fires had occurred during "hotwork" with most fires occurring near the work indicating that combustible controls for "hotwork" were not being implemented.

During a tour of the turbine building with the fire protection supervisors, the inspector observed "hotwork" (welding, grinding, cutting activities) at three job locations were not being performed according to plant procedures and good work practices. Two job locations contained an untreated wood frame supporting herculite for a barrier. In addition, the areas contained a garbage can with combustibles, cloth tool bags, coats, papers, boxes, plastic buckets, and other combustible materials.

D. C. Cook Technical Specification 6.8.1.a requires adherence to fire protection program implementing procedures. D. C. Cook Preventive Maintenance Instruction, PMI-2270, "Fire Protection," Revision 22, requires the following:

As a minimum the following items shall be reviewed:  
4.3.2.1 Removal of combustibles from the immediate

area in which the work is to be performed and a 35' radius around the work area, not to include those areas cut off by walls, doors, etc. 4.3.2.3 The necessity to use non-flammable material to cover or shield adjacent or lower equipment and openings to lower elevations.

On June 3, 1994, the inspector observed grinding, welding, and cutting activities in the turbine building that did not have combustibles removed or covered within 35 feet of these activities. This is a violation of Technical Specification 6.8.1.a(50-315/316/94012-01(DRS)). A response to this violation is required.

The plant determined that the employees had received adequate training but over the years the general condition of not enforcing the 35 foot combustible free zone had become an accepted practice. The problem of not enforcing this requirement included the fire watches, the fire brigade, the supervisors of the maintenance staff, and the maintenance employees. However, mitigating the significance of this problem were "hotwork" fire watches who were on the job site and attentive to their duties.

The immediate corrective actions were to inform the staff that the 35 foot combustible free zone would be enforced. Maintenance staff that did not comply would have the work stopped. Minor amounts of combustibles would still be needed near the work, such as work procedures, cloth work bags, and plastic quench bottles of water. But in most cases these items can be protected or covered.

### 3.5 Fire Protection Staffing

The staff was experienced, knowledgeable, and proactive in dealing with most plant problems. Good cooperation was observed among the staff. The fire protection supervisor was very knowledgeable about the fire protection program and Appendix R. Since the previous fire protection inspection a dedicated fire protection training instructor, a fire protection engineer, and a second fire protection coordinator had been added to the staff. In addition, an Appendix R special project team had been created.

### 3.6 Fire Brigade

The plant requirements for the fire brigade were all being met in an effective manner. The inspector reviewed fire brigade qualifications and associated training records. Onsite fire drill requirements had been met by all brigade members who were listed as qualified. Live fire training for all brigade members was being conducted on an annual basis. Good fire brigade critiques were being performed for fire drills with associated training to improve brigade performance. Also, off-site response drills were being performed and a good relationship existed with the local fire department.

The fire brigade training program appeared to be good. A review of records indicates that the fire brigade was meeting its quarterly fire brigade training. Members of the fire brigade had sufficient training

on plant safety-related systems with the assistance of the operations department to understand the effects of a fire on safe shutdown capability.

The inspectors observed a fire drill in the auxiliary boiler room. The operations and fire fighting staff appropriately used the pre-fire plans to identify the risks in the area and simulated isolating the electrical equipment in the auxiliary boiler room. Five fire brigade members responded in a timely manner to the simulated fire with appropriate fire fighting gear and completed dressing for entering the space. Fire fighting gear was in good condition and well organized. The operations and security departments also responded to the fire drill. Four brigade members formed double hose teams with the simulated use of foam to fight the fire.

The overall assessment of the drill was excellent. One weakness noted was the pre-fire plans had not been updated to reflect the new electrical control panel modifications for the auxiliary boiler room. Additional time with operations assistance was required to ensure that the areas equipment was properly isolated prior to fighting the simulated fire. The pre-fire plans are currently being updated and will be issued to the plant staff.

A critique was held at the end of the fire drill with all of the participants in the drill present. The participants were allowed to give their insights on what they considered as problems during the drill. The staffs overall assessment was that this was an excellent drill with very few problems.

### 3.7 Audits and Self-Assessments of Fire Protection

Audits were detailed and thorough with adequate staff hours devoted to each audit. The QA surveillances were performance based observations of conditions in the plant and were effective in identifying fire protection program problems. The audits included good findings and recommendations to improve the fire protection program. The 1994 fire protection audit was very comprehensive with 5 quality assurance auditors spending 3 weeks onsite. The findings and recommendations had been used to improve the fire protection program. The following audits were reviewed:

- a. Appendix R Compliance QAVP 91-16, 3/19/92
- b. Fire Protection NSDRC-186, 1/30/92
- c. Fire Protection (PMI-2270) QA-92-21/NSDRC 196, 12/14/92
- d. Station Fire Protection NSDRC-206, 2/01/94

### 4.0 Exit Meeting

The inspector met with licensee representatives (denoted in Section 1) on June 8, 1994, and summarized the scope and findings of the inspection. The informational content of the inspection report was discussed with regard to documents reviewed during the inspection. The licensee did not identify any of the documents as proprietary.