

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/88006(DRSS); 50-316/88007(DRSS)

Docket Nos. 50-315; 50-316

Licenses No. 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, Bridgeman, Michigan

Inspection Conducted: January 25-29, 1988

Inspectors: *James E. Foster*  
James E. Foster  
Team Leader

2/26/88  
Date

*Marcia Smith*  
Marcia Smith

2/26/88  
Date

Approved By: William Snell, Chief  
Emergency Preparedness Section  
*W.D. Snell for*

2-29-88  
Date

Inspection Summary

Inspection on January 25-29, 1988 (Report No. 50-315/88006(DRSS):50-316/88007(DRSS))

Areas Inspected: Routine, unannounced inspection of the following areas of the Donald C. Cook Nuclear Power Plant emergency preparedness program: action on previously-identified items; emergency plan activations; LER review; operational status of the emergency preparedness program; dose assessment; notifications and communications; shift staffing and augmentation; emergency preparedness training; licensee audits; and maintaining emergency preparedness. The inspection involved two NRC inspectors.

Results: One violation was identified related to 10 CFR 50, Appendix E (E) (9d) requirements for communication testing.

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## DETAILS

### 1. Persons Contacted

- \*W. Smith, Jr., Plant Manager
- \*A. Blind, Assistant Plant Manager
- \*D. Loope, IMP - RP
- \*R. Krieger, Emergency Planning Coordinator
- \*K. Baker, Operations Superintendent
- \*L. Matthias, Administration Superintendent
- \*J. Rischling, QC/Administration Compliance Coordinator
- \*L. Gibson, Assistant Plant Manager
- \*R. Huerter, AEPSC QA Supervisory Auditor
- \*C. Ross, Computer Science
- \*T. Kriesel, Tech. Superintendent
- \*G. Arent, Operations
- \*J. Paris, Computer Science
- \*B. Svensson, Lic. Act. Coordinator
- \*T. Postlewait, Technical Engineering Support
- \*T. Hershberger, Corporate
  - A. Barker, AEPSC Quality Assurance
  - W. Stoner, IMP Computer Science
  - D. Yount, IMP Office Administration
  - J. Wojcik, IMP Technical Physical. Science
  - G. Tollas, Shift Supervisor
  - R. Heathcote, Unit Supervisor
  - G. Peak, Shift Technical Advisor
  - J. McElligott, Supervisory QA Auditor
  - D. Leibel, Manager & Tech. Staff Senior Instructor

\*Personnel listed above attended the exit meeting on January 29, 1988.

### 2. Licensee Actions on Previously-Identified Open Items

- a. (Closed) Open Item (50-315/86002-01;50-316/86002-01): The representativeness of the onsite meteorological tower should be determined to characterize meteorological conditions to approximately 10 miles from the site. Considerable licensee action has taken place on this item. Analysis indicated that the near-site tower alone was not characteristic of offsite weather conditions. Three meteorological towers, one lakeside and 2 off-site towers are now available, utilizing a VAX computer having the capability to use a full Phase "B" dispersion model. The system is currently scheduled to be fully functional in July, 1988. This item is closed for the purpose of updating the item, and will now be tracked as Open Item No. 50-315/88006-01; 50-316/88007-01.

- b. (Closed) Open Item (50-315/86002-02; 50-316/86002-02): Lack of the EP program to have three trained individuals designated for each emergency response position. The organization was reviewed and appeared acceptable for the purpose of having three persons trained for each position. This was accomplished for several positions by having corporate personnel trained as the third individual for a position. This item is closed.
- c. (Closed) Open Item (50-315/86040-01; 50-316/86040-01): No formalized training module for dose calculations and assessment had been included in the training program. A formalized dose assessment training module (RP-C-GE63, Revision 0) for "Offsite Dose assessment-Computer" (using a mainframe computer for calculations) has been developed and training conducted. The module lesson plan, handouts, mini-scenarios and classroom exam were reviewed. A personal computer based dose assessment system is planned for the future. Protective Action Recommendation calculations have also been computerized and initial training of personnel is in process. This item is closed.
- d. (Open) Open Item (50-315/87006-01; 50-316/87006-01): Exercise Weakness; Inadequate discussion of Protective Action Recommendations due to delay in performing dose calculations using a manual dose calculation method. Improvements have been made in this area, as noted above. This item will remain open pending demonstration of improved capability in an Exercise.

3. Activations of the Licensee's Emergency Plan

A review of licensee and NRC records indicated that six activations of the licensee's Emergency Plan had taken place since the last routine inspection.

On November 26, 1986, an Unusual Event was declared at 1701 hours, in accordance with the plant's Emergency Action Levels (EALs) due to a reactor shutdown being required by Technical Specifications (TS) when both Unit 1 diesel Generators were declared out of service.

On April 8, 1987, an Unusual Event was declared at 2400 hours when calculations indicated that unidentified reactor coolant system leakage exceeded that specified by Technical Specifications.

On June 10, 1987, an Unusual Event was declared at 1955 hours when an earthquake was felt on-site.

On June 15, 1987, an Unusual Event was declared at 1855 hours when a reactor shutdown was required by Technical Specification 3.0.3 due to the lack of operability of both trains of the containment spray system.

On July 23, 1987, an Unusual Event was declared at 1725 hours when a potentially contaminated, injured man was transported to a local hospital.

On August 3, 1987, an Unusual Event was declared at 0820 hours when two unit diesel generators were declared out of service. This event was preplanned, as it was previously known that both diesel generators would be out of service.

Documentation related to each activation was available at the plant site, in various locations, but was not rapidly retrievable. Discussion with licensee personnel indicated that procedures which would provide for the collection and review of emergency event documentation had not been finalized. The lack of such collection and review indicates that the licensee is not analyzing actions taken during actual events.

Documentation related to each activation was reviewed and found to be acceptable.

During the inspection, a review of Licensee Event Reports (LERs) generated during 1987 was performed to determine if events had been properly classified per the plant's Emergency Action Levels (EALs). The following LERs were reviewed:

<u>LER No.</u>	<u>Unit</u>	<u>Brief Description</u>
87-001	1	Liquid Effluent Monitors Improperly Calibrated
87-002	1	Non-representative Steam Generator Blowdown Sample
87-003	1	Failure To Restore Heat Trace Circuit Required By T.S.
87-004	1 (UE)	Unit Shutdown Due to RCS Coolant Leakage, Per T.S.
87-005	1	T.S. RCS Pressure/Temperature Limits Exceeded
87-006	1	ESF Actuation (Main Steam Line Isolation)
87-007	1	Missed Event Initiated Surveillance
87-008	1	Reactor Trip Due To Extreme High Steam Generator Level
87-009	1	Reactor Trip Signal Due To High Turbine Exhaust Pressure
87-010	1	Reactor Trip Signal Due To High Turbine Exhaust Pressure
87-013	1	Ice Buildup In Ice Condenser Flow Passages
87-014	1	Failure To Comply With Technical Specifications
87-015	1	Refueling Manipulator Crane LCOs Not Verified
87-016	1	ECCS Flow Imbalance Caused By Normal Fluctuations
87-017	1	Changes To Pressurizer Level Set Values
87-018	1	Fire Rated Assemblies And Dampers Inoperable
87-019	1	RCS Flow Less Than Required During Refueling
87-020	1	Lack Of Isolation Between BOP And Safety System Loads
87-021	1	Reactor Trip Due To Feedwater Flow/Steam Flow Mismatch
87-022	1	Potential Violation Of ESF Instrumentation LCO
87-001	2	ESF Actuation, Inadvertent Opening Of Trip Breakers
87-002	2	Ice Buildup In Ice Condenser Flow Passages
87-003	2	Bistables Not Tripped During Instrumentation Calibration

87-004	2	Turbine Trip/Reactor Trip Due To Condenser Vacuum Loss
87-005	2	Reactor Trip Due To Low-Low Steam Generator Level
87-006	2 (UE)	Improperly Performed T.S. Surveillance (Cont. Spray)
87-007	2	Reactor Trip Due To Reactor Coolant Pump Undervoltage
87-008	2	Reactor Trip Due To Extreme High Steam Generator Level
87-009	2	Radiation Monitor Inoperable Without Compensatory Sample
87-010	2	Ice Buildup In Ice Condenser Flow Passages
87-011	2	ESF Actuation By Personnel Error
87-012	2	Inadvertent Opening Of Reactor Trip Breakers
87-013	2	Reactor Trip Caused By Turbine Trip (P-13 Setpoint)

All LER events were found to be properly classified as either an Unusual Event (UE), or not falling under the Emergency Plan event classification scheme (no Emergency Action Level had been met).

No violations of regulatory requirements or deviations from commitments were identified. However, the following item should be considered for improvement.

Documentation related to each emergency plan activation should be gathered into a file specific to the activation. Included should be notification sheets, condition reports, shift logs, notes, related memoranda or other documentation as appropriate. Each activation should be reviewed for identification and correction of problems and summarized. Documentation as to identified problems, problem tracking and corrective action taken should be included in the file package.

4. Operational Status of the Emergency Preparedness Program (82701)

a. Emergency Plan and Implementing Procedures (Also 82204)

The licensee's procedures related to onsite and offsite protective action decisionmaking were adequate and unchanged from those in use during the previous inspection.

A review of the Emergency Plan and Procedures, demonstrated that the authority and responsibility to make protective action recommendations were clearly delineated. Procedures necessary to assess and analyze emergency conditions and to make recommendations to protect the public and onsite workers were adequately documented.

b. Readiness of Facilities

The inspectors toured the Technical Support Center (TSC), Operational Support Center (OSC), and the Emergency Operations Facility (EOF). All were located as described in the emergency plan and procedures and were being adequately maintained in an operational state of readiness.



It was noted that improvements had been made in the TSC since the last inspection. A large, electronic copyboard had been installed, providing the capability to rapidly document comments placed on the board. Lighting had been improved by the addition of track lighting on both sides of the room, and various computer displays had been repositioned, providing additional free space. A test of the Health Physics Network (HPN) telephone and ENS in the TSC and EOF indicated that they were in good working order.

No violations of regulatory requirements or deviations from commitments were identified.

c. Organization and Management Control (Also 82204)

A major reorganization of the onsite Emergency Preparedness function has taken place since the last inspection. The Emergency Response Coordinator now reports to the Assistant Plant Manager, Technical Support. A new Emergency Response Coordinator was selected in August, 1987, and assumed the duties of the position in September, 1987.

A review of the organizational structure of corporate and plant staff indicated no changes were made that would effect the ability of plant personnel to protect the health and safety of the public. A review of training and qualification records of Emergency Response Organization personnel was performed and all individuals were determined qualified to fulfill their responsibilities.

A review was conducted of Revision 6 of the Emergency Plan and its corresponding Implementing Procedures (EIPs). There were no major changes made to the program which would affect the overall status of emergency preparedness. At the time of this inspection all of the EIPs involved in the complete rewrite of the Emergency Plan Implementing Procedures begun in 1985 were implemented. These changes had been reviewed by the site review committee and had proper management approval. Revisions to the Plan and EIPs were submitted to the NRC within 30 days as required by 10 CFR 50.54 (q). Current copies of the Emergency Plan and Implementing Procedures were available in the Emergency Response Facilities and Control Room.

The Emergency Plan Administrative Manual (EPAM) which was in the development process during the November 1986 routine inspection was not completed at the time of this inspection. Originally this manual had a June, 1987 completion goal. Specifically, chapters 7 "Facility Maintenance" and 8 "Documentation" had not been completed. Therefore, an effective maintenance program, checklists, administrative procedures and a tracking system were not in effect.

The lack of administrative procedures and tracking system (to track action items, routine items, other items resulting from drill and exercise critiques, and items from NRC reports) has led to inadequate program management demonstrated by the omission of required monthly communication testing of the ENS and HPN telephone systems as noted in Section 7 of this report. The licensee committed to develop adequate Emergency Plan Administration Procedures for implementation within 90 days, to ensure that a state of operational readiness is obtained and maintained. This will be tracked as Open Item No. 50-315/88006-01.

The 1988 Emergency Information brochure was published in pocket calendar form in conjunction with Berrien County Sheriff's office and the Michigan State Police. This brochure was mailed by the licensee to all Michigan customers of Indiana Michigan Power on December 9, 1987. Brochures were hand delivered to all motels, nursing homes, and marinas within the emergency planning zone during the week of January 18, 1988. A review of offsite support training and meeting records indicated adequate coordination and interface was part of the overall emergency response program. Letters of Agreement with offsite support agencies were current and indicated no changes in organizations or support.

A steam generator replacement is scheduled to take place at Unit 1 later this year. Discussion with licensee personnel indicated that consideration had been given to the possible impact that this effort would have on emergency preparedness. Personnel involved in the replacement effort will have designated assembly/accountability areas, should plant evacuation be necessary. Licensee personnel also indicated that they were considering a request to suspend certain Emergency Action Levels (EALs) for Unit 1 for the timeframe when it was defueled.

No violations of regulatory requirements or deviations from commitments were identified.

d. Emergency Preparedness Training (Also 82206)

The overall training program has had minor changes since the previous routine inspection. A selection of training records were reviewed, and no deficiencies were identified.

The lesson plan for "Emergency Plan Overview" for manager and technical staff training (TS-C-CS17) and related handouts was reviewed and found acceptable. A written test is included as a part of this training module, with a passing grade of 80% required.

The licensee has implemented a program which includes all of the basics of the Institute for Nuclear Power Operations (INPO) training guidelines. A job analysis is first performed on the job



for which training is under development, identifying the job requirements and tasks performed. Then, a lesson plan is developed to cover the requirements and teach the required tasks. As a part of the above, reviews are underway to determine which of the emergency plan positions require specific training, and which positions only require normal training (emergency duties are virtually identical to routine duties).

All licensed personnel receive emergency preparedness training as part of the routine requalification training program, except those whose job analysis has indicated that specific training is not required (such as mechanical or electrical department personnel).

A new training facility, including classrooms, administrative offices, mechanical and electrical shops, and a plant simulator has been completed since the last inspection. The plant control room simulator was complete and undergoing testing. A room adjacent to the simulator will be utilized to simulate the Technical Support Center, the first such facility in Region III. This should be an aid in increasing the realism of annual emergency exercises.

As noted below, one shift of Control Room personnel, consisting of the Shift Supervisor, Assistant Shift Supervisor and the Shift Technical Advisor, all members of the emergency organization, were interviewed to establish their knowledge of and ability to implement the Emergency Plan and implementing procedures. All of the individuals were adequately knowledgeable and displayed an ability to implement the procedures in relation to accident classification and escalation, notification and protective action recommendations.

e. Independent Reviews/Audits (Also 82210)

The licensee's Quality Assurance group performs an audit every 12 months, to meet the requirements of 10 CFR 50.54(t). Individuals assigned to perform the audit are to have no responsibilities for implementing the Emergency Response Program. It was confirmed through record review that the audit had been performed within 12 month periods. Licensee procedures provide for the conduct, documentation, and corrective action associated with audits.

Audit Report NSDRC-136, documenting the licensee's 1987 annual audit of Emergency Preparedness was reviewed. The audit was conducted during February 23-27, 1987, by a team consisting of an Audit Team Leader and three auditors. The previous audit (NSDRC-125) was conducted during February, 1986.

Audit NSDRC-136 did not identify any noncompliance with licensee procedures or commitments. There were four Recommendations, and five "points of information" listed in the Audit Summary Report. A portion of the audit dealt with the adequacy of the interface with State and local governments. Documents indicated that State of Michigan and local (Berrien County) representatives were advised of the availability of the audit on September 1, 1987, as per the requirements of 10 CFR 50.54(t).

Quality Assurance Audit QA-87-06 was also reviewed. This audit documented the observation of the Emergency Plan Exercise held on February 10, 1987 by seven QA Auditors. The audit was conducted from an "observations only" standpoint, and no response to the report was required, although several recommendations and weaknesses from the Exercise were provided in the text of the report.

Quality Assurance Surveillance Report 12-87-207 addressed "Emergency Plan Control and Reference Material Libraries", and was conducted between November 30, 1987 and December 16, 1987. One Condition Report (12-12-87-2016) was issued relative to document control and availability in the Technical Support Center (TSC). It was also recommended that the TSC reference material library be inventoried and updated to controlled status.

Discussion with Quality Assurance personnel indicated that few surveillances were performed in the area of emergency preparedness, but the surveillance program was under revision, and such surveillances would be considered. It was recommended that surveillances be performed on documentation of Emergency Plan activations, required communications tests, equipment maintenance, and tracking of exercise critique items.

No violations of regulatory requirements or deviations from commitments were identified.

5. Emergency Detection and Classification (82201)

A team of Control Room personnel, consisting of a Nuclear Shift Supervisor (NSS), a Nuclear Assistant Shift Supervisor (NASS), and a Shift Technical Advisor (STA) was interviewed. The team exhibited adequate familiarity with the Emergency Action Levels (EALs) when asked to classify several abnormal plant conditions. The NSS knew that his undelegatable responsibilities included declaring an emergency, and that he was procedurally required to approve all related initial notification messages to Federal, State, and county officials. This team was well aware of the regulatory time limits for initially informing offsite officials following any emergency declaration.

Some minor confusion initially developed as to the requirement for an evacuation of nonessential site personnel at the declaration of a Site Area Emergency. Procedure PMP 2080 EPP.104, Section 4.8 (Page 2) does not indicate that such an evacuation is required. Procedure PMP 2081 EPP.103, Section 4.2.1 does clearly indicate that this is a requirement.



Records review indicated that the annual review of EALs with offsite officials was conducted in October, 1987. Attendees also heard presentations on the provisions for formulating offsite Protective Action Recommendations (PARs) and for notifying offsite officials following any emergency declaration.

No violations of regulatory requirements or deviations from commitments were identified.

6. Protective Action (82202)

The shift of operating personnel interviewed above was also adequately familiar with procedural requirements related to onsite and offsite protective action decisionmaking. The NSS knew that his undelegatable responsibilities included authorizing emergency exposure limits for onsite volunteers sent to perform lifesaving and vital equipment repair tasks, and making a Protective Action Recommendation (PAR) to offsite authorities within 15 minutes following any General Emergency declaration. The team was adequately familiar with procedural requirements for assembly and accountability for all onsite personnel. The team was readily able to use procedural guidance to formulate a correct offsite PAR when given a set of abnormal plant conditions.

No violations of regulatory requirements or deviations from commitments were identified.

7. Notifications and Communications (82203)

Selected procedures were reviewed. It was determined that the licensee had the capability to notify and communicate among the appropriate licensee personnel, offsite agencies and authorities, and the general public in the event of a radiological emergency.

A review of test and maintenance documentation of the Prompt Notification System was conducted for the period January 1987 thru December 1987. The System was in place and maintained. Required monthly tests were activated and monitored by state authorities with problems reported to the licensee, who maintained the system.

A review of communication test procedures PMP 2082 EPP.005 revealed an out of date telephone number for the testing of the HPN telephones. Licensee personnel indicated that this would be corrected.

Licensee emergency plan and implementing procedures require monthly test of ENS and HPN telephones in the TSC and EOF in accordance with 10 CFR 50 Appendix E requirement. Documentation of these tests was reviewed for the period January 1987 thru December 1987. Documentation revealed that contrary to these requirements responsible licensee personnel had not tested the ENS and HPN telephones in the TSC and EOF for the time period of July 1987 thru December 1987. The inspector tested the telephones



during a tour of the ERFs and found they were operational at the time of the inspection. During this time frame operations personnel tested the communications equipment located in the TSC only, but failed to document this and inform the Emergency Planning Coordinator, the responsible licensee representative. The EP Coordinator was newly appointed to the position in July, 1987, and had failed to perform monthly communication testing. The omission of monthly testing of these telephone lines is a violation of 10 CFR 50 Appendix E and is contrary to licensee Emergency Plan and Procedure requirements. The violation will be tracked as Item No. 50-315/88006-02.

In response to an improvement item documented in November 1986, the licensee had copied the NRC Notification form attached to Information Notice 85-78 and added it to Operations Instruction PMI 7030, "Condition Reports & Plant Reportability", as Attachment 4. This form is completed, notifications are made, and then the form is attached to the Condition report and distributed for review.

One violation of regulatory requirements was identified. Also, the following item should be considered for improvement.

Implementing Procedure PMP 2082 EPP.005 should be revised to reflect the correct commercial telephone number for the HPN telephone.

8. Shift Staffing and Augmentation (82205)

The licensee's minimum shift staffing and functional capabilities were reviewed and it was concluded that the emergency response organization met the guidelines of Table B-1 of NUREG-0654, Revision 1.

A review of shift augmentation drill records for September 30, 1987 indicated that due to inadequate telephone line capabilities and inadequate procedures the licensee would not have been able to staff the TSC or EOF within the required time frame. The TSC Director and EOF Manager positions were not staffed. After a review of drill records the Emergency Preparedness Coordinator determined that additional trunk line capabilities were necessary, and procured them the next day. Personnel designated as TSC Directors and EOF Managers were on site at a meeting and were not aware that they could respond.

Actions to address the lack of staffing were adequate, however, a second augmentation drill was not conducted to verify licensee's ability to meet staffing requirements. The licensee's Emergency Plan and corresponding Implementing Procedures require semi-annual shift staffing augmentation drills. On January 28, 1988 the inspector requested an offhours shift augmentation test. Following a review of test documentation it was determined that the licensee was able to meet minimum staffing requirements of Table B-1 of NUREG-0654. Licensee personnel indicated that in order to ensure constant minimum staffing capability notification procedures and the corresponding call out list would be reviewed and modified. Consideration would be given to selection of minimum staff to activate an emergency response facility, prioritizing the call-out list

by distance from the plant, and call out drills would take credit for those already on-shift at the time of the drill. This will be tracked as Open Item No. 50-315/88006-03.

By procedure, the call-out list of emergency personnel is updated quarterly. The notification system and call-out procedures were adequately described.

No violations of regulatory requirements or deviations from commitments were identified.

9. Dose Calculation and Assessment (82207)

The equipment and procedures to be used for dose assessment were reviewed. A formalized dose assessment training module (RP-C-GE63, Revision 0) for "Offsite Dose assessment-Computer" (using a mainframe computer for calculations) has been developed and training conducted. A personal computer based dose assessment system is planned for the future. The lesson plan, handouts, mini-scenarios and classroom exam were reviewed.

Protective Action Recommendation calculations have also been computerized and initial training of personnel is in process. Procedure PMP 2081 EPP.305, "Protective Action Recommendations" (Revision 2) addressing the above, is in the review process.

No violations of regulatory requirements or deviations from commitments were identified.

10. Licensee Action on NRC Information Notice 87-58

NRC Information Notice 87-59 "Continuous Communications Following Emergency Notifications" was issued by the NRC on November 16, 1987. The Notice clarified the role of the NRC in emergency response, and reiterate the responsibility of each licensee to maintain adequate personnel on shift to permit continuous communications with the NRC in an emergency without diminishing the ability to react to an emergency. No response or specific action was required by the Notice.

Licensee documentation indicated that the Notice had been distributed to appropriate personnel on January 11, 1988. Licensee procedures (PMP 2080 EPP.106) provide for the contingency that one individual may have to be continuously involved with communicating to the NRC during an emergency classified as an alert or higher classification.

11. Exit Interview (30703)

The inspectors met with the licensee representatives denoted in Paragraph 1 on January 29, 1988. The inspectors summarized the scope and results of the inspection and discussed the likely content of the inspection report. The licensee did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.

