

# CATEGORY 1

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SUBJECT: Forwards response to NRC 960402 ltr re violations noted in  
 insp repts 50-315/96-02 & 50-316/96-02 on 960117-0226.  
 Corrective actions: relocated fuel bundle to position in NFSW  
 & monitor could detect criticality accident.

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Indiana Michigan  
Power Company  
P.O. Box 16631  
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April 24, 1996

AEP:NRG:1238  
10 CFR 2.201

Docket Nos.: 50-315  
50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2  
NRG INSPECTION REPORTS NO. 50-315/96002 (DRP)  
AND 50-316/96002 (DRP)  
REPLY TO NOTICE OF VIOLATIONS

This letter is in response to a letter from W. L. Axelson dated April 2, 1996, that forwarded a notice of two violations to Indiana Michigan Power Company. The violations were identified during a routine safety inspection conducted by Messrs. Bartlett, Hartland, Orsini, and Osterholtz from January 17 through February 26, 1996. The violations are associated with criticality monitoring of new reactor fuel and the failure to ensure that a temporary modification did not represent an unreviewed safety question prior to installation.

Our reply to the violations is provided in the attachment to this letter. The reply does not contain any personal privacy, proprietary, or safeguards information.

Sincerely,

A handwritten signature in cursive script, reading 'E. E. Fitzpatrick'.

E. E. Fitzpatrick  
Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 24<sup>th</sup> DAY OF April 1996

A handwritten signature in cursive script, reading 'Lisa D. Liss'.

Notary Public

My Commission Expires: 6-22-99

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PDR ADCK 05000315  
Q PDR

Handwritten initials 'IE01' with a vertical line through them.

U. S. Nuclear Regulatory Commission  
Page 2

AEP:NRC:1238

slc

Attachment

cc: A. A. Blind  
G. Charnoff  
H. J. Miller  
NFEM Section Chief  
NRC Resident Inspector - Bridgman  
J. R. Padgett  
W. T. Russell - NRC NRR



ATTACHMENT TO AEP:NRC:1238

REPLY TO NOTICE OF VIOLATION: NRC  
INSPECTION REPORT NOS. 50-315/96002 (DRP)  
AND 50-316/96002 (DRP)



During an NRC inspection conducted January 17 through February 26, 1996, two violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," (60 FR 34381, June 30, 1995) the violations and the Donald C. Cook Nuclear Plant responses are provided below.

#### NRG Violation A

"10 CFR Part 70.24, "Criticality Accident Requirements", requires, in part, that "Each licensee authorized to possess special nuclear material in a quantity exceeding 700 grams of contained uranium-235...shall maintain...a monitoring system ....which will energize clearly audible alarm signals if accidental criticality occurs."

License number DPR-74 authorizes the licensee to possess special nuclear material (SNM) for Unit 2 in excess of 700 grams of contained uranium-235.

Contrary to the above, on February 16, 1996, the NRC determined that the licensee did not have a monitoring system that complied with the requirements of 70.24.

This is a Severity Level IV violation (Supplement I)".

#### Response to Violation A

1. Admission or Denial of the Alleged Violation  
Indiana Michigan Power Company admits to the violation as cited in the NRC notice of violation.
2. Reasons for the Violation

The criticality monitor for the New Fuel Storage Vault (NFSV) was originally placed, along with its alarm, inside the NFSV. The monitor was removed as a result of an inaccurate assessment of the design basis. It was later placed in a location that was not confirmed by calculation. The location was recently questioned by an NRC inspector, leading to the violation noted above. Procedures were not developed for setting the specific setpoint required by 10CFR70.24 for the monitor. Procedures also did not specifically address personnel response to the monitor when in an alarmed state.

This event is attributable to failure to fully integrate the regulatory requirements of 10CFR70.24 into the plant design basis via an accepted process (such as the design change process) when the requirements were originally recognized to be applicable in the 1970s. Subsequent decisions regarding the need for the monitor and its placement were also made without adequate investigation of the design basis for the





monitor.. This resulted in the installation of a monitoring system that did not achieve compliance with the regulatory basis. The design and installation were not captured via the modification process or on plant drawings.

Analyses had been performed to clearly show that an accidental criticality was not credible in the new fuel vault. This underlying fact contributed to an inappropriate significance being placed on the placement of the new fuel storage vault (NFSV) criticality monitor, the setting of the alarm setpoint, and the lack of procedures to respond in the implausible event of an alarm.

3. Corrective Actions Taken and Results Achieved

Upon discovery of the incorrectly positioned monitor, a fuel bundle was relocated to a position in the NFSV where the monitor could detect a criticality accident. When the error in the monitor setpoint was discovered, it was reset to reflect the guidance provided in 10CFR70.24.

All fuel was removed from the NFSV on February 29, 1996. Administrative controls have been placed on the NFSV by a memo from the Site Vice President to prevent storage of new fuel until either a permanent monitoring system is installed or an exemption to the requirements of 10CFR70.24 is received from the NRC.

4. Corrective Actions Taken to Avoid Further Violations

A Temporary Modification was completed to install a radiation detector inside the NFSV. Radiation Protection (RP) has been identified as the lead organization responsible for placement and maintenance of the monitor. Instructions for the RP technicians were developed to ensure that the radiation monitor is functional with the alarm setpoint set in compliance with 70.24(a)(2). Compensatory actions have been prescribed in the instructions in the event the monitor is not operable.

A procedure was developed that provides guidance for RP personnel when responding to an alarm from the accidental criticality radiation monitor. RP personnel have been trained on the procedure and made familiar with its requirements.

An emergency plan procedure has been modified to include prescribed actions for a valid alarm from the NFSV criticality monitor. A criticality event in the NFSV will be considered when developing Emergency Plan drill scenarios.



In January 1996, a memo was distributed to the Cook Nuclear Plant management team directing that Nuclear Licensing be contacted when the license basis of equipment is questioned. Training will be provided to licensing personnel. The training will note the lack of a licensing basis notation for the criticality monitor. It will use this example to stress the importance of considering possible license basis implications of plant equipment. The training will also provide guidance on using the computer search capability available to licensing personnel. This training will be completed by May 31, 1996.

The UFSAR will be updated during the next appropriate review cycle to note the license basis requirement that criticality monitoring be in place when moving or storing irradiated or unirradiated fuel.

In addition, a request for an exemption from 10CFR70.24 has been prepared per the direction in 10CFR70.24(d). This exemption request was submitted to the NRC on April 8, 1996, as submittal AEP:NRC:1156A. NRC approval of the exemption will negate the need for the criticality monitor for the new fuel vault. NRC approval will also nullify the commitments concerning inclusion of a NFSV criticality into future Emergency Plan drill scenarios, as well as the commitment to administratively prevent the loading of unirradiated fuel into the NFSV.

5. Date When Full Compliance Will Be Achieved

The Temporary Modification to install a radiation monitor inside the NFSV was completed on February 29, 1996. No fuel will be stored in the NFSV until a criticality monitor is permanently installed or an exemption to 10CFR70.24 is granted to Cook Nuclear Plant.

Instructions for the RP technicians have been provided to ensure that the radiation monitor is functional and that the alarm setpoint is set in compliance with 70.24(a)(2). The instructions also provide appropriate compensatory actions if the monitor is not operable. The instructions were made effective on February 23, 1996.

Emergency plan procedure PMP 2080 EPP.101 was modified on March 13, 1996. The Emergency Plan will be modified to reflect the change to the procedure in its next revision.

Full compliance was achieved on March 13, 1996, when the emergency plan procedure was modified.



NRG Violation B

"10 CFR 50.59 requires, in part, that changes made to the facility as described in the safety analysis report be evaluated in accordance with 50.59 to determine, in part, if an unreviewed safety question exists.

Section 6.2 of the D. C. Cook Nuclear Plant Updated Safety Analysis Report (USAR) states that the "spilled coolant and injection water which is collected in the containment recirculation sump following the injection phase is recirculated back to the reactor coolant system by the residual heat removal pumps."

Contrary to the above, on February 26, 1996, the NRC identified an 8 ft by 8 ft tarp temporarily installed over the Unit 2 reactor cavity. The unit was at full power and the tarp had the potential to prevent reactor coolant from reaching the containment recirculation sump during a Loss of Coolant Accident (LOCA). The tarp was installed without the required evaluation to ensure it did not represent an unreviewed safety question.

This is a Severity Level IV violation (Supplement I)."

Response to Violation B

1. Admission or Denial of the Alleged Violation

Indiana Michigan Power admits to the violation as cited in the NRC Notice of Violation.

2. Reason for the Violation

The cause for this event is lack of well defined and understood policy guidance that would identify the need to perform a safety review associated with the control of material in containment when containment work is being performed during power operation.

3. Corrective Actions Taken and Results Achieved

The tarp was immediately removed and an analysis performed of the as found configuration. The conclusion of the analysis was that the upper to lower containment drains (refueling cavity drains) and the recirculation sumps were operable while the tarp was installed. In addition, a review of the individual work activities in the unit 2 containment was immediately performed to identify other potentially related issues. No other issues were identified. A check of work in



progress in unit 1 containment was performed to see if a similar unit 1 walkdown was necessary. No work was in progress in unit 1 containment.

On February 27, 1996, the Containment System Engineer (CSE) conducted a walkdown of the unit 2 containment to ensure that no additional unreviewed conditions existed due to the aggregate of unit 2 containment work activities. No additional unreviewed conditions were observed.

Also, on February 27, 1996, plant management stopped work in unit 2 containment, with the exception of ice basket weighing, until adequate interim actions were established. Selected work activities were allowed to resume following reviews by the CSE and completion of pre-job briefings. Ice basket weighing was an exception as the job review and pre-job briefing had already taken place relative to the event.

In addition, the Installation Services Section Head conducted a review of this incident with the Project Management & Installation Services (PM&IS) Field Supervisors, emphasizing the requirements for working in containment at power and the fact that containment is a system. The review was conducted specifically to this group due to their direct involvement in the event.

4. Corrective Actions Taken to Avoid Further Violations

An administrative guideline for performing work in containment in Modes 1 through 4 was issued on March 14, 1996. This guideline defines and provides guidance for the initiation of reviews associated with the control of material in containment when containment work is being performed during power operation. The guideline also provides background information relative to the FSAR requirements for maintaining containment drains, sumps, and spray system free of loose material so as to not render these items incapable of performing their post accident design function.

Also, PMSO 122, "Voluntary Removal From Service of Technical Specification Required Equipment, Vital Secondary Equipment and Fire Protection Equipment" was revised and issued on March 21, 1996, to include management reviews for work performed in containment while the unit is in operating Modes 1 through 4. Plant Engineering's review of PMSO.122 Attachment 2 will include a review of the aggregate effect of work in containment.

5. Date When Full Compliance will be Achieved

Full compliance was achieved on February 27, 1996, following removal of the tarp and performance of the unit 2 containment walkdown to ensure that no additional unreviewed conditions existed.