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INDIANA MICHIGAN POWER

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U. S. Nuclear Regulatory Commission
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Donald C. Cook Nuclear Plant Unit 1 and Unit 2
PLANNED ACTIONS FOR THE DONALD C. COOK NUCLEAR PLANT
FIRE PROTECTION PROGRAM

Reference: Letter from Julio F. Lara, Nuclear Regulatory Commission, to A. C. Bakken III, Indiana Michigan Power Company, "D. C. Cook Nuclear Power Plant, Units 1 and 2 NRC Inspection Report 50-315/03-05; 50-316/03-05," dated July 16, 2003.

The referenced letter transmitted the results of the Nuclear Regulatory Commission (NRC) Fire Protection Triennial Inspection (FPTI) at Donald C. Cook Nuclear Plant (CNP) held March 24, 2003, to April 11, 2003. The purpose of this letter is to inform the NRC of the actions planned to sustain continuous improvement of the CNP Fire Protection Program.

In 2002, CNP augmented the Fire Protection Program staff with experienced and proven Fire Protection Engineers. The enhanced staff, with support from consultants, conducted an in-depth self assessment of the Fire Protection Program. That self assessment identified areas for improvement, which are captured in our corrective action program. Many of the near-term corrective actions have been completed and were reviewed during the FPTI.

The referenced FPTI report identified five items that require action. The first issue is ensuring that one train of the Control Room (CR) Heating Ventilation and Air Conditioning (HVAC) System remains free from fire damage. The CR HVAC Systems were not previously credited for safe shutdown, but the installation of temporary ventilation was provided if CR HVAC was lost. Preliminary analysis indicates that the loss of both trains of CR HVAC for affected fire zones has the potential to be offset by pre-emptive actions or minor plant modifications to assure that one train remains free from fire damage.

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Therefore, resolution of this issue will entail selection of one of these two options, negating the need for installation of temporary ventilation. Indiana Michigan Power Company (I&M) continues to evaluate this issue and will implement the appropriate action to resolve this issue.

The second issue is the lack of onsite power to support Alternate Safe Shutdown. Offsite power was credited for Control Rod Drive Mechanism (CRDM) Cooling Fans allowing the reactor vessel head to cool down concurrent with the Reactor Coolant System (RCS), eliminating the requirement to achieve a high level of RCS sub-cooling. An analysis confirmed that the pressurizer (PZR) Power Operated Relief Valves (PORVs) are available using both onsite and offsite power to support Alternate Safe Shutdown. Procedures have been revised to credit natural cooldown using PZR PORVs for affected Alternate Safe Shutdown applications. This allows the required RCS sub-cooling to be achieved, precluding the need for the onsite power for use of CRDM cooling fans.

The third issue is the adequacy of emergency lighting in the Shift Manager's office, the dosimetry area, and near lockers containing equipment. Emergency lighting is being installed in the Shift Manager's office. Lighting for emergency dosimetry and the storage lockers will be improved by installing additional emergency lighting.

The fourth issue is the lack of test data to support the required CO_2 concentration for two fire zones for which Alternate Safe Shutdown was credited. Preliminary analysis indicates that Alternate Safe Shutdown may not be required for these fire zones, which will eliminate the need for the CO_2 systems in these Fire Zones. I&M will perform a reanalysis to support a change to the Appendix R compliance strategy to not credit the CO_2 systems in these areas.

The last issue is an Unresolved Item (URI) regarding the potential contribution to combustible loading due to the flame spread characteristics of epoxy floor coverings with a thickness greater than that supported by existing test reports. Southwest Research Institute has been retained to perform flame spread tests necessary to assess the significance of this issue and perform appropriate compensatory actions as indicated by the analysis.

Although significant improvements in the Fire Protection Program have been achieved, long term improvement actions will assure continued reliable operation and a more effective Fire Protection Program. These long term actions are described below.

The current Appendix R Cooldown calculation and implementing safe shutdown procedures are based on achieving RCS cooldown by adding inventory via Reactor Coolant Pump (RCP) seal injection and removing heat via Steam Generator PORVs. While this approach provides a success path to achieve cooldown, it is burdensome to plant operators and does not use systems normally associated with cooldown. Therefore, CNP intends to simplify the cooldown process by using normal cooldown systems for all Appendix R analyzed areas, as described above for the second FPTI issue. For example, the PZR PORVs, which are used for RCS pressure control, are either available from the CR or by cross-tie of power from the unaffected Unit for all Appendix R Analysis Areas. This approach will allow the safe shutdown procedure to be a normal emergency operating procedure for all normal and Alternate Shutdown areas, thereby, eliminate the need for a specialized Appendix R cooldown process.

The original approach to CNP Alternate Safe Shutdown generally used cross-ties from the unaffected Unit to counteract the effects of a fire in the fire-affected Unit. The result is an extensive use of manual actions that make the safe shutdown process difficult. Through the use of the recently implemented computer analysis program, System Assurance and Fire Protection Engineering (SAFE), the components and/or cabling that are currently affected by a postulated fire can be readily identified, the feasibility of their isolation and/or protection assessed, and, if required, minor plant modifications, such as fire wrapping cables, implemented. CNP intends to analyze and implement changes in the Appendix R compliance strategy to reduce reliance on cross-ties and other currently required manual actions.

Another planned initiative is the integration of safe shutdown processes with the response to a fire by the Fire Brigade. The Alternate Safe Shutdown process implemented by Operations, and the response to a fire by a dedicated Fire Brigade, if properly integrated through the use of improved Fire Pre-plans, can significantly enhance the performance of both organizations. This integration will also ensure that the Alarm Response Procedures and Pre-Fire Plans are consistent.

A project was initiated in January 2003, to survey the installed configurations of fire-rated penetration seals and either establish that each seal is supported by an approved fire test, evaluated as acceptable for its purpose, or modified to meet requirements. There are approximately 2500 penetration seals in credited fire-rated walls that are required to be supported by fire test reports. Detailed surveys of these seals are being performed by the Fire Brigade with evaluations being performed by the Fire Protection Engineering staff using support from a penetration seal industry consultant. This project successfully responded to the

concerns regarding some of the penetration seals reviewed by the FPTI Inspectors and, in the future, will provide documentation that all credited seals meet regulatory criteria.

The Suppression and Detection Systems in the high-risk fire zones identified by the Individual Plant Evaluation for External Events have been walked down to assure the available design drawings and calculations are consistent with the as-built installation, regulatory requirements and National Fire Protection Association Code design criteria. This process will be continued so that all Suppression and Detection Systems will be walked down, reviewed, and deviations addressed and documented.

The Fire Hazard Analysis (FHA) includes tables specifying calorific values for combustibles, summaries of combustible loads by Fire Zone and an allowance of an additional ten percent to establish the maximum allowable combustible load. Several improvements are needed in the FHA combustible loading information. First, the basis for the combustible loading in the FHA is being validated. Second, the calorific tables are being removed from the FHA and captured in a new Combustible Loading Procedure used for determining and maintaining combustible load data documented in SAFE for each Fire Zone. Finally, the maximum allowable load criteria is being revised to conform to the low, moderate, high classifications allowed by the NFPA Code, thereby, providing more realistic maximum combustible loading limits.

The existing design basis for fire pumps requires two of three fire pumps to be available to support the maximum water supply demand. This in turn requires a fire truck water supply connected to the Lake Township water system to be available as a backup in the event one fire pump is inoperable. The maximum water supply demand, as established by calculation, is based on the supply to the non-safety-related Main Transformer deluge system. This system does not support safe shutdown systems, and therefore should not be used to establish the fire pump ratings. CNP intends to complete analysis to demonstrate that the highest demand for suppression in safe shutdown areas requires only one pump to be used, allowing the third pump to be the backup, and eliminating the need for the fire truck. This approach will require the highest safe shutdown suppression system demand be added to the existing water supply maximum demand calculation.

Some fire protection systems and equipment require unnecessary maintenance and periodic testing. For example, CO_2 hoses are not used, but are periodically hydrostatically and functionally tested. The RCP have suppression systems that

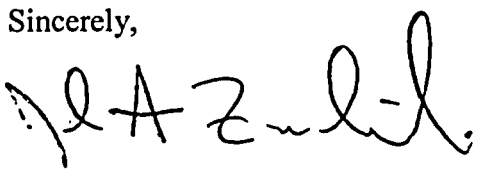
are not required, but have to be disconnected and reconnected during refueling outages for RCP maintenance. Other Fire Protection Systems are redundant, or are backups and may not be required by NFPA Codes or regulatory criteria. Such non-essential systems and components will be reviewed for possible abandonment or removal. These efforts will allow resources to be focused on the required systems and equipment.

Many of the fire protection systems and equipment at CNP were installed in the 1970's and replacement materials required for maintenance are becoming very difficult to obtain. In addition, many of the detection systems do not pinpoint the location of a fire. A five-year plan is being developed to address the upgrade or replacement of these systems and equipment.

These actions will establish excellence for the CNP Fire Protection Program and will provide for sustained continuous improvement.

There are no new commitments associated with this letter. Any actions discussed in this submittal represent intended or planned actions by I&M. They are described to the NRC for the NRC's information and are not regulatory commitments. Should you have any questions, please contact Mr. Brian D. Mann, Acting Manager of Regulatory Affairs, at (269) 697-5806.

Sincerely,



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