February 28, 2006

Mr. Mano K. Nazar
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 - CORRECTION TO AMENDMENTS RE: DELETION OF THE POWER RANGE NEUTRON FLUX HIGH NEGATIVE RATE TRIP FUNCTION (TAC NOS. MC8805 AND MC8806)

Dear Mr. Nazar:

On February 10, 2006, the Nuclear Regulatory Commission (NRC) issued Amendment No. 293 to Renewed Facility Operating License No. DPR-58 and Amendment No. 275 to Renewed Facility Operating License No. DPR-74 for Donald C. Cook Nuclear Plant, Units 1 and 2. The amendments deleted the power range neutron flux high negative rate trip function from Table 3.3.1-1, “Reactor Trip System Instrumentation” of the units' Technical Specifications.

Subsequent to issuance, the NRC staff noted that the safety evaluation (SE) supporting the amendments references General Design Criterion 10, despite the fact that both units were constructed before Appendix A, “General Design Criteria for Nuclear Power Plants,” to 10 CFR Part 50 was promulgated. Accordingly, referencing GDC 10 in the SE is an error. Enclosed please find corrected pages 1 and 2 of the SE, deleting all references to GDC 10, with marginal lines indicating the areas corrected. Please use these pages to replace corresponding pages in the SE. The corrections on pages 1 and 2 of the SE do not change the NRC staff's conclusion in the SE. The NRC staff regrets any inconvenience this error may have caused you.

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosures: As stated

cc w/encls: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 293 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-58

AND AMENDMENT NO. 275 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-74

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By application dated August 10, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML052300238), Indiana Michigan Power Company (the licensee) requested amendments to the Technical Specifications (TSs) for the Donald C. Cook (D. C. Cook) Nuclear Plant, Units 1 and 2. The proposed amendments would delete the power range neutron flux high negative rate trip function from Table 3.3.1-1, "Reactor Trip System Instrumentation."

The licensee stated that the proposed change would allow elimination of an unnecessary trip function and thereby reduce the potential for a transient due to reactor shutdown in meeting TS requirements for a limiting condition for operation (LCO) of the trip function. The Nuclear Regulatory Commission (NRC) staff's review of the application is set forth below.

2.0 REGULATORY EVALUATION

The NRC's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36, "Technical Specifications." Specifically, 10 CFR 50.36(c)(2)(ii) specifies four screening criteria to be used in determining whether an LCO is required to be included in the TSs:

Revised by letter dated 2/28/06

Criterion 1 - Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary (RCPB);

Criterion 2 - A process variable, design feature, or operating restriction that is an initial condition of a design-basis accident (DBA) or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier;

Criterion 3 - A structure, system or component (SSC) that is part of the primary success path, and which functions or actuates to mitigate a DBA or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier; and

Criterion 4 - An SSC which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The licensee proposed to delete the power range neutron flux high negative rate trip function from the D. C. Cook TSs. The NRC staff evaluation of the licensee's proposed change was predicated upon continued compliance with the screening criteria specified in 10 CFR 50.36. |

3.0 TECHNICAL EVALUATION

The power range neutron flux high negative rate trip function was designed as part of the reactor protection system (RPS) to mitigate the consequences of one or more dropped rod cluster control assemblies (RCCAs) event. The dropped RCCAs event is an anticipated operational occurrence, and is caused by a single electric or mechanical failure that results in a number and combination of RCCAs from the same group of a given bank to drop to the bottom of the core. The resulting negative reactivity insertion causes nuclear power to quickly decrease and core radial peaking factors to increase. The reduced power and continued steam generation cause the reactor coolant temperature to decrease. In the manual control mode, the positive reactivity feedback due to dropping temperature causes the reactor power to rise to initial power level at a reduced reactor vessel inlet temperature with no power overshoot. In the automatic control mode, the plant control system detects the reduction in core power and initiates control bank withdrawal in order to restore core power. As a result, power overshoot occurs, resulting in lower calculated departure from nucleate boiling ratios (DNBRs). At higher power levels, in the event of a dropped RCCA event, the RPS will detect the rapidly decreasing neutron flux due to the dropped RCCAs and trip the reactor based on the power range neutron flux high negative rate trip function, thus ending the transient and assuring that DNBR design limits are maintained. Since the dropped RCCA event is an anticipated operational occurrence, it must be shown that the DNBR design limits are met for the combination of high nuclear power, high radial peaking factor, and other system conditions that exist following the dropped RCCA event. |

In a topical report WCAP-10297-P-A, "Dropped Rod Methodology for Negative Flux Rate Trip Plants" (see ADAMS Accession No. 8304140120) Westinghouse documented a methodology for the analysis of the dropped RCCA event and concluded that the high negative flux rate trip was required only when a dropped RCCA (or RCCA bank) exceeded the threshold value of reactivity worth. Any dropped RCCA having a worth below the threshold value would not

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