

**NUCLEAR REGULATORY
COMMISSION**

[Docket Nos. 50-315 and 50-316]

**Indiana Michigan Power Company;
Notice of Consideration of Issuance of
Amendment to Facility Operating
License, Proposed No Significant
Hazards Consideration Determination,
and Opportunity for a Hearing**

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. DPR-58 and DPR-74 issued to Indiana Michigan Power Company (the licensee) for operation of the Donald C. Cook Nuclear Power Plant, Units 1 and 2, located in Berrien County, Michigan.

The proposed amendments involve the resolution of an unreviewed safety question (USQ) related to certain small-break loss-of-coolant accident scenarios for which there may not be sufficient containment recirculation sump water inventory to support continued operation of the emergency core cooling system and containment spray system pumps during and following switchover to cold leg recirculation. Resolution of this issue consists of a combination of physical plant modifications, new analyses of containment recirculation sump inventory, and resultant changes to the accident analyses to ensure sufficient water inventory in the containment recirculation sump. In addition, the licensee proposes to change the Technical Specifications (T/S) dealing with the refueling water storage tank (RWST) inventory and temperature, the required amount of ice in each ice basket in the containment, and the delay to start the containment air recirculation/hydrogen skimmer fans.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its

analysis of the issue of no significant hazards consideration, which is presented below:

1. Does the change involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated?

The proposed T/S changes are a result of the planned modifications being performed to ensure the original design basis functional capability of the containment recirculation sump. These planned modifications, and the associated changes to input assumptions of related safety analyses, do not result in a condition where the material and construction standards that were applicable prior to the changes are altered. The integrity of safety-related systems, structures, and components is maintained within the limits previously approved. The planned modifications to the facility do not create any new initiators for any accident, nor do they create any new credible limiting single failure, nor do they result in any event previously deemed incredible being made credible. The existing separation of the control and protection functions for the reactor core and fuel, reactor coolant system, and the containment and containment systems are not adversely affected. In addition, the functional requirements of safety-related systems, structures, and components, which are related to accident mitigation, have not been altered.

The proposed T/S changes increasing the minimum RWST contained inventory have no impact on the initiation of an accident. The RWST is used to mitigate the consequences of an accident. There are no new failure modes involving the RWST that could differently initiate any of the previously evaluated accidents. This is because the RWST is located outside containment in an area where it is not credible for a failure of the RWST to affect the reactor core and fuel, reactor coolant system, and the containment and containment systems.

The proposed T/S changes reflect planned modifications to the ESFAS [engineered safety features actuation system] actuation logic and to the time delay for starting of the CEQ [containment air recirculation/hydrogen skimmer] fans, and opening of the component cooling water supply and return valves and hydrogen skimmer valves to the CEQ fans. The proposed changes have no impact on the initiation of an accident. The planned modifications do not introduce any new failure modes for the CEQ fans or associated valves.

The proposed T/S changes reflect the minimum ice weight used in the existing analyses of containment recirculation sump inventory and the associated analyses, plus an allowance for weighing uncertainty. The proposed changes have no impact on the initiation of an accident.

Therefore, the probability of an accident previously evaluated will not be increased by these changes.

The proposed T/S changes, and the associated modifications being performed, will ensure the capability of the containment recirculation sump, and the containment

structures, systems, and components, to meet the original design basis requirements for the facility. The proposed changes will ensure that the minimum required water inventory is maintained in the containment recirculation sump at levels sufficient to prevent vortexing in the sump. Therefore, the original evaluation of the consequences of previously evaluated accidents as described in the Donald C. Cook Nuclear Plant (CNP) Updated Final Safety Analysis Report (UFSAR) will not be affected.

The proposed T/S changes do not affect the integrity of the fuel assembly or reactor internals, or any fission product barrier, such that their function in the control of radiological consequences is affected. In addition, the response of safety-related systems to mitigate previously evaluated accidents as described in the CNP UFSAR, will not be adversely affected or prevented. There is no effect on the assumptions previously made in the radiological consequence evaluations, and mitigation of the radiological consequences of the accidents described in the CNP UFSAR is not affected as further described below. The accident analyses performed to determine the effects of a LOCA demonstrate that decay heat is removed, and long-term core cooling is assured with these changes. As a result, design basis accident analyses affected by these T/S changes remain valid with the incorporation of the revised accident analyses input assumptions. Therefore, the consequences of an accident previously evaluated will not be increased by these changes.

The proposed T/S changes for the RWST do not increase the consequences of any previously evaluated accident. Increasing the minimum deliverable RWST volume of water provides assurance that the ECCS and CTS are capable of performing their design basis functions to mitigate the consequences of a LOCA or main steam line break (MSLB) by ensuring adequate containment recirculation sump inventory.

The proposed T/S changes for the CEQ fans and valves do not increase the consequences of any previously evaluated accident. The design basis functions of the CEQ fans and valves in maintaining containment integrity following a LOCA or MSLB continue to be met. In addition, the proposed change provides additional assurance that the ECCS and CTS remain capable of performing their design basis functions in mitigating the consequences of a LOCA or MSLB by ensuring adequate containment recirculation sump inventory. The planned modification to shorten the time delay for the CEQ fans and valves will delay initiation of CTS for a small break LOCA. Delaying CTS initiation results in a period when any fission products released from the reactor core due to possible fuel damage are not absorbed by CTS and held in solution in the containment recirculation sump. However, a small break LOCA does not result in reactor fuel damage of the magnitude that would increase offsite dose because of the lack of fission product removal by CTS. For a large break LOCA involving the possibility of more significant fuel damage, there will be no discernable delay in CTS initiation because of the

proposed T/S changes. Therefore, the consequences of a LOCA will not be increased by the proposed T/S changes.

The proposed T/S changes for the ice condenser ice weight do not increase the consequences of a LOCA or MSLB. The minimum end-of-cycle ice weight is consistent with the assumptions in the accident analyses. Additional ice is loaded into the ice baskets based on sublimation of 10% over an eighteen-month period so that the minimum ice weight of 1132 pounds is available at the end of each operating cycle. At other times throughout the cycle, there is additional margin because the ice that is assumed to sublime later in the cycle is still in the ice basket. The 1% weighing allowance provides additional assurance that the actual weight of ice meets the analyses requirement of 1132 pounds.

Therefore, the probability of occurrence or the consequences of accidents previously evaluated are not increased.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

Sufficient containment recirculation sump inventory is necessary during the mitigation of both MSLB and LOCA events. The proposed T/S changes do not create the possibility of any other type of accident. The proposed T/S changes are a result of the planned modifications being performed to ensure the original design basis functional capability of the containment recirculation sump. These planned modifications, and the associated changes to input assumptions of related safety analyses, do not result in a condition where the material and construction standards that were applicable prior to the changes are altered. The integrity of safety-related systems, structures, and components is maintained within the limits previously approved.

The planned modifications to the facility do not create any new initiators for any accident, nor do they create any new credible limiting single failure, nor do they result in any event previously deemed incredible being made credible. The existing separation of the control and protection functions for the reactor core and fuel, reactor coolant system, and the containment and containment systems are not adversely impacted. In addition, the functional requirements of safety-related systems, structures, and components, which are related to accident mitigation, have not been altered.

The proposed T/S changes for the RWST cannot create the possibility of an accident. There are no failure modes involving the RWST that could initiate an accident. This is because the RWST is located outside containment in an area where it is not credible for a failure of the RWST to affect the reactor core and fuel, reactor coolant system, and the containment and containment systems.

The proposed T/S changes for the CEQ fans and valves cannot create the possibility of an accident. The changes do not introduce any new failure modes for the CEQ fans or associated valves. Operation of the CEQ fans and valves cannot initiate an accident.

The proposed T/S changes for the ice condenser ice weight cannot create the

possibility of an accident. The ice condenser has no function during normal operation. It is a passive system that functions after an accident has already occurred. The proposed T/S changes to the ice weight do not alter any other physical characteristics of the ice condenser, nor does it change the function of the ice condenser. The proposed ice weights are less than the maximum weight supported by the structural analyses for the ice baskets. No new failure mechanisms are introduced by this change.

Therefore, it is concluded that the change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the change involve a significant reduction in a margin of safety?

The margin of safety pertinent to the proposed T/S changes includes providing assurance that emergency core cooling, containment cooling and pressure suppression, and containment spray functional requirements will be met following a design basis accident, specifically for LOCA or MSLB events. Assurance of minimum required containment recirculation sump inventory during and following switchover of suction for the ECCS and CTS pumps from the RWST to the containment recirculation sump provides this assurance.

The planned modifications have no adverse effect on the availability, operability, or functional performance of the safety-related systems, structures, and components required for mitigating the effects of design basis accidents. In fact, these planned modifications are intended to ensure the original design basis functional capabilities of the containment recirculation sump, and other containment systems, structures, and components, to support ECCS, ice condenser, and CTS operation, and to ensure that the containment structure and systems provide an effective fission product barrier. However, the planned modifications do require changes to the T/S, but they do not prevent the performance of any surveillance requirement currently specified in the CNP T/S.

The proposed T/S changes for the RWST provide assurance that sufficient water is available to support the ECCS and CTS in performance of their design basis functions to mitigate the consequences of a LOCA or MSLB. Therefore, the margin of safety provided by the ECCS and CTS associated with containment integrity and with assurance of post-LOCA long-term core cooling is preserved by these proposed changes.

The proposed T/S changes for the CEQ fans and valves provide assurance that the original design basis functional capabilities of the containment are preserved. In addition, by increasing ice melt rate in the early stages of a small break LOCA, the design basis functions of the ECCS and CTS during and after switchover to cold leg recirculation are preserved. Finally, the changes to containment pressure response resulting from starting the CEQ fans and opening the associated valves earlier in a LOCA than in previous analyses do not result in a reduction in the capability of ECCS during the reactor vessel reflood period.

Therefore, the margin to safety provided by the CEQ fans and valves associated with containment integrity, assurance of post-LOCA long-term core cooling, and ECCS performance is preserved by these proposed changes.

The proposed T/S changes for the ice condenser ice weight provides assurance that the ice condenser will provide sufficient pressure suppression capability to limit the containment peak pressure transient to less than the design limit and will contain sufficient heat removal capability to condense the RCS volume released during a LOCA. The proposed T/S changes maintain the appropriate distribution of ice through the containment bays. The required concentration of sodium tetraborate in the ice bed is not changed. There is sufficient boron in the ice bed to ensure adequate boron concentration in the containment recirculation sump following a LOCA when combined with the water inventory from the RWST, RCS leakage, and safety injection accumulators. The increase in the allowance for ice sublimation does not reduce the margin of safety. The original allowance was conservatively estimated to be 10% over an eighteen-month period. There was no operating ice condenser plant data for determining actual sublimation at the time that allowance was made. Since that time, actual data obtained has demonstrated that 10% is a reasonable, bounding value. Stating the ice weight requirement as an end-of-cycle value does not impact the margin of safety because the allowance for sublimation will be verified during the as-found weighing of the ice baskets.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92 are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public

and State comments received. Should the Commission take this action, it will publish in the **Federal Register** a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and should cite the publication date and page number of this **Federal Register** notice. Written comments may also be delivered to Room 6D59, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By November 29, 1999, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Maud Preston Palenske Memorial Library, 500 Market Street, St. Joseph, MI 49085. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons

why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no

significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to Jeremy J. Euto, Esquire, 500 Circle Drive, Buchanan, MI 49107, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(I)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated October 1, 1999, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Maud Preston Palenske Memorial Library, 500 Market Street, St. Joseph, MI 49085.

Dated at Rockville, Maryland, this 25th day of October 1999.

For the Nuclear Regulatory Commission.

Carl F. Lyon,

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