

September 9, 2002

Mr. A. Christopher Bakken III, Senior Vice President
and Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENTS (TAC NOS. MB5729 AND MB5730)

Dear Mr. Bakken:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 270 to Facility Operating License No. DPR-58 and Amendment No. 251 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Units 1 and 2. The amendments consist of changes to the Operating Licenses in response to your application dated July 26, 2002, as supplemented August 23, 2002.

The amendments will add a license condition to the Operating Licenses for both units, allowing a one-time 140-hour allowed outage time for the essential service water (ESW) system, to allow ESW pump replacement during plant operation.

A copy of our related safety evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

John F. Stang, Senior Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosures: 1. Amendment No. 270 to DPR-58
2. Amendment No. 251 to DPR-74
3. Safety Evaluation

cc w/encls: See next page

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DATE	08/30/02	08/30/02	09/06/02	09/06/02	09/06/02	09/06/02

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Donald C. Cook Nuclear Plant, Units 1 and 2

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INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 270

License No. DPR-58

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated July 26, 2002, as supplemented August 23, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by adding paragraph 2.C.(11) to the Facility Operating License No. DPR-58 which read as follows:

2.C.(11) During the essential service water pump replacement, a one-time extension of the Technical Specification 3.7.4.1 Action a and b requirement that an inoperable essential service water loop be restored to an operable status within 72 hours may be extended to 140 hours. This extension is applicable only during the preplanned replacement of an essential service water pump with a modified pump and may not be used when an essential service water pump is found to be inoperable. The extension is subject to the following conditions:

This allowance may be invoked once for each essential service water pump to allow replacement of the pump with a modified pump.

This allowance may be invoked once for each Unit 1 essential service water loop when the associated Unit 2 essential service water pump is being replaced. This will be done in accordance with Unit 1 Technical Specification 3.7.4.1 Action b.1.

This allowance is applicable until January 31, 2003.

When the essential service water loops are declared inoperable during the pump replacement, the systems supported by the essential service water system need not enter their limiting conditions for operation action statements.

3. This license amendment is effective as of its date of issuance and shall be implemented within 20 days of the date of issuance. Prior to implementation, the licensee shall change the Updated Final Safety Analysis to include a description of the plant alignment and compensatory measures as described in the July 26, 2002, application and the August 23, 2002, supplement, to be taken during the essential service water pump replacement.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

L. Raghavan, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 9, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 270

TO FACILITY OPERATING LICENSE NO. DPR-58

DOCKET NO. 50-315

Replace the following pages of the Facility Operating License with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

5

5a

INSERT

5

5a

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 251

License No. DPR-74

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated July 26, 2002, as supplemented August 23, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by adding paragraph 3(y) to the Facility Operating License No. DPR-74 which read as follows:

3(y) During the essential service water pump replacement, a one-time extension of the Technical Specification 3.7.4.1 Action a and b requirement that an inoperable essential service water loop be restored to an operable status within 72 hours may be extended to 140 hours. This extension is applicable only during the preplanned replacement of an essential service water pump with a modified pump and may not be used when an essential service water pump is found to be inoperable. The extension is subject to the following conditions:

This allowance may be invoked once for each essential service water pump to allow replacement of the pump with a modified pump.

This allowance may be invoked once for each Unit 2 essential service water loop when the associated Unit 1 essential service water pump is being replaced. This will be done in accordance with Unit 1 Technical Specification 3.7.4.1 Action b.1.

This allowance is applicable until January 31, 2003.

When the essential service water loops are declared inoperable during the pump replacement, the systems supported by the essential service water system need not enter their limiting conditions for operation action statements.

3. This license amendment is effective as of its date of issuance and shall be implemented within 20 days of the date of issuance. Prior to implementation the licensee shall change the Updated Final Safety Analysis to include a description of the plant alignment and compensatory measures as described in the July 26, 2002, application and the August 23, 2002, supplement, to be taken during the essential service water pump replacement.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

L. Raghavan, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 9, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 251

FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NO. 50-316

Replace the following pages of the Facility Operating License with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

9

10

INSERT

9

10

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 270 TO FACILITY OPERATING LICENSE NO. DPR-58
AND AMENDMENT NO. 251 TO 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 July 26, 2002, as supplemented August 23, 2002, the Indiana Michigan Power Company (the licensee) requested amendments to the Technical Specifications (TSs) for the Donald C. Cook Nuclear Plant, Units 1 and 2. The proposed amendments would amend Operating Licenses DPR-58 and DPR-74 to add a license condition allowing a one-time 140-hour allowed outage time (AOT) for the essential service water (ESW) system, to allow ESW pump replacement during plant operation. The current TS AOT for the ESW system is 72 hours. The proposed License Conditions would add an additional 68 hours to the existing ESW TS AOT for one time only during the pump replacement. The licensee will be replacing the Unit 1 and Unit 2 ESW pumps with pumps modified to prevent accelerated degradation of their performance and improve their availability and reliability.

The August 23, 2002, letter provided clarifying information within the scope of the original application and did not change the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

The ESW system supplies safety related cooling water to the component cooling water heat exchangers, the containment spray heat exchangers, the emergency diesel generators, the control room air conditioners, and the auxiliary feedwater pump enclosure coolers. It also is an emergency backup water supply source for the auxiliary feedwater system.

The system consists of four ESW pumps, four duplex strainers, and associated piping and valves. The system piping is arranged in two independent headers, each serving components in each unit. The two headers are arranged such that a rupture in either header will not affect safe operation of the system. Each header is served by two ESW pumps. Two of the four pumps are sufficient to supply all service water requirements for unit operation, shutdown, refueling, or post-accident operation, including a loss-of-coolant accident in one unit and a

simultaneous hot shutdown in the other unit. The ESW pumps are Johnston Pump Company two stage vertical turbine style containing enclosed drive shafts with grease lubricated bearings and closed impellers rated at 10,000 gpm at 145 feet total developed head.

The ESW pumps at D. C. Cook over the last 3 years have experienced unusually rapid degradation of pump performance on several occasions during unit operation, and the pumps have required replacement. The licensee's past attempts to improve performance of the ESW pumps have focused on sand intrusion as the root cause for rapid wear of the pumps due to recent low lake levels resulting in high sand ingestion. Based on a recent root case analysis, the licensee has determined that the ESW pump degradation is attributed to the pumps' design and construction and not sand ingestion. Therefore, the proposed upgraded pump design is based on minimizing the radial loading and limiting the pumps' susceptibility to radial loading.

The modifications to the pumps include changing the impeller design, the internal line shaft supports, and changing the material for several pump subcomponents.

Other changes to the ESW pumps will include the following:

1. Vibration monitoring addition for Predictive Maintenance
2. Adding an oil sample valve on the motor upper bearing drain for on-line sampling
3. Adding a grease relief line on the motor lower bearing for on-line maintenance

These additional modifications will allow better pump monitoring and "in-service" maintenance.

As part of the ESW pump replacement plan, two pumps, one modified as described above, and one refurbished to the current design, will be available for installation. The licensee plans to begin the installation of the modified pumps following the approval of this license amendment to preclude forced entries into the TS action statements because of the rapidly degrading condition of the pumps. Without ESW pump replacement, there is a potential for normally-occurring pump degradation to result in an ESW pump being declared inoperable. The replacement schedule will be predicated on a planned, controlled entry into the action statement prior to an ESW pump becoming inoperable because of degradation.

3.0 EVALUATION

During the replacement of each ESW pump both units will enter into TS 3.7.4.1 Action a which currently allows continued operation for 72 hours before the units would be required to proceed to HOT STANDBY. The proposed license amendment will add a condition to the Operating License of each unit to allow, on a one time basis, an additional 68 hours of AOT in addition to the 72 hours AOT current stated in TS 3.7.4.1.

As stated above, the licensee is replacing the ESW pumps to improve the reliability and the availability of the pumps. The licensee has previously replaced the pumps during the current TS AOT of 72 hours; however, during one pump replacement the licensee experienced difficulty with the pump replacement within the 72 AOT. The licensee is requesting the extension of the AOT to allow the replacement of the pump under orderly conditions. Extending the AOT will allow the licensee to finish the pump replacement in an orderly manner and prevent a unit having to shut down if the pump replacement is not complete within the current TS AOT of 72 hours, with a degraded ESW system.

The ESW pump replacement maintenance activities have been planned in anticipation of ESW pump degradation. As a result, the plants will be put into a stable and safe configuration. Pre-job briefs will have been performed prior to removing the pump from service. Technical expertise will be present during the pump replacement. Parts and tools will be pre-staged. Contingencies and compensatory measures will have been considered to assure that each unit is in the safest configuration possible during the entire pump replacement sequence. Lessons learned from previous pump upgrades will be used to improve the pump replacement.

The one-time extension of the allowed outage time does not introduce any mechanisms that would initiate an accident not previously analyzed; alter the function of the ESW pump; nor does it change the mode of plant operation. Only one ESW pump per unit is required to mitigate the consequences of an accident. The redundant ESW pump will be operable during the time that the ESW pump is being replaced.

The licensee has made a comparison of the risk of shutting down the plant pursuant to the existing TS AOT to the increase in risk of continued operation. The risk of shutting down a unit has been determined to be greater than the risk of continued operation while performing the pump replacement.

PROBABILISTIC RISK ASSESSMENT INSIGHTS

The licensee's probabilistic risk assessment (PRA) evaluations were performed using the updated 2001 version of the Cook Nuclear Plant (CNP) probabilistic risk assessment model in the Safety Monitor™. The licensee's evaluation used a zero test and maintenance base case version of the PRA model and assumed that one ESW pump was not available for the extended 140 hour AOT, for each of the 4 pumps sequentially. All other equipment affecting the risk analysis was considered in-service or available. The staff reviewed the submittal using Regulatory Guide (RG) 1.177 "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications."

TIER 1

The first tier evaluates the CNP PRA and the impact of the change on plant operational risk. Since this is a one-time AOT extension, the impact on plant risk will only occur during the year in which the replacement activity occurs, and subsequent years may actually show a reduction in plant risk as a result of this replacement due to improved operability or reliability. The first tier also aims to ensure that plant risk does not increase unacceptably during the period when equipment is taken out of service as part of the replacement activities.

With one ESW pump unavailable, the core damage frequency (CDF) was estimated by the licensee to increase by $2.59E-06$ /r-yr and the large early release frequency (LERF) was estimated to increase by $1.35E-07$ /r-yr. This impact reflects the combined risk increase of each of the 4 pumps being replaced during the one time AOT period. These are within the

small change categories of RG 1.174 “ An Approach for using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis” and are acceptable to the staff. The average CDF is about 4.9E-05/yr and the average LERF is about 5.6E-06/yr estimated by the licensee with each of 4 pumps inoperable, for 140 hrs during a 1 year period.

The average incremental conditional core damage probability (ICCDP) for all four (eight cross-tie configurations) pumps at the two units is 6.48E-07. The average incremental conditional large early release probability (ICLERP) at the two units for all four pumps at the two units is 3.37E-08. All of these values are within or close to the guidelines of RG 1.177.

Additionally, the licensee calculated the ICCDP for going to shut down for Unit 1 to be 4.62E-06, and that for Unit 2 to be 4.69E-06, without any test or maintenance assumed. Both of these values exceed the above at-power ICCDP's. Additional unquantified risk savings are achieved by avoiding shutdown risk and the risk of power escalation from shutdown.

PLANT ALIGNMENTS AND COMPENSATORY MEASURES

The above Tier 1 evaluations of ICCDP and ICLERP are based on a specific set of plant alignments and the following compensatory measures:

- The effect of burn-up on unfavorable exposure time is included in the evaluation for both units.
- Solid state protection system and engineered safety features actuation system logic testing are assumed for the unit with the pump being replaced—it may be in progress.
- No switchyard work is in progress or initiated during the extended AOT.
- At the start of the replacement activity, no severe weather is forecast during the extended AOT.
- During the normal work week planning and risk evaluation, the planned plant alignment must be evaluated and changed as necessary to maintain ICCDP values and ICLERP values below 1E-06 and 1E-07 respectively.
- No biocide treatment is performed during the entire pump replacement period.
- No manipulation of valve 12-WMO-30, circulating water intake tunnel shut-off valve, is allowed during the entire pump replacement period.

TIER 2 AND TIER 3

The Tier 2 provisions of RG 1.177 state that the licensee should provide reasonable assurance that risk-significant plant equipment outage configurations will not occur when specific plant equipment is out of service consistent with the proposed TS change. The Tier 3 provisions of RG 1.177 are now, in essence, moot, and are covered by paragraph (a)(4) of the Maintenance Rule.

The Maintenance Rule paragraph (a)(4) requirements and Tier 2 provisions have been addressed at CNP. The licensee has in place a risk-informed, on-line and shutdown risk management process, to support the requirements of the Maintenance Rule, 10 CFR 50.65 (a)(4). The Safety Monitor is currently used for on-line risk assessment (MODES 1, 2, and 3), while ORAM is currently used for shutdown risk assessment (MODES 4, 5, and 6). This risk-informed process is implemented and governed by plant procedures. These procedures assure that the risk associated with the various plant configurations planned during at-power or shutdown condition is assessed prior to entry into these configurations and appropriately managed while the plant is in these various configurations.

PRA QUALITY

The licensee submitted the initial CNP individual plant examination (IPE) to the staff for review on May 1, 1992. The IPE data analysis was revised in a model completed in June 1994. In response to the staff's requests for additional information, the Human Reliability Analysis was revised in June 1994 and October 1995. The staff Safety Evaluation Report was sent to the licensee on September 6, 1996, and concluded that the IPE conformed to the provisions of Generic Letter 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities – 10 CFR 50.54(f)," dated November 23, 1988, and the guidance given in NUREG-1335, "Individual Plant Examination: Submittal Guidance, Final Report," dated August 1, 1989. In addition to the above IPE (now PRA) improvements, an updated data analysis was done for version PA-96-03, dated May 1996, conversion to a top logic model for Rev. HH, dated August 1997, and a major revision (2001 update), to be described as follows:

- The existing Computer Aided Fault Tree Analysis Model was converted to a WinNUPRA model to better support implementation of the Safety Monitor for on-line and shutdown risk evaluation.
- The PRA was updated to include new plant-specific data, reflect procedure and/or design changes, revise the treatment of common cause failures to comply with the latest methodology, and remove the conservative assumptions and simplifications.
- The IPE was a single unit model and applied only to an operating unit. The 2001 update consists of a dual unit model including inter-unit dependencies and spans all modes of operation (operating and shutdown). This effort included the development of Safety Monitor full power models based on the updated PRA and development and inclusion of a shutdown risk model, which can be used to support assessment and management of shutdown risk.

SPECIFIC PRA CHANGES

Initiating Events

- Large and medium loss of coolant accidents (LOCAs), steam generator tube ruptures (SGTRs), and steam line breaks were subdivided into individual contributions from each loop and four separate initiating events were evaluated for each of these categories.

- Initiators for loss of a single direct current train were added for each train separately.
- The loss of offsite power initiator was divided into loss of offsite power to a single unit and loss of offsite power to both units (dual unit loss of offsite power) to improve modeling of the unit crossties.
- Similarly, loss of emergency service water was split to consider the loss of a single unit's ESW separately from a total (dual unit) loss of ESW to improve modeling of the unit crossties.
- Initiating event frequencies were reassessed based on updated plant-specific data and new generic data. In addition, a number of the frequencies were obtained from models built into the overall PRA as transfers from other initiators.

The latter included:

- 1) Consequential medium and small LOCAs resulting from a reactor coolant system power operated relief valve or safety relief valve failing to reclose.
- 2) Station blackouts.
- 3) Anticipated Transient Without Scram events.

Also, several initiating event frequencies were obtained from detailed system models:

- 1) Loss of ESW to a single unit.
- 2) Loss of ESW to both units.
- 3) Loss of component cooling water (CCW).
- 4) Loss of 250 volt direct current busses.

Fault Trees

- The fault tree models were revised to include design changes and operational changes.
- Individual component common cause groups were identified for Multiple Greek Letter method common cause analysis.
- The models were revised to support the implementation of the Safety Monitor.
- The heat removal function was removed from the recirculation model, and this function included in a separate long term cooling model.
- Extensive changes were made in the ESW system model to properly account for interactions between units for this shared system.

- The 4160 volt alternating current System model was changed to address the reconfiguration of the Reserve Auxiliary Transformers.

Reliability and Unavailability Data

- Revision of component failure data analysis included collecting and analyzing more recent CNP failure data for the time period since the previous update and the enhancement of common cause failure data for all components.

Human Reliability Analysis

- Evaluation of human error probabilities was limited to those affected by changes in procedures or were new to the updated model. The principal re-evaluation involved the revised Emergency Operating Procedure for switching to cold leg recirculation.
- The revised procedure for a loss of CCW was also used to update the associated human error probabilities.
- The net result was to add or revise 30 human error probabilities (20 percent of the total human interaction events).

Results

- The CDF is less than that from the 1997 update of $7.09E-05/\text{yr}$. This can be attributed to a number of factors, including a reduction in LOCA initiating event frequencies, the removal of conservative assumptions, and the more detailed and complete modeling of ESW crossties between units.
- The Unit 2 results are almost identical to those from Unit 1, with the differences being due to minor differences in power supply arrangements to support systems and ATWS-unfavorable exposure times.
- The distribution of the contributions to the results has changed from the 1997 update. The station blackout contribution is now 36 percent of the total CDF and is higher than that from the 1997 PRA.
- Sequences related to a loss of all ESW contribute approximately 24 percent of the total CDF. The most significant contributors are loss of ESW either as the initiator or following a normal transient initiator with subsequent loss of ESW combined with failure to recover the ESW.
- Small LOCA is still an important contributor (17 percent) to CDF. The importance of small LOCA has decreased from the 1997 evaluation due to reduced initiator frequency. The contribution to the total number of SGTRs has been reduced due to more detailed modeling while the contribution from steamline breaks has gone up because of an increase in assessed secondary side pipe break frequency.

- The dominant contributors to LERF are loss of offsite power initiated sequences that make up approximately 50 percent of the total. SGTRs, loss of ESW, and small LOCAs each contribute about 10 percent of the total LERF.

PEER REVIEW

The 2001 update was the model provided to the Westinghouse Owner's Group PRA Peer Review Team for review; it was done following accepted industry guidelines. The PRA peer review was performed in September 2001. The peer review team identified 4 level A Facts and Observation (F&Os) and 24 level B F&Os. The licensee indicated that many of these F&Os were resolved shortly after the peer review team completed their evaluation by providing additional information or explanation to support the analysis. The remaining open F&Os have been determined by the licensee to not have a significant affect on the quantitative results of this submittal.

Based on the foregoing, the staff has determined that the licensee's PRA and On-Line Safety Monitor, shutdown model, and external events models which have been peer reviewed, form a sufficient basis to support the current proposal for a one-time ESW AOT of 140 hours per pump.

EXTERNAL EVENTS

Seismic

The effects of a one-time extension for each ESW pump's AOT on the results of the CNP Seismic PRA (SPRA) have been qualitatively evaluated by the licensee. Although the CNP SPRA model has not been re-analyzed, the seismic modeling and results were reviewed to determine the potential impact of increasing individual ESW pump's test and maintenance unavailability. In the base SPRA model, the ESW pumps are not significant contributors to the seismic PRA risk results on an individual basis. This is because pump failures due to seismic events are assumed to simultaneously affect ESW pumps. For example, seismically-induced loss of ESW initiating events is caused by a catastrophic failure of the screen-house due to a seismic event. Such events are assumed to cause the ESW pumps to fail simultaneously and in a non-recoverable manner. Assuming this type of failure precludes any potential effect of a 140 hr. AOT for one ESW pump on the loss-of-ESW initiator due to seismic events.

A similar bounding treatment was applied to seismically-induced failures of the ESW pumps (not due to screen-house failure). That is, ESW pump failure due to a seismic event is assumed to result in all pumps failing simultaneously. This implies, according to the licensee, that a longer ESW pump AOT does not impact sequences with ESW pump failure due to seismic events. Finally the licensee's review of all the listed accident cutsets in the CNP SPRA reports shows that there are no random ESW pump unavailabilities in any of these cutsets. The staff agrees with the licensee's qualitative evaluation. Based on the fact that the ESW pumps are in relatively close proximity to one another, the staff finds that it is acceptable to completely couple their fragilities and thus assume that seismically-induced failure of the ESW pumps is essentially a common cause event that will simultaneously fail all ESW pumps to both units. Thus, the extended ESW pump AOT is not expected to impact the risks associated with seismic events.

Fire

The effects of a 140 hr. ESW pump AOT on the results of the Fire Analysis for the CNP PRA have also been qualitatively evaluated by the licensee. The present revision of the fire analysis was updated in December of 1995 to address concerns raised by the staff during its review of CNP's submittal in response to Supplement 4 of Generic Letter 88-20, which requested licensees to perform an individual plant examination of external events for internal fire events. Along with the seismic analysis, the licensee's Fire PRA quantification results are not included in the total core damage quantification. Fires in the control room dominate the core damage frequency for internal fire events with a contribution of $1.81E-06/\text{yr}$. The CDF contribution for a fire in an ESW pump room was estimated to be $1.07E-07/\text{yr}$.

The licensee stated in the CNP Fire PRA report, the ESW pump rooms are not very susceptible to fires. The main reason for this (Attachment to AEP:NRC:2741-01) is that the ESW pump rooms are essentially concrete and steel and contain minimal combustibles. Furthermore, according to the licensee the maintenance activities associated with upgrading the ESW pumps are not expected to change that low susceptibility to a fire. Any heat producing activities such as welding or grinding are controlled at CNP by numerous plant procedures and processes, including activity specific controls such as welding permits. A 140 hr. ESW AOT does not affect the conclusion reached by the licensee in the Fire PRA reports. The staff concurs with the licensee that a fire in the screenhouse motor control center disabling the ESW pumps is not credible and could be screened from further evaluation. The staff agrees.

The fire analysis evaluation of control room cabinet fires that could cause a loss of ESW pump determined that a single panel fire would cause the loss of both ESW pumps in a unit. Given this panel configuration, the licensee's fire analysis then estimated the frequency of a loss of all ESW due to a fire in a single control room. No resulting frequencies were greater than $1E-08/\text{yr}$. The proposed extension of the ESW AOT would not affect these results since both ESW pumps would fail due to the panel fire. The staff agrees.

Flooding

The licensee states that any additional influence on flooding resulting from maintenance on an ESW pump will be small due to the physical location of the ESW pumps. The ESW pumps are located in the intake structure. Since the pumps reside in neither the turbine building nor the auxiliary building, maintenance on the ESW pumps cannot cause flooding of other vital equipment. Additionally, if flooding were to occur in the vicinity of the ESW pump, within the confines of the pump room, water would run into the forebay with no effect on equipment, according to the licensee. Similarly, water spray in the pump room would also be confined within the pump room. The staff agrees that, for the proposed ESW activity, flooding can be screened out as meaningful risk contributor.

SUMMARY

The staff concludes that, with the compensatory measures indicated, the impact on plant risk of allowing a one-time 140 hr. at-power AOT for the CNP Units 1 and 2 for any inoperable ESW pump is very small for internal and external events. The staff thus finds that the requested amendments allowing for a one-time 140 hr AOT for the ESW pumps is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

These amendments change the requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (67 FR 51603). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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