INDIANA MICHIGAN POWER
A unit of American Electric Power

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August 31, 2005

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Docket Nos: 50-315
50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2
ADDITIONAL INFORMATION - NUCLEAR REGULATORY COMMISSION
BULLETIN 2003-01 REGARDING DEBRIS
BLOCKAGE OF RECIRCULATION SUMP

References:

1) Nuclear Regulatory Commission (NRC) Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," dated June 9, 2003 (ML031600259).

2) Letter from A. C. Bakken III, Indiana Michigan Power Company (I&M), to U. S. NRC Document Control Desk, "Response to Nuclear Regulatory Commission Bulletin 2003-01 Regarding Debris Blockage of Recirculation Sump," AEP:NRC:3054-12, dated August 7, 2003 (ML032260668).

3) Letter from C. F. Lyon, NRC, to M. K. Nazar, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Request for Additional Information Regarding Response to NRC Bulletin 2003-01 (TAC Nos. MB9579 and MB9571)," dated November 4, 2004 (ML043000052).

4) Letter from J. N. Jensen, I&M, to U. S. NRC Document Control Desk, "Response to Request for Additional Information - Nuclear Regulatory Commission Bulletin 2003-01 Regarding Debris Blockage of Recirculation Sump," AEP:NRC:5054-01, dated January 24, 2005 (ML050270184).

A103

This letter provides additional information requested by the Nuclear Regulatory Commission (NRC) regarding Indiana Michigan Power Company's (I&M's) response to an NRC Bulletin concerning the potential for debris blockage of the recirculation sump.

By NRC Bulletin 2003-01 (Reference 1), the NRC informed pressurized water reactor licensees of the potential susceptibility of recirculation sump screens to debris blockage following a high-energy line break in containment. In that bulletin the NRC requested that licensees identify interim compensatory measures to reduce the associated risk while additional evaluation proceeded. Reference 2 provided I&M's response to the bulletin for the Donald C. Cook Nuclear Power Plant. By Reference 3, the NRC identified additional information needed to complete its review of I&M's response. By Reference 4, I&M provided the majority of the requested information, and committed to provide additional information by September 1, 2005. Attachment 1 to this letter provides the additional information as committed in Reference 4.

This letter does not contain new regulatory commitments. Should you have any questions, please contact Mr. John A. Zwolinski, Safety Assurance Director, at (269) 466-2428.

Sincerely,

Joseph N. Jensen
Site Vice President

JW/rdw

Attachment:

Additional Information Regarding U. S. Nuclear Regulatory Commission Bulletin 2003-01.

c: J. L. Caldwell, NRC Region III
K. D. Curry, Ft. Wayne AEP, w/o attachment
J. T. King, MPSC
MDEQ – WHMD/RPMWS
NRC Resident Inspector
D. W. Spaulding, NRC Washington, DC

AFFIRMATION

I, Joseph N. Jensen, being duly sworn, state that I am Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this letter with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

Indiana Michigan Power Company

Joseph N. Jensen
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 31st DAY OF August, 2005

Regan D Wendzel
Notary Public

REGAN D. WENDZEL
Notary Public, Berrien County, MI
My Commission Expires Jan. 21, 2009

My Commission Expires

Attachment to AEP:NRC:5054-10

ADDITIONAL INFORMATION REGARDING
U. S. NUCLEAR REGULATORY COMMISSION BULLETIN 2003-01.

References for this attachment are identified on Page 11.

By Nuclear Regulatory Commission (NRC) Bulletin 2003-01 (Reference 1), the NRC informed pressurized water reactor licensees of the potential susceptibility of recirculation sump screens to debris blockage following a high-energy line break in containment. In that bulletin, the NRC requested that licensees identify interim compensatory measures to reduce the associated risk while additional evaluation proceeded. Reference 2 provided Indiana Michigan Power Company's (I&M's) response to the bulletin for the Donald C. Cook Nuclear Power Plant (CNP). By Reference 3, the NRC identified additional information needed to complete its review of I&M's response. By Reference 4, I&M provided the majority of the requested information, and provided two commitments to submit additional information by September 1, 2005. The two specific commitments to submit additional information are restated below, along with the actions taken to fulfill the commitments.

First Commitment to Submit Additional Information: I&M will submit the information requested by NRC Question 1.

NRC Question 1 from Reference 3 was as follows:

> *On page 4 of Attachment 1 of your response [Reference 4 in this Attachment], you discussed operator training on indications of and responses to sump clogging. However, your response does not completely discuss the operator training to be implemented. Please provide a detailed discussion of the operating procedures to be implemented, the indications of sump clogging that the operators are instructed to monitor, the criteria used to declare a sump clogging condition, and the response actions the operators are instructed to take in the event of sump clogging and loss of ECCS recirculation capability.*

I&M's answer from Reference 4 was as follows:

> The training description referenced in NRC Question 1 above pertained to existing training on pump cavitation, which would be a consequence of significant sump clogging. This training is not specific to clogging of recirculation sump screens. As described below in the portion of the answer to NRC Question 2, regarding WCAP-16204, Revision 1 (Reference 4) [Reference 5 in this Attachment], Appendix A, Sections A8-W and A9-W, I&M will provide operator guidance on symptoms and identification of containment sump blockage, and will provide contingency operator actions in response to containment sump blockage, loss of suction, and cavitation. As also described below, the actions will be completed no later than September 1, 2005. I&M will also submit the detailed information requested by NRC Question 1 no later than September 1, 2005.

Action Taken to Fulfill First Commitment

As detailed below I&M has changed existing Emergency Operating Procedures (EOPs) for the transfer to cold leg recirculation (ES-1.3), and for the loss of emergency coolant recirculation (ECA-1.1), to identify indications of sump blockage. I&M has also implemented a new EOP to respond to these indications (ECA-1.3). The procedure changes and new procedure are based on Westinghouse Owners Group recommendations, including the generic Sump Blockage Control Room Guideline (SBCRG), contained in Volume 2 of WCAP-16204, Revision 1, and on the CNP design configuration in which both trains of the emergency core cooling system (ECCS) and containment spray system (CTS) take suction from the single common recirculation sump.

Changes to Procedure for Transfer to Cold Leg Recirculation, ES-1.3

Existing EOP ES-1.3, "Transfer to Cold leg Recirculation," has been changed to direct operators, via a continuous action step, to monitor control room displays of the following sump blockage indicators to ensure the indications are stable and normal following the transfer of the CTS and residual heat removal (RHR) systems to the recirculation mode.

- RHR heat exchanger flow.
- RHR system flow to the CTS system.
- RHR pump discharge pressure.
- RHR pump motor current.
- CTS pump discharge pressure.
- CTS pump motor current.

Containment water level is not used as a criterion because it does not conclusively indicate sump blockage. CNP does not have instrumentation that indicates water level in the recirculation sump downstream of the screen. There is no instrumentation capable of directly detecting sump blockage, such as screen differential pressure. Therefore, symptoms of pump distress resulting from sump blockage are used to determine if blockage exists. Indications of pump cavitation or loss of suction caused by sump blockage include erratic or abnormally reduced pump motor current, discharge pressure or flow. Conversely, these indications would be stable at normal values if the pumps were not impaired due to sump blockage.

If established train or trains of the RHR system or CTS system are affected by sump blockage, procedure ES-1.3 directs operators to transition to new procedure, ECA-1.3, "Sump Blockage Control Room Procedure."

Procedure ES-1.3 has been changed to direct operators to make preemptive preparations to refill the refueling water storage tank (RWST) by lining up the boric acid blender flow path to add borated makeup water to the RWST.

Revisions to Procedure for Loss of Emergency Coolant Recirculation, ECA-1.1

Existing EOP ECA-1.1, "Loss of Emergency Coolant Recirculation," applies to a loss of recirculation from causes other than sump blockage, such as a pump or valve malfunction. A continuous action step has been added to procedure ECA-1.1, directing operators to monitor the same sump blockage indications that are monitored in procedure ES-1.3, as listed above. This step assures that operators do not remain in ECA-1.1 if sump blockage is the cause of the recirculation loss. ECA-1.1 may have been entered before symptoms resulting from sump blockage are evident, or the loss of recirculation may have been attributed to pump or valve malfunction rather than sump blockage. This step provides a mechanism to either confirm that the operator is in the proper procedure or to direct the operator to ECA-1.3. Similar to procedure ES-1.3, if the established train(s) of the RHR system or CTS system are affected by sump blockage, procedure ECA-1.1 directs operators to transition to new procedure ECA-1.3.

New Sump Blockage Procedure, ECA-1.3

New EOP ECA-1.3 would be entered from procedure ES-1.3 or procedure ECA-1.1 upon indications of sump blockage that precludes establishing or maintaining at least one train of RHR recirculation flow or one train of CTS flow. The initial steps in procedure ECA-1.3 direct operators to take actions to protect the ECCS pumps, since loss of suction not only causes immediate loss of flow, but can also cause pump damage. Although the initial actions may have a temporary adverse effect on some safety functions, preserving long-term flow capability has a higher priority. The actions taken to protect the pumps include reducing total recirculation flow (which minimizes transport of debris to the sump screen and reduces head losses to the pump suction), reducing individual pump flow (which reduces net positive suction head requirements) and, when necessary, stopping pumps. The specific procedure steps are summarized as follows:

The procedure directs operators to stop one centrifugal charging pump (CCP), safety injection (SI) pump, and RHR pump, and monitor the control room displays of the following parameters for indications of cavitation:

- RHR system heat exchanger flow
- RHR pump discharge pressure
- RHR pump motor current

If these indications are not stable and normal, the procedure directs operators to stop the remaining operating CCP and SI pumps taking suction from the operating RHR pump, and stop the CTS pumps.

If indications of cavitation continue, the procedure directs operators to reduce flow from the remaining operating RHR pump by throttling the discharge valve open only far enough to

obtain the minimum positive indication of flow. If indications of cavitation continue, the procedure directs operators to stop the remaining operating RHR pump.

Actions would then be taken to establish and maintain optimum ECCS flow. The amount of recirculation flow available depends on the degree of sump blockage present. The plant engineering staff would be consulted to determine the optimum ECCS and containment spray alignment. The optimum flow conditions would be those that provide adequate core cooling at the lowest possible flow rates. Flows would not be raised above the minimums necessary to support safety functions. Any additional flow would produce greater transport of debris to the recirculation sump screens and increases the chances of loss of suction head. The optimum alignment may include intermittent operation of some pumps. The specific procedure steps are summarized as follows:

The procedure directs operators to verify both CTS pumps are stopped and place the containment vent fans in service. Stopping CTS reduces flow through the recirculation sump screen, thereby minimizing debris transport and further screen blockage The ice condenser and the vent fans provide containment pressure control mechanisms.

The procedure then directs operators to try establishing recirculation suction by running an RHR pump and throttling its discharge valve open only far enough to obtain the minimum positive indication of flow. If indications of cavitation occur, operators are instructed to stop the RHR pump, restart the other RHR pump and throttle its discharge valve open only far enough to obtain the minimum positive indication of flow. If indications of cavitation occur, operators are instructed to stop the RHR pump and establish injection flow using a CCP or SI pump taking suction from the RWST. In parallel, the procedure directs operators to vent the affected RHR pump(s) casing if the Emergency Response Organization Plant Evaluation Team determines that pump venting is appropriate.

If an RHR pump can be run without indication of cavitation with minimum indicated flow, then the procedure directs operators to align a CCP and an SI pump to take suction from the running RHR pump. The procedure directs operators to start and stop pumps as necessary to establish recirculation using a CCP. If flow cannot be established using the CCP, the procedure directs operators to establish flow using an SI pump. Although the CCP and SI pump can each deliver adequate flow for decay heat removal, use of the CCP allows for further flow reductions.

If recirculation flow cannot be established using a CCP or an SI pump, the procedure directs operators to try establishing flow using the RHR pump with its discharge valve throttled to obtain the minimum positive indication of flow. If there is indication of cavitation, the procedure directs operators to secure the operating RHR pump and attempt to establish flow with the other RHR pump. Again, the pump discharge valve would be throttled to obtain minimum indication of flow.

If recirculation flow cannot be established using an RHR pump, the procedure directs operators to align the CCP and SI pump suction to the RWST, if adequate inventory remains. The procedure then directs operators to start and stop pumps as necessary to establish injection using a CCP. If flow cannot be established using the CCP, the procedure directs operators to establish flow using an SI pump.

Following establishment of recirculation flow via a CCP, SI pump, or RHR pump, or establishment of flow from the RWST via a CCP or SI pump, the procedure directs operators to consult the Emergency Response Organization Plant Evaluation Team to determine the optimum ECCS and CTS system alignment.

Makeup would be added to the RWST to extend the time the ECCS pumps and CTS pumps can take suction from the RWST (if pumps are taking suction from the RWST) or to permit realignment of ECCS pump and CTS pump suctions to the RWST (if pumps are not taking suction from the RWST). The specific procedure steps are summarized as follows:

Operators are directed to add makeup to the RWST using existing procedures for filling the RWST from the chemical and volume control system (CVCS) or from the opposite unit RWST.

Operators are directed, via a continuous action step, to monitor for adequate reactor coolant system (RCS) makeup flow by monitoring the reactor vessel level indicting system (RVLIS) and the core exit thermocouples. If these parameters indicate inadequate flow or cooling, the procedure provides options of increasing ECCS flow within cavitation limits, and/or adding RCS makeup. If necessary, operators are directed to shut down the opposite unit and use the opposite unit's CVCS as an alternate makeup source.

The remainder of the procedure provides instructions for cooling and depressurizing (as necessary) the RCS to cold shutdown conditions, if the RCS is not already depressurized from the break. The procedure provides a continuous action step, during the cool-down and depressurization, to operate the ECCS by starting and stopping pumps, aligning flowpaths and throttling flow as necessary to maintain RCS makeup without pump cavitation. The cool-down and depressurization instructions are otherwise similar to those provided in other loss of coolant accident (LOCA) response procedures, such as ECA-1.1.

Training

Each operating crew has received formal training on the above described procedures in both classroom and simulator settings, as described below:

Classroom

The classroom training is approximately three hours in duration, is conducted in accordance with approved lesson plans, and includes slides and handouts. The training objectives are to enable the control room operating crew to:

- Describe the entry conditions for procedure ECA-1.3.
- Describe the basis or reason for all steps, notes cautions, and foldout page items in procedure ECA-1.3.
- Determine the appropriate procedure steps and actions to be implemented, given a description of plant conditions and a copy of the EOPs.

The classroom training introduction includes a brief overview of industry issues and events that led to NRC Generic Safety Issue 191, NRC Bulletin 2003-01, and NRC Generic Letter 2004-02. The introduction also includes a brief discussion of CNP-specific debris generation and transport mechanisms, and details of the CNP recirculation sump configuration and piping connections, including potential future design changes to address the screen clogging issue. Using drawings and photographs of the CNP recirculation sumps, the control room operating crew is shown how sump screen clogging could lead to air entrainment in the ECCS system. The crew is advised that the many variables involved in sump screen clogging result in a range of possible scenarios, that clogging may occur early or late in the recirculation process, and that a certain amount of operator judgment may be involved in diagnosing and responding to sump screen clogging.

The crew is then led through the transition guidance from procedures ES-1.3 and ECA-1.1 into procedure ECA-1.3. The training presents the objectives of each section of procedure ECA-1.3, and the crew is led through each step of the procedure. Information from the Plant Specific Background Document is available to provide the crew with an understanding of the underlying intent of procedurally required actions. The training is primarily focused on the initial indications of, and response to, sump screen clogging, and the actions taken to restore ECCS flow and reach the point of initiating RCS depressurization and cooldown.

Simulator

Plant specific simulator training is administered to each control room operating crew following the classroom training. The simulator training is approximately three hours in duration, is conducted in accordance with approved lesson plans, and includes handouts.

The training objectives are to enable the control room operating crew to:

- Recognize entry conditions for procedure ECA-1.3.
- Given a LOCA with significant recirculation sump blockage, take the appropriate actions specified in procedure ECA-1.3 to:

  Protect the ECCS and CTS pumps
  Establish and maintain optimum ECCS flow
  Conserve RWST level
  Maintain RCS heat removal

The simulator training consists of pre-briefing, execution of two simulator scenarios, and debriefing, and includes review of CNP operating experience. During scenario executions, the scenario is placed in "freeze" at designated points and at the discretion of the instructor to ensure the crew understands the intent of procedure steps, notes, and cautions. The CNP simulator modeling is capable of producing indications of ECCS pump air entrainment on the control room instrument displays. The simulator uses detailed modeling of both the lower containment and recirculation sump volumes and associated instrumentation. The instructor is provided with the capability of controlling the severity of recirculation sump screen clogging to allow the students to respond to the indications of pump cavitation and air entrainment with varying degrees of ECCS flow reduction.

Two different scenarios are presented. The first scenario involves a partial blockage of the sump screen. The scenario begins approximately 30 minutes into a large break LOCA, just prior to the transition to cold leg recirculation in accordance with procedure ES-1.3. During the transition, the crew is then presented with indications of sump blockage, requiring them to recognize the degrading sump conditions and transition to procedure ECA-1.3. The crew proceeds through ECA-1.3, stopping a train of ECCS, securing CTS pumps, and aligning the remaining RHR train such that it only provides suction for the CCP. When presented with less than adequate cooling, the crew determines the additional actions needed to ensure RCS makeup is adequate to restore RVLIS level and stabilize core exit thermocouple temperatures.

The second scenario involves a complete blockage of the sump screen. The scenario begins with the transition to recirculation in progress. Complete sump blockage occurs and procedure ECA-1.3 is entered. It is assumed in this scenario that downstream debris reaches the CCPs and SI pumps, which then trip on motor overload. The crew then establishes recirculation flow using the RHR pump with its discharge valve open only far enough to obtain the minimum positive indication of flow.

Second Commitment to Submit Additional Information: The detailed discussion of procedure modifications and operator training regarding the Candidate Operator Actions (COAs) identified in Sections A5, A6, A8-W, and A9-W, of Appendix A to WCAP-16204, Revision 1, will be submitted to the NRC as requested by NRC Question 2.

NRC Question 2 from Reference 3 was as follows:

> *On page 9 of Attachment 1 of your response [Reference 4 in this Attachment], you state that CNP emergency procedures are based on generic procedures provided by the Westinghouse Owners Group (WOG). You further state that I&M considered certain WOG recommendations in determining if procedural modifications to delay switchover to sump recirculation should be implemented at CNP, and I&M determined that the procedural modifications were not appropriate. The WOG has developed operational guidance in response to Bulletin 2003-01 for Westinghouse and CE type pressurized water reactors (PWRs). This guidance was issued in March 2004. Please provide a discussion of your plans to consider implementing this new WOG guidance. Include a discussion of the WOG recommended compensatory measures that have been or will be implemented at your plant, and the evaluations or analyses performed to determine which of the WOG recommended changes are acceptable at your plant. Provide technical justification for those WOG recommended compensatory measures not being implemented by your plant. Also include a detailed discussion of the procedures being modified, the operator training being implemented, and your schedule for implementing these compensatory measures.*

I&M's answer from Reference 4 summarized each COA applicable to Westinghouse plants as identified in Appendix A to WCAP-16204, Revision 1 (Reference 5), and presented the results of I&M's evaluation as to whether the COA would be implemented at CNP. I&M committed to provide a detailed discussion of procedure modifications and operator training regarding four of the COAs. The four COAs were those identified in Sections A5, A6, A8-W, and A9-W of Appendix A to the WCAP. Discussions of procedure modifications and operator training regarding these four COAs are provided below.

A5 - Refill of RWST

The COA consists of initiating preemptive preparations to refill the RWST or lineup an alternate makeup source that bypasses the RWST, initiating RWST refill after switchover to sump recirculation, or initiating RWST refill before switchover to sump recirculation. WCAP-16204, Revision 1, documents the WOG conclusion/recommendation that emergency procedures be changed to initiate early action to line up to refill the RWST or bypass the RWST to support using an alternate makeup source, if needed. Actual RWST refill was generally not recommended until after switchover to recirculation has occurred.

In the Reference 4 discussion of this COA, I&M committed to revise EOPs to include actions to align valves to refill the RWST or lineup an alternate makeup source that bypasses the RWST,

and submit a detailed discussion of the procedure modifications and operator training regarding this COA by September 1, 2005. As described above in the action taken to fulfill the first commitment, I&M has changed existing operations procedure ES-1.3, "Transfer to Cold leg Recirculation," to direct operators to make preemptive preparations to refill the RWST by lining up the boric acid blender to add borated makeup water to the RWST. This is a task covered by normal operating procedures and no additional training is needed.

In the Reference 4 discussion of this COA, I&M also stated that implementation of actual RWST refill may not occur unless further evaluation indicated that RWST elevated levels will not impact assumed accident conditions due to inadvertent injection (e.g. boundary valve leakage). The concern regarding boundary valve leakage from a refilled RWST is that such leakage could result in the addition of water into the containment, beyond that normally injected from a single RWST, impairing components credited in design basis accident analyses. Containment flood-up calculations indicate that the currently available flooding margin is small (less that one inch for Unit 2). There is no assurance that RWST boundary valves (i.e., the CTS pump suction isolation valves) would be sufficiently leak tight to preclude an unacceptable containment flood level. Therefore, I&M does not intend to refill the RWST if an accident is within the plant design basis, i.e. while the recirculation sump is functional as is assumed in procedure ES-1.3.

As described in COA A6 below, I&M has provided procedural instruction for refilling the RWST in response to a beyond-design-basis accident, i.e., an accident with sump blockage.

A6 – Inject More Than One RWST Volume From Refilled RWST or by Bypassing the RWST

The COA consists of measures to re-initiate RCS injection if screen blockage causes loss of sump recirculation capability. The COA would provide injection water from a refilled RWST or from an alternate source, bypassing the RWST. WCAP-16204, Revision 1, documents the WOG conclusion/recommendation that a loss of recirculation capability due to sump blockage would be a beyond-design-basis condition. As also documented in the WCAP, the COA may have implications regarding RCS pressurization, hydrogen generation, reactivity control, thermal shock, pH control, and flooding of important instrumentation. Therefore, the WOG recommended that the actions be coordinated by emergency organization technical support personnel in accordance with severe accident management guidelines.

In the Reference 4 discussion of this COA, I&M stated that, due to the containment flood level concerns identified above, operators would implement this COA only if beyond-design-basis conditions of sump blockage were to occur, and that this COA would be included in the procedural guidance developed to address containment sump blockage. As described above in the action taken to fulfill the first commitment, new procedure ECA-1.3, "Sump Blockage Control Room Procedure," includes instructions to re-initiate RCS injection from the RWST using the CCP or SI pump, if adequate RWST inventory remains. Procedure ECA-1.3 also directs operators to add makeup to the RWST, as necessary. Therefore, the above described

action taken to fulfill the first commitment satisfies the commitment to submit a detailed discussion of procedure modifications and operator training regarding this COA.

A8-W - Westinghouse Plants - Provide Guidance on Symptoms and Identification of Containment Sump Blockage

The COA consists of providing procedural guidance and training to identify symptoms of containment sump blockage or degraded ECCS pump performance, utilizing all available instrumentation. WCAP-16204, Revision 1, documents the WOG conclusion/recommendation that, in general, the proposed change is advantageous to most plants.

In the Reference 4 discussion of this COA, I&M committed to provide procedural guidance and training to identify symptoms of containment sump blockage or degraded ECCS pump performance, utilizing all available instrumentation, and submit a detailed discussion of the procedure modifications and operator training regarding this COA by September 1, 2005. As described above in the action taken to fulfill the first commitment, I&M has changed operations procedures ES-1.3, and ECA-1.1, "Loss of Emergency Coolant Recirculation," has issued a new procedure ECA-1.3, and has implemented associated training. These procedures contain guidance for identifying symptoms of containment sump blockage or degraded ECCS pump performance and utilize all relevant instrumentation available in the control room. Therefore, the above described action taken to fulfill the first commitment satisfies this commitment to submit a detailed discussion of procedure modifications and operator training regarding this COA.

A9-W - Westinghouse Plants – Develop Contingency Actions in Response to Containment Sump Blockage, Loss of Suction, and Cavitation

The COA consists of providing procedural guidance and training on responses to sump clogging. WCAP-16204, Revision 1, documents the WOG conclusion/recommendation that guidance be developed outside the Westinghouse Emergency Response Guideline (ERG) system, since this enables implementation of interim guidance with minimum long-term changes to the ERG system.

In the Reference 4 discussion of this COA, I&M committed to provide procedural guidance and training on responses to sump clogging, outside the ERG system, and submit a detailed discussion of the procedure modifications and operator training regarding this COA by September 1, 2005. As described above in the action taken to fulfill the first commitment, I&M has changed existing operations procedures ES-1.3 and ECA-1.1 to direct operators to new procedure ECA-1.3 if indications of sump clogging are observed. New procedure ECA-1.3 provides procedural guidance on responses to sump clogging. These procedures contain guidance based on WOG recommendations, including the SBCRG contained in Volume 2 of WCAP-16204, Revision 1. The SBCRG is separate from the ERG network. As also described above in the action taken to fulfill the first commitment, I&M has implemented training on these procedure revisions and new procedure. Therefore, the above described action taken to fulfill the

first commitment satisfies this commitment to submit a detailed discussion of procedure modifications and operator training regarding this COA.

References for this Attachment

1. NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," dated June 9, 2003.

2. Letter from A. C. Bakken III, I&M, to U. S. NRC Document Control Desk, "Response to Nuclear Regulatory Commission Bulletin 2003-01 Regarding Debris Blockage of Recirculation Sump," AEP:NRC:3054-12, dated August 7, 2003 (ML032260668).

3. Letter from C. F. Lyon, NRC, to M. K. Nazar, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Request for Additional Information Regarding Response to Nuclear Regulatory Commission (NRC) Bulletin 2003-01 (TAC Nos. MB9579 and MB9571)," dated November 4, 2004 (ML043000052).

4. Letter from J. N. Jensen, I&M, to U. S. NRC Document Control Desk, "Response to Request for Additional Information - Nuclear Regulatory Commission Bulletin 2003-01 Regarding Debris Blockage of Recirculation Sump," dated January 24, 2005 (ML050270184).

5. WCAP-16204, Revision 1, "Evaluation of Potential ERG and EPG Changes to Address NRC Bulletin 2003-01 Recommendations," dated March 2004.