



February 1, 2001

C0201-07
10 CFR 50.90

Docket No.: 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
RESPONSE TO NUCLEAR REGULATORY COMMISSION (NRC)
ACCEPTANCE REVIEW
REGARDING LICENSE AMENDMENT REQUEST,
"REACTOR COOLANT PUMP SEAL LEAK-OFF TWO-PHASE FLOW"
(TAC NOS. MB0154 AND MB0155)

- Reference: 1) Letter from R. P. Powers (I&M) to Nuclear Regulatory Commission (NRC) Document Control Desk, "License Amendment Request - Reactor Coolant Pump Seal Leak-Off Two-Phase Flow: Revised Analysis And Related Changes," C0900-20, dated September 26, 2000.
- 2) Letter from J. F. Stang (NRC) to R. P. Powers (I&M), "Donald C. Cook Nuclear Plant - Acceptance Review Regarding License Amendment Request, "Reactor Coolant Pump Seal Leak-Off Two-Phase Flow," dated December 27, 2000 (TAC Nos. MB0154 AND MB0155).

In Reference 1, Indiana Michigan Power Company (I&M), the Licensee for Donald C. Cook Nuclear Plant (CNP) Unit 1 and Unit 2, proposed to amend Facility Operating Licenses DPR-58 and DPR-74 to change the CNP licensing basis as described in the Updated Final Safety Analysis Report. The current licensing basis requires no specific operator action in response to a loss of seal injection (LOSI) cooling to the reactor coolant pumps (RCPs). I&M proposed a new licensing basis that involves operator actions to mitigate the effects of a LOSI. I&M identified this as an unreviewed safety question, the resolution of which requires NRC review and approval. I&M performed an operability determination addressing this condition to support the restart of Units 1 and 2.

APO1

In Reference 2, the NRC informed I&M that additional technical detail was needed to enable the NRC staff to make an independent assessment regarding the acceptability of the proposed amendment. Attachment 1 to this letter addresses the specific questions transmitted by the NRC in Reference 2. Attachment 2 to this letter provides a report, MPR-2077, Revision 2, "D. C. Cook Nuclear Plant Reactor Coolant Pump Loss of Seal Injection (LOSI) Evaluation," dated February 2000 (Proprietary). Attachment 3 provides a letter entitled "Sensitivity of RCP No. 1 Seal Leak-off and Bearing Temperatures to Variations in the Seal Leak-off and CCW Flow Rates under Loss of Seal Injection (LOSI) Conditions," dated May 26, 2000 (Proprietary). Attachments 4 and 5 provide applications and affidavits from I&M and Westinghouse, respectively, for withholding Attachments 2 and 3 from public disclosure in accordance with 10 CFR 2.790.

I&M has concluded that the evaluation of significant hazards considerations contained in Attachment 3 to Reference 1 is not affected. There are no new commitments made in this submittal.

Should you have any questions, please contact Mr. Ronald W. Gaston, Manager of Regulatory Affairs, at (616) 697-5020.

Sincerely,

A handwritten signature in black ink, appearing to read "M. W. Rencheck FOR".

M. W. Rencheck
Vice President Nuclear Engineering

/dmb

Attachments

c: J. E. Dyer
MDEQ - DW & RPD
NRC Resident Inspector
R. Whale

ATTACHMENT 1 TO C0201-07

RESPONSE TO NUCLEAR REGULATORY COMMISSION (NRC) STAFF QUESTIONS REGARDING LOSS OF REACTOR COOLANT PUMP (RCP) SEAL INJECTION

Indiana Michigan Power Company (I&M), the Licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, provides the following responses to questions transmitted by NRC letter, "Donald C. Cook Nuclear Plant – Acceptance Review Regarding License Amendment Request, 'Reactor Coolant Pump Seal Leak-Off Two-Phase Flow,' dated December 27, 2000 (TAC Nos. MB0154 AND MB0155)."

NRC Question 1

"The submittal provided a general description of the process used to analyze the scenario and determine the proposed operator actions. The licensee indicated that a detailed engineering analysis had been done, and that the analysis concluded that there was a need for new operator actions to mitigate the LOSI event. However, the analysis was not provided for review, nor was a description of how the conclusion was reached and the justification for how the proposed operator actions would mitigate the event.

In order to begin its review, the staff requests that you describe in detail and justify the analyses performed, the assumptions made in the analyses, the results of the analyses, and how the proposed operator actions mitigate the event."

I&M Response to Question 1

The analyses described in the submittal are documented in a report and an associated letter prepared for I&M by MPR Associates, Inc. (MPR). The report, MPR-2077, "D. C. Cook Nuclear Plant Reactor Coolant Pump Loss of Seal Injection (LOSI) Evaluation," Revision 2, dated February 2000, is provided as Attachment 2 to this letter. The associated letter from MPR, "Sensitivity of RCP No. 1 Seal Leak-off and Bearing Temperatures to Variations in the Seal Leak-off and CCW Flow Rates under Loss of Seal Injection (LOSI) Conditions," dated May 26, 2000, is provided as Attachment 3 to this letter. The report and letter describe in detail and justify the analyses performed, the assumptions made in the analyses, the results of the analyses, and how the proposed operator actions mitigate the event. Although the report and letter are complete and generally self-explanatory, the following synopses are provided to facilitate their use.

The report and letter provided in Attachments 2 and 3 contain information that is proprietary to I&M and information that is proprietary to Westinghouse Electric Company LLC (Westinghouse), and should be withheld from public disclosure. I&M is contractually the owner of the report and letter, including the analyses and results contained therein. Certain information in the report and letter, such as seal configuration and test data, is proprietary to Westinghouse. Accordingly, Attachments 4 and 5 provide applications and affidavits from I&M and

Westinghouse, respectively, which set forth the basis on which the information may be withheld from public disclosure by the NRC and addresses with specificity the consideration listed in Paragraph (b)(4) of Section 2.790 of the NRC's regulations.

Synopsis of MPR-2077, Rev. 2

The Introduction of report MPR-2077 summarizes the background of the RCP LOSI issue, including reference to a letter from Westinghouse, Nuclear Safety Advisory Letter (NSAL) 99-005, dated June 1, 1999. This NSAL advised utilities using Westinghouse RCPs that a LOSI combined with low leak-off flow can lead to unexpectedly high leak-off temperatures from the first (No. 1) seal. The purpose of the evaluation documented in report MPR-2077 was to demonstrate that the conditions during a LOSI will not detrimentally impact pump and/or seal function at CNP, or to determine the range of seal leak-off flow rates that are a concern. The evaluation included the following major steps:

- Determination of functional requirements for the RCP, seals, and leak-off piping during a LOSI event (addressed in Sections 3.3.1 and 3.3.2 of the MPR report).
- Determination of acceptance criteria to ensure functional requirements for the RCP, seals, and leak-off piping would be met during a LOSI event (addressed in Section 3.3.3 of the MPR report).
- Development of a thermal analysis model of the RCP internals (addressed in Section 3.5.1 and Appendix A of the MPR report).
- Exercising of the thermal analysis model for an array of initial conditions and operating assumptions to provide a spectrum of final temperatures for the No. 1 seal leak-off flow (addressed in Sections 3.5.2 and 3.5.3, Appendix B, Appendix C, and Appendix D of the MPR report).
- Evaluation of the acceptability of the calculated No. 1 seal leak-off temperatures under LOSI conditions (summarized in Section 2 of the MPR report).

The evaluation resulted in the following significant conclusions regarding the effects of a LOSI:

- Two-phase flow in the seal leak-off piping must be prevented because analysis of the piping under these conditions is impractical.
- The fluid temperature at the RCP bearing would remain below the vendor recommended limit of 225°F, regardless of whether the pump is stopped or running.

- For seal leak-off flows less than approximately 2 gpm, the seal leak-off temperature following a LOSI is relatively insensitive to changes in component cooling water (CCW) flow rate to the thermal barrier heat exchanger (TBHX).
- For a CCW maximum temperature of 105°F, a seal leak-off flow of 0.9 gpm (nominally 1 gpm with instrument uncertainty included), and the RCP not running, the maximum seal leak-off temperature is approximately 270°F. The corresponding volume control tank (VCT) pressure to prevent two-phase flow in the seal leak-off piping under these conditions is approximately 27 psig.
- For initial seal leak-off flows less than 2 gpm, the reactor coolant system (RCS) cooldown rate following a LOSI must be limited to 60°F/hr. in order to prevent seal leak-off temperature from increasing during the cooldown. For flows above 2 gpm, the corresponding cooldown limit is 100°F/hr.
- The maximum leak-off temperature will exceed the seal leak-off alarm setpoint of 185°F for all expected CCW flows to the TBHX and all expected CCW maximum temperatures.
- The Westinghouse recommendation to initiate a “quick cooldown” of the RCS to limit the increase in seal leak-off temperature is not an effective approach to deal with a LOSI event because the associated decrease in RCS pressure and resulting reduction in seal leak-off flow would override the benefit provided by cooler RCS water.
- When the RCS is less than 350°F, limitations on CCW maximum temperature and minimum flow rate to the TBHX are not required to maintain acceptable seal leak-off and bearing temperatures because the heat load is significantly lower.

Based on the conclusions summarized above, the following recommendations were made:

- Operating procedures should prevent seal leak-off flows during normal operations from decreasing below 1 gpm.
- Operating procedures should limit the RCS cooldown rate to 60°F/hr. following a LOSI.
- Operating procedures should ensure that the CCW flow to the TBHX is at least 30 gpm. This recommendation was subsequently determined to be unnecessary based on the MPR letter described below.
- Operating procedures should ensure VCT pressure is maintained at 27 psig or higher within 90 minutes following a LOSI.
- The currently installed seal leak-off flow instrumentation need not be replaced since its range and accuracy are adequate.
- The existing operational limit of 185°F seal leak-off temperature should be maintained as the point at which an RCP is to be tripped.

- The CNP Updated Final Safety Analysis Report (UFSAR) should be revised to eliminate statements indicating that the RCPs can be operated indefinitely without seal injection flow.

Although MPR suggests in Section 3.3.2 that a LOSI could be considered to be a Service Level D (faulted) event in accordance with Section III of the ASME Boiler and Pressure Vessel Code, implementation of the operator actions described in the proposed amendment would maintain seal leak-off piping within UFSAR allowable stresses for normal operation.

Synopsis of MPR Letter Dated May 26, 2000

In Report MPR-2077, MPR recommended that CCW flow to the TBHX remain at or above 30 gpm since their analysis was based on this value. However, the analysis also indicated that seal leak-off temperature appeared to be relatively insensitive to CCW flow, particularly at low seal leak-off flow rates. To add operational flexibility for balancing CCW flows at a variety of operating conditions, I&M commissioned MPR to perform a sensitivity study for CCW flows below 30 gpm. The results of this study were documented in an MPR letter dated May 26, 2000, which is provided as Attachment 3. The study produced the following conclusions regarding CCW flow during a LOSI:

- The minimum CCW flow needed to maintain acceptable RCP bearing temperature increases with increasing seal leak-off flow. For the maximum allowable seal leak-off flow of 6 gpm, a CCW temperature of 105°F, and the RCP not running, the study determined that a CCW flow of 20 gpm is needed to maintain the bearing temperature below the limit of 225°F.
- Allowable No. 1 seal leak-off flow rates range from 1 to 6 gpm. As stated above, the minimum required CCW flow to the TBHX was determined to be 20 gpm for a seal leak-off flow of 6 gpm. At the low end of the leak-off flow rate range, seal leak-off temperature rather than bearing temperature determines the minimum CCW flow needed to the TBHX. The study showed that 20 gpm under these conditions is adequate to maintain seal leak-off temperature below its limit. Therefore, 20 gpm CCW to the TBHX is adequate throughout the range of allowable seal leak-off flow rates to maintain both bearing and seal leak-off temperatures within their respective limits.
- The seal leak-off and bearing temperatures are relatively insensitive to small changes in CCW inlet temperature.

As summarized above, the MPR report and associated letter, which are provided as Attachments 2 and 3, describe in detail the analyses performed, the conclusions reached and provide justification for the proposed amendment transmitted by I&M's letter to the NRC, C0900-20, dated September 26, 2000.

NRC Question 2

“The licensee indicates that a risk assessment is not needed to support the proposed change because it can be concluded, based on industry experience, that there is no significant increase in risk. However, the staff cannot reach the same conclusion without the benefit of additional information and analysis. It is the staff’s position that the determination of risk significance should be based on the magnitude of risk change between the current licensing basis and the new (proposed) licensing basis. The current licensing basis assumes capability to cool the RCP seals through the thermal barrier heat exchanger (TBHX) by using component cooling water (CCW) over the full range of Westinghouse recommended seal leak-off rates. Thus, the current licensing basis assumes two redundant and diverse means to cool the RCP seals with no need for operator intervention. The proposed (new) licensing basis recognizes that, under certain conditions, RCP seal cooling through the TBHX may not be possible unless the RCP is tripped by the operator. The results of a risk/reliability analysis can be used to show that the reliability of the RCP seal cooling function is not being significantly degraded and that the proposed change is a good alternative to the initial licensing basis.”

“The staff requests the following information: (1) an estimate of the frequency of losing seal injection; (2) an estimate of the probability of “low leak-off” rate; (3) an estimate of the probability of operator failing to trip the pump(s) given loss of seal injection with low “leak-off” rate; (4) assumed failure mechanisms (e.g., “pop-open” of primary seals) and associated leak rates; and (5) the assumed number of pumps affected.”

I&M Response to Question 2

The discussion of risk in the amendment request was included as supplemental qualitative information indicating that there were no apparent risk implications associated with the proposed amendment, rather than information necessary to justify the proposed amendment. It was not I&M’s intention that the amendment request be classified as risk informed. The justification for the proposed amendment is based solely on the deterministic evaluations documented in the amendment request and elsewhere in this letter. I&M considers that these deterministic evaluations demonstrate that the proposed amendment will provide adequate protection of public health and safety. Accordingly, I&M requests that the NRC review the proposed amendment as non-risk informed.

NRC Question 3

“Provide summaries of your evaluations of the RCP seal leak-off piping. The summaries should describe in detail the method of analysis, including the assumptions used in the analysis, loads and load combinations considered, and maximum calculated stress in the piping. You should also discuss the bases for acceptance criteria used for the evaluations and how it meets the licensing basis criteria for D. C. Cook.”

I&M Response to Question 3

I&M initially investigated qualifying the seal leak-off piping for two-phase flow conditions as a potential solution to the LOSI issue. However, generating a bounding forcing function for two-phase flow was impractical due to the large number of variables involved. Therefore, I&M pursued a solution that prevents two-phase flow in the No. 1 seal leak-off line. This approach maintains the existing design basis for the piping, except that the predicted maximum temperature of 270°F under LOSI conditions exceeds the current piping design temperature of 200°F.

To support restart of the units, I&M performed an operability determination (OD), in accordance with NRC Generic Letter 91-18, to demonstrate that the system would perform its intended function if a LOSI were to occur. The portion of the OD dealing with the piping system relied on a separate piping analysis conducted to evaluate station blackout (SBO) conditions.

The SBO piping analyses were conducted for both units to verify that the seal leak-off piping and system components would remain intact under the extreme temperature and pressure conditions following SBO. A thermohydraulic computer analysis (RELAP) was used to determine limiting pressures and temperatures in the No. 1 seal leak-off piping following SBO. The piping analyses were performed using existing I&M structural design computer code models (E/PD STRUDL) of the leak-off piping. The analyses considered SBO steady state pressure and thermal conditions, and included thrust loads associated with opening of the relief valve in the leak-off piping and with closing of the containment isolation valve in the leak-off piping. The piping temperature ranged from RCS temperature at the seal discharge (~550°F) to essentially atmospheric saturation temperature near the volume control tank. The design code for the piping system (USAS B31.1-1967) does not address acceptance criteria for unlikely events such as SBO, so guidance for acceptance criteria was taken from Section III of the ASME Code for Emergency Condition (Level C) events. All piping stresses were shown to be less than the appropriate allowable stresses. Thermal expansion potentially overloaded several pipe supports; however, the remaining supports and the pipe stresses were acceptable with those supports removed. Thus, the piping and pipe support analyses show that the pipe stresses and support loads are acceptable for conditions following SBO.

Since the LOSI conditions are clearly bounded by the extreme conditions of SBO, no further piping analysis was needed to support the OD. The pipe specification for appropriate portions of the seal leak-off piping will be revised to reflect the slightly higher design temperature. An analysis will be performed to show that under LOSI conditions the piping will remain within UFSAR allowable stresses for normal operation.

ATTACHMENT 4 TO C0201-07

INDIANA MICHIGAN POWER COMPANY APPLICATION AND AFFIDAVIT FOR
WITHHOLDING PROPRIETARY INFORMATION FROM
PUBLIC DISCLOSURE IN ACCORDANCE WITH 10 CFR 2.790

Application for Withholding of Proprietary Information from Public Disclosure

Indiana Michigan Power Company (I&M) requests that the proprietary information described below be withheld from public disclosure.

The proprietary information for which withholding is requested is contained in Attachment 2 and Attachment 3 to this I&M submittal, C0201-07, dated February 1, 2001. Attachment 2 and Attachment 3 are titled, respectively, "MPR Associates Report, MPR-2077, Revision 2, D. C. Cook Nuclear Plant Reactor Coolant Pump Loss of Seal Injection (LOSI) Evaluation, February 2000," and "Enclosure To MPR Associates Letter Dated May 26, 2000, Sensitivity Of RCP No. 1 Seal Leak-Off and Bearing Temperatures To Variations in the Seal Leak-Off And CCW Flow Rates Under Loss of Seal Injection (LOSI) Conditions."

The affidavit provided following this application sets forth the basis on which the information may be withheld from public disclosure by the Nuclear Regulatory Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.790 of the Commission's regulations.

A handwritten signature in black ink, appearing to read "Scot Greenlee". The signature is fluid and cursive, with the first name "Scot" and last name "Greenlee" clearly distinguishable.

Scot Greenlee
Director of Design Engineering and Regulatory Affairs

Affidavit for Withholding of Proprietary Information from Public Disclosure

Affidavit of Scot Greenlee

1. I am Director of Design Engineering and Regulatory Affairs for Donald C. Cook Nuclear Plant (CNP), Indiana Michigan Power Company (I&M), and as such, have the responsibility of reviewing the proprietary information sought to be withheld from public disclosure in connection with our submittal C0201-07, dated February 1, 2001, and am authorized to apply for its withholding on behalf of I&M.
2. I am making this affidavit in conformance with the provisions of 10 CFR 2.790 of the regulations of the Nuclear Regulatory Commission (NRC) and in conjunction with I&M's application for withholding, which accompanies this affidavit.
3. I have knowledge of the criteria used by I&M in designating information as proprietary or confidential.
4. Pursuant to the provisions of 10 CFR 2.790(b)(4), the following is being furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned by I&M and has been held in confidence by I&M and MPR Associates, Inc.
 - (ii) The information is of a type that would customarily be held in confidence by I&M. The information consists of analysis methodology details, analysis results, supporting data, and aspects of development programs, relative to an analysis that provides a competitive advantage to I&M.
 - (iii) The information is transmitted to the NRC in confidence, and under the provision of 10 CFR 2.790 it is to be received in confidence by the NRC.
 - (iv) The information sought to be protected is not available in public sources to the best of our knowledge and belief.
 - (v) The proprietary information sought to be withheld is contained in Attachment 2 and Attachment 3 to this I&M submittal, C0201-07, dated February 1, 2001. Attachment 2 and Attachment 3 are titled respectively "MPR Associates Report, MPR-2077, Revision 2, D. C. Cook Nuclear Plant Reactor Coolant Pump Loss of Seal Injection (LOSI) Evaluation, February 2000," and "MPR Associates Letter, Sensitivity of RCP No. 1 Seal Leak-Off and Bearing Temperatures to Variations in the Seal Leak-Off and CCW Flow Rates Under Loss Of Seal Injection (LOSI) Conditions, May 26, 2000."

This information enables I&M to:

- (a) Justify a proposed license amendment with system performance, evaluation, and analysis information.
 - (b) Continue cost effective plant operation.
 - (c) Preclude the need for alternative solutions that are impractical and costly.
5. Public disclosure of this information is likely to cause harm to I&M because it would allow other companies in the nuclear industry to benefit from the results of a significant analysis program without requiring commensurate expense, or allowing I&M to recoup a portion of its expenditures, or benefit from the sale of the information as described below.

The condition that is the subject of the analysis is not specific to CNP, but rather is a common condition that potentially affects the nuclear plants of other utilities.

The analyses were commissioned and funded solely by I&M.

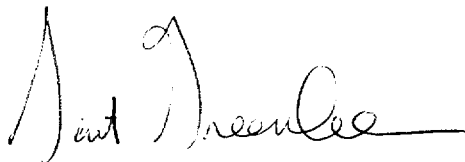
The cost of analyses to I&M was substantial.

The analyses can easily be adapted to other nuclear plants with this condition.

The subject information could only be duplicated by other companies or groups of companies at a similar expense to that incurred by I&M.

I&M may elect to recover a portion of the costs of these analyses by making the information available to other utilities on a cost-sharing basis. Public disclosure of the information at this time would prevent implementation of this competitive strategy.


I Scot Greenlee, being duly sworn, state that I am the person who subscribed my name to the foregoing statement, and that the matters and facts set forth in the statement are true to the best of my knowledge, information and belief.



Scot Greenlee
Director of Design Engineering
and Regulatory Affairs

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 1 DAY OF February, 2001


Notary Public

My commission expires: Apr. 4, 2004

DANIELLE M. SCHRADER
Notary Public, Berrien County, MI
My Commission Expires Apr 4, 2004

ATTACHMENT 5 TO C0201-07

WESTINGHOUSE APPLICATION AND AFFIDAVIT FOR
WITHHOLDING PROPRIETARY INFORMATION FROM
PUBLIC DISCLOSURE IN ACCORDANCE WITH 10 CFR 2.790



Westinghouse Electric Company, LLC

Box 355
Pittsburgh Pennsylvania 15230-0355

January 30, 2001

CAW-01-1436

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. Samuel J. Collins

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: American Electric Power, D. C. Cook Nuclear Power Plant Units 1 and 2

- MRR-2077, Revision 2, "D. C. Cook Nuclear Plant Reactor Coolant Pump Loss of Seal Injection (LOSI) Evaluation:
- Enclosure to MPR Associates letter dated May 26, 2000, Sensitivity of RCP No. 1 Seal Leak-off and Bearing Temperatures to Variations in the Seal Leak-off and CCW Flow Rates Under Loss of Seal Injection (LOSI) Conditions"

Dear Mr. Collins:

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-01-1436 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.790 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by American Electric Power.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-01-1436 and should be addressed to the undersigned.

Very truly yours,

H. A. Sepp, Manager
Regulatory and Licensing Engineering

Enclosures

cc: S. Bloom/NRR/OWFN/DRPW/PDIV2 (Rockville, MD) 1L

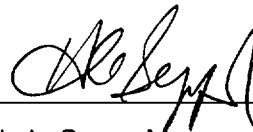
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared H., A. Sepp, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse"), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:



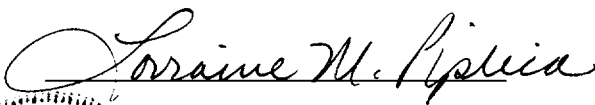
H. A. Sepp, Manager

Regulatory and Licensing Engineering

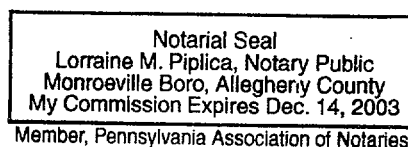
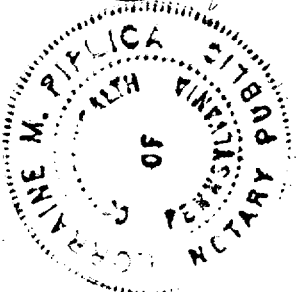
Sworn to and subscribed

before me this 30th day

of January, 2008



Notary Public



- (1) I am Manager, Regulatory and Licensing Engineering, in the Nuclear Services Business Unit of the Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rulemaking proceedings, and am authorized to apply for its withholding on behalf of the Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10CFR Section 2.790 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by the Westinghouse Electric Company LLC in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.
- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
- (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
- (f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
 - (b) It is information which is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
 - (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.
 - (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
 - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
 - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10CFR Section 2.790, it is to be received in confidence by the Commission.
 - (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in MPR-2077, Revision 2, "D. C. Cook Nuclear Plant Reactor Coolant Pump Loss of Seal Injection (LOSI) Evaluation and the Enclosure to MPR letter dated May 26, 2000, "Sensitivity of RCP No. 1 Seal Leak-off and Bearing Temperatures to Variations in the Seal Leak-off and CCW Flow Rates Under Loss of Seal Injection (LOSI) Conditions" letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk, Attention: Mr. Samuel J. Collins. The proprietary information submitted for use by American Electric Power for the D. C. Cook Nuclear Plant Units 1 and 2 is expected to be applicable in other licensee submittals.

This information is part of that which will enable Westinghouse to:

- (a) Establish WCAP-7907-S1-P, Revision 1, based analytical models of Westinghouse designed plants.
- (b) Provide documentation of the methods to be used to employ Westinghouse models for performing licensing-basis non-LOCA safety analysis.
- (c) Assist the customer in the licensing process.

Further this information has substantial commercial value as follows:

- (a) Westinghouse's plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation.
- (b) Westinghouse can sell support and defense of this information to its customers in the licensing process.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar licensing support documentation and

licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar design programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended for developing testing and analytical methods and performing tests.

Further the deponent sayeth not.

Proprietary Information Notice

Transmitted herewith is the proprietary version of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

For the purpose of conforming to the requirements of 10 CFR 2.790 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information contained in both submittals is considered proprietary. The types of information Westinghouse customarily holds in confidence is identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.790(b)(1).