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FITZPATRICK, E. American Electric Power Co., Inc.
RECIP. NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

See Proposed Change to Tech Specs

SUBJECT: Application for amends to licenses DPR-58 & DPR-78, request TSs 3/4.6.5 re ice weight & 3/4.5.5 re bases refueling water storage tank change. Proprietary summary of recirculation sump encl. Proprietary info withheld, per 10CFR2.790.

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Indiana Michigan
Power Company
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INDIANA MICHIGAN POWER

October 8, 1997

AEP:NRC:0900K
10 CFR 50.90

Docket Nos.: 50-315
50-316

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2
REQUEST FOR EXIGENT TECHNICAL SPECIFICATION AMENDMENT
TECHNICAL SPECIFICATION 3/4.6.5
ICE WEIGHT AND SURVEILLANCE REQUIREMENT
AND TECHNICAL SPECIFICATION 3/4.5.5 BASIS
REFUELING WATER STORAGE TANK CHANGE

Pursuant to 10 CFR 50.91(a)(5), we propose to amend both technical specification (T/S) 3/4.6.5, and the T/S 3/4.6.5 and 3/4.5.5 basis of Cook Nuclear Plant units 1 and 2, and request the NRC grant this as an exigent amendment. This letter and its attachments constitute an application for the exigent amendment. This amendment will increase both the minimum required ice mass per ice basket, the total minimum required ice mass, and changes the basis for the T/S.

The change in the T/S 3/4.5.5 basis is considered to be an unreviewed safety question. The analysis supporting the change in ice weight concludes that both water from the refueling water storage tank (RWST) and water from melted ice are required to provide an adequate sump inventory for the limiting calculation. The use of water from melted ice is considered a reduction in the margin of safety as defined in the T/Ss. The present wording of T/S 3/4.5.5 basis can be interpreted to mean that the only water in the recirculation sump that can be credited in the safety analysis is that from the RWST.

Attachment 1 provides a description of the change, the background and reason for the change, the justification for exigent review and approval, the justification for the change, and our analyses concerning significant hazards considerations. Attachment 2 provides the current T/S pages, marked-up to reflect the proposed changes. Attachment 3 provides the proposed revised T/S pages. Attachment 4 provides the data supporting the sublimation rates. Attachment 5 provides Fauske & Associates' proprietary summary of the recirculation sump inventory calculation that supports the T/S change. Attachment 6 provides Fauske & Associates' affidavit and justification for withholding proprietary information from public disclosure in accordance with 10 CFR 2.790.

We believe the proposed changes will not result in: 1) a significant change in the types of effluents or a significant increase in the amounts of any effluents that may be released offsite; or 2) a significant increase in individual or cumulative occupational radiation exposure.

A001 1/1

Change: LTR ENCL
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This change in the minimum required ice mass is part of the resolution of issues raised during the recent architect engineer design inspection at Cook Nuclear Plant. The revised ice mass is used as input to the calculation of recirculation sump water volume during a loss-of-coolant accident. A summary of the limiting calculation for small break loss-of-coolant accident is provided in attachment 5. This summary includes the significant code input parameters and the calculation results. The input parameters in attachment 5 have been reviewed by our personnel, and we have concluded that the input parameters accurately reflect the current Cook Nuclear Plant design.

The proposed changes have been reviewed by the plant nuclear safety review committee, and will be reviewed by the nuclear safety and design review committee at its next regularly scheduled meeting.

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to the Michigan Public Service Commission and the Michigan Department of Public Health.

Sincerely,

E E Fitzpatrick

E. E. Fitzpatrick
Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 8th DAY OF October, 1997

Jan Watson
Notary Public

My Commission Expires _____

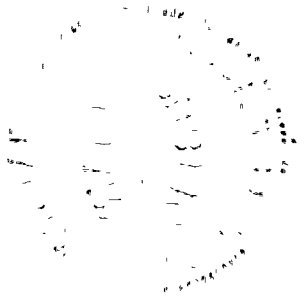
JAN WATSON
NOTARY PUBLIC, BERRIEN COUNTY, MI
MY COMMISSION EXPIRES FEB. 10, 1999

vb

Attachments

c: A. A. Blind
A. B. Beach
MDEQ - DW & RPD
NRC Resident Inspector
J. R. Padgett

5



ATTACHMENT 6 TO AEP:NRC:0900K

FAUSKE & ASSOCIATES' AFFIDAVIT AND JUSTIFICATION FOR
WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

AFFIDAVIT

STATE OF ILLINOIS

COUNTY OF DUPAGE

Before me, the undersigned authority, personally appeared Robert E. Henry, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Fauske & Associates, Inc., a wholly owned subsidiary of the Westinghouse Electric Corporation ("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.

Robert E. Henry

Robert E. Henry
Senior Vice President
Process Safety Department

Sworn to and subscribed
before me this 2nd day
of October, 1997

OFFICIAL SEAL
HANS KRISTIAN FAUSKE
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 8-21-2001

Notary Public

(1) I am Senior Vice President in charge of the Process Safety Department of Fauske & Associates, Inc., a wholly owned subsidiary of Westinghouse Electric Corporation 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 am authorized to apply to its withholding on behalf of the Westinghouse Energy Systems Business Unit.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR 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 Energy Systems Business Unit 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.

(g) It is not the property of Westinghouse, but must be treated as proprietary by Westinghouse according to agreements with the owner.

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 component 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 avialable 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 presented in Sections 2 and 3 of the draft report entitled "MAAP4 Small Break LOCA Analyses for the D.C. Cook Plant". The proprietary information as submitted for use by Indiana Michigan Power Company for Donald C. Cook Nuclear Plant Unit 1 may be applicable in other license submittals in response to certain NRC requirements..

This information is part of that which will enable Westinghouse to assist the customer to obtain NRC approval.

Further this information has substantial commercial value as follows:

(a) Westinghouse 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 the technology 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 competitor to provide similar methodologies 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 technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expanded for developing testing and analytical methods and performing tests.

Further the deponent sayeth not.

ATTACHMENT 1 TO AEP:NRC:0900K

DESCRIPTION OF CHANGE, BACKGROUND AND REASON FOR CHANGE,
JUSTIFICATION FOR EXIGENT REVIEW AND APPROVAL,
JUSTIFICATION FOR CHANGE AND 10 CFR 50.92 ANALYSES

Description of Amendment Request

Technical specification (T/S) 3.6.5.1.d requires that each ice basket contain at least 1220 pounds of ice, and T/S surveillance 4.6.5.1.b.2 requires a minimum total ice weight of 2,371,450 pounds for each unit. This request for a T/S change increases both the minimum ice basket weight requirement and the minimum total weight requirement. Also, the basis for the T/S is being revised to decrease the quantity assumed for sublimation losses from 10% to 5%.

T/S 3/4.5.5 basis is being revised for clarification.

Background and Reason for Change

This T/S and surveillance are currently required for operation in modes 1, 2, 3, and 4.

During a loss-of-coolant accident (LOCA), water from several sources (e.g., refueling water storage tank (RWST), reactor coolant system (RCS), accumulators, and melted ice) collect in the lower regions of the containment, part of which acts as a sump (i.e., recirculation sump) for the recirculation of water through the safety injection and containment spray systems. As the accident progresses, the RWST, the initial source of water for the emergency core cooling (ECCS) and containment spray systems, empties and the water that has accumulated in the lower regions of the containment is used as the source of water for the safety injection and containment spray systems. The water level in the recirculation sump must be high enough to provide sufficient net positive suction head to the pumps, and to prevent vortexing in the recirculation sump.

During the recent architect engineer inspection conducted at Cook Nuclear Plant, it was determined that, because of instrument uncertainties, the switchover to the recirculation mode might occur before a sufficient volume of RWST water had been injected into the containment. This, when considered with our lower containment design that allows some containment spray flow to become trapped in the dead ended annulus region, raised a concern as to whether the limiting vortexing height requirements for the RHR and CTS pumps could be met throughout the transient. As a result, evaluations for transient sump level for small break loss-of-coolant accident (SBLOCA) and large break loss-of-coolant accident were performed. The limiting evaluation is the SBLOCA, due to its lower RCS and accumulator mass release. A calculation performed for SBLOCA indicates that it is necessary to credit more of the available ice condenser ice mass than currently listed in the T/S.

The current T/S and basis statements require that:

T/S 3/4.6.5 Each ice basket have at least 1220 pounds of ice.

T/S 3/4.6.5 The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,371,450 pounds.

T/S 3/4.6.5
Basis — The minimum weight figure of 1220 pounds of ice per basket contains a 10% conservative allowance for ice loss through sublimation, which is a factor of 10 higher than assumed for the ice condenser design.

T/S 3/4.5.5
Basis — The limits on RWST minimum volume and boron concentration ensure that: 1) sufficient water is available within containment to permit recirculation cooling flow to the core.

We are proposing to change these requirements to:

T/S 3/4.6.5 — Each ice basket have at least 1333 pounds of ice.

T/S 3/4.6.5 — The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,590,000 pounds.

T/S 3/4.6.5
Basis — The minimum weight figure of 1333 pounds of ice per basket contains a 5% conservative allowance for ice loss through sublimation.

T/S 3/4.5.5
Basis — Consistent with the applicable LOCA analyses, the limits on RWST minimum volume and boron concentration ensure that: 1) when combined with water from melted ice, the RCS, and the accumulators, sufficient water is available within containment to permit recirculation cooling flow to the core.

Justification for Exigent Review and Approval

Cook Nuclear Plant T/Ss require that the ice condenser be operable in modes 1, 2, 3, and 4. To meet this requirement, the ice condenser must contain sufficient ice to condense the reactor system volume released during a LOCA, and to provide an adequate amount of water to the recirculation sump so that the combined water from all sources is sufficient to enable the RHR and CTS pumps to function properly.

The amount of ice presently taken credit for (per basket and total) in our current T/S minimum ice weights is less than what is needed to maintain the sump level above 602' 10". Based on a model test in 1977, water level of 602' 10" is sufficient to prevent pump vortexing at maximum safeguards flow. The proposed changes to the T/S will take credit for more of the available ice to provide reasonable assurance that sufficient water to maintain 602' 10" elevation is achieved.

On September 18, 1997, our submittal AEP:NRC:1260G1 was sent to the NRC, providing a discussion of the actions we are taking to address technical issues identified by the recently completed architect engineer team inspection. We are anticipating the commencement of

startup activities in several weeks, and respectfully request the NRC's review and approval on an exigent basis.

We understand the impact of such an exigent request, and recognize that the conditions and status of Cook Nuclear Plant's restart may change in the future. We intend to keep the commission informed, through our daily contact with our NRR project manager, as to the status of our restart schedule.

Justification For Change

In modes 1, 2, 3, and 4, the ice condenser is required to be operable. To be considered operable, the ice condenser must be capable of condensing steam, providing borated water to the recirculation sump, and be capable of maintaining its structural integrity. Additionally, because the water from the melted ice combines with water from the RWST, the RCS, and the accumulators, the total amount of water from all sources must not cause the water level in containment to result in the submergence of equipment required to safely shut down the reactor.

The structural analysis for the ice baskets has shown that they will maintain their structural integrity at a weight of 1877 pounds (ice basket plus ice weight). We administratively control ice basket weight so that ice basket structural integrity is not adversely impacted.

Safety related equipment located inside the containment is protected from being submerged, since the equipment has not been qualified for submergence. In many instances, the protection against submergence is achieved by locating the equipment above the calculated floodup level. The floodup analysis for the plant assumed that the ice condenser contained 3,000,000 pounds of ice. The revised T/S value of 2,590,000 pounds of ice is less than the value used in the floodup evaluation.

The minimum required quantity of ice has been determined using an allowance of 5% for sublimation. This is a reduction from the 10% value used in the present T/S, and has been determined on the basis of historical average changes in ice mass. Using data from the last thirteen years, the average measured change in ice mass over an eighteen month period was 2.31% for unit 1, and 2.68% for unit 2. The data used to determine the sublimation rates are given in attachment 4.

T/S 3/4.5.5 basis is being revised to clarify that water sources in addition to water in the RWST are required to provide a sufficient quantity of water to ensure that there is no vortexing in the recirculation sump, and that there is sufficient net positive suction head. The current basis wording can be interpreted to mean that the water from the RWST must, by itself, be sufficient to meet these requirements. The revised wording will be consistent with the current wording in the basis of T/S 3/4.6.5.7 wherein it is stated that, "The operability of the ice condenser floor...drains ensures that following a LOCA, the water from the melted ice...has access...to the sump. This...ensures the availability of the water for long term cooling of the reactor during the post accident phase."

Basis For No Significant Hazards Determination

In accordance with 10 CFR 50.92, the proposed changes do not involve a significant hazards consideration if the changes do not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated;

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

3. involve a significant reduction in a margin of safety.

Criterion 1

This amendment request does not involve a significant increase in the probability or consequences of an accident previously evaluated. The change increases the minimum ice weight requirements, ensuring that there will be sufficient water (i.e., a minimum sump level of 602' 10") in the recirculation sump from the time of switchover until an equilibrium level is reached. This will provide adequate sump level for the RHR and CTS pumps to function properly, and provide sufficient flow to meet accident requirements.

Criterion 2

The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. This change increases the required minimum amount of ice in the ice condenser. It does not alter any other physical characteristics of the ice baskets, nor does it change the ice condenser's function. No known failure mechanisms are introduced by this change.

Criterion 3

This proposed change does not involve a significant reduction in a margin of safety. The change increases the minimum heat absorbing capability of the ice condenser, and ensures that there will be a sufficient quantity of melted ice to maintain the desired minimum sump level of 602' 10" from the time of switchover. This will provide an adequate sump level for the RHR and CTS pumps following switchover to the recirculation phase.

The reduction in the allowance for ice sublimation does not significantly reduce the margin of safety. The original allowance was conservatively estimated to be ten times the design value. At the time this allowance was made, there was no data for determining the actual sublimation rate.

Data taken since 1984 has shown that the average measured sublimation rate is 2.31% per eighteen month cycle for unit 1, and 2.68% for unit 2. Both historical values are less than the 5% sublimation rate used in setting the T/S minimum ice weight. Based on this historical data, there is reasonable assurance that the analysis assumptions for available ice mass will be satisfied.

The revision to the T/S 3/4.5.5 basis provides clarification that water sources in addition to the water in the RWST are considered in determining the water inventory for the recirculation sump. This clarification is consistent with FSAR appendix N, section 13.1 through section 13.25, question 23, and appendix Q, unit 2 question 212.29. The answers to these questions document that melted ice,

RCS inventory, and RWST inventory were considered as contributing to the volume of water in the recirculation sump.

ATTACHMENT 2 TO AEP:NRC:0900K

CURRENT PAGES MARKED-UP TO REFLECT PROPOSED CHANGES
TO TECHNICAL SPECIFICATIONS