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SUBJECT: Application for amend to License DPR-58, extending time for performance of surveillance of ice basket weighings until upcoming refueling outages. Response requested by 870507. Fee paid.

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February 10, 1987
AEP:NRC:0967H

Donald C. Cook Nuclear Plant Unit No. 1
Docket No. 50-315
License No. DPR-58
ICE CONDENSER SURVEILLANCE INTERVAL EXTENSION
FOR UNIT 1 CYCLE 9

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

Dear Sirs:

This letter and its attachments constitute an application for amendment to the Technical Specifications (T/Ss) for the Donald C. Cook Nuclear Plant Unit No. 1. Specifically, we are requesting an extension until the upcoming refueling outage for performance of the surveillances required by T/Ss 4.6.5.1.b.2 and 4.6.5.1.b.3, concerning ice basket weighings and flow passage inspections. The ice condenser surveillances are required to be performed by May 10, 1987. However, the beginning of the Unit 1 Cycle 9-10 refueling outage has been delayed until after this date for reasons that were described in our letter AEP:NRC:0967D, dated October 1, 1986. We currently anticipate that we will need the extension until the end of May. These surveillances can only be performed during shutdown; therefore, to avoid unnecessary shutdown of the plant, we ask that your review of this request be performed on an expedited basis and that you respond to us by May 5, 1987. The reasons for the proposed change, a discussion of alternatives to submittal of this T/S change request, and our analysis concerning significant hazards considerations are contained in Attachment 1 to this letter. The proposed revised Technical Specification page is contained in Attachment 2. A summary of the ice condenser ice weight calculations done in support of this extension request is included in Attachment 3. A drawing illustrating the ice condenser bay and row-group orientation is contained in Attachment 4.

Attachment 2 also contains two revised T/S pages (3/4 3-56 and 3/4 5-5) for our submittal AEP:NRC:0967F, dated January 16, 1987. These T/S pages did not include the T/S revisions issued in Amendment 100. The pages enclosed in Attachment 2 to this letter include the revisions of this amendment. By inclusion of these pages in this letter, we are requesting that you substitute the T/S pages 3/4 3-56 and 3/4 5-5 for the similar pages which were included in AEP:NRC:0967F. Since no T/S changes are included on pages 3/4 3-56 and 3/4 5-5 other than those cited in AEP:NRC:0967F, we have concluded that no new justification per 10 CFR 50.92 is required.

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

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee (PNSRC) and will be reviewed by the Nuclear Safety and Design Review Committee (NSDRC) at their 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 Mr. R. C. Callen of the Michigan Public Service Commission and Mr. G. Bruchmann of the Michigan Department of Public Health.

Pursuant to 10 CFR 170.12(c), we have enclosed an application fee of $150.00 for the proposed amendments.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

M. P. Alexich
Vice President

EBK
2/9/87

cm

Attachments

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman
J. G. Keppler - Region III

ATTACHMENT 1 TO AEP:NRC:0967H

REASONS, DESCRIPTION OF ALTERNATIVES CONSIDERED,

AND 10 CFR 50.92 ANALYSIS FOR CHANGE TO THE

DONALD C. COOK NUCLEAR PLANT UNIT 1

TECHNICAL SPECIFICATIONS

Reasons for T/S Change Request and Discussion of Alternatives

We are requesting an extension of the surveillance interval for the ice condenser ice basket weighings and flow passage inspections required by T/Ss 4.6.5.1.b.2 and 4.6.5.1.b.3. We request that a footnote be added to these T/Ss which states that Specification 4.0.6 applies. These ice condenser surveillances are required to be performed by May 10, 1987. Currently the refueling outage is scheduled to begin at the end of May 1987. Therefore the length of this extension is short compared to the overall length of the surveillance interval.

In the past five surveillances (performed in April 1985, June 1985, September 1985, December 1985, and June 1986) all ice basket weights for bays and row-groups have met the acceptance criteria of T/S 4.6.5.1.b.2. This surveillance history shows that maintaining the required ice weight has not been a problem, and therefore we believe that the ice condenser will have sufficient ice weight to perform its safety function during the extension period.

In addition to the surveillance history, we have performed calculations of the ice loss due to sublimation that also support our belief that this extension will not impact the ability of the ice condenser to perform its safety function. These calculations, which are summarized in Attachment 3, show that in mid-July 1987 all but three bays and three row-groups are expected to contain at least 1220 pounds of ice at the lower 95 percent confidence level as required by T/S 4.6.5.1.b.2. The ice condenser total ice weight is expected to be well over the minimum of 2,371,450 pounds required by T/S 4.6.5.1.b.2. The calculations used known ice weights from the beginning of this surveillance interval and extrapolated expected ice basket weights based on the average ice loss utilizing data from the past five ice weighings for each bay and row group. All calculations were performed based on average expected ice loss and the minimum expected at the lower 95 percent confidence level through at least July 1, 1987. A more detailed description of these calculations is contained in Attachment 3.

The expected values for the three bays and the three row-groups that may fall below the T/S limit of 1220 pounds per basket are bay 1 (1202 pounds), bay 7 (1155 pounds), bay 24 (1134 pounds), row 1 group 2 (1212 pounds), row 4 group 3 (1206 pounds), and row 9 group 3 (1162 pounds). While these bays and row-groups might fall below the T/S limit, they are all above the 1098 pounds stated in the bases as the minimum acceptable weight (Bases page B 3/4 6-4). These bases state that "The minimum weight figure of 1220 pounds of ice per basket contains a 10 percent conservative allowance for ice loss through sublimation." This statement indicates that the purpose of the 1220 pound surveillance limit is to ensure a minimum ice weight of 1098 pounds at the end of the surveillance interval. Therefore we believe that since all bays and row-groups are expected to have ice basket weights well over 1098 pounds (with most bays and row-groups having ice basket weights over 1220 pounds), the ice condenser has sufficient capability to perform its safety function during the requested extension period.

T/Ss require visual inspections of the lattice frames, the intermediate and top deck floor gratings, the lower inlet plenum support structures and turning vanes, and at least two flow passages per bay. Over half of these areas must be inspected from lower containment, and therefore this cannot be done at power due to ALARA considerations.

Eight visual inspections have been performed since July 1982. Since that time, two inspections failed the T/S acceptance criteria, the first in October 1983 and the second in July 1985. In both cases the problem consisted of blocked flow passages caused by maintenance on the ice beds. Frequently when ice is being replenished in the ice baskets, chips of ice and frost are dispersed throughout the ice condenser. In both cases the unsuccessful inspections were performed prior to post-maintenance clean-up.

Following post-maintenance cleaning, the surveillances results were acceptable. Both surveillance failures resulted from maintenance that was performed in Modes 5 or 6 and was corrected before the plant entered Mode 4. Therefore at no time were the flow passages blocked when the ice condenser was required to be operable (Modes 1 through 4). It is important to note that no failures have been experienced in inspections of the ice condenser in the "as-found" condition following power operation. This surveillance history supports our belief that the extension of the visual inspection will not significantly impact the ability of the ice condenser to perform its safety function.

Portions of both the visual inspections and the ice basket weighings can be done at power. The visual inspection of the top portions of the flow passages and lattice frames, as well as the intermediate and top deck floor gratings, can be done at power. All ice baskets except those in Rows 1 and 9 can be weighed at power. Row 1 is located closest to the containment wall, and Row 9 is located closest to the crane wall (see drawing in Attachment 4). These ice baskets cannot be weighed because they become frozen in place (even though no ice or frost can be seen and the flow passages remain clear) and must be freed from the bottom. This cannot be done at power due to ALARA concerns.

Although portions of these surveillances can be done at power, we request that the extension apply to all of the surveillances. We request this because of the relative difficulty in performing the partial surveillances at power. In addition, due to the excellent surveillance history of the ice condenser, we do not believe that performing portions of these surveillances would provide a significant benefit to safety, and we believe that the administrative burden of performing these partial surveillances outweighs the small potential gain in safety margin.

10 CFR 50.92 Evaluation

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously analyzed,

(2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

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

Our evaluation of the proposed change with respect to these criteria, based on the above information, is provided below.

Criterion 1

On the basis of the surveillance history of the ice baskets and flow passages, the calculations of the sublimation rates, and the relatively short period of this extension, we believe that the extension will not result in a significant increase in the probability or consequences of a previously evaluated accident.

Criterion 2

The surveillance extension will not result in a change in plant configuration or operation. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated.

Criterion 3

We believe that an extension of the surveillance interval will not result in a significant reduction in the margin of safety based on the excellent surveillance performance of this system, the calculations of sublimation rates and the relatively short period of this extension.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. We believe these changes fall within the scope of this example. Therefore we believe this change does not involve a significant hazards consideration as defined in 10 CFR 50.92.