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SUBJECT: Application for amend to License DPR-74,deleting TS 3/4.3.4, associated bases & associated index listings for turbine overspeed protection.

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AEP:NRC:1168A

Donald C. Cook Nuclear Plant Unit 2
License No. 50-316
Docket No. DPR-74
TECHNICAL SPECIFICATIONS CHANGE REQUEST TO
DELETE TURBINE OVERSPEED PROTECTION REQUIREMENTS

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

Attn: T. E. Murley

February 15, 1994

Dear Dr. Murley:

This letter and its attachments constitute an application for amendment of the license conditions and Technical Specifications (T/Ss) for the Donald C. Cook Nuclear Plant Unit 2. Specifically, the change proposed in this letter deletes T/S 3/4.3.4, associated bases, and associated index listings for the Unit 2 turbine overspeed protection. The turbine overspeed protection instrumentation trips the turbine to prevent generation of potentially damaging missiles from the turbine in the event of a loss of the turbine speed control system or a transient. We believe the presence of a T/S for the Unit 2 turbine overspeed protection is inappropriate and unnecessary for this balance-of-plant system. This view is consistent with the MERITS program of NUREG-1431 which does not include a technical specification for turbine overspeed protection. This T/S change request is being proposed to increase operational flexibility to conduct turbine valve testing and maintenance and to eliminate this T/S difference between Unit 1 and Unit 2.

This T/S change will not significantly change our testing practices. Previous testing results show no signs of adverse turbine valve conditions. We intend to continue to test Unit 2 and maintain the turbine overspeed protection available during power operation. This T/S change request is to provide relief from the rigidity of the present Unit 2 T/S.

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Attachment 1 provides a detailed description of the proposed changes, the justification for the changes, and our proposed determination of no significant hazards consideration performed pursuant to 10 CFR 50.92. Attachment 2 contains the existing T/S pages marked to reflect the proposed changes. Attachment 3 contains the proposed revised T/S pages.

In addition, this is our first Cost Beneficial Licensing Action (CBLA) submittal. We need to implement the change in the upcoming Unit 2 refueling outage commencing August 5, 1994. The lifetime cost savings associated with this CBLA are $1,800,000 as detailed in Attachment 4.

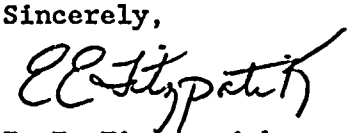
We believe the proposed changes will not result in (1) a significant change in the types of any effluent that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee and the Nuclear Safety and Design Review Committee.

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.

This letter is submitted pursuant to 10 CFR 50.30(b) and, as such, an oath statement is attached.

Sincerely,



E. E. Fitzpatrick
Vice President

dr

Attachments

cc: A. A. Blind
G. Charnoff
J. B. Martin - Region III
NFEM Section Chief
NRC Resident Inspector
J. R. Padgett

bc: S. J. Brewer
D. H. Malin/K. J. Toth/C. C. Savitscus
M. L. Horvath - Bridgman w/o attachments
J. B. Shinnock - w/o attachments
W. G. Smith, Jr./S. H. Steinhart
S. P. Hodge/J. D. Benes/G. D. Hines
J. B. Hickman, NRC - Washington, D. C.
AEP:NRC:1168A
DC-N-6015.1 - w/o attachments

STATE OF OHIO)
COUNTY OF FRANKLIN)

E. E. Fitzpatrick, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the forgoing Request for Deletion of Unit 2 Turbine Overspeed Protection Technical Specification and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

E E Fitzpatrick

Subscribed and sworn to before me this 16th day of February, 19 94.

Rita D. Hill
NOTARY PUBLIC

RITA D. HILL
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES 6-28-94

Attachment 1 to AEP:NRC:1168A

10 CFR 50.92 ANALYSIS FOR CHANGES TO DONALD C. COOK NUCLEAR PLANT UNIT 2 TECHNICAL SPECIFICATIONS

1.0 Sections to be Changed

Unit 2 T/S Index - pages V and XII,
Unit 2 T/S 3/4.3.4 - pages 3/4 3-65 and 3/4 3-66,
Unit 2 Bases 3/4.3.4 - page B 3/4 3-4.

2.0 Extent of Change

This license amendment request proposes to delete Technical Specification (T/S) 3/4.3.4 for Unit 2 and its associated bases section and index listings.

3.0 Specific Changes Requested

a. We propose to delete the entry on page V of the T/S index for T/S 3/4.3.4, Turbine Overspeed Protection.

b. We propose to delete the entry on page XII of the T/S index for Bases section 3/4.3.4, Turbine Overspeed Protection.

c. We propose to delete T/S 3/4.3.4 on pages 3/4 3-65 and 3/4 3-66 in its entirety. To effect this, the pages would be removed.

d. We propose to delete the second paragraph and its heading on page B 3/4 3-4 in the bases section, thereby deleting the bases on turbine overspeed protection.

4.0 Discussion

System Description and Safety Function

According to the bases for this T/S, the specification is "...provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety related components, equipment, or structures."

The present Unit 2 turbine overspeed protection T/S lists "Surveillance Requirements" b, c, and d on page 3/4 3-66 under the heading of "Limiting Condition for Operation". This clerical error will be corrected when this T/S is deleted.

The Unit 2 turbine was the first turbine manufactured by Brown Boveri to operate at a nuclear power plant in North America. There are two independent mechanical overspeed trips on the Unit 2 turbine.

The surveillance requirements of the Unit 2 T/S presently require that all turbine control, stop, and intercept valves be tested through at least one complete cycle at least once per seven days. Valve testing is a good practice which is followed at Cook Nuclear Plant. For the Brown Boveri turbine these valves are controlled by the Turbomat system. A turbine shutdown test, where the valves are stroked, is performed prior to turbine roll. The normal turbine valve test is then performed up to seven days later in Mode 1 with about 8% power or more. At that time the requirements for running the Turbomat in "auto" have been satisfied. With the Turbomat in "auto", the Turbomat will adjust the remaining valves to maintain unit load as one valve is tested.

The T/S also requires direct observation of the movement of each of the valves once per 31 days. It has been plant practice that this direct observation be done every seven days, also meeting the 31 day T/S requirements.

The T/S also requires a "channel calibration", which is interpreted to mean an actual overspeed test, of the turbine overspeed protection system at least once per 18 months. Overspeed tests will be continued at Cook Nuclear Plant consistent with operating experience at Cook Nuclear Plant and applicable industry experience.

Also included in the T/S is the requirement that at least one valve of each type (control, main stop, reheat stop, and reheat intercept) shall be disassembled and inspected at least once every 40 months. Valve inspections will be continued at Cook Nuclear Plant consistent with operating experience at Cook Nuclear Plant and applicable industry experience.

Justification

We believe that the presence of a T/S for turbine valve testing and maintenance is inappropriate and unnecessarily restrictive for a balance-of-plant system. It is expected that the overspeed protection will remain available during power operation. This T/S change is to provide relief from the rigidity of the present Unit 2 T/S. This T/S change request is proposed for the following reasons: this T/S is not included in the new standardized technical specifications (STS) developed by the methodically engineered, restructured, and improved technical specifications (MERITS) program; it will increase the similarity of the T/Ss for the two units; our testing practices will not significantly change; since 1983 our testing results do not show signs of adverse conditions; and we will be less likely to trip the reactor as a result of trying to meet the schedular requirements of this T/S.

The new STS developed by the MERITS program in NUREG-1431 does not include a T/S for turbine overspeed protection. Our maintenance of the turbine overspeed protection system will prevent challenges to missile-protected equipment. The omission of an overspeed protection T/S in NUREG-1431 indicates that a T/S is not needed. This view is supported by WCAP 11618 which uses the NRC's "Interim Policy Statement Criteria" to evaluate the need for a turbine overspeed protection T/S and concludes that it is not needed.

A similar T/S does not exist for Unit 1. The reason for this is that the STS of NUREG-0452 were not available when Unit 1 was licensed but were adopted for Unit 2. Although Unit 1 does not have a turbine overspeed protection T/S, the surveillances performed on the Unit 1 turbine are similar to those performed on the Unit 2 turbine, as this is simply good surveillance and test practice based on operating experience at Cook Nuclear Plant and applicable industry experience. The result of the proposed T/S changes will be to reduce the rigidity of the schedular requirement to perform the surveillance for turbine overspeed protection on Unit 2 so that both units will be tested under an administrative program outside of the technical specifications and in accord with operating experience at Cook Nuclear Plant and applicable industry experience. This similarity in T/Ss between Unit 1 and Unit 2 benefits the safe operation of both units because the increased consistency between the units minimizes the chance of human error.

Despite the deletion of this T/S, the surveillance tests will not significantly change on the Unit 2 turbine. Turbine overspeed protection and surveillance will be maintained on Unit 2, similar to what has always existed. Only the T/S will be deleted. Good surveillance and test practices based on operating experience at Cook Nuclear Plant and applicable industry experience will continue to be followed under an administrative program outside of T/Ss.

The Unit 2 turbine is now operating in its ninth operating cycle with over 90,000 hours of operation. Turbine overspeed protection surveillance results have been very good since unit startup in 1978. In 1983, a wear problem was found with the overspeed plungers. Replacement plungers were installed. Then in 1988, these plungers were replaced with parts having stellited (hardened) surfaces. There have been no subsequent problems.

During normal power operation the requirement to perform this T/S surveillance has the potential for bringing the unit down and then subjecting the plant to transients. In performing this T/S surveillance the plant can encounter difficulties that are unrelated to the functionality of the valves and overspeed trip protection. We believe that it is safer to continue to operate in Mode 1 while these difficulties are worked out both from the point of view of a potential reactor trip and the additional stress on plant personnel to perform the work in a 72-hour window. Shutting down the unit because of difficulties performing this T/S surveillance, in our opinion, is inappropriate and unnecessary.

There are two independent mechanical overspeed trips on the Unit 2 turbine. Each trip device operates through a separate channel to trip all of the control, main stop, reheat stop, and reheat intercept valves as its setpoint is reached. Each major steam line entering the turbine has two independent valves in series. Thus it can be seen that there is redundant overspeed protection.

The Brown Boveri low pressure turbine rotors are assembled from separate forgings that are welded together. They are not assembled using a shrunk-on disk design. The Brown Boveri welded design is considered to be less susceptible to turbine burst.

5.0 No Significant Hazards Determination

We have evaluated the proposed T/S changes and have determined that the changes should involve no significant hazards consideration based on the criteria established in 10 CFR 50.92(c). Operation of Cook Nuclear Plant in accordance with the proposed amendment will not satisfy any of the following criteria.

(a) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendment does not involve a significant increase in the probability or consequences for an accident previously evaluated. The proposed deletion of the turbine overspeed protection T/S will not significantly change the surveillance tests on the Unit 2 turbine. The surveillance schedule and tests will be under administrative procedures outside of the TSs similar to that of Unit 1 and will be in line with operating experience at Cook Nuclear Plant and applicable industry experience. The Unit 2 turbine is now operating in its ninth operating cycle with over 90,000 hours of operation. Turbine overspeed protection surveillance results have been very good since unit startup in 1978. In 1983, a wear problem was found with the overspeed plungers. Replacement plungers were installed. Then in 1988, these plungers were replaced with parts having stellited (hardened) surfaces. There have been no subsequent problems. Our expectation is that the turbine overspeed protection system will remain available to perform its function of preventing excessive turbine overspeed. Lastly, the STS developed by the MERITS program in NUREG-1431 do not include a T/S for turbine overspeed protection. The omission of an overspeed protection T/S in NUREG-1431 indicates that a T/S is not needed to ensure an adequate level of safety for a nuclear facility. This view is supported by WCAP 11618 which uses the NRC's "Interim Policy Statement Criteria" to evaluate the need for a turbine overspeed protection T/S and concludes that it is not needed. For these reasons, we believe that deleting the turbine overspeed protection T/S will not significantly increase the probability or consequences of an accident previously evaluated.

(b) Create the possibility of a new or different kind of accident from any previously analyzed.

The proposed amendment does not create the possibility of a new or different kind of accident from any previously evaluated. This request to delete the turbine overspeed protection T/S eliminates a control on the surveillance testing of the Unit 2 turbine. The design function of the turbine overspeed protection and the operation of the turbine/generator remain the same. The operating history of the Unit 2 surveillance results to date and our continued testing support the view that the turbine overspeed protection will remain available. For these reasons, we believe that the proposed changes will not create the possibility of a new or different kind of accident from any previously analyzed.

(c) Involve a significant reduction in a margin of safety.

The proposed amendment does not involve a significant reduction in the margin of safety. Turbine overspeed protection surveillance results have been excellent since 1983. The years of operating data well within acceptance criteria on Unit 2 turbine overspeed protection provide ample evidence that there is no significant degradation of the system to perform its function. The reliability of the overspeed protection was improved by the replacement of the plungers with parts having stellited surfaces. The surveillance schedule and tests will be based on operating experience at Cook Nuclear Plant and applicable industry experience. Surveillance testing will continue under an administrative program outside of TSs. Thus the turbine overspeed protection is expected to remain available. Also by eliminating this T/S we will be reducing the potential for shutting down the unit because of difficulties performing this T/S surveillance unrelated to the functionality of the valves and overspeed trip protection. Lastly, the STS developed by the MERITS program in NUREG-1431 do not include a T/S for turbine overspeed protection. The omission of an overspeed protection T/S in NUREG-1431 indicates that a T/S is not needed to ensure an adequate level of safety for a nuclear facility. This view is supported by WCAP 11618 which uses the NRC's "Interim Policy Statement Criteria" to evaluate the need for a turbine overspeed protection T/S and concludes that it is not needed. For these reasons, we believe that the turbine overspeed protection system will remain operable and so this proposed amendment does not involve a significant reduction in the margin of safety.

6.0 Pending T/S Proposals Impacting This Submittal

None of the pages in this submittal impact nor are impacted by any currently pending T/S proposals.

Attachment 2 to AEP:NRC:1168A

EXISTING TECHNICAL SPECIFICATIONS
PAGES MARKED TO REFLECT PROPOSED CHANGES