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UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
DOCKETING & COMPLIANCE
BRANCH

Wisconsin Electric Power Company
POINT BEACH NUCLEAR PLANT UNITS 1 & 2
DOCKET NOS. 50-266 AND 50-301
Operating License Amendment
(Steam Generator Tube Sleeving Program)

PETITION FOR REVIEW OF APPEAL BOARD DECISION

Pursuant to 10 C.F.R. §2.786 (b), Wisconsin's Environmental Decade, Inc. ("Decade"), hereby serves upon the U. S. Nuclear Regulatory Commission ("Commission") its petition for review of the Decision of the Atomic Safety and Licensing Appeal Board ("Appeal Board") entered September 7, 1983, and served September 8, 1983, concerning "sleeving" degraded steam generator tubes in the Point Beach Nuclear Plant ("Point Beach").

As in the Decade's petition for review, dated April 7, 1983, in a parallel proceeding concerning replacement of the steam generators at the other unit of Point Beach, the issue continues to be the safety of the facility and the unrelenting refusal of the Commission and its agents to consider one of the major generic safety questions presently afflicting most pressurized water reactors in the country.

THE NATURE OF THE DECISION UNDER REVIEW

The Appeal Board in a Decision, entered September 7, 1983, as did the Atomic Safety & Licensing Licensing Board ("Licensing Board") in an Initial Decision, dated March 16, 1983, rejected the Decade's challenge to sleeving at Point Beach. This petition

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for review seeks Commission review of those two orders.

THE NATURE OF THE PROCEEDINGS BELOW

The Point Beach Nuclear Plant Units 1 and 2 are suffering from steam generator tube degradation. The Licensee proposed to address the problem by either sleeving the degraded tubes or by replacing the steam generators. In the proceedings below, the Licensee sought a license amendment to authorize sleeving, in lieu of plugging, degraded tubes.

STATEMENT OF ANY MATTERS NOT RAISED BELOW

This petition for review does not raise any matters which were not raised below before the Licensing Board and before the Appeal Board, as is more fully cited in the text that follows.

REASONS WHY THE DECISIONS UNDER REVIEW ARE ERRONEOUS

The Appeal Board, as did the Licensing Board, has approved the Licensee's proposals and ignored the unresolved generic issues by pretending major issues do not exist and by hiding behind irrelevant legal homolies.

It agreed with the Licensing Board over the Decade's objection that no evaluation of the consequences of an accident was necessary before finding that the probability of an accident from the license amendment posed acceptable risks; and with one hand it disdained intervenor's concerns over the inspectability of sleeved tubes while conceding them with the other.

Three salient errors by the Appeal Board arise from those conclusions: (i) the Appeal Board erroneously denied that a linkage was shown between sleeving and tube failures; (ii) the Appeal Board erroneously claimed that applicable statutes and

rules preclude consideration of safety concerns; and (iii) the Appeal Board arbitrarily and capriciously disclaimed the importance of an issue raised by the intervenor that it conceded was important by raising it sua sponte.

(i) Linkage Between Sleeving and Failures

The Appeal Board sustained the Licensing Board's refusal to consider the effects of tube failures on the grounds that "the Decade had not put forth a cognizable claim that some element in the sleeving process gives rise to an enhanced likelihood of tube rupture". That is to say, according to the Appeal Board, before accident concerns arise, some nexus must be shown between sleeving and the possibility of an accident. Decision, at p. 6.

The claimed absence of such a linkage is patently untrue. In fact, the Decade did allege just such a connection in its intervention papers to the Licensing Board, see Decade's Motion Concerning Litigable Issues, dated July 21, 1982, at p. 6, and on appeal, see Decade's Brief in Support of Exceptions, dated March 16, 1983, at p. 6,

That linkage which the Decade raised concerned the fact that the narrow space between the sleeve and the tube created the same type of highly corrosive crevice-like conditions that was previously the apparent source of run-away tube degradation within the tubesheet at Point Beach since 1979. Moreover, the Decade pointed out that this time the annulus, which is created by the sleeve, would be located above, not below, the tube sheet. In that location, secondary-to-primary inleakage would no longer be constrained as it would have been inside the tube sheet, and safety systems would be fatally compromised in case of a loss-of-

coolant-accident.

In its Motion, the Decade alleged:

"The process of sleeving steam generator tubes increases the probability of tube failures generally, and, of even greater significance, it substantially increases the risk of failures in the unconstrained free standing region of the steam generator specifically in, among other things, the following manner:

" * * *

"The annulus between the original tube and the sleeve may give rise to a corrosive environment in the unconstrained free standing region of the steam generator in cases where the original tube is or may be suffering in the future from a through-wall crack permitting secondary water impurities (including copper and iron oxides from the feedwater heaters that are an unintended byproduct of the conversion to all volatile treatment) to seep into the narrow space and concentrate to eventually corrode the sleeve as well."

Motion, at p. 6. See, also, pp. 8 to 10 for detailed citations.

In its Brief, the Decade argued:

"The Board stated that this evidence is relevant only 'if tube weakening is assumed to have occurred,' and then, without ever ruling on the possibility of tube weakening, it determined the safety issue to be irrelevant.

"For the limited purpose of making a pre-trial ruling on which issues may be adjudicated, it would be impossible to preclude the possibility of failures in sleeved tubes, and therefore the exclusionary ruling cannot stand.

"The previous problem of corrosion-inducing environments in confined spaces such as the tube-to-tubesheet crevice in steam generators at pressurized water reactors is well known. Nuclear Reactor Regulation, Steam Generator Tube Experience (1982), NUREG-0886, at p. 14. In turn, the insertion of sleeves inside the original tubes creates a new confined space, this time in the sleeve-to-tube annulus, and, in those cases where the original tube is degraded through-wall, secondary water with its inevitable impurities will enter the annulus and concentrate corrosive agents. This fact cannot be in serious dispute inasmuch as it is admitted in the Licensee's own application:

"The behavior of the annulus between the tube and sleeve, with respect to the capability to concentrate secondary side bulk water impurities [sic], is judged

to be similar to that of that original tube/tubesheet crevice.' Appl. Ex. 1, at p. 6.7

"Thus, the possibility of failures in tube failures must be acknowledged, and the Board's reasoning for excluding consideration of safety must fall."

Brief, at p. 6.

Although the Licensing Board refused to admit it into evidence, the Commission may wish to note in passing that a sister utility to the Licensee, Northern States Power Company, took much the same position as the Decade:

"Consideration of sleeving should anticipate that any corrosion problems that existed before sleeving will continue, and that sleeving itself is likely to introduce some new ones.

"Inconel is particularly sensitive to crevice corrosion. Sleeving creates another crevice between tube and sleeve. Any secondary corrosion attack that penetrates the original tube then makes the sleeve vulnerable to secondary side crevice corrosion attack. * * * "

Letter from G. H. Neils (NSP) to S. Burstein (WEP), dated February 2, 1982.

The Appeal Board was only able to reject this plethora of information that demonstrates the possibility of a linkage by the erroneous -- and irresponsible -- expedient of ignoring it. If one were to believe the Appeal Board, the "Decade was aware it had to make this showing [of a linkage], yet it failed to provide any link demonstrating that sleeving may lead, or be related, to tube failures." Decision, at p. 7 (emphasis added). Such perverted reasoning defies any claim to responsible conduct.

(ii) Applicable Rules Require an Assessment of Safety

Also, in overturning the Decade's insistence on a safety evaluation, the Appeal Board held that "[c]onsideration of the probability and magnitude of steam generator tube failures is not

required by the Commission's existing regulations." "[T]he Board could apply only existing safety standards." Decision at p. 8.

However, in fact, the existing regulations require such consideration.

Congress has established as the statutory standard to control the Commission's action:

"In any event, no license may be issued to any person within the United States if, in the opinion of the Commission, the issuance of a license to such person would be inimical to the common defense and security or to the health and safety of the public." 42 U.S.C. §2133.

In turn, the Commission has established as the administrative regulation to control its conduct, as well as its Licensing Board's actions:

"In determining that a license will be issued to an applicant, the commission will be guided by the following considerations:

"(a) The processes to be performed, the operating procedures, the facility and equipment, the use of the facility, and other technical specifications, or the proposals, in regard to any of the foregoing collectively provide reasonable assurance that the applicant will comply with the regulations in this chapter, including the regulations in Part 20, and that the health and safety of the public will not be endangered." 10 C.F.R. §50.40(a). [Emphasis added.]

"The reactor coolant pressure boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture." 10 C.F.R. Part 50 App. A. Crit. 14. [Emphasis added.]

The Licensing Board had before it below a proceeding to determine whether to approve a new procedure (sleeving) intended to repair one part of the reactor coolant pressure boundary (steam generator tubes) that is failing. Tr. 1385.

Sleeving involves the insertion of a nominal 3/4 inch tube, approximately [extremely thin] inch in wall thickness, into a

nominal 7/8 inch tube, approximately .005 inch in wall thickness, from the confined radioactive primary side of the steam generator by temporary workers, and then joining the ends of the first tube to the inside face of the second tube by a complex proprietary process. Appl. Ex. 1.

When it made its determination as to whether to approve this sleeving process, the Board was not free to act arbitrarily, but rather it was required to make a reviewable record on whether the new procedure was "inimical to the health and safety of the public," 42 U.S. C. §2133, whether the "public health and safety will be endangered", 10 C.F.R. §50.40(a), and whether it will provide a "low probability of abnormal leakage, of rapidly propagating failure or of gross rupture", 10 C.F.R. Part 50 App. A Crit. 14.

In making this factual determination of whether sleeving met these tests, the Licensing Board should have compiled evidence on the consequences to "the health and safety of the public" from a sleeve induced tube failure under various accident conditions, 10 C.F.R. §50.40(a), and weigh that in relation to whether there is a "low probability" of such a failure, 10 C.F.R. Part 50 App. A Crit. 14.

Instead of proceeding rationally and in accordance with the Commission's regulations, however, the Licensing Board improperly excluded as irrelevant evidence on both the safety consequences of a tube failure and on the number of such failures sufficient to precipitate those consequences. 1/ By excluding this evidence, the Board incapacitated its ability to ascertain "how safe is

safe enough", because a lower probability of occurrence is required when the consequences of its occurrence are more injurious.

Both Boards have implied that these safety issues have been dealt with before, such that any further consideration would be duplicative. It should be emphasized that this is patently untrue. In fact, the Commission has not yet formally investigated the consequences of steam generator tube failure during loss-of-coolant-accident ("LOCA") conditions -- whether in a sleeved or unsleeved tube, as shown by the statements of the Commission's own staff, as well as by outside agencies:

"One area [of research] that has not been considered sufficiently using recent accident analysis codes is estimation of the consequences of a transient or some other failure that might lead in turn to the failure of a significant number of tubes. Such failures could lead to the degradation of ECCS function." Office of Reactor Safety Research Group, Report to the President's Nuclear Safety Oversight Committee (1981), at p. I-2.

"The consequences of multiple tube failure, excess of the design base, have not yet been rigorously studied. * * * In the event of a LOCA, the core reflood rate could be retarded by steam binding. * * * S[team] G[enerator] tube failures would create a secondary to primary leak path which aggravates the steam binding effect and could lead to ineffective reflooding of the core." Nuclear Reactor Research, Steam Generator Status Report (Feb. 1982), at p. 2 to 3 ("Status Report").

"At the times Point Beach Unit 1, Surry Unit 2, and Prairie Island Unit 1 were licensed, there were no specific analysis requirements for S[team] G[enerator] T[ube] rupture events. * * *

* * *

"The staff does not require licensees to analyze loss-of-coolant accidents (LOCAs) concurrent with an SGT break, but does require all LOCA analyses to include the effects of the plugged tubes on reduced RCS flow." Nuclear Reactor Regulation, Evaluation of Steam Generator Tube Rupture Events (March 1980), NUREG-0651, at p. 1-2.

This demonstrates that the Commission has never made any

determination whether the possibility of a failure in an unsleeved tube during LOCA poses an unacceptable risk. That being given, it is totally irresponsible to claim that there "is no serious safety issue", see Initial Decision, at p. 34, from failures in sleeved tubes solely with reference to the possibility of failures in unsleeved tubes which has never been considered.

The Appeal Board only deigns to acknowledge the fact that multiple tube ruptures have not been studied -- while inexplicably ignoring the other failings -- and then hesitantly dismisses the concern without explanation by noting that one report that it has seen makes a reference to an unpublished report which it has not seen on the subject. Decision, at p. 8 n. 8.

Contrary to the Appeal Board's assertions, the statutes and rules require a rational decision-making process in which conclusions as to adequate levels of safety cannot be meaningless boiler plate, but rather must be based upon a probabilistic assessment of probabilities and consequences. Concocting a standard ostensibly pegged to presently evaluated risks is arbitrary when the existing risks have, themselves, never been evaluated.

(iii) Importance of Inspectability Concern

The Appeal Board accepted the Licensing Board's assurances as to the inspectability of sleeved tubes, including the inspectability of the upper joint. See Decision, at pp. 9 to 10. This was an issue raised by the Decade that the Licensing Board had previously found of insufficient importance to even be

investigated through a hearing. See Memorandum and Order, dated October 21, 1982, at p. 15.

Then, the Appeal Board turned around and issued a concurrent Memorandum and Order, dated September 7, 1983, requesting more information on the inspectability of the upper joint. Id., at p. 2.

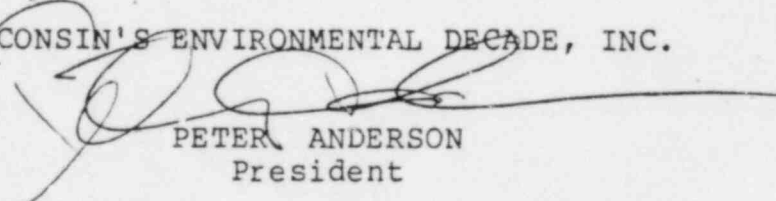
This presents the exact same arbitrary and capricious action that we challenged in our April 7, 1983 petition for review in the same docket which is still pending. It is erroneous and should be reversed.

STATEMENT WHY THE COMMISSION SHOULD GRANT REVIEW

Due to limitations of time and space, we refer the Commission to the reasons set forth in our parallel petition, dated April 7, 1983, for review to be granted here, as well.

WISCONSIN'S ENVIRONMENTAL DECADE, INC.

by


PETER ANDERSON
President

114 North Carroll Street
Madison, Wisconsin 53703
Dated: September 23, 1983

- 1 The Appeal Board asserts that the Licensing Board did "consider" safety. Decision, at p. 9. This is grossly misleading. In fact, the Licensing Board first precluded intervenors from presenting affirmative or rebuttal evidence by granting summary disposition on the subject, see Memorandum and Order, dated October 1, 1982, at pp. 7 to 8, and then, over the Decade's objection, made its own inquiries of Staff on the subject during the hearing, see Transcript. p. 1822. This may be a meretricious veneer to a bad decision, but it does not comport with the most basic rudiments of due process.

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CERTIFICATE OF SERVICE

I certify that true and correct copies of the Petition for Review, dated September 23, 1983, in the above-captioned matter, were served this day by depositing the same in the first class mails, correctly addressed, postage prepaid, upon Messrs. Gerald Charnoff (WEPCO), Richard G. Bachmann (Staff), Hon. Peter B. Bloch (ASLB) and Hon. Thomas S. Moore (ASLAB).

Dated: 9/23/83

