

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	}	
WISCONSIN ELECTRIC POWER COMPANY		Docket Nos. 50-266
(Point Beach Nuclear Plant, Units 1 and 2)		50-301 (Repair to Steam Generator Tubes)

NRC STAFF RESPONSE TO DECADE'S
MOTION CONCERNING LITIGABLE ISSUES

I. INTRODUCTION

On January 11, 1982, during an on-the-record telephone conference, the Atomic Safety and Licensing Board (Board) described the means by which this proceeding would be advanced. Tr. 890-903. Specifically, the Board required Intervenor, Wisconsin's Environmental Decade (Decade), to file a motion concerning litigable issues in which Decade must "document the genuine issues of fact which it believes exist with respect to any litigable issue which it plans to try at an evidentiary hearing." Tr. 891. The standard to be applied to the motion will be the same standard as would be applied to a response to a motion for summary disposition, i.e. that there are genuine issues of material fact. The Licensee and the Staff would then respond to Decade's motion in the nature of a motion for summary disposition and attempt to show why the issues of fact propounded by Decade are not really genuine issues of fact and are not proper subjects for hearing. Tr. 892.

DESIGNATED ORIGINAL

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Accordingly, Decade filed its Motion Concerning Litigable Issues (Motion) dated July 21, 1982.^{1/} On August 9, 1982, the Licensee filed its Response to Decade's Motion Concerning Litigable Issues (Response).

For the reasons discussed below, the Staff believes:

1. Only Decade Contentions 3(a) and 3(b) satisfy the standards for admissibility of contentions;
2. Decade has not provided genuine issues of material fact which are proper subjects for an evidentiary hearing.

The Staff will initially discuss the legal adequacy of Decade's issues based on the provisions of 10 C.F.R. § 2.714. The Staff will then discuss the material facts at issue according to the standards of summary disposition, 10 C.F.R. § 2.749. The fact that the Staff addresses Decade's issues in the nature of a motion for summary disposition does not constitute an admission by the Staff that any of the issues meet the relevance and basis requirements for contentions.

^{1/} The schedule for filing the motion, and responses thereto, was amended during a June 1, 1982 conference call between the Board and the parties (memorialized in a letter from counsel for Licensee to the Board dated June 7, 1982). Under the revised schedule, Decade's motion was due July 19, 1982. Following a conference call among the Board and parties on July 19, 1982, Decade filed a partial motion on July 20, 1982. Staff received the completed motion on July 22, 1982. In its Response, Licensee argues that Decade should be estopped from raising many of its proposed contentions because of Decade's failure to (1) notify the Board and the parties of its litigable issues on July 19 and July 20, 1982 and (2) comply with its continuing obligation to keep Licensee and Staff apprised of its contentions and the bases therefor. Response at 5-18. Further, Licensee argues that Decade has failed to justify late-filing of new contentions. Response at 19-20. The Staff supports Licensee's position.

II. DECADES PROPOSED CONTENTIONS NUMBERED 1, 2,
3(c), (d), (e), 4, 5 AND THE ALTERNATIVE
CONTENTION DO NOT MEET THE NRC CONTENTIONS REQUIREMENTS

A. Contention Requirements

As a general matter for proposed contentions to be admissible, they must fall within the scope of the issues set forth in the Commission's notice of opportunity for hearing. See Northern Indiana Public Service Company (Bailly Generating Station, Nuclear 1), ALAB-619, 12 NRC 558, 565 (1980); Public Service Company of Indiana (Marble Hill Nuclear Generating, Units 1 and 2), ALAB-316, 3 NRC 167, 171 (1976). This requirement is recognized in the notice of opportunity for hearing in the instant proceeding where it is stated that "[c]ontentions shall be limited to matters within the scope of the amendment under consideration" 46 Fed. Reg. 40359, 40360 (August 7, 1981). The notice further states that the amendments under consideration concern revision of the provisions of the Technical Specifications "to permit repair of degraded or defective steam generator tubes by sleeving." Id. at 40359. Accordingly, contentions proposed by Decade which are not relevant to repair of degraded or defective steam generator tubes by sleeving are beyond the scope of this proceeding and must be rejected.

The Commission's rules furthermore require that the bases for each contention be set forth with "reasonable specificity." 10 C.F.R. § 2.714(b). This "basis" requirement helps assure that the hearing process is not improperly invoked, that other parties are sufficiently put on notice so that they will know at least generally what they will have to defend against or oppose, and that the proposed issues are proper for adjudication in this particular proceeding. Philadelphia Electric Company (Peach Bottom Atomic Power Station, Units 2 and 3) ALAB-216,

8 AEC 13, 20-21 (1974). This requirement does not require a petitioner to detail the evidence which would be offered in support of each contention. See Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973); Houston Lighting and Power Company (Allens Creek Nuclear Station, Unit 1), ALAB-590, 11 NRC 542, 546-51 (1980). However, the proposed contention and basis therefor should refer to and address relevant documentation, available to Decade, which is relevant to the proposed actions of repairing degraded or defective steam generator tubes at Point Beach by means of sleeving the tubes, particularly the "Point Beach Steam Generator Sleeving Report" as well as the Staff's SER. See Cleveland Electric Illuminating Company et al. (Perry Nuclear Power Plant, Units 1 and 2), LPB-81-24, 14 NRC 175, 181-184 (1981).

Evaluation of the adequacy of basis in the context of this proceeding should be distinguished from the situation normally encountered at the early stages of a proceeding where the availability of documentation is more limited. (Allens Creek at 548), where initial contentions need only identify the reasons as bases for the contention. Here all the pertinent evaluation documents and extensive discovery have been made available to the Intervenor. Generalized allegations are clearly insufficient and the Intervenor must now come forward with specific factual basis for its contentions. Cf. Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-654, 14 NRC 632 (1981) (intervenors required to make a stronger showing of basis for their contentions in order to gain an evidentiary hearing on the health effects of radon emissions).

These contention requirements are applied to each of the contentions in the discussion below:

B. ARGUMENT ON CONTENTIONS

Contention 1

Decade's Contention 1 which is entitled "Tube Failures Under LOCA Accident Conditions" provides:

Degradation of as few as one to ten steam generator tubes in a pressurized water reactor such as Point Beach Nuclear Plant ("Point Beach") could induce essentially uncoolable conditions in the course of a loss-of-coolant-accident (LOCA").

It is clear from reading this contention and the basis set forth in support of this contention that it does not fall within the scope of this proceeding. The scope of this proceeding is the consideration of amendments to the operating license "to permit repair of degraded or defective steam generator tubes by sleeving." 46 Fed. Reg. 40359. Accordingly, this contention must be rejected.

Moreover, Contention 1 is the same contention previously raised by Decade and rejected by the Board. Memorandum and Order Concerning the Admission of a Party and Its Contention, LBP-81-45, 14 NRC 853, 858 (1981). Decade has not provided any additional reason why this contention should be accepted now. Accordingly, Contention 1 should be rejected.

Contention 2

DECADE's Contention 2 which is entitled, "Tube Failures Under Normal Operation Conditions" provides:

Rupture of steam generator tubes during normal operation may release radiation to the environment from the plant's secondary side in excess of maximum permissible doses to the extent that:

- (a) Iodine. The iodine levels in the primary coolant exceed Westinghouse Standard Technical Specifications for reactor coolant iodine activity;
- (b) Unconsidered Leakage. The primary-to-secondary leakage is greater than bounded in the Safety Evaluation Report Relating to Full Scale Steam Generator Tube Slewing at Point Beach Nuclear Plants Unit 1 and 2, undated but presumed issued July 8, 1982 ("SER"); or
- (c) Safety Valve. The secondary side safety valve set point is exceeded and does not properly reseal for an extended period.

This contention is not relevant to the slewing of the steam generator tubes. The contention asserts that rupture of the steam generator tubes during normal operation may cause release of radiation in excess of maximum permissible doses. There is no explanation in the contention or the basis how slewing can cause the steam generator tubes to rupture or increase releases of radiation off-site if a rupture does occur. In short, Contention 2 concerns the consequences of a steam generator tube rupture, irrespective of slewing. Accordingly, it does not fall within the scope of this proceeding.

Furthermore, Contention 2 raises the same concern and is almost identical to Contention 2 asserted in the "Petition of Wisconsin's Environmental Decade for Admission as Party, Hearing and Environmental

Impact Statement," dated July 7, 1981, at 3. That contention was rejected by the Board. Memorandum and Order Concerning the Admission of a Party and Its Contentions, LPB-81-45, 14 NRC 853, 858 (1981). The only difference between the two contentions is that Decade now lists three reasons why it believes radiation doses may exceed the maximum permissible doses if a rupture of the steam generator does occur. Not one of these reasons, however, shows any relationship to sleeving. Furthermore, Decade's reference to page 43 of the SER (Motion at 4) does not support Contention 2. The Staff evaluation discussed at pages 40-43 is not concerned with steam tube rupture but rather primary to secondary leakage. The Staff's evaluation at pages 42-43 mentions as an aside steam generator tube sleeving and states that if reactor coolant iodine concentration were above the Westinghouse Standard Technical Specifications (STS) (which have been agreed to be applied to Point Beach Unit 2, as they have been adopted for Unit 1, SER at 41) a tube rupture could cause releases exceeding 10 C.F.R. § 100.11 guidelines. The SER goes on to state that such consideration reinforces the importance of adopting the STS. This evaluation does not in any way, however, support an argument that tube rupture is related to sleeving. Accordingly, Decade's Contention 2 must be rejected.

Contention 3

Decade's Contention 3 which is entitled "Increased Probability of Tube Failures Due to Sleeving" provides:

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:

(a) Inspectability. Present inspection methods in unsleeved tubes have been shown to be inadequate to detect defects, and the complicating presence of the sleeve inside the tube will make the detection of degradation, especially at the joints, even more difficult. Over time, the detection capability will continue to degrade. Scaling will occur on the outer surface of the sleeve inside those tubes with through-wall defects because the all-volatile water chemistry treatment used in lieu of phosphate chemistry can no longer maintain the secondary water completely free of solids. In the narrow confines of the crevice-like annulus, the rate of scaling will be accelerated by concentration effects beyond any scaling on the outside of the tubes in the free standing region where there is no crevice. Combined with the scaling will be other conductive impurities from the feed-water train and elsewhere that are also an unintended byproduct of all-volatile treatment and that will further degrade and confuse the eddy current signal. The inability to adequately detect defects that can lead to primary-to-secondary or secondary-to-primary pathways for leakage will exacerbate the problems indicated in ¶(b), ¶(c), ¶(d) and ¶(e).

(b) Annulus. 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.

(c) Quality Assurance. the dependence on a large number of transient workers to install the sleeves will make it impossible to assume

that the installation in the field matches the performance of test installations in the laboratory and will increase the probability of the kinds of problems indicated in ¶(d) and ¶(e).

(d) Under Expanded Sleeve. In a LOCA accident condition which stresses the system and in which the suddenly depressurized primary system no longer acts to compress together the sleeve and tube at the upper joint, an undetected insufficiently expanded sleeve, that may have been functional in normal operation, may leak and, if the original tube is also defected through-wall, form a secondary-to-primary pathway for in-leakage in excess of the allowable leak rates for model 44 steam generators or otherwise sufficient to retard reflood of the core.

(e) Over Expanded Sleeve. If the reference upper joint is excessively expanded and not detected in the sample verification process, the residual stresses in the transition zones will become more prone to degradation that can yield under the stress of a tubed rupture event or accident conditions.

These examples of sleeve induced tube degradation increase the leakage rates that worsen the matters raised in the First and Second Litigable Issues to the extent that an adequate basis for safe operation cannot be assured.

The Staff believes that Contention 3(a) and 3(b) satisfy the NRC contention requirements. We, further note that the Staff interprets the last sentence of 3(a) as basis for the other contentions and not a separate contention.

In Contention 3(c) Decade asserts that the probability of tube failure generally and in the unconstrained free standing region is increased by sleeving for the reasons that "a large number of transient workers" will be used to install the sleeves thereby, making it

"impossible to assume that the installations in the field matches the performance of test installations in the laboratory." This contention must be rejected since the basis asserted does not support the contention. The only basis asserted concerns another plant - the San Onofre, Unit 1 plant. Further, nothing in the contention or statement of basis gives any indication how the use of "transient workers" at Point Beach would increase the probability of failures in the steam generator tubes "generally" or in the "unconstrained free standing region." Failure of equipment to properly install sleeves at another reactor and use of narcotics and alcohol by employees at another reactor has no bearing on the Point Beach sleeving program and, accordingly, provides absolutely no basis for Contention 3(c). For these reasons, Contention 3(c) fails to satisfy the contention requirements of 10 C.F.R. § 2.714.

Contention 3(d) and (e) concerning "under expanded" and "over-expanded" sleeves are not supported by adequate basis and, therefore, fail to meet the contention requirements of 10 C.F.R. § 2.714. First, Contention 3 parts (d) and (e) deal only with the sleeves and make no mention of the free standing region or how the tubing in that region could be affected by sleeving. Accordingly, the Contention 3(d) and (e) and their bases don't support the assertion that the sleeving process "substantially increases the risk of failures in the unconstrained free standing region of the steam generator". Therefore, this aspect of Contentions 3(d) and (e) must be rejected for lack of basis.

Furthermore, Decade provides insufficient basis for 3(d) and absolutely no basis for 3(e) that would support the Contention 3 assertion that the sleeving program "increases the probability of tube failures

generally." Decade has failed (1) to provide any basis or explanation for its assertion that an "undetected insufficiently expanded sleeve" would exist; (2) to provide any basis for the assumption that pressure on the primary side prevents the sleeve from failing; and (3) to provide any basis for the final assertion that there would be leakage "in excess of the allowable leak rates." In addition Contentions 3(d) and (e) raise issues never raised before, either in Decade's January 18 letter to Richard Bachmann, Counsel for NRC Staff, supplements to that letter, or the July 19 conference call in this proceeding. The Board in its "Memorandum and Order (Concerning a Motion to Compel and Other Matters)" LPB-82-10, 15 NRC 341, 346 (1982), ruled that "late contentions will be admitted only if they comply with the criteria for the admission of late contentions. 10 C.F.R. § 2.714(a)(1)." Decade has not complied with this Board ruling. For all the above reasons Contentions 3(d) and (e) should be rejected.

Contention 4

Decade's Contention 4 which is entitled "Other Sources of Leakage from Failing Explosive Plugs" provides:

Pre-existing explosive plugs in tubes with through-wall defects, or which are incipient failures, may rock loose in the course of a LOCA accident condition providing a pathway for secondary-to-primary in-leakage, by itself or in combination with tube failure pathways, in excess of allowable leak rates for model 44 steam generators or otherwise sufficient to retard reflood of the core.

This contention must be rejected since it does not relate in any way to the sleeving of the steam generator tubes. Accordingly, it is beyond the scope of this proceeding.

Contention 5

Decade's Contention 5 which is entitled "Other Sources of Leakage From Loose Parts in the Steam Generator" provides:

Loose parts left behind from steam generator repair work may impact upon and rupture tubes in the unconstrained free standing region, including the region where there is no double primary-to-secondary boundary of sleeve and tube during normal or accident conditions. This will increase the leakage rates which worsen the problems identified in the First and Second Litigable Issues.

This contention must be rejected since it does not relate to sleeving of the steam generator tubes. This contention states a concern that "loose parts" from steam generator repair work may "impact upon and rupture" steam generator tubes. However, there is absolutely no showing in the contention or its basis how this concern relates to sleeving. Accordingly, this contention is beyond the scope of this proceeding.

ALTERNATIVE LITIGABLE ISSUE

Decade's alternative contention entitled "Interrelationship with Thermal Shock" provides:

Measures that have been taken to alleviate thermal shock to the reactor vessel, such as reracking of the core to move high neutron emitting assemblies away from the vessel wall, will make post-accident cooling more difficult due to the resultant higher heat fluxes in the center of the core and embrittlement of the fuel rod cladding. Tube failures, including sleeve induced failures, have been shown to retard reflooding rates during recovery from LOCA. The intensified cooling demands of the reconfigured core will increase the probability that this steam binding effect may create uncoolable conditions. From the opposite direction, the lessons-learned from the accident at Three Mile Island Nuclear Plant require early termination of the reactor pumps which, by shutting down core spray,

increases the demands on the steam generators to cool down the core through feed and bleed techniques, techniques which require higher pressures and increase the risk of thermal shock. Delaying termination of high pressure injection during recovery from a tube failure event, as another TMI lessons-learned, will similarly increase the risk of thermal shock.

This contention must be rejected since it does not relate to sleeving of the steam generator tubes. This contention states a concern about thermal shock to the reactor vessel and core cooling demands. There is no showing how this concern relates to sleeving. There is only a passing statement that "[t]hese failures, including sleeve induced failures, have been shown to retard reflooding rates during recovery from LOCA." Decade has not, however, explained or provided any basis for the occurrence of "sleeve induced failures". Furthermore, the Board in its "Memorandum and Order (Concerning a Motion to Compel)," dated April 22, 1982, at pages 4 and 5 ruled that Decade had failed to show "how the sleeving program would cause problems in the reactor pressure vessel." Accordingly, this contention must be rejected.

C. CONCLUSION

For the reasons set forth above, the NRC Staff urges this Board to reject Decade Contentions 1, 2, 3(c)(d) and (e), 4, 5 and the Alternative Contention. Decade Contentions 3(a) and (b) satisfy the NRC contention requirements.

III. NRC STAFF MOTION FOR SUMMARY DISPOSITION
OF DECADE CONTENTIONS 1, 2, 3(a)-(e), 4 and 5

A. INTRODUCTION

Pursuant to 10 C.F.R. § 2.749 of the Commission's regulations, the Staff hereby moves for summary disposition of the following contentions: Contentions 1,2,3(a)-(e), 4 and 5 filed by Decade. The Staff submits that the attached Staff affidavits, together with the Safety Evaluation Report (SER) in this matter, issued July 8, 1982, demonstrate that there are no factual issues requiring adjudication and that dismissal of these contentions is warranted as a matter of law.

B. GENERAL PRINCIPLES RELATING TO SUMMARY DISPOSITION

The Commission's regulations provide that summary disposition of a matter at issue can be obtained on the pleadings if the moving papers demonstrate that there is no genuine issue of material fact and that the movant is entitled to a favorable decision as a matter of law. 10 C.F.R. § 2.749(d). The summary disposition procedures set forth in 10 C.F.R. § 2.749 are analogous to the summary judgment procedures contained in Rule 56 of the Federal Rules of Civil Procedure. Alabama Power Company (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, 217 (1974). A hearing on the questions raised by an intervenor is not inevitable, but wholly dependent upon the ability of the intervenor to demonstrate the existence of a genuine issue of material fact respecting any of the issues they raise within the scope of the proceeding. See Peach Bottom, ALAB-654, supra, at 634.

The use of summary disposition has been encouraged by the Commission and the Appeal Board to eliminate litigation over contentions for which an intervenor has failed to establish the existence of a genuine issue. See, e.g., Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-73-12, 6 AEC 241 (1973), affid sub nom. BPI v. Atomic Energy Commission, 502 F.2d 424 (D.C. Cir. 1974); Allens Creek, ALAB-590, supra, at 550-551 (1980). The Commission has issued a policy statement concerning the conduct of adjudicatory proceedings. In that statement the Commission advised its adjudicatory boards as follows:

"In exercising its authority to regulate the course of a hearing, the boards should encourage the parties to invoke the summary disposition procedure on issues where there is no genuine issue of material fact so that evidentiary hearing time is not unnecessarily devoted to such issues.

Statement of Policy on Conduct of Licensing Proceedings, Section II.G., 46 Fed. Reg. 28533 (May 27, 1981).

Applicants for licenses may be subjected to substantial expense and delay when genuine issues have been raised, but they are entitled to an expeditious determination, without need for an evidentiary hearing, on all issues which are not genuine. Consumers Power Company (Big Rock Point Plant), LBP-82-8, 15 NRC 299, 301-302 (1982).

"A party opposing the motion...must set forth specific facts showing that there is a genuine issue of fact." 10 C.F.R. § 2.749(b); Virginia Electric and Power Co. (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980). Mere allegations or denials will not suffice. Id.; Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 754 (1977);

Gulf States Utilities Co. (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975). In addition:

"All material facts set forth in the statement required to be served by the moving party will be deemed to be admitted unless controverted by the statement required to be served by the opposing party."

10 C.F.R. § 2.749(a); Pacific Gas and Electric Co. (Stanislaus Nuclear Project, Unit No. 1), LBP-77-45, 6 NRC 159, 163 (1977).

Finally, to draw on federal practice, the Supreme Court has pointed out that Rule 56 of the Federal Rules of Civil Procedure does not permit plaintiffs to get to a jury on the basis of the allegations in the complaints coupled with the hope that something can be developed at trial in the way of evidence to support the allegations. First National Bank of Arizona v. Cities Service Co., 391 U.S. 253, 289-90 (1968). Similarly, a plaintiff may not defeat a motion for summary judgment on the hope that on cross-examination the defendants will contradict their respective affidavits. To permit trial on such a basis would nullify the purpose of Rule 56 which permits the elimination of unnecessary and costly litigation where no genuine issues of material fact exist. See Orvis v. Brickman, 95 F. Supp. 605, 607 (1951), aff'd, 196 F.2d 762 (D.C. Cir. 1952), cited with approval in River Bend, supra, 1 NRC at 248.

In light of these principles, and for the reasons set forth below, the Staff moves the Board to grant summary disposition on Decade Contentions 1,2,3(a)-(e), 4 and 5. Section 2.749(a) authorizes a "decision by the presiding officer in that party's [movant's] favor as to all or any part of the matters involved in the proceeding." See Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2),

LBP-77-46, 6 NRC 167 (1977); and Toledo Edison Company (Davis-Besse Nuclear Power Station), LBP-73-30, 6 AEC 691, 699 (1973). Therefore, if the Board is unable to grant summary disposition of these contentions in their entirety, summary disposition should be granted on any portions of such contentions as to which there is no genuine issue of material fact.

C. ARGUMENT

As stated by the Board, Decade was required in its Motion to document the genuine issues of fact which it believes exist with respect to any litigable issue which it plans to try at an evidentiary hearing. Tr. 891. The Staff and the Licensee in their responses were to attempt to show why any issues of fact propounded by Decade are not really genuine issues of fact and that, therefore, the issues which Decade wishes to have admitted to hearing are not proper subjects for hearing. Tr. 892. The Staff will discuss each of Decade's contentions in turn, and demonstrate that Decade has not provided any genuine issues of material fact which are proper subjects for an evidentiary hearing.^{2/}

In support of its argument, the Staff relies upon the attached Affidavits of Timothy G. Colburn (Colburn), Emmett L. Murphy (Murphy) and Patrick G. Easley (Easley).

^{2/} Decade has followed each contention with a section entitled "Basis". The Staff considers these sections to be the issues of fact required by the Board, and will refer to them in this response accordingly.

Contention 1

Decade's first contention states:

Degradation of as few as one to ten steam generator tubes in a pressurized water reactor such as at Point Beach Nuclear Plant ("Point Beach") could induce essentially uncoolable conditions in the course of a loss-of-coolant-accident ("LOCA").

As demonstrated by the attached affidavit of Timothy G. Colburn, this contention is appropriate for summary disposition and should be dismissed.

Degradation of steam generator tubes is not synonymous with failure or rupture of the tubes but only means that the tubes have had a measurable reduction in wall thickness from that of the originally installed tube. Colburn ¶3. Degradation is defined in the Licensee's Technical Specifications (T.S.) for Point Beach Units 1 and 2 as "service induced cracking wastage, wear, or general tube corrosion occurring on either inside or outside of a tube." Colburn ¶4. The Licensee's T.S. further define a degraded tube as "a tube that contains imperfections cause by degradation (emphasis added) greater than 20% of the nominal tube wall thickness". Id.

All of Decade's basis statements supporting Contention 1 relate to failure of steam generator tubes, not degradation, with the exception of the third basis statement which references Regulatory Guide 1.83. Colburn ¶5. The next sentence following the statement referencing Regulatory Guide 1.83 Decade uses in support of Contention 1 reads, "This guide describes a method acceptable to the NRC Staff for implementing these General Design Criteria (General Design Criteria 14, 31, 15 and 32) by reducing the probability and consequences of steam generator tube

failures through periodic inservice inspection for early detection of defects and deterioration." Colburn ¶6. The General Design Criteria described above, notably 14, "Reactor Coolant Pressure Boundary," and 31, "Fracture Prevention of Reactor Coolant Pressure Boundary," require that the reactor coolant pressure boundary have an extremely low probability of abnormal leakage, of rapidly propagating failure and of gross rupture. Colburn ¶7. Regulatory Guide 1.83 provides an acceptable method for implementing these criteria. The supportive statement by Decade deals with release of secondary steam to the containment and doesn't imply uncoolable conditions will exist in the core. Id.

NUREG-0651, used by Decade as a basis to support Contention 1, states that "Recent studies have shown that as few as ten tubes would need to have ruptured during a LOCA (assuming a leakage rate of 130 gal/min per ruptured tube) before the cladding temperature would be significantly affected". Colburn ¶8. This means that 1300 gal/min total in-leakage would be required (130 gal/min per tube x 10 tubes) to significantly affect cladding temperature. Id.

As pointed out in Appendix A to the Staff's November 30, 1979 SER (previously introduced in the record), a guillotine rupture of a tube at a location 1/2 inch below the top of the tubesheet would yield a calculated in-leakage of 9.2 gal/min per tube assuming a secondary-to-primary differential pressure of 800 psid following a LOCA. Colburn ¶9. The leakage calculated for similar conditions at a location in the tubesheet where the crevice gap is .008 inches was only 5.5 gal/min per tube. Id. If a leak occurred in a sleeved tube following a LOCA at the location of the mechanical joint the in-leakage would be

likewise constrained and of a similar magnitude as that stated above. Id. Because the small narrow crevice between the tube and tubesheet limits in-leakage during postulated LOCA conditions (assuming a circumferential crack of a steam generator tube), the narrow annulus region between the sleeve and tube in the vicinity of the mechanical joint similarly limits the in-leakage per tube which would result from a circumferential crack near or at the location of the joint during postulated LOCA conditions. Id. The Licensee estimates the resulting in-leakage to be 12.5 gal/min per tube even if no expansion of the sleeve occurred during installation. Id. Thus, at least 100 tubes would have to simultaneously fail in the above manner during a LOCA to be of concern. Id.

Tube collapse is a more likely mechanism for tube failure during a LOCA than tube rupture due to the direction of the resulting differential pressure forces. Colburn ¶10. The resulting in-leakage during a LOCA from tube collapse has been calculated to be much less than would be experienced during a tube rupture due to the smaller cross-sectional area available as a leakage path from tube collapse compared with a tube rupture. Id. Tube collapse does not have as high a potential to produce multiple tube failures as tube rupture because tube collapse will not cause tube-whip interaction of the affected tube with adjacent tubes as might a tube rupture in the free-standing region of the steam generator. Colburn ¶11. Finally, a sleeved tube will be less likely to experience tube failure along its sleeved length than an unsleeved tube due to the added support the sleeve lends to the tube. Colburn ¶12.

As demonstrated above, there is no genuine issue of material fact which remains to be resolved with respect to either degradation or rupture of steam generator tubes during a LOCA. Therefore, the Board should find for the Staff as a matter of law, grant summary disposition of Decade's Contention 1 and dismiss this contention as a matter in controversy in this proceeding.

Contention 2

Decade's second contention states in part:

Rupture of steam generator tubes during normal operation may release radiation to the environment from the plant's secondary side in excess of maximum permissible doses to the extent that:

(a) Iodine. The iodine levels in the primary coolant exceed Westinghouse Standard Technical Specifications for reactor coolant iodine activity;

(c) Safety Valve. The secondary side safety valves set point is exceeded and does not properly reseal for an extended period.

As demonstrated by the attached affidavits of Timothy G. Colburn and Patrick G. Easley, this contention is appropriate for summary disposition in part and should be dismissed.

Contention 2(a)

The NRC Staff's Safety Evaluation concludes that the Westinghouse Standard Technical Specifications for reactor coolant iodine activity should be adopted for Point Beach Unit 2 as they have for Point Beach Unit 1. Colburn ¶13. The Licensee has acknowledged to the Staff that they would accept this as a requirement, and the Standard Technical

Specifications for iodine activity will be adopted for Unit 2 as they have been for Unit 1 upon issuance of the sleeving license amendment. Id. The Staff is unaware of any pressurized water reactor (PWR) which has ever violated the Westinghouse Standard Technical Specifications (STS) for iodine coolant activity, and most PWR's operate well below the STS limits. Easley ¶3.

Contention 2(c)

The failure of a safety valve is not linked to sleeving steam generator tubes. Colburn ¶14. Sleeved steam generator tubes are not more likely to rupture during normal operation than unsleeved steam generator tubes. Id.

The Staff Safety Evaluation Report (NUREG-0916) noted a procedural error on the part of the Ginna operators which contributed to the leakage experienced on the steam generator safety valve. Colburn ¶15. That is, the power operated steam generator relief valve, which is isolable, was isolated prior to the affected steam generator pressure reaching the lift setpoint for the spring-loaded safety valves. Id. The Staff felt that this unnecessarily challenged the spring-load safety valves, which are not isolable, five times. Id. NUREG-0916 states that the performance of the spring-loaded code safety valve which lifted five times was not unexpected or unsatisfactory given the exposure to the steam-water mixture and the state of the art of the valve. Colburn ¶16. The valve did close fully after leaking for about 50 minutes. Id. Should a tube rupture event occur, the correct procedure to relieve steam generator pressure would be to cycle the power operated steam generator relief

valve as necessary to relieve pressure rather than challenge the non-isolable spring-loaded steam generator code safety valves. Id. The power operated relief valve can be isolated if the valve fails to seat fully. Colburn ¶17. Decade has stated no facts to show that the Point Beach operators would fail to follow the correct procedure.

As demonstrated above, no genuine issue of material fact remains to be resolved with respect to the rupture of steam generator tubes during normal operation conditions, with the exception of 2(b). Therefore, the Board should find for the Staff as a matter of law, grant summary disposition of Decade's Contention 2(a) and (c), and dismiss those parts of this contention as matters in controversy in this proceeding.

Contention 3(a)-(e)

Decade's third contention states:

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:

(a) Inspectability. Present inspection methods in unsleeved tubes have been shown to be inadequate to detect defects, and the complicating presence of the sleeve inside the tube will make the detection of degradation, especially at the joints, even more difficult. Over time, the detection capability will continue to degrade. Scaling will occur on the outer surface of the sleeve inside those tubes with through-wall defects because the all-volatile water chemistry treatment used in lieu of phosphate chemistry can no longer maintain the secondary water completely free of solids. In the narrow confines of the crevice-like annulus, the rate of scaling will

be accelerated by concentration effects beyond any scaling on the outside of the tubes in the free standing region where there is no crevice. Combined with the scaling will be other conductive impurities from the feedwater train and elsewhere that are also an unintended byproduct of all-volatile treatment and that will further degrade and confuse the eddy current signal. The inability to adequately detect defects that can lead to primary-to-secondary or secondary-to-primary pathways for leakage will exacerbate the problems indicated in ¶(b), ¶(c), ¶(d) and ¶(e). (b) Annulus. 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.

(c) Quality Assurance. the dependence on a large number of transient workers to install the sleeves will make it impossible to assume that the installation in the field matches the performance of test installations in the laboratory and will increase the probability of the kinds of problems indicated in ¶(d) and ¶(e).

(d) Under Expanded Sleeve. In a LOCA accident condition which stresses the system and in which the suddenly depressurized primary system no longer acts to compress together the sleeve and tube at the upper joint, an undetected insufficiently expanded sleeve, that may have been functional in normal operation, may leak and, if the original tube is also defected through-wall, form a secondary-to-primary pathway for in-leakage in excess of the allowable leak rates for model 44 steam generators or otherwise sufficient to retard reflood of the core.

(e) Over Expanded Sleeve. If the reference upper joint is excessively expanded and not detected in the sample verification process, the residual stresses in the transition zones will become more prone to degradation that can yield under the stress of a tube rupture event or accident conditions.

These examples of sleeve induced tube degradation increase the leakage rates that worsen the matters raised in the First and Second Litigable Issues to the extent that an adequate basis for safe operation cannot be assured.

As demonstrated by the attached affidavits of Emmett L. Murphy, and Timothy G. Colburn, this contention is appropriate for summary disposition and should be dismissed.

Contention 3(a)

The sleeves have been designed to replace defective portions of tubing as the primary pressure boundary and to meet applicable ASME Code and Regulatory requirements. Murphy ¶3. An extensive test verification program has been conducted to confirm acceptable structural strength, metallurgical properties, corrosion resistance, leak tightness, and in-service inspectability. Id. Post-installation process verification checks, baseline eddy current inspection, and system hydrostatic tests which will be performed prior to resuming power operation provide added assurance regarding the integrity of the sleeved tube assemblies. Id. Periodic inservice inspections, hydrostatic pressure tests, and tight limits on allowable primary to secondary leakage will be performed to ensure that tube integrity is maintained at acceptable levels throughout the life of the facility. Id.

The sleeves will be periodically inspected during service using the eddy current test method. Murphy ¶4. The inspectability of the sleeved tubes has been evaluated in the Staff's SER for Point Beach dated July 8, 1982. The inspectability of the sleeves between the sleeve joints is comparable to that for an unsleeved tube. At the sleeve joints, various structural discontinuities will produce background signals which will make flaw detection more difficult. However, laboratory tests indicate that flaws will generally be detectable before they are sufficiently large to cause a rupture. Id.

Eddy current test sensitivity to small volume defects such as intergranular attack (IGA) and tight stress corrosion cracks (SCC) is significantly reduced relative to larger volume flaws. This applies to both sleeved and non-sleeved tubes. Murphy ¶5. However, corrosion testing has shown that the thermal treatment given to the Inconel sleeves is effective in reducing the probability of this type of corrosion developing on the sleeves. It has also been shown that the small, controlled amount of cold work associated with fabrication of the sleeve joints is not sufficient to cause a significant increase in the potential for stress corrosion cracking at the joints. Id.

Even should IGA or SCC type defects occur during service, and even should some of these flaws escape detection by eddy current testing, the likely consequence would be a small leak based on operating experience. Murphy ¶6. The stringent Technical Specification limit on allowable primary to secondary leakage ensures that the plant will be shut down for appropriate corrective action before degradation could potentially rupture a tube during normal operating and postulated accident conditions. Id.

Even if the sleeve or tube were to become completely severed at the location of the joint, the sleeve tube would be constrained against a double ended failure by the sleeve itself, and the resulting leakage would be severely limited by the narrow annulus gap between the sleeve and tube. Murphy ¶7. In the statement filed by W. D. Fletcher of Westinghouse on August 4, 1982, it is stated that the resulting leakage would be limited to approximately 5% of the rate which would be expected from an unobstructed leak path of a double ended break. Id. For postulated LOCA conditions, it was stated that this would correspond to 12.5 gallons per minute leakage from the secondary to the primary side. Based upon Staff experience, this appears to be a reasonable estimate (in terms of order of magnitude). Id. This is a very small amount of leakage compared to that which an NRC study indicates is necessary (1300 gallons per minute) to potentially cause critical overheating of the fuel during a LOCA. Id.

The advent of AVT chemistry has resulted in a significant reduction in solids in the secondary water. Murphy ¶8. Therefore, AVT does not increase the propensity for concentration of impurities in the tube/tube sleeve crevice. Id.

Installation of a tube sleeve will result in significantly reduced heat transfer at the sleeve location and a concurrent decrease in heat flux. Murphy ¶9. Reduced heat flux in the areas of a tube sleeve will reduce boiling, which will act to minimize concentration of impurities. Id. Therefore, because concentrated impurities are necessary to cause corrosion, the installation of a sleeve and the resultant decreased heat

flux will in fact reduce corrosion. Id. Also, reduced boiling will further act to minimize impurity concentrations which result in scaling. Id.

Surface desposits of conductive impurities or scaling which may occur with time is not expected to cause any significant degradation of eddy current detection capabilities. Murphy ¶10. Multifrequency eddy current techniques can be adapted as necessary to minimize background noise as a result of those impurities. Id.

Sleeved tubes will also be adequately inspectable above the location of the sleeves. Murphy ¶11. In general, the length of tubing above the sleeves can be inspected from the cold leg side using probes which are of the same diameter as those normally used to inspect unsleeved tubes. Id. Thus, we would not expect any loss of sensitivity relative to that for an unsleeved tube. For tubes with the smallest radius U-bends (tubes in row 1 through approximately row 5), it would be necessary to decrease the probe diameter somewhat to permit the probe to pass through the U-bends. Id. Use of appropriate centering devices to minimize probe wobble effects should permit these small radius U-bend tubes to be inspected above the sleeves without excessive loss of sensitivity. Id.

The Staff has concluded that eddy current test inspection of the sleeves in conjunction with stringent limits on allowable primary to secondary leakage will provide reasonable assurance that the occurrence of degradation will be detected and appropriate corrective action taken before the integrity of the sleeved tubes has become sufficiently degraded to create the potential for rupture or unacceptable leakage during normal and postulated accident conditions. Murphy ¶12.

Contention 3(b)

Concentration of impurities, if any, which may or may not preferentially accumulate in the annulus between the original tube and the sleeve will not affect the concentration of corrodents or corrosion products in the free standing region of the steam generator. Colburn ¶18. Sleaving will not introduce corrodents or impurities into the secondary side of the steam generator in any greater quantity or concentration than presently exists. Colburn ¶19.

The Licensee's reported efforts at sludge lancing and crevice flushing indicate that the level of solid impurities and corrosion products is not increasing as a result of switching to all-volatile chemistry treatment because the residual amount of solids obtained by these methods is not increasing. Colburn ¶20.

Contention 3(c)

Contentions 3(d) and 3(e) relate to sleeves becoming underexpanded or overexpanded at the reference joint. Colburn ¶21. The failure of hydraulic equipment at San Onofre 1 which resulted in a number of sleeves not being inserted all the way into the tubesheet is not related to tubes becoming under or over expanded. Id. This condition was identified and corrected at San Onofre 1 by their quality assurance check prior to startup. Id.

Failure of equipment at San Onofre 1 cannot be implied to be the fault of transient workers. Colburn ¶22. The use of drugs or alcohol by workers at one job site does not necessarily imply that drugs and alcohol will be used by workers at some other site. Colburn ¶23.

Westinghouse and the Licensee have provided a description of the training programs for the transient workers and the description of their duties with respect to equipment installation of remote and semi-remote equipment. Colburn ¶24. The workers will be trained and supervised by Westinghouse personnel. Id. The workers will be pre-screened by Westinghouse prior to hiring. Id.

The NRC Staff is requiring an acceptable post-process sampling plan to verify the correct installation of the sleeves and proper joint formation. Colburn ¶25. The Licensee submitted its plan by letter dated July 26, 1982, which the NRC Staff is evaluating. Id. Regardless of how many transient workers are used, each will receive the same training, including the use of full scale rehearsal mockups prior to performance of duties. Colburn ¶26. Each worker will be under direct supervision of Westinghouse personnel. The workers will be monitored by closed-circuit TV while performing their duties. Id.

Contentions 3(d) and 3(e)

The joint fabrication procedures and tooling incorporate a highly controlled and automated process to achieve the specified amount of expansion. Murphy ¶14. The resulting joint expansions will be verified by measuring the inner diameter of the joints in accordance with a process sampling plan. Id. This will involve a 10% sample of the joints, with additional samples to be taken if under or over-expanded joints are found. Id. All joints will be eddy current inspected to verify that the expansion joints have been formed. Id.

The likely consequence of a joint not receiving the full specified expansion would be a small leak. Murphy ¶15. If Technical Specification limits on primary to secondary leakage are exceeded, the plant will be shut down for appropriate corrective action. Id.

Even if no credit is taken for the expansion joint, the maximum leakage which could result would be limited to a small fraction of the maximum leakage which could occur for a double ended rupture of a unsleeved tube due to the narrow annular gap between the sleeve and tube. Murphy ¶16. For postulated LOCA conditions, the resulting leakage would only be a small fraction of the amount of leakage which we expect could potentially result in critical overheating of the fuel. Id. However, we consider it very unlikely that any sleeves will be accepted for service with unexpanded joints based upon our review of how the joints are expanded and the post-process verification checks (including eddy current inspection of all joints) which will be performed prior to resuming power operation. Id.

The sleeves are expanded against the tubes to provide a leak limiting seal. Murphy ¶17. Deformation of the sleeves relative to the tubes caused by differential pressure loadings are very small relative to the deformations induced by the specified joint expansion process. Id. Therefore, depressurization of the primary side during a LOCA will have little effect on the leakage characteristics of the joint as compared to the amount of deformation achieved during the expansion. Id.

The sleeved tube assemblies will be subjected to a 1900 psid primary to secondary hydrostatic pressure test following installation of the sleeves. Murphy ¶18. This test pressure is considerably in excess of

the approximately 1300 psid normal operating differential pressure across the tubes. Id. In addition, the steam generators will be subjected to an 800 psid secondary to primary (reverse pressure) test. Id. This latter test is close to the pressure which would be expected to occur during a LOCA. Id. It is stated in Section 9.0 of the Point Beach Steam Generator Slewing Report, WCAP-9960, Revised February 1982, that both the primary side and secondary side hydro tests will be repeated during subsequent inservice inspections of the steam generators. Id. These tests will identify abnormal leakage which occur as a result of an underexpanded joint. Id.

Joint fabrication procedures and tooling, equipment cutoff settings, and post-process diameter measurements are expected to minimize any potential for overexpanding the joints, and thus to minimize any potential for stress corrosion cracking at the joints. Murphy ¶19. However, assuming that stress corrosion cracks do occur as a result of the joints being overexpanded, the cracks will be identified either during inservice inspection or as a result of leaks during service. Id. The stringent Technical Specification limit on allowable primary to secondary leakages ensures that the plant will be shutdown for the appropriate corrective action before degradation could potentially rupture a tube during normal operating or postulated accident conditions. Id.

As demonstrated above, no genuine issue of material fact remains to be resolved with respect to increased probability of tube failures due to slewing. Therefore, the Board should find for the Staff as a matter of

law, grant summary disposition of Decade's Contention 3 and dismiss this contention as a matter in controversy in this proceeding.

Contention 4

Decade's fourth contention reads:

Pre-existing explosive plugs in tubes with through-wall defects, or which are incipient failures, may rock loose in the course of LOCA accident condition providing a pathway for secondary-to-primary in-leakage, by itself or in combination with tube failure pathways, in excess of allowable leak rates for model 44 steam generators or otherwise sufficient to retard reflood of the core.

The Licensee has previously submitted by letter to all parties its notice that it does not intend to sleeve tubes which have previously been plugged with explosive plugs. Colburn ¶27.

Explosive plugs have shown some small indications of leakage (a few drops per minute) and have required further repair (usually seal welding). Colburn ¶28. The maximum force that could be exerted on an explosive plug during a LOCA would be the same as the secondary-to-primary differential pressure, approximately 800 psid, assuming a large through wall defect of the explosively plugged tube. A drilling operation is required for removal of explosive plugs due to the large forces used initially in expanding the explosive plug (several KSI). The maximum force an explosive plug will see during a LOCA is much less than used in installing the plug and should not be enough to cause it to rock loose. Id.

As demonstrated above, there is no genuine issue of material fact remaining to be resolved with regard to other sources of leakage from failing explosive plugs. Therefore, the Board should find for the Staff as a matter of law, grant summary disposition of Decade's Contention 4 and dismiss this contention as a matter in controversy in this proceeding.

Contention 5

Decade's fifth contention states:

Loose parts left behind from steam generator repair work may impact upon and rupture tubes in the unconstrained free standing region, including the region where there is no double primary-to-secondary boundary of sleeve and tube during normal or accident conditions. This will increase the leakage rates which worsen the problems identified in the First and Second Litigable Issues.

Decade has provided no facts to support a finding that the sleeving process could introduce loose parts into the secondary side of the steam generators.

The sleeving repair effort will take place on the primary side of the steam generators. Colburn ¶29. No sleeving repair work will take place on the secondary side of the steam generators. Id. Thus, tubes cannot be damaged on the secondary side by loose parts left as a result of the sleeving process. Id.

Were loose parts to be introduced into the Point Beach steam generators at some future date from some other repair or inspection effort, the presence of sleeves in some tubes would make it less likely that these tubes rather than unsleeved tubes would leak because of

loose-part damage. Colburn ¶30. The sleeves will provide added support to the original tube along the sleeved portion. Id. Loose parts would preferentially locate at or near the top of the tubesheet due to gravitational forces. Id. The sleeves extend above the top of the tubesheet for several inches. Id.

As demonstrated above, there is no genuine issue of material fact remaining to be resolved with regard to other sources of leakage from loose parts in the steam generator. Therefore, the Board should find for the Staff as a matter of law, grant summary disposition of Decade's Contention 5 and dismiss this contention as a matter in controversy in this proceeding.

D. CONCLUSION

For the reasons set forth above, no genuine issues of material fact remain to be resolved with regard to Decade Contentions 1, 2(a), 2(c), 3(a)-(e), 4 and 5.

Therefore, summary disposition of these issues should be granted and the issues should be dismissed as matters in controversy from this proceeding.

Respectfully submitted,



Richard G. Bachmann
Counsel for NRC Staff



Henry J. McGurken
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 16th day of August, 1982

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

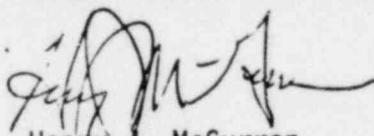
In the Matter of)	
WISCONSIN ELECTRIC POWER COMPANY)	Docket Nos. 50-266
(Point Beach Nuclear Plant,)	50-301
Units 1 and 2))	(Repair to Steam Generator Tubes)

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the captioned matter. In accordance with § 2.713,10 C.F.R. Part 2, the following information is provided:

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Respectfully submitted,


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Dated at Bethesda, Maryland
this 16th day of August, 1982