

January 8, 1980

Mr. Harold R. Denton, Director Office of Nuclear Reactor Regulation U. S. Nuclear Regulatory Commission Washington, D. C. 20555

> Re: Point Beach Nuclear Plant Unit 1 Docket 50-266

Dear Mr. Denton:

Reference is made to the steam generator tube degradation matter involving Point Beach Nuclear Plant Unit 1 and the licensee's letter to you dated December 21, 1979, which appears to be in response to our Request for Mearing on Confirmatory Order, datad December 17, 1979.

There are two issues raised by the licensee's letter, to-wit: (A) the veracity of its representations to the Staff and the Commission in the period November 20-28, 1979 and (B) the adequacy of its hypothesis that the five tubes identified in October 1979 to be defective at or above the top of the tubesheet are of pre-1975 origin. This letter is to respond to those two issues. Questions relating to any culpability on the part of the Staff for omitting pertinent information have been dealt with separately and are not treated here.

(A) VERACITY OF LICENSEE'S REPRESENTATIONS

The matter in controversy concerns the conclusion of the American Physical Society(APS) to the effect that the rupture of between one and ten steam generator tubes during a loss-of-coolant-accident(LOCA) could create essentially uncoolable conditions in the reactor core. (See: Lewis, et al., "Report to the American Physical Society by the American Physical Society by the Study Group on Light-Water Reactor Safety," 47 Review of Modern Physics 1, Summer 1975, at App. 1, \$85-91.)

Point Beach 1 has been and is experiencing degradation of its steam generator tubes to such an extent as to lead to a concern that the number of incipient tube failures at any given moment when a LOCA may occur is sufficient to raise the most serious guestions identified by the APS. (See: Petition of Wisconsin's Environmental Decade, Inc., dated November 14, 1979, In the Matter of Wisconsin Electric Power Company, Docket 50-266, at 3 to 8.)

The licensee in its letter to you dated November 23, 1979, which letter summarized its version of a November 20, 1979 meeting between it, Staff, Westinghouse and ourselves, stated as its basis for refuting this concern and for permitting the plant to continue operating: 90017178 75,0 0 8001140 304 MGEOCE MGEOCE

> "Although Wisconsin's Environmental Decade petition contained a number of statements which we believe are in error, its major safety concern relates to the American Physical Society, Lewis Report, (1975), reference to the potential for steam generator tube failure during a severe LOCA which could adversely affect ECCS performance. Since the present tube degradation problem at Point Beach is confined to the tube sheet crevice area, and since a tube collapse within the tube sheet area cannot occur during a LOCA or otherwise, the possibility of having secondary side inventory interfere with blowdown and reflood during a LOCA does not exist. Insofar as rupture of a tube above the tube sheet during LOCA is concerned, there is nothing in the present or foreseeable steam generator tubing characteristics inspection or operating programs that constitutes a change from previous conditions." (See: Id., at 7, emphasis added.)

The Staff's minutes of the November 20, 1979, meeting, which were distributed on November 23, 1979, similarly show the following in this regard:

"The licensee stated that the LOCA steam binding phenomenon for broken tubes is not applicable to the current Point Beach tube problems, since the tubes are defective below the tube sheet and large leaks cannot occur here. The rest of the SG tubes (above the tube sheet) are not experiencing problems." (See: Id., at 2 to 3.)

The licensee's representations were adopted by the Staff at the November 28, 1979 meeting of the Commission. Mr. Eisenhut, for the Staff, stated to the Commissioners:

"Every piece of evidence we have ever seen shows that all of these defects are in the crevice. They are below the upper surface of the tube sheet."

\* \* \*

"Therefore, while the steam binding question is a good theoretical question, we believe it is not directly applicable to this situation, because we really believe that all the degradation we are seeing is actually with tubes in the tube sheet." (See: Transcript of Public Meeting, 28 November 1979, at 85. See, also: Transcript, at 6, 17, 25, 26, 29 and 39.) 1/

At the same meeting, representatives of the licensee, attorney Gerald Charnoff and executive vice-president Sol Burstein, attended, observed the staff presentation and then made their own presentation. Mr. Charnoff stated:

"If there is any contention between us, it would go <u>only</u> to the frequency and intensity of the surveillance requirements. " \* \* \*

"[W]e have from the outset of this condition and actually over the years kept the staff fully informed of the conditions of the tubes." (See: Id., at 54 and 56, emphasis added.)

1/ To the extent required by 10 C.F.R. 9.103, authorization is requested to cite the above-mentioned portions of the transcript from the November 28, 1979 public meeting.

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No correction was proffered to the Commission by the licensee of the Staff's foregoing statements.

Following the Movember 28, 1979 Commission meeting, the Staff issued its Safety Evaluation Report of the problem, dated November 30, 1979, which stated:

"No crevice indications extending above the tubesheet have been observed to date." (See: Id., at 10.)

No correction was submitted to the Staff by the licensee of this statement.

On December 17, 1979, we submitted a Request for Hearing on Confirmatory Order for several reasons. One reason was that we had just become aware that prior to its representations during November 20-28, 1979, the licensee had identified five tubes with defects not in the crevice region. A question was raised as to whether the licensee had deliberately mislead the Commission in order to secure approval to continue operation.

By letter dated December 21, 1979, 1/ the licensee has submitted its explanation for the apparent misrepresentation of this fundamental matter. Essentially, the licensee's justification is premised upon two contentions: (1) a putative difference between "intergranular attack" and the kind of degradation in the five tubes with defects at or above the top of the tubesheet and (2) a claim that its prior representations only denied the existence of "intergranular attack" above the tubesheet and not the kind of corrosion found in the five tubes.

We believe that the evidence available shows that neither justification is true and only serves to continue the licensee's policy of mendacity.

 Purported Difference Between Intergranular Attack and the Degradation in the Five Tubes

The licensee states in its December 21 letter that it "made no attempt to relate the eddy current inspection results [of the five tubes] with the presense or absense of IGA [in its November 20-28 representations]." (See: Id., at 3.) That is to say, the licensee is attempting to distinguish "intergranular attack" in kind from the degradation in the five tubes with defects at or above the top of the tubesheet such as to explain the failure to mention those five tubes in its November 20-28 representations ostensibly limited to IGA. This purported distinction is a total fabrication. The only difference is not in kind but rather in location.

As stated in the Staff's compendium of the issue, there are assentially three kinds of tube degradation which have been observed to date: (i) wastage or thinning (a generalized form of corrosion attributed to residual acidic phosphates), (ii) intergranular stress corrosion cracking(a stress type of corrosion attibuted to caustic impurities), and (iii) denting(a deformation of the tube wall attributed to corrosion products on the carbon steel support plates). (See: Eisenhut, et al., <u>Summary of Operating Experience with Recirculating Steam Generators</u>, NUREG-0523(1979), at 3 to 4.)

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1/ The letter was mailed to us in a envelop postmarked December 26, 1979.

Thus, "intergranular attack" is not something new and different and unique to the tubesheet crevice and recent experience at Point Beach 1. The only new element here is that the location of intergranular stress corrosion within the tubesheet seems to sometimes evince itself in a modified form apparently due to the constraining effect of the surrounding wall. In some instances, the corrosive attack on the grain boundaries appears to be bi-directional and generalized instead of along a crack. (See: Transcript, op. cit., at 88; Safety Evaluation Report, op. cit., at 12.)

Intergranular attack remains intergranular attack, whether above or below the tubesheet--except that when it is located below the tubesheet, it sometimes may not clearly delineate an attendant, observable crack.

To the same effect, there is no basis for attempting to characterize the degradation in the five tubes as thinning and not intergranular stress corrosion. For, according to the Staff's ECT consultant, with whom we talked on the telephone, no eddy current inspection presently available can distinguish between thinning and IGA in the absense of a single large crack.

Therefore, no justification exists for the licensee's failure to inform the Commission of the five defective tubes in a discussion which it now attempts to characterize as being limited to IGA. And, even if <u>arguendo</u> there were, that kind of hair splitting is inconsistent with a frank and honest exchange of information.

Similarly, the licensee's December 21 claim that it believes "that the defects \* \* resulted from earlier thinning or cracking rather than to the IGA" (see: Id., at 4) has no meaning to the extent that it is meant to imply that different kinds of corrosion are involved to support a vintage argument. For there can be no disputing that the so-called "earlier thinning andcracking" consisted in substantial part of "intergranular attack" and "intergranular corrosion" (see, e.g.: Office of Inspection and Enforcement, <u>TE Inspection Report No. 050-266/75-03</u>, dated April 11, 1975, at 4, 5 and 6), just as the present so-called "crevice corrosion" is a form of "intergranular attack" (see: Safety Twaluation Report, <u>op. cit.</u>, at 5). Thus, the only new element is the location and not the kind of degradation, and, of course, it is the failure to fully inform as to location that raises the most serious questions of wanton misrepresentation.

That same reference to "earlier thinning and cracking" may also be meant to imply that the five tubes were omitted from the November 20-28 representations because those representations at that time were ostensibly limited to new defects and not old defects.

It should be clear that the validity of any such claim is confined to whether the licensee, <u>during the November 20-28 period</u>, construed the five tubes as having old defects and does not reach the issue of whether those defects are, in fact, old.

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In this regard, the licensee's November 23 letter clearly contemplated the five tubes in question, at that time, to be examples of recent crevice corrosion. (See: Id., at Enclosure 1, Viewgraph 1.) This is made unmistakably clear in the licensee's December 21 letter which concedes:

"We had included them [i.e. the five tubes] in the 'crevice corrosion' column of Viewgraph 1, in our November 23 letter based upon preliminary information regarding the number of tubes containing defects and, as we have since determined, this was in error.

"The inclusion of these [five] tubes in the 'crevice corrosion' column of Viewgraph 1, attached to our November 23 letter, is now, in light of this comparison, incorrect." (See: Licensee's December 21, 1979, letter, at 3 and 4, emphasis added.)

That is to say, the licensee's own statements conclusively demonstrate that when it stated in November 20-28, 1979 that all defects were in the crevice, it had no basis, at that time, for believing them to be old defects.

## (2) Purported Limitation of Prior Representtions to Intergranular Attack

The licensee's statement in its December 21 letter also attempts to purport that its November 20-28 statements alleging that corrosion was confined to the tubesheet was specifically limited to corrosion from intergranular corrosion and, thus other kinds of corrosion were properly omitted.

Even if this kind of dichotomy between kinds of corrosion were true(and the preceeding section shows that it is not), it is simply fallacious to contend that the licensee's November 20-28 representations were stated to be narrowly defined to just IGA.

As is cited above, the licensee's oral statement at the November 20, 1979, meeting used the generic term "defects" and "problems" and was not specifically limited to the term "IGA". And the licenseee's written submission of November 23 memorializing its oral presentation uses the term "tube degradation problem" and also was not limited to "IGA". The licensee's selective excerpts from its November 23 letter in its most recent missive are just that--selective excerpts which omit the incriminating passages.

## (B) ADEQUACY OF HYPOTHESIS THAT FIVE TUBES HAVE OLD DEFECTS

The licensee's December 21 letter supports its hypothesis that the defects in the five tubes in question occurred prior to 1975 by stating that the single frequency eddy current test "signals have not changed through three of four annual inspections since 1975." (See: Id., at 4.)

Yet according to the Staff's consultant on ECT, in a telephone conversation with us, single frequency ECT cannot detect any defects in the region between one-half inch above and below the top surface of the tubesheet. Thus, it would appear that the single frequency ECT over the past four years for the five

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tubes recently observed to have defects within one-half inch of the tubesheet has no indicative value whatsoever.  $1\!/$ 

Apparently also in support of its hypothesis, the December 21 letter refers to the fact that the partial multi-frequency ECT examination during the December 11, 1979 outage did not identify any further degradation above the tubesheet, implying that significance can be drawn from this fact. (See: Id., at 4.)

Such an implication is wholly improbable and unwarrented unless there are other independent facts to support it. On December 11, the plant had only been operating at less than 80% of full power and at reduced temperatures for less than eleven days since the prior multi-frequency ECT. The fact that any significant degradation occurred, which it did in approximately thirty-four tubes, in that exceedingly short space of time is extremely disturbing. That the thirty-four tubes which degraded in less than eleven days did not happen to degrade above the tubesheet has no significance.

The fact remains that the licensee is asking us to believe that degradation, some of which is greater than 80% through the wall, remained completely latent without any further corrosion for four or more years. This is highly improbable, to say the least. It is our understanding that the only observed instance of latency has been in facilities which made a clean changeover following shutdown from phosphate to AVT secondary water treatment with thorough sludge lancing. At Point Beach 1, this was not done(see: Safety Evaluation Report, <u>op. cit.</u>, at 4; Transcript, <u>op. cit.</u>, at 90), and the amount of phosphate hideout in the sludge pile has been extremely large, apparently the result of excessive slugging of phosphates during the first years of operation to combat condensor in-leakage (see: Office of Inspection and Enforcement, <u>IE Inquiry Report No. 050-266/75-01</u>, dated March 14, 1975, at 2; Licensee's November 23, 1979 letter, at Enclosure E5-1).

For the foregoing reasons, it is clear that the licensee deliberately misrepresented the facts to the Staff and the Commission in a most critical particular during the period November 20-28, 1979, and that there exists no reliable basis, at the present time, for concluding that the identified defects outside the crevice are of pre-1975 origin or will not be repeated.

Sincerely, WISCONSIN'S ENVIRONMENTAL DECADE, INC.

by Mathleen M. Falk

KATHLEEN M. FALK General Counsel

cc:Commissioners Gerald Charnoff, Esq.

1/ This is as distinguished from multi-frequency ECT which has enhanced capability to detect defects in the boundary area at the top of the tubesheet. Multi-frequency ECT was first performed at Point Beach in October 1979.

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