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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION '88 MAY 18 P4:59

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of
PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.
(Seabrook Station, Units 1 and 2)

} Docket Nos. 50-443 OL-01
50-444 OL-01
(On-site Emergency Planning
and Safety Issues)

NRC STAFF RESPONSE TO NECNP BRIEF
IN SUPPORT OF APPEAL OF MEMORANDUM AND ORDER
RENEWING AUTHORIZATION TO OPERATE AT LOW POWER

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May 17, 1988

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INTRODUCTION

On April 7, 1988, the New England Coalition On Nuclear Pollution (NECNP) filed an appeal of an order issued by the Licensing Board on February 17, 1988 ^{1/} in which the Board held that the contentions remanded by the Appeal Board for further litigation in ALAB-875 ^{2/} were not relevant to low power operations and thus did not have to be resolved before the Board could reauthorize low power operations. Public Service Company of New Hampshire, (Seabrook Station Units 1 and 2) LBP-88-6 27 NRC 245, 255. ^{3/} NECNP appeals this order, relying

^{1/} Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-88-6, 27 NRC 245 (1988) (hereinafter "February 17 Order" or LBP-88-6").

^{2/} Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251 (1987).

^{3/} The Board did not authorize the Director of Nuclear Reactor Regulation to make the appropriate findings and issue a low power license to the Seabrook Station because it was precluded from doing

(FOOTNOTE CONTINUED ON NEXT PAGE)

principally on the argument that the Commission and its adjudicatory boards lack legal authority to authorize low power operations prior to the resolution of all issues material to full power licensing. NECNP Brief In Support Of Appeal Of Memorandum And Order Renewing Authorization To Operate At Low Power (hereinafter "NECNP Brief"), passim. As explained below, this appeal has been mooted in part by NECNP's withdrawal of the subject contention. Further, there is no merit to the arguments advanced by NECNP. A Commission regulation, 10 C.F.R. § 50.57(c), allows the issuance of a low power license where pending contentions are not "relevant to the activity to be authorized." Neither of the remanded contentions (NECNP Contention I.V, relating to inservice inspection of steam generator tubes; and NECNP Contention I.V, concerning accumulation of aquatic organisms and debris in cooling system) is relevant to the activity (operation at 5% of rated power) to be authorized. Consequently, the Board correctly ruled that neither of the remanded contentions posed a bar to the reauthorization of low power operations. Accordingly, NECNP's appeal should be denied and the February 17, 1988 Order should be affirmed.

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

so by the Appeal Board's decision in Public Service of Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-883, 27 NRC 43 (1988). See LDP-80-6, 27 NRC at 255.

BACKGROUND

On November 25, 1987, the Commission issued CLI-87-13 ^{4/} in which it lifted its January 9, 1987 order staying the Director of the Office of Nuclear Reactor Regulation from issuing a low-power license for the Seabrook facility. In its order, the Commission took note of the two contentions that had been remanded for further litigation by the Appeal Board in ALAB-875 and directed the Licensing Board to "expeditiously determine whether, considering the issues that it is hearing on remand, it is appropriate to renew at this time its authorization of low power or whether low power operations must await further decisions." CLI-87-13, 26 NRC at 405. On November 27, 1987, the Licensing Board issued an order directing the parties to file briefs addressing this issue. Memorandum Order (Briefing Schedule) at 1-2 (November 27, 1987).

In its brief, the Staff explained why neither of the remanded contentions constituted a bar to the reauthorization of low power (5% rated level of power) operations. See NRC Staff Response To Licensing Board Order Of November 27, 1987, passim (January 12, 1988). Specifically, the Staff presented the affidavits of experts in the issues raised by the remanded contentions which demonstrated that there was reasonable assurance that the dangers alleged in the remanded contentions would not occur during low power operations. Accordingly, the Staff contended that neither of the remanded contentions was relevant to the low power activity to be reauthorized. The Staff explained that under 10 C.F.R. § 50.57(c), a license to conduct activities short of full power

^{4/} Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), CLI-87-13, 26 NRC 400 (1987).

operations may be authorized prior to the completion of the full power licensing proceeding if none of an intervenor's contentions is "relevant to the activity to be authorized." Id. at 2-7. In their brief, Applicants took a similar approach. See Applicants' Brief In Support Of Low Power Operations, passim (January 4, 1988).

NECNP, on the other hand, did not oppose the reauthorization of low power operations on the ground that the remanded contentions were "relevant to the activity to be authorized." NECNP could have challenged the reauthorization of low power operations on this ground. See 10 C.F.R. § 50.57(c). Instead, NECNP's brief was devoted solely to the argument that the Commission and its adjudicatory boards lack the legal authority to authorize the issuance of any type of license prior to the completion of the full power licensing proceeding. See NECNP Brief In Opposition To Renewal Of Authorization To Operate At Low Power, passim (January 4, 1988). NECNP placed relied on this argment even though this claim had been rejected by the Appeal Board earlier. See Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), supra ALAB-875, 25 NRC at 256; Id., ALAB-865, 25 NRC 430, 439 (1987).

On February 17, 1988, the Board issued an order in which it held that neither NECNP Contention I.V or NECNP Contention IV was relevant to low power operations "inasmuch as the safety concerns raised therein would not adversely impact upon the public health and safety if Seabrook, Unit 1, were to be authorized to operate only up to 5% of rated power." LBP-88-6, 27 NRC at 255. On April 7, 1988, NECNP filed the instant appeal.

Significant developments have occurred subsequent to the filing of the instant appeal. On April 22, 1988, after having failed in its attempt

to broaden the scope of remanded NECNP Contention IV ^{5/}, NECNP notified the Board in writing that "NECNP does not intend to litigate NECNP Contention I.V, on the adequacy of Applicants' program for in-service inspection of steam generator tubing, or NECNP Contention IV, to the extent that Contention IV relates to the adequacy of Applicants' program for monitoring to detect blockage of coolant flow resulting from the build-up of macro-biological organisms." Letter from Andrea Ferster, Esq. to Licensing Board at 1 (April 22, 1988). ^{6/} On April 28, 1988, the Staff responded to NECNP's letter and advised the Board that "[i]n view of NECNP's decision not to prosecute its contentions, the Board should find that Contentions I.V and IV have been abandoned by NECNP and issue an order dismissing both of the contentions." Letter from Gregory Alan Berry, Esq. to Licensing Board at 1 (April 28, 1988). On May 12, 1988,

^{5/} See Memorandum and Order (Denying NECNP's Motion to Compel) (February 17, 1988); Memorandum and Order (Denying NECNP Motion For Reconsideration) (March 18, 1988). In these orders, the Board rejected NECNP's attempt to expand NECNP Contention IV to encompass the subject of microbiologically induced corrosion. The Board ruled that NECNP Contention IV did not embrace the question of corrosion of cooling systems, but rather was limited to the question of blockage of such systems due to the accumulation of aquatic organisms and debris. No distinction was made in the Board's orders between micro-organisms and macro-organisms. February 17, 1988 Memorandum at 5; March 18, 1988 Memorandum at 2. The Board's construction of Contention IV is consistent with the understanding expressed by the Appeal Board in ALAB-875. See ALAB-875, 26 NRC at 262, 275 (NECNP Contention IV is "addressed to the accumulation of aquatic organisms and other foreign matter in cooling system") (emphasis added).

^{6/} Although, NECNP also expressed its intention to appeal "at the appropriate time" the Board's construction of NECNP Contention IV to exclude micro- and macro-biologically induced corrosion, id. at 2, that issue is not presented by the instant appeal.

the Board issued an order dismissing NECNP Contentions I.V IV. See Memorandum and Order at 3 (May 12, 1988).

On April 29, 1988, Applicants filed motions for summary disposition of NECNP's Contentions I.V and IV. On May 6, 1988 NECNP notified the Board that it did not oppose the granting of Applicants' motions but urged the Board to make it clear that summary disposition of NECNP Contention IV was limited to the issue of blockage of cooling systems and did not include the issue of microbiologically induced corrosion. See NECNP Response To Applicant's Motion For Summary Disposition On NECNP Contention IV at 4 (May 6, 1988). In its May 12 order dismissing NECNP's contentions, the Board denied NECNP's request on grounds of mootness. The Board stated it would not issue a decision on Applicants' summary disposition motions because in view of NECNP's abandonment of its contentions, "it would be [a] useless exercise to prepare and to issue a decision[.]" May 12 Order at 3.

ARGUMENT

1. THE INSTANT APPEAL IS MOOTED IN PART BY NECNP'S ABANDONMENT OF ITS CONTENTIONS

NECNP'S appeal rests upon two major arguments. First, NECNP argues that, as a matter of law, the Commission and its adjudicatory boards lack the authority to authorize low power operations prior to the resolution of all issues "relevant to full power operation." See NECNP Brief at 4-23. In the alternative, NECNP maintains that all of its remanded contentions must be resolved before low power operations may be reauthorized. Id. at

23-25. In the present posture of this proceeding, NECNP's latter argument has been mooted. ^{7/}

As noted above, on April 22, 1988, NECNP notified the Licensing Board and the parties that it no longer intended to litigate remanded NECNP Contentions I.V and IV and would not oppose any motions for summary disposition of these contentions filed by Applicants or the Staff. See Letter from Andrea Ferster, Esq. to Licensing Board, supra, at 1. ^{8/} In such circumstances, it is appropriate to dismiss, as the Board has, NECNP Contention I.V and IV. See Statement of Policy On Conduct Of Licensing Proceedings, CLI-81-8, 13 NRC 452, 454 (1981). Thus, to the extent that the instant appeal rests upon the argument that low power operations may not be reauthorized prior to the resolution of NECNP Contentions I.V and IV, the appeal is moot since those contentions no longer present a live controversy.

^{7/} The Board's February 17 Order addressed the issue whether the contentions that had been remanded for further proceedings as of that time precluded reauthorization of low power operations. Subsequent to the issuance of that order, the Appeal Board remanded another of NECNP's contentions for further proceedings. See Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-891, 27 NRC ____ (April 25, 1988) (NECNP Contention I.B.2, relating to environmental qualification of RG-58 coaxial cable). Thus, the February 17 Order did not embrace the question whether the uncertainties surrounding the environmental qualification of RG-58 coaxial cable must be resolved before low power operation could be reauthorized.

^{8/} As noted earlier, NECNP intends to appeal the Licensing Board's construction of NECNP Contention IV "at the appropriate time." The correctness of the Board's construction, however, is not presented on this appeal. See n.5 and n.6, ante.

II. NECNP's LEGAL ARGUMENT IS WITHOUT MERIT

NECNP's other legal argument -- that the Commission and its adjudicatory boards lack authority to authorize low power operations prior to the resolution of all issues material to full power operation is wholly lacking in merit and should be rejected summarily.

Both the Appeal Board and the Commission already have ruled that authorization to commence low power operations need not as a matter of law await the completion of a full power operating license proceeding. See e.g. Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437 (1984); Id., CLI-83-17, 17 NRC 1032 (1983); Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251 (1987); Id., ALAB-865, 25 NRC 430, 439 (1987). These determinations are dispositive and in view of these precedents, NECNP's argument should be rejected.

As section 50.57(c) of the Commission's regulations explicitly provides, "[a]n applicant may, in a case where a hearing is held in connection with [an operating license] proceeding . . ., make a motion in writing . . . for an operating license authorizing low power testing . . . and further operations short of full power." 10 C.F.R. § 50.57(c); see Shoreham, supra, CLI-84-21, 21 NRC 1437. ^{9/} Low power operation, of course, is an operation "short of full power." The validity of section 50.57(c) is not subject to attack in this forum. 10 C.F.R. § 2.758(a); see ALAB-875, supra, 26 NRC at 256 (adjudicatory boards "lack the

^{9/} NECNP's suggestion (NECNP Brief at 5, n.7) that this interpretation of section 50.57(c) is of recent vintage is erroneous. See e.g. Duquesne Light Company (Reaver Valley Power Station, Unit 1), LBP-76-3, 3 NRC 44, 45 (1976).

authority to strike down a Commission regulation"). NECNP's argument that the Licensing Board lacked legal authority to reauthorize low power operations prior to the resolution of NECNP Contentions I.V and IV therefore must be rejected.

III. THE LICENSING BOARD'S ORDER IS SUPPORTED BY THE RECORD

In view of the foregoing, the instant appeal may and should be denied without deciding whether the record supports the Board's finding that neither of remanded NECNP Contentions I.V or IV is relevant to the low power operations. Moreover, NECNP does not challenge on this appeal the merits of the Board's determination that neither NECNP Contentions I.V nor IV is relevant to issuance of a low power license. However, in the event the Appeal Board determines that it is necessary to address the merits of the Board's decision, the Staff here shows that the Board's finding on relevance was correct. As discussed below, the public health and safety is not threatened during low power operations by the dangers raised by NECNP Contentions I.V and IV. Consequently, neither of the contentions is relevant to the activity to be authorized, the sole ground upon which a request to conduct operations short of full power in advance of the completion of a full power operating license proceeding may be opposed. See 10 C.F.R. § 50.57(c).

On February 17, 1988, pursuant to the directions of the Appeal Board^{10/} and the Commission^{11/} "to expeditiously determine" whether low power operations should be reauthorized prior to the completion of the

^{10/} CLC-87-100, 26 NRC at 276.

^{11/} CLC-87-100, pra, 26 NRC at 405.

remand proceeding on NECNP Contentions I.V and IV, the Licensing Board issued an order ruling that "the two remanded contentions are not relevant to low power operations inasmuch as the safety concerns raised therein would not adversely impact upon the public health and safety if Seabrook, Unit 1, were to be authorized to operate only up to 5% of rated power." LBP-88-6, 27 NRC at 255. This conclusion is supported by substantial, reliable, and uncontroverted evidence and should be affirmed by the Appeal Board.

A. Legal Standards Governing Low Power Operations

Section 50.57(c) of the Commission's regulations permits an applicant in a contested operating license proceeding to move the licensing board to authorize the Director of the Office of Nuclear Reactor Regulation (NRR) to issue a license "permitting activities short of full power operation, notwithstanding the pendency of safety contentions before the licensing board." Commonwealth Edison Company (Braidwood Nuclear Power Station, Units 1 and 2), LBP-86-31, 24 NRC 451, 453-54 (1986). Section 50.57(c) was promulgated "to provide explicitly for early consideration of facility testing in the event of a contested hearing on the issuance of a license for full power operation." Id. at 454, citing 36 Fed. Reg. 8862 (May 14, 1982). Thus, as noted by the licensing board in Braidwood, "the regulation affords relief to an applicant when the pendency of hearings before a licensing board threatens to delay the applicant's fuel loading and testing schedule." Id.

Section 50.57(c) provides that if an applicant's request for authorization to conduct activities short of full power operation is not opposed, the licensing board shall issue an order authorizing the Director

of NRR, after making the findings required by section 50.57(a), to grant the license for the requested operation. Id. The sole ground for opposing a request made pursuant to section 50.57(c) is that the "§ 50.57(a) findings cannot be made for the requested authority because [a party's contention] is relevant to those operations and must therefore be resolved prior to the issuance of the § 50.57(c) license." Id.; see also Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437, 1439 (1984) (in passing upon a section 50.57(c) motion, the regulation involved "must be examined to determine its application and effect for fuel loading or some phase of low power testing"). In such cases, the licensing board must determine whether the contention is in fact relevant to the requested operation, and if it finds that the contention is relevant, section 50.57 provides that the board itself make those section 50.57(a) findings "as to which there is a controversy" because of the pendency of a relevant contention. 10 C.F.R. § 50.57(c).

On the other hand, if the licensing board finds that the admitted contentions are not relevant to the requested operation, and therefore need not be resolved before the requisite section 50.57(a) findings can be made, the board does not make any section 50.57(a) findings, but authorizes the Director of NRR to do so. Id., citing 10 C.F.R. § 50.57(c), Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-81-15, 13 NRC 226, 233 (1981), and Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-83-27, 18 NRC 1146, 1149-50 (1983).

Since NECNP opposed the reauthorization of low power operations the Board was required to determine at the threshold whether either NECNP's Contentions I.V or IV was "relevant to the requested operation[.]" Braidwood, supra, 24 NRC at 434. It should be noted that the test of "relevance" is not whether the contention relates to the conduct of the proposed activity, but rather whether it poses an issue relating to the safe conduct of the proposed activity. Braidwood, supra, 24 NRC at 455; see Shoreham, supra, 20 NRC at 1439. As the board explained in Braidwood:

[T]he test for relevancy, under § 50.57(c) as is general, is whether, if the matters were heard, they could result in a finding adverse to the other party -- in this case under § 50.57(a). Since only matters inimical to the public health or safety can be decided adversely to Applicant under § 50.57(a), and Intervenor has made no showing that their admitted contention raises a safety matter with regard to fuel loading and precritical testing [the activities sought to be authorized], they have failed to establish that the contention is relevant to the requested license.

24 NRC at 456. Stated another way: unless the public health and safety is threatened by the danger posed by the admitted contentions in the event the activity sought to be authorized commences, the contentions simply are not relevant. See Shoreham, supra, 20 NRC at 1439. The Board correctly concluded that remanded NECNP contentions I.V and IV did not raise a safety matter with regard to low power operations and thus were not relevant to the activity to be authorized.

B. NECNP Contention I.V Did Not Raise A Safety Concern With Regard To Low Power Operations

NECNP Contention I.V alleges that:

The Applicants have not demonstrated that they have met GDC 14, 15, 31, and 32 insofar and to the extent that those GDC require a program of in-service inspection of steam generator tubes.

The gravamen of this contention is that in the absence of an adequate inservice inspection program, cracking or leaking steam generator tubes may go undetected and uncorrected which might result in a tube rupture causing a steam generator safety valve(s) to open and risking the release of radioactive gases. As explained below, the record supported the Board's conclusion that there was reasonable assurance that the dangers presented by NECNP's scenario would not occur during low power operations.

General Design Criterion 32 requires that:

Components which are part of the reactor coolant pressure boundary [RCPB] shall be designed to permit (1) periodic inspection and testing of important areas and features to assess their structural and leaktight integrity, and (2) an appropriate material surveillance program for the reactor pressure vessel.

10 C.F.R. Part 50, Appendix A, Criterion 32. Applicants' program for inservice inspection of steam generator tubes satisfies these requirements. See Affidavit of Herbert F. Conrad at A4-A5, attached to NRC Staff Response To Licensing Board Order of November 27, 1987 (January 12, 1988). In this regard and as documented in NUREG-0986, the Safety Evaluation Report for the Seabrook Station, the pressure retaining parts of the steam generators have been designed "to meet the ASME Code requirements for ASME Code Class 1 components." NUREG-0986 at 5.4.2.2.2. In addition, Applicants' inservice inspection program provides for the "inservice inspection of Class 1 and 2 components, including individual steam generator tubes." Conrad Affidavit at A4-A5. In addition, Applicants have "committed to following the recommendations of Regulatory Guide 1.83, Rev. 1, "Inservice Inspection Of Pressurized Water Reactor Steam Generator Tubes," as well as the standard technical specifications for Westinghouse Pressurized Water Reactors set forth in NUREG-0452. Id.

Finally, Applicants have committed to conduct the required inservice inspections of steam generator tubes in accordance with the requirements set forth in section XI of the ASME Code. NUREG-0986, § 5.4.2.2.; Conrad Affidavit at A4. As Mr. Conrad's affidavit indicated, the Staff has determined that collectively the measures described above "constitute an acceptable basis for meeting, in part, the requirements of GDC 32." Id.

The proffered basis for NECNP Contention I.V is that a steam generator tube rupture occurred at the Ginna facility notwithstanding that licensee's adherence to Regulatory Guide 1.83. This circumstance did not compel the conclusion that NECNP Contention I.V must be resolved before the Board reauthorized low power operations at the Seabrook Station.

The tube rupture at the Ginna facility was caused by the presence of a foreign object inadvertently left in a steam generator tube. Conrad Affidavit at A6; NUREG-0909, "MRC Report On The January 25, 1982 Steam Generator Tube Rupture At R.E. Ginna Nuclear Power Plant" (April 1982). This occurrence is unlikely to repeat itself at the Seabrook Station. As both Mr. Conrad and Gregory Kann, the Program Support Manager at the Seabrook Station, observed, in April 1986, the Seabrook Station's secondary side steam generator internal areas were inspected and all debris or foreign objects observed were removed. Affidavit of Gregory Kann at ¶ 11, attached to Applicants Brief In Support of Low Power Operations (January 4, 1988). See Conrad Affidavit at A6. In addition, rigorous controls were adopted to ensure that any clothing worn or material used during this inspection was not left behind inadvertently. Id. Finally, Applicants have in place a system which permits them during plant operation to monitor and detect any "loose parts" which might pose a

threat to the integrity of the steam generator tubes. Id.; Kann Affidavit at ¶ 12; see Seabrook Final Safety Assessment Report (FSAR), § 4.4.6.4. In the opinion of the Staff's expert in this area, Mr. Conrad, the measures described above "provide reasonable assurance that a rupture caused by a loose part, similar to that experienced at Ginna, will not occur at Seabrook." Conrad Affidavit at A6.

Mr. Conrad also explained why there was even less likelihood of a Ginna type steam generator tube rupture occurring at 5 percent power than there is at 100 percent or full power. Conrad Affidavit at A9. "The rate of fluid flow at 5 percent power would greatly reduce the driving force that could be caused by such a postulated loose part[.]" Id. "Fluid flow" in this context means the motion of the water circulating within the steam generator. The lower the power level, the slower the flow of fluid and hence the weaker the force of the postulated loose part. Consequently, in the unlikely event that a part became loose or a foreign object was left in a steam generator, it extremely unlikely that such occurrence would result in a rupture similar to that experienced at the Ginna facility. Id.

In July 1987, the North Anna facility experienced a steam generator tube rupture. Conrad Affidavit at A7. This rupture was caused by "fluid flow induced vibration fatigue." Id. The Seabrook Station, however, is not susceptible to this type of failure. Id. This is because, unlike the North Anna facility, the steam generator tube support plates used at the Seabrook Station are not made of carbon steel. Id.; NUREG-0986, § 5.4.2.1. Carbon steel support plates contain drilled holes, which are

susceptible to the corrosion process known as "denting." ^{12/} In contrast, the tube support plates used at the Seabrook Station are made of highly corrosion-resistant ferritic stainless steel which is not vulnerable to rust. Conrad Affidavit at A7. Additionally, the Seabrook tube support plates utilize "broached," rather than drilled, holes. Id.; NUREG-0986, § 5.4.2.1. "The broached-hole design promotes high-velocity flow along the tube, sweeping impurities away from support plate locations." Id. The invulnerability to rust and the use of broached holes means that there is no reasonable danger that the Seabrook steam generator tubes will experience the "denting" phenomena, which led to the North Anna steam generator tube rupture. Conrad Affidavit at A7.

Moreover, as with a Ginna type of rupture, there is even less likelihood that a North Anna type of rupture will occur at the Seabrook Station during low power operations. This is because the reduced rate of fluid flow at 5 percent power is not sufficient to cause the "flow induced vibrations which caused the North Anna tube rupture." Conrad Affidavit at A9.

Finally, it should be noted that the Seabrook Technical Specifications provide that the first inservice inspection of the steam generators be performed six months after full power operations commence or within 24 months of initial criticality, whichever occurs first. Conrad

^{12/} "Denting" refers to the growth of the iron oxide corrosion product in the annulus between the tube and the drilled hole which can result from deformations in the tube caused by gripping or squeezing the tube. See NRC Staff Response To New England Coalition On Nuclear Pollution's First Set Of Interrogatories And Request For The Production Of Documents To The NRC Staff On NECNP Contentions I.V And IV at 7 (December 7, 1987).

Affidavit at A8. Low power operations would not alter this requirement. Id. Nor would low power operations make inservice steam generator tube inspections more difficult to perform or augment. Id. In fact, as Mr. Conrad pointed out, the requirement that "the full length of each tube in each of the four steam generators be eddy current inspected from the point of entry on the hot leg side completely around the U-bend to the top support of the cold leg" provides "additional assurance of steam generator tube integrity for the initial period of operation until the first inservice inspection[.]" Id. None of these facts was controverted by NECNP. Since the record established that no safety issue was presented by NECNP Contention I.V with respect to low power operations, the Licensing Board's conclusion was correct and should be affirmed.

C. NECNP Contention IV Did Not Raise A Safety Concern With Regard To Low Power Operations

NECNP Contention IV alleges that:

The Applicant must establish a surveillance and maintenance program for the prevention of the accumulation of mollusks, other aquatic organisms, and debris in cooling system in order to satisfy the requirements of GDC 4, 30, 32, 35, 36, 39, and 39, which require the maintenance and inspection of reactor cooling systems. The design, construction, and proposed operation of Seabrook fail to satisfy these requirements.

NECNP argued before the Licensing Board that this contention "strikes to the very core of plant safety." According to NECNP, in the absence of an adequate surveillance and monitoring program, aquatic organisms and debris might accumulate in the Seabrook cooling systems "which will impair these safety systems, or cause them to fail altogether." Id. at 30.

NECNP's assertion did not demonstrate that this contention raised a safety issue with regard to low power operations. As explained below, Applicants in fact have an adequate surveillance and monitoring program to prevent

the accumulation of aquatic organisms and debris in the Seabrook cooling systems. Moreover, it is extremely unlikely that the danger posited by NECNP will arise during low power operations.

An effective program to prevent the accumulation of aquatic organisms and debris (i.e., "biofouling") consists of three elements: first, a properly designed cooling and service water system; second, a water treatment program; and third, proper surveillance and monitoring. See Affidavit of Dr. Michael T. Masnik at A4, attached to NRC Staff Response To Licensing Board Order of November 27, 1987 (January 11, 1988). Applicants' program includes each of these elements and, according to the Staff's expert, Dr. Masnik, is "sufficient to control biofouling of the [service and cooling water] systems and to detect any significant degradation of the systems due to biofouling." Id. at A5. ^{13/}

With regard to the design element, the Seabrook Station has been designed to include a "midwater intake structure," which among other things greatly reduces the intake of debris and macro-organisms, including mollusks. Id. This intake structure is coated with an anti-fouling agent which discourages the attachment of aquatic organisms. Id. Also installed upstream from the individual room and component heat exchangers are screening devices to prevent flow blockage. Id. These devices are capable of screening out objects as small as 3/8 inches square in size.

^{13/} Additionally, in NUREG/CR-3054, "Closeout of IE Bulletin 81-03: Flow Blockage of Cooling Water to Safety System Components by Corbicula sp. (Asiatic Clam) and Mytilus sp. (Mussel)" (June 1984), the Staff determined that Applicants' had an "acceptable program to confirm adequate flow rates in the safety-related systems." Id. at B-9. An inadequate flow rate is the danger presented by biofouling. See Id. at 1.

Affidavit of Norman Wagner at A7, attached To NRC Staff Response To Licensing Board Order of November 27, 1987 (January 12, 1988).

The second element of an effective biofouling prevention plan -- water treatment -- also has been incorporated into Applicants' biofouling control program. Masnik Affidavit at A5. In his affidavit, Dr. Masnik explained that, typically, a water treatment program consists of chlorinating the cooling water with a solution of sodium hypochlorite injected into the system as far upstream as possible in a concentration sufficient to destroy aquatic organisms downstream from the point of injection. Id. at A4. Applicants' biofouling control program includes this technique. Id. at A5; Wagner Affidavit at A6. Another water treatment technique employed in the nuclear industry is thermal backflushing. Masnik Affidavit at A4. This technique consists of reversing the flow in the cooling system and elevating the temperature of the water. Id. According to Dr. Masnik, elevated temperatures will result in virtually 100 percent mortality to all macro and micro fouling organisms. Id. The Seabrook Station is designed to allow Applicants to employ this technique. Id. at A5; Wagner Affidavit at A6.

The third element of an adequate biofouling control plan is proper surveillance. Masnik Affidavit at A4. An effective surveillance program ideally includes backpressure measurements, heat rejection tests, and pump head testing. Id. Additionally, periodic visual inspections of the systems components including the intake structure, travelling screens, intake inlet and outlet water boxes, inlet and outlet heat exchanger water boxes should be conducted. Id. Finally, the biofouling control system should be monitored to ensure that reduced flow or blockage does not

occur. Id. Applicants' surveillance program is described in the affidavit of Winthrop B. Leland, who is the Chemistry and Health Physics Manager at the Seabrook Station. See Affidavit of Winthrop B. Leland at ¶ 8, attached to Applicants Brief In Support Of Low Power (January 4, 1988). The Staff has reviewed Applicants' surveillance program and found it acceptable. Masnik Affidavit at A5; see Wagner Affidavit at A7.

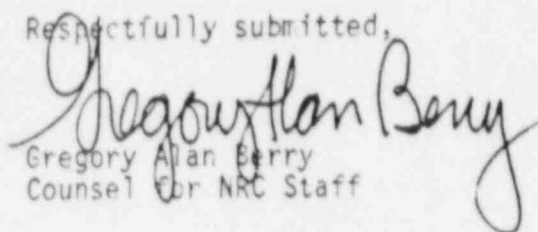
The record also supported the Board's conclusion that it is unlikely that mollusks, other aquatic organisms, or debris in an amount sufficient to raise a safety issue will accumulate during low power operations. Low power operations are likely to result in decreased biofouling. This is because the rate of biofouling caused by aquatic organisms is dependent on several factors, including environmental conditions such "salinity, water temperature, light, availability of food, and frequency and degree of submergence[.]" Masnik Affidavit at A6. According to Dr. Masnik, with the exception of water temperature, operation at 5 percent power "would not have a significant effect" on any of these environmental conditions at the Seabrook Station. Id. However, since the growth rate of aquatic organisms is "highly dependent" on water temperature, "operation of the facility at 5 percent of rated power would result in much slower growth rates in most of the [cooling and service water] systems than at 100 percent power[.]" Id. Thus, there is reasonable assurance that the danger posited by NECNP Contention IV will not occur during low power operations. NECNP, although maintaining it wished to introduce evidence of biologically induced corrosion, offered no evidence to show that the accumulation of mollusks, other aquatic organisms, and debris in the cooling systems could affect the safe operation of the Seabrook Station

during low power operation. Therefore, the Licensing Board's conclusion that NECNP Contention IV was not relevant to low power operations is supported by the record and therefore should be affirmed.

CONCLUSION

NECNP's appeal presents two issues: First, whether the reauthorization of low power operations is precluded pending the resolution of NECNP Contention I.V and IV, and second, whether the Commission and its adjudicatory boards lack legal authority to authorize low power operations prior to the resolution of all issues material to full power licensing. The first issue has been mooted by NECNP's decision to abandon NECNP Contentions I.V and IV and the Board's subsequent order dismissing those Contentions from the proceeding. The second issue is without merit since it is well settled that activities short of full power may be authorized where it is shown that none of the safety contentions pending are relevant to the activity to be authorized. Accordingly, the Appeal Board should deny NECNP's appeal and affirm the February 17, 1988 order.

Respectfully submitted,


Gregory Allan Berry
Counsel for NRC Staff

Dated at Rockville, Maryland
this 17th day of May 1988

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USNRC

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION '88 MAY 18 P4:59

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD
OFFICE OF THE SECRETARY
VICE
BRANCH

In the Matter of
PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.
(Seabrook Station, Units 1 and 2)

Docket Nos. 50-443 OL-01
50-444 OL-01
On-site Emergency Planning
and Safety Issues

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO NECNP BRIEF IN SUPPORT OF APPEAL OF MEMORANDUM AND ORDER RENEWING AUTHORIZATION TO OPERATE AT LOW POWER" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, by deposit in the Nuclear Regulatory Commission's internal mail system, this 17th day of May 1988.

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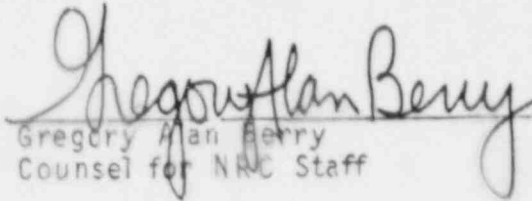
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