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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF REGULATORY
DOCKETING & SERVICE
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

NRC STAFF RESPONSE TO LICENSING BOARD ORDER OF JULY 1, 1988

INTRODUCTION

In an order issued on June 29, 1988, the Commission directed the Licensing Board to "determine whether the remanded coaxial cable issue [remanded NECNP Contention I.B.2] need be resolved before low-power operations." Order at 1 (June 29, 1988) (unpublished). Two days later, the Licensing Board issued an order directing that briefs addressing this question be filed by Applicants and Intervenors by July 22, 1988, and by the Staff by July 27, 1988. See Order at 1-2 (July 1, 1988) (unpublished).

As explained in the following sections of this brief, the Staff is not now in a position to state unequivocally that remanded NECNP Contention I.B.2 is relevant to low power operations. This is because while the environmental qualification requirements of 10 C.F.R. § 50.49 are as a general matter applicable to low power operation, Applicants have offered testimonial and documentary evidence intended to demonstrate that the electrical equipment which is the subject of remanded NECNP Contention I.B.2 -- RG-5E coaxial cable -- is not needed to operate the Seabrook

Station safely at low-power. ^{1/} Since this information was made available to the Board and parties less than a week ago, the Staff has not reviewed or evaluated Applicants' claim. ^{2/}

In the event the Board were to find that remanded NECNP Contention I.B.2 is relevant to low power operation, 10 C.F.R. § 50.57(c) requires that the Board first make the reasonable assurance findings required by 10 C.F.R. § 50.57(a) before reauthorizing low power operations at the Seabrook Station. As explained in this brief and in the attached affidavit of Harold Walker, the Board can and should find that there is reasonable assurance the concern raised by remanded NECNP Contention I.B.2 will not threaten the public health or safety during low power operations.

DISCUSSION

A. Legal Standards

It is well settled that authorization to commence low power operations need not as a matter of law await the completion of a full power operating license proceeding. 10 C.F.R. § 50.57(c); see e.g. Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-83-17, 17 NRC 1032 (1983); Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-892, 28 NRC ____ (May 24, 1988).

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- ^{1/} See Applicants' Memorandum In Support of Permitting Low Power Operation Prior To Resolution Of "Coaxial Cable" Issue, passim, (July 22, 1988).
- ^{2/} In view of the Staff's position that the existing record contains sufficient evidence for the Board to resolve remanded NECNP Contention I.B.2 favorably to Applicants, see Part C, ante, the Staff believes that a comprehensive review and evaluation of the information submitted by Applicants is not necessary. See attached Affidavit of Harold Walker at ¶ A4.

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); accord ALAB-892, supra, slip op. at 9-12. 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." Braidwood, supra, 24 NRC at 454, citing 36 Fed. Reg. 8862 (May 14, 1982). Thus, "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.; see also ALAB-892, supra, slip op. at 11 (The Commission's purpose in expediting the decisional process is furthered if section 50.57(c) "is read as authorizing low-power operation on the strength of a determination that the requisite assurance exists that such low-power operation will not endanger the public health and safety").

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. Braidwood, supra, 24 NRC at 454. 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 Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437, 1439 (1984) (in passing upon a § 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(c) provides that the board itself make those § 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); Braidwood, supra 24 NRC at 454.

On the other hand, if the licensing board finds that the pending contention is not relevant to the requested operation, and therefore need not be resolved before the requisite § 50.57(a) findings can be made, the board does not make any § 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 Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-81-15, 13 NRC 226, 233 (1981), and Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-83-27, 18 NRC 1146, 1149-50 (1983).

NECNP opposes the reauthorization of low power operations. See NECNP Brief In Opposition To Authorization Of Low Power Operation At Seabrook Nuclear Power Plant (July 21, 1986). Thus, the Board must determine at the threshold whether remanded NECNP Contention I.B.2 is "relevant to the requested operation[.]" Braidwood, supra, 24 NRC at 454. If the

contention is not relevant, it poses no bar to the reauthorization of low power operations. Id.; see ALAB-892, supra, slip op. at 10; Shoreham, supra, CLI-84-21, 20 NRC at 1439. On the other hand, if the Board finds that remanded NECNP Contention I.B.2 is relevant to low power operation, it must make the reasonable assurance findings required by 10 C.F.R. § 50.57(a) before low power operation may be reauthorized. The Staff will address both of these issues in the following sections of this brief.

B. The Relationship Between Remanded NECNP Contention I.B.2 And Low Power Operations

As indicated in the attached affidavit of Harold Walker, as a general proposition, the Staff considers the requirements of 10 C.F.R. § 50.49 to be applicable during low power as well as full power operation. Affidavit of Harold Walker at ¶ A4 ("Walker Affidavit"). As Mr. Walker states, "[t]he basis for this position is that were an accident to occur at low-power (less than 5% rated power), there is the potential for failure of safety-related and nonsafety-related electrical equipment (as discussed in 10 C.F.R. § 50.49(b)) when subjected to a harsh environment. Such equipment is relied upon to remain functional during and following postulated events to ensure the integrity of the reactor coolant pressure boundary, to safely shut down the reactor and maintain it a safe shutdown condition, and to prevent or mitigate the consequences of accidents that could result in potential offsite exposure." Id. Thus, based on the

information currently available to it, the Staff considers remanded NECNP Contention I.B.2 relevant to low power operations. ^{3/}

It should be noted, however, that remanded NECNP Contention I.B.2 focuses not on electrical equipment in general but rather on a single type of electrical equipment: RG-58 coaxial. Accordingly, the Staff acknowledges the possibility that a review of the particular applications of RG-58 at the Seabrook Station may result in a determination that the environmental qualification of RG-58 cable is not essential for safe operation of the facility at low power. Id. In making this evaluation, the Staff would conduct a review, similar to that described in NRC Generic Letter 88-07, to determine whether failure of the subject RG-58 cables under accident conditions during low-power operation would result in significant degradation of any safety function or provide misleading information to plant operators. Id. In view of the Staff's position that the existing record is sufficient to enable the Board to resolve remanded NECNP Contention I.B.2 favorably to Applicants (see Part C, ante), the Staff believes it is unnecessary to evaluate whether environmental qualification of the 126 RG-58 cables (12 of which have been replaced with

^{3/} NECNP argues that because the pending contention is relevant to full power operation, it necessarily is relevant to low power operation. See NECNP Brief In Opposition To Authorization Of Low Power Operation At Seabrook Nuclear Power Plant at 3 (July 21, 1988). There is absolutely no merit to this assertion. As the Appeal Board made clear in ALAB-892, 28 NRC ____ (May 24, 1988), a party opposing a section 50.57(c) motion has an affirmative obligation to demonstrate that its contention is relevant not to full power operation, but to the "activity to be authorized," in this case low power operation. ALAB-892, slip op. at 10-11. NECNP has not even attempted to make this showing.

RG-59 coaxial cable) installed in the Seabrook Station is essential to operate the facility safely at low power. Id. ^{4/}

C. The Licensing Board Can And Should Resolve Remanded NECNP Contention I.B.2 Favorably To Applicants

As noted earlier, where a pending contention is relevant to low power operation, section 50.57(c) requires a licensing board to make the reasonable assurance findings specified in section 50.57(a) before authorizing low power operation. For the reason stated below, the Board can and should find reasonable assurance that the concern raised by remanded NECNP Contention I.B.2 will not threaten the public health or safety during low power operation.

The gravamen of the remanded contention is that the environmental qualification of the RG-58 cable installed in the Seabrook Station is indeterminate, the consequence of which is a violation of 10 C.F.R. § 50.49. As explained below, Applicants have satisfied all environmental qualification requirements applicable to RG-58 coaxial cable.

Section 50.49 governs the environmental qualification of electrical equipment important to safety. 10 C.F.R. § 50.49. An item is considered "important to safety" if it (i) has an accident mitigation function; (ii) its failure under postulated environmental conditions could prevent satisfactory performance of safety related equipment relied upon to remain functional during and subsequent to design basis events; or (iii) involves

^{4/} Indeed, on July 22, 1988, Applicants submitted information intended to demonstrate that the RG-58 coaxial cables installed at the Seabrook Station are not relevant to low-power operation; the Staff, however, has not reviewed or evaluated this information and, as indicated above, does not believe it is necessary to do so.

"certain post-accident monitoring equipment." 10 C.F.R. § 50.49(b)(1-3). However, not every item of electrical equipment which is "important to safety" need be environmentally qualified in accordance with 10 C.F.R. § 50.49. Paragraph (c)(3) provides that "[r]equirements for . . . (3) environmental qualification of electric equipment important to safety located in a mild environment are not included within the scope of this section." 10 C.F.R. § 50.49(b)(3). A "mild" environment is defined as "an environment that would at no time be significantly more severe than the environment that would occur during normal plant operation, including anticipated operational occurrences." Id. In view of the foregoing, electrical equipment must be environmentally qualified in accordance with 10 C.F.R. § 50.49 if it (1) is "important to safety" as that phrase is defined in section 50.49(b)(1-3) and (2) is located in a harsh (i.e., non-mild) environment. Unless both of these conditions exist, the electrical equipment item need not be environmentally qualified.

Applicants recently conducted a review of their records relating to RG-58 coaxial cable installed at the Seabrook Station. See Affidavit of Richard Bergeron at ¶¶ 3-6, attached to Applicants' "Suggestion Of Necessity" (May 19, 1988) ("Bergeron Affidavit"). This review revealed that 126 RG-58 cables had been installed. Id. The review also indicated that each of the identified cables fell within one of five categories. Id. As the attached affidavit of Harold Walker indicates, the Staff has reviewed and is satisfied with the methodology used by Applicants to identify these cable installations and thus is reasonably assured that Applicants have succeeded in identifying and locating all of the installed RG-58 cables. See Walker Affidavit at ¶ A6. The Staff has also reviewed

and finds acceptable the methodology by which Applicants assigned each RG-58 cable to one of the five category groupings. Id. As explained below, for each of these groupings, the requirements of 10 C.F.R. § 50.49 have been satisfied or are inapplicable.

1. Applicants' RG-58 Cable Category Groupings

a. Spare RG-58 Coaxial Cables

According to Applicants' expert, Mr. Bergeron, 19 of the 126 installed RG-58 coaxial cables are spares. May 26, 1988 Bergeron Affidavit at ¶ 9. According to Mr. Bergeron, none of these cables need be environmentally qualified pursuant to 10 C.F.R. § 50.49 because, inter alia, they "are not functioning or energized and therefore do not pose any threat to other cables in the same raceway." Id. at ¶ 14. Mr. Bergeron further states that before a spare RG-58 cable may be used, "a design change has to be initiated prior to its incorporation into the plant design." Id.

The Staff agrees that spare cables need not meet the requirements of 10 C.F.R. § 50.49. See Walker Affidavit at ¶ A6. As noted above, the Commission's environmental qualification requirements do not apply to nonsafety related electrical equipment unless the failure of such equipment under postulated environmental conditions could prevent satisfactory performance of safety related equipment relied upon to remain functional during and after a design basis event. See 10 C.F.R. § 50.49(b)(2). An electrical cable that is not energized or functional does not present any threat to the ability of other electrical cables or components to perform their safety functions during or subsequent to an accident. Consequently, such cables are not "important to safety" as that

phrase is defined in 10 C.F.R. § 50.49(b) and thus need not satisfy the environmental qualification standards even if located in a harsh environment.

b. RG-58 Coaxial Cables Routed Through A Harsh Environment

Applicants have identified twelve RG-58 coaxial cables routed through harsh environments. Bergeron Affidavit at ¶ 9. Applicants state that these cables must comply with the environmental qualification requirements of 10 C.F.R. § 50.49. Id. at ¶ 15. These cables, however, have been replaced with RG-59 coaxial cables. See e.g. Walker Affidavit at ¶ A6. Although the environmental qualification of RG-59 cable is not subject to dispute in this remand proceeding, see ALAB-886, 27 NRC 1 (1988); Tr. 1180, the Staff independently reviewed the environmental qualification test results for RG-59 cable and concluded that the requirements of 10 C.F.R. § 50.49 had been met. See Affidavit of Amritpal Gill and Harold Walker, passim, attached to NPC Staff Response To NECNP Motion To Reopen Record And Admit New Contention (February 17, 1988); Walker Affidavit at ¶ A6. For these reasons, there is reasonable assurance that the 12 cables located in a harsh environment are environmentally qualified in accordance with 10 C.F.R. § 50.49. ^{5/}

^{5/} As the Staff previously has explained (see NRC Staff Response To NECNP First Set Of Interrogatories And Request For The Production Of Documents To NRC Staff On NECNP Contention I.B.2 at 8 (July 20, 1988)), the functional adequacy of RG-59 coaxial cable as a replacement for RG-58 coaxial cable is not germane to the environmental qualification issue pending before the Board. It is the responsibility of Applicants to conduct adequate evaluations of all nonsafety applications for functional requirements and compatibility. In the case of RG-58 and RG-59 coaxial cables,

(FOOTNOTE CONTINUED ON NEXT PAGE)

c. RG-58 Coaxial Cables Located In A Mild Environment

Applicants' expert, Mr. Bergeron, states that 76 of the 126 installed RG-58 coaxial cables are not subject to the requirements of 10 C.F.R. § 50.49 because they are located in mild environments. Bergeron Affidavit at ¶¶ 9, 12. The Staff agrees with Applicants that these RG-58 cables are located in a mild environment. See NRC Staff Response To NECNP First Set Of Interrogatories, supra, at 3; Walker Affidavit at ¶ A6. Section 50.49(c)(3) provides that electrical equipment important to safety located in mild environments is not subject to the environmental qualification requirements set forth in 10 C.F.R. § 50.49. See 10 C.F.R. § 50.49(c)(3).

d. RG-58 Coaxial Cables Routed With Other Nonsafety-Related Cables Outside The Nuclear Island

Ten RG-58 coaxial cables are routed with other non-safety related cables outside the Seabrook nuclear island according to Mr. Bergeron. Bergeron Affidavit at ¶ 9. Among the structures included in the Seabrook nuclear island are the containment, control room, fuel storage, diesel generator, and primary auxillary buildings. See Seabrook FSAR, Figure

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

Applicants evaluated the 12 RG-58 circuits in question to assess whether RG-59 coaxial cable is functionally compatible with RG-58 coaxial cable. See Affidavit of Gerald A. Kotkowski, attached to Applicants' Suggestion of Mootness (May 19, 1988). In determining the functional acceptability of RG-59 coaxial cable for the 12 RG-58 circuits, Applicants evaluated the attenuation characteristics, velocity of propagation and compatibility of connection devices/instruments and found them acceptable. In addition, Applicants contacted the vendors of the connected equipment and confirmed that the proposed substitution of RG-59 coaxial cable for the 12 RG-58 coaxial cables involved was acceptable. The Staff has no concern regarding the adequacy of Applicants' review or the conclusions reached. Id.

8.3-58. According to Applicants, RG-58 cables routed with other nonsafety related cables outside the nuclear island need not comply with 10 C.F.R. § 50.49 because they are not "important to safety." Id. at ¶ 13. The Staff agrees and is reasonably assured that the RG-58 coaxial cables routed with other nonsafety related cables outside the nuclear island are not required to be qualified by 10 C.F.R. § 50.49. Walker Affidavit at ¶ A6.

e. RG-58 Coaxial Cables Routed In Mild Environments Within The Nuclear Island And Routed With Nonsafety-Related Cables Outside The Nuclear Island

According to Mr. Bergeron, nine RG-58 coaxial cables are routed in mild environments within the nuclear island and with nonsafety related cables outside the nuclear island. Bergeron Affidavit at ¶ 9. Electrical cables, even ones important to safety, which are located in mild environments within or outside the nuclear island are not subject to environmental qualification requirements of section 50.49. See 10 C.F.R. § 50.49(c)(3). Mr. Bergeron states that the requirements of 10 C.F.R. § 50.49 are inapplicable to these cables. See May 19, 1988 Bergeron Affidavit. The Staff agrees and is reasonably assured that the RG-58 coaxial cables routed with other nonsafety related cable outside the nuclear island are not required to be qualified in accordance with 10 C.F.R. § 50.49. Walker Affidavit at ¶ A6.

2. RG-58 Coaxial Cable Is Environmentally Qualified

Throughout this proceeding the Staff has asserted that the record establishes that RG-58 coaxial cable has been demonstrated to be environmentally qualified in accordance with 10 C.F.R. § 50.49. See e.g. Affidavit of Harold Walker, attached to NRC Staff Response To Memorandum

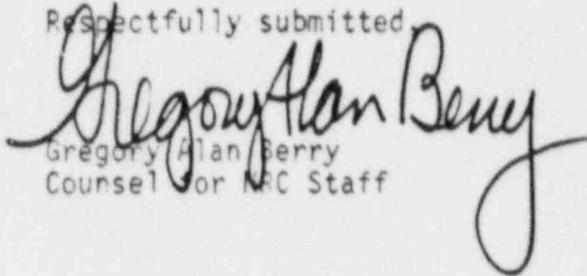
of Licensing Board And NECNP Regarding Environmental Qualification Of RG-58 Coaxial Cable (December 11, 1987) ("December 11 Walker Affidavit"). The Staff continues to hold this view. In reaching this conclusion, the Staff reviewed the test report (NECNP Exhibit 4, Ref. 2) for RG-59 cable. Walker Affidavit at ¶ A6. This test report demonstrates that RG-59 cable is environmentally qualified. See Walker Affidavit at ¶ A6. The Staff concluded that RG-58 cable is sufficiently similar to RG-59 for purposes of section 50.49(f)(2) because the cables' materials, construction, and manufacturer are the same, as is the cable type (i.e., both are single conductor). Id.; see NECNP Exhibit 4; December 11 Walker Affidavit. It should be emphasized that "similarity" for purposes of section 50.49(f)(2) does not require that components, such as cables, be identical. Walker Affidavit at ¶ A6. Instead, it is the Staff's practice to review the environmental qualification files of components to determine whether there is reasonable assurance that the test results for one component, in this case RG-59 coaxial cable, will be representative of another component, in this case RG-58 coaxial cable. Id. Consequently, as a result of reviewing Qualification File No. 113-19-01, the Staff concluded that RG-59 coaxial cable is environmentally qualified by test in accordance 10 C.F.R. § 50.49(f)(1) and that RG-58 coaxial cable is environmentally qualified by similarity in accordance with 10 C.F.R. § 50.49(f)(2). Id. For these

reasons, the Board can and should find that RG-58 coaxial cable is environmentally qualified in accordance with 10 C.F.R. § 50.49 ^{6/}.

CONCLUSION

The Licensing Board should issue an order in accordance with the views expressed in this response.

Respectfully submitted,


Gregory Alan Berry
Counsel for NRC Staff

Dated at Rockville, Maryland
this 27th day of July 1988

^{6/} On July 14, 1988, the Staff received a test plan and results of the environmental qualification testing recently completed by National Technical Systems/Action Division on RG-58 coaxial cable manufactured by ITT Suprenant. See Letter from Ted C. Feigenbaum to NRC (July 14, 1988).