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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
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 APPLICANTS' MOTION
FOR SUMMARY DISPOSITION OF NECNP
CONTENTION I.B.2 (RG-58 COAXIAL CABLE)

INTRODUCTION

On September 9, 1988, Applicants filed a "Motion For Summary Disposition Of NECNP Contention I.B.2 (RG-58 Coaxial Cable) pursuant to 10 C.F.R. § 50.49. The NRC Staff supports Applicants' motion. A review of the record as it currently stands confirms that there are no genuine issues as to any material facts with respect to the environmental qualification of RG-58 coaxial cable. Further, the record clearly demonstrates that the RG-58 coaxial cable installed in the Seabrook Station satisfies all applicable environmental qualification requirements. Consequently, Applicants are, as a matter of law, entitled to a favorable and summary disposition of remanded NECNP Contention I.B.2.

BACKGROUND

The procedural history surrounding the litigation of NECNP Contention I.B.2 was described in detail by the Appeal Board in Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-891, 27 NRC 341, 342-50 (1988). In that decision, the Appeal Board

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reversed the Licensing Board's conclusion in the March 25, 1987 Partial Initial Decision (LBP-87-10) that the environmental qualification of RG-58 coaxial cable had been established and remanded the matter to the Licensing Board for "a further evidentiary exploration." 27 NRC at 351. The Appeal Board was compelled to take this action because "neither the Licensing Board nor any party has brought to light any evidence of record that might adequately support the Board's finding that the environmental qualification of the RG-58 cable has been established." Id. (emphasis in original). ^{1/}

The next day, April 26, 1988, the Licensing Board reopened the record for the purpose of further litigation of the issue whether RG-58 coaxial cable is environmentally qualified. On September 9, 1988, after the parties had engaged in extensive discovery as permitted by the Licensing Board, Applicants filed the instant motion for summary disposition of remanded NECNP Contention I.B.2.

DISCUSSION

A. Legal Standards Governing Summary Disposition Motions

Pursuant to 10 C.F.R. § 2.749 of the Commission's Rules of Practice, a party may move for summary disposition of all or any part of the matters involved in the proceeding. Paragraph (d) of section 2.749 provides:

^{1/} It should be emphasized that the Appeal Board did not conclude as a matter of law or fact that RG-58 cable was not environmentally qualified. Id. Rather the Appeal Board held only that the record evidence before the Licensing Board did not support a finding that the cable was in fact environmentally qualified. In this regard, the Appeal Board held that the Licensing Board erred in relying upon an unsponsored and conclusory certification from the cable manufacturer

(FOOTNOTE CONTINUED ON NEXT PAGE)

The presiding officer shall render the decision sought if the filings in the proceeding, depositions, answers to interrogatories, and the admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law[.]

10 C.F.R. § 2.749(d). The proponent of the motion for summary disposition must meet this burden even if the party opposing the motion fails to present evidentiary material to the contrary. Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-54 (1977). To meet this burden, the movant must eliminate any real doubt as to the existence of any genuine issue of material fact. Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), LBP-81-48, 14 NRC 877, 883 (1981). For a material fact to be "genuine," the factual record -- considered in its entirety -- must be enough in doubt so that there is a reason to hold a hearing to resolve the issue. Perry, supra, LBP-83-46, 18 NRC 218, 223 (1983).

Although a party opposing a motion for summary disposition need only show that there are issues to be tried and not that it would prevail on the issues, Commonwealth Edison Company (Braidwood Nuclear Power Station, Units 1 and 2), LBP-86-414, 418 (1986), it may not defeat a properly supported summary disposition motion by mere allegations or denials. 10 C.F.R. § 2.749(b); Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-629, 13 NRC 75, 78 (1981);

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

(ALAB-875, 26 NRC 251, 271) and an unsponsored memorandum of a telephone conversation to establish the environmental qualification of the RG-58 cable. 27 NRC at 351.

Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 452 (1980). Rather, the opposing party must present admissible evidence which identifies "specific facts showing that there is a genuine issue of fact." 10 C.F.R. § 2.749(b); Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 NRC 1170, 1175 (1983). ^{2/} As explained below, an application of these principles compels the conclusion that Applicants' motion for summary disposition of remanded NECNP Contention I.B.2 should be granted.

B. The Motion For Summary Disposition Should Be Granted

As noted earlier, the Appeal Board remanded NECNP Contention I.B.2 for further proceedings because the record before the Licensing Board did not support the conclusion that RG-58 coaxial cable was environmentally qualified. ALAB-891, supra, 27 NRC at 351. The Staff previously has informed the Licensing Board that there are several ways in which

^{2/} Paragraph (c) of section 2.749 contains the only exception to this rule:

Should it appear from the affidavits of a party opposing the motion that he cannot, for reasons stated, present by affidavit facts essential to justify his opposition, the presiding officer may refuse the application for summary disposition or may order a continuance to permit affidavits to be obtained or make such order as is appropriate and a determination to that effect shall be made a matter of record.

10 C.F.R. § 2.749(c).

Applicants could establish that RG-58 coaxial cable is environmentally qualified for its intended use at the Seabrook Station. ^{3/}

First, the Staff noted that Applicants could subject the RG-58 cable itself to the tests necessary to establish its environmental qualification. This course of action expressly was approved by the Appeal Board. ALAB-891, supra, 27 NRC at 353, n.66. Second, the Staff observed that the record could be supplemented with additional evidence demonstrating that RG-58 coaxial cable is sufficiently similar to RG-59 coaxial cable such that the acceptable test results of the latter can serve to demonstrate the environmental qualification of the former under 10 C.F.R. § 50.49(f)(2). ^{4/} Third, Applicants might elect to demonstrate that RG-58 coaxial cable is not intended to be used for any purpose in which it may be required to perform an accident mitigation function and that the cable is qualified to perform its intended function. Id. at 4. A fourth option available to Applicants is to replace all RG-58 coaxial cables installed in locations which make them subject to the environmental qualification requirements of 10 C.F.R. § 50.49 with another type cable that has previously been demonstrated to be environmentally qualified. This latter course of action is appropriate because it addresses and eliminates the central concern of remanded NECNP Contention I.B.2 -- that RG-58 coaxial cable was being utilized in a harsh environment at the

3/ See NRC Staff Response To Board Order Of April 26, 1988 at 3-4 (May 6, 1988); NRC Staff Response To Applicants "Suggestion Of Mootness" at 2-3 (June 2, 1988).

4/ The environmental qualification of RG-59 coaxial cable is not subject to challenge in this proceeding. See Memorandum Order (Denying NECNP Motion Of July 13, 1988) (August 1, 1988).

Seabrook Station without first being environmentally qualified pursuant to 10 C.F.R. § 50.49. On each of these counts, Applicants should prevail on their summary disposition motion. ^{5/}

1. The Regulatory Scheme

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 "certain post-accident monitoring equipment." 10 C.F.R. § 50.49(b). 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 . . . 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(c)(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

^{5/} The Staff has reviewed Applicants' "Statement Of Material Facts Not In Dispute" which is attached to their motion for summary disposition. As the attached Affidavit of Harold Walker and Amritpal S. Gill indicates, the Staff either agrees with each of those material facts or has no basis for disagreeing with them. See Attached Affidavit Of Harold Walker And Amritpal S. Gill at ¶ A4 (October 3, 1988) ("Walker/Gill Affidavit").

10 C.F.R. § 50.49 if it (1) is "important to safety" as that phrase is defined in section 50.49(b) 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.

2. RG-58 Coaxial Cable Is Qualified By Test

Section 50.49 provides four alternative means by which electrical equipment may be environmentally qualified. ^{6/} Applicants initially qualified RG-58 coaxial by using the second method, i.e., qualification by testing a similar item of equipment. The similar item tested was RG-59 coaxial cable. As seen in the following section of this response, the two types of cable are sufficiently "similar" as that term is used in 10 C.F.R. § 50.49(f)(2) so that the environmental qualification test results for RG-59 cable can be used to establish the qualification of RG-58 cable. More recently, however, NTS, a testing firm located in Acton, Massachusetts, at Applicants behest, conducted an environmental

^{6/} The qualification methods are:

- (1) Testing an identical item of equipment under identical conditions or under similar conditions with a supporting analysis to show that the equipment to be qualified is acceptable.
- (2) Testing a similar item of equipment with a supporting analysis to show that the equipment to be qualified is acceptable.
- (3) Experience with identical or similar equipment under similar conditions with a supporting analysis to show that the equipment to be qualified is acceptable.
- (4) Analysis in combination with partial type test data that support the analytical assumptions and conclusions.

10 C.F.R. § 50.49(f).

qualification test of RG-58 coaxial cable itself. The Staff has completed its review of the test methodology and the NTS test results and agrees with Applicants' conclusion that RG-58 coaxial cable is environmentally qualified for use at the Seabrook facility. Walker/Gill Affidavit at ¶ A8. The results of this test demonstrate beyond question that RG-58 coaxial cable is environmentally qualified in accordance with 10 C.F.R. § 50.49.

The test was conducted on July 22, 1988 by NTS, of Acton, Massachusetts. The testing was conducted in accordance with IEEE standard 383-1974 "IEEE Standard for Type of Class 1E Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations." Walker/Gill Affidavit at ¶ A9. This standard is endorsed by NUREG-0588 and the Staff considers the applicable requirements of 10 C.F.R. § 50.49 to be satisfied if a successful test is conducted in accordance with the guidelines of the IEEE 383-1974 Standard. Id. The test included both aged and unaged RG-58 coaxial cable samples or specimens. Id. An "aged specimen" is one that has been subjected to thermal and radiation aging in order to place it in an end-of-life condition before testing. Id. In accordance with IEEE 383-1974 and 10 C.F.R. § 50.49(e), the specimens were subjected to thermal aging, radiation exposure, Loss of Coolant Accident (LOCA) simulation, and post-LOCA simulation. Id.

The purpose of the test was to demonstrate the ability of the coaxial cables to perform satisfactorily during and following exposure to postulated in-service and end-of-life accident environment simulation. Id. at ¶ 10. The acceptance criteria were the requirements of IEEE Standard 383-1974. Id. The test specimens were considered to have met

the requirements of IEEE Standard 383-1974 Section 2.4, if they (a) remained energized with client specified potential and current during the steam, chemical, and high humidity exposure (b) passed a final bend test at a diameter 40 times the cable diameter and an AC "high potential withstand" test of 80v per mil of insulation thickness. Id. Item (a) above was considered to have been met if the total leakage/charging current of the specimens connected to an energizing source for potential did not exceed approximately 1.0 amp. Id.

For instrumentation cable such as RG-58, in addition to items (a) and (b) above, the staff typically requires the demonstration of at least one megohm (i.e., 10^6 ohms) of insulation resistance during accident simulation. Id. If insulation resistance falls below one megohm the applicant should explain why that condition is acceptable. Id. An acceptable explanation may be developed around the particular use of the cable. In this case, for example, an explanation that includes a determination that the only function of this cable is to remain intact (i.e., no short to ground) during a design basis event is an acceptable explanation. Id. This is acceptable because insulation resistance values lower than one megohm do not necessarily indicate failure, but rather serve to define the limits and conditions under which the cable being tested can be used with predictable results. Id.

The specimens in the RG-58 environmental qualification test maintained specified voltage and current throughout the test and passed a final bend test and an AC "high potential withstand." Id. In addition, insulation resistance was maintained at an acceptable level as indicated by the readings recorded periodically throughout the test. Id.

The success of the RG-58 environmental qualification test demonstrates that RG-58 coaxial cable is environmentally qualified in accordance with 10 C.F.R. § 50.49. To give this fact, which is not subject to genuine dispute, the significance it demands, Applicants' motion for summary disposition must be granted.

3. RG-58 Coaxial Cable Is Qualified By "Similarity"

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(f)(2) on the basis of its "similarity" to RG-59 coaxial cable. 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. October 3, 1988 Walker/Gill Affidavit at ¶ A6. In reaching this conclusion, the Staff reviewed the test report (NECNP Exhibit 4, Ref. 2) for RG-59 cable. Id. This test report demonstrates that RG-59 cable is environmentally qualified. See Affidavit of Amritpal Gill and Harold Walker, passim, attached to NRC Staff Response To NECNP Motion To Reopen Record And Admit New Contention (February 17, 1988). 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). December 11, 1988 Walker Affidavit; Affidavit of Harold Walker, attached to NRC Staff Response To Licensing Board Order Of July 1, 1988 (July 27, 1988) ("July 27, 1988 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. July 27, 1988 Walker Affidavit at ¶ A6; October 3, 1988 Walker/Gill Affidavit at ¶ A6. Instead, as Mr. Walker explains, "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. This finding, which also is not subject to genuine dispute, is an additional and independent reason for granting Applicants' motion for summary disposition.

4. All RG-58 Cables Subject To The Requirements Of 10 C.F.R. § 50.49 Have Been Replaced With Qualified RG-59 Cables

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 ¶¶ 7-12, attached to Applicants' Motion For Summary Disposition (September 9, 1988) ("September 9, 1988 Bergeron Affidavit"). This review revealed that 126 RG-58 cables had been installed. Id. The review also indicated that each of the indentified cables fell within one of five catagories. Id. As the attached affidavit of Harold Walker indicates, the Staff 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 October 3, 1988 Walker/Gill Affidavit at ¶ A7. The Staff also 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.

a. Spare RG-58 Coaxial Cables

According to Applicants' expert, Mr. Bergeron, 19 of the 126 installed RG-58 coaxial cables are spares. See 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 July 27, 1988 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. July 27, 1988 Walker Affidavit at ¶ A6.

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

Applicants have identified twelve RG-58 coaxial cables which were routed through harsh environments. September 9, 1988 Bergeron Affidavit at ¶ 16. These cables must comply with the environmental qualification requirements of 10 C.F.R. § 50.49. July 27, 1988 Walker Affidavit at ¶ A6. These cables, however, have been replaced with RG-59 coaxial cables. September 9, 1988 Bergeron Affidavit at ¶ 16. As noted earlier, the Licensing Board has ruled that the environmental qualification of RG-59 coaxial cable is no longer open to question in this proceeding. Memorandum Order (August 1, 1988). The 12 coaxial cables located in a harsh environment are environmentally qualified in accordance with 10 C.F.R. § 50.49.

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. May 26, 1988 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; July 27, 1988 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. May 19, 1988 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 8.3-58. 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." July 27, 1988 Walker Affidavit at ¶ A6. 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. July 27, 1988 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. May 26, 1988 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 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. July 27, 1988 Walker Affidavit at ¶ A6.

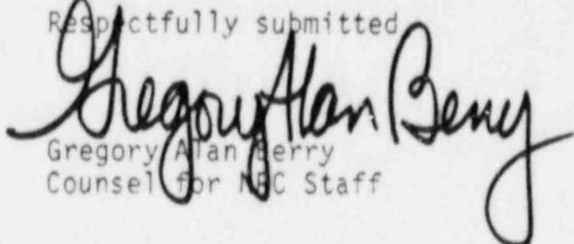
C. Summary

The record of this proceeding establishes that RG-58 coaxial cable is environmentally qualified by two different and independent methods, both of which are sufficient to enable Applicants to prevail on their summary disposition motion. The environmental qualification of RG-58 cable has been confirmed by test in accordance with 10 C.F.R. § 2.50.49(f)(1) and by "similarity" in accordance with 10 C.F.R. § 2.50.49(f)(2). The record also shows that 126 RG-58 cables were installed in the Seabrook Station and of these, only the 12 located in a "harsh environment" are subject to the requirements of section 50.49. The record also establishes that these 12 cables have been replaced with RG-59 coaxial cables, the environmental qualification of which is not open to question in this proceeding. Since none of these material facts is subject to genuine dispute, Applicants are entitled to a favorable decision on remanded NECNP Contention I.B.2 as a matter of law. The motion for summary disposition of remanded NECNP Contention I.B.2, therefore, should be granted.

CONCLUSION

For the reasons stated herein, Applicants' Motion For Summary Disposition of remanded NECNP Contention I.B.2 should be granted.

Respectfully submitted



Gregory Alan Berry
Counsel for NEC Staff

Dated at Rockville, Maryland
this 3rd day of October 1988