UNITED STATES OF AMERICA
UNITED STATES NUCLEAR REGULATORY COMMISSION

before the

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	
PUBLIC SERVICE COMPANY NEW HAMPSHIRE, et al.	Docket Nos. 50-443 OL-1 50-444 OL-1
(Seabrook Station, Units 1 and 2)	(On-site Emergency Planning Issues)

SUPPLEMENTAL AFFIDAVIT OF RICHARD BERGERON

I, RICHARD BERGERON, being on oath, depose and say as follows:

1. I am the Instrumentation and Controls Engineering Supervisor for New Hampshire Yankee. A statement of my professional qualifications is attached and marked "A".

2. In paragraph 9 to my affidavit of May 19, 1988, I indicated that there were "77 RG-58 cables located in mild environments within the nuclear island". Included in this number is an RG-58 cable which is located in a mild environment and which is a spare cable. As such this cable could have been categorized as "RG-58 cables located in mild environments within the nuclear island" or as "Spare RG-58 cables".

3. Since all oth.r spare cables located in mild environments within the nuclear island had been included in the "Spare RG-58 cables" category, the tabulation in paragraph 9 should be revised as follows to be consistent with this categorization.

No. of Cables	Category
19	Spare RG-58 Cables
12	RG-58 cables routed at least partially through a harsh environment within the nuclear island.
76	RG-58 cables located in mild environments within the nuclear island.
10	RG-58 cables routed with other nonsafety-related cables outside the nuclear island.
9	RG-58 cables routed in mild environments within the nuclear island and routed with nonsafety-related cables outside the nuclear island.

Richard Bergeron

STATE OF NEW HAMPSHIRE

Rockingham, ss. May 26, 1988

The above-subscribed Richard Bergeron appeared before me and made oath that he had read the foregoing affidavit and that the statements et forth therein are true to the best of his knowledge.

Before me,

Beverly E. Silloway, Notary Public
My Commission Expires: March 6, 1990

"A"

RICHARD BERGERON

Instrumentation & Controls Engineering Supervisor

Education

BS Marine Engineering, Maine Maritime Academy, May 1969

Mr. Bergeron joined Public Service Company of New Hampshire in May 1982 as Senior I&C Engineer in the Engineering Services Department. His areas of responsiblity include coordination of I&C Engineering activities for the Station Staff, Construction and Startup interface activities, as well as, various special projects. Mr. Bergeron was recently appointed to the position of Instrumentation & Control Supervisor in the Engineering Department. For the past six years Mr. Bergeron has also been assigned as the Station Staff Representative on the Equipment Qualification Task Force. He has been responsible for the coordination and review of the Equipment Qualification Program, as well as, coordinating the implementation of the Station Equipment Qualification Program.

Mr. Bergeron came to Public Service Company of New Hampshire from Stone & Webster Engineering Corporation where he was employed from 1972-1982. He held the position of Principle Instrument Application Engineer responsible, for

specifying, purchasing and design review of electron and pneumatic instrumentation control systems. Mr. Bergeron is also experienced in the scheduling and preparation of Logic Diagrams and System Descriptions which define the functional control concepts. He was also assigned as a task member to assist in the development and preparation of the 79-01B equipment qualification submittal for Duquesne Light Company.

Between 1969 and 1972 was employed by Gulf Oil Corporation as an engineer in their Marine Engineering Division. There he was responsible for the operation and maintenance of Marine Power Plants.

06/02/88

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING 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 APPLICANTS' SUGGESTION OF MOOTNESS

INTRODUCTION

On May 19, 1988, Applicants filed a "Suggestion Of Mootness" in which they request the Licensing Board "to enter an order that the issue regarding the environmental qualification of RG-58 coaxial cable pending before the Licensing Board is moot." Id. at 1. On May 23, 1988, the Licensing Board directed the Staff and NECNP to respond to Applicants' filing by June 3, 1988. See May 23, 1988 Order at 1. The Staff's views concerning Applicants' "Suggestion of Mootness" are set forth below.

BACKGROUND

In ALAB-891, the Appeal Board 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." Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-891, 27 NRC ___, slip op. at 22 (April 25, 1988). The next day, April 26, 1988, the Licensing Board

issued its order soliciting the parties' views as to how best to effectuate the Appeal Board's order. See April 26, 1988 Order at 1.

In its response to the Board's April 26, 1988 order [1], the Staff noted that the Licensing Board's finding regarding the environmental qualification of RG-58 coaxial cable was reversed by the Appeal Board for only one reason -- that the evidentiary record contained insufficient evidence to support the conclusion that the cable was environmentally qualified to perform its intended function. May 6 Staff Response at 3, citing, ALAB-891, slip op. at 22. The Staff pointed out that the Appeal Board did not rule that RG-58 cable was not environmentally qualified. Id. The Staff advised the Board that to cure this deficiency it was necessary to receive additional evidence from the parties sufficient to enable the Board to reach a sound decision as to whether RG-58 coaxial cable is qualified for its intended uses. Id. The Staff further advised that because Applicants bear the burden of proof, see 10 C.F.R. § 2.732, they should be required to present such evidence in the first instance.

The Staff identified three ways in which Applicants could carry their burden. See May 6 Staff Response at 3-4. First, Applicants can subject the RG-58 cable itself to the tests necessary to establish its environmental qualification. Id. at 3, citing, ALAB-891, slip op. at 26, n.66. Second, Applicants can submit 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

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1/ NRC Staff Response To Board Order Of April 26, 1988 (May 6, 1988) ("May 6 Staff Response").

demonstrate the environmental qualification of the former under 10 C.F.R. § 50.49(f)(2). Id. Third, Applicants can attempt 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 function. Id. at 4. A fourth option available to Applicants which the Staff did not address is to replace all RG-58 coaxial cables requiring environmental qualification with another type cable that has previously been demonstrated to be environmentally qualified for its intended use. This course of action is appropriate because it addresses and eliminates the central claim of remanded NECNP Contention I.B.2 -- that RG-58 coaxial cable was being utilized in a harsh environment at the Seabrook Station without first being environmentally qualified pursuant to 10 C.F.R. § 50.49.

Applicants state that remanded NECNP Contention I.B.2 should be dismmissed as moot because they plan to replace the RG-58 coaxial cables with RG-59 coaxial cable in each instance where the requirements of 10 C.F.R. § 50.49 are applicable. Suggestion Of Mootness at 5-6. To the extent that Applicants suggest that the Board dismiss remanded NECNP Contention I.B.2 without making the appropriate findings of fact and conclusion of law, the Staff does not agree that Applicants' submission in itself moots the issue. [2/] Rather, as the Staff outlined in its May 6

2/ There is no inconsistency between this position and the one taken by the Staff with respect to remanded NECNP Contentions I.V and IV. See Letter from Gregory Alan Berry, Esq. to Licensing Board at 1 (April 28, 1988). Since remanded NECNP Contentions I.V and IV were abandoned by the intervenor, they properly were dismissed by the

(FOOTNOTE CONTINUED ON NEXT PAGE)

response, the affidavits submitted by Applicants in support of their mootness motion should be received into the record as evidence offered to establish that the safety concern alleged in remanded NECNP Contention I.B.2 has been satisfactorily resolved. See May 6 Staff Response at 3-5. Thus, the Board should follow the procedure outlined by the Staff and afford NECNP and the Staff a reasonable opportunity to present evidence in support of or in opposition to Applicants' position. Id. at 4-5. 3/

The Staff may submit a further presentation after reviewing Applicants' evidentiary submission. It is useful at this juncture, however, for the Staff to provide the following comments on Applicants' submission based upon a preliminary review of that information.

DISCUSSION

Applicants state that a review of all installed RG-58 coaxial cable at the Seabrook Station resulted in the identification of 126 RG-58 coaxial cables, grouped into five categories. Suggestion of Mootness at

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(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

Board. See May 12, 1988 Order. In contrast, NECNP has not abandoned or withdrawn remanded NECNP Contention I.B.2. The only thing changed by Applicants' instant filing is the manner in which Applicants have elected to address the safety concern raised in remanded NECNP Contention I.B.2.

3/ The Staff advised the Board in its May 6 response that the need for an evidentiary hearing would be obviated "[i]f, upon review of all the materials submitted, there exists no genuine issue as to any material fact and Applicants are entitled to judgment as a matter of law[.]" May 6 Staff Response at 5. In such case, "the Board should close the record and issue an initial decision favorable to Applicants." Id. The Staff advised the Board that if, upon review of all the materials sumbitted by the parties, there existed genuine issues as to any material facts, the Board should then schedule a hearing to resolve those issues. Id.

1, citing, Affidavit of Richard Bergeron at ¶¶ 3-6. According to Applicants, only the cables (a total of 12) in one the five categories are required to meet the environmental qualification standards set forth in 10 C.F.R. § 50.49. Bergeron Affidavit at ¶ 15. Applicants take the position that for various reasons, the remaining 114 cables in the four other categories need not satisfy the requirements of section 50.49. See Id. at ¶¶ 12-14. As explained below, the Staff agrees with Applicants that the requirements of 10 C.F.R. § 50.49 apply only to RG-58 cables located in harsh environments. 4/

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)(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 . . .

4/ It should be noted that Applicants have not submitted the source material upon which the claim that a total of 126 RG-58 cables have been installed in the Seabrook Station is founded. Similarly, Applicants have not submitted the materials evaluated by them in determining which category grouping a particular RG-58 cable belonged. Consequently, the Staff is not in a position to confirm or deny the accuracy of Applicants' representations that (1) 126 RG-58 cables have been installed at the Seabrook Station and (2) the particular category groupings are appropriate. The Staff after reviewing the nature of this submission may make a further presentation on its sufficiency.

(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 term 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. The Staff has applied these criteria to Applicants' RG-58 coaxial cable groupings.

A. Applicants' RG-58 Cable Category Groupings

1. Spare RG-58 Coaxial Cables

Applicants' expert, Mr. Bergeron, states that 18 of the 126 installed RG-58 coaxial cables are spares. 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. 5/ [illegible] e information presented by Applicants to date, the Staff agrees [illegible] cables need not meet the requirements of 10 C.F.R. § 50.49. 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. 6/

5/ Although the Staff possesses no information to dispute this claim, it should be noted that no documentary materials are cited or provided in support of this claim. For this reason, the Staff has indicated that the Seabrook Final Safety Analysis Report should be amended to reflect this design committment. See n.6, infra.

6/ It should be noted, however, that should Applicants choose in the future to utilize any spare RG-58 coaxial cable located in a harsh environment, it will be necessary for Applicants to first establish the environmental qualification of the cable in accordance with section 50.49. In the meantime, the Seabrook Final Safety Analysis Report should be amended to reflect that no spare RG-58 coaxial cable may be utilized in a harsh environment.

2. 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. Although Applicants do not expressly state, it appears that these cables are important to safety (i.e., their failure under postulated environmental conditions could impair the ability of safety related equipment to perform its safety function satisfactorily). See Id. If this assumption is correct, the Staff agrees that the requirements of section 50.49 are applicable to the subject cables since they are located in harsh environments.

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

Applicants' expert, Mr. Bergeron, states that 77 of the 126 installed RG-58 coaxial cables are exempt from the requirements of 10 C.F.R. § 50.49 because they are located in mild environments. Bergeron Affidavit at ¶¶ 9, 12. Section 50.49(c)(3) expressly 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). Thus assuming Applicants are correct in stating these 77 RG-58 coaxial cables are located in "mild" environments, they need not be environmentally qualified in accordance with section 50.49. 7/

7/ Again, Applicants have not provided any documentary materials to substantiate the claim that the environment in which these cables are located is a mild one; and the Staff has no independent information to confirm or deny the accuracy of this claim.

4. 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 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. Mr. Bergeron opines that failure of the subject RG-58 coaxial cables would not prevent the accomplishment of safety functions but his affidavit does not reference or contain any factual information against which this conclusion can be evaluated. See Id. 8/ The Applicants fails to show that important to safety RG-58 cable might not be exposed to a harsh environment outside of the nuclear island. As the basis of the Applicant's assertion that these cables will not be exposed to a harsh environment is only that they are not in the nuclear island, the Staff is not able to take a position at this time as to whether the RG-58 coaxial cables routed with other nonsafety related cables outside the nuclear island must be environmentally qualified in accordance with 10 C.F.R. § 50.49.

8/ Non-safety related equipment is "important to safety" and subject to environmental qualification requirements, if (1) it is located in a harsh environment and (2) its "failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions." Compare 10 C.F.R. § 50.49(b)(2), with, 10 C.F.R. § 50.49(c)(3). If either of these conditions are lacking, the requirements of section 50.49 do not apply. Mr. Bergeron's affidavit does not explain clearly why one or the other of these conditions is not present with respect to the RG-58 coaxial cables routed with other non-safety related cables outside the nuclear island.

5. 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). Electrical cables routed outside the nuclear island need not be qualified where it is shown that such cables (1) are located in mild environments or (2) the failure of such under postulated environmental conditions would not prevent satisfactory accomplishment of safety functions. As noted in Part A(4) of this response, Mr. Bergeron's affidavit does not clearly explain the basis for the determination that the RG-58 coaxial cables routed with other nonsafety related cable outside the nuclear island is not in a harsh environment as those environments are also present outside of a nuclear island. Consequently, the Staff has no current position as to whether the subject cables must be qualified in accordance with 10 C.F.R. § 50.49.

B. The Acceptability Of RG-59 Coaxial Cable In Place Of RG-58 Coaxial Cable

As discussed in the preceding section of this response, the Staff agrees with Applicants that only RG-58 cables located in harsh environments need be environmentally qualified. Rather than establish the environmental qualification of RG-58 coaxial cable, Applicants propose instead to use RG-59 coaxial cable in lieu of RG-58 coaxial cables in which it recognizes are subject to harsh enviornments. Affidavit of

Gerald A. Kotkowski at ¶ 2; Affidavit of Ted C. Feigenbaum at ¶ 7. The Staff agrees that the substitution of RG-59 coaxial cables for the twelve RG-58 coaxial cables would satisfy the environmental qualification requirements of 10 C.F.R. § 50.49 for those cables. This is because the environmental qualification of RG-59 coaxial cable already has been established. See Public Service Company of New Hampshire (Seabrook Station, Unit 1 and 2), LBP-87-10, 25 NRC 177, 210-11, rev'd in part on other grounds, ALAB-875, 26 NRC 251 (1987); NECNP Ex. 4 (Environmental Qualification File No. 113-19-01); Affidavit of Amritpal S. Gill and Harold Walker, attached to NRC Staff's Response To NECNP Motion To Reopen The Record and Admit New Contention (February 17, 1988).

Although from an environmental qualification standpoint no concern is presented by the proposed substitution of RG-59 coaxial cable in place of the twelve RG-58 coaxial cables located in harsh environments, it remains to be considered whether the RG-59 coaxial cable is a technically acceptable replacement for the RG-58 coaxial cable. Applicants' expert on this issue, Mr. Kotkowski, concludes in his affidavit that RG-59 coaxial cables would be acceptable substitutes. See Kotkowski Affidavit at ¶¶ 3-8. On the basis of this affidavit, providing matters set out therein are not rebutted, the Licensing Board might find that the RG-59 cable is an acceptable substitute for the subject 12 RG-58 cables.

CONCLUSION

For the reasons stated in this response, the Board should deny Applicants' motion for an order dismissing remanded NECNP Contention I.B.2 as moot. The Board should reopen the record to receive the affidavits of Messrs. Bergeron, Kotkowski, and Feigenbaum submitted by Applicants and

any other relevant and admissible evidence which Applicants may offer to support their position on remanded NECNP Contention I.B.2 or to address the questions raised by the Staff herein. The Board should then afford NECNP and the Staff a reasonable amount of time to submit, if they so elect, relevant and admissible evidence in support of or opposition to Applicants' position. If, upon review of all the materials submitted, there exists no genuine issue as to any material fact and Applicants are entitled to judgment as a matter of law, the Board should close the record and issue an initial decision favorable to Applicants. If, however, a review of all the materials submitted by the parties reveals the existence of genuine issues as to material facts, the Board should then schedule a hearing to resolve those issues. 9/

Respectfully submitted,

Gregory Alan Berry

Gregory Alan Berry
Counsel for NRC Staff

Dated at Rockville, Maryland
this 1st day of May 1988

9/ On May 31, 1988, the Staff received a May 27, 1988 filing from the Applicants concerning its May 19, 1988 Suggestion of Mootness. In this filing the Applicants change the number of cables in two categories and set out matters which they believe are relevant to their Suggestion of Mootness. This additional filing and the changes reinforces the Staff's position that the record should be reopened to receive material proffered by the Applicants and other parties in order to determine whether this environmental qualification issue may be disposed of on the bases of those submissions or whether a hearing is needed on the subject issue.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket Nos. 50-443 OL-01
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al.	)	50-444 OL-01
	)	On-site Emergency Planning
	)	and Safety Issues
(Seabrook Station, Units 1 and 2	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO APPLICANTS' SUGGESTION OF MOOTNESS" 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 2nd day of June 1988.

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June 9, 1988

UNITED STATES NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of Public Service Company of New Hampshire, et al. (Seabrook Station, Units 1 & 2)	Docket No. 50-443 OL-1 ONSITE EMERGENCY PLANNING & TECHNICAL ISSUES

NEW ENGLAND COALITION ON NUCLEAR POLLUTION'S
RESPONSE TO APPLICANTS' SUGGESTION OF MOOTNESS
REGARDING ENVIRONMENTAL QUALIFICATION OF RG-58 CABLE

The New England Coalition on Nuclear Pollution ("NECNP") hereby responds to Applicants' Suggestion of Mootness with respect to the environmental qualification of RG-58 coaxial cable. Applicants' filing and supporting affidavits show not that the issue is moot, but that a great many questions about the RG-58 cable and substitute RG-59 cable remain unresolved. These questions include the issues raised in NECNP's Response to ASLBP No. 88-558-01-OLR, dated May 19, 1988, and in the attached affidavit of Robert D. Pollard. They may only be resolved through the process of discovery and through confrontation of Applicants' experts on the witness stand.

While it is framed as a "suggestion," Applicants' filing has all the characteristics of a summary disposition motion. For three important reasons, this dispositive pleading must be rejected. First, summary disposition is completely inappropriate where the parties have not had discovery on the entirely new set of facts presented by Applicants regarding the qualification of

RG-58 coaxial cable. Applicants' pleadings continue to generate more questions than answers; the discovery process is an important tool for obtaining those answers, and for delving into the reasons for Applicants' 180 degree change in position since the 1986 hearings.

The discovery process would also include examination of documents supporting Applicants' position. For example, in their suggestion of mootness, Applicants cite a number of documents, including schematic drawings and raceway drawings, as well as a computer program. Not only have Applicants failed to file these documents, but they are described so vaguely as to shed no light on their bearing on this issue.

A second reason that this dispositive motion must be denied is that NECNP is entitled to test the credibility of Applicants' witnesses in a hearing. Applicants have dramatically changed their position from claiming in 1986 that RG-58 cable is qualified, to claiming now that most of it does not need to be qualified. For those applications for which Applicants concede qualification is required, they maintain that the RG-58 cable is qualified; yet, they have nevertheless decided to replace some of the RG-58 cable with RG-59 cable. Despite the numerous opportunities available to them, Applicants have failed to provide the Board with any specific information regarding the particular pieces of equipment that are served by the RG-58 cable, or the exact environmental qualification requirements to which

the substitute cable must conform. The affidavits filed by Applicants in support of their suggestion of mootness are exemplars of vagueness on this score. Given Applicants' changing position and the vagueness with which it is set forth, it is imperative that the Board subject Applicants' witnesses to the test of cross-examination.

Finally, Applicants' filing fails to resolve material issues of dispute between the parties. As discussed in detail in the attached affidavit of Robert D. Pollard, Applicants' affidavits fail to establish that Applicants have identified all uses and locations of RG-58 cable, that they know what qualification requirements the cable must meet, or that RG-59 cable is an adequate substitute. A host of important questions remain, including but not limited to:

1) What is the basis for Applicants' assertion that all identified uses of RG-58 coaxial cable involve non-Class 1E or non-safety functions or applications, including those instances where Applicants propose to replace the RG-58 coaxial cable with RG-59?

2) Why was RG-58 cable designated Class 1E safety equipment in the first place?

3) What are the specific uses of RG-58 cable? What particular pieces of equipment does it serve?

4) Have Applicants correctly identified all instances in which RG-58 coaxial cable is used at Seabrook Station? Have

Applicants identified all purchase orders of RG-58 coaxial cables?

5) Have Applicants adequately determined the exact physical locations of all RG-58 cable that has been identified as being used at Seabrook Station?

6) What are the specific environmental qualification requirements for RG-58 coaxial cable?

7) What are the specific environmental qualification requirements for RG-59 coaxial cable when used in place of RG-58?

8) Is RG-59 coaxial cable qualified to replace RG-58 cable? (If so, why was RG-58 purchased in the first place, since it is more expensive than RG-59?) (See NECNP Exh. 4, Ref. 7) These are all issues that must be addressed in the context of a hearing on the environmental qualification of RG-58 coaxial cable.

NECNP agrees in large part with the position taken by the Staff in its filings of June 2 and June 6, 1988. However, we disagree with the Staff in two important respects. First, as discussed above, we do not consider that additional summary disposition proceedings are appropriate in this case. Second, we disagree with the Staff that the environmental qualification of RG-59 cable is "established." NRC Response to Applicants' Suggestion of Mootness at 11. The qualification of RG-59 cable was not placed at issue in the 1986 hearings, and subsequent litigation on the admissibility of a late-filed contention on the issue

does not constitute a merits ruling on the qualification of that cable. Most importantly, there is no basis for assuming that RG-59 cable meets RG-58 performance requirements for those applications of RG-58 that RG-59 will serve as a substitute. Once the specific environmental qualification requirements for these applications of RG-58 coaxial cable are known, the parties may examine all relevant testing documentation to determine whether RG-59 cable meets those standards.

For the foregoing reasons, NECNP asks the Licensing Board to reject Applicants' Suggestion of Mootness and schedule discovery and a hearing on the issue of the need for and adequacy of environmental qualification of RG-58 coaxial cable and substitute cable.

Respectfully submitted,

Diane Curran
Dean R. Tousley
HARMON & WEISS
2001 "S" Street, N.W.
Suite #430
Washington, D.C. 20009
(202) 328-3500

June 9, 1988

CERTIFICATE OF SERVICE

I certify that on June 9, 1988, copies of the foregoing pleading were served by hand, overnight mail, or first-class mail on all parties to this proceeding, as designated on the attached service list.

Diane Curran

June 8, 1988

UNITED STATES NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of Public Service Company of New Hampshire, et al. (Seabrook Station, Units 1 & 2)	Docket No. 50-443 OL-1 ONSITE EMERGENCY PLANNING & TECHNICAL ISSUES

AFFIDAVIT OF ROBERT D. POLLARD

I, Robert D. Pollard, being duly sworn, depose and say:

1. My name is Robert D. Pollard. My business address is 1616 P Street, N.W., Washington, D.C. 20036.

2. Since February 1976, I have been employed as a nuclear safety engineer by the Union of Concerned Scientists. Previously, I was employed by the U.S. Nuclear Regulatory Commission as a licensing project manager for commercial nuclear power plants.

3. The purpose of this affidavit is to describe the unresolved technical issues raised in affidavits filed in support of "Applicants' Suggestion of Mootness," filed May 19, 1988.

4. The technical issues regarding which there remains significant question fall in four principal categories:

a) the adequacy of Applicants' efforts to identify all instances in which RG-58 coaxial cable is used at Seabrook Station.

b) the adequacy of Applicant's efforts to determine

the exact physical location of the RG-58 cable that has been identified as being used at Seabrook Station:

c) the validity of Applicants' assertion that all identified uses of RG-58 coaxial cable involve non-Class 1E or non-safety functions or applications, including those instances where Applicants propose to replace the RG-58 coaxial cable with RG-59.

d) the adequacy of the environmental qualification of RG-59 coaxial cable in those instances where Applicants propose to replace the RG-58 coaxial cable with RG-59 cable.

5. The means used in an attempt to identify all applications of RG-58 coaxial cable in the Seabrook Station was to use the Computerized Conduit and Cable Schedule Programs (CASP) Design Guide to generate a list of installed cables having the cable code TA6Y. Bergeron Affidavit at paragraphs 4-6.

6. Mr. Bergeron claims that "an independent review was performed and verified that all RG-58 had been identified ..." Id., paragraph 16. However, while this review "was performed by different individuals," it cannot be construed as an independent review because it only "essentially replicated the review described above, using the same information sources." Id.

7. Having two or more individuals query the same computer based listing of cables cannot provide an independent review of the validity of the data base of the computer. There are three

cable designations that differ only in the last character, i.e., TA6T, TA6Y, and TA6U, and the three characters, T, Y, and U, are adjacent on a standard keyboard. NECNP Ex. 4, Encl. 1, App. A. Thus, the possibility of erroneous data entries is not insignificant. Errors in data entry would not be discovered by asking the computer the same questions twice.

8. Similarly, if output from CASP was used as instructions to the workers installing the cable, the possibility of interchanging cable types TA6T, TA6Y, and TA6U during installation is not insignificant. Again, such errors would not be revealed by making duplicative inquiries to the computer.

9. Applicants further claim that the independent review "included an evaluation of Seabrook Station electrical schematic drawings for RG-58 applications." Bergeron Affidavit, paragraph 16. This statement fails to show how the review of the drawings was done or how it contributed to the independence of the review. Schematic drawings frequently do not include information about the type of cable used. However, even assuming such information is on the schematic drawings, Applicants are silent about what, if any, effort was made to determine whether the drawings reflect the as-built plant. Furthermore, if the information in CASP regarding cable type was obtained from the schematic drawings, or vice versa, the drawing review would provide no independence.

10. A genuinely independent review to determine whether all RG-58 applications have been identified would involve not only

different individuals, but a different technique as well. For example, the sum of the cable lengths used during installation of each identified use of RG-58, plus the remaining length of RG-58 on hand, should approximate the total length of RG-58 purchased. While this type of check may not succeed in identifying every RG-58 application, it may disclose gross errors in identification of RG-58 applications.

11. The Applicants also fail to address whether any RG-58 was purchased under purchase orders other than 9763-006-113-19. Furthermore, the cable designation TA6Y designates any cable that is coaxial, single conductor, color coded black with red tracer, and having an undefined conductor size. FSAR, Table 3, page 6-2. (This portion of the FSAR was filed as Attachment 1 to "NRC Staff Response to NECNP Supplemental Memorandum on Environmental Qualification of RG-58 Coaxial Cable," dated April 8, 1988.)

12. In sum, Applicants have failed to establish that they have identified all applications of RG-58 coaxial cable in Seabrook Station.

13. Applicants claim that the "CASP" system "provides the controls to identify and maintain cable routes and termination locations for each uniquely identified plant cable." Bergeron Aaffidavit, paragraph 5. I disagree. The CASP system may have been intended to accomplish those tasks, but the actual location and routing of each cable depends on how accurately the construction work force followed the cable installation instructions pro-

vided by CASP.

14. One method of verifying the actual location of a particular cable is to attach a signal generator to the cable and then physically trace the cable length with a signal detector. Instead, Applicants have apparently simply assumed that the CASP data base reflects the configuration of the as-built plant. Tracing the route of each cable using "Seabrook Station Cable raceway drawings" (Bergeron Affidavit, paragraph 7 (emphasis added)) is not equivalent to physically tracing the actual routing of each cable. Nor is it clear whether the review "to determine if the other cables routed along with the RG-58 cable(s) were Class 1E (i.e., safety-related) or Non-Class 1E (i.e., nonsafety-related)" was conducted by reviewing installation instructions or by actual inspection of cables routed with RG-58 cables.

15. In sum, the Applicants appear to have made no attempt to verify the actual location of the RG-58 cables or the designation (as Class 1E or Non-Class 1E) of other cables routed with RG-58 cables by physical inspection. Instead, reliance is placed on drawings or the CASP data base with no assurance that such information accurately reflects the as-built plant.

16. Applicants claim that all 126 identified applications of RG-58 cables are nonsafety-related. Bergeron Affidavit, paragraph 6. This is a new claim but Applicants present no information that permits an evaluation of that claim. Without this

information, I am unable to express an opinion as to whether Applicants have correctly classified the cable applications as nonsafety-related.

17. Applicants also fail to provide any meaningful information that would allow me to evaluate the safety classification of the 12 RG-58 cables that they intend to replace with RG-59 cable. The general description of the cable applications given in Mr. Kotkowski's affidavit at paragraph 3 lacks sufficient specificity with respect to the identity of the equipment served or its location in the plant.

18. Applicants also fail to describe what environmental qualification specifications are prescribed for RG-58 cable, and thus must be met by the RG-59 cable that is to be substituted for it. As discussed in my affidavit, filed in support of "NECNP's Motion to Reopen the Record and Admit New Contention," dated February 2, 1988, the RG-59 cable fell below the required insulation resistance of 10,000 Megohms during the environmental qualification test to which it was subjected by the manufacturer.

19. Applicants have claimed elsewhere that the 10,000 Megohm Insulation Resistance requirement was a purchasing specification rather than an environmental qualification requirement for the RG-59 cable. "Applicants' Opposition to Motion of NECNP to Reopen the Record and Admit Late-filed Contention," dated February 12, 1988, Bergeron Affidavit at 2.

20. This explanation is unsatisfactory for two reasons.

First, Applicants have never provided any documentation of the actual environmental qualification specifications for RG-59 cable, other than to offer their own unsupported judgment as to the "reasonable" specifications for the cable. Id., Bergeron Affidavit at 4.

21. Second, Applicants have provided no information to show that the environmental qualification performance of RG-59 coaxial cable is sufficient for the applications of RG-58 cable for which RG-59 will be substituted.

Robert D. Pollard

Subscribed and sworn to before me on this 8th day of June, 1988.

Notary Public

My commission expires:

6-30-1992

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* By hand

** By Overnight Mail

UNITED STATES OF AMERICA
UNITED STATES NUCLEAR REGULATORY COMMISSION

before the

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	
PUBLIC SERVICE COMPANY NEW HAMPSHIRE, et al.	Docket Nos. 50-443 OL-1 50-444 OL-1
(Seabrook Station, Units 1 and 2)	(On-site Emergency Planning Issues)

AFFIDAVIT OF RICHARD BERGERON

I, RICHARD BERGERON, being on oath, depose and say as follows:

1. I am the Instrumentation and Controls Engineering Supervisor for New Hampshire Yankee. A statement of my professional qualifications is attached and marked "A".

2. In my affidavits dated May 19, 1988 and May 26, 1988 (hereinafter referred to as "May 19 affidavit" and "May 26 affidavit"), I described the means used to identify and locate all Seabrook Station RG-58 coaxial cable supplied by ITT Surprenant under Specification 9763-006-113-19. This affidavit provides further explanation of that process.

3. The statement that 126 nonsafety-related RG-58 coaxial cables were identified (May 19 affidavit at ¶ 6) was based on the materials listed in Attachment B. The identification of the five common groupings of the 126 RG-58 coaxial cables (May 19 affidavit at ¶ 9; May 26 affidavit at ¶ 3) was based on the materials listed in Attachment C. The source materials identified in Attachments B and C are voluminous. To assist in the

understanding of the information provided in this affidavit, the May 19 affidavit and the May 26 affidavit, the pertinent information has been extracted from these documents and summarized and provided in Attachments D and E.

4. The 126 nonsafety-related ITT Surprenant RG-58 coaxial cable runs were determined by means of a specific sort of the CASP database for Cable Code TA6Y and a review of Seabrook Station electrical schematic drawing packages also for any Cable Code TA6Y applications.

5. The CASP database is an appropriate means to identify ITT Surprenant RG-58 coaxial cable applications for three reasons. First, CASP is the primary design document for configuration control for electrical cable at Seabrook Station. Second, CASP has the capability to identify ITT Surprenant RG-58 coaxial cable applications by means of sorting on the Cable Code TA6Y because the RG-58 coaxial cable which was supplied by ITT Surprenant only uses the Design Guide Cable Code TA6Y. Therefore, a sort of the CASP database on the Cable Code TA6Y will identify ITT Surprenant RG-58 coaxial cable applications. Third, one capability of CASP used at Seabrook Station is to determine the shortest route and length of a cable, given the network of raceways, the origin and destination of cable and taking into consideration applicable design requirements. This information is then used to install, inspect and maintain the cable. Accordingly, CASP is subjected to the comprehensive design verification and updating process used for any installation document subject to the requirements of 10 CFR 50, Appendix B. This necessarily provides the additional assurances that CASP agrees with the as-built condition of the plant.

6. The Seabrook Station electrical schematic drawing package review is also appropriate to identify ITT Surprenant RG-58 coaxial cable runs because these are design basis documents whose input is not derived from CASP and because one can determine the cable applications for a given cable circuit from these documents. These documents have also been subjected to the comprehensive design verification and updating process one used for design basis document under 10 CFR 50, Appendix B. Thus, these documents can be relied upon to identify what cable was used in what applications.

7. At Seabrook Station the electrical schematic drawings are contained in electrical schematic drawing packages. These packages, in addition to the schematic drawings contain other information such as cable block diagrams. Thus, a review of the schematic drawings in conjunction with other information contained in that drawing package allows one to identify the cable application (e.g., ITT Surprenant RG-58 coaxial cable) for a specific cable circuit.

8. Therefore, all ITT Surprenant RG-58 coaxial cable applications at Seabrook Station can be determined by review of CASP and the Seabrook Station electrical schematic drawing packages since both are design basis documents which, under 10 CFR 50, Appendix B, are subject to quality assurance program requirements governing their issuance and updating. It should also be noted that the results of the reviews using either method was consistent.

9. Following the identification of a specific ITT Surprenant RG-58 coaxial cable (i.e., specific cable identification number) the route of each cable was traced by using approximately 36 Seabrook Station cable raceway drawings. In the case of the independent review

discussed in the May 19 affidavit at ¶ 16, the routes were specifically highlighted on a set of these drawings.

10. In conjunction with tracing the route of an identified RG-58 cable, a review was performed to identify the cable(s) routed with the RG-58 cable(s). This was done by means of using CASP to identify other cables sharing the raceway with the RG-58 cable(s). CASP was also used to determine whether the other cable was safety-related (i.e., Class 1E) or nonsafety-related (i.e., Non-Class 1E).

11. After identifying a specific RG-58 coaxial cable route, the environmental zones through which each cable traveled was determined using approximately 45 Environment Zone Maps contained in the Service Environment Chart Design Basis Calculation. The Service Environment Charts were used to identify the applicable environmental parameters for each environmental zone. See FSAR Figure 3.11(B)-1, Shts 1-5, provided in Attachment G and Excerpt from Environmental Qualification Report provided in Attachment I. In the case of the independent review assessment discussed in the May 19 affidavit at ¶ 16 the harsh environment zones were superimposed upon the raceway drawings used in that review.

12. A review of applicable drawings and documents and related documentation was performed. This verified that the drawings and documents used in the evaluation reflected the as-built configuration.

13. Following the review of environmental zones described above (Ref. ¶ 11) each RG-58 coaxial cable application was then categorized into five common groupings as summarized in Attachment D. The tabulation provided in Attachment D identifies each RG-58 coaxial cable, indicates which category it falls under (e.g., spare, harsh, etc.) and specifies its function, classification and the environmental zone(s) for each

cable. In addition, the tabulation refers to a figure which is provided in Attachment E.

14. The figure provided in Attachment E depicts the routing a given cable follows through the various environmental zones at Seabrook Station and identifies the building and specific environmental zone the cable passes through. It also indicates whether the cables are inside or outside the nuclear island, and for those cables within the nuclear island whether the zone is harsh or mild. The process used to develop the information to produce the figures is discussed above at ¶ 9 and 11.

15. From the tabulation provided in Attachment D, it is apparent that the 126 nonsafety-related ITT Surprenant RG-58 coaxial cables can be categorized as provided in the May 26 affidavit at ¶ 3.

16. The RG-58 coaxial cable supplied by ITT Surprenant was specified and purchased with a black with red trace jacket color. See EQF excerpts provided as Attachment F. As discussed in FSAR Section 8.3.1.3, cables which are colored black with a red tracer signify that the cables are Train A associated. As discussed in FSAR Section 8.3.1.4, cables which are identified by a black with a red tracer color jacket are nonsafety-related cables. Further, FSAR Section 8.3.1.4.a also indicates that associated cables are Non-Class 1E circuits. Finally, FSAR Section 8.3.1.4.k when read in conjunction with FSAR Section 8.3.1.3 indicates that cables with the single solid color of red, white, blue or yellow signify cables which are safety-related or Class 1E. See Attachment G for excerpts from above referenced FSAR sections. Therefore, it is clear from the FSAR that the RG-58 coaxial cable supplied by ITT Surprenant cannot and does not perform an accident mitigating function (i.e., it is nonsafety-related).

17. To clarify the usage of the EQF operability code and actual plant applications: As testified to previously (Transcript excerpts provided as Attachment H), a conservative assumption was made during the initial phase of the Environmental Qualification Program, namely that a given piece of equipment, cable, etc. was required to perform a safety function. Accordingly, the ITT Surprenant RG-58 coaxial cable was specified, purchased, environmentally qualified and installed (within the nuclear island) to safety-related requirements. However, it is possible that the EQ File could indicate that the cable is Operability Code A which designates that it is required to perform a safety function, but in actuality the cable is only required to be evaluated to determine if any failures of the cable due to the environment will affect the accomplishment of a safety function. This is the case for the RG-58 coaxial cable supplied by ITT Surprenant in that it does not perform any accident mitigating function.

18. To determine if a given component, cable, etc., is required to be environmentally qualified pursuant to 10 CFR 50.49 one must first determine if the item is within the scope of concern as discussed in 10 CFR 50.49(b) and then determine if the item is not in a mild environment [10 CFR 50.49(c)]. If the item is not within the scope of concern as discussed in 10 CFR 50.49(b) then the inquiry into the applicability of 10 CFR 50.49 ends. If the item is within the scope of concern but is in a mild environment then the inquiry into the applicability of 10 CFR 50.49 also ends. In either case 10 CFR 50.49 qualification requirements would not apply.

19. As indicated above none of the 126 RG-58 coaxial cables are safety-related; therefore, none are within the scope of 10 CFR 50.49(b)(1).

20. Since the RG-58 coaxial cable is nonsafety-related, one then needs to evaluate the applicability of 10 CFR 50.49(b)(2) to a given RG-58 coaxial cable application. As described in FSAR Section 8.3.1.3, Train A associated cables, such as ITT Surprenant RG-58 coaxial cable, can be routed with Train A safety-related cables within the nuclear island. Therefore, all Train A associated cables within the nuclear island are within the scope of concern of 10 CFR 50.49(b)(2). However, as provided above, those cables located in mild environments need not comply with the qualification requirements set forth in 10 CFR 50.49 per 10 CFR 50.49(c). (See also May 19 affidavit at ¶ 12).

21. For those applications outside the nuclear island none were identified where a safety-related cable was being routed along with the RG-58 coaxial cable outside the nuclear island. Thus, the postulated failure of an ITT Surprenant RG-58 coaxial cable cannot prevent satisfactory accomplishment of safety functions by safety-related equipment since none of the cables it comes in contact with outside the nuclear island are safety-related (i.e., the failure could only affect another nonsafety-related cable). Therefore, the RG-58 coaxial cable outside the nuclear island is not "important to safety", the qualification requirements of 10 CFR 50.49 are not applicable and further inquiry is not required.

22. The 12 RG-58 coaxial cables routed within the nuclear island are important to safety because their failure under postulated environmental conditions could potentially impair the ability of safety-related equipment to perform its safety function satisfactorily. These 12 RG-58 coaxial cables are in the process of being replaced with already qualified RG-59 cable.

23. As regards to the acceptability of RG-59 coaxial cable for use as a replacement for the RG-58 coaxial cables located in a harsh environment, it should be understood that for purposes of environmental qualification, the RG-59 cable's signal transmission characteristics versus those of the RG-58 cable are immaterial because all applications are nonsafety-related. Rather, the concern is with the cable's ability to withstand the stresses imposed by accident environments and not fail so as to prevent the satisfactory accomplishment of a safety function.

24. The EQF for ITT Surprenant RG-59 coaxial cable (File No. 113-19-01), the Equipment List, the Summary Evaluation, the QEW, clearly indicate that the RG-59 coaxial cable is qualified for use in all building environmental zones and for all event codes. See Attachment F for EQF excerpts. Accordingly, since there is no environmental qualification related restrictions regarding the usage of RG-59 coaxial cable at Seabrook Station, the cable is qualified for any of the building environmental zones in which the ITT Surprenant cable may be located.

Richard Bergeron

STATE OF NEW HAMPSHIRE

Rockingham, ss. June 16, 1988

The above-subscribed Richard Bergeron appeared before me and made oath that he had read the foregoing affidavit and that the statements set forth therein are true to the best of his knowledge.

Before me,

Beverly E. Silloway, Notary Public
My Commission Expires: March 6, 1990

"A"

RICHARD BERGERON

Instrumentation & Controls Engineering Supervisor

Education

BS Marine Engineering, Maine Maritime Academy, May 1969

Mr. Bergeron joined Public Service Company of New Hampshire in May 1982 as Senior I&C Engineer in the Engineering Services Department. His areas of responsiblity include coordination of I&C Engineering activities for the Station Staff, Construction and Startup interface activities, as well as, various special projects. Mr. Bergeron was recently appointed to the position of Instrumentation & Control Supervisor in the Engineering Department. For the past six years Mr. Bergeron has also been assigned as the Station Staff Representative on the Equipment Qualification Task Force. He has been responsible for the coordination and review of the Equipment Qualification Program, as well as, coordinating the implementation of the Station Equipment Qualification Program.

Mr. Bergeron came to Public Service Company of New Hampshire from Stone & Webster Engineering Corporation where he was employed from 1972-1982. He held the position of Principle Instrument Application Engineer responsible, for

specifying, purchasing and design review of electron and pneumatic instrumentation control systems. Mr. Bergeron is also experienced in the scheduling and preparation of Logic Diagrams and System Descriptions which define the functional control concepts. He was also assigned as a task member to assist in the development and preparation of the 79-01B equipment qualification submittal for Duquesne Light Company.

Between 1969 and 1972 was employed by Gulf Oil Corporation as an engineer in their Marine Engineering Division. There he was responsible for the operation and maintenance of Marine Power Plants.

ATTACHMENT B

SOURCE MATERIALS USED TO IDENTIFY
ITT SURPRENANT RG-58 COAXIAL CABLE APPLICATIONS

1. CAS Data Base; Speciality Sort for TA6Y Cable Codes

2. Seabrook Station Electrical Schematic Drawing Packages (164 packages of approximately 12,000 pages).

DRAWING ID NUMBERS

300933	301913	310106	310872	310952
300934	301914	310107	310874	310953
300935	301915	310108	310875	310955
300936	301916	310177	310882	310956
300937	301917	310178	310887	310957
301010	309702	310179	310890	310958
301012	309703	310180	310891	310961
301015	309709	310181	310894	310962
301016	309709A	310182	310895	310963
301017	309709B	310841	310897	310965
301107	309711	310842	310898	310966
301115	309711A	310843	310899	311864
301211	309712	310844	310900	311865
301212	309712A	310845	310901	311866
301213	309713	310846	310902	311867
301214	309713A	310847	310903	311868
301215	309714	310848	310919	311869
301216	309714A	310849	310920	311870
301221	309716	310850	310921	312020
301506	309716A	310851	310922	312021
301508	309716B	310852	310924	312062
301619	309718	310853	310926	312066
301900	309718A	310854	310927	312067
301901	309720	310855	310928	370008
301902	309720A	310857	310929	
301903	309721	310862	310930	
301904	309741	310863	310931	
301905	309742	310864	310932	
301906	309871	310865	310940	
301907	309876	310866	310942	
301908	310101	310867	310943	
301909	310102	310868	310944	
301910	310103	310869	310947	
301911	310104	310870	310949	
301912	310105	310871	310951	

ATTACHMENT C

SOURCE MATERIALS USED FOR CATEGORIZATION
OF RG-58 COAXIAL CABLE APPLICATIONS

1. CASP Data Base (approximately 3,500 page hard copy equivalent).

2. CASP Data Base; Speciality Sort for TA6Y Cable Codes

3. Seabrook Station Cable Raceway Drawings:

   Drawing Numbers

   301286 - 301293; 309859; 310298; 310335; 310366 - 310371; 310450; 310476; 310478; 310479; 310496 - 310501; 310688; 310796 - 310803.

4. Service Environment Design Basis Calculation, Calculation Set No. 6.01.00.00 (approximately 61 pages), dated February 2, 1987.

5. Service Environment Charts; FSAR Figures 3.11(B)-1, Shts. 1-5.

6. PSNH Letter (SBN-886) dated October 31, 1985, "Environmental Qualification of Electrical Equipment; SER Outstanding Issue #6," J. DeVincentis to G. W. Knighton (Note letter and enclosure distributed to ASLB Service List including NECNP).

ATTACHMENT D

ITT SURPRENANT RG-58 COAXIAL CABLE APPLICATIONS

CATEGORY	QUANTITY	LISTING
Spare RG-58 Coaxial Cable	19	Sheet 1
RG-58 cables routed at least partially through a harsh environment within the nuclear island	12	Sheet 2
RG-58 Cables located in mild environment within the nuclear island	76	Sheets 3 thru 8
RG-58 Cables routed only with other nonsafety-related cables outside the nuclear island	10	Sheet 9
RG-58 Cables routed in mild environments within the nuclear island and routed only with nonsafety-related cables outside the nuclear island	9	Sheet 10
Total no. of cables	126	

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
1.	FM4-JX1/2	CB2, CB4, ET2A, ET4A, ET3A, ET3B	Spare	A1 *	-	Nonsafety-related
2.	FM7-JX1/2	CB2, CB4, ET2A, ET4A, ET3A, ET3B	Spare	A1 *	-	Nonsafety-related
3.	FM3-JW5/2	CB2, CB4, CB10, ET1, PB25, PB11, PB12	Spare	A3 *	-	Nonsafety-related
4.	FM6-JW5/2	CB2, CB4, CB10, ET1, PB25, PB11, PB12	Spare	A3 *	-	Nonsafety-related
5.	FM6-JX5/2	CB2, CB4, ET2A, ET4A, ET3A	Spare	B *	-	Nonsafety-related
6.	FM4-JX5/2	CB2, CB4, ET2A, ET4A, ET3A	Spare	B *	-	Nonsafety-related
7.	FM7-GY4/2	CB2, CB4, CB6A	Spare	B *	-	Nonsafety-related
8.	FM4-GY4/2	CB2, CB4, CB6A	Spare	B *	-	Nonsafety-related
9.	FE7-FM6/2	CB1, CB2	Spare	B *	-	Nonsafety-related
10.	FM6-GY6/2	CB2, CB4, CB6A	Spare	B *	-	Nonsafety-related
11.	FM4-GY6/2	CB2, CB4, CB6A	Spare	B *	-	Nonsafety-related
12.	FM3-FP1/2	CB2	Spare	B *	-	Nonsafety-related
13.	FM7-FP1/2	CB2	Spare	B *	-	Nonsafety-related
14.	FE7-FM4/2	CB1, CB2	Spare	B *	-	Nonsafety-related
15.	FM3-GY0/2	CB2, CB5A, CB4, TB	Spare	C *	-	Nonsafety-related
16.	FM7-GY0/2	CB2, CB5A, CB4, TB	Spare	C *	-	Nonsafety-related
17.	F86-G13	CB1, CB4, TB	Spare	C *	-	Nonsafety-related
18.	FM3-GY9/2	CB2, CB5A, CB4, TB	Spare	C *	-	Nonsafety-related
19.	FM6-GY9/2	CB2, CB5A, CB4, TB	Spare	C *	-	Nonsafety-related

* See Note 1

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
1.	FM4-JX1	CB2, CB4, ET2A, FT4A, ET3A, ET3B	Harsh	A1	Station Computer Applications	Nonsafety-related
2.	FM7-JX1	CB2, CB4, ET2A, ET4A, ET3A, ET3B	Harsh	A1	Station Computer Applications	Nonsafety-related
3.	FM4-JX1/1	CB2, CB4, ET2A, ET4A, ET3A, ET3B	Harsh	A1	Station Computer Applications	Nonsafety-related
4.	FM7-JX1/1	CB2, CB4, ET2A, ET4A, ET3A, ET3B	Harsh	A1	Station Computer Applications	Nonsafety-related
5.	GU4-Y59/2	PB12, PB11, PB14, PB14A, PB13, PB15C, PB15A	Harsh	A2	Degasifier Level Control	Nonsafety-related
6.	GU4-Y59/4	PB12, PB11, PB14, PB14A, PB13, PB15C, PB15A	Harsh	A2	Degasifier Level Control	Nonsafety-related
7.	GU4-Y59/3	PB12, PB11, PB14, PB14A, PB13, PB15C, PB15A	Harsh	A2	Degasifier Level Control	Nonsafety-related
8.	GU4-Y59/5	PB12, PB11, PB14, PB14A, PB13, PB15C, PB15A	Harsh	A2	Degasifier Level Control	Nonsafety-related
9.	FM3-JW5	CB2, CB4, CB10, ET1, PB25, PB11, PB12	Harsh	A3	Station Computer Applications	Nonsafety-related
10.	FM3-JW5/1	CB2, CB4, CB10, ET1, PB25, PB11, PB12	Harsh	A3	Station Computer Applications	Nonsafety-related
11.	FM6-JW5/1	CB2, CB4, CB10, ET1, PB25, PB11, PB12	Harsh	A3	Station Computer Applications	Nonsafety-related
12.	FM6-JW5	CB2, CB4, CB10, ET1, PB25, PB11, PB12	Harsh	A3	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
1.	FM4-JX5	CB2, CB4, ET2A, ET4A, ET3A	Mild	B	Station Computer Applications	Nonsafety-related
2.	FM6-JX5/1	CB2, CB4, ET2A, ET4A, ET3A	Mild	B	Station Computer Applications	Nonsafety-related
3.	FM6-JX5	CB2, CB4, ET2A, ET4A, ET3A	Mild	B	Station Computer Applications	Nonsafety-related
4.	FM4-JX5/1	CB2, CB4, ET2A, ET4A, ET3A	Mild	B	Station Computer Applications	Nonsafety-related
5.	FE2-FM4/1	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
6.	F52-FN1/3	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
7.	F52-FN5/3	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
8.	F72-FN5/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
9.	FM6-GY6/1	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
10.	FE2-FM4/2	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
11.	F52-FN1/4	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
12.	F52-FN5/4	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
13.	FM6-GY6	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
14.	F52-FN1/5	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
15.	F52-FN5/5	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
16.	FM0-FT5	CB2, CB1	Mild	B	Station Computer Applications	Nonsafety-related
17.	FM4-GY6/1	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
18.	FM0-FT5/1	CB2, CB1	Mild	B	Station Computer Applications	Nonsafety-related
19.	F52-FN1/6	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
20.	W4H-W4J	CB1F, CB1D	Mild	B	Station Computer Applications	Nonsafety-related
21.	F52-FN5/6	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
22.	F52-FN1/7	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
23.	F52-FN5/7	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
24.	FN4-W4H/3	CB2, CB5A, CB1F	Mild	B	Station Computer Applications	Nonsafety-related
25.	F81-FN4	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
26.	FM3-FP1	CB2	Mild	B	Station Computer Applications	Nonsafety-related
27.	FN4-W4H/2	CB2, CB5A, CB1F	Mild	B	Station Computer Applications	Nonsafety-related
28.	FM7-FP1	CB2	Mild	B	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
29.	FM3-FP1/1	CB2	Mild	B	Station Computer Applications	Nonsafety-related
30.	FM7-FP1/1	CB2	Mild	B	Station Computer Applications	Nonsafety-related
31.	F90-FN4/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
32.	F10-FM0	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
33.	F90-FN4/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
34.	F52-FN5	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
35.	F72-FN5	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
36.	F52-FN1	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
37.	F31-FN1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
38.	F31-FN5	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
39.	FE7-FM6	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
40.	FM4-GY4	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
41.	FE2-FM6	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
42.	FM7-GY4	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
43.	FE7-FM6/1	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
44.	FE2-FM6/1	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
45.	F61-FN1/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
46.	FM7-GY4/1	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
47.	F61-FN1/3	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
48.	FE2-FM6/2	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
49.	F61-FN1/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
50.	F40-FN5/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
51.	FN4-W4H	CB2, CB5A, CB1F	Mild	B	Station Computer Applications	Nonsafety-related
52.	F40-FN5/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
53.	FM4-GY4/1	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
54.	FN4-W4H/1	CB2, CB5A, CB1F	Mild	B	Station Computer Applications	Nonsafety-related
55.	FM0-FT5/2	CB2, CB1	Mild	B	Station Computer Applications	Nonsafety-related
56.	W4H-W4J/2	CB1F, CB1D	Mild	B	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
57.	FMO-FT5/3	CB2, CB1	Mild	B	Station Computer Applications	Nonsafety-related
58.	W4H-W4J/1	CB1F, CB1D	Mild	B	Station Computer Applications	Nonsafety-related
59.	F9O-FN4	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
60.	W4H-W4J/3	CB1F, CB1D	Mild	B	Station Computer Applications	Nonsafety-related
61.	F1O-FMO/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
62.	F4O-FN5	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
63.	F1O-FMO/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
64.	F52-FN1/1	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
65.	F52-FN5/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
66.	F31-FN1/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
67.	F61-FN1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
68.	FM4-GY6	CB2, CB4, CB6A	Mild	B	Station Computer Applications	Nonsafety-related
69.	F1O-FMO/3	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
70.	FE7-FM4	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
71.	F52-FN1/2	CB1, CB4, CB2	Mild	B	Station Computer Applications	Nonsafety-related
72.	F52-FN5/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
73.	FE2-FM4	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related
74.	F72-FN5/1	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
75.	F31-FN1/2	CB1, CB4, CB5A, CB2	Mild	B	Station Computer Applications	Nonsafety-related
76.	FE7-FM4/1	CB1, CB2	Mild	B	Station Computer Applications	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
1.	G7S-R3J/1	WPB	Note 2	D	Waste Feed TK-198B Level Control	Nonsafety-related
2.	G7S-R3G	WPB	Note 2	D	Waste Feed TK-198A Level Control	Nonsafety-related
3.	G7S-R3J	WPB	Note 2	D	Waste Feed TK-198B Level Control	Nonsafety-related
4.	G7S-R3L/1	WPB	Note 2	D	Waste Concentrate Bottoms TK-200 Level Control	Nonsafety-related
5.	G67-ZM3/2	WPB	Note 2	D	Primary Drains Tank Degasifier TK-67 Level Control	Nonsafety-related
6.	G67-ZM3/3	WPB	Note 2	D	Primary Drains Tank Degasifier TK-67 Level Control	Nonsafety-related
7.	G67-ZM3/4	WPB	Note 2	D	Primary Drains Tank Degasifier TK-67 Level Control	Nonsafety-related
8.	G67-ZM3/5	WPB	Note 2	D	Primary Drains Tank Degasifier TK-67 Level Control	Nonsafety-related
9.	G7S-R3G/1	WPB	Note 2	D	Waste Feed TK-198A Level Control	Nonsafety-related
10.	G7S-R3L	WPB	Note 2	D	Waste Concentrate Bottoms TK-200 Level Control	Nonsafety-related

NO.	CABLE NO.	ENVIRONMENTAL ZONES	CATEGORY	FIGURE	FUNCTION	CLASSIFICATION
1.	FM3-GY9	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
2.	FM3-GY9/1	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
3.	FM6-GY9/1	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
4.	FM6-GY9	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
5.	FM3-GYO	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
6.	FM7-GYO	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
7.	FM3-GYO/1	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
8.	FM7-GYO/1	CB2, CB5A, CB4, TB	Note 3	C	Station Computer Applications	Nonsafety-related
9.	F86-S3W	CB1, CB4, TB	Note 3	C	Generator Hydrogen Core Cooling Monitor	Nonsafety-related

NOTES:

1. Routing of spares through environmental zones is as shown in referenced figure, however, the cable is not connected to any devices as the figure depicts.

2. RG-58 cables routed outside nuclear island only with other nonsafety-related cables.

3. RG-58 cables routed in mild environments within the nuclear island and routed only with nonsafety-related cables outside the nuclear island.

LEGEND/KEY

Category Column

Spare - Spare RG-58 Cables

Harsh - RG-58 Cables routed at least partially through a harsh environment within the nuclear island

Mild - RG-58 Cables located in mild environments within the nuclear island

Functions Column

Station Computer - All Seabrook Station Plant Computer Applications, i.e., connections between main frame and computer peripheral connections between computer peripherals, etc.

Environmental Zones

TB - Turbine Building outside nuclear island

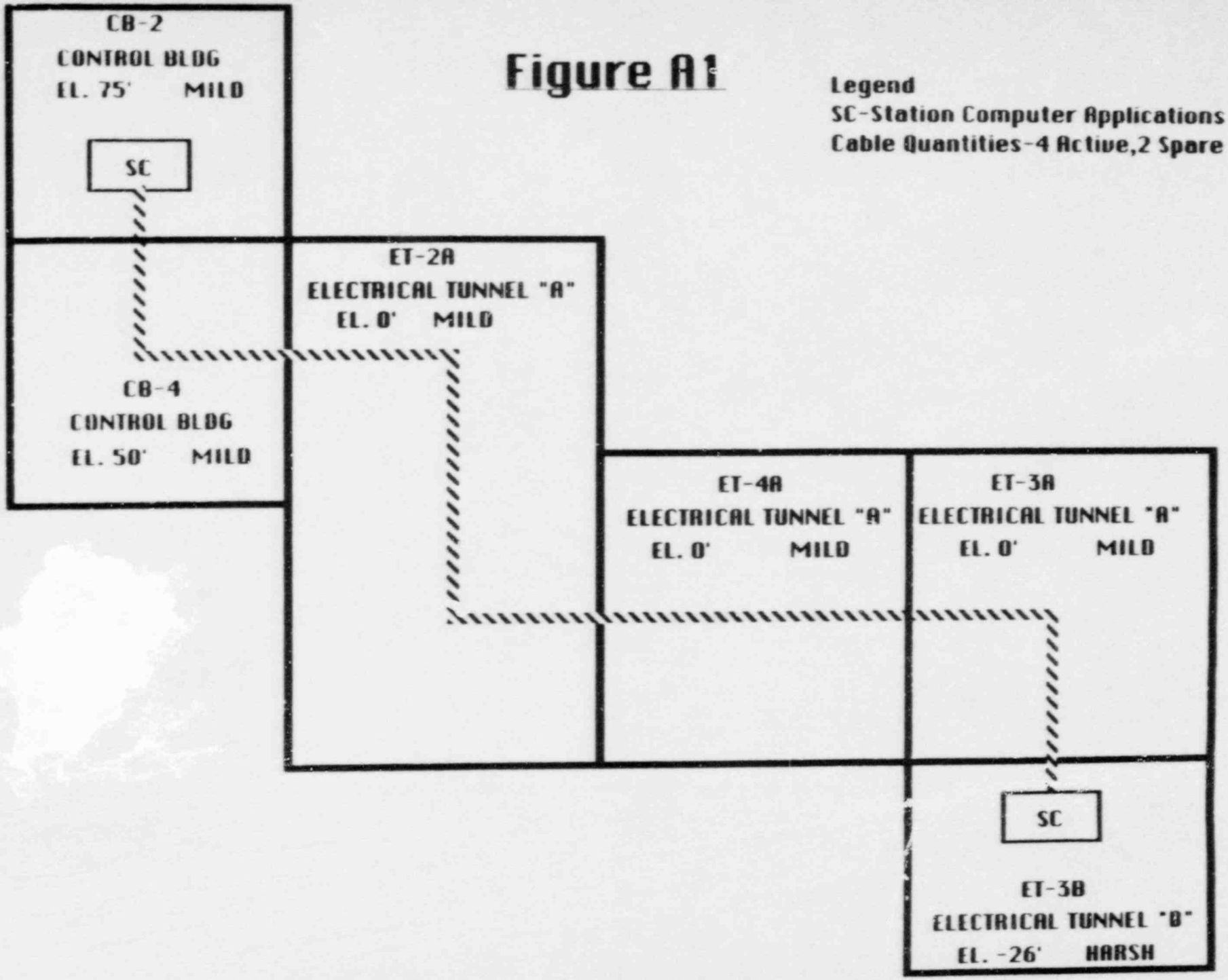
WPB - Waste Processing Building outside nuclear island

ATTACHMENT E

ITT SURPRENANT RG-58 COAXIAL CABLE APPLICATIONS; ENVIRONMENTAL ZONE ROUTINGS

CONTENTS

Figure A1



Legend
SC-Station Computer Applications
Cable Quantities-4 Active,2 Spare

FIGURE A2

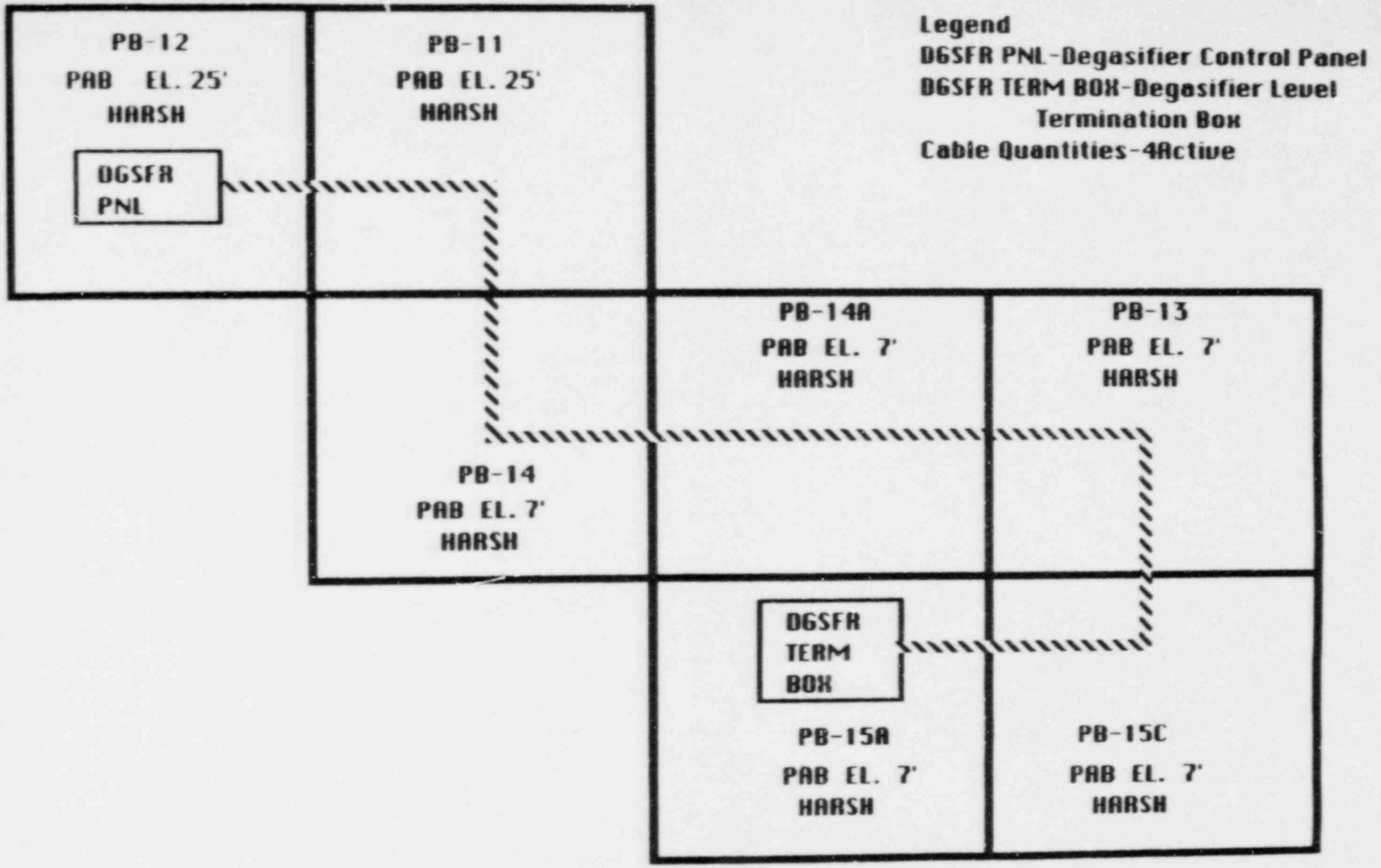

PB-12
PAB EL. 25'
HARSH
DGSFR
PNL
PB-11
PAB EL. 25'
HARSH
PB-14A
PAB EL. 7'
HARSH
PB-13
PAB EL. 7'
HARSH
PB-14
PAB EL. 7'
HARSH
DGSFR
TERM
BOX
PB-15A
PAB EL. 7'
HARSH
PB-15C
PAB EL. 7'
HARSH
Legend
DGSFR PNL-Degasifier Control Panel
DGSFR TERM BOX-Degasifier Level
Termination Box
Cable Quantities-4Active

FIGURE A3

Legend
SC-Station Computer Applications
Cable Quantities-4Active,2Spare

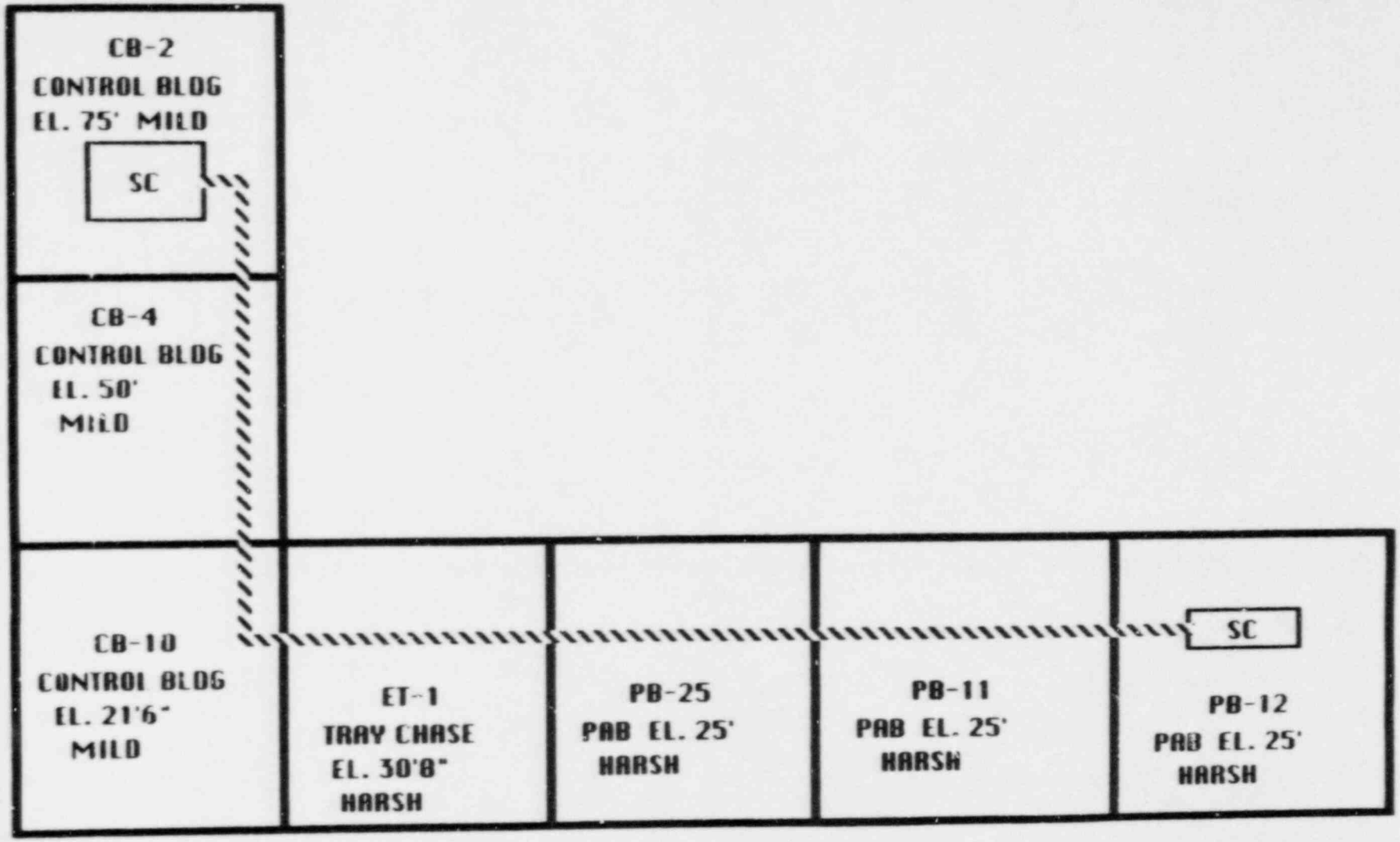


Figure B

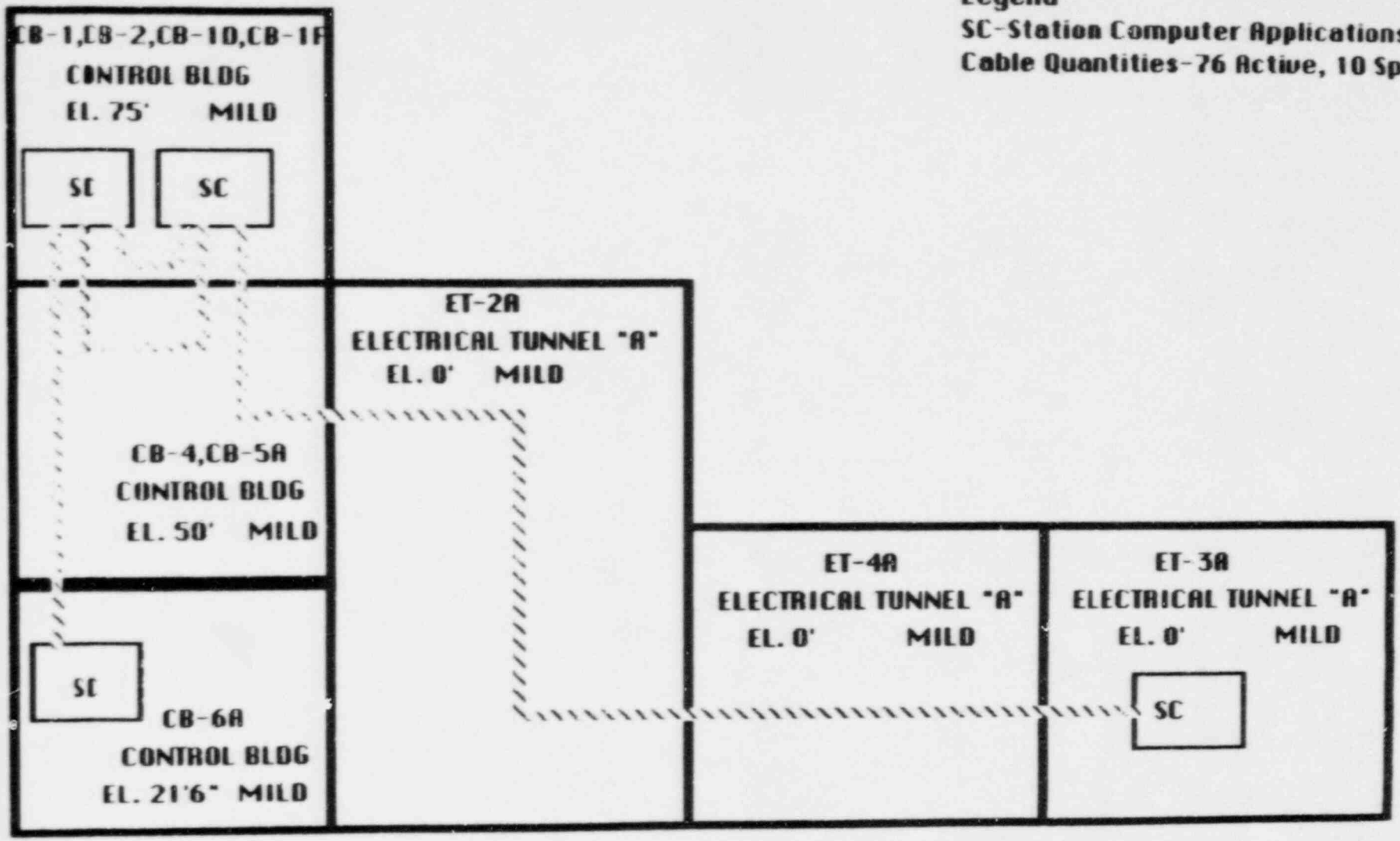

Legend
SC-Station Computer Applications
Cable Quantities-76 Active, 10 Spare
CB-1,CB-2,CB-10,CB-1F
CONTROL BLDG
EL. 75' MILD
SC
SC
ET-2A
ELECTRICAL TUNNEL "A"
EL. 0' MILD
CB-4,CB-5A
CONTROL BLDG
EL. 50' MILD
ET-4A
ELECTRICAL TUNNEL "A"
EL. 0' MILD
ET-3A
ELECTRICAL TUNNEL "A"
EL. 0' MILD
SC
SC
CB-6A
CONTROL BLDG
EL. 21'6" MILD

FIGURE C

Legend
SC-Station Computer Applications
MCB-Main Control Board
Gen Mon-Generator Hydrogen Core Cooling Monitor
Cable Quantities- 9 Active, 5 Spare

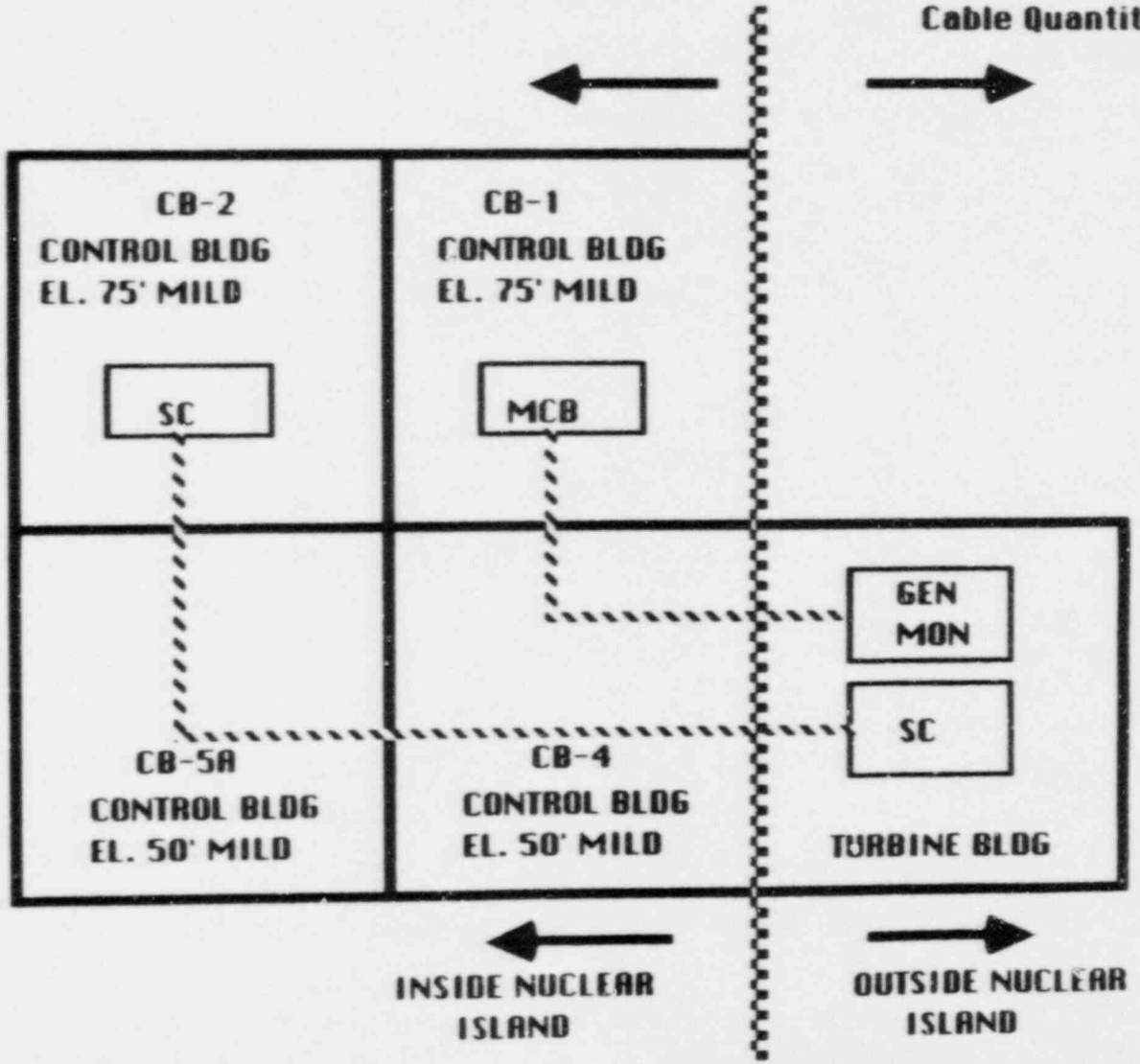
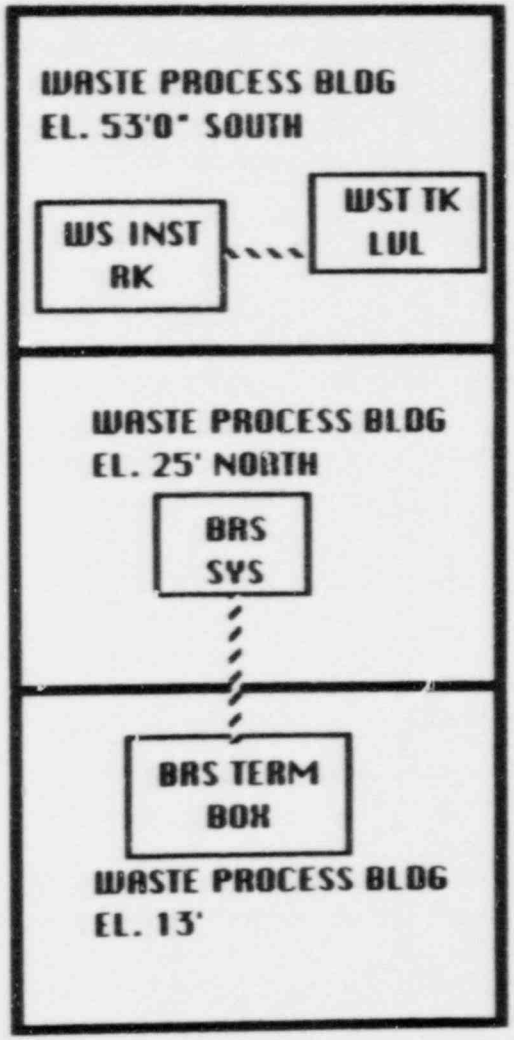


FIGURE 0



OUTSIDE NUCLEAR ISLAND

Legend

WS INST RK- Waste Solids System Instrument Rack

WST TK LVL- Waste Feed Tank Level

BRS SYS- Boron Recovery System Control Panel

BRS TERM BOX- Primary Drains Tank Degasifier Level Control Termination Box

Cable Quantities- 10 Active

ATTACHMENT F

EQUIPMENT QUALIFICATION FILE
NO. 113-19-01 EXCERPTS

CONTENTS

PUBLIC SERVICE OF NEW HAMPSHIRE

HARSH ENVIRONMENT EQUIPT LIST

SEABROOK STATION

SORT NO 05 SHEET 9

UNIT 1

DWG 9763-M-300218

REV 004

DATE 10/20/86

EQ FILE NO 113-19-01

REV NO	EQUIPMENT ID	SERVICE LEGEND / REMARKS	MANUFACTURER / MODEL NO	BLDG / ENV ZONE	EQ FILE NO / PO NO	SAFETY FUNCT	OPER CODE	EVENT CODE
004	EDE CBL - 6	INSTRUMENT CABLE	ITT-S FR-XLPE/EXANE	ALL	113-19-01 113-19	PWR	A	ALL

Electrical Equipment Qualification File No. 113-19-01

Revision

EQUIPMENT SUMMARY EVALUATION

1.0 Description

The equipment under evaluation is the Coaxial and Triaxial Instrument Cable manufactured by ITT Surprenant Division. This cable is located in all areas of the plant, both inside and outside containment, and will be evaluated for the worst case postulated environment conditions inside containment. The traceability of the test documentation to the cable supplied by ITT for UE&C Specification 9763-006-113-19 is provided in reference 4.

2.0 Conclusion

This equipment is qualified by sequential test for the postulated accident temperature, pressure, humidity, chemical spray and radiation dose and by test supplemented by analysis for the required operating time. This equipment has a qualified life of 40 years at 167°F (75°C).

Therefore, this equipment is qualified to the requirements of NUREG-0588, Category I.

3.0 Limitations

None.

4.0 Discussion

Two specimens are tested in Reference 2. These specimens are RG-11/U and RG-59/U coaxial. Reference 4 states that these two specimens are representative of the four different types of cables supplied to Seabrook as per Reference 1. The supplied cables are RG-11 triaxial, and RG-11, RG-58 and RG-59 coaxial. The insulation in these cables is cross-linked polyethylene with an Exane jacket. The limiting Environmental Zones for radiation are PB-15A, PB-4, PB-18 and PB-19. There is no Class 1E Electrical Equipment is Zones PB-4 and PB-19 (Reference 8). The qualified life of the cable in Zones PB-15A and PB-18 (Radiation TID 200 Mrads) is limited to 33.20 years.

All margins suggested by IEEE 323-1974 have been meet.

A vertical tray flame test has been conducted in accordance with Section 2.5 of IEEE Standard 383-1974 (Reference 3, p. 2, Item 5).

5168m

Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION ATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 113-19-01

Prepared By: Patrick O'Keefe Date: 11/4/86
Checked By: Jim Buckley Date: 11/4/86

Equipment Description	Postulated Environment			Qualified Environment		Qualification Method	Outstanding Items
	Parameter	Value	Reference	Value	Reference		
Purchase Order No.: 9763-006-113-19 Equipment ID No(s).: EDE-CBL-6 Equipment Type: Instrument Cable Manufacturer: ITT Suprenant Model Number: RG-11 Triaxial, RG-11, RG-58 & RG-59 Coaxial Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment (All Zones) Rad Zone: Primary Aux. Bldg. (PB-15A, PB-18) Note 1 Lowest Elevation: Note 2 Flood Level: Note 2 Above Flood Level: Note 2	Operating Time	1 Year	1 p. 1	1 Year	3 p. 2 5	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	390	2 p. 11	Test	None
	Peak Pressure (Psig)	60	1 p. 1	113	2 p. 11	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. 10	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH=7.5 to 10.5	1 p. 1	Boric Acid 1.7% by wt. pH=10.5	2 p. 10 6	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p. 3 Note 1	1.66×10^{8} (Note 1)	2 p. C-2	Test	None
	1 Year Accident Radiation Dose (Rads)	---	1 p. 3 Note 1				
	Aging (^{o}F/Years)	167/40 (75^{o}C)	3 p. 2 4	167/40 (75^{o}C) (Note 1)	3 p. 2	Test and Analysis	None
	Submergence	N/A	Note 8	N/A	N/A	N/A	None

Documentation References:

UE&C Drawing No. 9763-F-300219, Revision 19, Service Environmental Chart, 9/25/86.
EP-33262-02, FIRL Report No. F-A5550-8, Qualification Tests of Electrical Cables in a Simulated Steam Line Break and Loss-of-Coolant-Accident Environment, 1/14/83.
VU-20454, ITT to UE&C, 8/23/82.
UE&C Specification No. 9763-006-113-19, Sec. for Specialty Cable, 9/20/82.
Impell Calculation No. 070-032-002.
Seabrook E.Q. File No. 113-19-01, Assessment Checklist, Note 11.
SBU-97605, UE&C's letter to Impell, dated 2/13/85.
SBU-98764, UE&C letter, "Flooding Study Matrix."
Impell Letter No. 0570-032-NY-156, dated 2/2/86 Summary of Class 1E Equipment Submerged as a Result of Design Basis Events.

Notes:

1. The limiting zones for radiation are PB-15A and PB-18. Zones PB-4 and PB-19 are excluded since no electrical equipment is installed in these areas, (Reference 7). The qualified life of the cable (irradiated to 1.66 Mrads) in these zones is limited to 33.20 years.
2. Submergence qualification is not required (Reference 9).

2

APPENDIX A

BILL OF MATERIAL

SEABROOK STATION UNITS 1 & 2

SPECIALTY CABLE

(1) ITEM NO.	(2) MINIMUM CABLE VOLTAGE	(3) TYPE CABLE (FUNCTION)	(4) CONDUCTOR COLOR	(5) OVERALL JACKET COLOR	(6) CONDUCTOR SIZE AWG (STRAND)	(7) NUMBER CONDUCTORS	(8) SHIELD TYPE (COVERAGE)	(9) PURCHASE ORDER QTY - FEET	(10) CABLE CODE
1.	2500 vdc	Triaxial (RG-11,	N/A	Red	#18 (7x)	1	Braid (90% Min.)	25,000	UA1T
2.	2500 vdc	Triaxial (RG-11,	N/A	White	#18 (7x)	1	Braid (90% Min.)	25,000	UA2T
3.	2500 vdc	Triaxial (RG-11,	N/A	Blue	#18 (7x)	1	Braid (90% Min.)	7,000	UA3T
4.	2500 vdc	Triaxial (RG-11,	N/A	Yellow	#18 (7x)	1	Braid (90% Min.)	7,000	UA4T
5.	2500 vdc	Triaxial (RG-11,	N/A	Black With Red Trace	#18 (7x)	1	Braid (90% Min.)	60,000	UA6T
6.	2500 vdc	Coaxial (RG-11,	N/A	Black With Red Trace	#18 (7x)	1	Braid (90% Min.)	5,000	TA6T
7.	1000 vac	Coaxial (RG-58,	N/A	Black With Red Trace	#21 (19x)	1	Braid (90% Min.)	60,000	TA6Y
8.	1000 vac	Coaxial (RG-59,	N/A	Red	#24 (7x)	1	Braid (95% Min.)	5,000	TA1Y
9.	1000 vac	Coaxial (RG-59,	N/A	White	#24 (7x)	1	Braid (95% Min.)	5,000	TA2Y
10.	1000 vac	Coaxial (RG-59,	N/A	Black With Red Trace	#24 (7x)	1	Braid (95% Min.)	5,000	TA6U

CAF 113-19-0

Ref. 7

Form 4438

ACCT NO

PURCHASE ORDER

united engineers & constructors inc

DATE October 7, 1982

THE ORDER NUMBER MUST APPEAR ON INVOICES, CORRESPONDENCE, SHIPPING PAPERS AND PACKAGES.

P. O. NO. SNH-744 9763.006-113-1

Mail 5 copies of invoices (no original) shipping papers and packing list to UNITED ENGINEERS & CONSTRUCTORS INC. Post Office Box 700 Seabrook, New Hampshire 03

PURCHASER: PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE et al
c/o United Engineers & Constructors Inc. Agents
Post Office Box 700
Seabrook, New Hampshire 03874

ALL CORRESPONDENCE AND A COPY OF SHIPPING PAPERS AND PACKING LISTS MUST BE SENT TO UNITED ENGINEERS & CONSTRUCTORS INC. P.O. BOX 8223 PHILA. PA 19101 ATTN: E. H. CASE, MANAGER PROCUREME

Page 1 of 4

REQ NO 13819

REQ BY G.W.Morris

SELLER: ITT-Supranant Division
172 Sterling Street
Clinton, Massachusetts 01510

SHIP VIA Motor Freight

CONSIGN TO Public Service Company of New Hampshi
c/o United Engineers & Constructors I
Seabrook Station
Seabrook, New Hampshire 03874

TERMS 1% ten (10)/ net thirty (30) days.

DATED 9/21/82

TYPED BY GW

BUYER T.M.O'L.

Items furnished hereunder shall be made in a workmanlike manner and fit for the purpose set forth. All items are subject to Purchaser's inspection at destination. Rejected items will be held at Seller's risk and expense. On demand Seller shall replace without delay. Seller shall pay all royalties and license fees and shall defend all suits or claims whatsoever for infringement of any patent rights and shall save the Purchaser harmless from loss on account thereof.

ITEM NO	DESCRIPTION	PRICE

FURNISH F.O.B. Job Site.

SPECIALTY CABLE

Design, furnish, fabricate, test and deliver 1 Lot of Special Cable in accordance with the following documents:

A. Specification No. 9763.006-113-19, dated September 20, 1982 consisting of Cover Page, Table of Contents, nineteen (19) reproduced typewritten pages, Figure 1, three (3) pages of Appendix A, and three (3) pages of Appendix B, attached hereto and made a part hereof.

B. Specification No. 9763-QAS-3, Quality Assurance Administrative and System Requirements, For Safety Related Electrical Equipment, Revision 7, dated April 11, 1979, consisting of Cover, Table of Contents, Current Page Listing, Identification of Changes, and thirty-nine (39) reproduced typewritten pages, already in your possession and made a part hereof.

C. Specification No. 9763-EQ-1, Class IE Equipment Qualification Requirements, Revision 7, dated February 19, 1976, consisting of Cover, Table of Contents, ten (10) reproduced typewritten pages and Data to be submitted with Proposal, consisting of two (2) reproduced typewritten pages, numbered D1 and D2, already in your possession and made a part hereof.

PRICING:

TOTAL FIRM DELIVERED PRICE . . . . . $130,365.

ITEM	QUANTITY	DESCRIPTION	PRICE/MFT	EXTENSION
1.	25,000 ft.	UA1T Triax RG-11 Red	$810.00	$ 20,250.00
2.	25,000 ft.	UA2T Triax RG-11 White	$810.00	$ 20,250.00
3.	7,000 ft.	UA3T Triax RG-11 Blue	$810.00	$ 5,670.00
4.	7,000 ft.	UA4T Triax RG-11 Yellow	$810.00	$ 5,670.00
5.	60,000 ft.	UA6T Triax RG-11 Black/Red	$810.00	$ 48,600.00

Continued

NO CHANGE WILL BE MADE IN THIS ORDER UNLESS BY WRITTEN AGREEMENT

Form 4435

ACCT NO

PURCHASE ORDER

united engineers & constructors inc

DATE October 7, 1982

THE ORDER NUMBER MUST APPEAR ON INVOICES, CORRESPONDENCE, SHIPPING PAPERS AND PACKAGES

SNH-744

P. O. NO. 9763.006-113

Mail copies of invoices, the original shipping papers and packing list to UNITED ENGINEERS & CONSTRUCTORS INC

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE et al
c/o United Engineers & Constructors Inc. Agents

PURCHASER

REQ NO

REQ BY

ITT-Supremant Division

SELLER

ALL CORRESPONDENCE AND A COPY OF SHIPPING PAPERS AND PACKING LISTS MUST BE SENT TO UNITED ENGINEERS & CONSTRUCTORS INC P.O. BOX 8223 PHILA PA 19101 ATTN S. H. CASE MANAGER PROCUREMENT

SHIP VIA

CONSIGN TO

TERMS

DATED

TYPED BY

BUYER

Items furnished hereunder shall be made in a workmanlike manner and fit for the purpose set forth. All items are subject to Purchaser's inspection at destination. Rejected items will be held at Seller's risk and expense. On demand Seller shall replace without delay. Seller shall pay all royalties and license fees and shall defend all suits or claims whatsoever for infringement of any patent rights and shall save the Purchaser harmless from loss on account thereof.

ITEM NO.	DESCRIPTION	PRICE

ITEM	QUANTITY		DESCRIPTION			PRICE/MFT	EXTENSION
6.	10,000 ft.	TA6T	Coax	RG-11	Black/Red	$755.00	$ 7,550.00
7.	60,000 ft.	TA6Y	Coax	RG-58	Black/Red	$250.00	$ 15,000.00
8.	5,000 ft.	TA1Y	Coax	RG-59	Red	$225.00	$ 1,125.00
9.	5,000 ft.	TA2Y	Coax	RG-59	White	$225.00	$ 1,125.00
10.	5,000 ft.	TA6U	Coax	RG-59	Black/Red	$225.00	$ 1,125.00

Premium Price - Vendor to expedite delivery to October 8, 1982.

ITEM	QUANTITY	DESCRIPTION			PREMIUM
5.	25,000 ft.	UA6T	Triax	RG-11 Black/Red	$ 4,000.00

Prices are firm for delivery through January 14, 1983.

TERMS OF PAYMENT:
1% ten (10)/ net thirty (30) days.

SPECIAL CONDITIONS - Form No. 9763-4224, Revised May 20, 1981 consisting of Cover Page, Table of Contents and twenty (20) reproduced typewritten pages is attached hereto and made a part hereof.

GAURANTEE:
In accordance with Article 9 of Special Conditions Form 9763-4224 for a period of one (1) year from date of commercial operation.

Two (2) unpriced copies of outside Purchase Orders are to be submitted to the attention of Mr. D. E. McCaig, Manager - Expediting.

Monthly progress charts outlining engineering, purchasing, production and delivery status will be submitted starting August 23, 1982.

Contin.

NO CHANGE IN ... OR ITEMS ... UNLESS BY WRITTEN AGREEMENT

TOTAL

ATTACHMENT G

EXCERPTS FROM FSAR

CONTENTS

8.3.1.3 Physical Identification of Safety-Related Equipment

All cables, raceways and safety-related equipment are assigned to a particular channel or train. There are two redundant trains of power and controls, and four redundant channels of instrumentation. Each channel or train is assigned a particular color, as shown below:

Separation Group	Equipment Nameplate	Raceway Tag	Cable Color
A. Channel I and Train A Train A Associated	Red Black	Red	Red Black w/Red Tracer
B. Channel II and Train B Train B Associated	White Black	White	White Black w/White Tracer
C. Channel III	Blue	Blue	Blue
D. Channel IV	Yellow	Yellow	Yellow

47

47

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Each piece of electrical equipment is marked with the node number indicated on the design drawings, in the particular color corresponding to the channel or train to which that equipment is assigned. Similarly, trays and exposed conduits are marked with color-coded markers. The cable jacket color code serves as its identification. The operator or maintenance craftsman needs only to observe the color of the nameplate of any piece of equipment or the cable jacket color to determine which channel or train it serves. For exceptions to the above cable and raceway identification criteria, see Subsection 8.3.1.4.k.

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8.3.1.4 Independence of Redundant Systems

a. General

The Seabrook Station complies with the requirements of FSAR Appendix 8A, IEEE 384-1974 and Regulatory Guide 1.75, Rev. 2. These documents describe acceptable methods of complying with IEEE 279-1971 and Criteria 3, 17 and 21 of Appendix A to 10 CFR Part 50 with respect to the physical independence of the circuits and electrical equipment comprising or associated with the Class 1E power system, the protection system, systems actuated or controlled by the protection system, and auxiliary or supporting systems that must be operable for the protection system and the systems it actuates to perform their safety-related functions. Preservation of independence of redundant systems within the control boards and all other field mounted racks is discussed in Subsection 7.1.2.2.

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8.3.1.4 Independence of Redundant Systems

a. General

The Seabrook Station complies with the requirements of FSAR Appendix 8A, IEEE 384-1974 and Regulatory Guide 1.75, Rev. 2. These documents describe acceptable methods of complying with IEEE 279-1971 and Criteria 3, 17 and 21 of Appendix A to 10 CFR Part 50 with respect to the physical independence of the circuits and electrical equipment comprising or associated with the Class 1E power system, the protection system, systems actuated or controlled by the protection system, and auxiliary or supporting systems that must be operable for the protection system and the systems it actuates to perform their safety-related functions. Preservation of independence of redundant systems within the control boards and all other field mounted racks is discussed in Subsection 7.1.2.2.

In accordance with the provisions of Section 4.5a and 4.6.2 of FSAR Appendix 8A, Sections 4.5(1) and 4.6.1 of IEEE 384-1974, and Position C4 of Regulatory Guide 1.75, Revision 2, we have elected to associate all of the Non-Class 1E circuits with Class 1E circuits. This application of associated circuits allows the plant to be designed with one less separation group; that is, instead of having five separation groups consisting of four safety-related separation groups and one non-safety-related separation group, Seabrook has only four separation groups. The major advantages of this approach are the ability to provide greater separation distances between the groups, as well as to reduce the raceway system's exposure to fire.

As a result of this design, all plant circuits are specifically assigned to one of the following four separation groups as noted in Figure 8.3-57:

Group A - Train A, Channel I and Train A Associated Circuits
Group B - Train B, Channel II and Train B Associated Circuits
Group C - Channel III
Group D - Channel IV

The great majority of associated circuits are with Group A, a very limited number are with Group B, and none are with Groups C and D.

The circuits that are associated with Train A consist of:

1) Non-Class 1E power, control, instrument circuits contained within the Nuclear Island.

2) Non-Class 1E power, control, and instrumentation circuits that traverse the Nuclear Island boundary.

3) Non-Class 1E power, control, and instrument circuits outside the Nuclear Island.

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The circuits that are associated with Train B consist of:

1) Non-Class 1E power, control, and instrument circuits contained within the Nuclear Island.

2) Non-Class 1E power, control, and instrumentation circuits that traverse the Nuclear Island boundary. 47

The Nuclear Island boundary is shown in Figure 8.3-58. This figure denotes the buildings, structures, duct banks, etc., which are part of the Nuclear Island. All other buildings, structures, etc., are considered to be outside the Nuclear Island. 52

The four separation groups are routed through four separate raceway systems per the separation criteria given in Table 8.3-10. This separation criteria are based on a combination of the following:

1) Standard separation criteria given in Sections 5.1.3, 5.1.4, and 5.6 of FSAR Appendix 8A and IEEE 384-1974 and

2) Separation criteria established by analysis and testing as permitted aby Sections 5.1.1.2 and 5.6 of FSAR Appendix 8A and IEEE 384-1974. This analysis and testing are documented in References (a) and (2) (see FSAR Seciton 8.3.4). 54

The following analysis examines the design features and modes of failure of associated circuits of each separation group to determine any interaction and challenges with other separation groups. The overall objective is to assure that the ability to achieve a safe plant shutdown under design basis event (DBE) conditions is not compromised.

b. Train A Associated Circuit Analysis

1. Associated Circuits Contained within the Nuclear Island

Non-Class 1E circuits that remain within the Nuclear Island are permitted to share the same raceway as Train A Class 1E circuits. These circuits are classified as Train A Associated Circuits and are designed and installed to meet all the requirements placed on associated circuits as required by the compliance documents listed earlier.

Challenges to Class 1E circuits, because of failure in an associated circuit, have been examined and determined to have no detrimental effect because:

(a) When Class 1E power supplies are utilized, failure of a Non-Class 1E motor, load, or device connected to this power supply will be promptly isolated by operation of Class 1E protective devices.

Non-Class 1E loads connected to Class 1E buses are in all cases protected by Class 1E devices. The breakers protecting Non-Class 1E loads are coordinated such that failure of all Non-Class 1E loads, with proper operation of their own breakers, will not result in tripping of the incoming breaker to the bus.

Further, in the few cases where credit is taken for the incoming bus feeder breaker to provide backup protection to meet Regulatory Guide 1.63, the associated bus is dedicated to Non-Class 1E loads only and, therefore, will not degrade a Class 1E bus.

(b) In cases where Non-Class 1E power supplies, such as switchgear, motor control centers, and distribution panels are utilized, these are of identical design of the Class 1E counterparts and have been purchased to the same specification requirements inclusive of quality control. Mounting of the Non-Class 1E power supplies within the Nuclear Island is identical to the mounting of their Class 1E counterparts; therefore, credit can be taken for this equipment to function under DBE conditions.

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Penetrations for 600 volt service and below are modular type with a header plate welded to the outside of a 12 inch containment sleeve. Because of the concern regarding leakage currents of terminal blocks during accident conditions, low level instrumentation circuit conductors inside containment are connected to the penetration conductors with qualified splices. Safety-related 480 volt power, 120 volt ac and 125 volt dc control circuit conductors inside containment required to function for LOCA and main steam line break conditions are also connected to the penetration conductors with qualified splices. The balance of medium power 480 volt conductors, and control and instrumentation conductors are terminated on terminal blocks inside terminal boxes both inside and outside containment. 480 volt heavy power conductors are terminated with lugs on special termination plates inside terminal boxes both inside and outside containment. Nuclear instrumentation detector circuits are terminated with connectors inside terminal boxes both inside and outside containment. Penetrations for medium voltage have header plates welded to the outside of an 18 inch containment sleeve. Each penetration consists of three 1000 MCM conductors terminated with premolded stress cones inside terminal boxes both inside and outside containment. 56

The capability of the electrical penetrations to withstand the total range of time versus fault current without loss of containment integrity under worst case environmental conditions was demonstrated by test. These test results are summarized in the response to RAI 430.56. 52

The penetrations are arranged in two levels, with one power train and two channels entering above the intermediate floor of the containment building, and the redundant train and two channels entering below the intermediate floor. Once inside the containment, this floor provides the necessary physical separation and protection between the redundant trains; outside the containment, this separation is continued by separate tunnels connecting the penetration area to the switchgear and cable spreading areas of the control building.

Penetration conductors are sized using ICEA guidelines with an additional restriction of a 65°C ambient temperature. 52

The design, construction, and installation of the penetration assemblies are in accordance with IEEE 317 and Regulatory Guide 1.63. (See Subsections 8.1.5.3, 8.3.1.1, and 8.3.1.2 for further details on compliance to Regulatory Guide 1.63).

k. Cable and Raceway Identification

The computerized conduit and cable schedule provides a permanent record of the routing and termination of cables. Circuit level coding identifies the individual channel or train assigned to each raceway and cable. These data are entered into the conduit and cable program, which in turn produces reports designating the unique number with origin, destination, channel or train, and specific path for every cable. Every cable is identified by a tag affixed at each end, bearing the unique cable number. 47 52

Each channel or train is assigned a particular color, as described in Subsection 8.3.1.3.

All safety-related cables have jackets of the color assigned to the particular channel and train so there is no difficulty in distinguishing between cables of redundant channels. Non-safety related cables are associated with either Train A or B and have black jackets with a red trace for cables associated with Train A and a white trace for cables associated with Train B. It is immediately evident to the operator or maintenance man, by observing the color of the cable jacket, that a given cable is safety-related and that it is a particular channel or train. This system also prevents placing a cable of one channel or train with cables of another, by the obvious dissimilarity of jacket color. 52

Each cable is further identified by a footage and cable code on the jacket of the cable at intervals of approximately five feet. Reference to pulling records reveals the cable number, routing, separation, circuit type, and use of any cable at any accessible point in the raceway system where the footage marker and cable code can be identified.

Exceptions to the above cable identification criteria exist for vendor supplied speciality cables for radiation monitoring system and portions of various other systems (for example telephone system, lighting and fire protection/detection). For these exceptions, the necessary information to ensure adequate control of separation, installation, inspection, etc. is provided in the construction documents. 56

Raceways which are part of the computerized cable and conduit schedule are marked to identify their number and circuit level. Conduit raceways are identified at each end where conduit terminates and at both sides of walls, floors and in-line boxes. Tray raceway markers are spaced at 15 foot or less intervals. These markings are in the same colors assigned to the channels and trains. For example, a raceway with a red section marking is utilized only by cables with red (or black with red tracer) jackets. Hence, it is readily apparent that a given cable is routed with its respective channel. 53

Raceways which are not part of the computerized conduit and cable schedule may not be marked with a unique identification number, but their function is obvious by tracing the raceway to its end device. These raceways may be used to carry vendor supplied speciality cables for radiation monitoring system and portions of various other systems such as telephone system, lighting and fire protection/detection. For these raceways, the necessary information to ensure adequate controls of separation, installation, inspection, etc. is provided in the construction documents. 53

Since, in general, there is no sharing of safety-related systems between the two units (see discussion of compliance to GDC 5, Subsection 8.3.1.2), there is no need to distinguish the safety-related cables of one unit from the safety-related cables of the

other unit. As such, the cable and raceway coloring scheme is identical for the two units. In the common areas, the unit to which a cable belongs is not apparent from the raceway or cable markings. If it is required to know the unit to which a cable belongs, it can be obtained by observing the equipment designation number, which has the unit number as a prefix. The basis for cable and raceway identification is to distinguish between redundant channels, indicate which channel is involved, and which cables are safety-related.

1. Administrative Responsibility and Control

Administrative responsibility for assuring compliance with applicable design criteria and bases relative to independence of redundant systems rests with the A/E's Project Electrical Engineer. He is responsible for coordination with the A/E's field electrical supervisor to verify that the independence, separation and availability of Class 1E equipment is preserved during installation of the electric power system.

The following control procedures are established by the A/E's Project Electrical Engineer to assure compliance of the electric power system with the design criteria and bases:

1. Periodic design reviews with the cognizant engineer, the design supervisor, and the reviewing engineer to assure the criteria are being interpreted and followed,

2. Issuance of periodic administrative and design directives covering procedures, and

3. Periodic field reviews at the job site by the Project Electrical Engineer and/or the cognizant engineer to check field installation procedures, to provide interpretation of design drawings and guidance for solution of field installation problems, and to verify compliance with criteria.

The design of the conduit and raceway system is guided by the recommendations of applicable IEEE, ICEA and NEC standards. For instance, the limiting percentages of fill of internal area of the various size conduits or cable trays are fixed in one of the input forms of the computer conduit and cable schedule and these limits are automatically applied to all conduits and cable trays by the computer. If the conduit or cable tray is one which the computer is free to size, it designates the size which accommodates the cables to be enclosed. If the conduit or cable tray size is designer-designated and the fill exceeds the limiting percentage, the computer indicates an error message so that either the conduit can be made a larger size, or the cables routed by another path. By these methods, all raceways are assured of being of adequate capacity.

Correct installation practice assures that the design criteria by which the equipment was selected are not violated during construction. Installation bases are prescribed, where necessary, by the

BUILDING	MECHANICAL PENETRATION AREA	AIR INTAKE	COOLING TOW	
AREA/ ELEVATION	RADIOACTIVE TUNNEL (-) 34'-6"	CONTROL BUILDING VENT MAKE-UP AIR INTAKE-UNIT 2 8'-6"	PUMP ROOM 46'-0"	MECHANICAL EQUIPMENT ROOM 46'-0"
ENVIRONMENTAL ZONE	MPA-6 (17)	MUA-2 (17)	CT-5 (17)	CT-6 (17)
CONDITION	NORMAL 2	NORMAL 1	NORMAL 1	NORMAL 1
TEMPERATURE (°F)				
MAXIMUM	172	104	104	104
MINIMUM	50	40	0 (5)	0 (5)
PRESSURE (PSIG)				
MAXIMUM	SLIGHT POS	0	0	0
NORMAL	SLIGHT POS	0	0	0
MINIMUM	0	0	0	0
HUMIDITY (%)				
MAXIMUM (12)	8	60	60	60
MINIMUM	3	-	30	30
RADIATION (RADS) NORMAL INTEGRATED DOSE	2×10^{7} **	1×10^{3} *	1×10^{3} *	1×10^{3} *

* PER NUCLEAR DISCIPLINE CAL.. NO.: 4.4.14.94 F (REV 0).
** PER NUCLEAR DISCIPLINE CAL.. NO.: 4.4.14.70 F (REV 3).

ER (UNIT 2)		ELECTRICAL TUNNEL	MAIN STEAM & FEEDWATER PIPE CHASES			
ELECTRICAL SWITCHGEAR ROOMS 22'-0"		ELECTRICAL TRAY AREA 0'-0"	EAST PIPE CHASE STAIRWELL 3'-0"	EAST PIPE CHASE CABLE TUNNEL 8'-2"	EAST PIPE CHASE ELECTRICAL TRAY AREA 3'-0"	EAST PIPE CHASE ELECTRICAL TRAY AREA 3'-0"
CT-7A (17)	CT-7B (17)	ET-5A (17)	PCE-7 (17)	PCE-8 (17)	PCE-9 (17)	PCE-10 (17)
NORMAL 1	NORMAL 1	NORMAL 1	NORMAL 1	NORMAL 1	NORMAL 1	NORMAL 1
104	104	86	130	130	144	130
0 (5)	0 (5)	50	0 (5)	0 (5)	0 (5)	0 (5)
0	0	SLIGHT POS	SLIGHT POS	0	SLIGHT POS	0
0	0	SLIGHT POS	SLIGHT POS	0	SLIGHT POS	0
0	0	0	0	0	0	0
60	60	43	30	30	20	30
30	30	3	30	30	30	30
1×10^3 *	1×10^3 *	1×10^3 *	1×10^3 *	1×10^3 *	1×10^3 *	1×10^3 *

NOTE:
FOR NOTES AND GENERAL NOTES SEE THIS DRAWING SHEET 1 OF (5)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE SEABROOK STATION - UNITS 1 & 2 FINAL SAFETY ANALYSIS REPORT	SERVICE ENVIRONMENT CHART	
	9763-F-300219	FIGURE 3.11(B)-1, SH. 5

BUILDING												
AREA/ ELEVATION	CBS VAULTS 1-162'-0"			CBS VAULTS 1-162'-0"			CBS VAULTS 1-137'-0"			CBS VAULTS 1-137'-0"		
ENVIRONMENTAL ZONE	CY-1A (15)			CY-1B (15)			CY-2A (15)			CY-2B (15)		
CONDITION	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	
TEMPERATURE (°F) MAXIMUM	104	92	189	104	92	189	104	93	189	104	93	
MINIMUM	50	—	—	50	—	—	50	—	—	50	—	
PRESSURE (PSIG) MAXIMUM	SLIGHT POS	—	LOI	SLIGHT POS	—	LOI	0	—	LOI	0	—	
NORMAL	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	
MINIMUM	0	—	—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	
HUMIDITY (2) MAXIMUM (12)	60	—	100	60	—	100	60	—	100	60	—	
MINIMUM	3	—	—	3	—	—	3	—	—	3	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	4.7×10^5		ACCIDENT 1 5.8×10^8	4.7×10^6		ACCIDENT 1 5.8×10^8	4.7×10^5		ACCIDENT 1 5.8×10^8	4.7×10^6		

BUILDING	EQUIPMENT VAULTS											
AREA/ ELEVATION	STAIRWELLS 1-162'-0"						CONTROL BUILDING TO PAB 30'-8"			TRAIN A 0'-0"		
ENVIRONMENTAL ZONE	EY-6A			EY-6B			ET-1			ET-2A		
CONDITION	NORMAL 2	ABNORMAL 3	ACCIDENT 1	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	
TEMPERATURE (°F) MAXIMUM	104	84	196	104	87	189	104	125	144	104	105	
MINIMUM	50	—	—	50	—	—	18	—	—	50	—	
PRESSURE (PSIG) MAXIMUM	0	—	ACCIDENT 4 LOO	0	—	LOO	0	—	0	0	—	
NORMAL	0	—	—	0	—	—	0	—	—	0	—	
MINIMUM	0	—	—	0	—	—	0	—	—	0	—	
HUMIDITY (2) MAXIMUM (12)	60	—	ACCIDENT 4 100	60	—	100	60	—	20	60	—	
MINIMUM	3	—	—	3	—	—	5	—	—	3	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	4.7×10^6		6×10^7 (16)	4.7×10^6		6×10^7 (16)	1×10^3		—	1×10^3		

BUILDING												
AREA/ ELEVATION	MAIN CONTROL ROOM 75'-0"			GENERAL AREAS 75'-0"			COMPUTER ROOM 75'-0"			HVAC ROOM 75'-0"		
ENVIRONMENTAL ZONE	CB-1 (15)			CB-A,B,C,D,E,F,G (15)			CB-2			CB-3 (15)		
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL	ACCIDENT	NORMAL 1	ABNORMAL 3	
TEMPERATURE (°F) MAXIMUM	75	75	75	75	75	75	72	—	—	83	83	
MINIMUM	70	—	—	70	—	—	72	—	—	72	—	
PRESSURE (PSIG) MAXIMUM	SLIGHT POS	—	SLIGHT POS	SLIGHT POS	—	SLIGHT POS	SLIGHT POS	—	—	SLIGHT NEG	—	
NORMAL	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	
MINIMUM	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	
HUMIDITY (2) MAXIMUM (12)	60	—	60	60	—	60	60	—	—	38	—	
MINIMUM	30	—	—	30	—	—	30	—	—	30	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		

BUILDING	CONTROL BUILDING											
AREA/ ELEVATION	BATTERY ROOMS 29'-6"											
ENVIRONMENTAL ZONE	CB-1A (15)			CB-1B (15)			CB-8A (15)			CB-8B (15)		
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	
TEMPERATURE (°F) MAXIMUM	97	97	97	97	97	97	97	97	97	97	97	
MINIMUM	65	—	—	65	—	—	65	—	—	65	—	
PRESSURE (PSIG) MAXIMUM	SLIGHT NEG	—	SLIGHT NEG	SLIGHT NEG	—	SLIGHT NEG	SLIGHT NEG	—	SLIGHT NEG	SLIGHT NEG	—	
NORMAL	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	
MINIMUM	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	
HUMIDITY (2) MAXIMUM (12)	90	—	50	50	—	60	50	—	50	50	—	
MINIMUM	2	—	—	2	—	—	2	—	—	2	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		

NOTE:
FOR NOTES AND GENERAL NOTES SEE THIS DRAWING SHEET 1 OF 5

EQUIPMENT VAULTS

	RHR VAULTS 1-162'-0"			RHR VAULTS 1-162'-0"			RHR VAULTS 1-150'-0"			RHR VAULTS 1-150'-0"			RHR VAULTS 1-13'-10"			RHR VAULTS 1-13'-10"		
	EY-3A (6)			EY-3B (6)			EY-4A (6)			EY-4B (5)			EY-5A (6)			EY-5B (6)		
ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4	NORMAL 2	ABNORMAL 3	ACCIDENT 4
105	104	92	105	104	92	105	104	93	105	104	92	105	104	93	105	104	93	105
—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—
LOI	0	—	LOO	0	—	LOO	0	—	LOO	0	—	LOO	0	—	LOO	0	—	LOO
—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—
—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—
100	60	—	100	60	—	100	60	—	100	60	—	100	60	—	100	60	—	100
—	3	—	—	3	—		3	—	—	3	—	—	3	—	—	3	—	—
ACCIDENT 1																		
5.8×10^{-6}	4.7×10^{-4}		4.7×10^{-7} (4)	4.7×10^{-4}		4.7×10^{-7} (4)	4.7×10^{-4}		3.3×10^{-7} (4)	4.7×10^{-4}		3.3×10^{-7} (4)	4.7×10^{-4}		6.3×10^{-7} (4)	4.7×10^{-4}		6.3×10^{-7} (4)

ELECTRICAL TUNNELS / ELECTRICAL PENETRATION AREA

	TRAIN B 1-120'-0"			TRAIN A AIRLOCK 0'-0"			TRAIN B AIRLOCK 1-120'-0"			DUCT BANK PENETRATION 1-126'-0"			TRAIN A 0'-0"			TRAIN B 1-126'-0"		
	ET-2B			ET-4A			ET-4B			ET-5B			ET-3A			ET-3B		
ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 5	NORMAL 1	ABNORMAL 3	ACCIDENT 5
105	104	92	121	100	R	82	85	R	85	104	104	105	100	83	83	85	R	R
—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—
SLIGHT POS	0	—	SLIGHT POS	SLIGHT POS	—	SLIGHT POS	SLIGHT POS	—	SLIGHT POS	0	—	—	0	—	—	0	—	—
—	0	—	—	0	—	—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—
—	0	—	—	0	—	—	0	—	—	SLIGHT NEG	—	(-) 0.25" WG	SLIGHT NEG	—	(-) 0.25" WG	SLIGHT NEG	—	(-) 0.25" WG
58	60	—	35	60	—	48	60	—	45	60	—	58	35	—	48	24	—	50
—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
—	1×10^{-3}		—	1×10^{-3}		—	1×10^{-3}		—	1×10^{-2}		—	1×10^{-3}		ACCIDENT 1 8.4×10^{-7}	1×10^{-3}		ACCIDENT 1 3.4×10^{-6}

CONTROL BUILDING

	CABLE SPREADING ROOM 50'-0"			MECHANICAL EQUIPMENT ROOM 50'-0"						TRAIN A SWITCHGEAR ROOM 21'-6"			TRAIN B SWITCHGEAR ROOM 21'-6"					
	CB-4			CB-5A (6)			CB-5B (6)			CB-6A (5)			CB-6B (5)					
ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1			
83	104	95	95	83	83	83	83	83	83	104	104	104	104	104	104			
—	55	—	—	55	—	—	55	—	—	55	—	—	55	—	—			
SLIGHT NEG	0	—	0	SLIGHT NEG	—	SLIGHT NEG	SLIGHT NEG	—	SLIGHT NEG	SLIGHT POS	—	SLIGHT POS	SLIGHT POS	—	SLIGHT POS			
—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—			
—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	0	—	—	0	—	—			
58	60	—	60	50	—	50	50	—	50	60	—	60	60	—	60			
—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—			
—	1×10^{-3}		—	1×10^{-3}		—	1×10^{-3}		—	1×10^{-3}		—	1×10^{-2}		—			

TANK FARM / AIR INTAKE / EMERGENCY FEEDWATER PUMP BUILDING

	MG SETS 21'-6"			REFUELING WATER STORAGE 20'-0"			REACTOR MAKE-UP STORAGE 20'-0"			CONTROL BUILDING VENT MAKE-UP AIR INTAKE UNIT 1 X-6"			PUMP HOUSE 21'-0"			STAIRWELL 1-126'-0"		
	CB-9,10 (6)			TF-1			TF-2			MUA-1			EFW-1 (6)			EFW-2		
ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1
97	104	104	104	104	109	290	104	109	290	104	—	—	104	—	104	104	—	104
—	55	—	—	0 (5)	—	—	0 (5)	—	—	40	—	—	40	—	—	50	—	—
SLIGHT NEG	0	—	0	0	—	U	0	—	U	0	—	—	SLIGHT POS	—	ACCIDENT 5 SLIGHT POS	0	—	ACCIDENT 5 SLIGHT POS
—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	0	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	—
—	0	—	—	(-) 3	—	—	(-) 3	—	—	0	—	—	0	—	—	SLIGHT NEG	—	—
50	60	—	60	60	—	100	60	—	100	60	—	—	60	—	ACCIDENT 5 100	60	—	ACCIDENT 5 100
—	3	—	—	3	—	—	3	—	—	5	—	—	2	—	—	3	—	—
—	1×10^{-3}		—	2.3×10^{-4}		—	2.3×10^{-4}		—	1×10^{-3}		—	1×10^{-3}		—	1×10^{-3}		—

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
SEABROOK STATION - UNITS 1 & 2
FINAL SAFETY ANALYSIS REPORT

SERVICE ENVIRONMENT CHART

9763-F-300219 | FIGURE 3.11(B)-1, SH. 4

BUILDING										
AREA/ ELEVATION	HVAC EQUIPMENT ROOM 81'-0"			VALVE AISLE 53'-0"			SUPPLY FAN AREA 53'-0"			CHEMICAL VOLUME 53'-...
ENVIRONMENTAL ZONE	PB-1			PB-2			PB-3			PB-...
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 3	NORMAL 1	ABNORMAL 3	ACCIDENT 3	NORMAL 1	ABNORMAL
TEMPERATURE (°F) MAXIMUM	104	106	109	104	113	158	104	113	158	104	[illegible]
MINIMUM	50	—	—	50	—	—	50	—	—	50	—
PRESSURE (PSIG) MAXIMUM	0	—	0	0	—	0.5	0	—	0.5	0	—
NORMAL	SLIGHT NEG	—	—	SLIGHT NEG	—	—	-1-1/2" WG	—	—	SLIGHT NEG	—
MINIMUM	[illegible]	—	—	SLIGHT NEG	—	—	-1-1/2" WG	—	—	SLIGHT NEG	—
HUMIDITY (%) MAXIMUM (12)	60	—	56	60	—	100	60	—	100	60	—
MINIMUM	3	—	—	3	—	—	3	—	—	3	—
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		1.1×10^5 (16)	2×10^1		2.1×10^7 (16)	1×10^3		1.8×10^2 (16)	2×10^4	

BUILDING										
AREA/ ELEVATION	PCCW PUMP AREA 25'-0"			LETDOWN DEGAS AREA 25'-0"			RAACT PIPE TR AREA "A" 7'-0"			REACTOR MAKE-U... 7'-...
ENVIRONMENTAL ZONE	PB-11 (15)			PB-12			PB-13			PB-...
CONDITION	NORMAL 2	ABNORMAL 3	ACCIDENT 1	NORMAL 2	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 3	NORMAL 1	ABNORMAL
TEMPERATURE (°F) MAXIMUM	104	88	135	104	125	142	104	88	163	104	125
MINIMUM	60	—	—	60	—	—	50	—	—	50	—
PRESSURE (PSIG) MAXIMUM	0	—	ACCIDENT 3 0.4	SLIGHT POS	—	ACCIDENT 3 0.4	SLIGHT POS	—	0.4	SLIGHT POS	—
NORMAL	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT POS	—
MINIMUM	SLIGHT NEG	—	—	0	—	—	0	—	—	0	—
HUMIDITY (%) MAXIMUM (12)	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100	60	—	100	60	—
MINIMUM	2	—	—	2	—	—	3	—	—	3	—
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	4.7×10^4		1.9×10^5 (16)	1×10^3		5.8×10^2 (16)	2×10^7		2.1×10^7 (16)	3.5×10^4	

BUILDING										
AREA/ ELEVATION	HX/FILTER CUBICLES 7'-0"			REGEN DEMIN CUBICLES 7'-0"			CHARGING PUMP ROOMS 7'-0"			DEGAS COND ... 1-16'-...
ENVIRONMENTAL ZONE	PB-18			PB-19			PB-20 (A,B,C)			PB-21
CONDITION	NORMAL 2	ABNORMAL 3	ACCIDENT 3	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL
TEMPERATURE (°F) MAXIMUM	104	124	185	125	150	196	104	105	144	104	150
MINIMUM	50	—	—	50	—	—	50		—	50	—
PRESSURE (PSIG) MAXIMUM	0	—	0.4	0	—	ACCIDENT 3 0.4	0	—	ACCIDENT 4 1.0	SLIGHT POS	—
NORMAL	SLIGHT NEG	—	—	0	—	—	0	—	—	SLIGHT POS	—
MINIMUM	SLIGHT NEG	—	—	0	—	—	0	—	—	0	—
HUMIDITY (%) MAXIMUM (12)	60	—	100	34	—	ACCIDENT 3 100	60	—	ACCIDENT 4 100	60	—
MINIMUM	3	—	—	3	—	—	3	—	—	3	—
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	2×10^8		—	2×10^8 (108)		—	4.7×10^4		2.9×10^7 (16)	2×10^7	

BUILDING	PRIMARY AUXILIARY BUILDING									
AREA/ ELEVATION	RAD MON AND WPB ACCESS AREA 25'-0"/53'-0"			HVAC PLENUM 39'-0"			RADIOACTIVE PIPE CHASE 23'-0"			SAMPLE HX... 2'-0"
ENVIRONMENTAL ZONE	PB-28			PB-29			PB-17A			PB-1...
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 3	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 2	ABNORMAL 3	ACCIDENT 3	NORMAL 1	ABNORMAL
TEMPERATURE (°F) MAXIMUM	104	86	175	104	86	127	104	134	180	104	197
MINIMUM	50	—	—	0	—	—	50	—	—	50	—
PRESSURE (PSIG) MAXIMUM	0	—	0.05	0	—	0	0	—	0.4	0	—
NORMAL	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—
MINIMUM	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—
HUMIDITY (%) MAXIMUM (12)	60	—	100	60	—	37	60	—	100	45	—
MINIMUM	3	—	—	30	—	—	2	—	—	3	—
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		—	1×10^3		—	2×10^7		2.4×10^7 (16)	2×10^7	

* PER NUCLEAR DISCIPLINE CALC. NO. 4.4.H.70 F (REV. 4).

NOTE:
FOR NOTES AND GENERAL NOTES SEE THIS DRAWING SHEET 1 OF 5

PRIMARY AUXILIARY BUILDING																				
CONTROL TANK	EXHAUST FAN AREA 57'-0"			PAB HEAT EQUIPMENT AREA 57'-0"			BORIC ACID STORAGE AREA 57'-0"			COMPONENT COOLING HX 17'-0"			BORIC ACID TANK ROOM 25'-0"			SAMPLE HX ROOM 25'-0"		
	PB-5			PB-6			PB-7			PB-8			PB-9			PB-10		
ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 2	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1
158	104	96	165	104	107	158	104	107	158	104	175	165	104	125	134	104	164	179
--	50	—	—	50	—	—	45	—	—	50	—	—	65	—	—	60	—	—
0.5	0	—	0.5	0	—	0.5	SLIGHT POS	—	0.5	0	—	0.5	SLIGHT POS	—	ACCIDENT 3 0.4	0	—	ACCIDENT 3 0.4
—	1-1/2" WG	—	—	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	—
—	1-1/2" WG	—	—	SLIGHT NEG	—	—	0	—	—	SLIGHT NEG	—	—	0	—	—	SLIGHT NEG	—	—
100	60	—	100	60	—	100	60	—	100	60	—	100	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100
—	3	—	—	3	—	—	2	—	—	3	—	—	2	—	—	2	—	—
4.5×10^7 (4)	1×10^7		1.8×10^7 (4)	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		5.8×10^3 (4)	2×10^7		2.1×10^7 (4)

PRIMARY AUXILIARY BUILDING																		
WATER PUMP	CHARGING PUMP CONTROL ACCESS CORR 7'-0"			LETDOWN DEGAS ROOM 7'-0"			SEAL SUPPLY TANK 25'-0"			LETDOWN DEGAS RECIRC PUMPS 7'-0"			CHILLER PUMP AREA 7'-0"			VALVE MAINTENANCE PLATFORM 7'-0"		
	PB-14A			PB-15A			PB-15B			PB-15C			PB-16			PB-17		
ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 2	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1
165	104	96	163	104	101	300	104	107	300	104	119	300	104	130	162	104	144	209
—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—
ACCIDENT 3 0.4	0	—	0.4	0	—	0.4	0	—	0.4	0	—	0.4	SLIGHT POS	—	ACCIDENT 3 0.4	0	—	ACCIDENT 3 0.4
—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	—
—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	0	—	—	SLIGHT NEG	—	—
ACCIDENT 3 100	60	—	100	60	—	100	60	—	100	60	—	100	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100
—	1	—	—	3	—	—	3	—	—	3	—	—	1	—	—	3	—	—
—	3.5×10^4		7.3×10^5 (4)	2×10^4		—	1×10^5		5.8×10^2 (4)	2×10^7		—	8.4×10^5		2.4×10^5 (4)	2×10^7		2.4×10^7 (4)

PRIMARY AUXILIARY BUILDING																		
CCENER	REACT PIPE AREA & AREA 'A' 1-1 6'-0"			REACTOR PIPE TUNNEL 1-1 26'-0"			COND RECEIVER PUMP ROOM 1-1 25'-0"			ELECTRICAL PIPE CHASE 1'-26'-0"			STAIRWELL NO 2 1-1 25'-0"			STAIRWELL NO 1 7'-0"		
	PB-22			PB-23			PB-24			PB-25			PB-26			PB-27		
ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 2	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3	NORMAL 1	ABNORMAL 2	ACCIDENT 3
229	104	62	220	104	62	220	104	107	220	104	105	220	104	95	220	104	107	165
—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—
ACCIDENT 3 0.4	0	—	0.4	SLIGHT POS	—	0.4	SLIGHT POS	—	0.4	0	—	0.4	0	—	0.4	0	—	0.4
—	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—	0	—	—	0	—	—	0	—	—
—	SLIGHT NEG	—	—	0	—	—	0	—	—	0	—	—	0	—	—	0	—	—
ACCIDENT 3 100	60	—	100	60	—	100	60	—	100	60	—	100	60	—	100	60	—	100
—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—	3	—	—
3.4×10^7 (4)	2×10^7		2.2×10^7 (4)	2×10^7		2.2×10^7 (4)	2×10^7		2.6×10^7 (4)	1×10^7		3.1×10^5 (4)	2×10^7		2.2×10^7 (4)	1×10^3		—

	FUEL STORAGE BUILDING															CONTAINMENT ENCLOSURE		
ROOM	SPENT FUEL PUMP AREA 7'-0"			FUEL POOL AREA 7'-0"			SPENT FUEL STORAGE 25'-0"			SPENT FUEL HX 21'-6"			FILTER ROOM 64'-0"			FAN AREA 21'-0"		
	FSB-1			FSB-2			FSB-3			FSB-4			FSB-5			CE-1 (2)		
ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 2	ACCIDENT 1	NORMAL 2	ABNORMAL 2	ACCIDENT 4
190	104	157	184	104	104	158	104	104	158	104	104	158	104	104	158	104	97	150
—	60	—	—	60	—	—	60	—	—	60	—	—	60	—	—	50	—	—
ACCIDENT 3 0.4	0	—	ACCIDENT 3 SLIGHT POS	0	—	ACCIDENT 3 SLIGHT POS	0	—	ACCIDENT 3 SLIGHT POS	0	—	ACCIDENT 3 SLIGHT POS	0	—	ACCIDENT 3 SLIGHT POS	0	—	LO
—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	—
—	(-) 3	—	—	(-) 3	—	—	(-) 3	—	—	(-) 3	—	—	(-) 3	—	—	SLIGHT NEG	—	—
ACCIDENT 3 100	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100	60	—	ACCIDENT 3 100	60	—	100
—	2	—	—	2	—	—	2	—	—	2	—	—	2	—	—	3	—	—
2.1×10^7 (4)	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		(5)	1×10^3		ACCIDENT 1 3.6×10^4

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE SEABROOK STATION - UNITS 1 & 2 FINAL SAFETY ANALYSIS REPORT	SERVICE ENVIRONMENT CHART	
	9763-F-300219	FIGURE 3.11(B)-1, SH. 3

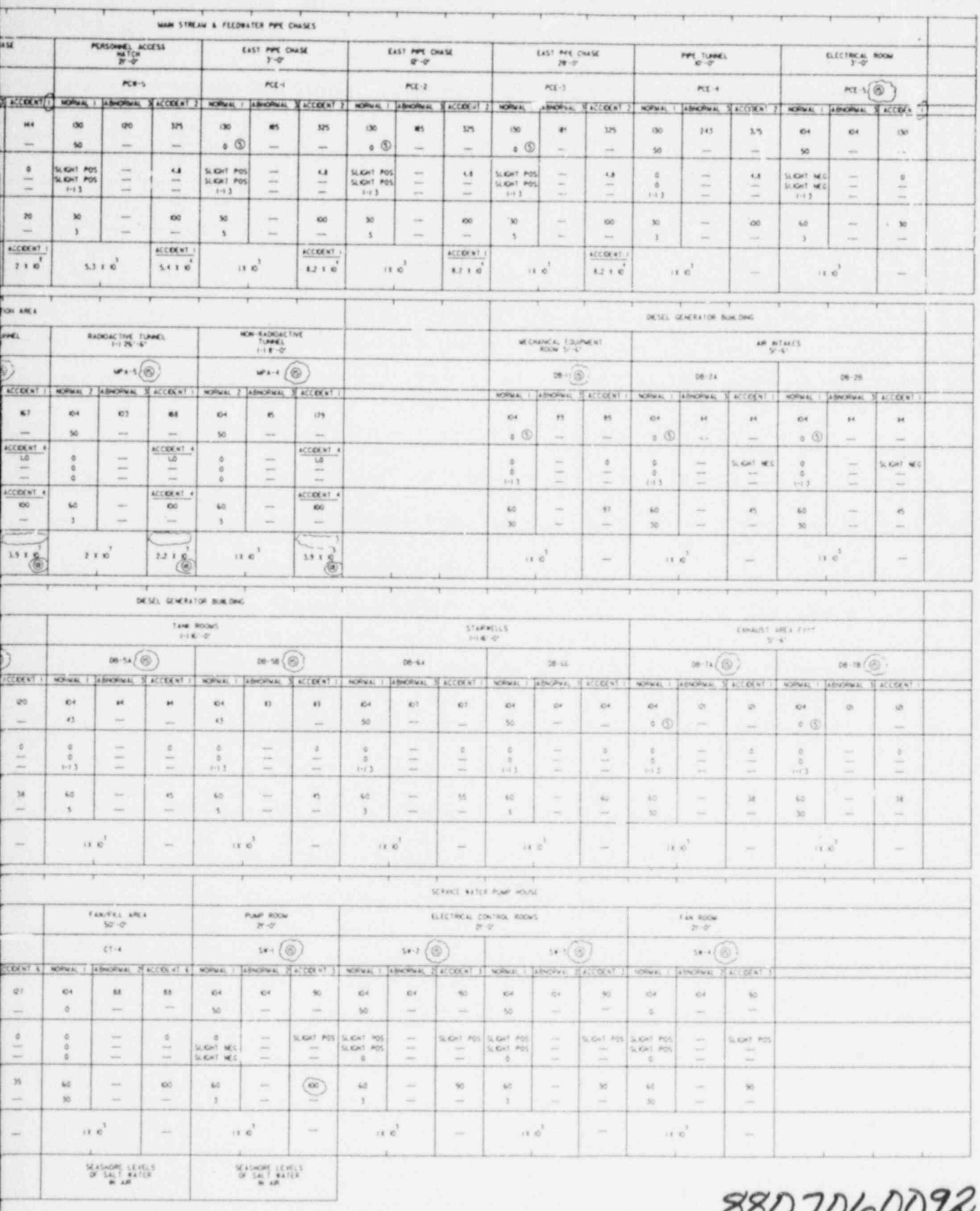
BUILDING												
AREA/ ELEVATION	WEST PIPE CHASE 3'-0"			WEST PIPE CHASE 12'-0"			WEST PIPE CHASE 28'-0"			WEST PIPE CHASE STAIRWELL 3'-0"		
ENVIRONMENTAL ZONE	PCE-1			PCE-2			PCE-3			PCE-4		
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 2	NORMAL 1	ABNORMAL 3	ACCIDENT 2	NORMAL 1	ABNORMAL 3	ACCIDENT 2	NORMAL 1	ABNORMAL 3	
TEMPERATURE (°F)												
MAXIMUM	130	206	325	130	206	325	130	206	325	130	206	
MINIMUM	0 (5)	—	—	0 (5)	—	—	0 (5)	—	—	28		
PRESSURE (PSIG)												
MAXIMUM	SLIGHT POS	—	4.8	SLIGHT POS	—	4.8	SLIGHT POS	—	4.8	0	—	
NORMAL	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—	0	—	
MINIMUM	(-) 3	—	—	(-) 3	—	—	(-) 3	—	—	(-) 3	—	
HUMIDITY (%)												
MAXIMUM (6)	30	—	100	30	—	100	30	—	100	30	—	
MINIMUM	5	—	—	5	—	—	5	—	—	8	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		ACCIDENT 1 8.2×10^4	1×10^3		ACCIDENT 1 8.2×10^4	1×10^3		ACCIDENT 1 8.2×10^4	1×10^3		

BUILDING	MAIN STEAM & FEEDWATER PIPE CHASES			MECHANICAL PENETRA								
AREA/ ELEVATION	HYDROGEN ANALYZER ROOM 22'-0"			RADIOACTIVE TUNNEL (-) 34'-6"			RADIOACTIVE TUNNEL (-) 26'-6"			RADIOACTIVE T (-) 34'-6		
ENVIRONMENTAL ZONE	PCE-6 (8)			MPA-1 (8)			MPA-2 (8)			MPA-3 (8)		
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 2	ABNORMAL 2	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 2	ABNORMAL	
TEMPERATURE (°F)												
MAXIMUM	104	104	130	104	100	166	104	104	160	104	10	
MINIMUM	50	—	—	50	—	—	50	—	—	50	—	
PRESSURE (PSIG)												
MAXIMUM	SLIGHT NEG	—	0	SLIGHT POS	—	ACCIDENT 4 LD	SLIGHT POS	—	ACCIDENT 4 LD	SLIGHT POS	—	
NORMAL	SLIGHT NEG	—	—	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT POS	—	
MINIMUM	(-) 3	—	—	0	—	—	0	—	—	0	—	
HUMIDITY (%)												
MAXIMUM (6)	60	—	30	60	—	ACCIDENT 4 100	60	—	ACCIDENT 4 100	60	—	
MINIMUM	3	—	—	3	—	—	3	—	—	3	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		ACCIDENT 1 7.2×10^3	2×10^7		7.5×10^7 (9)	2×10^7		2.8×10^7 (9)	2×10^7		

BUILDING												
AREA/ ELEVATION	DAY TANK ROOMS 51'-6"						DIESEL GENERATOR ROOMS 21'-6"					
ENVIRONMENTAL ZONE	DE-3A			DE-3B			DE-4A (8)			DE-4B (8)		
CONDITION	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	ACCIDENT 1	NORMAL 1	ABNORMAL 3	
TEMPERATURE (°F)												
MAXIMUM	104	108	108	104	108	108	104 (5)	120	120	104 (5)	120	
MINIMUM	50	—	—	50	—	—	50	—	—	50	—	
PRESSURE (PSIG)												
MAXIMUM	0	—	0	0	—	0	SLIGHT POS	—	0	SLIGHT POS	—	
NORMAL	SLIGHT NEG	—	—	SLIGHT NEG	—	—	0	—	—	0	—	
MINIMUM	(-) 3	—	—	(-) 3	—	—	(-) 3	—	—	(-) 3	—	
HUMIDITY (%)												
MAXIMUM (6)	60	—	55	60	—	55	60	—	38	60	—	
MINIMUM	3	—	—	3	—	—	3	—	—	3	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		

BUILDING	COOLING TOWER											
AREA/ ELEVATION	ELECTRICAL SWITCHGEAR ROOMS 22'-0"						MECHANICAL EQUIPMENT ROOM 46'-0"			PUMP ROOM 46'-0"		
ENVIRONMENTAL ZONE	CT-1A (8)			CT-1B (8)			CT-3 (8)			CT-2		
CONDITION	NORMAL 1	ABNORMAL 2	ACCIDENT 6	NORMAL 1	ABNORMAL 2	ACCIDENT 6	NORMAL 1	ABNORMAL 2	ACCIDENT 6	NORMAL 1	ABNORMAL 2	
TEMPERATURE (°F)												
MAXIMUM	104	104	104	104	104	104	104	90	90	104	127	
MINIMUM	50	—	—	50	—	—	0 (5)	—	—	0 (5)	—	
PRESSURE (PSIG)												
MAXIMUM	SLIGHT POS	—	SLIGHT POS	SLIGHT POS	—	SLIGHT POS	0	—	0	0	—	
NORMAL	SLIGHT POS	—	—	SLIGHT POS	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	
MINIMUM	0	—	—	0	—	—	SLIGHT NEG	—	—	SLIGHT NEG	—	
HUMIDITY (%)												
MAXIMUM (6)	60	—	93	60	—	93	60	—	35	60	—	
MINIMUM	2	—	—	2	—	—	30	—	—	30	—	
RADIATION (RADS) TOTAL INTEGRATED DOSE - (4)	1×10^3		—	1×10^3		—	1×10^3		—	1×10^3		
SPRAY	NONE									SEASHORE (EVEL OF SALT WATER IN AIR		

NOTE:
FOR NOTES AND GENERAL NOTES SEE THIS DRAWING SHEET 1 OF (5)



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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
SEABROOK STATION - UNITS 1 & 2
FINAL SAFETY ANALYSIS REPORT

SERVICE ENVIRONMENT CHART

9763-F-300219 | FIGURE 3.11(B)-1, SH. 2

BUILDING	OUTDOOR										
AREA/ ELEVATION	-	INCORE INSTRU (-) 44'-9"		REACTOR AREA (-) 25'-0"		REFUEL'G CAVITY 0'0"		REGEN HX (-) 25'-0"		VALVE ROOM (-) 25'-0"	
ENVIRONMENTAL ZONE	-	CS-1		CS-2		CS-3		CS-4		CS-5	
CONDITION	NORMAL	NORMAL	ABNORMAL	NORMAL	ABNORMAL	NORMAL	ABNORMAL	NORMAL	ABNORMAL	NORMAL	ABNORMAL
TEMPERATURE (°F) ⑦											
MAXIMUM	88	120	120	120	120	120	120	120	120	120	120
MINIMUM	0	50 ⑮	—	50 ⑮	—	50 ⑮	—	50 ⑮	—	50 ⑮	—
PRESSURE (PSIG)		15.01 ②		15.01 ②		15.01 ②		15.01 ②		15.01 ②	
MAXIMUM	-	1.5	—	1.5	—	1.5	—	1.5	—	1.5	—
NORMAL	0	0.5	—	0.5	—	0.5	—	0.5	—	0.5	—
MINIMUM	-	(-) 3.5 ①	—	(-) 3.5 ①	—	(-) 3.5 ①	—	(-) 3.5 ①	—	(-) 3.5 ①	—
HUMIDITY (%)											
MAXIMUM	100	40	—	40	—	40	—	40	—	40	—
MINIMUM ⑫	30	1.0	—	1.0	—	1.0	—	1.0	—	1.0	—
RADIATION (RADS) TOTAL INTEGRATED DOSE - ④	10^3	⑤		⑤		⑤		⑤		⑤	
SPRAY ⑭	SEASHORE LEVELS OF SALT WATER IN AIR										

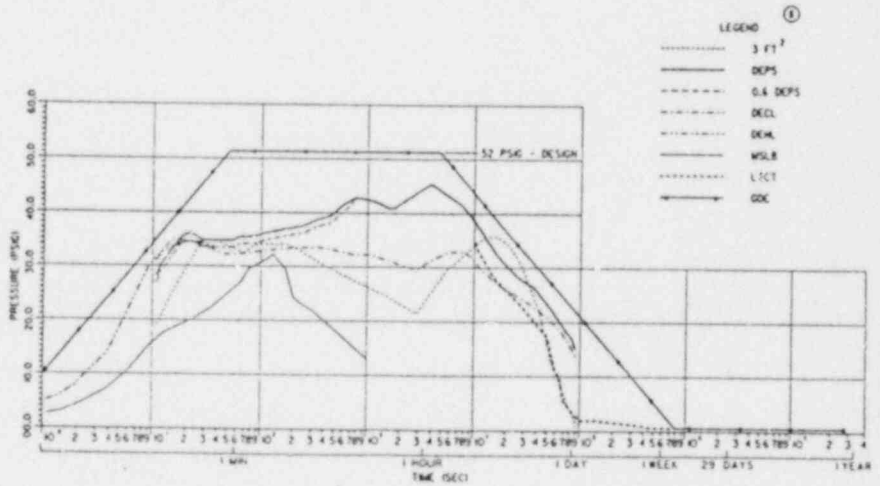

FIGURE 1 ③
CONTAINMENT ACCIDENT DESIGN ENVELOPE
PRESSURE - TIME

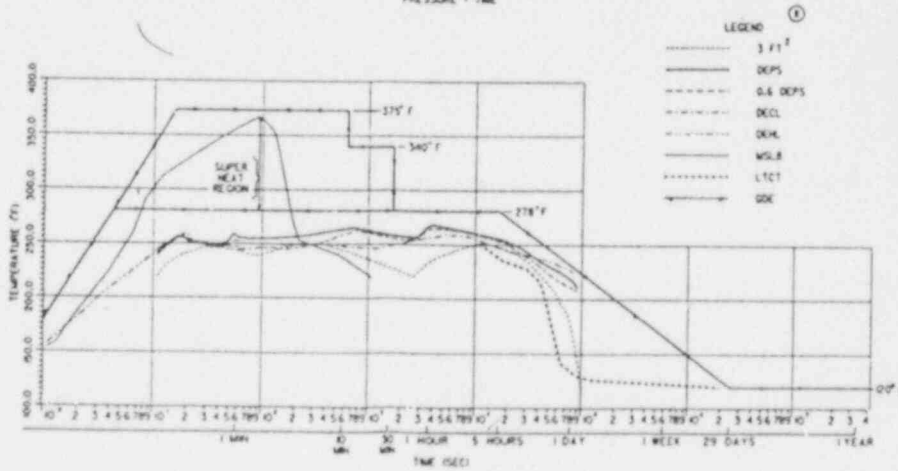

FIGURE 2 ①
CONTAINMENT ACCIDENT DESIGN ENVELOPE
TEMPERATURE - TIME

CONTAINMENT																			
EX LETDOWN HX 1-1 25'-0"		RC DR TANK HX 1-1 24'-0"		RC DR TANK 1-1 24'-0"		STEAM GEN AREA 1-1 28'-0"		OUT SEC SHIELD WALL 1-1 25'-0"		PRESSURIZER ROOM 0'-0"		OUT SEC SHIELD WALL 0'-0"		OPERATING FLOOR 35'-0"		INSIDE CONTAINMENT STRUCTURE AND PENETRATIONS WITHIN WALLS		
CS-6		CS-7		CS-8		CS-9		CS-10		CS-11		CS-12		CS-13		ALL ZONES			
NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	NORMAL 1	ABNORMAL 3	ACCIDENT 1	ACCIDENT 2	ACCIDENT 8
120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	274	370	120
50 (15)	—	50 (15)	—	50 (15)	—	50 (15)	—	50 (15)	—	50 (15)	—	50 (15)	—	50 (15)	—	-	-	-
160 (2)		160 (2)		160 (2)		160 (2)		160 (2)		160 (2)		160 (2)		160 (2)				
LS	—	LS	—	LS	—	LS	—	LS	—	LS	—	LS	—	LS	—	46.1	34.5	2
0.5	—	0.5	—	0.5	—	0.5	—	0.5	—	0.5	—	0.5	—	0.5	—	-	-	-
1+3.5 (1)	—	1+3.5 (1)	—	1+3.5 (1)	—	1+3.5 (1)	—	1+3.5 (1)	—	1+3.5 (1)	—	1+3.5 (1)	—	1+3.5 (1)	—	-	-	-
40	—	40	—	40	—	40	—	40	—	40	—	40	—	40	—	STEAM/AIR MIXTURE SEE FIGURES 1 & 2		
LO	—	LO	—	LO	—	LO	—	LO	—	LO	—	LO	—	LO	—			
(5)		(5)		(5)		(5)		(3)		(3)		(5)		(5)		(5)		
NONE																BORIC ACID L2% WT PH 7.5-10.5 NaOH USED TO CONTROL PH		

NOTES ○

1. -3.5 PSIG IS RESULT OF INADVERTENT SPRAY ACTUATION WITH MINIMUM WATER TEMPERATURE
2. 60 PSIG TEST CONDITION SPECIFIED ENVELOPES THE INTEGRATED LEAK RATE TEST AS WELL AS THE STRUCTURAL INTEGRITY TEST. THIS IS REQUIRED TO BE SPECIFIED AS A NON-FUNCTIONAL REQUIREMENT, BUT MAY HAVE IMPACT ON EQUIPMENT INTEGRITY DURING TEST. TIME DURATION OF PRESSURIZATION AT THIS VALUE WILL RANGE FROM ONE DAY TO ONE WEEK FOR A TOTAL NUMBER OF 20 TIMES DURING A 40-YEAR LIFE OF PLANT.
3. FIGURE 1, THE PRESSURE DESIGN ENVELOPE, IS THE CONTAINMENT STRUCTURE DESIGN PRESSURE OF 52 PSIG, WHICH IN ACCORDANCE WITH 10CFR50.55a(h) 50 INCLUDES A MARGIN ABOVE THE PEAK ACCIDENT PRESSURE OF 46.1/PSIG.

   FIGURE 2, THE TEMPERATURE DESIGN ENVELOPE INCLUDES AN INITIAL PEAK CORRESPONDING TO THE MAIN STEAM LINE BREAK DESIGN TEMPERATURE OF 379°F AND A LOCA DESIGN TEMPERATURE OF 278°F; THIS IS THE TEMPERATURE OF THE SATURATED STEAM/AIR MIXTURE AT 52 PSIG.

   THE DESIGN ENVELOPES IN BOTH CASES DO NOT INCLUDE MARGINS FOR EQUIPMENT QUALIFICATION AS REQUIRED BY IEEE 323.
4. TOTAL INTEGRATED DOSE IS THE SUM OF 40 YEARS NORMAL DOSE PLUS ONE YEAR POST ACCIDENT DOSE WHERE APPLICABLE
5. MINIMUM TEMPERATURE NOTED WILL ONLY BE REACHED AFTER SOME PERIOD OF TIME, AND ONLY IF NO ACTION IS TAKEN TO PROVIDE HEATING TO THE AFFECTED AREA.
6. A TORNADO CAN PRODUCE A -3 PSIG DEVIATION FROM NORMAL ATMOSPHERIC PRESSURE. THE D.G. SHOULD START UNDER THESE CONDITIONS, HOWEVER, OPERATION AT -1.5&D IS NOT REQUIRED BECAUSE THE DURATION OF THE PRESSURE TRANSIENT IS ONLY 1.5 SEC WHICH IS LESS THAN STARTING TIME OF THE DIESEL.
7. THE DESIGN BASIS AMBIENT TEMPERATURE RANGE OF 0 TO 88°F USED FOR EQUIPMENT LOCATED WITHIN BUILDINGS IS TAKEN FROM ASHRAE 1967 HANDBOOK OF FUNDAMENTALS, SEE OF THE TEMPERATURE DATA LIES BETWEEN THESE TWO LIMITS.

   A STATISTICAL ANALYSIS OF REGIONAL EXTREME TEMPERATURE CONDITIONS PREDICTS 100 YEAR MAXIMUM AND MINIMUM HOURLY OUTDOOR TEMPERATURES OF 100°F AND -3°F RESPECTIVELY (FSAR SECTION 2.3.2 &3). SAFETY-RELATED EQUIPMENT LOCATED INSIDE SELECTED BUILDINGS HAVE BEEN EVALUATED FOR SATISFACTORY PERFORMANCE UNDER 24-HOUR AVERAGE OUTDOOR TEMPERATURE CONDITIONS OF -4°F AND 89°F. THE ANALYSIS SUMMARIZING THE OPERATIONAL CAPABILITY OF THE INDOOR EQUIPMENT FOR THESE EXTREME OUTDOOR TEMPERATURES WAS SUBMITTED TO THE NRC IN A LETTER BY PSNH, DATED JUNE 24, 1981, TO MR. G.W. KNIGHTON FROM MR. JOHN DeVINCENTIIS, YAEC.
8. R.P.B. EVAPORATOR CUBICLES T_{max} = 120°F
9. THE INTEGRATED DOSE, WHICH IS THE SUM OF THE FORTY YEAR NORMAL AND ACCIDENT (LOCA) DOSES IS AS FOLLOWS:
   A. NORMAL FOR GENERAL AREA: 2300 RADS GAMMA
   B. NORMAL FOR REACTOR COOLANT (RC) PIPING (4.0E6) RADS GAMMA
   C. NORMAL FOR RC PIPING IN LINE INSTRUMENTATION: 3000 RADS GAMMA
   D. NORMAL FOR AREA BETWEEN MISSILE SHIELD AND REACTOR PRIMARY SHIELD, AND AROUND RC PIPING PENETRATION IN PRIMARY SHIELD: 1.9DP RADS GAMMA
   E. ACCIDENT-INTEGRATED DOSE AFTER ONE YEAR IN LOCA ENVIRONMENT:
      (1) FOR COMPONENTS NOT SUBMERGED FOLLOWING LOCA:
      BETA DOSE = 9.0E6R RADS; GAMMA DOSE = 1.4E8R RADS.
      (2) FOR COMPONENTS SUBMERGED FOLLOWING LOCA:
      BETA DOSE = 2.5 XDP RADS; GAMMA DOSE = 2.5XDP RADS.
10. FOR THE FOLLOWING AREAS USE AN INTEGRATED DOSE OF 2300 RADS:
    A. SPENT RESIN SLURCE TANK/TRANSFER PUMP AREA
    B. DEMINERALIZER CUBICLES
       (EXCEPT CS MIXED BED AND CATION WHICH ARE 5XDP)
    C. FILTER CUBICLES
    D. WASTE SOLIDIFICATION HOPPER AREA
    E. DEGASIFIER AREA (WASTE PROCESS BUILDING)

11. DECL - DOUBLE ENDED COLD - LEG GUILLOTINE (MAXIMUM SAFETY INJECTION)
    DEHL - DOUBLE ENDED HOT - LEG GUILLOTINE (MAXIMUM SAFETY INJECTION)
    DEPS - DOUBLE ENDED PUMP SUCTION GUILLOTINE (MAXIMUM/MINIMUM SAFETY INJECTION)
    3 FTF - 3 FT² PUMP SUCTION SPLIT (MAXIMUM SAFETY INJECTION)
    MSLB - MAIN STEAM LINE BREAK AT FULL POWER
    LTCT - LONG TERM CONTAINMENT TEMPERATURE/PRESSURE RESPONSE TO DESIGN BASIS LOCA
    GDE - GENERAL DESIGN ENVELOPE
12. MAXIMUM AND MINIMUM HUMIDITIES GIVEN FOR NORMAL CONDITIONS ARE COINCIDENT WITH MAXIMUM AND MINIMUM TEMPERATURES FOR NORMAL CONDITIONS DURING NORMAL PLANT OPERATION (6000 POWER, HEAT-UP AND COOL DOWN, REFUELING AND SHUT DOWN). HUMIDITIES COULD EXCEED THE MAXIMUM NOTED IN THE TABLE, HUMIDITIES ARE NOT CONTROLLED EXCEPT IN THE FOLLOWING ENVIRONMENTAL ZONES:
    CB-1 "MAIN CONTROL ROOM"
    CB-4, B, C, D, E, F, G, "GENERAL AREAS"
    CB-7 "COMPUTER ROOM"

    OTHER AREA HUMIDITIES MAY REACH 95% RH DURING PLANT SHUTDOWN CONDITIONS (REF CALC WS-WSC-32).
13. MINIMUM TEMPERATURE APPLIES TO PLANT SHUTDOWN. MINIMUM TEMPERATURE DURING REFUELING OPERATION IS 74°F.
14. SPRAY FOR ZONES SW-1, CT-1, 2, CT-4 AND CRC WATER PUMP HOUSE PUMP ROOM IS SEASHORE LEVELS OF SALT WATER IN AIR. ALL OTHER AREAS/ZONES NOT APPLICABLE
15. INDICATES AREA PROVIDED W/SAFTEY RELATED VENTILATION
16. FOLLOWING A FUEL HANDLING ACCIDENT THE 30 DAY INTERGRATED DOSE EXCEEDS 1×10^3 RADS IN A LOCALIZED AREA WITHIN APPROXIMATELY 10 FEET OF THE CHARCOAL VENTILATION FILTERS. THE MAXIMUM 30 DAY INTERGRATED DOSE ON CONTACT IS APPROXIMATELY 2 X 10⁴ RADS. IT IS ASSUMED THAT THE CHARCOAL FILTERS CAN BE REPLACED WITHIN 30 DAYS. (REF CALC 4.4.4.5(7), REV. 0)
17. THESE ZONES ARE ANALYZED FOR NORMAL CONDITIONS ONLY.
18. PRESSURIZED ACCIDENT-RCS REMAINS PRESSURIZED FOLLOWING CORE DAMAGE.
19. THE YEARLY AVERAGE SPACE TEMPERATURE IN DG-1A&1B IS 77°F. (CALC 6.0.4.7.2, REV. 1).

GENERAL NOTES

A. IN AREAS WHERE SLIGHTLY POSITIVE (SLIGHT POS) OR SLIGHTLY NEGATIVE (SLIGHT NEG) PRESSURES ARE INDICATED, THE INFORMATION IS FOR DESIGN OF HVAC SYSTEMS AND IS NOT REQUIRED TO BE SPECIFIED IN EQUIPMENT SPECIFICATIONS, UNLESS THESE PRESSURES AFFECT THE DESIGN AND/OR OPERATION OF THIS EQUIPMENT.

B. ALL EQUIPMENT LOCATED EXTERNAL TO SECONDARY SHIELD WALL WITHIN CONTAINMENT, AND ALL EQUIPMENT LOCATED EXTERNAL TO CONTAINMENT WILL EXPERIENCE NEUTRON FLUX LESS THAN 10^4 n/cm² AND THEREFORE NEUTRON EXPOSURE NEED NOT BE SPECIFIED FOR FERRITE COMPONENTS PURCHASED TO ASME CODE SECTION 3.

C. THIS DRAWING IS VALID ONLY FOR ENVIRONMENTAL QUALIFICATION OF EQUIPMENT IMPORTANT TO SAFETY AND SHOULD NOT BE UTILIZED FOR ANY OTHER DESIGN PURPOSES.

D. FOR REFERENCE CALCULATIONS WHICH SERVE AS THE BASIS FOR THE NORMAL/ABNORMAL/ACCIDENT CONDITIONS SHOWN ON THE SERVICE ENVIRONMENT CHART, SEE CALC SET NO 6.0.0.000, "DESIGN BASIS".

E. FOR ENVIRONMENTAL ZONE MAPS, SEE CALC SET NO 6.0.0.000, "DESIGN BASIS"

F. CONDITIONS- ALL NORMAL, ABNORMAL AND ACCIDENT CONDITIONS LISTED BELOW OCCUR SIMULTANEOUSLY WITH THE DESIGN BASIS OUTDOOR AMBIENT TEMPERATURES AND HUMIDITIES. THE WORST NORMAL, ABNORMAL AND ACCIDENT CONDITIONS, AS APPLICABLE FOR EACH BUILDING ZONE, ARE TABULATED IN THE CHART.

   NORMAL 1 - THE MAXIMUM AND MINIMUM TEMPERATURES AND HUMIDITIES OCCURRING DURING 100% FULL POWER.

   NORMAL 2 - THE MAXIMUM AND MINIMUM TEMPERATURES AND HUMIDITIES OCCURRING DURING HEAT-UP AND COOLDOWN.

   ABNORMAL 1 - THE MAXIMUM TEMPERATURE OCCURRING DURING DIESEL GENERATOR TESTING.

   ABNORMAL 2 - THE MAXIMUM TEMPERATURE OCCURRING DURING TUNNEL HEAT TREATMENT.

   ABNORMAL 3 - THE MAXIMUM TEMPERATURE OCCURRING DURING LOSS OF OFFSITE POWER (LOP) WITH THE PLANT AT 100% FULL POWER. THE DURATION OF THE LOP EVENT IS 2 HOURS AND WILL OCCUR ONCE DURING THE LIFE OF THE PLANT.

   ABNORMAL 4 - THE MAXIMUM TEMPERATURE OCCURRING DURING REFUELING.

   ACCIDENT 1 - THE MAXIMUM TEMPERATURE, PRESSURE, HUMIDITY & RADIATION DOSE OCCURRING DURING A LOSS OF COOLANT ACCIDENT (LOCA) WITH A LOSS OF OFFSITE POWER. THE DURATION OF THE LOP IS 72 HOURS FOR ALL BUILDINGS OTHER THAN CONTAINMENT; FIGURES 1 AND 2 SHOULD BE USED FOR CONTAINMENT.

   ACCIDENT 2 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING A MAIN STEAM LINE BREAK (MSLB) EITHER IN CONTAINMENT OR IN THE MAIN STEAM AND FEEDWATER PIPE CHASES.

   ACCIDENT 3 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING A HIGH ENERGY LINE BREAK (HELB) OUTSIDE CONTAINMENT.

   ACCIDENT 4 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING A MODERATE ENERGY LINE BREAK (MELB).

   ACCIDENT 5 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING A HOT WATER LINE BREAK (HWLB) HIGH ENERGY LINE.

   ACCIDENT 6 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING 100% FULL POWER WITH A LOSS OF TUNNELS.

   ACCIDENT 7 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING A LOSS OF COOLANT ACCIDENT WITH A LOSS OF TUNNELS.

   ACCIDENT 8 - THE MAXIMUM LONG TERM TEMPERATURE, PRESSURE AND HUMIDITY RESULTING FROM A DESIGN BASIS LOCA.

   ACCIDENT 9 - THE MAXIMUM TEMPERATURE OCCURRING DURING A SEISMIC EVENT WITH 100% FULL POWER OR A LOCA.

   ACCIDENT 10 - THE MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY OCCURRING DURING A FUEL HANDLING ACCIDENT (FHA ACCIDENT).

G. MAXIMUM TEMPERATURE, PRESSURE AND HUMIDITY GIVEN FOR THE ACCIDENT CONDITIONS ARE COINCIDENT WITH THE WORST CASE ACCIDENT AS NOTED.

H. MINIMUM TEMPERATURES INDICATED ARE FOR ANY NORMAL MODE OF OPERATION (INCLUDING PLANT SHUTDOWN).

I. DASHED (-) LINE FOR RADIATION DOSE UNDER ACCIDENT CONDITIONS INDICATES THAT THE ACCIDENT DOSE IS NEGLIGIBLE.

J. DASHED (-) LINE FOR TEMPERATURE, PRESSURE AND/OR RELATIVE HUMIDITY UNDER NORMAL, ABNORMAL AND/OR ACCIDENT COLUMNS INDICATES INFORMATION NOT REQUIRED UNDER THIS ANALYSIS.

ATTACHMENT H

EXCERPT FROM ASLB HEARING TRANSCRIPT
TUESDAY, SEPTEMBER 30, 1986

CONTENTS

Transcript pgs. 384-389

Sim 7-6

INDEX

MS. CURARN: I would like to turn now to equipment qualification file No. 113-20-01, which I would ask the reporter to mark for identification purposes as Exhibit 5.

(The document referred to was marked NECNP Exhibit 5 for identification.)

MS. CURRAN: Do you have a copy of that, Mr. Woodward?

WITNESS WOODWARD: Yes, I do.

BY MS. CURRAN:

Q According to Applicant's testimony at page 7, this is one of the pieces of equipment that is not qualified for 100 days. Am I correct?

A (Witness Salvo) That is correct.

Q This piece of equipment is qualified for -- at least not for all parameters -- this piece of equipment is qualified for 30 submergence, am I correct?

A (Witness Woodward) Yes, that is correct.

Q Would you please describe the location and the use of this cable at the Seabrook plant?

A This cable is 300 volt instrument cable that can be found anywhere in the plant. With respect to all specific applications, I couldn't answer that question.

Q But it is possible, is it not, that this cable

Sim 7-7

supplies electricity to instruments that would say show the conditions of accidents at the plant and monitor the various parameters associated with accidents at the plant?

A It is possible, yes.

End Sim
Sue fols

1-SueW

Q Now, according to Page 7 of the qualification report review checklist, this test program doesn't include submergence tests. And, their checklist refers to Note 9 for an explanation of that.

I would like to turn to Note 9 which is on Page 11 of the assessment checklist. And, in particular I would like to discuss the statement in Note 9 that this particular table supplies instrument rack MM-IR-12.

Now, as I understand it, the cable that supplies MM-IR-12 may be submerged during an accident; is that correct?

A (Witness Woodward) That's correct.

Q However, the note explains that instrument rack MM-IR-12 is denoted operability Code C. Now, would you explain what operability Code C means?

A In accordance with the regulations and criteria set forth in NUREG 0588 and Regulatory Guide 1.89, all the equipment in Seabrook for which qualification is addressed is assigned operability codes.

Operability Code C represents equipment which may see what we call harsh environment of which submergence may be one subsequent to design basis events.

However, it performs no safety function relative to mitigating the accident or putting the plant in a safe condition after these events. And, also it has been evaluated

#3-2-SueW

to see if any failures of this equipment due to the environment will effect anything else in the plant, the safety of the plant.

Q Okay. I would like to turn to Reference 12 which is the letter from the Impell Corporation to Yankee Atomic, dated February 2nd, 1986. Now, on February 2nd, do I understand it that at that time the Impell Corporation considered that instrument rack MM-IR-12 was Class 1E equipment which would have been operability Code A?

(Mr. Woodward and Mr. Salvo are conferring.)

A Yes. As of the date of this letter, the equipment on, and parts of instrument rack of MM-IR-12, were considered to be essential to the plant at that time.

Q And, am I correct that Impell suggested that rack MM-IR-12 should either be relocated above flood level or it should be shown that operability for a moderate energy line break is not required?

Is that correct?

(The witness is looking at the document.)

A Yes, as stated on Page 4 of that letter.

Q Now, did New Hampshire Yankee relocate this instrument rack?

A (Witness Salvo) During the initial phase of the EQ program, an assumption was made that -- a conservative assumption was made -- many pieces of equipment were assumed

8-3-SueW

to have an operability Code A, which meant that they were required to perform a safety function. When the specific files were reviewed and we encountered problems that did not envelope all accident assumptions, conservative action assumptions, that we made we went back and did a specific review of each piece of equipment's operability requirements.

This is what was done for this particular instrument rack. It was originally assumed an operability Code A as a conservative assumption. And, after problems were encountered due to submergence, we then performed a specific review for that piece of equipment. And, it was determined that no piece of equipment in that rack was required to perform any safety function during a mild energy break.

And, that was performed by United engineers.

Q And, was a report and an evaluation prepared for that piece of equipment?

A I believe so.

Q But, you are not sure?

A Well, United has done a document of review. I haven't seen a report. But, United did perform a review and I have not specifically seen the report.

Q Now, turning back to the Note 9 in the assessment checklist, Note 9 refers to Reference 16 as an explanation for the downgrading of the instrument rack, MM-IR-12, from operability Code A to operability Code C; is that correct?

#8-4-SueW

(Mr. Woodward and Mr. Salvo are conferring.)

A (Witness Woodward) Reference 16 reports that the operability code will be changed in the program from either A or B to C.

Q And, Reference 16 -- correct me if I'm wrong, but Reference 16 is the only reference in this file to the change in the operability code for that instrument rack, from A to C. It's the only explanation that's given of how this operability code has changed.

Is that right?

(Mr. Woodward and Mr. Salvo are conferring.)

A Yes, this is the official United engineer's documentation that notifies people that the change will occur. Ultimately, the equipment list or that harsh environment list we have previously talked about will show that change.

Q Okay. I would just like to review this reference with you since it is a kind of unusual looking document.

The first page is an engineering change authorization; is that right?

A That's correct.

Q Basically, this lists the equipment, the specific pieces of equipment, for which the company is requesting the authorization to downgrade the safety code?

(Mr. Woodward and Mr. Salvo are conferring.)

ATTACHMENT I

EXCERPT FROM ENVIRONMENTAL
QUALIFICATION REPORT (EQR)

CONTENTS

PSNH

Public Service of New Hampshire

New Hampshire Yankee Division

SEABROOK STATION
Engineering Office

October 31, 1985

SBN- 886
T.F. B7.1.2

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) PSNH Letter (SBN-549), dated August 12, 1983, "Response to Safety Evaluation Report Outstanding Issue #6 (SER 3.11, Equipment Qualification Branch)," J. DeVincentis to G. W. Knighton

Subject: Environmental Qualification of Electrical Equipment; SER Outstanding Issue #6

Dear Sir:

As discussed at the June 13, 1985 meeting regarding Seabrook's Environmental Qualification Program, the report entitled, "Environmental Qualification of Electrical Equipment Important to Safety" (hereinafter referred to as EQR), was being updated and would be submitted to the NRC in the late fall. Accordingly, please find enclosed three (3) copies of the revised EQR, which documents our compliance with 10CFR50.49.

It is also our understanding, from the above referenced meeting, that the NRC site audit would be scheduled approximately six to eight (6-8) weeks after submittal of the EQR. We respectively request that you advise us as soon as possible of your plans for conducting this audit, so that we can begin planning for support of your audit activities.

If you have any questions or require further clarifications, please do not hesitate to contact us.

Very truly yours,

John DeVincentis, Director
Engineering and Licensing

Enclosure

cc: Atomic Safety and Licensing Board Service List

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
SEABROOK STATION
ENVIRONMENTAL QUALIFICATION OF
ELECTRICAL EQUIPMENT IMPORTANT TO SAFETY

2.0 DEFINITION OF ELECTRICAL EQUIPMENT IMPORTANT TO SAFETY

2.1 Criteria for Selection of Equipment

The Seabrook environmental qualification program addresses all electrical equipment important to safety which is located in a potentially harsh environment. Equipment which would not be exposed to a harsh environment during postulated accident conditions (i.e., mild environment) is not included. A mild environment, as defined in 10 CFR 50.49(c) is, "...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."

Seabrook Station defines a harsh environment as those areas of the plant where normal or accident environmental temperatures exceed 130°F, pressures exceed 1 psig, humidity is 100% and condensing, or the total integrated radiation dose exceeds 1×10^4 rads.

Electrical equipment important to safety which were considered for inclusion within the scope of the Seabrook program includes the following:

A. Safety-related (Class 1E) electrical equipment.
B. Nonsafety-Related electric equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions.
C. Post-accident monitoring equipment.

The systems found to contain electric equipment in the above categories are listed in Table 2-1.

2.2 Identification of Equipment

In response to the requirements of 10 CFR 50.49 paragraph (d), a documented review was performed of all applicable design documents to assure that all equipment important to safety [10 CFR 50.49 paragraphs (b)(1), (b)(2), (b)(3)] was identified. The equipment was listed and categorized in accordance with the guidance provided in Appendix E to Regulatory Guide 1.89, Rev. 1.

Dated: June 17, 1988

UNITED STATES OF AMERICA
UNITED STATES NUCLEAR REGULATORY COMMISSION

before the

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
PUBLIC SERVICE COMPANY NEW HAMPSHIRE, et al.	)	Docket Nos. 50-443-OL-1 50-444-OL-1
(Seabrook Station, Units 1 and 2)	)	(On-site Emergency Planning Issues)

APPLICANTS' REPLY TO NRC STAFF
AND NECNP'S RESPONSE TO
APPLICANTS' SUGGESTION OF MOOTNESS

BACKGROUND

Following the Licensing Board's Partial Initial Decision,[1] ("PID") NECNP challenged, inter alia, the Licensing Board's finding that the RG-58 coaxial cable was environmentally qualified by comparison with RG-59 coaxial cable. In ALAB-875 the Appeal Board agreed with NECNP and stated that a letter from the cable vendor to Seabrook's architect-engineer and constructor was an insufficient

[1] Public Service Company of New Hampshire, (Seabrook Station, Units 1 and 2) LBP-87-10, 25 NRC 177 (1987), rev'd in part, ALAB-875, 26 NRC 251 (1987).

evidentiary basis for the Licensing Board's finding.[2] The Appeal Board requested that the Licensing Board indicate any additional support in the existing record for its finding, or take further evidence.[3] Unpersuaded by the submissions from the Licensing Board and the Applicants, the Appeal Board, in ALAB-891, reversed the decision of the Licensing Board in the PID and remanded the issue of whether RG-58 coaxial cable is environmentally qualified.[4] In ALAB-891, the Appeal Board stated that new evidence introduced on this issue, following the remand, "must be sponsored by a competent affiant or witness."[5]

On May 19, 1988, the Applicants filed a "Suggestion of Mootness" in which they stated, on the basis of affidavits of experts, that they had: 1) identified which RG-58 coaxial cables are required to meet the environmental qualification requirements of 10 CFR 50.49; and 2) directed that those RG-58 coaxial cables be replaced by RG-59 coaxial cables -- an

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[2] Public Service Company of New Hampshire, (Seabrook Station, Units 1 and 2) ALAB-875, 26 NRC 251, 271 (1987).

[3] Id.

[4] Public Service Company of New Hampshire, (Seabrook Station, Units 1 and 2) ALAB-891, 27 NRC ___ (April 25, 1988).

[5] Id. slip op at 22.

environmentally qualified, technically acceptable substitute.[6]

The NRC Staff responded on June 2, 1988. In its response, the Staff agreed that "[a] fourth option available to Applicants...is to replace all RG-58 coaxial cables requiring environmental qualification with another type cable that has previously been demonstrated to be environmentally qualified for its intended use. This course of action is appropriate because it addresses and eliminates the central claim of remanded NECNP Contention I.B.2."[7] Furthermore, the Staff agreed that the requirements of 10 CFR 50.49 apply only to RG-58 cables which are important to safety and located in harsh environments,[8] agreed that spare cables need not meet the requirements of 10 CFR 50.49,[9] and agreed that RG-58 cables located in a mild environmental do not need to be environmentally qualified in accordance with 10 CFR 50.49.[10] Finally, the Staff also agreed that the replacement of the RG-58 cable by the RG-59 cable "would satisfy the

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[6] On May 27, 1988 Applicants filed the Supplemental Affidavit of Richard Bergeron, and in accordance with that affidavit, slightly revised the pleading.

[7] "NRC Staff Response to Applicants' Suggestion of Mootness" (June 2, 1988) at 3.

[8] Id. at 5-6.

[9] Id. at 7.

[10] Id. at 8.

environmental qualifications of 10 CFR 50.49 for those cables."[11]

Nevertheless, while seemingly endorsing the Applicants' course of action, the Staff in effect faulted the affidavits of the Applicants' experts based on the alleged failure to supply sufficient information to substantiate certain claims. While not conceding that such additional information is necessary, the Affidavit of Richard Bergeron (June 16, 1988) responds to the issues raised.

On June 9, 1988 NECNP filed its response, together with the affidavit of Robert D. Pollard.[12] NECNP argues that the Applicants' Suggestion of Mootness must be rejected for three reasons, all of which are without merit. First, NECNP seeks discovery, specifically the examination of documents supporting Applicants' position.[13]

Second, NECNP argues that it is entitled to a hearing to test the credibility of Applicants' witnesses.[14]

Third, NECNP asserts that there are remaining disputes of material facts because Applicants have failed "to

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[11] Id. at 11.

[12] "New England Coalition on Nuclear Pollution's Response to Applicants' Suggestion of Mootness Regarding Environmental Qualification of RG-58 Cable" (June 9, 1988).

[13] Id. at 1-2.

[14] Id. at 2-3.

establish that Applicants have identified all uses and locations of RG-58 cable, that they know what qualification requirements the cable must meet, or that RG-59 is an adequate substitute."[15]

NECNP's arguments are without merit. NECNP may not use the Applicants' Suggestion of Mootness as a basis for random inquiry or to raise new contentions. The issue remanded to the Licensing Board concerns only whether the RG-58 cable is environmentally qualified. This is the only issue remanded to this Licensing Board and therefore the sole issue over which the Licensing Board has jurisdiction[16] and the sole issue which NECNP properly may litigate. Applicants have mooted that issue by agreeing to remove all RG-58 coaxial cables presently required to meet the environmental qualification requirements of 10 CFR 50.49. There is no contention in this case, and never has been, that Applicants were not capable of selecting what components to be environmentally qualified. Indeed, there has never been a contention that the Seabrook organization was not fully technically qualified.

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15 Id. at 3.

16 Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), ALAB-526, 9 NRC 122, 124 and n.3 (1979); Portland General Electric Company (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 at n.6 (1979).

Nevertheless, without conceding that NECNP's inquiries are proper, the affidavit of Richard Bergeron (June 16, 1988) responds to the issues raised.

Finally, NECNP, in disagreement with the NRC Staff and Applicants, claims that it has not been established that RG-59 coaxial cable is environmentally qualified. This is incorrect; the environmental qualification of RG-59 coaxial cable has been already established.[17] Moreover, NECNP's motion[18] to reopen the record and admit a late-filed contention concerning whether RG-59 coaxial cable was environmentally qualified was denied.[19]

On the basis of the foregoing, Applicants press their motion that the Licensing Board enter an order that the issue regarding the environmental qualification of RG-58 coaxial cable as moot. Any possible remaining matters of concern are fully capable of resolution by a purely objective

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[17] See LBP-87-10, supra n.1, 25 NRC 177 at 210-211, rev'd in part on other grounds, ALAB-875, 26 NRC 251 (1987); NECNP Ex. 4 (Environmental Qualification File No. 113-19-01); see also May 19 affidavit at ¶19. Of course, the initial issue on appeal was whether it was proper to conclude that the RG-58 coaxial cable supplied by ITT Surprenant was environmentally qualified based on its similarity with RG-59 coaxial cable.

[18] Motion to Reopen the Record and Admit Late-Filed Contention (February 2, 1988).

[19] Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB 886, 27 NRC __ (February 22, 1988).

determination, and will be appropriate for ministerial resolution by the NRC Staff. See e.g., Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1104-1105 (1983) (Details of installation and testing of siren system is proper matter for Staff to oversee); Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Units 1,2,3 and 4) CLI-74-22, 7 AEC 939, 951-952, (1974). A license condition to this effect is acceptable to the Applicants.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Deborah S. Steenland, one of the attorneys for the Applicants herein, hereby certify that on June 17, 1988, I made service of the within documents by depositing copies thereof with Federal Express, prepaid, for delivery to (or where indicated, by depositing in the United States mail first class, postage paid, addressed to):

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