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USNRC

UNITED STATES OF AMERICA  
UNITED STATES NUCLEAR REGULATORY COMMISSION

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before the

OFFICE OF SECRETARY  
ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of )	
) )	
PUBLIC SERVICE COMPANY )	Docket Nos. 50-443-OL-1
NEW HAMPSHIRE, et al. )	50-444-OL-1
) )	
(Seabrook Station, Units 1 )	(On-site Emergency
and 2) )	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. The purpose of my affidavit is to describe the means used to identify and locate all Seabrook Station RG-58 coaxial cable applications; the means used to identify those RG-58 cables which could be subjected to a harsh environment within the nuclear island (see FSAR Figure 8.3-58); the rationale why only cables located in harsh environments within the nuclear island need be replaced; and to conclude that the RG-59 coaxial cable replacement evaluated in the Affidavit of Gerald A. Kotkowski is environmentally qualified for the RG-58 coaxial cable applications located in harsh environments.

3. Specification 9763-006-113-19 establishes the requirements for all of the specialty cable supplied to Seabrook Station by ITT Surprenant. It includes RG-11 coaxial, RG-11 triaxial, RG-58 coaxial and RG-59 coaxial cables supplied under Purchase Order 113-19. The specification assigns Cable Code TA6Y to the RG-58 cable.
4. Cable codes are used to identify plant cables and are described in the Computerized Conduit and Cable Schedule Programs (CASP) Design Guide. In the Design Guide, Cable Code TA6Y denotes that RG-58 is a coaxial, single conductor cable, and is colored black with a red trace to signify that it is non-vital, associated with Train A. This color coding of cables is also described in FSAR Section 8.3.1.3. In addition, FSAR Section 8.3.1.4 defines non-vital cables as being Non-Class 1E (i.e. nonsafety-related).
5. CASP is a computer based system for maintaining the design configuration of both safety related and nonsafety-related installed plant cables such as the RG-58 coaxial cable. The CASP system provides the controls to identify and maintain cable routes and termination locations for each uniquely identified plant cable.
6. A sort was made of CASP to generate a list of all installed cables with the Cable Code TA6Y used to denote the ITT Surprenant RG-58 coaxial cable. This sort identified 126 nonsafety-related RG-58 coaxial cable runs.

7. The route of each cable identified was traced by means of Seabrook Station cable raceway drawings. In addition to tracing the route of the identified RG-58 cable, a review was performed 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).

8. After each route was established, the environmental zones through which each cable traveled were determined using the Service Environment Chart Design Basis Calculations. The environmental parameters of each environmental zone were then reviewed using the Service Environment Charts.

9. The information obtained from the above review was evaluated to identify common groupings of cables. This evaluation categorized the 126 RG-58 coaxial cables into the following:

<u>No. of Cables</u>	<u>Category</u>
18	Spare RG-58 cables
12	RG-58 cables routed at least partially through a harsh environment within the nuclear island
77	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

10. This evaluation also concluded that none of the RG-58 coaxial cables are routed inside the Containment Building or in the Main Steam and Feedwater pipe chases.

11. An evaluation was made of the above five cable categories to determine which cables are required to comply with the environmental qualification requirements set forth in 10 CFR 50.49.

12. 10 CFR 50.49(c) provides in pertinent part "Requirements for...(3) environmental qualification of electric equipment important to safety located in mild environment are not included within the scope of this section [10 CFR 50.49]." Wherein a mild environment is described 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." Therefore cables located in mild environments are not required to comply with the environmental qualification requirements set forth in 10 CFR 50.49. Environmental qualification for cables in mild environments is demonstrated through the specifying and purchasing of cables in accordance with recognized and acceptable industry standards and by invoking the general quality and surveillance requirements applicable to electric cables as a result of Commission regulations other than 10 CFR 50.49 (e.g., 10 CFR 50, Appendix B). Since all cable in Purchase Order No. 113-19 were purchased as if

it were intended for safety-related applications (i.e., purchased as safety-related regardless of its actual or intended end use), the RG-58 cable meets or exceeds the requirements necessary to demonstrate its acceptability for mild environment applications. The requirements for mild environment qualification of electrical equipment were articulated in the statements of consideration to the published final rule of 10 CFR 50.49 (Ref. 48 FR 2729, Comment No. 3 at 2731).

13. 10 CFR 50.49(b) provides in pertinent part "Electric equipment important to safety covered by this section [10 CFR 50.49] is:...(2) Nonsafety-related equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions...by the safety related equipment." Therefore RG-58 coaxial cables which are routed with other nonsafety-related cables outside the nuclear island need not comply with the requirements set forth in 10 CFR 50.49. In this regard, it should be noted that the RG-58 coaxial cable outside the nuclear island was specified and procured in accordance with the same requirements for the RG-58 coaxial cable located within the nuclear island as described in paragraph 12 above.

14. Spare cables are not functioning or energized and therefore would not pose any threat to other cables in the same raceway. In order to use a spare cable, a design change

has to be initiated prior to its incorporation into the plant design. One of the considerations in any design change is the need to comply with the requirements of 10 CFR 50.49. Therefore, a cable which is not qualified for a given application would not be used. This necessarily restricts the use of the spare cables. Therefore spare cables need not comply with the environmental qualification requirements set forth in 10 CFR 50.49 until the cable has been designated for a use in the plant design and all applicable NRC regulations have been met.

15. Based on the foregoing the only cables which need comply with the environmental qualification requirements set forth in 10 CFR 50.49 are the twelve (12) nonsafety-related RG-58 coaxial cables which are routed at least partially through a harsh environment within the nuclear island [10 CFR 50.49(b)(2)]. These cables are: FM3-JW5; FM3-JW5/1; FM6-JW5; FM6-JW5/1; FM4-JX1; FM4-JX1/1; FM7-JX1; FM7-JX1/1; GU4-Y59/2; GU4-Y59/3; GU4-Y59/4; and GU4-Y59/5.

16. An independent review was performed and verified that all RG-58 cable had been identified and more specifically that the twelve (12) nonsafety-related RG-58 coaxial cables identified above were the only nonsafety-related cables which were routed at least partially through a harsh environment within the nuclear island. The review was performed by different individuals and essentially replicated the review

described above, using the same information sources. The review included an evaluation of Seabrook Station electrical schematic drawings for RG-58 applications. This provides further assurances that all RG-58 applications have been identified.

17. A review of the applicable drawings and related documentation was performed. It verified that the raceway drawings used in the above described evaluations reflected the as-built installed raceway configuration.

18. As provided in the Affidavit of Gerald A. Kotkowski, ¶3-8 the twelve RG-58 cables located in harsh environments can be replaced with the RG-59 cable supplied by ITT Surprenant.

19. The environmental qualification of the RG-59 cable for the postulated accident conditions inside the containment at Seabrook Station is contained in EQ File No. 113-19-01 (NECNP Exhibit No. 4). As provided therein, this qualification was established by means of testing. The RG-58 coaxial cable is only used outside the containment which experiences less severe environmental condition than those inside the

containment. Therefore the RG-59 coaxial cable is environmentally qualified for the harsh environment RG-58 cable applications.

  
Richard Bergeron

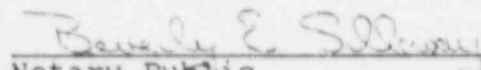
STATE OF NEW HAMPSHIRE

Rockingham, ss.

May 19, 1988

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

Before me,

  
Notary Public  
My Commission Expires: March 6, 1990



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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 responsibility 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.