

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.)

(Seabrook Station, Units 1)
and 2))

Docket Nos. 50-443-OL-1
50-444-OL-1

(On-site Emergency
Planning Issues)

AFFIDAVIT OF GERALD A. KOTKOWSKI

I, GERALD A. KOTKOWSKI, being on oath, depose and say as follows:

1. I am the Electrical Engineering Supervisor at Seabrook Station. My responsibilities include the supervision of Electrical Engineering and Design activities and technical support of field/construction activities. A statement of my professional qualifications is attached and marked "A".
2. As provided in the Affidavit of Richard Bergeron, paragraph 15, twelve (12) nonsafety-related RG-58 cables are located in harsh environments within the nuclear island (see FSAR Figure 8.3-58). The purpose of my affidavit is to show that for these applications, an RG-59 coaxial cable already purchased and qualified for use at Seabrook Station, can be used in lieu of the RG-58 coaxial cable.

3. A review was performed to determine the applications of these twelve (12) RG-58 cables. As a result of the review, these applications can be categorized into two nonsafety-related/non-essential groupings. The first application grouping is cables connected between intelligent remote termination units (IRTU) and the main plant computer system Host CPU. The second application grouping is cables connected between ultrasonic level sensors and electrical control units for certain level measuring instruments. In both cases the intended function of the cable is to transmit high frequency electrical signals.

4. In determining the acceptability of RG-59 coaxial cable in these twelve applications an evaluation was made to assess the degradation of signal due to insertion loss (attenuation) and variation in response time due to the change in the velocity of propagation.

5. The velocity of propagation is the velocity of an electric wave governed solely by the properties of the dielectric medium and the permeability of the conductor through which it is transmitted. In a coaxial cable the velocity of propagation is the ratio of the speed of electromagnetic energy flow compared to the speed of light and is generally referred to herein as a percentage (%). The actual measured velocity of propagation provided in the typical factory cable test reports is 61.24% for RG-59 and

63.5% for RG-58. The minor decrease in the velocity of propagation (approximately 2.26%) will not noticeably affect the rate of signal transmission. This is due to the fact that the actual field cable lengths for these twelve applications are much less (approximately 1/4) than the maximum allowable cable lengths for the applicable operating frequency as recommended by the equipment vendors.

6. A review of factory test results for both RG-58 and RG-59 coaxial cables showed that the attenuation (i.e., db/100 ft.) for the RG-59 cable is less than that for the RG-58 cable. Thus the RG-59 cable will have less insertion losses and will retain equal or better signal quality than the RG-58 cable for these twelve (12) applications.

7. In addition the compatibility of an RG-59 cable with the connecting device/instrument was evaluated. In both application groupings the characteristic impedance of the RG-59 is compatible with the requirements of the connecting device/instrument. In addition, the respective equipment vendors were contacted and they confirmed that the use of RG-59 was acceptable.

8. Based on the foregoing, I have concluded that an RG-59 coaxial cable would be an acceptable substitute for the twelve (12) nonsafety-related RG-58 cables located in harsh environments and within the nuclear island.

Gerald A. Kotkowski
Gerald A. Kotkowski

STATE OF NEW HAMPSHIRE

Rockingham, ss.

May 19, 1988

The above-subscribed Gerald A. Kotkowski 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,

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

"A"

GERALD A. KOTKOWSKI

ELECTRICAL ENGINEERING SUPERVISOR

EDUCATION

BS Electrical Engineering, Northeastern University, June 1974. Mr. Kotkowski joined PSNH in June 1982 as a Senior Electrical Engineer in the Engineering Services Department. He was assigned to the Startup and Test Department as the System Test Engineer for the 13.8 KV, 4160 Volt, 125 Volt DC and Diesel Generator Electrical Systems and as the Lead Electrical Distribution Test Engineer. Specific accomplishments include the preparation and performance of the pre-operational acceptance tests for the DC Distribution and Diesel Generator Systems. Specific responsibilities included the review and approval of all design changes to the Distribution Systems and the subsequent implementation and testing of these changes.

WORK EXPERIENCE

In June 1986, Mr. Kotkowski was appointed to the position of Electrical Engineering Supervisor in the Engineering Department. His current responsibilities include the supervision of Electrical Engineering and Design activities and technical support of field/construction activities. He has overall responsibility for ensuring that

the electrical design of the plant complies with the codes and regulations specified in the Seabrook FSAR.

Mr. Kotkowski came to PSNH from Power Technical Services where he was employed from June 1981 - April 1982 and was assigned as a Project Engineer to Boston Edison Company. While in this position he had the overall responsibility for implementing an Emergency Response Facility program for the Pilgrim 1 Nuclear Station. This program was designed to ensure technical adequacy and licensing compliance to current regulatory requirements including NUREG-0696, NUREG-0700 and Regulatory Guide 1.97, Revision 2.

Between March 1978 and May 1981, Mr. Kotkowski was employed by Stone & Webster Engineering as an engineer in the Electrical Control Group. While at Stone & Webster Headquarters in Boston he was assigned to the Electrical Control Group on the Shoreham Nuclear Power Station Project as the engineer responsible for providing post accident instrumentation to meet the requirements of Regulatory Guide 1.97, Revision 2. He also was designated as the cognizant engineer responsible for all controls associated with the Nuclear Steam Supply Systems as well as several other major modifications to Balance of Plant Systems.

While on a field assignment he was the only site representative for the controls Division at the Shoreham Nuclear Power Station. He assumed complete responsibility

for the resolution of construction and start-up problems on all instrumentation and controls associated with an 850 MW Boiling Water Reactor. Specific responsibilities included: medium and low voltage switchgear, motor control centers, protective relaying, control and relay panels, electronic analog instrumentation, pneumatic control loops and instrumentation tubing. Also designated as the Interface Engineer between Nuclear Steam Supplier and the Architect Engineer.

Between December 1974 and February 1978, he was employed by General Atomic Engineering company. While on a field assignment he participated in the rise to power program at the Fort St. Vrain Nuclear Power Station. Specific accomplishments include: tuning the major plant controllers, modifying the Plant Protective System and Overall Plant Control System as required to pass Reactor Scram and Turbine Trip testing, coordinating a task force to resolve the Nuclear Regulatory Commission's concerns on cable segregation, and eliminating spurious control room alarms.

While at General Atomic Headquarters in San Diego he was assigned to the Control and Electrical Department. He was responsible for the design of instrumentation and controls for systems associated with the operation of a nuclear power plant. He prepared control and instrumentation diagrams,

schematic diagrams, cable tabulations, and instrument specifications.

Between December 1970 and October 1974 he was employed by Stone & Webster on a student co-operative basis where he received various assignments in the Electrical Control Department.

In summary, Mr. Kotkowski has fourteen (14) years experience in the electrical design and testing of nuclear power plants.