September 28, 1988

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.	)	Docket Nos. 50-443-OL-1 50-444-OL-1
(Seabrook Station, Units 1 and 2)	)	(Onsite Emergency Planning and Safety Issues)

AFFIDAVIT OF GREGG F. SESSLER

I, Gregg F. Sessler, being on oath, depose and say as follows:

1. I am a Project Engineer in the Technical Support Group for New Hampshire Yankee. As indicated in the following paragraphs, I was the first shift Engineering Coordinator in the Technical Support Center (TSC) during the Seabrook Station Graded Exercise in June, 1988. I am a licensed professional engineer with extensive operating and engineering experience in pressurized water reactors and have a graduate degree in physics. In addition I had been qualified, while in the Navy, on three different reactor plants as Engineering Officer of the Watch which is equivalent to a shift superintendent in commercial reactors.

During the graded exercise I was personally involved with the engineering activities in the TSC. Furthermore, I am familiar with the operating modes, design characteristics/limitations, and physical arrangement of the plant systems and components involved in the exercise scenario. A statement of my professional qualifications is attached hereto and marked "A".

2. The NRC in Inspection Report No. 88-09 stated that:

> "Results: No violations were identified. Emergency response actions were adequate to provide protective measures for the health and safety of the public."

3. The above reference inspection report identified both strengths and weaknesses. One of the weaknesses or areas for corrective action identified in this inspection report is the factual basis upon which the Massachusetts Attorney General (MA AG) relied in filing its motion. The purpose of this affidavit is to address the Affidavit of Robert D. Pollard and the following excerpt from the inspection report relied upon by the MA AG.

> "The Technical Support Center (TSC) and Emergency Operations Facility (EOF) staff displayed questionable engineering judgment and/or did not recognize or address technical concerns (50-443/88-08-01). For example:
>
> "- A questionable fix for the Containment Building Spray System; and
>
> "- No effort was noted to blowdown Steam

Generators to lessen the heat load in containment."

4. As discussed in the following paragraphs, the efforts involving the restoration of the Containment Building Spray (CBS) system displayed good engineering judgment and a recognition of relevant technical concerns. This conclusion was reached as a result of my personal involvement as an exercise participant (i.e. Engineering Coordinator in TSC), reviews of materials generated during the exercise, discussions with controller and other exercise participants, and discussions with the NRC Inspector who made the observations.

5. In order to understand the actions taken, the plant status should first be reviewed. At the time an Alert was declared, the "A" train CBS pump was out of service and being repaired. These repair efforts continued until the LOCA occurred. Because of the radiation levels associated with a LOCA, the equipment vaults, where the pump is located, had to be exited for personnel safety. Since the repair work was incomplete, the "A" train pump was still out of service. Coincident with the postulated LOCA, there was also a postulated failure of the "B" train CBS pump to start. Initial efforts by the Control Room to start the "B" train pump manually proved to be unsuccessful. With a loss of both redundant trains, the TSC with the assistance of other

support groups undertook the following actions: (1) as a first priority, restore/repair the normal CBS flow path components; and (2) as a second priority, develop a contingency plan for an alternate CBS flow path which would be implemented in the event all efforts to restore normal CBS flow failed. Both of these efforts were initiated to restore containment spray to mitigate the impact of the ongoing release by increasing cooling to the containment (thereby reducing pressure) and removing some radioiodine from the containment atmosphere.

6. As indicated above, the first priority efforts were underway to restore/repair the normal CBS components. Specifically a team from the Operational Support Center (OSC) was being assembled to troubleshoot the hypothetical electrical failure experienced by the "B" train pumps. This repair effort used acceptable procedures, techniques and equipment. The spare parts used were acceptable for the intended use.

7. In parallel, I coordinated the development of the alternate CBS flowpath contingency plan. The alternate CBS flowpath concept was to use components and systems not necessarily associated with the normal CBS flowpath as a means of restoring the containment spray function. My efforts included reviews of available components, system

interconnections, plant parameters, design characteristics, and operating modes.

8. During the development of the alternate flowpath the NRC Inspector, who had made the observation, asked several detailed questions concerning this solution. Within the constraints of the exercise on communicating with observers answers to his questions were provided. However, since the alternate flowpath effort was in fact a contingency plan, it was not appropriate at that time to caucus with the NRC as would have been required for a final plan prior to implementation. As such, the information available to the Inspector was not a complete description or analysis of the alternate flowpath.

9. The alternate CBS flowpath developed was technically sound. It was a feasible means to provide water to the CBS spray rings in containment and restore the containment spray function, albeit at reduced effectiveness, for accident mitigation if the normal flowpath was not returned to operation.

10. As can be seen from paragraph 5 above, it was prudent to develop a contingency plan since there was a loss of both trains of CBS and because initial efforts by the Control Room to manually restart proved unsuccessful. Furthermore, the exercise controllers, in order to assure offsite response activities would continue commensurate with

exercise objectives, caused the repair activities of the "B" train pump to be continued (i.e., the controllers interceded and declared restart/repair efforts ineffectual approximately four times during the exercise).

11. The alternate CBS flowpath, as a contingency plan, would have been subjected to formal reviews, including those of the NRC, prior to its actual implementation. However, the repair efforts for the "B" train CBS pump's electrical system were finally successful and containment spray initiated via the normal flowpath. Accordingly, the contingency plan never proceeded into the review/implementation stage.

12. As discussed in the following paragraphs depressurization of the steam generators was temporarily postponed to assess the radiological consequences of the blowdown and its impact on future accident mitigation activities. This conclusion was reached based on reviews of materials generated during the exercise and discussions with controllers and other exercise participants. In addition, I did further assessment of the effect depressurizing the steam generator would have had on containment heat load and the purpose for why this step is provided in the Emergency Procedures.

13. It was recognized by the operators in the Control Room and the emergency responders in the TSC that a step in the applicable Emergency Operating Procedures called for a

controlled depressurization of the steam generators. It was also recognized, however, that this action could introduce accident level radioactive material to areas of the plant that at the time were unaffected (e.g., Primary Auxiliary Building) which could hamper later accident mitigation efforts.

14. Since it would not delay further actions under the Emergency Operating Procedures (i.e., one could continue onto the next step), it was decided that the depressurization of the steam generators could be temporarily postponed until the results of a steam generator secondary side sample were available. In addition, the steam generators were not required to cool down the plant.

15. Before completion of sampling activities and any simulation of steam generator depressurization, the exercise for Day #1 was terminated.

16. Subsequent to the exercise, I also assessed the effect that depressurization would have had on the heat load to the containment. Based on this analysis I concluded that the rate of heat transfer between the containment atmosphere and the insulated steam generators was insignificant when compared to the energy already released from the postulated accident. Further, the potential reduction did not warrant immediate depressurization without further evaluation of

potential radiological consequences to other areas of the plant and the public.

17. Subsequent to the exercise, I also reviewed the Westinghouse documents which provide the reasoning behind the various steps in the Emergency Operating Procedures. The reason given for controlled depressurization of the steam generators is not reducing containment heat load but rather to permit further cooldown and depressurization of the Reactor Coolant System (RCS). Given the particular accident sequence of the exercise, the RCS had already been depressurized.

18. The Pollard Affidavit at ¶¶ 13 and 15 concluded that the blowdown would have contributed to reducing the radioactive release and that this blowdown would have contributed to achieving the goal of rapid reduction in containment temperature and pressure. In both cases the conclusions reached by Mr. Pollard are either wrong or speculative.

19. As indicated in paragraph 13 above, the reason depressurization was delayed was because of a concern that it could cause a further release of radiation, a factor Mr. Pollard seems to ignore. Therefore, at best, Mr. Pollard is speculating on what effect the depressurization may have on radiological consequences.

20. In regards to the depressurization of the steam generators as a means of achieving the goal of rapid reduction in containment temperature and pressure, it was recognized during the exercise and subsequently shown by me that the rate of heat transfer between the containment atmosphere and the insulated steam generators was insignificant when compared to the energy released by the postulated LOCA. Therefore steam generator secondary side depressurization would have had no practical effect in reducing containment temperature and pressure, much less be a contributor to the rapid reduction in temperature and pressure. As such there would have been no real potential for reducing any radiological releases.

21. Based on the foregoing paragraphs, I have concluded that the observations of the NRC Inspector were a result of the unavailability of information during the exercise and that subsequent evaluations have shown that the conclusion

reached from these observations is not correct. There is no issue much less a significant safety issue.

Gregg F. Sessler

STATE OF NEW HAMPSHIRE

Rockingham, ss. September 28, 1988

Then appeared before me the above subscribed Gregg F. Sessler and made oath that he was the author of the foregoing affidavit and that the statements set forth therein are true to the best of his knowledge.

Before me,

Marilyn R. Sullivan
Notary Public
My Commission Expires: 3/29/1992

GREGG F. SESSLER

SUMMARY OF QUALIFICATIONS:

Over seventeen years experience in the nuclear power field; a licensed professional engineer with a graduate degree in physics and an extensive background in PWR design, plant engineering, and operations including six years in the naval nuclear propulsion program.

EDUCATION AND TRAINING:

B.S. Naval Science; U.S. Naval Academy, Annapolis, MD. 1970; Major: Applied Science

M.S. Physics; U.S. Naval Post Graduate School, Monterey, CA. 1971; Specialty: Nuclear Physics

U.S. Naval Nuclear Propulsion School 1972; Bainbridge, MD and S3G Prototype Reactor West Milton, NY

QUALIFICATIONS:

Professional Engineer in the State of New Hampshire, No. 6243

EXPERIENCE:

1982-Present

Seabrook Station - Public Service Co. of New Hampshire Project Engineer - 1987-1988

Member of the Station Operation Review Committee (SORC), responsible for review of Station operating programs, procedures, and design changes, and to advise Station management on matters related to nuclear safety. Vice Chairman of the Electric Council of New England (ECNE) Engineering Subcommittee, whose charter involves periodic meetings between New England and New York State nuclear power plant technical support groups to discuss operating experiences. Perform independent reviews of 10 CFR 50.59 evaluations and have various collateral responsibilities involving programs such as temporary modifications, fire protection, and performance monitoring.

Technical Support Department Supervisor - 1986

Directed engineering support activities for the plant operations group during the transition from initial plant construction to the plant operations phase, involving initial core load and licensing activities prior to power operation. Responsible for various configuration management programs. Participated in various licensing activities such as technical specification reviews. Coordinated the design and construction of a major modification to the plant's reactor coolant and steam generator sample systems following initial plant hot functional testing. SORC member and ECNE engineering subcommittee member.

Engineering Services Department Supervisor - 1983-1986

Supervised a multi-discipline engineering group of over 30 engineers as well as an additional large group of designers and drafters. This group supported many initial plant licensing activities such as environmental qualification (EQ), fire protection (10 CFR 50 Appendix R), and ASME Section XI inservice inspection/testing (ISI/IST). Responsible for the development of Station operating programs, such as design control, test control, special process control, and fire protection. Managed the development of Station drawings critical to operations such as piping and instrumentation drawings, (P&ID's), using an advanced computerized drafting/design (CADD) system. SORC member and ECNE subcommittee member.

Senior Mechanical Engineer - 1982

Assisted the Engineering Services Department Supervisor in various engineering and technical projects supporting the plant operations group during initial plant construction. Concentrated on nuclear steam supply system (NSSS) problems.

1978 to 1981

Beaver Valley Unit No. 2 - Schneider Power Corporation Chief Site Engineer - 1980-1981

Managed an engineering department of over 90 personnel, including engineers, piping designers, and draftsmen, during the initial construction of Beaver Valley Power Station Unit 2. Worked in close coordination with architect engineering and Duquesne Light Company engineering personnel. Responsibilities included small bore piping design layout; piping design verification; isometric drawing preparation; ASME Section III/XI, ANSI B31.1, and AWS welding programs; technical construction procedures; quality assurance records, and document control.

Site Quality Assurance Manager - 1978-1979

Managed a quality assurance/quality control group of ANSI Level II and III audit and inspection personnel during the initial construction of Beaver Valley Unit 2. Functioned as a member of the Duquesne Light Company site quality control organization staff. Responsibilities including supervision of mechanical/welding inspectors and nondestructive examination (NDE) personnel; performance of program audits, maintenance of the ASME Section III/XI Quality Assurance Manual, and coordination of inspections and audits by jurisdictional/enforcement authority personnel (ANI/NRC).

1972 to 1977 United States Navy

Served as an officer on two nuclear powered ships, USS Bainbridge (CGN 25) 1975-1977 and USS Whale (SSN 638) 1972-1974, in assignments that provided extensive experience in nuclear power plant operations and maintenance. As a qualified engineering duty officer and engineering officer of the watch, responsibilities included supervision of nuclear propulsion plant operation, personnel training, and administration of repair and maintenance activities.

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

CERTIFICATE OF SERVICE

I, Thomas G. Dignan, Jr., one of the attorneys for the Applicants herein, hereby certify that on September 28, 1988, I made service of the documents listed below 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) the individuals listed below:

1) Applicants' Response to Motion to Admit Exercise Contention or, in the Alternative, to Reopen the Record;
2) Affidavit of Gary J. Kline;
3) Affidavit of James A. MacDonald; and
4) Affidavit of Gregg F. Sessler.

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Adjudicatory File
Atomic Safety and Licensing Board Panel Docket (2 copies)
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East West Towers Building
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(*=Ordinary U.S. First Class Mail.)