

March 14, 1990

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USNRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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 In the Matter of )  
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 Public Service Company of )  
 New Hampshire, et al. )  
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 (Seabrook Station, Units 1 & 2) )  
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OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

Docket No. 50-443/OL

444

INTERVENORS' EMERGENCY MOTION  
FOR EXTENSION OF STAY OF  
FULL POWER OPERATION

Intervenors New England Coalition on Nuclear Pollution, Seacoast Anti-Pollution League, and Commonwealth of Massachusetts, hereby move the Commission to extend the stay of full power operation which was imposed by the Commission on March 1, 1990, to provide additional time to consider newly discovered documents which implicate the validity of the NRC's finding that the Seabrook reactor complies with NRC regulations and can operate safely at full power. Because the stay is due to expire this evening, we request that you consider this motion on an emergency and expedited basis.

The Intervenors' motion is based on recent, previously undisclosed industry reports of extensive and serious regulatory noncompliance at Seabrook. The reports, some of which were prepared by the Institute for Nuclear Power Operations ("INPO"), and others prepared jointly by INPO and Public Service Company of New Hampshire ("PSNH"), were provided to Robert D. Pollard, a staff engineer with the Union of Concerned Scientists, on Monday March 12.<sup>1</sup> To our knowledge, they have not previously been pro-

vided to the NRC or to any party to the Seabrook case other than PSNH.

The reports describe a wide array of serious safety deficiencies at the plant, including inadequate training of maintenance personnel and radioactive waste technicians, continuing failures by plant personnel to follow procedures, the permanent installation of equipment not shown on plant drawings or included in plant procedures, the lack of staffing for the solid waste radioactive waste handling group, the lack of an effective check valve preventive maintenance program despite numerous check valve failures, and failure to complete a design review of check valves. PSNH also states in the reports that it does not plan to correct a number of the deficiencies until well after the plant is licensed.

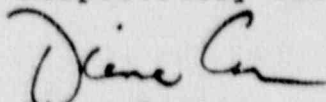
As discussed in Mr. Pollard's attached affidavit and testimony to be delivered today before the Subcommittee on General Oversight and Investigations of the House Committee on Interior and Insular Affairs, the reports demonstrate that the NRC had no valid technical basis for finding that the Seabrook reactor complies with the NRC's regulations and is safe to operate. In particular, the apparent deficiencies relating to the design and reliability of check valves pose the risk of a serious accident with concomitant rapid releases of radioactivity.

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<sup>1</sup> The documents were provided to Mr. Pollard on the condition that he neither disseminate nor reproduce them in any way. See Affidavit of Robert D. Pollard, par. 2. Therefore, the contents of the documents are summarized in the attached pleading, testimony and affidavit of Mr. Pollard. Pursuant to the Memorandum of Agreement between NRC and INPO, such reports are available to NRC upon request.

The Commission has repeatedly stressed that it places reliance on INPO's safety assessments and conclusions. The INPO reports raise such grave new issues of regulatory noncompliance as to completely undermine the NRC's previous conclusion that the Seabrook reactor is ready for safe operation at full power. In light of these revelations, Intervenors respectfully move that the Commission extend its stay of full power operation until it has had the opportunity to fully investigate the issues raised by the report and obtain assurance that the Applicants are in compliance with NRC regulations and safety requirements; and until the Intervenors have had an opportunity to address these issues on the record.<sup>2</sup>

Respectfully submitted,



Diane Curran  
HARMON, CURRAN & TOUSLEY  
2001 "S" Street N.W. Suite 430  
Washington, D.C. 20009  
(202) 328-3500

March 14, 1990

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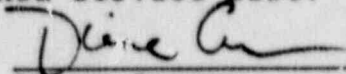
<sup>2</sup> We note that Intervenors sought unsuccessfully to litigate deficiencies in operator training and competence and adequacy of equipment and maintenance which were revealed by the 1988 onsite exercise and the 1989 low power test.

CERTIFICATE OF SERVICE

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USNRC

I certify that on March 14, 1990, copies of the foregoing document were served by telefax or first-class mail, as indicated, on the parties to the attached service list.

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Diane Curran

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

original

March 14, 1990

UNITED STATES NUCLEAR REGULATORY COMMISSION  
BEFORE THE COMMISSION

In the Matter of	)	
	)	
Public Service Company of	)	Docket No. 50-443 OL
New Hampshire, et. al.	)	
	)	
(Seabrook Station, Units 1 & 2)	)	
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**AFFIDAVIT OF ROBERT D. POLLARD**

Robert D. Pollard deposes and says:

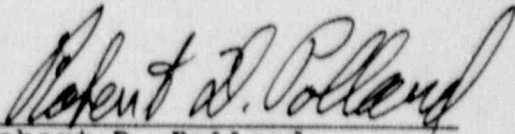
1) My name is Robert D. Pollard. Since February 1976, I have been employed as a nuclear safety engineer by the Union of Concerned Scientists. My business address is 1616 P Street, N.W., Washington, D.C. 20036. My other professional experience includes six years' employment by the NRC as a Reactor Engineer and Project Manager. A summary of my professional qualifications is attached.

2) On the afternoon of March 12, 1990, I received from Ralph Nader a set of reports, some of which were prepared by the Institute for Nuclear Power Operations ("INPO"), and others prepared jointly by INPO and Public Service Company of New Hampshire ("PSNH"). The reports were given to me on the condition that I neither disseminate them nor reproduce them in any way.

3) The reports describe a wide array of deficiencies at the Seabrook nuclear plant, involving such issues as equipment design, operator training, corporate management, and maintenance. These deficiencies and their safety significance are discussed in

the attached testimony which I have prepared for delivery today before the Subcommittee on General Oversight and Investigations of the House Committee on Interior and Insular Affairs.

4) As discussed in my testimony, it is my opinion that if confirmed, the deficiencies cited in the reports demonstrate that there is no basis for a finding that the Seabrook reactor complies with NRC regulations or can be operated safely. Moreover, the deficiencies include significant safety problems which, if left unresolved, would pose an unacceptable risk of a serious, fast-breaking accident and concomitant radioactive releases.

  
Robert D. Pollard

Signed and sworn to before me this 14th day of March, 1990.

\_\_\_\_\_  
Notary Public

# UNION OF CONCERNED SCIENTISTS

## ROBERT D. POLLARD

Robert D. Pollard, 50, is Senior Nuclear Safety Engineer for the Union of Concerned Scientists, a non-profit group of scientists and other professionals supported by contributions from citizens nationwide.

Robert Pollard's formal education in nuclear design began in May 1959, when he was selected to serve as an electronics technician in the U.S. Navy nuclear power program. After completing the required training, he became an instructor responsible for teaching naval personnel both the theoretical and practical aspects of operations, maintenance and repair of nuclear propulsion plants. From February 1964 to April 1965, he served as senior reactor operator, supervising the reactor control division of the U.S.S. Sargo, a nuclear-powered submarine.

After his honorable discharge in 1965, Robert Pollard attended Syracuse University, where he graduated with a Bachelor of Science degree magna cum laude in electrical engineering in June 1969.

In July 1969, Robert Pollard was hired by the Atomic Energy Commission (AEC), and continued as a technical expert with the AEC and its successor the Nuclear Regulatory Commission (NRC) until February 1976. After joining the AEC, he studied advanced electrical and nuclear engineering at the Graduate School of the University of New Mexico in Albuquerque. He subsequently advanced to the positions of reactor engineer and project manager with the AEC/NRC.

As a reactor engineer, Robert Pollard was primarily responsible for performing detailed technical reviews analyzing and evaluating the adequacy of the design of reactor protection systems, control systems and emergency electrical power systems in proposed nuclear facilities. In September 1974, he was promoted to project manager, responsible for planning and coordinating the design and safety reviews of applications for licenses to construct and operate seven commercial nuclear power plants. While with NRC, Mr. Pollard also served as the agency's representative in standard-setting groups, participating in the development of standards and safety guides, and as a member of IEEE committees.

He resigned from the NRC and began working for UCS in February 1976. In his work for UCS, Mr. Pollard has continued to use his expertise in nuclear safety analysis. He has testified as an expert witness in NRC and judicial proceedings in the U.S. and overseas. Mr. Pollard conceived and provided the technical analysis for a petition filed by UCS with the NRC that resulted in the 1980 adoption of industry-wide safety standards for nuclear plant components. He has traveled extensively throughout the country speaking to citizens and government officials on issues related to nuclear power.

UNITED STATES OF AMERICA  
U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
SUBCOMMITTEE ON GENERAL OVERSIGHT AND INVESTIGATIONS

HEARING ON THE LICENSING PROCEDURES OF THE  
U.S. NUCLEAR REGULATORY COMMISSION FOR  
THE SEABROOK NUCLEAR POWER PLANT

Testimony of

Ralph Nader

and

Robert D. Pollard  
Nuclear Safety Engineer  
Union of Concerned Scientists

Washington, D.C.

March 14, 1990



## SUMMARY OF TESTIMONY

Reports written by the Institute of Nuclear Power Operations (INPO), and others written jointly by INPO and the Public Service Company of New Hampshire (PSNH), are pertinent to the questions raised about the safety of the Seabrook nuclear power plant. We have reviewed INPO documents that are dated between October 1983 and December 26, 1989. The INPO reports describe a wide variety of serious safety deficiencies identified by INPO at the Seabrook nuclear power plant and the plans by the PSNH to initiate corrective actions. In numerous instances, the schedules for completing the corrective actions extend well past March 1, 1990, the date on which the U.S. Nuclear Regulatory Commission decided to issue a full-power operating license for Seabrook.

The subjects of the safety deficiencies identified by INPO in late 1989 include the following: inadequate training of maintenance personnel and radioactive waste technicians; the continuing failure of plant personnel to follow procedures; the permanent installation of equipment not shown on plant drawings or included in plant procedures; the lack of staffing for the solid radioactive waste handling group; the lack of an effective check valve preventive maintenance program, despite numerous check valve failures; and a design review of check valves which is not scheduled to be completed until April 1991.

The contents of the INPO evaluations compel a conclusion that the NRC had--and continues to have--no valid technical basis for permitting the Seabrook nuclear power plant to operate. At the very least, given the Administration's position on nuclear power, the Seabrook plant should not be permitted to operate unless and until the PSNH completes its planned corrective actions and the NRC reviews those actions and determines that the safety deficiencies have been corrected. Furthermore, all INPO documents related to the Seabrook plant should be disclosed to permit the parties to the Seabrook licensing proceeding to evaluate the veracity of sworn testimony presented by the NRC and PSNH witnesses to the NRC licensing boards.

## Introduction

Thank you for the invitation to appear before the Subcommittee to address the licensing procedures used by the U.S. Nuclear Regulatory Commission (NRC) in issuing a full-power operating license for the Seabrook nuclear power plant.

Reports written by the Institute of Nuclear Power Operations (INPO), and others written jointly by INPO and the Public Service Company of New Hampshire (PSNH), are pertinent to the questions raised about the safety of the Seabrook nuclear power plant. The INPO documents we have reviewed are dated between October 1983 and December 26, 1989. They include INPO trip reports provided to PSNH, evaluations of the Seabrook Station, construction project evaluations, and evaluations of PSNH, New Hampshire Yankee Division corporate support and monitoring of the Seabrook Station. The latter three types of documents include PSNH's responses to INPO's findings and recommendations.

We have concentrated our review on the more recent INPO documents. Quotations in this testimony from INPO reports are from documents dated March 1988, September 1989, and December 26, 1989. Further identification of these three documents is provided later.

## Description of INPO and Its Relationship With the NRC

The Institute for Nuclear Power Operations was created in the aftermath of the Three Mile Island accident that began on March 28, 1979. According to an article in the January 2, 1989 edition of Inside N.R.C., INPO:

"has a \$50-million operating budget paid by utilities, conducts periodic inspections of operating nuclear plants, plants under construction, and corporate organizations \* \* \* It manages an accreditation of utility training programs for operations, maintenance, and technical personnel. It also analyzes abnormal events that occur during construction, testing, and operation of plants, and it disseminates that information, the lessons-learned, to its members."

According to the INPO documents, "INPO's goal is to assist member utilities in achieving the highest standards of excellence in nuclear plant operation. The recommendations in each area are based on best practices, rather than minimum acceptable standards or requirements. Accordingly, areas where improvements are recommended are not necessarily indicative of unsatisfactory performance." [emphasis added.]

In October 1988, the NRC and INPO signed a revised "Memorandum of Agreement" (MOA), which modified a 1985 MOA. This MOA was signed for the NRC by Victor Stello, Jr., then the NRC's Executive Director for Operations. As part of the Subcommittee's investigation of the NRC licensing procedures, we recommend a thorough review of the current MOA between INPO and the NRC. In our view, the MOA effectively transfers the NRC's regulatory responsibilities to INPO, despite assertions to the contrary in the MOA.

Some of the MOA provisions relevant to the types of the INPO appraisal and evaluation reports discussed in this testimony are as follows:

"NRC desires to recognize INPO evaluation activities to the extent that these activities are effective in helping meet NRC's responsibilities as well as lessen the burden imposed on the industry by duplicative appraisal activities."

"NRC requires access to selected INPO documents and information as well as the opportunity to give credit for INPO activities and to thereby avoid unnecessary duplication."

"INPO expects its member utilities to make operating plant evaluation reports available to the NRC for review or reading. Further, INPO will make final evaluation reports

available to the NRC for review or reading by appropriate NRC management personnel at the INPO offices in Atlanta."

"NRC review of INPO evaluation activities will be coordinated by the NRC Office of the Executive Director for Operations. Since INPO has its own system for obtaining member corrective action, NRC's role in pursuing correction of INPO evaluation findings will primarily involve only those potentially significant safety problems for which NRC has no other reasonable alternative in meeting its legislated responsibilities. Any other NRC follow-up enforcement action would be in accordance with . . . the established Commission enforcement policy for licensee identified non-compliances to those non-compliances identified by utilities as a result of INPO evaluations."

INPO documents which reflect unsafe conditions at Seabrook also serve to highlight the public's ongoing lack of access to virtually all of INPO's vital records. Ironically, in addition to furnishing its safety evaluations to the NRC, INPO makes them available to every nuclear utility, as well as virtually all industry consultants and contractors. However, INPO has vehemently objected to the release of the reports to the public (including members of Congress) who must actually live in the shadow of nuclear power plants because, in the words of an internal INPO memorandum, "public and/or political pressure may be brought to bear on the NRC to follow-up on INPO evaluations for the purpose of regulatory action." The result is that the INPO reports are routinely made available to everyone that is concerned in any way with the construction and operation of nuclear plants in the United States--with the exception of the American public. Since INPO is funded by utility dollars which come from consumer dollars, consumers are paying for this intolerable secrecy.

Even more alarming than INPO's position on public access is the fact that the NRC has allowed INPO to dictate the Commission's own non-disclosure policies. Since 1984, the NRC has been battling in federal court to prevent a public-interest group--Public Citizen's Critical Mass Energy Project--from obtaining access, under the Freedom of Information Act, to INPO safety reports that are in the Commission's possession. While conceding that it heavily relies on the INPO reports in establishing and pursuing its regulatory activities, and also that the INPO reports frequently contain more safety-related information than NRC records, the Commission has nonetheless maintained that the public has no right of access to the reports simply because INPO has objected to their disclosure.

The NRC's disdain for the public's right to know about INPO's findings is especially outrageous since the Commission has insisted on turning many of its regulatory functions over to INPO. For example, rather than promulgate its own requirements for the training and qualifications of nuclear power plant personnel, as Congress required in 1982, the Commission has simply rubber-stamped INPO's training program. The Commission did the same with regard to fitness for duty requirements. In essence, the Commission has allowed INPO to take over many of the Commission's own vital regulatory functions, yet, at the same time, it is allowing INPO to ignore essential elements of public accountability and access--which the Commission would have had to afford if it had not ceded control to an industry group.

The public is, therefore, getting the short end of the stick in two different ways -- first, because a self-interested industry group rather than a federal agency is entrusted with regulating the safety of nuclear power plants and, second, because the industry group is permitted to conduct its quasi-governmental functions in complete secrecy. In essence, if the NRC is willing to simply hand over its statutory responsibilities

to the nuclear industry, it should at least be prevented from surrendering the public's right to know at the same time.

Analysis of INPO Documents

\* Document No. 1

The following quotations are from a document consisting of a one-page letter from W. R. Kindley, Director, Corporate Support Division, INPO, to George S. Thomas, Vice President, Nuclear Production, New Hampshire Yankee Division, PSNH, dated February 8, 1988, enclosing a seven-page "Trip Report - Special Assistance Visit to Seabrook Station," dated February 8, 1988, with a one-page attachment listing personnel contacted.

The PSNH had requested INPO "to participate in an audit of the Seabrook Emergency Preparedness and Public Affairs Divisions." One of the INPO emergency preparedness evaluators had previously observed a drill of the Seabrook Emergency Operations Facility during an evaluated exercise in December 1987. This INPO "trip report" document discusses and makes several "significant recommendations" regarding the organization of the Seabrook emergency preparedness program, the Emergency Plan and the emergency plan implementing procedures, the emergency preparedness training program, and the emergency public information program.

The following are among the problems affecting emergency preparedness at Seabrook which were noted by INPO:

Under "Organization," INPO stated that: "Several New Hampshire Yankee personnel interviewed did not know their complete assigned duties and responsibilities and indicated they had not ever seen their position descriptions;" and "There is no document, form, or system in place that describes all the duties and responsibilities of the Radiological Assessment Manager."

Under "Emergency Plan and emergency plan implementing procedures," INPO noted that: "The emergency plan in some instances is not consistent with the emergency plan implementing procedures and/or business as it is being conducted;" and "Revisions to on-site procedures are being accomplished through the use of an unauthorized change control program, administered by the emergency preparedness group outside of the approved process. \* \* \* Interviews and document reviews indicated that 'short cuts' are being used to speed up even this process and user impacts are not being considered. No documentation exists for this unauthorized process."

Under "Training," INPO noted that: "Emergency preparedness training programs do not currently comply with the requirements specified by procedure. \* \* \* Emergency preparedness training instructors are not being qualified or selected in accordance with the criteria specified in [a procedure containing well-defined criteria for selecting and training emergency preparedness training instructors]."

The INPO document does not contain any responses by PSNH.

Given these deficiencies in the Seabrook emergency preparedness program, there is reason to question the validity of the NRC and FEMA evaluations of emergency drills conducted prior to this INPO report and prior to PSNH correcting the deficiencies, assuming (without any basis) that they have been corrected.

\* Document 2

The following quotations are from a document consisting of a 45-page INPO report, "Evaluation of Seabrook Station," dated September 1989, including a one-page Appendix I and a twelve-page Appendix II, "Additional Supporting Details."

During the weeks of September 11 and 18, 1989, INPO conducted an evaluation of Seabrook. Low power testing was completed in June 1989 and the plant was shutdown for modification work during this evaluation.

INPO made findings and recommendations, which PSNH responded to, in the areas of organization and administration, operating experience review, technical support, operations, maintenance, radiological protection and chemistry. The following are examples of the areas that INPO characterized as "the most significant areas in need of improvement:"

INPO Finding:

"Monitoring of plant activities and programs and supervisors is often ineffective in identifying needed improvements." One example: "Senior station managers were unaware that vendor manuals are used to conduct station activities contrary to station policy. Interviews with instrument and control technicians indicated that vendor manuals are routinely used to troubleshoot and repair process equipment. Vendor manuals do not receive the equivalency of station operating review committee approval, and a program is not in place to keep the manuals up to date."

PSNH Response:

"Station management's expectations of supervisors and managers regarding their presence in station work areas will be restated and reemphasized." The remainder of the PSNH response did not specifically address the use of vendor manuals in place of approved procedures.

INPO Finding:

"The station has experienced a number of recurring events due to inadequate identification and investigation of in-house operational events." One of six examples cited by INPO was the



following: "Between August 6 and September 9, 1989, water was inadvertently drained from the refueling water storage tank or the condensate storage tank on three occasions. The first event was due to a valve being open that was thought to be danger-tagged shut. The second event was due to not performing a required valve lineup. The third event occurred while restoring eight valves that were discovered to be previously mispositioned."

It should be noted that the refueling water storage tank and the condensate storage tank are important safety equipment because they are the sources of water for plant safety systems, such as the emergency core cooling systems and the emergency feedwater system, that are needed in the event of an accident.

PSNH Response:

"The station information report (SIR) procedure will be revised or a new reporting method will be developed to ensure that in-house operating events, such as those noted, will be investigated thoroughly and completed in a timely manner. \* \* \* This procedure will be updated and implemented by February 1990."

INPO Finding:

"Some events have occurred at the [Seabrook] station that could have been prevented by improved application of industry operating experience. Implementation of corrective actions to prevent occurrence of events described in significant operating experience reports (SOER) is frequently not effective or timely." INPO cited three examples, involving multiple failures of safety equipment at Seabrook, which were the subject of SOERs issued before the failures occurred at Seabrook.

"Corrective actions taken in response to 118 SOER recommendations were reviewed during the evaluation. Of these, 25 station responses were determined to be not satisfactory due to either

insufficient progress being made, or the actions taken not being implemented completely or effectively."

"Review of significant event reports (SER) is frequently not complete or timely as indicated by the following: a. Five SERs, one 1987 and four 1988, were closed out without being reviewed for applicability and appropriate corrective actions; b. Five 1988 SERs have not received initial screening for applicability."

PSNH Response:

"The New Hampshire Yankee industry operating experience review program will be improved and strengthened to ensure effectiveness and timeliness in the implementation of lessons learned from industry operating experience. A schedule has been developed for the review and implementation of outstanding SOERs and SERs. The backlog of open SOERs will be reviewed and corrective actions determined by October 1990." [emphasis added.]

INPO Finding:

"Many plant changes do not receive appropriate technical review and are not incorporated into plant drawings and procedures. The lack of adequate design review and documentation has resulted in plant events and reportable conditions." INPO cited four examples, including the following:

"Excluding temporary modifications required to support the power ascension test program, there are 64 outstanding temporary modifications with some installed more than four years ago. Fifty-two of these 64 require a design engineering decision to be made permanent or to cancel. Twenty-one are being worked or are scheduled to be completed by 1990; however, 10 are not scheduled for completion until 1991 or later, and 21 have no dates currently established." [emphasis added.]

PSNH Response:

"An assessment of the current scope of the temporary modification program will be performed by March 1990. As part of this assessment, existing controls will be enhanced to further ensure plant configuration control. \* \* \* In addition, previously installed temporary modifications that have been made permanent will be reviewed to ensure that maintenance procedures and vendor technical information are accurate. This effort will be completed by June 1990." [emphasis added.]

INPO Finding:

"Preventative maintenance measures have not been established to identify check valve performance problems or degradation in some important systems. Recent check valve problems, including a case of seat leakage that resulted in the residual heat removal system suction piping overpressurization and two stuck open volume control tank nitrogen supply check valves, demonstrate the need for such measures."

The check valve failures and other problems experienced at Seabrook cited by INPO involve many vital safety systems, including the following: residual heat removal (which is part of the emergency core cooling system); emergency feedwater; emergency diesel generator starting and cooling systems. INPO also noted that "Test and inspection requirements have not been specified for 64 of the 220 valves listed in the check valve monitoring program."

INPO also found that the existing check valve monitoring program at Seabrook does not contain "quantitative acceptance criteria" which industry experience has shown is necessary. Furthermore, the "limited testing" of check valves at Seabrook "may not identify degraded internal conditions such as worn hinge pins, loose or missing non-pressure retaining parts or erosion of internal parts."

PSNH Response:

The response by PSNH includes the following statements.

"A review of the current check valve design and monitoring program will be conducted and completed by October 1990. This effort will include \* \* \* a design review of check valves for applicability with respect to EPRI Report NP-3479 and INPO SOER 86-3. \* \* \* Preventative maintenance on selected check valves will be performed prior to completion of the first refueling outage." [emphasis added.]

This particular subject deserves additional discussion to illustrate its safety significance. A check valve is, simply, a valve which is designed to permit fluid flow in one direction and is supposed to close and prevent flow in the opposite direction if system pressure downstream of the valve is greater than the pressure upstream.

One common use of check valves is to prevent over-pressurization of low-pressure systems connected to the high-pressure reactor coolant system. Failure or significant leakage of check valves installed in this "interface" between high-pressure and low-pressure systems can result in what the NRC terms an interfacing systems loss-of-coolant accident. This is an extremely serious and fast-moving accident involving destruction of the emergency core cooling system, core meltdown, and radiation doses in the 100-rem range to the public in about an hour.

Thomas Murley, a high-level NRC official, has described the serious nature of such an accident.

"This sequence is important in my judgement because it bypasses the containment and it bypasses emergency preparedness. It effectively bypasses two levels of our defense-in-depth safety philosophy under the worst circumstances. The worst circumstances (are) that you have a break out in the RHR (residual heat removal) system which then causes you to not only lose

coolant but to lose all your safety injection [i.e., emergency core cooling] capability, and which ultimately then leads to core damage and core meltdown to an open containment.

"That goes straight to the atmosphere and it can happen in a short time. The worst time calculations that I've seen can lead to core uncoverage in a half hour, core damage in 45 minutes, and off-site doses in the 100 rem range in an hour or hour-and-a-half. So its the importance of that sequence that caused me to consider taking another look at it. I have no evidence that the probability is higher than what is said in the PRAs [probabilistic risk assessments], (but) I'm starting to see these precursors, so rather than take the PRA results at face value, I'm going to be a little skeptical, just because of this sequence and its consequences."

Inside N.R.C., April 10, 1989.

Of course, existing probabilistic risk assessments (PRAs) rely, in part, on the assumption of an adequate check valve maintenance program. As INPO noted, the program at Seabrook is inadequate and has already resulted in overpressurization of the RHR system due to check valve leakage.

INPO Finding:

"Unapproved vendor technical manuals are being used to perform various maintenance activities. In addition, some of the manuals lack sufficient technical direction for the conduct of maintenance activities."

PSNH Response:

"The New Hampshire Yankee program for vendor manuals is presently being revised and strengthened. Part of this revision will define which vendor manuals will be available for use, how they can be used and what review process must be completed. Full implementation of this program is scheduled for December 1990."  
[emphasis added.]

INPO Finding:

"The station equipment tagging and isolation procedure needs improvement to ensure protection for personnel and equipment." INPO cited three problems, some involving safety systems, where the Seabrook procedures are not adequate to prevent personnel injury or equipment damage.

PSNH Response:

"The review of the current [tagging] procedure with suggested modifications will be completed by June 1990. The subsequent procedure revisions and training will be completed by September 1990." [emphasis added.]

INPO Finding:

"The material condition of some plant equipment and piping is degraded due to corrosion. In addition, many equipment deficiencies are not identified in the work control system." INPO cited six examples of problems including the following. "Nearly 50 percent (18 of 38) of a sample of equipment deficiencies checked were not in the work control system. Examples include the following: excessive boric acid crystal buildup on core spray and residual heat removal system valves . . . ." Both systems cited by INPO are vital plant safety systems.

PSNH Response:

"Station management will stress the importance of routine reporting of problems using the work request system." The remainder of the response describes changes to the existing Seabrook program which will be completed by January 1990 and a new program to complement the existing program which will be completed by September 1990.

\* Document 3.

The following quotations are from a document consisting of a one-page letter from Zach T. Pate, President, INPO, to John C. Duffett, President & CEO, PSNH, dated December 26, 1989,

enclosing a 17-page report on "INPO's evaluation of Public Service Company of New Hampshire, New Hampshire Yankee Division's corporate support and monitoring of Seabrook Station from October 2 through 6, 1989."

INPO Finding:

"Consistent direction needs to be provided to the New Hampshire Yankee organization to facilitate the nuclear station's transition from the support role it held during construction, to that of the principal department requiring support during power operation." Among the areas cited by INPO as requiring "additional corporate emphasis or resolution for the station to complete preparations for power operations" was the following: "The solid radioactive waste handling group has not been staffed." In addition, "Maintenance training was recently cancelled due to insufficient resources in the maintenance department to complete both the scheduled work and training. \* \* \* Senior plant and corporate management were not aware of these decisions or the impact on the maintenance department's readiness for power operations."

PSNH Response:

Many of the actions taken by PSNH, such as reinforcing and further defining responsibilities and staffing the radioactive waste handling group were scheduled to be completed by December 1989. However, ongoing reviews to identify and, if necessary, to reassign activities are not scheduled to be completed until June 1990 "and any identified responsibility reassignments will be implemented by September 1990." [emphasis added.]

INPO Finding:

"Timely action has not been taken by the corporate organization to address and resolve some important problem areas that could affect station operation. In several cases, these problems were previously identified from within the organization, but corrective action was not adequately implemented."

One of the three lengthy examples of "significant problem areas" cited by INPO was the following: "Procedure adherence problems were repeatedly identified in the executive summaries of semi-annual quality assurance trend reports since 1987. However, management action to address this problem was not initiated until early 1989, and was not effective in preventing an event in June 1989 that was, in part, attributed to non-adherence to a test procedure."

INPO also noted that "despite the check valve failures at Seabrook and [previous INPO correspondence emphasizing the significance of check valve failures], an effective check valve maintenance program is not yet in place. Additionally, a design review of check valves is not scheduled to be completed until April 1991." [emphasis added.]

PSNH Response:

Most of the actions discussed in the PSNH response were scheduled to be completed by February 1990. However, PSNH stated: "A task team has been established to address vendor manual issues, and a comprehensive check valve design and monitoring program is under development. Corrective actions associated with these issues will be fully implemented by December 1990, and October 1990, respectively." [emphasis added.]

INPO Finding:

"Corporate and station managers and supervisors are often not held accountable for timely completion of assigned actions or improvements to the station." Examples cited by INPO included the following: "Approximately one-quarter of 1,250 items on the integrated commitment tracking system are past due; Based on a recent status report, 29 of 47 corporate goals (62 percent) will not be achieved in 1989; 48 percent of the annual appraisals for exempt personnel in the station staff are overdue; a number of issues identified in this and the recent station evaluation are



similar to those identified in 1986 and 1987 INPO corporate and station visits."

PSNH Response:

The PSNH response consists primarily of nebulous efforts such as instituting a "Core Values and Work Ethic Program" to strengthen attention to detail, accountability, and management expectations, all of which were scheduled to be completed by December 1989. One PSNH action that may be effective in correcting one problem is that "completion of performance appraisals will be assured by requiring that performance appraisals be a prerequisite to annual wage and salary actions."

INPO Finding:

"Insufficient management attention has been given to the development and implementation of a radioactive waste handling program. As a result, although generation of radioactive waste has begun and the plant expects to begin power ascension in the near future, key segments of the radioactive waste program are not in place. Examples include the following:

"a. Responsibilities for the processing of radioactive waste are unclear. The corporate radiological protection organization is assigned responsibility for radioactive waste shipments by procedure. However, based on an interface agreement approved in July 1989, the principal health physicist considers this responsibility to have been shifted to the station maintenance utilities manager. The utilities manager considers the interface agreement to be contingent upon staffing the utilities/radioactive waste organization (staffing positions not yet approved) and has not accepted radioactive material processing and shipment responsibilities. As a result, neither group is modifying procedures to accomplish the shift in responsibilities.

"b. Reorganization and staffing to create the proposed utilities/radioactive waste organization is incomplete. As a

result, progress is not being made in training and procedure revisions, and development of long-term plans for interim radioactive waste storage pending resolution of final waste disposal options has been delayed."

"c. The radioactive waste minimization committee has not met in over two years, and has not addressed existing station practices that contribute to unnecessary generation of radioactive waste. Management oversight has not been effective in identifying and correcting this problem. \* \* \*"

"d. Plans and milestones have not been communicated for the temporary storage of radioactive waste prior to availability of facilities for long-term storage. Despite the long lead times involved for some temporary facilities, plans have not been implemented. Various managers in the plant and corporate organizations have communicated different plans for interim storage of radioactive waste ranging from flatbed trailers parked in the protected areas to a new storage building."

PSNH Response:

"A comprehensive radioactive waste program will be developed by January 1990. The program will clearly define the responsibilities, resources, and procedures necessary to handle expected volumes of radioactive waste. Steps are being taken to fill radioactive waste technician positions. Temporary storage of solid low level waste will be in place by April 1990. A training program for radioactive waste technicians has been established and will be fully implemented in the first quarter of 1990." [emphasis added.]

Conclusion

These findings by the nuclear power industry's own Institute of Nuclear Power Operations argue that anything short of correcting the grave safety deficiencies constitutes grounds for

criminal negligence in the operation, supervision and regulation of the Seabrook nuclear plant. Any harm proceeding from any uncorrected safety problems should justify a criminal indictment for willful and knowing violations.

A full congressional investigation is needed with all pertinent officials and analysts from the Public Service Company of New Hampshire, the Institute of Nuclear Power Operations and the U.S. Nuclear Regulatory Commission ordered to respond to congressional questioning. No further movement toward power operation should be permitted by the NRC which should immediately modify, suspend, or revoke the operating license for the Seabrook plant pending completion of such an investigation.

The life of the land and its people are at stake.  
Thank you.

## SEABROOK SERVICE LIST

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<p>Alan S. Rosenthal, Chairman Atomic Safety and Licensing Appeal Board U.S. NRC Washington, D.C. 20555</p>	<p>Atomic Safety and Licensing Appeal Board Panel U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Robert A. Backus, Esq. Backus, Meyer &amp; Solomon 111 Lowell Street Manchester, NH 03105</p>	<p>Michael Santosuosso, Chairman Board of Selectmen Jewell Street, RFD # 2 South Hampton, NH 03842</p>
<p>Thomas S. Moore Atomic Safety and Licensing Appeal Board U.S. NRC Washington, D.C. 20555</p>	<p>Atomic Safety and Licensing Board Panel U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>*Mitzi A. Young, Esq. Edwin J. Reis, Esq. Office of the General Counsel U.S. Nuclear Regulatory Commn Washington, DC 20555</p>	<p>Judith H. Mizner, Esq. Silvergate, Gertner, et al. 88 Broad Street Boston, MA 02110</p>
<p>*Kenneth M. Carr U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>*Docketing and Service Branch U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>H. Joseph Flynn, Esq. Office of General Counsel FEMA 500 C Street S.W. Washington, D.C. 20472</p>	<hr style="border: 0.5px solid black;"/> <p>* By hand ** By telefax</p>
<p>*Thomas M. Roberts Commissioner U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Jane Doughty SAPL 5 Market Street Portsmouth, NH 03801</p>	<p>George Dana Bisbee, Esq. Geoffrey M. Huntington, Esq. Office of the Attorney General State House Annex Concord, NH 03301</p>	
<p>*James R. Curtiss Commissioner U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>John Traficonte, Esquire Assistant Attorney General 1 Ashburton Place, 19th Floor Boston, MA 02108</p>	<p>Richard A. Hampe, Esq. Hampe and McNicholas 35 Pleasant Street Concord, NH 03301</p>	
<p>*Forrest J. Remick Commissioner U.S. Nuclear Regulatory Commission Washington, DC 20555</p>	<p>Senator Gordon J. Humphrey 1 Eagle Square, Ste 507 Concord, NH 03301</p>	<p>Gary W. Holmes, Esq. Holmes &amp; Ellis 47 Winnacunnent Road Hampton, NH 03842</p>	
<p>*Kenneth C. Rogers Commissioner U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Alfred V. Sargent, Chairman Board of Selectmen Town of Salisbury, MA 01950</p>	<p>William Armstrong Civil Defense Director 10 Front Street Exeter, NH 03833</p>	
<p>Howard A. Wilber Atomic Safety and Licensing Appeal Board U.S. NRC Washington, D.C. 20555</p>	<p>Rep. Suzanne Breiseth Town of Hampton Falls Drinkwater Road Hampton Falls, NH 03844</p>	<p>Mrs. Anne E. Goodman Board of Selectmen 13-15 New Market Road Durham, NH 03842</p>	
<p>Ivan W. Smith, Chairman Atomic Safety and Licensing Board U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Stanley W. Knowles Board of Selectmen P.O. Box 710 North Hampton, NH 03826</p>	<p>R. Scott Hill-Whilton Lagoulis, Clark, Hill-Whilton and McGuire 79 State Street Newburyport, MA 01950</p>	
<p>Dr. Richard F. Cole Atomic Safety and Licensing Board U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Allen Lampert Civil Defense Director Town of Brentwood Exeter, NH 03833</p>	<p>Diana Sidebotham RFD # 2 Box 1260 Putney, VT 05346</p>	
<p>Kenneth A. McCollom Atomic Safety and Licensing Board U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Paul McEachern, Esq. Shaines &amp; McEachern P.O. Box 360 Maplewood Avenue Portsmouth, NH 03801</p>	<p>Richard Donovan FEMA 442 J.W. McCormack (POCH) Boston, MA 02109</p>	
<p>Robert R. Pierce, Esq. Atomic Safety and Licensing Board U.S. Nuclear Regulatory Commission Washington, D.C. 20555</p>	<p>Sandra Gavutis RFD 1, Box 1154 East Kensington, NH 03827</p>	<p>Senator Gordon J. Humphrey U.S. Senate Washington, D.C. 20510 (Attn. Tom Burack)</p>	
	<p>Phillip Ahrens, Esq. Assistant Attorney General State House, Station #6 Augusta, ME 04333</p>	<p>Ashod N. Amirian, Esq. 145 South Main Street P.O. Box 38 Bradford, MA 01835</p>	
	<p>**Thomas G. Dignan, Esq. R.K. Gadd II, Esq. Ropes &amp; Gray One International Place Boston, MA 02110-2624</p>		