

Ms. Jane Doughty
The Seacoast Anti-Pollution League
93 High Street
P.O. Box 1136
Portsmouth, NH 03802

Dear Ms. Doughty:

I am responding to a Petition pursuant to 10 CFR 2.206 submitted by you on December 18, 1997, on behalf of The Seacoast Anti-Pollution League. The Petition was submitted to the Executive Director for Operations of the U.S. Nuclear Regulatory Commission (NRC) and requests that the operating license for Seabrook Station be suspended until such time as a thorough root cause analysis of the reasons underlying the development of leaks in piping of the "B" train of the residual heat removal (RHR) system is conducted. The leakage was reported by North Atlantic Energy Service Corporation, the Licensee for Seabrook Station, on December 5, 1997. Your Petition asserts that there have been past allegations of improper welding practices and documentation, and installation of substandard piping at Seabrook Station and requests that the investigations of the pipe leakage include findings related to these past allegations.

Your Petition requested that the restart of the Seabrook Station following repairs to the RHR system piping be delayed until all such actions requested by the Petition are taken. By letter dated January 15, 1998, you were informed that, on the basis of the Licensee's preliminary analysis of the cause of the pipe leakage, the NRC staff found no reason to prevent the plant from restarting.

The Petition was referred to the Office of Nuclear Reactor Regulation in accordance with 10 CFR 2.206 for preparation of a Director's Decision. The enclosed Director's Decision contains the NRC staff's conclusions regarding the cause of the RHR system piping leakage and addresses the specific concerns raised in your Petition. The Decision denies your request to suspend the operating license of Seabrook Station.

J. Doughty

- 2 -

A copy of the Director's Decision will be filed with the Secretary of the Commission for the Commission to review in accordance with 10 CFR 2.206(c). As provided for by this regulation, the Decision will become the final action of the Commission 25 days after its issuance, unless the Commission, on its own motion, institutes a review of the Decision within that time. I have also enclosed a copy of the notice of "Issuance of Director's Decision Under 10 CFR 2.206," which contains the complete text of DD-98-03. This notice is being filed with the Office of the Federal Register for publication.

Sincerely,

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Enclosures: 1. Director's Decision DD-98-
2. Federal Register Notice

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION
Samuel J. Collins, Director

In the Matter of)	Docket No. 50-443	
)		
)		
NORTH ATLANTIC ENERGY SERVICE CORPORATION)	License No. NPF-86	
)		
(Seabrook Station, Unit No. 1))	(10 CFR 2.206)	
)		

DIRECTOR'S DECISION PURSUANT TO 10 CFR 2.206

I. INTRODUCTION

On December 18, 1997, Ms. Jane Doughty submitted a Petition to the Executive Director for Operations of the U.S. Nuclear Regulatory Commission (NRC) on behalf of The Seacoast Anti-Pollution League requesting that the operating license for Seabrook Station be suspended until such time as a thorough root cause analysis of the reasons underlying the development of leaks in piping of the "B" train of the residual heat removal (RHR) system is conducted. The leakage was reported by North Atlantic Energy Service Corporation, the Licensee for Seabrook Station, on December 5, 1997.

The Petition requested that the restart of the Seabrook Station following repairs to the RHR system piping be delayed until all such actions requested by the Petition are taken. On January 15, 1998, the NRC informed the Petitioner in an acknowledgment letter that on the basis of the Licensee's preliminary analysis of the cause of the pipe leakage, the NRC staff found no reason to prevent the plant from

restarting. The acknowledgment letter further informed the Petitioner that her Petition had been referred to the Office of Nuclear Reactor Regulation pursuant to 10 CFR 2.206 for preparation of a Director's Decision and that action would be taken within a reasonable time regarding the specific concerns raised in the Petition.

II. DISCUSSION

The Petition requests, in part, "that the operating license for the Seabrook Station Nuclear Power Plant [Seabrook Station] be suspended until such time as a thorough root cause analysis of the reasons underlying the development of leaks...in piping in the "B" train of the Residual Heat Removal (RHR) system is conducted, including but not limited to a review of documentation associated with welds in the area of the leakage and their associated inspection documentation, a review of the qualification of the piping involved, and a review of the procedures for ongoing assurance of weld and piping quality at the plant." The Petition asserts that there have been past allegations of improper welding practices and documentation, and installation of substandard piping at Seabrook Station and requests that the investigations of the RHR system pipe leakage include findings related to these past allegations and the implications of this incident for other plant systems. Each of these concerns is addressed below.

A. Root Cause Analysis

The Licensee has concluded that the cause of the RHR piping leak was chloride-induced transgranular stress-corrosion cracking initiated from the outside diameter of the pipe. The stress-corrosion cracking was the result of repeated wettings and dryings of a protective covering attached to the pipe with red duct tape during construction of the facility. The covering was installed to prevent other welding activities from damaging the pipe after it was installed and

should have been removed prior to placing the RHR system in service. After being wetted the protective covering and tape leached chlorides, allowing the chlorides to concentrate on the outer surface of the pipe over time. The chlorides provided an agent to initiate stress-corrosion cracking of the stainless steel pipe material. The Licensee has conducted an inspection of accessible areas both inside and outside containment for similar instances of unapproved materials being attached to stainless steel piping and none were found.

The NRC staff has reviewed the Licensee's conclusions, including observations of the failed pipe section and a review of the relevant metallurgical and chemistry reports. The NRC staff found that the metallurgical and chemistry reports provide an adequate basis for the Licensee's conclusion that the leaks were the result of stress-corrosion cracking initiated from the outside diameter of the pipe that progressed through the pipe wall to the inside surface. The NRC staff's findings are documented in Inspection Report 50-443/97-08.

B. Review of Weld Documentation

The Licensee conducted a review of the original radiographs of the affected welds and found no anomalies in the weld or the base metal. This finding indicates that the cause of the leakage was the result of service- induced conditions and not a weld or piping defect originating from the original construction.

The NRC staff's review of the radiographs confirmed that there were no adverse construction weld quality problems, such as cracks, porosity, or weld slag shown on the pipe weld radiographs in the vicinity of the leaks or on the similar welds on the "A" train of the RHR system. No defective welds were found. The NRC staff's findings are documented in Inspection Report 50-443/97-08.

C. Review of Pipe Qualification

The Licensee reviewed the original material test reports and purchase specification documentation for the affected piping sections. Chemical analysis of the removed piping sections confirmed that the material met the specification for SA312 Type 304 stainless steel pipe.

The NRC staff's review of the chemistry analysis and photomicrographs showed the pipe material to be Type 304 stainless steel. The NRC staff's findings are documented in Inspection Report 50-443/97-08.

D. Review of the Procedures for Ongoing Assurance of Weld and Pipe Quality

In conjunction with the most recent refueling outage at Seabrook Station, the NRC staff conducted a review of the Licensee's American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section XI inservice inspection program plan for ensuring structural and leaktight integrity of systems important to safety. The NRC inspector found the implementation of all elements of the program to be on schedule and in accordance with the rules of Section XI of the ASME Code.

The NRC inspector observed and/or reviewed the results of inservice inspections conducted by the Licensee on plant equipment, including several piping welds. The NRC inspector found that the inspections were performed in accordance with the rules of Section XI of the ASME Code and NRC regulations. The NRC staff's findings are documented in Inspection Report 50-443/97-03.

E. Review of Past Allegations of Improper Welding Practices

On March 27, 1990, the NRC's Executive Director for Operations established an independent review team to conduct an assessment of the adequacy of the construction welding and nondestructive examination (NDE) practices at Seabrook Station. The team's findings are

documented in NUREG-1425, "Welding and Nondestructive Examination Issues at Seabrook Nuclear Station." The independent review team concluded that the pipe welding and NDE programs were generally consistent with applicable codes and NRC requirements and resulted in technically acceptable pipe welds.

In investigating the leaks in the "B" train of the RHR system reported on December 5, 1997, the NRC staff did not identify any factors that would provide a basis for disagreeing with the Licensee's conclusion that the cause of the leakage was the result of service-induced conditions and not a weld or piping defect originating from the original construction. Likewise, the investigation of this issue did not provide any information that would question the validity of NUREG-1425. Therefore, no further action by the NRC staff is warranted with respect to the past allegations of improper welding practices and substandard quality piping in response to the Petitioner's request.

F. Implications for Other Plant Systems

The Licensee has concluded that the cause of the leakage in the "B" train of the RHR system reported on December 5, 1997, was the result of a service-induced condition and not a defect originating from the original construction. The NRC staff has reviewed the Licensee's activities related to the root cause analysis and subsequent repair in response to the RHR system pipe leakage. The NRC staff found no evidence of improper welding practices or substandard piping that contributed to the RHR system pipe leakage and that would result in generic implications to other plant systems.

III. CONCLUSION

The NRC staff has reviewed the information submitted by the Petitioner, and the Petitioner's request to suspend the operating license of the Seabrook Station is denied. As described above, the NRC staff has found that the cause of the leaks in the piping in the "B"

train of the RHR system was the result of service-induced degradation. There were no deficiencies identified in the fabrication of the original piping or welds that would have generic implications for other plant systems and that would require the operating license of the facility to be suspended.

As provided in 10 CFR 2.206(c), a copy of this Decision will be filed with the Secretary of the Commission for the Commission's review. This Decision will constitute the final action of the Commission 25 days after issuance, unless the Commission, on its own motion, institutes review of the Decision in that time.

Dated at Rockville, Maryland, this 17th day of

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTH ATLANTIC ENERGY SERVICE CORPORATION

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

ISSUANCE OF DIRECTOR'S DECISION UNDER 10 CFR 2.206

Notice is hereby given that the Director, Office of Nuclear Reactor Regulation (NRR), has taken action with regard to a Petition dated December 18, 1997, submitted by Ms. Jane Doughty on behalf of The Seacoast Anti-Pollution League. The Petition requests that the operating license for Seabrook Station be suspended until such time as a thorough root cause analysis of the reasons underlying the development of leaks in piping of the "B" train of the residual heat removal (RHR) system is conducted. The leakage was reported by North Atlantic Energy Services Corporation, the Licensee for Seabrook Station, on December 5, 1997. The Petition asserts that there have been past allegations of improper welding practices and documentation, and installation of substandard piping at Seabrook Station and requests that the investigations of the RHR system pipe leakage include findings related to these past allegations.

The Director of NRR has denied the Petitioner's request to suspend the operating license of the Seabrook Station. In the Director's Decision

discussed each of the concerns raised by the Petitioner and found that the cause of the leaks in the piping in the “B” train of the RHR system was the result of service-induced degradation. There were no deficiencies identified in the fabrication of the original piping or welds that would have generic implications for other plant systems and that would require the operating license of the facility to be suspended. The complete text of the Decision follows this notice and is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Exeter Public Library, Founders Park, Exeter, New Hampshire 03833.

A copy of the Decision will be filed with the Secretary of the Commission for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations. As provided for by this regulation, the Decision will constitute the final action of the Commission 25 days after the date of issuance, unless the Commission, on its own motion, institutes a review of the decision in that time.

Dated at Rockville, Maryland, this 17th day of

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

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Sincerely,

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

- Enclosures: 1. Director's Decision DD-98-
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