

# New Hampshire Yankee

Ted C. Feigenbaum  
President and  
Chief Executive Officer

NYN-91092

June 10, 1991

United States Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Document Control Desk

- References:
- (a) Facility Operating License No. NPF-86, Docket No. 50-443.
  - (b) Transcribed Public Meeting Between New Hampshire Yankee and the NRC conducted on April 10, 1991.
  - (c) NHY Letter NYN-91076 dated May 13, 1991, "Transmittal of the Program Description for the Reverification of Pullman-Higgins Field Weld Records", T. C. Feigenbaum to T. T. Martin.

Subject: Report of Weld Record Anomalies For Field Weld 1-CS-360-08-F0801 and Field Weld 1-CS-318-02-F0202

Gentlemen:

In the April 10, 1991 Public Meeting between New Hampshire Yankee (NHY) and the NRC [Reference (b)], and as provided in the NHY Program Description for the Reverification of Pullman-Higgins Field Weld Records, transmitted to the NRC on May 13, 1991 [Reference (c)], NHY agreed to provide the NRC with a written report of any weld record anomalies within 72 hours of the determination that a report is required. Accordingly, enclosed please find a "Report of Weld Records Anomaly for Field Weld 1-CS-360-08-F0801" and a "Report of Weld Records Anomaly for Field Weld 1-CS-318-02-F0202". These reports relate to two record anomalies which NHY determined on June 7, 1991, were reportable pursuant to the program description. Subsequent to discussions with Region I personnel, NHY is submitting the Justification for Continued Operation for both records anomalies in this letter.

As provided in Enclosure 1, the Radiographic Inspection Report and associated radiographs for Pullman-Higgins Field Weld 1-CS-360-08-F0801 have not yet been located and may be misplaced or discarded. Other quality documentation demonstrates that an acceptable weld was installed, radiographed, and reviewed by the required, qualified personnel. NHY has evaluated this records anomaly and has determined that it does not adversely affect or call into question the physical quality of weld 1-CS-360-08-F0801 or other Seabrook Station welds.

As provided in Enclosure 2, review of the radiographs for Pullman-Higgins Field Weld 1-CS-318-02-F0202 indicates that the comparative densities of the penetrameters to those in the weld area of interest exceed the density limitation ranges specified by the Code. This

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discrepancy does not preclude the ability to make an evaluation of this weld for unacceptable indications per the Code requirements. The individual densities of both the penetrameters and the weld area of interest, in conjunction with the sharpness and clarity exhibited on the radiographs, are such that unacceptable indications would not be masked. NHY has evaluated this records anomaly and has determined that it does not adversely affect or call into question the physical quality of weld 1-CS-318-02-F0202 or any other Seabrook Station welds.

In order to correct the record anomalies, these welds will be re-radiographed before the end of the 1991 Seabrook refueling outage, the film will be reviewed in accordance with our present program requirements, and the film will be placed in the records vault to complete the required quality document set. The Justification for Continued Operations for each of these anomalies contained in the respective Enclosures have been reviewed by the Station Operation Review Committee (SORC) and determined to be acceptable.

Should you have any questions regarding this matter, please contact Mr. Neal A. Pillsbury, Director of Quality Programs at (603) 474-9521, extension 3341.

Very truly yours,

*T. Jeb SheLorch for*  
Ted C. Feigenbaum

TCF:JES/act

Enclosure

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New Hampshire Yankee  
June 10, 1991

ENCLOSURE 1  
REPORT OF WELD RECORDS ANOMALY FOR FIELD WELD 1-CS-360-08-F0801

## REPORT OF WELD RECORDS ANOMALY

### FOR FIELD WELD 1-CS-360-08-F0801

#### I. Introduction

In the April 10, 1991 Public Meeting between New Hampshire Yankee (NHY) and the NRC, and as provided in the NHY Program Description for the Reverification of Pullman-Higgins Field Weld Records, transmitted to the NRC on May 13, 1991, NHY agreed to provide the NRC with a written report of any weld record anomalies within 72 hours of the determination that a report was required. Accordingly, the following is a report of an identified records deficiency. NHY determined that this anomaly required NRC notification on June 7, 1991.

The identified deficiency is a lack of the Radiographic Inspection Report (RIR) and radiographic film for Pullman-Higgins field weld 1-CS-360-08-F0801. NHY has evaluated this record deficiency and has determined that it does not adversely affect or call into question the physical quality of weld 1-CS-360-08-F0801 or other Seabrook Station welds at this time. The following provides the code requirements, a description of the identified deficiency, cause of the deficiency, corrective actions which are to be implemented, and a justification for continued operation regarding the identified deficiency.

#### II. Code Requirements

American Society of Mechanical Engineers (ASME), Section III, Subsection NCA-4134.17, "Quality Assurance Records", and American National Standard Institute ANSI N45.2.9 - 1974, entitled "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants," state that radiographic review forms and radiographs are to be retained for the lifetime of a nuclear power plant.

#### III. Description of the Deficiency

Pullman-Higgins field weld 1-CS-360-08-F0801 is a circumferential butt weld on a four inch diameter section of piping in the Chemical and Volume Control System (CVCS). This section of the CVCS is ASME III, Class 2, and Safety Class 2. This weld connects a 90° long radius elbow to a section of piping. This weld is located in the letdown line of the CVCS downstream of the Regenerative Heat Exchanger (Tag number CS-E-2) and upstream of the Letdown Heat Exchanger (Tag number CS-E-4). This weld is physically located inside the Containment Building between valves 1-CS-V149 and 1-CS-V150 (Reference NHY P&ID 1-CS-B20722). A currently available Quality Assurance (QA) document, the Pullman-Higgins Field Weld Process Sheet, demonstrates that this field weld was radiographed in 1981 in accordance with the Non Destructive Examination (NDE) requirements contained in the 1977 Edition of ASME Section III up through and including the Winter 1977 Addenda (the Code applicable to Seabrook Station).

The weld records package for weld 1-CS-360-08-F0801 has not yet been located and may be misplaced or discarded. It is currently believed that the RIR and the radiographs for this

Yankee Document Control Center (SBYDCC) for final vault storage. Based on the above, the lack of weld record documentation for this weld does not meet the record retention requirements of ASME NCA-4134.17 and ANSI N45.2.9.

NHY Nuclear Quality Group (NQG) personnel have reviewed the available engineering documentation regarding this weld and have concluded that the lack of the RIR and radiographs for this weld does not call into question the quality of this weld. Review of the weld process sheets for 1-CS-360-08-F0801 indicate that this weld was completed on March 27, 1981, and on this same date, an external visual examination of this weld was performed. The attributes of this visual examination included weld reinforcement, undercut, arc strikes, removal of purge dams, presence of joint and welder identification, and suitability of the NDE performed. Nuclear Quality Group review of the field weld process sheet and the related Pullman-Higgins procedures have determined that the initials of the Level II and the ANI indicate that the procedures had been completed and the radiographic film showed the weld to be of acceptable quality. Other currently available QA documentation also demonstrates that the radiographic records for this weld were reviewed as part of the Seabrook Station as-built verification process.

The available quality record demonstrates the process sheet was initialed by a Pullman-Higgins Level II reviewer and an Authorized Nuclear Inspector (ANI). The ANI whose initials are on the weld process sheet, has reviewed the weld process sheets for field weld 1-CS-360-08-F0801 and affirmed that his initials were affixed after he had reviewed the radiographic film and had determined the weld to be acceptable.

#### IV. Cause of Deficiency

NHY has reviewed the identified records deficiency and has determined its cause to be personnel error on the part of Pullman-Higgins records management personnel. The Pullman-Higgins records management personnel apparently misfiled or inadvertently discarded the radiograph and the RIR prior to the transfer of records to YAEF for review and failed to transmit these documents to the SBYDCC for ultimate archival in the Seabrook Station records management system.

#### V. Corrective Actions

NHY has determined that the appropriate corrective actions for this records deficiency are to: 1) complete a radiographic examination of field weld 1-CS-360-08-F0801; 2) review the film in accordance with our present program requirements; and 3) include the radiograph and the required radiographic review forms in the NHY records management system. When completed, actions 1, 2 and 3 above will ensure compliance with the Code. NHY will complete these corrective actions during the refueling outage currently scheduled to begin on July 27, 1991.

If similar anomalies are found during the conduct of the balance of the Weld Records Reverification Project, long-term corrective actions will include the evaluation of such anomalies, as a group, for generic implications and possible additional corrective actions.

## VI. Justification for Continued Operation

The following provides a Justification for Continued Operation (JCO) of Seabrook Station for the time period between the determination that the aforementioned weld records deficiency required NRC notification and the time that corrective actions for the deficiency are implemented. This JCO demonstrates that the identified weld records deficiency does not produce any reduction in the protection provided for the health and safety of the public.

As provided in Section III above, NHY has conclusively determined that the radiographic film for field weld 1-CS-360-08-F0801 existed and was read by qualified reviewers and the weld was determined to be of acceptable quality as indicated on the weld process sheet.

The design pressure and design temperature of this section of the letdown piping are 600 psig and 400°F respectively. This portion of the letdown line was successfully hydrostatically tested to 780 psig on August 20, 1985. Records of that hydrostatic test, which was witnessed by a Pullman-Higgins Quality Control Engineer, a United Engineers and Constructors Quality Assurance Level II, YAEC Quality Assurance personnel and an ANI are available at Seabrook Station. There are no records of any discrepancies that would cause the integrity of field weld 1-CS-360-08-F0801 to be questioned. The letdown line is currently in service at approximately 265°F and 350 psig and has been in service since the issuance of the operating license.

Field weld 1-CS-360-08-F0801 is located inside the containment between valve 1-CS-V149 and containment penetration X-37. The letdown containment penetration isolation boundary is formed by valve 1-CS-V149, which is located inside the containment, and valve 1-CS-V150 which is located outside the containment. Valve 1-CS-V149 is a Class 2, motor-operated gate valve and valve 1-CS-V150 is a Class 2, air-operated globe valve. Each of these valves is a Containment Isolation Valve that will close on a Phase A Containment Isolation Signal or a High Energy Line Break Signal. These normally open Containment Isolation Valves are operable and capable of closing within their specified closure times of 10 seconds. These valves were stroke tested in accordance with the New Hampshire Yankee Inservice Testing (IST) Program on May 13, 1990, and were leak tested to meet the requirements of 10CFR50, Appendix J, on May 7, 1990. The results of both of these tests were satisfactory. Records of these tests are available for review at Seabrook Station. The satisfactory testing described above and the lack of any known reason to suspect the integrity of field weld 1-CS-360-08-F0801 ensures that the containment isolation requirements of Technical Specification 3.6.3, Containment Isolation Valves, are met.

The structural integrity of the containment penetration boundary from valve 1-CS-V149 through valve 1-CS-V150 is verified from a functional perspective by the New Hampshire Yankee Inservice Inspection (ISI) Program. The initial functional testing of this letdown line segment was performed by the construction hydrostatic test that was performed to 1.25 times the design pressure of 600 psig. There has been no evidence of Reactor Coolant System leakage from this letdown line segment. Therefore, there is no question that the structural integrity requirements of Technical Specification 3.4.10 are met.

Based on the above, there are no outstanding questions regarding the quality of this field weld and thus no outstanding questions regarding the integrity of the Chemical and Volume



Control System. Additionally, the CVCS has been extensively tested during preoperational and startup testing. Moreover, this system has been operating at normal plant temperatures and pressures for the past year. Throughout testing and operation, no problems with this weld have been identified. Therefore, since the identified records deficiency does not compromise the integrity of the CVCS, nor affect the operation of the Station, there is no reduction in the protection provided for the health and safety of the public.

NHY has also performed a safety evaluation for this JCO and has determined that (a) unreviewed safety question does not exist. Specifically, since the identified records anomaly does not compromise the integrity of the CVCS, it does not increase the probability or consequences of accidents or malfunctions previously evaluated in the Final Safety Analysis Report (FSAR). The mere presence of a records anomaly does not introduce a new failure mechanism nor does it modify the plant in any manner so as to create the possibility of a new accident or malfunction occurring. This records anomaly does not provide any means for an increase in the dose from any previously analyzed accident as it does not make any changes to the plant or its design basis. The margin of safety as defined in the basis for any technical specification will not be reduced by this records anomaly since it does not compromise the integrity of the CVCS nor affect the operation of the Station.

Based on the foregoing, the identified records anomaly does not present an unreviewed safety question and it does not compromise the integrity of the CVCS, nor affect the operation of the Station. Thus, this records anomaly does not reduce the protection provided for the health and safety of the public.



New Hampshire Yankee  
June 10, 1994

ENCLOSURE 2  
REPORT OF WELD RECORDS ANOMALY FOR FIELD WELD 1-CS-318-02-F0202

## REPORT OF WELD RECORDS ANOMALY

### FOR FIELD WELD 1-CS-318-02-F0202

#### I. Introduction

At the April 10, 1991 Public Meeting between New Hampshire Yankee (NHY) and the NRC, and as provided in the NHY Program Description for the Rectification of Pullman-Higgins Field Weld Records, transmitted to the NRC on May 13, 1991, NHY agreed to provide the NRC with a written report of any weld record anomalies within 72 hours of the determination that a report was required. Accordingly, the following is a report of an identified records deficiency. NHY determined that this anomaly required NRC notification on June 7, 1991.

The identified records anomaly regards a discrepancy between radiographic film quality and code requirements. NHY has evaluated this film quality discrepancy and has determined that it does not adversely affect or call into question the physical quality of weld 1-CS-318-02-F0202 or other Seabrook Station welds. The following provides the Code requirements, a description of the identified deficiency, cause of the deficiency, corrective actions which are to be implemented, and a Justification for Continued Operation regarding the identified deficiency.

#### II. Code Requirements

Section V of the ASME Boiler and Pressure Vessel Code, entitled "Nondestructive Examination" provides the Code requirements for radiographic density information which is to be captured on penetrameters. Specifically, paragraph T-263.2 states that "if the density of the radiograph through the area of interest of the weld varies by more than minus 15% or plus 30% from the density through the body of the penetrameter, within the minimum/maximum allowable density ranges specified in T-234.1, then an additional penetrameter shall be used for each exceptional area or areas and the radiograph retaken."

#### III. Description of the Deficiency

Pullman-Higgins field weld 1-CS-318-02-F0202 is a circumferential butt weld on a three inch diameter section of piping in the Chemical and Volume Control System (CVCS). This section of the CVCS is ASME III, Class 2, and Safety Class 2. This weld connects a valve (1-CS-V325) to the piping and is also adjacent to a reducer. This weld is located in the letdown leg of the CVCS downstream of both the Regenerative (Tag number CS-E-2) and Letdown (Tag number CS-E-4) Heat Exchangers. This weld is physically located in the Primary Auxiliary Building which is outside the Containment Building. (Reference NHY P&ID 1-CS-B20722). This field weld was radiographed in 1981 in accordance with the Non Destructive Examination (NDE) requirements contained in the 1977 Edition of ASME Section III up through and including the Winter 1977 Addenda (the code applicable to Seabrook Station).

The weld records package for weld 1-CS-318-02-F0202 contains a Radiograph Inspection Report (RIR) and the radiographic film. The RIR indicates that the radiograph views for all stations of this weld are of acceptable quality. The RIR also contains the approval signatures of the Level II Pullman-Higgins reviewer, Authorized Nuclear Inspector (ANI), and

the Yankee Atomic Electric Company (YAEC) reviewer. Additionally, another Level II Pullman-Higgins reviewer subsequently reviewed this RIR. At the time this radiograph was reviewed, the ASME Code approval process included the Level II Pullman-Higgins reviewer and the ANI. YAEC provided a review in order to satisfy Quality Assurance Program requirements. Level III Pullman-Higgins review was added to the review process at a later point and therefore is not a requirement for this field weld.

A review of the radiographic film for this weld was conducted on June 7, 1991 to evaluate issues previously raised by a NRC Level III RT reviewer as a result of an inspection conducted on May 29 and 30, 1991. This evaluation confirmed that the required 4T sensitivity was achieved in the necessary penetrameters in the films for all stations of this weld. Additionally, the density through the body of the penetrameters meet the requirements of ASME Section V, paragraph T-234. The weld area of interest in each film also meets the density requirements of the same Code provisions. This review also revealed, however, that the comparative densities of the penetrameters to those in the weld area of interest exceed the minimum/maximum density limitation ranges specified in ASME Section V, paragraph T-263.2. Specifically, the densities through the weld area of interest are 2.50 to 3.52 H&D. This technique shortcoming does not in itself preclude the ability to make an evaluation of the weld for unacceptable indications per the radiographic acceptance standards of NC-5320. As stated above, the densities in the weld area of interest are within the Code requirements of 2.0 to 4.0 I&D. Additionally, the sharpness and contrast of the radiographs are such that unacceptable indications would not be masked. Review, evaluation and interpretation of the weld area revealed no Code rejectable indications. These findings are consistent with the findings of previous evaluations and the findings provided on this weld's RIR. The June 7, 1991 evaluation was performed by a Level II RT reviewer and three Level III RT reviewers, all of whom are employed by NHY or YAEC.

Furthermore, the process sheets for this weld document that a post weld visual examination of the internal and external weld surfaces was performed for this weld on October 22, 1991. The internal examination attributes were for oxidation, concavity, convexity, undercut, and unconsumed insert, and in all instances were found to be acceptable for this weld. The external examination attributes included weld reinforcement, arc strikes, undercut, transition, purge dam removal, and suitability for NDE, and in all instances were found to be acceptable for this weld.

#### IV. Cause of Deficiency

NHY has reviewed the identified records deficiency and has determined its cause to be personnel error on the part of Pullman-Higgins and subsequent independent NDE review personnel. The NDE review personnel apparently neglected to compare the penetrameter density range with that of the weld area of interest density range to ensure that they were in compliance with the minus 15% and plus 30% criteria provided in the Code. This oversight appears to be due to the fact that both the penetrameter and the weld area of interest exhibited the acceptable Code required densities.

#### V. Corrective Actions

NHY has determined that the appropriate corrective actions for this record deficiency are to: 1) complete a radiographic examination of field weld 1-CS-318-02-F0202; 2) review the film in accordance with our present program requirements; and 3) include the radiograph and

the required radiographic review forms in the NHY records management system. When completed, actions 1, 2, and 3 above will ensure compliance with the Code. NHY will complete these corrective actions during the refueling outage currently scheduled to begin on July 27, 1991.

If similar anomalies are found in the future, long-term corrective actions will include the evaluation of such anomalies, as a group, for generic implications and possible additional corrective actions.

#### VI. Justification for Continued Operation

The following provides a Justification for Continued Operation (JCO) of Seabrook Station for the time period between the determination that the aforementioned weld record deficiency required NRC notification and the time that corrective actions for the deficiency are implemented. This JCO demonstrates that the identified weld record deficiency does not produce any reduction in the protection provided for the health and safety of the public.

As provided in Section III above, NHY has determined that the radiographs for Pullman-Higgins field weld 1-CS-318-02-F0202 are adequate to enable the identification of any Code rejectable discontinuities. As stated above, review of the radiographs for this weld indicate there are no Code rejectable indications in this weld. These findings are consistent with the findings provided on this weld's RIR.

The design pressure and design temperature of this section of the letdown piping are 600 psig and 400 F, respectively. This portion of the letdown line was successfully hydrostatically tested to 1.25 times the design pressure on August 20, 1985. Records of this hydrostatic test, which was witnessed by a Pullman-Higgins Quality Control Engineer, a United Engineer's Quality Assurance Level II reviewer, YAEC Quality Assurance personnel and an ANI are available at Seabrook Station. There are no records of any discrepancies that would cause the integrity of field weld 1-CS-318-02-F0202 to be questioned. The letdown line is currently in service at approximately 95°F and 350 psig and has been in service since the issuance of the operating license.

Pullman-Higgins field weld 1-CS-318-02-F0202 is located in the Primary Auxiliary Building which is outside the Containment Building. This weld is located downstream of both the Regenerative and Letdown Heat exchangers and valve 1-CS-V325. The portion of the letdown line in which this weld is located does not serve a containment isolation function. The penetration isolation boundary for the letdown line is formed by valve 1-CS-V149, which is located inside the containment, and valve 1-CS-V150 which is located outside containment. Valve 1-CS-V149 is a Class 2, motor-operated gate valve and valve 1-CS-V150 is a Class 2, air-operated globe valve. Each of these valves is a Containment Isolation Valve that will close on a Phase A Containment Isolation Signal or a High Energy Line Break Signal. These normally open Containment Isolation Valves are operable and capable of closing within their specified closure times of 10 seconds. These valves were stroke tested in accordance with the NHY Inservice Testing (IST) Program on May 13, 1990 and were leak tested to meet the requirements of 10CFR50, Appendix J, on May 7, 1990. The results of both of these tests were satisfactory. Records of these tests are available for review at Seabrook Station. The satisfactory testing described above ensures that the containment isolation requirements of Technical Specification 3.6.3, Containment Isolation Valves, are met.

Based on the above, there are no outstanding questions regarding the quality of field weld 1-CS-318-02-F0202 and thus no outstanding questions regarding the integrity of the Chemical and Volume Control System. Additionally, the CVCS has been extensively tested during preoperational and startup testing. Moreover, this system has been operating at normal plant temperature and pressure for the past year. Throughout testing and operation, no problems with this weld have been identified. Since the identified record deficiency does not compromise the integrity of the CVCS nor affect the operation of Seabrook Station, there is no reduction in the protection provided for the health and safety of the public.

NHY has also performed a safety evaluation for this JCO and has determined that an unreviewed safety question does not exist. Specifically, since the identified record anomaly does not compromise the integrity of the CVCS nor affect the operation of Seabrook Station, it does not increase the probability or consequences of accidents or malfunctions previously evaluated in the Final Safety Analysis Report (FSAR). The mere presence of a record anomaly does not introduce a new failure mechanism nor does it modify the plant in any manner so as to create the possibility of a new accident or malfunction occurring. This record anomaly does not provide any means for an increase in the dose from any previously analyzed accident as it does not make any changes to the plant or its design basis. The margin of safety as defined in the basis for any technical specification will not be reduced by this record anomaly since it does not compromise the integrity of the CVCS nor does it affect the operation of Seabrook Station.

Based on the foregoing, the identified record anomaly does not present an unreviewed safety question and it does not compromise the integrity of the CVCS nor affect the operation of the Station. Thus, this records anomaly does not reduce the protection provided for the health and safety of the public.