New Hampshire
Yankee

Ted C. Feigenbaum
President and
Chief Executive Officer

NYN-91040

March 11, 1991

Mr. Charles W. Hehl
Director, Division of Reactor Projects
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

References: (a) Facility Operating License No. NPF-86, Docket No. 50-443

(b) USNRC Letter dated March 5, 1991, "Request for Additional Information on Welds" C.W. Hehl to T.C. Feigenbaum

(c) NHY Letter NYN-91029, dated February 20, 1991, "Response to Request for Information", T.C. Feigenbaum to T.T. Martin

(d) USNRC Letter dated February 22, 1991, "Request for Information on Radiograph Records", C.W. Hehl to T.C. Feigenbaum

(e) NHY Letter NYN-91023, dated February 8, 1991, "Additional NHY Response to OIG Request c. Information", T.C. Feigenbaum to L.J. Norton

Subject: Response to Request for Information

Dear Mr. Hehl,

Enclosed please find New Hampshire Yankees' response to the information requested in USNRC letter dated March 5, 1991 [Reference (b)].

Should you have any questions regarding this matter please contact Mr. Terry L. Harpster, Director of Licensing Services at (603) 474-9521, extension 2765.

Very truly yours,

Ted C. Feigenbaum

TCF/JMP/act

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cc: Mr. Thomas T. Martin
Regional Administrator
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
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NRC Senior Resident Inspector
P.O. Box 1149
Seabrook, NH 03874

New Hampshire Yankee
March 11, 1991

ENCLOSURE 1 TO NYN-91040

REQUEST #1

- The basis for NHY confidence that required radiographs were made for (Pullman-Higgins) field welds, with satisfactory results and radiograph retention as required.

RESPONSE

NHY is confident that the required radiographs were made for Pullman-Higgins field welds with satisfactory results and radiograph retention as required. This confidence is based on the following:

1. The Design, Construction and Quality Assurance programs and practices in effect during the construction of Seabrook Station provided a defense-in-depth approach to ensure the quality and integrity of the physical components and supporting record documentation. The defense-in-depth concept entailed a hierarchy of internal independent checks and balances by the organizations involved in the design and construction of Seabrook Station. In addition to these internal measures, external reviews and audits by independent third parties verified the adequacy of both individual program elements and the total overall program to ensure full compliance with the welding installation, inspection and records processes.

   During design and construction, the QA Programs of the Architect Engineer (A-E) United Engineers and Constructors (UE&C), Installer Pullman-Higgins (P-H), and Yankee Atomic Electric Company (YAEC), as agent for NHY, provided controls to perform radiography including sufficient oversight to ensure that radiography for P-H field welds was satisfactorily performed. Key controls associated with radiography for ASME III systems included:

   a. Welds requiring radiography were identified on P-H field drawings.

   b. Performance of radiography was controlled via P-H Field Weld Process Sheets reviewed by P-H Engineering and QA. After completion of radiography, P-H QA personnel reviewed completed records to ensure radiography required by the Process Sheets was satisfactorily performed.

   c. At the conclusion of construction, P-H Engineering and QA personnel performed separate field walkdowns to ensure the piping configuration was consistent with piping drawings. ASME N-5 code data reports were prepared by both P-H (as the Installer) and UE&C (as the Designer) in order to demonstrate that ASME III piping systems met the ASME III code. One step in the process was to verify that code required radiography was satisfactorily performed. Another step was a system P&ID review performed by UE&C Engineering to assure that all ASME portions of piping systems were identified on an N-5 code data report.

d. YAEC performed a third level audit function of P-H radiographic activities. YAEC also performed an additional, overall review of radiographic packages for P-H field welds prior to including them in the records vault.

2. The results of four separate recent review efforts substantiate the effectiveness and adequacy of the programs and practices that were in effect during the design and construction of Seabrook Station. These four reviews included the NRC's Special Independent Inspection Review Team (NUREG 1425), corrective actions NHY performed as described in NHY CAR 91-001, Congressional inquiries (via the NRC) requesting Weld Process Sheets and Radiographic Inspection Reports and finally a separate NHY review of P-H weld packages performed for the years 1981 through 1984.

3. As a result of these combined reviews only one field weld record, a radiograph for weld number CS 328-02-F0204, was not found. Although the radiograph was not in the weld record package, other documentation clearly demonstrates that the radiograph was taken, appropriately reviewed as required by the procedures and programs and accepted as satisfactory. As part of the corrective actions for NHY CAR 91-001, NHY has committed to re-radiograph this weld in the upcoming plant outage to complete the weld record documentation package.

In summary, NHY's confidence is based on the Design, Construction and Quality Assurance programs and practices in effect during the construction of Seabrook Station. This confidence is further confirmed by the recent additional detailed reviews and inquiries regarding welding practices and records.

REQUEST #2

- Clarification of the number of (Pullman-Higgins) radiographs audited/examined incident to responses to post-construction inquiries concerning weld adequacy.

RESPONSE

NHY has conducted a separate physical count of the radiography packages removed from the vault as part of post-construction follow-up questions. The post-construction follow-up questions consisted of four separate efforts. These efforts included:

a) NUREG 1425,

b) Corrective actions performed as described in NHY CAR 91-001,

c) Congressional inquires and

d) Additional NHY reviews.

This physical count was also separately verified to ensure the precision and accuracy of the results. The physical count process entailed the following actions:

1. A single listing of welds was developed from the four separate follow-up efforts.

2. This list was compared with the actual index cards used to remove the weld packages from the vault for review.

3. This resulted in a tabulation of the actual number of times a weld radiograph package was removed from the vault for each of the four separate efforts.

This physical count accurately determined the exact number of separate and distinct radiograph packages retrieved and the number of unique welds involved. In the February 26, 1991 submittal NHY indicated that:

> "There have been 1174 occasions where P-H weld radiographic film packages have been retrieved from the NHY storage vault incident to post-construction follow-up on weld adequacy questions. Since certain packages were retrieved on multiple occasions, it has been determined that at least 920 separate and distinct radiographic packages have been retrieved and subsequently verified as a result of this effort."

Based on the physical count there were 1225 separate occasions where radiograph packages were retrieved from the NHY vault for review. In some instances a single package was reviewed as many as five (5) times. Eliminating this duplication indicates that there were 960 unique weld packages reviewed.

NHY has completed a review of each of these packages and verified that the required radiographs were present in the vault for each of these 960 welds.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-443

MAR 19 1991

Public Service Company of New Hampshire
ATTN: Mr. Ted C. Feigenbaum
President and Chief Executive Officer
New Hampshire Yankee (NHY) Division
Post Office Box 300
Seabrook, New Hampshire 03874

Gentlemen:

Subject: Comp'eteness of Radiographic Records

We have reviewed your March 11, 1991 letter describing the bases for your confidence that all required radiographs for Pullman-Higgins field welds were made, that those welds are satisfactory, and that the radiographs and associated radiograph inspection records (RIRs) were received by New Hampshire Yankee for permanent storage.

NRC inspections and assessments during Seabrook construction, the NRC special Independent Review Team (IRT) inspection documented in NUREG-1425, hydrostatic tests, in-service inspections, and Seabrook's Quality Assurance program and processes provide reasonable assurance that the safety-related welds which required radiographic verification are adequate for the service. This includes field weld CS-328-02-F0204, for which the radiograph, original RIR and evidence of the committed confirmatory Yankee Atomic Energy Company (YAEC) review are missing.

Notwithstanding the above, the Quality Assurance and overview programs which you described as being in effect during construction should have ensured that the noted missing records were reviewed and retained as required. While you appear to have identified a likely cause for the missing radiograph, the staff is not satisfied that you have identified the actual root cause. As a result, it is not clear that all radiographs and RIRs have been independently reviewed by YAEC for acceptability in accordance with your commitment, and have been permanently retained by New Hampshire Yankee. Therefore, to conclusively show whether the code-required radiographs and RIRs were fully processed, and retained, for Pullman-Higgins field welds, New Hampshire Yankee is requested to accomplish the following.

1. Re-review the Seabrook as-built isometric drawings and identify all Pullman-Higgins field welds for which radiography was a requirement established by code (e.g., ASME, B31.1).

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2. Determine whether New Hampshire Yankee has the required radiographs and RIRs for all welds identified by the above review, and whether those records attest to independent YAEC determination of acceptability. If they do not, please explain why not.

3. During the above review and determination, if any additional incomplete records are noted, assess the individual and generic causes and safety implications, and take appropriate compensatory and/or corrective actions.

4. Report the results of this effort to the NRC within about one week of its completion, retaining auditable records of the effort on-site for reference.

By March 25, 1991, please advise this office of your schedule for completing that effort.

Sincerely,

Thomas T. Martin
Regional Administrator

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Request 2 (questions 1, 2 & 3 of June 19, 1990):

1. (paraphrased) In my May 29 memorandum I requested that I be provided the procedures that, prior to implementation of Procedure #5 in May 1984, governed the YAEC 100% radiograph review. The May 29 request encompassed procedures that mandated the review.

   Whether or not a specific procedure governed the YAEC 100% review prior to May 1984, I assume the ongoing NRC inspection will provide information: (Several questions follow)

Response

It is our understanding that information pertaining to questions 1a-1f & 2 will be addressed in the report of the NRC Independent Regulatory Review Team established to review welding at Seabrook Station. Responses to questions 1g & 3 follow:

Questions 1g & 3

1g. A statement as to the approximate date on which the NRC learned of the YAEC 100% review and a discussion as to whether and during what time period the NRC assessed the adequacy of this review.

3. As of this date, I am unable to locate an NRC document, issued prior to IR 90-80 on February 7, 1990, which refers to a YAEC 100% review. If the NRC staff knows of any such reference, please provide it to me prior to COB, Friday, June 22.

Response

NRC Region I was aware in December 1983 of the licensee's intent to review 100% of the radiographs transmitted to the document control vault as quality records. This date is based upon documentation in a January 4, 1984 Region I memorandum (previously provided) documenting NRC awareness of the YAEC 100% radiographic review and upon reference in the resident inspector SALP office files to Deficiency Report (DR) 527 issued on December 7, 1983 with the supporting "YAEC RT INTERPRETATION" listing. It is possible that the NRC knew before December 1983 that YAEC was reviewing all film as it was received. However, we have not found any record of NRC cognizance of the 100% review prior to December 1983.

An NRC assessment of the adequacy of the YAEC review program was performed during the Systematic Assessment of Licensee Performance (SALP) conducted for piping systems and supports on February 14, 1984. This is documented in the final SALP report issued on May 17, 1984 as a YAEC "customer review" of ASME final code accepted radiographic film. Furthermore, the NRC Construction Appraisal Team (CAT) inspection conducted over the period

April 23 - May 25, 1984 reviewed several radiographic film packages. The CAT inspection report, 50-443/84-07, issued on July 18, 1984 documents the following:

> "No significant problems were identified involving film that was reviewed by the applicant's NDE organization. However, several irregularities were identified involving film that had not [yet] been reviewed by the applicant."

If the film in which the irregularities were identified by the CAT inspectors had been accepted final radiographs, enforcement actions would have been pursued. Instead, the CAT recognized that the licensee's program required the noted YAEC review of all safety-related vendor and site generated radiographs. In documenting the difference between the radiographic film which had been reviewed by the applicant and that which had not, the CAT inspectors specifically highlighted the fact that the radiographic review process would have represented a regulatory concern had it not been for the applicant's review process. Hence, this area of inspection was not listed as one where either potential enforcement actions or significant weaknesses were identified. Such inspection logic and the resulting findings and conclusions represent an additional NRC assessment of the adequacy of the YAEC 100% radiographic review program.

Additional documentation of an NRC assessment of the YAEC radiographic review process can be found in other NRC inspection reports (IRs). As an example, IR 50-443/82 for inspection conducted from November 28 - December 1, 1983 incl a review of the reactor pressure vessel (RPV) safe end radiographs. e NRC inspector reviewed radiographs that had been rejected by YAEC ite a differing position tendered by Westinghouse as the RPV supplier, and he NRC concurred with the YAEC findings. Other component radiographs were also reviewed, resulting in additional assessment of the quality of the YAEC review. An example is IR 50-443/85-31 for an inspection conducted from October - December 1985. Documented in this IR is the statement that:

> "To date, the licensee has performed an overview of virtually all vendor supplied radiographic film. Where problems were found, such as geometric unsharpness failing to meet the ASME code, radiography was re-performed on site and repairs were made, if necessary."

The inspector reviewed a sample of film during this inspection, which also provided a measure of the NRC assessment of the YAEC radiographic review program.

Other NRC inspections (e.g., IR 50-443/85-19 conducted in July 1985) used the NRC NDE Van to independently radiograph welds. Such inspections verified the adequacy of the licensee's radiographic program and compared site file film to NRC radiographs in an assessment of the licensee's overall NDE quality control program.

Another assessment of licensee performance in this area was conducted during the SALP appraisal on February 19, 1985. In the SALP report, issued on May 28, 1985, the following evaluation was documented:

> "It is noted, however, that with regard to completed and finally inspected hardware, very few problems were identified. In fact, in the welding and NDE areas, independent examinations by NRC inspectors revealed generally high quality work and effective licensee overivew of the final radiographic film packages."

In assessing the overall performance in the area of piping during this January 1 - December 31, 1984 SALP period, it was noted that significant improvement had been achieved and that the licensee had demonstrated "adequate control over their self-identified construction problems." One of the areas evidencing such licensee control was the YAEC 100% radiographic review process.

Further, in the previously mentioned Region I internal memorandum of January 4, 1984, it was noted that:

> "A key operation in providing assurance of QC field activities is the YAEC surveillance program. Specifically, YAEC NDE personnel had been and still do conduct 100% review of contractor accepted radiographs."

This memorandum not only provides the requested reference to an NRC document acknowledging the YAEC 100% radiographic review effort, but also assesses this program in the context of NRC followup of the previously reported NDE falsification problem, (i.e., the "Padovano" case). It should be noted that the above quote discusses the 100% review in reference to the "YAEC surveillance program." As has been discussed in previous responses to Dr. Myers' requests, prior to the implementation of the YAEC NDE Review Group procedure No. 5 in May 1984, the YAEC radiographic review process was controlled as a surveillance activity. Thus, even though surveillances were not normally 100% inspection efforts, the above NRC quotation illustrates the YAEC intent to conduct such film reviews on a 100% basis some time before the existence of the procedural requirement to do so.

The inspection reports identified in the response to this request have been provided previously.

Congress of the United States

Washington, D.C. 20515

February 6, 1991

Honorable Kenneth Carr
Chairman
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Chairman:

We are again writing to seek information concerning the quality of welds at the Seabrook station. The Commission's repeated failures to address the central issues of the Congressional investigation necessitate this request.

Please provide the following:

A. The specific procedure(s), if any, that governed the Yankee Atomic Electric Company's (YAEC's) purported 100% review of radiograph packages, prior to April 1984.

B. The Commission's position as to whether the procedure(s) referred to in Item A above complied with the requirement of 10 CFR 50, Appendix B, Criterion V.

C. The Commission's position with regard to whether the Seabrook licensee, in the conduct of the purported 100% review of radiographs, complied with the record keeping requirements of 10 CFR 50, Appendix B, Criteria XVI and XVII.

D. The Commission's position as to whether the Seabrook licensee, with regard to the purported 100% review of radiographs, complied with the audit requirements of 10 CFR 50, Appendix B, Criteria XVIII.

E. The Commission's explanation, in light of the contention that the purported 100% review was conducted throughout the duration of pipe welding activities, of why approximately 95% of welds reviewed by the NRC in its NUREG-1425 inspection showed YAEC approvals after Wampler arrived at the site.

F. A Commission statement providing the following information:

1. The date when the NRC Region I staff first became aware of the purported 100% radiograph review by YAEC.

2. An explanation of any delay in the NRC becoming

aware of the purported 100% review and its role in assuring weld quality at Seabrook.

3. The date of the first NRC inspection and/or SALP report which described the role of the purported 100% review in assuring weld quality.

4. An explanation of the delay in the licensee's awareness of a large backlog of radiographs that had not been transmitted from the welding contractor to the licensee and how this lack of knowledge can be explained in light of the NRC's repeated claims that the licensee maintained a 100% review of all radiographs beginning with the initiation of the pipe welding program.

G. The Commission's explanation of why the NRC staff, in the conduct of the inspection leading to NUREG-1425 failed to obtain information specified in Items 4e, 4f, and 4g of the PLAN FOR TEAM INSPECTION AT SEABROOK, reproduced in NUREG-1425, Appendix 2.

The NRC staff's initial decision to cease providing Seabrook weld documents that had to be obtained from the licensee causes us considerable concern. The decision to cease cooperation with certain of our documents requests was apparently made without consulting the Commission. It was made without a notification by the Commission of the members who, on April 2, 1990, requested that "you instruct the NRC staff to cooperate in this endeavor so that it is not necessary for us to become directly involved in requests for documents."

We again wish to emphasize that we require such documents in order to fulfill our oversight responsibilities and we expect continued cooperation from the Commission and its staff in obtaining all necessary materials.

Please provide the information requested herein prior to February 22, 1991.

Sincerely,

Peter H. Kostmayer

Edward M. Kennedy

Edward J. Markey

Nicholas Mavroules

John F. Kerry