

From: Terence Chan  
To: Harold Chernoff  
Date: Tue, Jun 1, 2004 3:53 PM  
Subject: Re: Allegation Review Board (ARB) Briefing Sheet NRR-2004-A-0026 and Green Ticket

DE/DIPM

There was no file attached.

>>> Harold Chernoff 6/1/2004 3:49:15 PM >>>

The attached file contains my comments presented in a red-line and strike-out version of the subject document.

hkc

Harold Chernoff, Project Manager - Point Beach  
Project Directorate III-1  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation  
Office: (301) 415-4018 Fax: (301) 415-1222

✓ >>> Frank Talbot 06/01/04 11:21AM >>>  
Terence,

Here is a electronic copy of the ARB briefing sheet. I already gave you a copy of the green ticket on this allegation. You may add information to the briefing sheet on the NRR staff response to Concerns 1 and 2. Specifically, information from two draft safety evaluations the NRR staff are working on to address the CI concerns. Since the ARB is scheduled for Thursday, June 3, 2004, we should complete the ARB briefing sheet by Close of Business (COB) Wednesday, June 2, 2004. Also, the green ticket has a due date of June 7, 2004, so we should complete the response to the green ticket by COB Friday, June 4, 2004. Please note that this e-mail contains sensitive information in the attachment, therefore, a sensitive information cover page is included denoting special handling requirements for NRR staff with a need to know.

Thanks for your help,

Frank

B-38

**NRR-2004-A-0026**

**ALLEGATION REVIEW BOARD BRIEFING  
AND MEETING SUMMARY**

**FACILITY:** Point Beach  
**TAC NUMBER:** MC3234  
**RECEIVED:** May 25-27, 2004 (NRR)  
**150 Day Date:** October 25, 2004

**TYPE OF ARB:** Initial ARB Meeting  
**PURPOSE OF ARB:** To discuss allegation resolution  
**DATE OF ARB:** June 3, 2004

**CONCERN 1:**

The concerned individual (CI) is concerned that the NRC Order required ultrasonic (UT) examination was not capable of finding the damage discovered within Point Beach Nuclear Plant (PBNP) Unit 1 penetration 26 "J" groove weld, and that primary water stress corrosion cracking (PWSCC) damage probably exists in other penetration "J" groove welds in the PBNP reactor pressure vessel head. The CI believes that the licensee will not pursue the PT examinations of other "J" groove welds because of the potential for finding additional evidence of PWSCC damage.

**CONCERN 2:**

The CI asserts that a Point Beach reactor vessel head nozzle fracture mechanics analysis which is supposed to support an NRC Order relaxation [Code Relief], which was granted to PBNP on May 26, 2004, may not be adequate. The CI stated that the assumed flaw size for PBNP is arbitrary and very small, in fact, suspiciously small which will allow achieving a calculated operational life greater than a plant operational cycle.

**I. BACKGROUND:**

On May 21, 2004, a letter, describing concern 1 was transmitted to the NRC's "allegation" web page by a concerned individual (CI). The letter indicated that the CI also copied Senators' Thomas Petri, Herb Kohl and Chairman Nils Diaz. Since the issue was focused specifically on Point Beach's reactor vessel head penetration nozzles, Region III took immediate responsibility for the issue and convened an ARB on the same day. As a result of the RIII-ARB, RIII referred

the issue to the Nuclear Management Company (NMC), Point Beach Nuclear Plant (PBNP) requesting a response within 3-days. Subsequent review of the CI's letter concluded that the concern should be referred to NRR for generic consideration associated with the adequacy of ultrasonic (UT) examination requirements directed at all PWRs since the concern could be associated with any PWR and was associated to NRC Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at PWRs." The CI's May 21, 2004, letter, to the NRC, stated the CI wished to express a safety concern about the operation of Point Beach, specifically:

NRC Bulletin 2001-01 was issued when circumferential cracks were discovered in Alloy 600 CRDM penetration nozzles and in the Alloy 182, "J" groove welds at several PWRs. As a result of the severe head corrosion discovered at the Davis-Besse station, the NRC issued Bulletin 2002-02, which requested that PWRs determine if supplementary reactor vessel examinations are necessary. Finally, the NRC issued Order EA-03-009, which specified the frequency and type of PWR reactor vessel head examinations that were necessary to ensure that plant operations do not pose undue risk to the public health and safety. To comply with Order EA-03-009, Point Beach performed bare metal visual examinations and under-head UT examinations of the vessel head penetration nozzles during the Unit 1 Spring 2004 refueling outage.

The Point Beach UT examinations revealed an anomaly in the root of the penetration 26 "J" groove weld. The anomaly was believed to be manufacturing related. The presence of the indication lead to the performance of a surface [dye penetrant] (PT) examination of penetration 26 "J" groove welds. The PT examination was not required by NRC Order EA-03-009. The PT examination revealed numerous crack like surface indications. Follow-up grinding and reexamination revealed the indications had depth. The indications were not sized or characterized. The indications were deemed to be not acceptable for continued operation. The indications were not detectable with the UT exam that was performed to comply with NRC Order EA-03-009. Although not identical to other industry experience, the indications are likely [primary water stress corrosion cracking] (PWSCC) of the Inconel weld material. Since the surface PT examination was not required by NRC Order EA-03-009, NMC is not performing additional PT examinations of any of the other RPV head penetrations. The NMC will obviously not pursue the PT examinations in view of the potential for finding additional evidence of PWSCC damage.

Further, the CI stated that his/her concern is that the UT examination was not capable of finding the damage discovered within the penetration 26 "J" groove weld, and that PWSCC damage probably exists in other penetration "J" groove welds in the PBNP Unit 1 reactor pressure vessel head. The CI also requested that the NRC staff: "provide justification why the NRC has not required PBNP to PT a reasonable sample of the other high stress penetrations "J" groove welds (outer periphery penetrations and the mechanically straightened penetrations during manufacture of the subject head)." Additionally, the CI asked the NRC staff to provide "technical justification for ignoring the potential for Inconel 182 cracking that was not detectable by the mandated examinations."

The CI also stated that in the interest of public safety, the CI requested that the NRC provide technical justification why the NRC has not required Point Beach to PT a reasonable sample of the other high stress penetration J-Groove welds (outer periphery penetrations and the mechanically straightened penetrations during manufacture of the subject head). The CI further requested that the NRC provide a **“written response and technical justification for ignoring the potential for Inconel 182 cracking that was not detectable by the mandated examinations.”**

On May 27, 2004, the same CI transmitted a note to the NRC allegations e-mail address. That note stated:

PBNP has performed a temporary repair of penetration 26 in the Unit 1 RPV head. The NRC is involved in approving this repair [an NRC Code relief request was verbally granted to PBNP on May 26, 2004]. It again appears that neither the NRC nor the NMC is being assertive in ensuring the safety of the public. Thus, I am communicating the following concern. Fracture mechanics analyses have been used to justify the acceptability of the repair. The limiting analysis indicates that the repair is good for approximately 1.5 years of operation. A PBNP operational cycle is approximately 1.3 years. Obviously, there is little margin provided with the PBNP repair design. The fracture mechanics analysis is based on assuming an existing crack within the material. The assumed flaw size for PBNP is arbitrary and very small. In fact, suspiciously small to allow achieving a calculated operational life greater than a plant operational cycle.

The CI further stated that he/she requests “written justification that the assumed PBNP flaw size contained in the fracture mechanics analyses for the temporary repair is in fact bounding for any and all potential existing flaws.”

On May XX, 2004, a telephone discussion was conducted between the CI, Point Beach Project manager and DIPM staff. A discussion was conducted regarding the Division of Engineering Order relaxation and the CI was informed that our DE staff has confidence in their relaxation because of their review of NMC’s engineering analyses . . .

Etc

etc

NRC Division of Engineering staff stated that if the licensee performs its RPV head examinations in accordance with the provisions of Order EA-03-009, the NRC considers those licensee actions to be adequate. Therefore, no compliance issue would be expected because the staff considers the the requirements delineated in EA-03-009 to satisfactorily address the Code and NRC requirements. [FRANK: this is what I got from Terence Chan-PLEASE verify it!!]

## II. REGULATORY REQUIREMENT(S):

10 CFR 50.55a, “Codes and Standards.” The NRC deemed it appropriate to establish a clear regulatory framework pending the revision of 10 CFR 50.55a. As a result, it

issued NRC Order EA-03-009 which imposed enhanced requirements for PWR licensees to inspect RPV heads and related penetration nozzles pending the revision of 10 CFR 50.55a. The requirements of the NRC Order EA-03-009 were immediately effective and were expected to remain in place until superseded by changes to 10 CFR 50.55a.

**III. SAFETY SIGNIFICANCE AND BASIS: LOW**

Talbot

I

**IV. TECHNICAL REVIEW PRIORITY AND BASIS: LOW**

Based on the above safety significance.

**V. ACTIONS:**

**A. PROPOSED INVESTIGATIONS, PRIORITY LEVEL: NO**

**B. REFERRAL: YES**

Refer issue to Nuclear Management Company. Due date: June 11, 2004

**C. PROPOSED INSPECTIONS AND DUE DATES: NO**

**D. OTHER ACTIONS:**

Closure Memo from Division of Engineering. Due date: June 18, 2004.

Note: June 18<sup>th</sup> due date is in consideration of the public meeting at PBNP scheduled for June 25<sup>th</sup>.

**VI. NON NRR ISSUES (OGC, OE, REGION, ETC.) - N/A**

**NRR-2004-A-0026**

**ALLEGATION REVIEW BOARD SECTION**

**ARB DECISION (and comments):**

The ARB

**ARB ATTENDANCE**

**ARB CHAIRMAN:**

**C. Carpenter**

**ARB MEMBER:**

**H. Berkow**

**ALLEGATION COORDINATOR:**

**G. Cwalina**

**ALLEGATION COORDINATOR:**

**J. Petrosino**

**ALLEGATION ASSISTANT:**

**J. Crutchley**

**OI REPRESENTATIVE(S):**

**S. Langan**

**OGC REPRESENTATIVE(S):**

**IPSB LEAD REVIEWER:**

**F.X. Talbot**

**TECH. BRANCH LEAD REVIEWER:**

**T. Chan**

**RECORDING SECRETARY:**

**K. Richards**

**ADDITIONAL PARTICIPANTS:**

**T. Quay, T. Chan, W. Bateman, H. Chernoff,**

**DISTRIBUTION:**

**G. Caputo, OI**

**S. Langan, OI**

**L. Raghavan**

**R. Barrett**

C:\WINDOWS\TEMP\Initial NRR ARBBriefingSheet-2004-0026.wpd