

RAS 12788

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:

Michael C. Farrar, Chairman
E. Roy Hawkens
Nicholas G. Trikouros

DOCKETED
USNRC

December 21, 2006 (11:47am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

)	
In the Matter of)	Docket No. IA-05-052
)	
DAVID GEISEN)	ASLBP No. 06-845-01-EA
)	
)	

STATEMENT OF DEFENSES

Pursuant to the Board's ruling at the November 14, 2006 hearing in the above-captioned matter, counsel for David Geisen ("Geisen") hereby identify and describe the defenses they believe at this time, based on the information currently available to them, they might assert on behalf of Mr. Geisen at the hearing in the above-captioned matter, as follows:

INTRODUCTION

1. This Statement is being made by counsel for Mr. Geisen, not by Mr. Geisen. It is also being made subject to, and without waiving, Mr. Geisen's rights and privileges under the Fifth Amendment to the U.S. Constitution. *See Hoffman v. United States*, 341 U.S. 479 (1951).

2. This Statement is based on and derives from non-privileged information presently available to counsel for Mr. Geisen, as well as non-privileged information that is publicly available, including pleadings and motions in this case. This Statement may not necessarily reflect information that is currently within the possession, custody or control of other persons or entities.

TEMPLATE - SECY-037

SECY-02

3. The investigation and/or discovery of this action is ongoing. In contrast to NRC Staff, which has conducted numerous witness interviews and depositions relating to the events alleged in the Enforcement Order dated January 4, 2006 (January 4, 2006 Order”),¹ counsel for Mr. Geisen have not conducted or attended any depositions in this matter or related enforcement proceedings. In fact, pursuant to the current proposed schedule in this matter, deposition discovery in this matter will not commence until January 2007. Accordingly, counsel for Mr. Geisen reserve the right to modify, amend or supplement this Statement as they acquire additional information, including information contained in or derived from deposition testimony of witnesses in this matter.

4. At this time, and in part because deposition discovery has not commenced in this matter, counsel for Mr. Geisen have not made a final determination of the defenses they will assert at the hearing of this matter, the witnesses whom they will call to testify at the hearing or the exhibits they will offer into evidence at the hearing.

5. Pursuant to 10 C.F.R. § 2.704(a)(1) and (2), NRC Staff is entitled to disclosure and discovery of non-privileged witnesses, documents and information that are “relevant to disputed issues alleged with particularity in the pleadings,” including the January 4, 2006 Order. NRC failed to allege, with sufficient particularity, the factual basis for the claims asserted against Mr. Geisen in the January 4, 2006 Order. Moreover, NRC Staff has failed and refused to particularize the factual basis for their claims against Mr. Geisen in response to written discovery from counsel for Mr. Geisen: *See* NRC Staff’s Responses to Mr. Geisen’s First Set of

¹ In related enforcement proceedings arising out of the events alleged in the January 4, 2006 Order, NRC Staff deposed numerous persons, including current and former employees of FENOC. NRC Staff also attended and participated in depositions of NRC personnel in those proceedings.

Interrogatories and First Request for Production of Documents (September 1, 2006); Letter from Charles F. B. McAleer, Jr. to Lisa B. Clark (November 30, 2006) (attached hereto as Exhibit 1); Letter from Lisa B. Clark to Charles F. B. McAleer, Jr. (December 7, 2006) (attached hereto as Exhibit 2). Accordingly, counsel for Mr. Geisen reserve the right to modify, amend or supplement this Statement if and as NRC Staff ultimately alleges the factual basis for its claims against Mr. Geisen “with particularity,” as that phrase is used in 10 C.F.R. § 2.704(a)(1) and (2).

DESCRIPTION OF DEFENSES

1. On or about November 7, 2002, FENOC sent the NRC Staff a 48-page letter setting forth in detail, with references to witnesses, documents and facts, reasons why NRC Staff should not bring charges or enforcement actions against FENOC employees, including Mr. Geisen, relating to the events at Davis-Besse described in the January 4, 2006 Order. *See* Letter from Jay M. Gutierrez to Richard C. Paul (November 7, 2002) (“FENOC’s November 7, 2002 Letter”). A copy of FENOC’s letter is attached hereto as Exhibit 3. NRC Staff nevertheless took enforcement action against Mr. Geisen, as reflected in the January 4, 2006 Order. Mr. Geisen might present as defenses at the hearing of this matter the arguments and reasons, including the supporting facts, witnesses and documents, described in detail in FENOC’s November 7, 2002 Letter.

2. On February 21, 2006, counsel for Mr. Geisen filed on behalf of Mr. Geisen, an Answer to the January 4, 2006 Order. *See* Answer to January 4, 2006 Order (February 21, 2006). Subject to paragraph 5 of the Introduction above, counsel for Mr. Geisen might present as defenses at the hearing of this matter the denials and responses contained in the Answer.

3. On July 28, 2006, counsel for Mr. Geisen filed on behalf of Mr. Geisen their Initial Disclosures in this matter. *See* Initial Disclosures of David Geisen (July 28, 2006)

(attached hereto as Exhibit 4). In Exhibits 1-3 to the Initial Disclosures, and pursuant to 10 C.F.R. § 2.704(a)(1) and (2), counsel for Mr. Geisen identified persons whom counsel for Mr. Geisen might call as witnesses at the hearing in this matter. In Exhibit 4 to the Initial Disclosures, counsel for Mr. Geisen identified documents relating to the allegations, claims and defenses in this matter. Counsel for Mr. Geisen hereby reaffirm their disclosure of such persons and documents and state that they might call such witnesses or offer such documents in support of the defense to the claims in the January 4, 2006 Order. Whether counsel for Mr. Geisen calls such persons or offers such documents will depend, in part, on whether NRC Staff ever particularizes the basis for its claims against Mr. Geisen and what testimony is given during deposition discovery in this case.

4. NRC Staff has the burden to prove its allegations and claims against Mr. Geisen through sufficient and competent evidence. As a defense to the NRC Staff's allegations and claims against Mr. Geisen in this matter, counsel for Mr. Geisen will argue that NRC Staff is unable to satisfy its burden of proof through sufficient and competent evidence.

5. In the January 4, 2006 Order, NRC Staff alleged that Mr. Geisen “had *sufficient knowledge* of the results of previous inspections of the RPV head and that he *knew* that the licensees written and oral responses to NRC Bulletin 2001-001 were incomplete and inaccurate.” January 4, 2006 Order at 6 (emphasis added). In addition, NRC Staff alleged in the January 4, 2006 Order:

that Mr. Geisen had *knowledge* of the RPV head conditions and the limitations experienced during RPV head inspections, and that, notwithstanding that knowledge, he *deliberately* provided materially incomplete and inaccurate information when he (1) concurred on August 28, October 17, and October 30, 2001, respectively, in the licensee's September 4, October 17, and October 30, 2001, responses to the Bulletin; and (2) assisted in the preparation and presentation of incomplete or inaccurate information during internal meetings on

October 2 and 10, 2001, and during meetings or teleconferences held with the NRC on October 3, 11, and November 9, 2001.

Id. at 14 (emphasis added). With respect to specific written and oral responses, NRC Staff alleged:

a. that Mr. Geisen was *aware* that the licensee's September 4, 2001 response to the Bulletin was materially incomplete and inaccurate, but nevertheless concurred on the response, thereby allowing it to be submitted to the NRC (*id.* at 9) (emphasis added);

b. that, during an October 3, 2001 conference call with employees of the NRC, Mr. Geisen communicated certain information regarding previous inspections of the reactor pressure vessel head (and review of videotapes of such inspections) and that the information Mr. Geisen allegedly communicated during that meeting was incomplete and inaccurate (*id.* at 9);

c. that Mr. Geisen made statements during an October 11, 2001 meeting with employees of the NRC and that, based on information of which he was allegedly "aware," he "did not have a basis for" any statements he allegedly made (*id.* at 11);

d. that Mr. Geisen was allegedly "aware" that FENOC's "October 17, 2001 supplemental response was materially incomplete and inaccurate but, nevertheless concurred on the response, thereby allowing it to be submitted to the NRC (*id.* at 12);

e. that Mr. Geisen was allegedly "aware" that FENOC's "October 30, 2001 supplemental response was materially incomplete and inaccurate but, nevertheless, concurred on the response, thereby allowing it to be submitted to the NRC (*id.* at 13); and

f. that Mr. Geisen made statements during an November 9, 2001 meeting with employees of the NRC and that the information allegedly provided by FENOC and Mr. Geisen during the meeting “was materially incomplete and inaccurate” (*id.* at 13).

Counsel for Mr. Geisen propounded detailed interrogatories to the NRC Staff seeking the factual basis for its allegations against Mr. Geisen regarding the written and oral responses allegedly made to the NRC. *See* Mr. Geisen’s First Set of Interrogatories to NRC Staff (September 1, 2006). The interrogatories were directed at the factual basis for the allegations relating to, *inter alia*, the September 4, 2001 written response (Interrogatory No. 13), the October 17, 2001 written response (Interrogatory No. 14), the October 30, 2001 written response (Interrogatory Nos. 15, 25, 26), any other written responses (Interrogatory No. 16), Mr. Geisen’s alleged knowledge regarding “previous RPV head inspections” (Interrogatory No. 18), Mr. Geisen’s alleged knowledge regarding the non-cleaning of the reactor vessel head (Interrogatory No. 19), Mr. Geisen’s alleged knowledge that FENOC’s “written and oral responses to the NRC Bulletin 2001-001 were incomplete and inaccurate” (Interrogatory No. 20), Mr. Geisen’s alleged responsibility “for the information provided to the NRC by FENOC in response to the Bulletin” (Interrogatory No. 21), Mr. Geisen’s alleged participation “in the development and presentation of information to the NRC during information briefings held on October 3, October 11 and November 9, 2001” (Interrogatory No. 22), Mr. Geisen’s alleged statements during the October 3, 2001 conference call (Interrogatory No. 23), any complete, inaccurate, misleading or false statements or communications during any information briefings to the NRC, including the information briefings alleged on page 7 of the January 4, 2006 Order (Interrogatory No. 24) and Mr. Geisen’s allegedly engaging in “deliberate misconduct” by “deliberately providing FENOC

and the NRC Information that he *knew* was not complete or accurate in all material respects to the NRC” (Interrogatory No. 27).

NRC Staff’s answers to Mr. Geisen’s First Set of Interrogatories, including the interrogatories listed above, were unresponsive and undetailed in many respects, as counsel for Mr. Geisen has demonstrated. *See* Exhibit 1. NRC Staff’s answers to Mr. Geisen’s First Set of Interrogatories largely constituted “contentions” and “arguments” by NRC Staff that were not supported with specific information, witnesses and documents relating to the specific allegations against Mr. Geisen. NRC Staff’s answers to Mr. Geisen’s First Set of Interrogatories also contained general references to transcripts of interviews and testimony, as well as certain documents, without providing specific details regarding the location of the allegedly responsive information relating to the specific allegations against Mr. Geisen. NRC Staff’s answers to Mr. Geisen’s First Set of Interrogatories also did not contain, on an interrogatory-by-interrogatory and allegation-by-allegation basis, an identification of all persons who allegedly have knowledge regarding the factual basis for the specific allegations against Mr. Geisen.

The limited and partial information that NRC Staff provided in its answers to Mr. Geisen’s First Set of Interrogatories do not provide sufficient, competent evidence on which to sustain NRC Staff’s burden of proof regarding the allegations against Mr. Geisen.

6. The Staff has alleged that Mr. Geisen engaged in “deliberate misconduct” in violation of 10 CFR 50.5(a)(2) by “deliberately providing FENOC and the NRC information that he knew was not complete or accurate in all material respects to the NRC.” “Deliberate misconduct” is defined at 10 CFR 50.5(c) as “an intentional act or omission that the person knows: (1) would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or (2) constitutes

a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.” Notably, the relevant section requires *knowledge* and does not allow for a finding of deliberate misconduct by an individual based on a showing of either careless disregard or negligence by that individual. Clearly, NRC Staff cannot prevail against Mr. Geisen on its deliberate misconduct charge unless it can show that he actually knew that the information that the NRC was receiving was incomplete and inaccurate in a material respect.

7. With respect to NRC Staff’s allegations against Mr. Geisen regarding FENOC’s September 4, 2001 written submission (*see* paragraph 5(a), above), the defense of Mr. Geisen at the hearing may include the facts, witnesses and documents that are described in Mr. Geisen’s Supplemental Answers to NRC Staff’s Interrogatory Nos. 16-19 and 29, which are incorporated herein by reference.

8. With respect to NRC Staff’s allegations against Mr. Geisen regarding the October 3, 2001 conference call with NRC employees (*see* paragraph 5(b) above), the defense of Mr. Geisen at the hearing may include the facts, witnesses and documents that are described in Mr. Geisen’s Supplemental Answer to NRC Staff’s Interrogatory No. 20, which is incorporated herein by reference.

9. With respect to NRC Staff’s allegations against Mr. Geisen regarding FENOC’s October 17, 2001 written submission (*see* paragraph 5(d), above), the defense of Mr. Geisen at the hearing may include the facts, witnesses and documents that are described in Mr. Geisen’s Supplemental Answers to NRC Staff’s Interrogatory Nos. 22-26 and 29, which are incorporated herein by reference.

10. With respect to NRC Staff's allegations against Mr. Geisen regarding FENOC's October 30, 2001 written submission (*see* paragraph 5(e), above), the defense of Mr. Geisen at the hearing may include the facts, witnesses and documents that are described in Mr. Geisen's Supplemental Answers to NRC Staff's Interrogatory Nos. 27 and 29, which is incorporated herein by reference.

11. With respect to NRC Staff's allegations against Mr. Geisen regarding the November 9, 2001 meeting with NRC employees (*see* paragraph 5(f) above), the defense of Mr. Geisen at the hearing may include the facts, witnesses and documents that are described in Mr. Geisen's Supplemental Answer to NRC Staff's Interrogatory No. 28, which is incorporated herein by reference.

12. In the January 4, 2006 Order, NRC Staff alleged that certain information allegedly provided by Mr. Geisen (*see* paragraph 5, above) was "material" to the NRC in deciding to take, or not take, certain actions regarding the Davis-Besse facility. *See, e.g.*, January 4, 2006 Order at 14 (alleging that "[t]he information provided by the licensee under oath in the Bulletin responses based, in part on the concurrence of Mr. Geisen, was material to the NRC because the NRC used the information, in part, to allow FENOC to operate Davis-Besse until February 2002 rather than requiring the plan to shut down by December 31, 2001 to conduct inspections of the head as discussed in Item 3.v.1 of the Bulletin."). Based on the information, witnesses and documents that NRC Staff has disclosed in this matter relating to the allegations in the January 4, 2006 Order, NRC Staff does not have sufficient, competent evidence to sustain its burden of proof regarding its contention that the any information allegedly attributable to Mr. Geisen was material to the decisions that the NRC actually made regarding the closing or non-closing of the Davis-Besse facility.

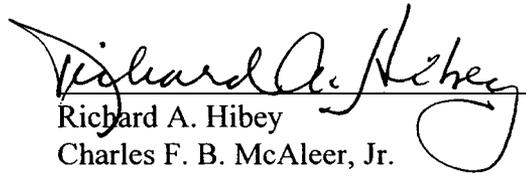
13. In the January 4, 2006 Order, NRC Staff alleged that “the public health, safety and interest require that Mr. Geisen be prohibited from any involvement in NRC-licensed activities for a period of five years from the effective date of” the January 4, 2006 Order. *See* January 4, 2006 Order at 15. Based on the information, witnesses and documents that NRC Staff has disclosed in this matter relating to the allegations in the January 4, 2006 Order, NRC Staff does not have sufficient, competent evidence to sustain its burden of proof regarding its contention that “the public health, safety and interest” required the prohibition of Mr. Geisen from involvement in NRC-licensed activities or was adversely affected by any of Mr. Geisen’s actions.

CONCLUSION

Based on the foregoing defenses and such other defenses as Mr. Geisen may present at the hearing of this matter, the Board should rescind the January 4, 2006 Order against Mr. Geisen, dismiss this enforcement action with prejudice and award Mr. Geisen such other and further relief as the Board deems just and proper.

Respectfully Submitted,

Dated: December 15, 2006

A handwritten signature in black ink, appearing to read "Richard A. Hibey". The signature is written in a cursive style with a large, looping flourish at the end.

Richard A. Hibey

Charles F. B. McAleer, Jr.

Andrew T. Wise

Matthew T. Reinhard

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(202) 626-5800

Counsel for David Geisen

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that, on the 15th day of December, 2006, true and genuine copies of the foregoing were served on the following persons by electronic mail and, as indicated with an (*), first-class mail, postage prepaid:

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Counsel for Mr. David Geisen

**EXHIBIT 1 TO
STATEMENT OF DEFENSES
DATED DECEMBER 15, 2006**



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November 30, 2006

BY ELECTRONIC MAIL

Lisa B. Clark, Esq.
Office of General Counsel
U.S. Nuclear Regulatory Commission
Mail Stop: O-15 D21
Washington, D.C. 20555-0001

Re: *In The Matter Of David Geisen*
IA-05-052, ASLBP No. 05-839-02-EA
Before the Atomic Safety and Licensing Board

Dear Lisa:

As I have mentioned on several occasions, and as I further document below, NRC Staff's responses to Mr. Geisen's written discovery contained many objections and refusals to produce responsive information and documents, which we find unacceptable and unsupported by the rules. Moreover, whatever substantive information the NRC Staff provided was typically incomplete and non-responsive. The deficiencies in NRC Staff's discovery responses have been self-evident since NRC Staff served those responses. Please let me know whether you agree to cure the deficiencies.

Verification Of The Interrogatory Answers: The two persons who verified NRC Staff's answers to interrogatories -- Messrs. Kenneth O'Brien and Robert D. Starkey -- did so simply on the basis of "information and belief" and apparently with no personal knowledge, and neither person was identified in NRC Staff's Answer to Interrogatory No. 2 seeking identification of persons with knowledge of "any facts, events, circumstances, allegations, claims, contentions, opinions or defenses in the January 4, 2006 Enforcement Order, the Answer or this Enforcement Proceeding." See Affidavit of Kenneth O'Brien (October 2, 2006); Affidavit of Robert D. Starkey (October 2, 2006); see also NRC Staff's Answer to Interrogatory No. 2. Their verifications are insufficient, especially given NRC Staff's refusal to identify any persons who "supplied information to or communicated with [Mr. Starkey or Mr. O'Brien] relating to the preparation or drafting of" the answers to interrogatories (see NRC Staff's Answer to Interrogatory No. 5), the documents that they may have reviewed or relied upon "for the preparation and drafting" of the answers to interrogatories (*id.*) or the persons who NRC Staff knows or believes "are most knowledgeable relating to the substance of" each answer to interrogatory (see NRC Staff's Answer to Interrogatory No. 6).

Insufficiency of Answers to Interrogatories and Responses to Document Requests Generally: In many instances, NRC Staff did not include information that would be fully

responsive to the interrogatories and did not present any reason or justification for the omissions. NRC Staff also refused to produce documents in response to several documents requests and, for others, did not confirm its agreement to produce all responsive documents. These deficiencies, which are evident from NRC Staff's answers and responses to the written discovery, are briefly summarized on Attachment A. In the absence of any explanation for the omissions, we must interpret the lack of a full and complete response as a tacit admission by NRC Staff that it does not have any additional information responsive to the discovery requests, and we must further assume that NRC Staff does not have the evidence necessary to support the allegations made against Mr. Geisen in the January 4, 2006 Order. We will proceed on the basis of those assumptions, and will take appropriate actions, including possibly seeking summary disposition of this matter.

Where NRC Staff does provide a response to the interrogatories, NRC Staff frequently references various documents (including transcripts of witness interviews) without indicating what information within the documents is responsive to the interrogatory and where the information is located within the document. *See* Attachment A. That sort of response is clearly insufficient, in part because the answers to those questions are not readily apparent from the description of the documents or the documents themselves. *Cf.* Fed. R. Civ. P. 33(d). Moreover, such answers do not even rise to the level of detail that NRC Staff provided in response to written discovery in the *Moffitt* and *Miller* matters, in which NRC Staff at least provided some explanation regarding the cited documents that gave albeit minimal clues to the nature and location of the allegedly responsive information. Finally, such answers are unacceptable given NRC Staff's refusal to identify those persons who NRC Staff knows or believes are most knowledgeable regarding the substance of its answers. *See* Answer to Interrogatory No. 6.

Asserted Objections: NRC Staff asserted several objections to the discovery requests that are not well-founded and/or raise significant doubts over whether NRC Staff is providing full and complete information. The issues relating to those objections include the following:

On page 2 of its responses, NRC Staff states that its "responses are provided subject to each of the foregoing objections as well as the specific objections noted." As a practical matter, we need to know whether, on the basis of its general or specific objections, NRC Staff is withholding, or intends to withhold, from Mr. Geisen any information or documents of which NRC Staff has knowledge.

In paragraph 1 on page 1 of its Responses and Objections, NRC Staff states that its responses "are limited to the knowledge of the Staff and documents within the possession and control of the Staff" and that NRC Staff "does not have knowledge of, access to, or control of information within other offices of the NRC." On that basis, NRC Staff "objects to instructions and definitions which require responses on behalf of offices within the NRC other than the Staff." Frankly, the premises for that objection is implausible, and it is especially troubling given your objections to other interrogatories. *See* paragraph 3(d), below. Moreover, as a practical matter, we need to know whether, on the basis of this objection, NRC Staff is withholding or intends to withhold from Mr. Geisen any information or documents of which

NRC Staff has knowledge, regardless of whether such information or documents reside within another NRC office. Finally, we must have a list of the "other offices of the NRC" that you contend are beyond the control or access of NRC Staff so that we can seek further discovery, as well as any appropriate relief from the Board.

In paragraph 2 on pages 1-2 of its Responses and Objections, NRC Staff simply refuses to look for any potentially responsive information or documents that may exist on computer systems "beyond existing NRC document management systems such as computer archives and backup systems." As a result of that objection, we need to know the legal authority on which you base your position, especially given the fact that the underlying events allegedly occurred five years ago. We also need to have a precise description of the "existing NRC document management systems" referenced in the objection, including a description of the time period those systems cover.

As to the objection in paragraph 3 on page 2 of NRC Staff's Responses and Objections, I do not believe there is a proper basis for refusing to produce hard copies of responsive documents. We reserve our right to request inspection and copying of hard copies if and as we deem it necessary in this matter.

As to the objection in paragraph 4 on page 2 of NRC Staff's Responses and Objections, NRC Staff must provide information regarding responsive documents if it is aware that such documents have existed, regardless of whether those documents have remained in the possession, custody or control of the NRC Staff.

As to the objection in paragraph 5 on page 2 of NRC Staff's Responses and Objections, there is nothing within 10 C.F.R. § 2.705(b)(4) supporting NRC Staff's position. That provision states that the responding party must provide information that "will enable other parties to assess the applicability of the privilege or protection." It is a common and required practice to disclose the identities of all persons who received, or had access to, an allegedly privileged document in order to determine, among other things, whether the alleged privilege or protection has been waived by a disclosure to persons who are beyond the scope of the alleged privilege or protection and to obtain necessary discovery from such individuals.

As to a second aspect of the objection in paragraph 5 on page 2 of NRC Staff's Responses and Objections, NRC Staff claims that, "[c]onsistent with the practice of counsel for Mr. Geisen," NRC Staff "has not logged or specifically identified documents which constitute attorney-client communications, [sic] which contain attorney work product." It is not clear to us what time period(s) are covered by that "objection" or what categories of documents NRC Staff is refusing to catalogue. Based on the limited information provided, we certainly cannot conclude that NRC Staff is doing anything "consistent with the practice of counsel for Mr. Geisen." In that regard, we specifically described in Mr. Geisen's Initial Disclosures the categories of communications as to which we contend Mr. Geisen has no logging obligation, and we discussed that position with you in detail. In fact, you commented during a telephone conversation that you thought our position was correct. Absent further information from you,

Lisa Clark, Esq.
November 30, 2006
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therefore, we cannot accept on face value the position that NRC Staff has taken in this objection. We also specifically renew our prior requests for full and complete information regarding the documents that NRC Staff has withheld on the basis of privilege.

In response to several interrogatories, NRC Staff asserts that, “[p]ursuant [to] 10 C.F.R. § 2.709(c), the Staff may object to Document Requests on grounds that it is not relevant and ‘not necessary to a proper decision in the proceeding.’” Each of the interrogatories to which NRC Staff has asserted that objection clearly seek relevant information which is necessary to a proper decision in this proceeding. That said, it is not clear from the actual answers whether NRC Staff is actually withholding any information on the basis of this objection. Please clarify whether NRC Staff is doing so.

Supplementation: On page 2 of its responses, NRC Staff states that its responses “are given without prejudice to the Staff’s right to add, supplement, modify or otherwise change or amend the responses.” Please let me know whether and when NRC Staff will comply with its obligation under the rules (which you have characterized as a “right”) to supplement its initial disclosures and discovery responses with any new or additional information in the possession, custody or control of NRC Staff that is responsive to the written discovery requests.

Personal Privacy Privilege Assertions: Given the Board’s entry of its November 29, 2006 Protective Order regarding the production of documents and information withheld on the basis of personal privacy privilege, I would like to receive as soon as possible the redacted portions of the August 2003 OI Report that were the subject of the Board’s October 31, 2006 Order and all other documents that NRC Staff has been withholding on the basis of personal privacy privilege. In a previous conversation, you confirmed that you would be producing to us, under the terms of the Protective Order, all documents as to which NRC Staff has asserted personal privacy privileged. Please let me know when we will receive those documents.

I am available to discuss the foregoing with you if you have any questions. In the meantime, please let me know whether you intend to supplement your discovery responses, withdraw your objections and otherwise cure the deficiencies described above and in Attachment A.

Sincerely,



Charles F. B. McAleer, Jr.

Attachment

cc: Richard A. Hibey, Esq.
Andrew T. Wise, Esq.
Matthew T. Reinhard, Esq.

ATTACHMENT A TO NOVEMBER 30, 2006 LETTER TO NRC STAFF

INTERROGATORY NO.	DEFICIENCIES IN ANSWERS
1 (identification of persons with knowledge)	(pp. 3-19) NRC Staff improperly objects because responsive information might include identities of persons "whose basis of knowledge consists of general information disclosed to the public" and "the identity of <i>such</i> persons is not within the knowledge of the Staff." Answer only identifies persons who have "knowledge relating to the claims charged in the Order" and does not attribute specific knowledge or categories of information to any listed person.
2 (identification of persons who have made any written or oral statements, communications or admissions); <i>see also</i> Request No. 15 (seeking documents relating to such statements, communications or admissions).	(p. 19) Similar objection to Interrogatory No. 1. NRC Staff improperly objects because responsive information might include "all any [sic] persons in the general public who may have made statements regarding the Order." Answer does not provide <u>any</u> information but instead asserts that "the information necessary to answer this Interrogatory is sufficiently provided by the Staff's response to Interrogatory No. 1," which did not contain any of the information requested by Interrogatory No. 2. NRC Staff objects to the associated document request in its entirety.
3 (identification of opinion witnesses and expert-related information); <i>see also</i> Request No. 19 (seeking documents relating to such experts).	(pp. 20-21) Several objections, including relevance, timing, work product and beyond scope of 10 CFR § 2.709(a)(2). Answer does not provide <i>any</i> substantive information. (pp. 72-73) NRC Staff objects to the related document request.
4 (identification of persons whose testimony NRC Staff intends to subpoena, offer, proffer, present, introduce or rely upon); <i>see also</i> Request Nos. 16 and 17 (seeking documents relating to such witnesses).	(pp. 21) Several objections, including relevance, timing and work product. Answer does not provide <i>any</i> substantive information. (pp. 70-72) NRC Staff objects entirely to the related document requests.
5 (identification of persons who participated in answering interrogatories, including identification of communications, documents and actions relating to that process); <i>see also</i> Request Nos.	(pp. 21-23) <i>See</i> discussion above. Objections on the grounds of relevance and burden. Answer identifies nine persons, including 4 agents and 2 attorneys. None of the persons identified was listed as a person with knowledge in response to Interrogatory No. 1. Answer contains no identification of persons with whom they communicated

<p>21 (seeking documents relied upon, assembled, reviewed, obtained, considered, drafted or generated in preparing answers to the Interrogatories).</p>	<p>to draft the answers, documents they reviewed to prepare answers or actions they took to locate responsive information and documents. (p. 74) NRC Staff objects to the related document request in its entirety.</p>
<p>6 (identification of persons most knowledgeable about information responsive to each interrogatory)</p>	<p>(pp. 23-24) Objection on the grounds of work product. Other than stating that “persons with knowledge relevant to the answers to interrogatories are identified in the testimony and documents cited in the response,” the Answer contains no substantive information.</p>
<p>7 (identification of persons who were formally or informally interviewed by OI or with whom OI had communications during the investigation leading to the August 2003 OI Report); <i>see also</i> Request No. 28 (seeking all documents, memoranda, summaries, notes, transcripts, recordings and videotapes of interviews)</p>	<p>(p. 24) Answer does not answer or clarify whether OI communicated with or interviewed any person other than those listed on the referenced pages of the August 2003 OI Report. (p. 77) In response to document request, NRC Staff only addresses “interview reports and transcripts” and simply references its answers to the Interrogatories, which is not fully responsive.</p>
<p>8 (identification of persons with whom OIG communicated or who were interviewed by OIG); <i>see also</i> Request No. 28 (seeking all documents, memoranda, summaries, notes, transcripts, recordings and videotapes of interviews)</p>	<p>(pp. 24-25) Objection on grounds that OIG is separate from NRC Staff and “the Staff has neither the obligation nor the authority within the general NRC infrastructure to compel the production of information contained in OIG’s internal documents.” Answer fails to identify any responsive information that NRC Staff, in fact, currently has in its possession, custody or control. (p. 77) In response to document request, NRC Staff only addresses “interview reports and transcripts” and simply references its answers to the Interrogatories, which is not fully responsive.</p>
<p>9 (identification of persons with whom NRC communicated or who were interviewed by NRC); <i>see also</i> Request No. 28 (seeking all documents, memoranda, summaries, notes, transcripts, recordings and videotapes of interviews)</p>	<p>(pp. 25-26) Objections on several grounds. Answer proceeds to provide “a list of individuals within the Office of Enforcement (OE)” who had communications regarding preparation and issuance of the Order. Answer does not provide any information regarding the communications other than that they “were numerous and occurred over a period of weeks in late 2005.” Answer does not provide a substantive response to subparts a (date, time and location), b (identification of attendees and participants) or c (notes, memoranda, transcripts or documents relating to communications, with the exception of one document</p>

	withheld on the grounds of “deliberative process” privilege). (p. 77) In response to document request, NRC Staff only addresses “interview reports and transcripts” and simply references its answers to the Interrogatories, which is not fully responsive.
12 (identification of all relevant documents, communications or information sent to or received from the persons identified in answers to Interrogatory Nos. 1-11)	(pp. 31-32) Objection on erroneous ground that the term “you” was not defined in the Interrogatories (<i>see</i> General Objection ¶ 4, at p. 6 of the Interrogatories). Other improper objections that interrogatory calls for legal conclusion regarding relevance, does not provide Staff with “the necessary direction to follow in response” and asks the Staff to “go on a ‘fishing trip.’” Answer does not contain any substantive response and simply cross-references the answers to Interrogatory Nos. 3, 5, 7, 8 and 9, which, as noted above, do not contain responsive, substantive information.
13 (seeking detailed information concerning any contention that Mr. Geisen wrote, inserted, added, proposed, revised, deleted or took any action relating to any words or text included in any draft of the September 4, 2001 written response by Davis-Besse, including identification of each word or text, a detailed description of Mr. Geisen’s actions, identification of documents relating to or reflecting such action and identification of persons who NRC Staff knows or believes have knowledge relating to the contention)	(pp. 32-33) According to NRC Staff, “the information that reveals each word or text Mr. Geisen may have written, inserted, added, proposed, revised or deleted relating to FENOC’s September 4, 2001 written response . . . is not within the knowledge of the Staff.” NRC Staff simply “contends that Mr. Geisen was involved in the process of formulation, preparation and submission of the September 4 Response.” Answer simply contains a list of testimony and documents, without specifying the location or substance of the responsive information in such testimony or documents. Answer also contains assertion that “[t]he persons with knowledge relating to this contention are identified” in the listed testimony and documents (again without specifying the location or substance of the responsive information) and in the answer to Interrogatory No. 1, which, as noted above, does not contain an attribution of specific knowledge to listed persons. Answer does not contain any of the information requested in subparts (a)-(e) of this Interrogatory.
14 (identical to Interrogatory No. 13 but directed to October 17, 2001 written response by Davis-Besse)	(pp. 34-36) Same type of deficient response as to Interrogatory No. 13.
15 (identical to Interrogatory No. 13 but directed to October 30, 2001 written response by Davis-Besse)	(pp. 36-38) Same type of deficient response as to Interrogatory No. 13.

<p>16 (identical to Interrogatory No. 13 but directed to any other written responses)</p>	<p>(pp. 38-39) NRC Staff states that “aside from the [three] oral briefings [allegedly made by Mr. Geisen to the NRC], the three referenced documents [in Interrogatory Nos. 12-15] form the basis for the issuance of the Order.” NRC Staff refers to, but does not identify, “other written submittals” in which Mr. Geisen may have been involved that might “support[] the Staff’s case regarding the submittals which form the basis of the Order.” NRC Staff refuses to answer this Interrogatory regarding such “other written submittals” on the grounds of attorney work product. Regarding persons with knowledge concerning such “other written submittals,” NRC refers to (but does not list) “the following documents,” as well as its otherwise non-responsive answer to Interrogatory No. 1. No responsive substantive information is contained in the answer.</p>
<p>17 (seeking detailed information regarding a specific allegation in the Order concerning “earlier information provided to the NRC”, including a detailed description of “the earlier information,” a detailed explanation of the contrary information, identification of all documents relating to the contention and identification of persons with knowledge relating to the contention)</p>	<p>(pp. 39-40) NRC Staff refers, without detail, to alleged “representations made by FENOC that the boric acid on the RPV head was attributable to flange leakage.” Aside from generally referencing one telephone call (i.e., an October 3, 2001 conference call), two presentations (i.e., on October 11 and November 9, 2001) and three documents (i.e., written submittals dated September 4, 2001, October 17, 2001 and October 30, 2001) that allegedly “support this claim,” NRC Staff does not provide the detailed information requested in this Interrogatory.</p>
<p>18 (seeking detailed information regarding a specific allegation in the Order concerning Mr. Geisen’s alleged knowledge of previous RPV head inspections,” including a detailed description of any alleged actions by Mr. Geisen relating to the contention and identification of each alleged “oral and written communication,” each document relating to the contention and each person having knowledge relating to the contention); <i>see also</i> Interrogatory Nos. 20 (relating to allegations concerning Mr. Geisen’s alleged knowledge); Request No.</p>	<p>(pp. 40-42) In its Answer, NRC Staff refers to, but does not identify or describe, “Mr. Geisen’s general duties and responsibilities” that “were such that he would have received and reviewed information regarding the condition of the RPV head.” NRC Staff asserts, without factual detail or support, that Mr. Geisen “was made aware from numerous sources” of certain information. NRC Staff asserts, without detail or support, that Mr. Geisen reviewed unspecified videos, photos, data and head inspection information. NRC Staff asserts, without factual detail or support, that Mr. Geisen “worked with and supervised” unidentified “others” who were “reviewing” unspecified “videos and photos of past inspections of the head.” NRC Staff asserts, without factual detail or support, that Mr. Geisen received unspecified “communications” from the unidentified “others”</p>

<p>30-31 (seeking all documents and things relating to Mr. Geisen's knowledge, state of mind or intention alleged in the Order).</p>	<p>regarding "the limited extent of past inspections of the head." Finally, NRC Staff claims that "[i]nformation supporting the above claims is included within, <i>but is not limited to</i>" certain listed testimony and documents, without specifying the location or substance of the responsive information in such testimony or documents. Nowhere does NRC Staff provide the information and detail requested by this Interrogatory. (p. 78) In response to the related document requests, NRC Staff simply refers to its otherwise non-responsive answers to Interrogatory Nos. 13-27 and then asserts an objection to the Requests. NRC Staff does not agree to produce all responsive documents).</p>
<p>19 (seeking detailed information regarding an allegation in the Order that Mr. Geisen made a certain statement)</p>	<p>(pp. 42-43) NRC Staff's Answer is based solely on a consultant's summary of an alleged March 27, 2002 interview with Mr. Geisen. NRC Staff does not identify the portions of the cited documents that allegedly contain the statement by Mr. Geisen, nor does NRC Staff identify <i>all</i> persons who supposedly have knowledge regarding the alleged statement.</p>
<p>20 (seeking detailed information regarding allegation in the Order that Mr. Geisen "knew that the licensee's written and oral responses to NRC Bulletin 2001-001 were incomplete and inaccurate," including identification each alleged "written and oral response," a detailed description of all facts and documents relating to Mr. Geisen's alleged knowledge, identification of each omission or inaccuracy of which Mr. Geisen allegedly had knowledge, identification of all documents relating to the contention and identification of persons with knowledge relating to the contention); <i>see also</i> Request No. 30, below.</p>	<p>(pp. 43-47) NRC Staff's "answer" consists of a string of "contentions" without any supporting detail or facts. NRC Staff simply cross-references its non-responsive answers to Interrogatory Nos. 13-15 (relating to certain written submissions by FENOC) and 18-19 (regarding Mr. Geisen's alleged knowledge of RPV vessel head inspections). <i>See</i> discussion above. NRC Staff then asserts that "the information which supports the Staff's contention that the information presented in the Bulletin responses was misleading, inaccurate and/or incomplete and Mr. Geisen's knowledge thereof is identified in response to Interrogatories 24-27," which, contrary to NRC Staff's representation, are not responsive. (For example, NRC Staff's answer to Interrogatory No. 26 simply cross-references its answer to this Interrogatory.) Finally, NRC Staff claims that its "contentions" are supported by certain listed testimony and documents, without specifying the location or substance of the responsive information in such testimony or documents. Nowhere does NRC Staff provide the information and detail requested by this Interrogatory.</p>

<p>21 (seeking detailed information regarding allegation in the Order that Mr. Geisen was allegedly “responsible for the information provided to the NRC by FENOC in response to the Bulletin,” including identification of each piece of information at issue for which Mr. Geisen was allegedly responsible, identification of all documents relating to the allegation and identification of all persons with knowledge relating to the allegation).</p>	<p>(pp. 47-48) Even though the interrogatory was tied to a specific allegation in the Order, Staff essentially objects to responding by stating that “[a] detailed description of every piece of information provided to the NRC by FENOC for which Mr. Geisen was responsible is not within the knowledge of the Staff.” Staff then simply (a) cross-references its otherwise non-responsive answers to Interrogatory Nos. 13-15 and 22, (b) lists various testimony and documents without any explanation and (c) asserts that the names of persons with knowledge regarding the allegation are listed in the testimony and documents or in the answer to Interrogatory No. 1. Nowhere does NRC Staff provide the information and detail requested by this Interrogatory.</p>
<p>22 (seeking detailed information regarding allegation in the Order that Mr. Geisen allegedly “participated in the development and presentation of information to the NRC during information briefings on October 3, October 11 and November 9, 2001,” including identification of each action and communication by Mr. Geisen, identification of all documents relating to the allegation and identification of all persons with knowledge relating to the allegation).</p>	<p>(pp. 48-51) NRC Staff simply restates its “conten[tion] that Mr. Geisen was <i>generally</i> involved in the process of formulation, preparation and submission of FENOC’s information and responses, whether in writing or in oral briefings.” NRC Staff claims that a “detailed description of every action that Mr. Geisen took or every communication he made” relating to this allegation “is not within the knowledge of the Staff.” NRC Staff then simply lists various testimony and documents without any explanation and asserts that the names of persons with knowledge regarding the allegation are listed in the testimony and documents or in the answer to Interrogatory No. 1. Nowhere does NRC Staff provide the information and detail requested by this Interrogatory.</p>
<p>23 (seeking detailed information regarding allegation in Order regarding a statement allegedly made by Mr. Geisen during an October 3, 2001 conference call, including identification of documents relating to the allegation and identification of all persons with knowledge relating to the allegation).</p>	<p>(pp. 52) NRC Staff lists various testimony and documents and asserts that the names of persons with knowledge regarding the allegation are listed in the testimony and documents or in the answer to Interrogatory No. 3 [sic]. NRC Staff’s Answer is not fully responsive to this Interrogatory.</p>
<p>24 (seeking detailed information regarding any incomplete, inaccurate, misleading or false</p>	<p>(pp. 52-56) NRC Staff objects to the term “information briefings as “vague” and undefined even though NRC Staff used that term on page 7 of the Order;</p>

<p>statements or communications during three information briefings alleged on page 7 of the Order, including identification and detailed description of each statement or communication, identification and description of omitted or falsely stated information, identification of all documents relating to the allegation and identification of all persons with knowledge relating to the allegation)</p>	<p>mischaracterizes the interrogatory supposedly asks for communications “beyond those which are the subject of the Order,” objects because the interrogatory “requests all documents that relate to the Staff’s contention,” complains because the “documentation relating to the subject of the Staff’s contention is extensive and <i>includes much information which is not within the knowledge, possession and control of the Staff,</i>” objects because searching for the documentation relating to the contention would be “unduly burdensome” and could somehow be “conducted by Mr. Geisen.” “Subject to” those objections, NRC Staff proceeds simply to state what it “claims” or “contends” without specific responsive information requested in the interrogatory or factual support. NRC Staff claims that “the factual basis for the claims described above” include (but is apparently not limited to) certain listed testimony and documents, without specifying the location or substance of the responsive information in such testimony or documents. NRC Staff does not identify the persons who allegedly have knowledge relating to the allegation.</p>
<p>25 (seeking detailed information relating to allegations on page 12 of the Order concerning FENOC’s October 30, 2001 Supplemental Response, including identification of documents relating to the allegation and identification of all persons with knowledge relating to the allegation.</p>	<p>(pp. 56-57) NRC Staff simply states what it “contend[s]” without specific responsive information requested in the interrogatory or factual support. NRC Staff then lists various documents and asserts that persons (apparently not an exclusive list) with knowledge regarding the allegation are listed in the documents.</p>
<p>26 (with reference to NRC Staff’s answer to Interrogatory No. 25, seeking detailed information relating to the allegation on pages 12-13 of the Order that “Mr. Geisen was aware that information contained in [the October 30, 2001 Supplemental Response] was materially incomplete and inaccurate,” including identification and description of “each fact or document relating to Mr. Geisen’s alleged state of mind,” identification of documents relating to the allegation and identification</p>	<p>(pp. 57-58). NRC Staff does not respond substantively to this Interrogatory and instead simply cross-references its otherwise non-responsive and insufficient answer to Interrogatory No. 20. <i>See</i> discussion above.</p>

<p>of all persons with knowledge relating to the allegation)</p>	
<p>27 (seeking detailed information relating to allegation on page 14 of the Order that Mr. Geisen engaged in “deliberate misconduct” by “deliberately provid[ing]” FENOC and NRC information that “he knew was not complete or accurate in all material respects,” including identification of each such piece of information, identification of each act of deliberate misconduct by Mr. Geisen, identification and description of each fact or document relating to Mr. Geisen’s alleged state of mind, identification of documents relating to the allegation and identification of persons with knowledge relating to the allegation).</p>	<p>(pp. 58). NRC Staff does not respond substantively to this Interrogatory and instead simply cross-references its otherwise non-responsive and insufficient answer to Interrogatory No. 20. <i>See</i> discussion above.</p>
<p>28 (seeking detailed information relating to the allegation on page 15 of the Order that there was a “pattern of deliberate inaccurate or incomplete documentation of information that was required to be submitted to the NRC,” including identification of each act or omissions that was part of the alleged pattern, identification of each person who committed each act or omission in the pattern, identification of documents relating to the allegation and identification of persons with knowledge relating to the allegation).</p>	<p>(pp. 58-59) NRC Staff argues that the alleged pattern “pertains to FENOC and not Mr. Geisen” and, on that basis “objects to providing the factual basis for that assessment on the grounds that it is not relevant to this enforcement proceeding.” Accordingly NRC Staff refused to answer this Interrogatory.</p>
<p>29(seeking detailed information relating to the allegation in the Order that Mr. Geisen’s alleged actions or omissions affected the health and safety of the public, including identification of</p>	<p>(pp. 59-60) NRC Staff simply repeats its conclusory allegations and states that “[d]ocuments which support the NRC’s issuance of the Order to Mr. Geisen, and which also support [NRC Staff’s] contention that he should be prohibited from NRC-licensed activities, are enumerated elsewhere in these responses. NRC Staff does not respond</p>

documents relating to the allegation and identification of persons with knowledge relating to the allegation).	substantively to this Interrogatory.
30 (seeking detailed information relating to NRC Staff's document retention procedures, practices policies and systems, including policies relating to electronic data); <i>see also</i> Request No. 31 (seeking documents and things relating to the document retention policies)	(p. 60) NRC Staff objects to this Interrogatory and simply refers to Management Directive 3.53 and NUREG0910. NRC Staff provides no other information and does not produce any documents relating to this Interrogatory.
31 (seeking detailed information relating to NRC Staff's assertion of privilege or protection for documents).	(pp. 60-61) NRC Staff objects to this Interrogatory and simply states that "no document for which a privilege has been asserted has been communicated to any person outside of the NRC." NRC Staff does not substantively respond to this Interrogatory.
DOCUMENT REQUEST NO.	DEFICIENCIES IN RESPONSES
4 (seeking production of documents "relating to the facts, events, circumstances, allegations, claims, contentions, opinions and defenses" in the Order, the Answer or this Enforcement Proceeding).	(pp. 62-63) NRC Staff improperly objects on grounds of overly broad, unduly burdensome and legal conclusion (allegedly requiring "a determination of the relevancy of each and every document and thing discovered in the course of the Staff's compilation." NRC Staff then proceeds to limit its response to only those documents "relevant to the specific interrogatory requests."
5 (seeking documents and things that are "referenced or alleged" in the Order)	(p. 63) NRC Staff improperly objects to this Request and simply cross-references the documents listed in its answers to Interrogatory Nos. 13-29.
6 (seeking documents and things relating to" the Order).	(p. 63-64) NRC Staff objects to this Request in its entirety and simply cross-references the documents listed in its otherwise non-responsive answers to Interrogatory Nos. 13-29.
7 (seeking documents that the NRC or Staff relied upon, assembled, reviewed, obtained, considered, drafted, prepared or generated in preparing" the Order).	(pp. 64-65) NRC Staff objections to this Request in its entirety and does not state that it will produce the requested documents.

<p>8 (seeking documents and things relating to the facts, events, circumstances, allegations, claims, contentions and opinions” in the OI Report), 9 (seeking all documents and things relating to” the OI Report), 10 (seeking documents and things that are referenced in” the OI Report), 11 (seeking documents and things relating to” the OI Report).</p>	<p>(p. 65-67) NRC Staff objects to these Requests in their entirety and simply cross-references its responses to Document Requests 1, 2 and 9 and its otherwise non-responsive answers to Interrogatory Nos. 7, 9 and 13-29.</p>
<p>12 (seeking documents and things that OI “relied upon, assembled, reviewed, obtained, considered, drafted, prepared or generated in preparing” the OI Report).</p>	<p>(pp. 67-68) NRC Staff objects to this Request and simply “refers to the OI report for identification as to the documents relied upon by OI in preparing the report which have been produced through mandatory disclosures in this proceeding.”</p>
<p>13 (seeking all documents and things on which you intend or expect to rely in support of any fact, allegation, claim, contention, opinion or defense in this Enforcement Proceeding, including all relevant documents, communications and information”).</p>	<p>(pp. 68) NRC Staff objects to this Request in its entirety and simply states that “[s]uch information will be disclosed <i>as necessary</i> by the Staff’s attorneys in proper accordance with all applicable regulations.”</p>
<p>14 (seeking relevant documents, communications and information sent or received by persons with knowledge of the allegations in this proceeding).</p>	<p>(pp. 68-69) NRC Staff objects to this Request in its entirety and simply cross-references the documents listed in its answers to Interrogatory Nos. 13-29.</p>
<p>17 (seeking documents relating to the topics described, included or contained in the Interrogatories)</p>	<p>(pp. 73-74) NRC Staff objects to this Request in its entirety.</p>
<p>24 (seeking documents produced in the Moffitt and Miller Enforcement Proceedings); 25 (seeking all documents disclosed in the Moffitt and Miller Enforcement Proceedings); 26 (seeking documents produced by non-parties in the Moffitt and Miller Enforcement Proceedings); 29</p>	<p>(pp. 75-78) NRC Staff references, but does not produce, or agree to produce, certain listed documents in unredacted form on the basis of personal privacy privilege. NRC Staff also does not confirm in its response that all documents produced or disclosed in the Moffitt and Miller Enforcement Proceedings have been or will be produced in this Enforcement Proceeding. NRC Staff also does not agree to produce copies of deposition transcripts in the Moffitt and Miller Enforcement Proceedings.</p>

(seeking deposition transcripts in the Moffitt and Miller Enforcement Proceedings)	
25 (seeking documents and things that will be marked, identified, proffered, offered, presented, introduced, used, shown, referenced, demonstrated or relied upon at the hearing)	(pp. 77) NRC objects to this Request in its entirety on the ground of attorney work product.
30 (seeking all documents and things relating to David Geisen); 31 (seeking all documents and things relating to Mr. Geisen's knowledge, state of mind or intention alleged in the Order).	(pp. 78) NRC Staff objects to Request No. 30 in its entirety on the grounds that it is overly broad, unduly burdensome, seeks irrelevant information and seeks information that is "not in the possession, control or knowledge of the Staff. In response to Request No. 31, NRC Staff simply refers to its otherwise non-responsive answers to Interrogatory Nos. 13-27 and then asserts an objection to this Request. NRC Staff does not agree to produce all responsive documents.

**EXHIBIT 2 TO
STATEMENT OF DEFENSES
DATED DECEMBER 15, 2006**

December 7, 2006

Charles F.B. McAleer, Jr.
Miller & Chevalier
665 15th St. N.W., Suite 900
Washington, D.C. 20005

Dear Chas:

This responds to your letter of November 30, 2006, in which you detail the issues you have with our interrogatory responses. Generally, we believe that our responses are adequate in form and substance. Specifically, with regard to these specific issues, we note the following:

1. Verification of Interrogatory Answers: Pursuant to 10 C.F.R. § 2.705((g), signatures on discovery responses constitutes certification that to the best of the signer's knowledge, information and belief, formed after reasonable inquiry, that the responsive disclosure is complete and correct, as of the time it is made. The signatures provided by the Staff individuals on the affidavits were intended to comply with and satisfy that requirement. The individuals identified in response to interrogatory five as having supplied information and participating in the preparation of the interrogatory responses all necessarily have knowledge relating to the claims in the enforcement order.

2. Insufficiency of Answers to Interrogatories and Responses to Document Requests Generally: The Staff identified or produced all responsive documents within the possession of the Staff at the time the responses were filed. The Staff will supplement its responses as additional information becomes known to the Staff. Our responses to your interrogatories are adequate and fully consistent with NRC practice for Staff discovery responses. Therefore, we will not address the "deficiencies" you have identified in the table attached to your response.

3. Asserted Objections: The Staff has not answered certain questions based on stated objections. If the Staff has withheld documents properly requested, the Staff has identified them and the reasons for withholding with the exception of attorney-client or attorney work product. We have not logged these communications or documents since the time when you identified that this was your practice in your mandatory disclosures.

In response to your discovery requests for information from the NRC Office of Inspector General, we explained the grounds for our objection and our reasons. See, response to Interrogatory five. The Staff did not identify any other responsive documents that were in the control or possession of any entity or subpart within the NRC but not under the possession or control of the Staff as defined in our interrogatory responses.

The Staff has searched for information on our NRC document management system, ADAMS, and on individual computer hard drives and e-mail archives. However, the Staff has not attempted to retrieve documents which have been deleted from our document record systems or hard drives. In response to your questions relating to the retention of documents, we note

that documents related to the development and drafting of the enforcement order were deleted by Staff consistent with the Staff's practice with regard to documents which are not required to be official agency records. With regard to your request that you be provided documents for inspection and copying, we note that pursuant to 10 C.F.R. § 2.705(b)(1), when any document is available from another source, such as the NRC web site, it is a sufficient response to an interrogatory for the Staff to identify the document. Therefore, the Staff is not required to produce documents for inspection and copying. However, should you identify specific documents you would like to inspect and copy please let me know and I will endeavor to accommodate your request.

We have determined that none of the documents for which we claim deliberative privilege was shared with any individual outside the Staff and, therefore, that we have not waived our privilege. Therefore, additional information such as you have requested is not necessary to determine whether our privilege has been waived.

4. **Supplementation:** The Staff will supplement its discovery responses as required of it pursuant the Commission's rules and regulations. We expect to supplement some time within the next two weeks.

5. **Personal Privacy Privilege Assertions.** The Staff is preparing to provide the redacted portions of the August 2003 OI Report under the Protective Order and will produce them within the next couple of days. In addition, the Staff will produce all documents listed on our personal privacy logs as soon as practicable. We hope to have all of this information to you by the end of this week.

Pursuant to the Board Order issued November 29, 2006, the Staff is attaching a copy of the August 2003 OI Report from which the personal privacy redactions have been removed. The attached document is identified by Bates numbers Redacted - 30235 to Redacted - 30468. We are currently working on providing you unredacted versions of the remainder of the documents listed on our personal privacy log and will produce them to you as soon as practicable. Please let me know if you have any questions regarding to foregoing.

Sincerely,

/RA/

Lisa B. Clark

Attachment: as stated

**EXHIBIT 3 TO
STATEMENT OF DEFENSES
DATED DECEMBER 15, 2006**

CONFIDENTIAL

Pursuant to 10 CFR 2.390(a)(6)

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November 7, 2002

VIA FEDERAL EXPRESS

Mr. Richard C. Paul
Director, Office of Investigations
Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road, Suite 255
Lisle, Illinois 60532

Re: In the Matter of NRC Investigation Case No. 3-2002-006

Dear Mr. Paul:

Enclosed is a position paper that addresses the roles of individuals as related to missed opportunities to prevent or earlier detect reactor pressure vessel ("RPV") head wastage at Davis-Besse, and apparent inaccuracies in associated documentation. This paper further analyzes whether any of these missed opportunities or miscommunications involved deliberate or willful misconduct on the part of any one individual or group of individuals. For the reasons more fully explained in the paper, FirstEnergy Nuclear Operating Company ("FENOC" or the "Company") concludes that these missed opportunities and miscommunications were not the result of deliberate or willful misconduct, but rather the result of human error caused by a lack of diligence, attention to detail, and a questioning attitude on the part of certain individuals.

As you know, FENOC discovered RPV head wastage on March 6, 2002, and promptly reported the condition to the NRC. On its own initiative, FENOC undertook a number of reviews in an effort to self-identify and evaluate the circumstances that led to this condition. In each of its reviews, FENOC has attempted to assess candidly past performance—including the performance of individuals—and comprehensively correct identified deficiencies. Based upon its several reviews, FENOC concluded that no one person or group is solely responsible for the RPV head wastage. Rather, FENOC concluded that the Davis-Besse organization must bear collective responsibility for missed opportunities to prevent or earlier detect RPV head wastage.

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Princeton Northern Virginia London Brussels Frankfurt Tokyo

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In April 2002, the Company first performed a technical root cause analysis that identified a number of deficiencies, including a failure to identify corrosion of the base metal of the RPV head over a period of years despite several opportunities to do so. That finding, in turn, led to a management and human performance root cause analysis in August 2002.

FENOC has accepted responsibility and recognizes that, as it looks to restart, the team in place preparing to operate Davis-Besse must meet enhanced Company standards of, and expectations for, performance. To that end, FENOC considered whether personnel actions should be taken against individuals because of the roles they played in missed opportunities to prevent or earlier detect RPV head wastage. For those individuals who were significantly involved in both one or more of the earlier refueling outages ("RFOs"), as well as directly involved in the preparation of the several responses to NRC Bulletin 2001-01, the Company applied the harshest sanction—removal from the Company. Regardless of their involvement in earlier RFOs, FENOC also applied its harshest sanction to senior management involved in responding to NRC Bulletin 2001-01. For others who had a direct role in either the earlier RFOs or the submittals to NRC, but not both, generally FENOC demoted and removed these individuals from any position of supervision at Davis-Besse, as well as from any significant involvement in Davis-Besse restart issues.

Based upon this graded approach, FENOC took personnel actions against 18 individuals during the week of September 16, 2002. FENOC terminated two employees and one contractor, eliminated the positions of two other employees, demoted one employee, and assigned five employees to positions outside the Davis-Besse organization. In addition, these employees and seven others received unsatisfactory performance ratings, which eliminates their eligibility for an annual incentive payment and, if applicable, consideration for a base salary increase in the next salary review cycle. These recent actions are in addition to the many personnel and management changes that have already occurred as part of the Company's effort to upgrade performance.

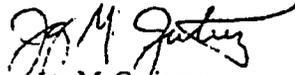
In sum, persons who were in a position of responsibility—and whose actions could have prevented or earlier detected RPV head wastage—have been held accountable under FENOC's performance evaluation and graded discipline practices. By this measured approach, FENOC management believes that it has sent a clear message to the entire workforce that employees are expected to perform their jobs in a manner consistent with high quality and safety standards, and will be held accountable if they do not. Further, the Company recognizes that its responses must be measured and tied to the severity of the performance deficiency. FENOC recognizes that to treat people too harshly could cause individuals to be fearful of admitting mistakes or identifying problems. Although the Company believes that the disciplined individuals did not meet expectations, the Company does not believe that any of these individuals engaged in any deliberate or willful misconduct.

Mr. Richard C. Paul
November 7, 2002
Page 3

Morgan Lewis
COUNSELLORS AT LAW

As in all of FENOC's submittals in response to your ongoing investigation, FENOC requests that all material provided herein be withheld from public disclosure under 10 C.F.R. §§ 2.790 and 9.17.

Sincerely,


Jay M. Gutierrez

JMG/emh
Enclosure

cc: Joseph M. Ulie (w/enclosure)
Michele Janicki (w/enclosure)
James A. Gavula (w/enclosure)
John A. Grobe (w/enclosure)
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Pursuant to 10 CFR 2.390(a)(4).

THE ROLES OF INDIVIDUALS RELATIVE TO THE PREVENTION OR EARLIER DETECTION OF RPV HEAD WASTAGE

I. Introduction

This position paper addresses the roles of individuals as related to missed opportunities to prevent or earlier detect reactor pressure vessel ("RPV") head wastage at Davis-Besse, and apparent inaccuracies in associated documentation. This paper further analyzes whether any of these missed opportunities or miscommunications involved deliberate or willful misconduct on the part of any one individual or group of individuals. For the reasons more fully explained in the paper, FirstEnergy Nuclear Operating Company ("FENOC" or the "Company") concludes that these missed opportunities and miscommunications were not the result of deliberate or willful misconduct, but rather the result of human error caused by a lack of diligence, attention to detail, and a questioning attitude on the part of several individuals.

FENOC recognizes that the NRC's Augmented Inspection Team Follow-up Special Inspection Report No. 50-346/02-08 (DRS), issued October 2, 2002 (the "AIT Report"), addresses, in part, these missed opportunities and other potential violations. In the AIT Report, the NRC opened ten unresolved items, citing numerous examples of the following apparent violations: "operating the reactor with prohibited pressure boundary leakage; failure to take effective action to correct multiple identified safety concerns; inadequacies in the boric acid corrosion control procedure; failure to effectively implement the boric acid corrosion control procedure and the corrective action procedure; and multiple examples of inaccurate or incomplete information in letters to the USNRC or records required by the USNRC to be maintained onsite."

The scope of this paper, however, is limited to those missed opportunities that raise a question as to willful or deliberate misconduct. More specifically, this paper addresses the missed opportunities involving certain potential condition adverse to quality reports ("PCAQRs") and condition reports ("CRs") during the 10th, 11th and 12th refueling outages ("RFOs"), the 1999 mid-cycle outage, and FENOC's responses to NRC Bulletin 2001-01. This paper does not address other CRs or events that appear tangential or only indirectly related to these missed opportunities.

II. Background

FENOC discovered RPV head wastage on March 6, 2002, and promptly reported the condition to the NRC. On its own initiative, FENOC undertook a number of reviews in an effort to self-identify and evaluate the circumstances that led to this condition. A list of the principal reviews is included at Attachment 1. In each of its reviews, FENOC has attempted to assess candidly past performance—including the performance of individuals—and comprehensively correct identified deficiencies. Based upon its several reviews, FENOC concluded that no one person or group is solely responsible for the RPV head wastage. Rather, FENOC concluded that the Davis-Besse organization must bear collective responsibility for missed opportunities to prevent or earlier detect RPV head wastage.

In April 2002, the Company first performed a technical root cause analysis that identified a number of deficiencies, including a failure to identify corrosion of the base metal of the RPV head over a period of years, despite several opportunities to do so. That finding, in turn, led to a management and human performance root cause analysis in August 2002 that identified the following:

- Less-than-adequate nuclear safety focus;
- Less-than-adequate implementation of the Corrective Action Program;
- Less-than-adequate analyses of safety implications; and
- Less-than-adequate compliance with Boric Acid Corrosion Control ("BACC") Procedure and Inservice Test Program.

Consistent with these assessments, FENOC has taken a number of actions to strengthen its management, as well as the programs to be managed. Specifically, FENOC has changed and added senior management to ensure rigorous oversight and long-term sustainable performance:

- FENOC has created the position of Chief Operating Officer ("COO"), and has assigned this senior officer full-time to Davis-Besse to address managerial and organizational issues. He will remain at the site, focused on these issues through restart. The COO has ultimate oversight and approval authority for the plant and its restart plan. The COO is also assuming the responsibilities of the Site Vice President, Nuclear, until after restart.
- FENOC has created a Vice President of Oversight position. This individual is in charge of oversight activities at all FENOC facilities. Both external and internal oversight will be assessed for improvements.
- FENOC has created an Executive Vice President of Engineering and Services position to further strengthen engineering management oversight at Davis-Besse. This individual oversees the Engineering activities and programs at all FENOC sites.
- FENOC has substantially changed the Davis-Besse senior leadership team (Site Vice President and Directors).
- This senior leadership team has made numerous changes to manager-level positions, including new managers in the Engineering, Maintenance, Corrective Action Program, and Quality Assessment functions.

This new management team has, in turn, initiated a Management and Human Performance Excellence Plan, as well as a more detailed Management and Human Performance Improvement Plan, designed to upgrade management and performance of the entire organization in such areas as:

- Nuclear Safety Culture;
- Management/Personnel Development;

- Standards and Decision-Making;
- Oversight and Assessment; and
- Programs, Corrective Actions, and Procedural Compliance.

In each of these areas, FENOC has identified objectives for improved performance, restart and non-restart actions to achieve those objectives, the managers responsible for implementing those actions, a schedule for implementation, and measures to verify the effectiveness of the actions. In addition to these initiatives, and to assure effective implementation, FENOC has retained an independent group of senior executives to provide insight to, and oversight of, FENOC's restart readiness.

The Company recognizes that, as it looks to restart, the team in place preparing to operate Davis-Besse must meet these enhanced Company standards of, and expectations for, performance. To that end, FENOC considered whether personnel actions should be taken against individuals because of the roles they played in missed opportunities to prevent or earlier detect RPV head wastage. While it is difficult to reconstruct precisely what happened, because some of the missed opportunities occurred as long as six years ago, FENOC has made significant efforts to identify and evaluate the circumstances involving missed opportunities during the 10th, 11th, and 12th RFOs, the 1999 mid-cycle outage, and in the course of responding to NRC Bulletin 2001-01.

In determining whether personnel action was warranted, FENOC management worked with Human Resources personnel in evaluating an individual's level of responsibility and involvement in either the earlier outages, FENOC's submittals in response to NRC Bulletin 2001-01, or both. For those individuals who were significantly involved in both one or more of the earlier RFOs, as well as directly involved in the preparation of the several responses to NRC Bulletin 2001-01, the Company applied the harshest sanction—removal from the Company. Regardless of their involvement in earlier RFOs, FENOC also applied its harshest sanction to senior management involved in responding to NRC Bulletin 2001-01. For others who had a direct role in either the earlier RFOs or the submittals to NRC, but not both, generally FENOC demoted and removed these individuals from any position of supervision at Davis-Besse, as well as from any significant involvement in Davis-Besse restart issues.

The individuals who were terminated or demoted were also given an unsatisfactory performance rating, which eliminates their eligibility for an annual incentive payment and, in the case of the demoted individuals, eliminated their eligibility for a base salary increase in the next salary review cycle. Lastly, those individuals who, in the judgment of the Company, were not directly involved, but nonetheless were in a position of supervision or oversight relative to a missed opportunity, were given an unsatisfactory performance rating, which eliminates their eligibility for an annual incentive payment and consideration for a base salary increase in the next salary review cycle.

Based upon this graded approach, FENOC took personnel actions against 18 individuals during the week of September 16, 2002. FENOC terminated two employees and one contractor, eliminated the positions of two other employees, demoted one employee, and assigned five employees to positions outside the Davis-Besse organization. In addition, these employees and

seven others received unsatisfactory performance ratings, which eliminates their eligibility for an annual incentive payment and, if applicable, consideration for a base salary increase in the next salary review cycle. These recent actions are in addition to the many personnel and management changes that have already occurred as part of the Company's effort to upgrade performance.

In sum, persons who were in a position of responsibility—and whose actions could have prevented or earlier detected RPV head wastage—have been held accountable under FENOC's performance evaluation and graded discipline practices. By this measured approach, FENOC management believes that it has sent a clear message to the entire workforce that employees are expected to perform their jobs in a manner consistent with high quality and safety standards, and will be held accountable if they do not. Further, the Company recognizes that its responses must be measured and tied to the severity of the performance deficiency. FENOC also recognizes that to treat people too harshly could cause individuals to be fearful of admitting mistakes or identifying problems. While the Company believes that the disciplined individuals did not meet expectations, the Company does not believe that any of these individuals engaged in any deliberate or willful misconduct in connection with the missed opportunities that are the subject of this paper.

III. Applicable Standard

In evaluating the roles of individuals in connection with the missed opportunities to prevent or earlier detect RPV head wastage at Davis-Besse, FENOC applied the standards that the Company has traditionally considered in its performance evaluation process and graded approach to discipline. As noted, those evaluations led to 18 personnel actions.

The Company also evaluated the behavior of each of those individuals against the NRC's standards of deliberate and willful misconduct. The NRC regulations at 10 CFR § 50.5 — Deliberate Misconduct prohibit any person, licensed or unlicensed, from deliberately violating any NRC requirement, or deliberately submitting inaccurate or incomplete information to the NRC. See 10 CFR § 50.5(a). Section 50.5(c) defines "deliberate misconduct" as "an intentional act or omission that the person knows: (1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or (2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor." As is plain from the text of the regulation, a person may not be held accountable for a violation of Section 50.5, absent a showing of deliberate misconduct.

Additionally, NRC's Enforcement Policy contemplates that the severity level of other violations for which the Company may be held liable may be increased if "willfulness" is involved. See General Statement of Policy and Procedure for NRC Enforcement Actions, Section IV.A.4, at 9. As defined by the NRC, willfulness includes conduct ranging from a deliberate or intentional violation to careless disregard of a known requirement. See id.; NRC Enforcement Manual, Chapter 1, Section 1.6, at 5 ("willfulness" described as "[a]n attitude toward compliance with requirements that ranges from the careless disregard for requirements to a deliberate intent to violate or to falsify"). In NRC's own words, "Willfulness does not include acts that do not rise to the level of careless disregard, e.g., [it does not include] negligence" Id. "The concept of

'careless disregard' goes beyond simple negligence, as the term has been applied in judicial decisions defining willful conduct and as it has been applied by this agency. 'Careless disregard' connotes a reckless regard or callous indifference toward one's responsibilities or the consequences of one's actions . . ." Final Rule, 10 CFR § 50.9 — Completeness and Accuracy of Information, 52 Fed. Reg. 49,362, 49,365 (Dec. 31, 1987) (citations omitted).

In forming its definition of careless disregard, the NRC specifically relied on the Supreme Court decision in Trans World Airlines, Inc. v. Thurston et al., wherein the Court defined careless disregard as "wholly disregard[ing] the law . . . without making any reasonable effort to determine whether the plan he is following would constitute a violation of the law." 469 U.S. 111, 126 (1985) (citation omitted). Subsequently, in McLaughlin v. Richland Shoe Company, the Supreme Court reaffirmed the standard established in Thurston, and held that if a person "acts reasonably in determining its legal obligation, its action cannot be deemed willful." 486 U.S. 128, 135 n. 13 (1988). The Court further reasoned that if a person "acts unreasonably, but not recklessly, in determining its legal obligation, then . . . it should not be considered [willful] under Thurston." Thus, as expressed by the Court, to permit a finding of willfulness to be based on nothing more than mere negligence, on a completely good-faith but incorrect assumption, would fail to give effect to the plain meaning of willfulness.

Thus, mistakes, simple errors, misjudgments, miscalculations, ignorance, or ordinary negligence do not rise to the level of careless disregard. Such shortcomings, by definition, are not willful. The NRC, in adopting the view of the Supreme Court, has specifically stated, "Willfulness does not include acts that do not rise to the level of careless disregard, e.g., violations caused by simple error, misjudgment, miscalculation, ignorance, or confusion on the part of the individual." Final Rule, 10 CFR 50.5 — Deliberate Misconduct by Unlicensed Persons, 56 Fed. Reg. 40,664, 40,676-677 (Aug. 15, 1991). The Commission has further stated: "It would be an erroneous reading of the final rule on deliberate misconduct to conclude that conscientious people may be subject to personal liability for mistakes. The Commission realizes that people may make mistakes while acting in good faith. Enforcement actions directly against individuals are not to be used for activities caused by merely negligent conduct." Id. at 40,681.

As more aptly stated by the court in Babcock & Wilcox Company v. Occupational Safety & Health Review Commission, "Willfulness connotes defiance or such reckless disregard of consequences as to be equivalent to a knowing, conscious, and deliberate flaunting of the [law]. Willful means more than merely voluntary action or omission[,] it involves an element of obstinate refusal to comply." 622 F.2d 1160, 1165 (3d Cir. 1980) (citation omitted). In applying this definition, the court in Babcock & Wilcox determined that the violation was not willful because the evidence showed that "the [violation] was not caused in deliberate or intentional disregard of the statute," that "[t]here was no element of obstinacy," and that "[t]here was a lack of diligence, but not the intentional element necessary for a willful violation." Id.

In sum, careless disregard must be more than a good faith action based upon an incorrect assumption, or a lack of diligence; it must include some defiance of, or obstinate refusal to comply with, a known requirement. The actions next discussed clearly reflect that there were a number of good-faith mistakes, incorrect assumptions, and a general lack of discipline and

diligence; however, it is equally clear that these same actions do not reflect defiance of, or an obstinate refusal to comply with, a known requirement.

IV. Discussion/Analysis

A. PCAQR 96-0551 (10 RFO)

By the mid-1990s, control rod drive mechanism ("CRDM") flange leakage was a recurring issue at Babcock & Wilcox ("B&W") plants, including Davis-Besse. During this timeframe, boric acid frequently leaked down from the flanges and accumulated on the Davis-Besse RPV head. In fact, as documented in FENOC's August 2002 Root Cause Report, some CRDM flange leakage was identified at Davis-Besse in every RFO from 7 RFO through 12 RFO and, as a consequence, personnel generally attributed boric acid on the RPV head to flange leakage. To address the issue, plant personnel performed periodic walkdowns of containment, inspected the CRDM flanges and other components. In addition, Davis-Besse implemented an action plan over several RFOs to repair or replace leaking CRDM flange gaskets.

There was also an emerging issue in the industry concerning primary water stress corrosion cracking ("PWSCC") of CRDM nozzles and other RPV head penetrations. In response to earlier incidents of PWSCC at some European plants, the B&W Owners Group ("B&WOG") coordinated a safety evaluation, BAW-10190 (1993), to address the issue on behalf of all B&WOG member plants, including Davis-Besse. The B&WOG concluded that "PWSCC of Alloy 600 CRDM nozzles in B&W-design plants does not constitute a safety concern and that excessive wastage of the RV head will not occur before leakage is detected either by visual observations in accordance with utility responses to GL 88-05 or the plant leakage detection systems."

In November 1993, the NRC issued its own safety evaluation, entitled "Safety Evaluation for Potential Reactor Vessel Head Adaptor Tube Cracking," which considered the assessments performed by all three PWR owners groups (Westinghouse, Combustion Engineering, and Babcock & Wilcox). The NRC's overall conclusion was that "there is no immediate safety concern for cracking of the CRDM... penetrations. This finding is predicated on the performance of the visual inspection activities requested in Generic Letter 88-05." With regard to the B&WOG's assessment, the NRC concluded:

[T]he potential for PWSCC of CRDM for B&WOG plants does not create an immediate safety issue as long as the surveillance walkdowns required continue and as long as any leakage is corrected. The B&WOG analyses, indicating that the stresses would favor development of axial rather than circumferential cracks and that significant time would be required to reduce the wall thickness of the vessel head to below the ASME code allowables, demonstrates that an immediate safety concern does not exist.

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Pursuant to 10 CFR 2.390(a)(8).

Against this backdrop, Davis-Besse entered its tenth refueling outage in the spring of 1996. During 10 RFO, [REDACTED], a senior engineer in the Design Engineering group, supervised the RPV head inspection being performed by experienced Framatome technicians.¹ During the inspection, they observed white boron deposits scattered around the RPV head and rust/brown-colored boron at the base of one of the CRDM nozzles. They removed some of the boron using scrapers and a vacuum, but found that they could not access the top of the RPV head due to physical restrictions imposed by limited access holes and the narrow gap between the RPV head and surrounding service structure.

To document these findings and the inability to fully clean and inspect the RPV head in accordance with the BACC procedure, [REDACTED] initiated PCAQR 96-0551 on April 21, 1996. [REDACTED] first documented the presence of boron on the RPV head, focusing on the rust/brown-stained boron at the base of CRDM nozzle #67, located on the periphery of the head. In his write-up, [REDACTED] documented his assumption that the rust/brown-colored boron was old boron left over from a previous operating cycle, because the corresponding flange (above) was not leaking.

The videotape of CRDM nozzles inspection (below the RV head insulation) shows several patches of boric acid accumulation on the RV head. Also one of the CRDM nozzle #67 (P6) shows rust or brown stained boron at the bottom of nozzle where it meets the head. The head area in this vicinity also has rust or brown stained boron accumulation. The videotape of CRDM flanges inspection was reviewed to determine the flange leakage. The inspection of CRDM nozzle #67 flange did not show any leakage during cycle 10 which indicates that the leakage marks and boron accumulation on CRDM nozzle #67 are due to leakage from previous operating cycles.

Also in his write-up, [REDACTED] indicated that the as-found condition of the RPV head prevented him from completing the inspection he believed was contemplated by the BACC procedure. "NG-EN-00324 Rev. 1 (Boric Acid Corrosion Control) outlines several steps to help identify the scope of the problem. . . . Concern is that [these] steps may not have been followed to identify the scope of the problem." As explained by [REDACTED], the presence of boric acid on the RPV head prevented a full inspection of the area under the boric acid to (1) determine whether boric acid could have entered the internals of a component or spread to a location not visible externally, and (2) identify any sign of corrosion or degradation of the RPV head.

[REDACTED] subsequently completed an initial assessment of this PCAQR and, on April 24, 1996, documented that the B&WOG safety evaluation (BAW-10190) submitted to and accepted by the NRC on behalf of all B&WOG plants, including Davis-Besse, assumed that an inspection of the

¹ This paper addresses the roles of FENOC personnel as related to opportunities to prevent or earlier detect RPV head wastage, as well as associated documentation. This paper does not address the corresponding roles and responsibilities of Framatome personnel, and other engineering contractor personnel who, by their action or inaction, may have contributed to certain missed opportunities.

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RPV head would be performed each outage. [REDACTED] added that the boron accumulation on the RPV head prevented a full inspection in accordance with the BACC procedure, and hindered a determination as to whether the deposits were from CRDM flange or other CRDM leakage. He wrote:

A walkdown inspection of RV head is performed during each outage in response to NRC Generic Letter 88-05 The walkdown inspection includes the visual inspection of CRDM flange area. In addition RV head is inspected for boric acid deposits. The safety evaluation submitted to NRC for B&W CRDM nozzle cracking issue takes credit [for] this inspection. . . . Since the boric acid deposits are not cleaned it is difficult to distinguish whether the deposits occurred because of the leaking flanges or the leaking CRDM. This situation represents an adverse trend with the potential for greater than marginal consequences.

His initial assessment raised other concerns regarding the susceptibility of peripheral nozzles (e.g., #67) to cracking, and the potential for internal RPV head corrosion (i.e., via the interface between nozzle sleeve and RPV head penetration). He wrote:

The peripheral nozzles on the downhill side of the RV head have the high potential for cracking. The nozzle #67 mentioned in this PCAQR is a downhill side nozzle. The CRDM nozzles are attached to the RV head by an interference fit and there is no weld at the top of head. Thus coolant from leaking flange will travel down to head and can enter in the head via the upper counterbore area and initiate internal corrosion. The visual inspection can not determine whether the coolant has gone inside the head or not. Also the step 6 of NG-EN-00324 "The area should be inspected to determine if boric acid could have entered the internals of a component and spread internally to a location that is not visible" can not be completed. This represents a situation that could have escaped detection by visual examination.

[REDACTED] concluded that this PCAQR was a Category 2 (potential significant condition adverse to quality) and, therefore, required a Root Cause analysis. This assessment was approved or concurred in by [REDACTED]'s then-supervisor, [REDACTED]; the Plant Engineering Manager, [REDACTED]; the Nuclear Assurance Director, [REDACTED]; and the PCAQR Review Board ("PCAQRB") Chairman, [REDACTED].

[REDACTED] included comments with his concurrence, based upon his conversations with [REDACTED], which reflected his understanding of the potential safety significance of [REDACTED]'s concerns. [REDACTED] wrote:

I have signed the part 4E justification and concurrence as a conservative measure. Nozzle cracking is, of course, a significant issue. However, at present, the probability of occurrence is relatively low. We should remove boron from the reactor pressure vessel head as best we can and so as to minimize dose. This will enable us to monitor any leakage, should a nozzle crack initiate. I believe that it is questionable that boron would enter the nozzle area from the outside because of

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the head temperature and the fact that there is an interference fit. I also do not believe that the vessel head area is non-conforming.

Consistent with this Engineering position, [REDACTED] attempted to remove the remaining boron from the RPV head. On May 9, 1996, [REDACTED] documented the completion of this effort: "Boron from RV head was removed to the extent practical considering cleaning equipment limitations, size of mouse holes and dose." [REDACTED]'s notation indicated that his efforts to clean the RPV head had not been completely successful and that some boron was left on the top of the RPV head at least in part due to access restrictions.

It was generally believed, however, that the nozzles at the top of the head were subject to relatively low stresses and were less likely to be subject to PWSCC. It was generally believed that the nozzles on the periphery of the RPV head were most susceptible to PWSCC, because these nozzles were under the greatest stresses (a primary factor in PWSCC) due to the curvature of the head. Consistent with these widely-held beliefs, [REDACTED] ensured that the boric acid was removed from around peripheral nozzle #67, that the area was inspected, and that no significant corrosion was observed. [REDACTED] also relied upon available industry data (e.g., B&W Document No. 51-1229638-1, "Boric Acid Corrosion - Summary and Evaluation") for the general proposition that the risk of nozzle cracking was low and that the boric acid corrosion rate was negligible above 550°F.

After concluding his efforts to clean the RPV head, [REDACTED] pursued the following remedial corrective actions: (1) to assess the total amount of boron deposits on the head; and (2) to evaluate the area of boron accumulation to determine if boric acid may have entered the internals of a component or spread to an area not visible and susceptible to corrosion. On November 22, 1996, [REDACTED] documented his responses. [REDACTED]'s response to item (1) indicated that access through the mouse holes limited the ability to clean and inspect the RPV head. [REDACTED] estimated that he had been able to inspect only "50-60% of the head" due to these access restrictions. [REDACTED] concluded, "It is extremely difficult to develop an estimate of the amount of boric acid deposit because of the deposit scatter and limited inspection."

In response to item (2), [REDACTED] essentially stated that he could not evaluate the impact of boric acid deposits on nozzle internals, although he reasoned it to be minimal, and reiterated the fact that the condition of the RPV head prevented completion of certain steps outlined in the BACC procedure. He wrote:

The area which could be cleaned did not show any significant corrosion. The condition of the area from which boron could not be removed is not known. But [it] is anticipated that the corrosion of this area should be minimal since the head temperature is greater than 550°F. . . . The issue is whether boric acid could have entered the internals of a component and spread internally to a location that is not visible and susceptible to corrosion. The boric acid could enter the inside of RV head only through openings for CRDMs. . . . But possibility of this occurring is quite low because of the very small gap and high temperature. This could happen if the conditions are just right e.g. already existing boric acid deposits around CRDMs, low temperature and leaking CRDM flanges. This type of leakage

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damage is extremely difficult to measure because area of interest cannot easily be inspected. Note: This PCAQR was written because steps outlined in NG-EN-00324 Rev. 1 (Boric Acid Corrosion Control) cannot be fully implemented.

Evaluation of this PCAQR did not end there. Because the PCAQR had been designated as a Category 2, a Root Cause/Corrective Action to Prevent Recurrence ("CATPR") review was also required. [REDACTED], Chairman of the PCAQRB, initially assigned Quality Control ("QC") to complete the Root Cause/CATPR. Due to low safety significance, work load, and manpower considerations, the QC Supervisor, [REDACTED], requested several extensions of the deadline, which were approved by [REDACTED]. The documented justification for delay/extension cited back to [REDACTED]'s view of the low safety significance and that the RPV head was not non-conforming: "This condition is not reportable and engineering has stated there is no non-conformance with respect to the RV head," and "even though Cat. 2--this is low priority work given no non-conforming hardware issues exist."

Eventually, in February 1997, [REDACTED], citing [REDACTED]'s earlier analysis, concluded that the issues raised in PCAQR 96-0551 derived from limited access to the RPV head and recommended implementation of a modification, previously recommended in 1994, to enlarge access holes in the service structure. [REDACTED] wrote:

[T]he cause of the inability to carry out the activities in NG-EN-00324 is due to inaccessibility of areas for inspection. . . . [T]he limited inspection area poses a condition that cannot be evaluated. . . . Enlarge the inspection holes to permit inspection of all susceptible areas and to inspect the CRDM nozzle penetrations of the head. Additional holes will be needed for access to the upper part of head.

Such a modification to install multiple access ports in the service structure to facilitate cleaning and inspection of the RPV head was first proposed in 1990. The modification was not implemented, however, and was subsequently voided on September 27, 1993, because it was believed that the head had been successfully inspected and cleaned during the previous three RFOs. Essentially, the same modification was again proposed in 1994, but it had not yet been implemented. And, during a meeting of the Work Scope Committee ("WSC") in February 1997, a decision was made to again defer the modification for 12 RFO.

In April 1997, PCAQR 96-0551 was transferred from QC to Systems Engineering, Mechanical ("SYME") for resolution. SYME Supervisor [REDACTED] determined that "[r]esolution will either result in a modification or procedural guidance changes which will outline acceptable inspections." In an Engineering meeting on August 7, 1997, the attendees agreed to the following five action items:

- Determine how well the head can be cleaned after the installation of the larger access openings. Three other units have installed the proposed Modification and will be contacted to determine if the Mod enables the complete cleaning of the head.

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- Evaluate the possibilities for an alternative head cleaning process. If a suitable process of cleaning the head can be implemented, the Mod would be unnecessary.
- Visit [Three Mile Island], if possible, during their Fall 97 refueling outage and evaluate the head inspection capability after the installation of larger access ports.
- Determine if the Modification is required and present to the PRG or if procedure revisions are required to clarify expectations for the Engineering Evaluations required by NG-EN-00324, Boric Acid Corrosion.
- Either present Mod to PRG or implement enhanced cleaning process or revise NG-EN-00324.

These taskings were divided between [redacted] and the then-RCS System Engineer, [redacted]. [redacted] was tasked to determine the feasibility of the modification, while [redacted] was tasked to evaluate alternative RPV head cleaning methods and whether NG-EN-00324 should be revised.

On November 22, 1997, [redacted] documented his findings that the modification had been successfully implemented at other plants. Subsequently, on December 17, 1997, [redacted] documented that alternative RPV head cleaning methods were not viable due to a combination of access, schedule, and dose restrictions. As between implementing the modification and revising the BACC procedure, [redacted], with the approval of his supervisor, [redacted], recommended that the plant "proceed with a proposal to modify the reactor head support structure." PCAQRB Chairman [redacted] acknowledged and approved their recommendation to go forward with a presentation on the modification to the Project Review Committee ("PRC") for funding approval.

At a September 17, 1998 WSC meeting, however, [redacted] asked for approval to implement the modification in 13 RFO. His supervisor, [redacted], and [redacted] the initiator of PCAQR 96-0551, were also present at the meeting, and did not object to the deferral. Because the RPV head had been in a dry condition, and, therefore, corrosion was not viewed as a concern, they agreed that delaying the implementation until 13 RFO did not add any risk. The WSC approved the implementation of the modification for 13 RFO.

On September 21, 1998, [redacted], with the approval of his supervisor, [redacted], documented completion of the Root Cause/CATPR for PCAQR 96-0551. [redacted] wrote:

Modification 94-0025 has been initiated to install 9 inspection/access holes, with removable covers, in the service structure. The access holes will allow both direct and remote visual inspection capabilities. The modification will also allow for adequate access to the top surface of the head to clean/remove any accumulated boric acid buildup. The modification has been approved for implementation during 13RFO by both the PRC and the WSC. . . . Previous inspections of the vessel head and analysis of the corrosion conditions present has determined that

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installation of this modification can be scheduled for 13 RFO with very limited risk of damage to the surface of the head from boric acid corrosion.

Both the Plant Engineering Manager, [REDACTED] and the Engineering Director, [REDACTED] concurred, effectively closing PCAQR 96-0551 to a future modification.

In the intervening period since initiation of PCAQR 96-0551, Davis-Besse procedures changed such that close-outs of significant conditions adverse to quality had to be reviewed by the Station Review Board ("SRB"). Subsequently, on October 28, 1998, the then-SRB Chairman, [REDACTED] notified SYME that their Root Cause had been rejected and issued the following additional action items:

- The Part 6 response was rejected by the SRB/PCAQRB because it didn't include the required attributes of a full Root Cause Evaluation
- Please complete a Root Cause Evaluation IAW NG-NA-702.
- Please address the Davis-Besse response to GL 88-05 for the evaluation of the significance of boric acid on the head.
- Please obtain manager concurrence.

The next day, SYME Supervisor [REDACTED] requested that the PCAQR be downgraded so as not to require a further Root Cause, and to enable Davis-Besse to rely on the already-stated Apparent Cause. The offered justification for the downgrade was that the PCAQR pertained to the "software issue of inspection, not the hardware issue of head leakage," and that a full-blown Root Cause would not change or add anything to the analysis. This request was based upon a belief that the appropriate corrective action had been identified after much consideration, and at the time, was reasonable, and therefore was approved by [REDACTED] the Plant Engineering Manager, and later concurred in by the SRB.

The facts outlined above show that the originator, [REDACTED] followed procedures in identifying and documenting the problem. The facts also show that the peripheral nozzles (the ones that were believed most susceptible to PWSCC) were cleaned, and that no significant corrosion was observed. They also show that plant personnel were unable to completely clean the top of the RPV head and unable to fully evaluate the source of the leakage and extent of condition as contemplated by the BACC procedure. However, the PCAQR included an evaluation allowing boric acid to remain on top of the RPV head for an indefinite period without safety consequences. The evaluation documented the widely-held views that boric acid on the RPV head was not an immediate safety concern because boric acid was not considered corrosive at RPV head temperatures above 550°F, and that nozzle cracking was a low probability at Davis-Besse. The evaluation also documented [REDACTED]'s assumption that red-brown boric acid was characteristic of old boron left over from prior outages. Notably, the red-brown boric acid was only noted around nozzle #67, which was cleaned and determined to be free of any significant corrosion.

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While, in hindsight, the underlying analysis proved incorrect, at the time, [REDACTED] and others in Engineering held these views in good faith. As shown above, [REDACTED] researched the issues and formulated engineering judgments based on his understanding of B&WOG safety evaluations and available industry data. However flawed, these engineering judgments were the result of inadequate analysis, not born out of defiance of, or obstinate refusal to comply with, a known requirement—as would be necessary for a finding of careless disregard. Although, in hindsight, these engineering judgments may have proved incorrect, that does not amount to deliberate or willful misconduct. Where a reasonable, good-faith effort is made to determine and apply the law, there is no deliberate or willful misconduct in the event the law is misunderstood or misapplied. The Commission has stated that "people may make mistakes while acting in good faith" and "[e]nforcement actions directly against individuals are not to be used for activities caused by merely negligent conduct." 56 Fed. Reg. at 40,681.

Others, including Messrs. [REDACTED] apparently relied upon [REDACTED]'s engineering judgments in dispositioning this PCAQR and the associated modification. Given the facts known to them at the time, this reliance was reasonably placed. [REDACTED] was the plant's representative to the B&WOG Materials Committee studying these issues, and he was generally considered the plant's subject matter expert. By virtue of his knowledge, experience, and position, others involved in the disposition of PCAQR 96-0551 looked to [REDACTED] as the technical lead on these issues. Based on [REDACTED]'s analysis and conclusions, his supervisors and managers approved the disposition of this PCAQR, believing that the impacts of boron on the RPV head and the feasibility of proposed corrective actions could be considered and reviewed on a longer-term basis.

Specifically, the modification to install larger access ports in the service structure was reviewed over an extended period of time. Various PRC representatives to whom the modification was presented, including Messrs. [REDACTED] among others, did not appreciate that the service structure modification was necessary to satisfy a procedural or regulatory requirement. The modification was not perceived as a compliance issue. Based on the information presented, PRC representatives considered the modification to be an enhancement, not a requirement. Neither [REDACTED] nor his supervisor, [REDACTED] expressed any sense of urgency regarding the modification. In sum, the PRC viewed the modification as merely a recommended improvement to facilitate RPV head inspections. As a result, the modification was deferred for scheduling, operational, and financial considerations, and, eventually, was superseded by a plan to replace the service structure.

Although the supervisors and managers involved in the disposition of this PCAQR and the associated modification did not demonstrate the attention to detail and questioning attitude that FENOC expects of personnel in their positions, these individuals acted in good-faith reliance on the information presented to them. They did not act in defiance of, or obstinate refusal to comply with, a known requirement—as would be necessary for a finding of careless disregard. For that reason, their actions or omissions do not amount to deliberate or willful misconduct. The NRC has long recognized that a mistake in judgment or mere negligence in the performance of one's job duties does not rise to the level of careless disregard. The NRC has specifically stated, "Willfulness does not include acts that do not rise to the level of careless disregard, e.g.,

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violations caused by simple error, misjudgment, miscalculation, ignorance, or confusion on the part of the individual." 56 Fed. Reg. at 40,676-677. See also 52 Fed. Reg. at 49,365.

Therefore, FENOC concludes that the human error which led to this missed opportunity to prevent or earlier detect the RPV head wastage was not the result of any deliberate or willful misconduct, but rather poor performance on the part of several individuals.

B. CR 98-0767 (11 RFO)

Between 10 and 11 RFO, the CRDM nozzle cracking issue gained additional attention within the industry when NRC issued GL 97-01, "Degradation of Control Rod Drive Mechanism Nozzle and Other Vessel Head Closure Penetrations." The NRC requested that licensees establish a program to ensure the timely inspection of CRDM and other RPV head penetrations. In July 1997, the B&WOG Materials Committee responded to GL 97-01, by issuing BAW-2301, "B&WOG Integrated Response to Generic Letter 97-01: Degradation of Control Rod Drive Mechanism Nozzle and Other Vessel Closure Head Penetrations." BAW-2301 reiterated conclusions discussed in the 1993 B&WOG and NRC Safety Evaluations on the subject, and stated that PWSCC of CRDM nozzles would not become a safety issue provided that boric acid visual inspections were performed in accordance with GL 88-05. On July 28, 1997, Davis-Besse responded to GL 97-01, by endorsing BAW-2301.

Also during the period leading up to 11 RFO, responsibility for RPV head inspections was transferred from Design Engineering to System Engineering, and ownership became fragmented with Design Engineering responsible for head analysis and Plant Engineering responsible for the CRDM flanges and field inspections of the RPV head. In implementing this transfer, however, no specific individual within Plant Engineering was charged with the responsibility for carrying out the RPV head inspections [REDACTED], the outgoing RCS System Engineer, believed that he was responsible for CRDM flange inspections. [REDACTED] the incoming RCS System Engineer, was occupied with reactor coolant pump motor rebuilds. No one took direct responsibility for performance of the RPV head inspection. Ultimately, when the time came to conduct the inspection activity during the 11 RFO work schedule, the duty-system engineer was assigned without advance notice or preparation.

Specifically, on April 24, 1998, the Outage Director, [REDACTED], directed [REDACTED] the duty-system engineer, to oversee the RPV head inspection to be performed by Framatome.² Notably, [REDACTED] the system engineer responsible for the service water system, had no previous experience with RPV head inspections, was not sure what he was looking for, and had no familiarity with CRDM nozzle cracking issues. As directed, [REDACTED] participated in the RPV head inspection/videotaping performed by two Framatome technicians on April 24, 1998. During the inspection, [REDACTED] observed clumps of boron at or near some of the CRDM nozzle penetrations. According to [REDACTED] the opinion of the Framatome representatives was that the boron deposits were from flange leakage, that the observed condition was not significant, and that there was no evidence of corrosion.

² Refer to footnote 1.

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After discussing his observations with the Outage Director, [redacted] initiated CR 98-0767, on April 25, 1998, to document the as-found condition. The CR stated: "Video inspection (4/24/98) of the area where the CRDM nozzles enter the reactor vessel head indicated several 'fist' size clumps of Boric Acid. . . . Where clumps were not present, a light dusting of Boric Acid was found covering the surface area of the vessel head." The CR was assigned to [redacted] of Design Engineering for review and resolution: "Plant/Design Engineering will evaluate per procedure."

Mr. Goyal reviewed the April 24 videotaped inspection, and noted:

[M]ost of the head area was covered with an uneven layer of boric acid along with some large lumps of boric acid. . . . The color of the layer and the lumps varied from rust brown to white. The rust or brown color is an indication of the old boric acid deposits. The [video] tape also showed white streaks on the OD of CRDM housing. This indicates leaking CRDM flanges.

[redacted] hereupon recommended removal of the boric acid deposits from the RPV head, which activity was performed in early May 1998. Based on his review of that activity, [redacted] prepared the following evaluation.

The reactor vessel head was cleaned as best as we can (The cleaning is recorded on videotape dated 5/5/98 [sic]). The visual inspection did not show any significant pitting of the head surface. Based on engineering judgement the head thickness [] will not be adversely impacted by very slight pitting. Also there were slight boron deposits left on the head after the cleaning. These deposits will not create any corrosion since the head temperature is [greater than] 550°F. This is based on the result of boric acid corrosion test[ing] performed by B&WOG (B&W document #51-1229638-1). . . . Thus RCS pressure boundary is not impaired and the RV head will continue to perform its intended function.

As with PCAQR 96-0551, [redacted] evaluation of CR 98-0767 again documented his opinion—now prevalent throughout the Davis-Besse organization—that the observed leakage was from the flanges, and that rust/brown boron was old boron from a previous cycle. Significantly, though, [redacted] ensured that the RPV head was cleaned as best they could, and that the cleaned areas showed no significant signs of corrosion. He furthermore referenced and relied upon available industry data (e.g., B&W Document No. 51-1229638-1) for the proposition that boric acid was not corrosive at RPV head temperatures above 550°F,

On July 16, 1998, [redacted] and his supervisor, [redacted], closed this CR to the ongoing corrective action for PCAQR 96-0551. Their disposition stated: "The boric acid deposits were removed from the head. The work is documented/captured in a videotape dated 5/4/98." In closing out this CR, [redacted] also recognized this as a repetitive issue and dispositioned it to the planned corrective actions for the still open PCAQR 96-0551 (i.e., the service structure modification). Their disposition of CR 98-0767 stated: "PCAQR 96-0551 recorded the similar concerns during 10 RFO. The root cause evaluation and CATPR for

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PCAQR 96-0551 is in progress. PCAQR 98-0767 can be closed once the root cause [and] CATPR for PCAQR 96-0551 are complete.”

Supervisors and managers, including [REDACTED], Quality Control Supervisor [REDACTED], and PCAQRB Chairman [REDACTED], apparently relied upon [REDACTED]'s conclusions in approving the disposition of this CR. Given the facts known to them at the time, coupled with [REDACTED]'s position as the B&WOG Materials Committee representative and the plant's subject matter expert, this reliance was reasonably placed. Moreover, the approved close-out of this CR was tied to and conditioned on the pending corrective action for PCAQR 96-0551. Given the facts and circumstances known to these individuals at the time, such a disposition would have seemed reasonable. Thus, these individuals did not act in defiance of, or obstinate refusal to comply with, a known requirement—as would be necessary for a finding of careless disregard. The Supreme Court has recognized that to permit a finding of willfulness to be based on nothing more than mere negligence, or on a completely good-faith but incorrect assumption, would fail to give effect to the plain meaning of willfulness. See Richland Shoe, 486 U.S. at 135 n. 13. The NRC, itself, has recognized that a mistake in judgment or mere negligence in the performance of one's job duties does not rise to the level of careless disregard. See 56 Fed. Reg. at 40,676-677; 52 Fed. Reg. at 49,365.

Therefore, FENOC concludes that the human error which led to this missed opportunity to prevent or earlier detect the RPV head wastage was not the result of any deliberate or willful misconduct, but rather poor performance on the part of several individuals.

C. FENOC's Response to Issues Associated with Reactor Coolant System Leakage During the Twelfth Operating Cycle

1. Introduction

FENOC's Root Cause Analysis Report, "Significant Degradation of the Reactor Pressure Vessel Head," and the subsequent Root Cause Analysis Report, "Failure to Identify Significant Degradation of the Reactor Pressure Vessel Head," discuss fouling of the containment air coolers ("CACs") and radiation monitors between 11 RFO and 12 RFO in terms of possible missed opportunities to discover degradation of the RPV head. In addition, NRC's review of this issue appears to focus on the technical specification limitation prohibiting plant operation with identified RCS pressure boundary leakage.¹ This section addresses issues related to unidentified RCS leakage and filter fouling during the 12th operating cycle from the perspective of operation of the reactor either with known RCS pressure boundary leakage or in careless disregard of evidence that a CRDM nozzle leak existed on the Davis-Besse RPV head.

This review demonstrates that no one in the Davis-Besse organization either knew of RCS pressure boundary leakage or held a reasonable belief that a through-wall CRDM nozzle crack

¹ Technical Specification 3.4.6.2 states, in relevant part, that "Reactor Coolant System Leakage shall be limited to: a. No Pressure Boundary Leakage, b. 1 GPM Unidentified Leakage."

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Pursuant to 10 CFR 2.390(a)(2).

might exist. Of course, looking at various clues in hindsight, with the source of the leak now identified, the relationship appears clear, however, as these indications actually unfolded, the linkage to RCS leakage was not apparent. No single engineer or group of engineers was aware of all the indicators, let alone their collective significance. Managers who held more of the pieces of information than others received them sequentially and unconnected in the normal course of business—not with the clarity or connection now understood only in hindsight and with the benefit of FENOC's significant review effort and root cause analyses.

2. Unidentified RCS Leakage

Before 11 RFO, during the 11th operating cycle, Davis-Besse experienced unidentified RCS leakage of approximately 0.05 gpm. As distinguished from pressure boundary leakage, the Davis-Besse technical specifications permit up to 1.0 gpm of unidentified RCS leakage. During 11 RFO in the spring of 1998, only minor CRDM flange leakage was identified. No immediate repairs were recommended. Following 11 RFO, Davis-Besse began to experience an increase in unidentified RCS leakage. In addition to leak rate calculations by plant operators, [REDACTED] in Plant Engineering was assigned the engineering project of monitoring unidentified RCS leakage and identifying possible sources of this leakage. Unidentified RCS leakage was seen by Davis-Besse management as a significant issue, especially by managers in the Engineering and Operations organizations. Senior plant management received periodic briefings on the status of this issue.

The search for the source of increasing RCS leakage was exacerbated when, because of a concern that under certain failure conditions the pressurizer relief valves could experience an axial force causing separation from the pressurizer and a loss of coolant accident, Davis-Besse personnel implemented a modification. The modification cut vents in the relief valve rupture disks. These vents allowed the expected leakage past the relief valves to vent into containment, rather than to the quench tank as designed. This new leak path more than doubled the unidentified RCS leakage into containment. Unidentified RCS leakage in containment following this modification rose to more than 0.7 gpm. As a result, Davis-Besse management's attention to the leakage issue increased. Plant management planned to act conservatively by shutting down early, before the planned May 1999 mid-cycle outage, if leakage increased much above 0.8 gpm, so as not to reach the 1.0 gpm technical specification limit. On October 19, 1998, CR 98-1895 was generated to address that increased RCS leakage. At that time, Engineering managers and others believed that the likely cause of this increase was the modification, which removed the pressurizer relief valve rupture disks and severed the drain line from that valve to the quench tank. At the time, this inference was reasonable and the modification was far more likely the source of increasing leakage than the unsuspected RPV head wastage.

3. RC-2 Event

In September 1998, Davis-Besse personnel monitoring the status of known packing leakage from the RC-2 valve, discovered that two nuts from body-to-bonnet bolts were missing. During 11 RFO in 1998, the yoke on RC-2 had been replaced. Following that outage, a packing leak had been identified on the valve but not repaired. Davis-Besse personnel were making containment entries to monitor the status of the valve leakage when they discovered the degraded

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condition. A subsequent root cause analysis for this condition revealed that, during maintenance, the nuts had been replaced with non-conforming carbon-steel nuts and that boric acid from the packing leak rapidly corroded the two nuts entirely away. This potentially non-isolable RCS leak was understood as a significant event at Davis-Besse that attracted commensurate management attention, time, and resources. The root cause evaluation triggered increased attention to material control issues and to boric acid corrosion control issues, particularly as such corrosion relates to bolted connections, such as valves, where other nonconforming materials may be present. Corrective actions planned for this event included system walkdowns to check for nonconforming materials and for evidence of boric acid corrosion. FENOC's focus, however, was on bolted-threaded connections, and the RC-2 event did not heighten FENOC's attention to the possibility of unsuspected RPV head wastage.

4. Containment Air Cooler Fouling

Also in the fall of 1998, Davis-Besse began to experience fouling of the CAC cooling coils. Flow of the relatively-humid containment atmosphere over the CAC cooling coils resulted in deposition of boric acid on the CAC cooling surfaces. The condition was documented in PCAQR 98-1980 in November 1998. The CACs required 17 containment entries for cleaning between November 1998 and the start of the mid-cycle outage in May 1999. Although the boric acid generally appeared to be white, a rust color was noticed on and in the boron being cleaned away from one of the CACs. [REDACTED] the Plant Engineer responsible for the CACs, mistakenly attributed the source of the boric acid deposits to historic CRDM flange leakage or other RCS leakage higher in containment, and any discoloration of the boric acid to migration of the surface corrosion of the carbon-steel CACs or aging of the boric acid itself. [REDACTED] and others suspected a leak source higher in containment, such as the top of the steam generator or pressurizer, because of the wide dispersion of boric acid high in containment and known air flow patterns.

Similar to the RCS leakage issue, Engineering and Operations managers were aware of the CAC fouling issue because of its impact on plant operations, and because cleaning required frequent containment entries to clean the CACs during power operations. Although Davis-Besse managers appreciated a link between unidentified RCS leakage and CAC fouling, no individual associated these two issues with possible nozzle cracking, reactor pressure boundary leakage, or with the boric acid deposits on the RPV head. Given the Engineering analyses at the time, and Engineering working assumptions (e.g., hot, dry boric acid on the RPV head is not corrosive), the response of Engineering personnel to the indicators presented was reasonable.

5. May 1999 Mid-Cycle Outage

Davis-Besse entered the planned mid-cycle outage in May 1999. In connection with the search for the source of unidentified RCS leakage and extent-of-condition review from the RC-2 event, walkdowns of the primary systems within containment were conducted. Although no major leaks were identified, a number of valves were worked on in both D-rings and elsewhere in containment to minimize possible leakage. Additionally, Mr. Chimahusky, with Framatome support, performed an inspection of the CRDM flanges. No new CRDM flange leaks were identified. To reduce unidentified RCS leakage, a modification was installed to re-direct

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might exist. Of course, looking at various clues in hindsight, with the source of the leak now identified, the relationship appears clear; however, as these indications actually unfolded, the linkage to RCS leakage was not apparent. No single engineer or group of engineers was aware of all the indicators, let alone their collective significance. Managers who held more of the pieces of information than others received them sequentially and unconnected in the normal course of business—not with the clarity or connection now understood only in hindsight and with the benefit of FENOC's significant review effort and root cause analyses.

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pressurizer relief valve leakage to the quench tank, rather than to the containment atmosphere. No RPV head inspections were planned or conducted during this outage. [REDACTED], the RCS Systems Engineer between 11 RFO and 12 RFO, was occupied during this outage with reactor coolant pump motor work and was not substantially involved in other RCS issues during the mid-cycle outage.

The mid-cycle outage ended on May 10, 1999. Following the outage, the rate of unidentified RCS leakage dropped below 0.3 gpm and the rate of CAC fouling slowed. As the rate of CAC fouling slowed, the search for possible causes received less management attention. Following the outage, however, a new, apparently unrelated, issue arose concerning the containment radiation monitors.

6. Containment Radiation Monitors

Following the mid-cycle outage, the containment radiation monitors began to experience low flow sample rates. Troubleshooting performed by the Radiation Monitor Systems Engineer, [REDACTED], the Plant Engineering lead, [REDACTED], and Chemistry personnel found a build-up of boric acid crystals on the monitors' filters. At that time, the engineers believed that the boric acid could not be a major contributor to the reduced sample flow rate because the boric acid crystals appeared coarse enough to allow normal sample airflow. During the subsequent troubleshooting efforts, [REDACTED] also observed a "beige colored film," similar to "latex paint," coating the filters. In May 1999, CRs 99-0882 and 99-0928 were generated to address the containment radiation monitor filter fouling. Preliminary testing by Chemistry personnel identified iron in the filter samples. [REDACTED] sent samples of the radiation monitor filter deposits to Southwest Research Institute ("SRI") for detailed chemical analysis to aid specific identification of the material on the filters. [REDACTED] also sent samples of Magnaflux powder used in containment during the mid-cycle outage.

Because the containment radiation monitor filter fouling had not been observed before the mid-cycle outage, [REDACTED], and others initially focused their attention on activities performed during the mid-cycle outage. One theory was that the source of iron oxide was the Magnaflux iron filings used during magnetic particle examination. This theory was disproved by the SRI analysis, which indicated that although the samples contained iron oxide, they did not contain any titanium, a component of magnetic particle exam filings. The laboratory analyses reported several confusing, if not conflicting, conclusions. For example, the SRI analysis found that "the iron oxide deposits are likely corrosion products from an iron base component within the system"—presumably a primary system. The SRI analysis also found small amounts of chlorine, copper, and potassium chloride, materials normally associated with secondary-side systems, rather than RCS components.

On July 30, 1999, [REDACTED] initiated CR 99-1300 to document the initial analysis results provided by SRI via telephone. Corrective action to address this condition provided, "Plant Engineering will issue an action plan for 12 RFO which will include CTMT [containment] walkdowns to identify possible sources and activities for rust removal CATS Item #2." To which, [REDACTED] appended by hand, "Plant Engineering is utilizing experts from Sargent & Lundy ("S&L") to review our actions for completeness and make recommendations."

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Pursuant to 10 CFR 2.390(a)(7).

Significantly, FENOC Engineering brought in expert consultants in an effort to better define and resolve the problem. Although these experts provided additional facts and further leads, they too did not suggest, let alone conclude, that the source of the iron oxide was from the RPV head.

initiated still further activities to identify the source of the iron oxide deposits. In August 1999, FENOC initiated a temporary modification, which installed four portable HEPA filtration units in containment in an attempt to reduce the concentration of iron oxide particulates. initiated a purchase order that requested Sargent & Lundy ("S&L") to review the SRI analysis and develop an action plan to locate the source of the containment radiation monitor filter fouling. A Possible Cause Matrix, prepared by , considered ten potential sources of the radiation monitor filter clogging, including the CACs ("possible" cause), service water piping ("possible" cause), electrical conduits ("possible" cause), and secondary-side steam leakage ("probable" cause).

In September 1999, succeeded as Plant Engineering Manager. became Maintenance Manager. was promoted to Design Engineering Manager, and was promoted to Supervisor, Systems Engineering for Electrical and Instrument & Control Systems. On September 21, 1999, prepared a two-page memorandum describing the history of RCS leakage, CAC, and radiation monitor fouling, and attaching his Possible Cause Matrix. That matrix clearly demonstrated that FENOC managers did not consider RCS leakage as a probable source of the iron oxide deposits. As stated by in CR 99-1300, sent the September 21 memorandum and Possible Cause Matrix, along with the SRI analysis, to S&L for review, comment, and recommendations.

In its initial review of the SRI analysis, S&L found that "[t]he fineness of the iron oxide... particulate would indicate it was probably formed from steam." S&L also concluded that the "presence of copper in the solids also indicates the particulate came from the inside of steam condense [sic] piping." These two statements conflict in their identification of likely sources for the filter particulates. Moreover, a subsequent S&L memorandum, dated November 5, 1999, states that "the iron oxide does not appear to be coming from general corrosion of a bare metal surface in containment or from steam impingement on a metal surface." That same memorandum also suggests that a steam leak, high in containment, caused the dispersal of the iron oxide.

Based upon his analysis of likely sources of the iron oxide deposits, as reviewed by S&L, identified five actions as an Action Plan for 12 RFO. The plan included the following actions for 12 RFO:

- Perform Mode 3 and Mode 5 containment walkdowns to locate a potential steam leak;
- Inspect the CAC plenum;
- Repair any identified RCS or secondary side leakage;
- Run the containment ventilation system in the purge mode to remove iron oxide from the containment atmosphere; and
- Paint/preserve any corroded surfaces that may be contributing to the particulate problem.

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The Action Plan items were presented to management in a Davis-Besse Plant Issue Summary and discussed in morning management meetings. [REDACTED] provided periodic updates of this Plant Issue to the Davis-Besse management team. During none of these meetings was CRDM nozzle cracking or boron on the RPV head ever discussed as possibly connected to the radiation monitor fouling.

On September 23, 1999, [REDACTED] dispositioned CR 99-1300 to the existing iron oxide Action Plan documented in CATS. This was consistent with the practice at Davis-Besse to close-out CRs to future and other contemporaneous actions. CR 99-1300 was closed on September 27, 1999, with [REDACTED] signing off on the apparent cause evaluation. CATS item 2—development of an action plan—remained open, pending S&L's review of the possible causes of the iron oxide. [REDACTED] closed CATS item 2 on November 11, 1999, following development of the Action Plan and presentation of the Plant Issue to Davis-Besse management.

Different individuals shouldered different responsibilities under the Action Plan. Additionally, the Action Plan took advantage of activities already planned for 12 RFO. For example, [REDACTED], a systems engineer responsible for monitoring and identifying the source of RCS leakage, had been assigned as Key Outage Project ("KOP") Team Leader in 12 RFO for containment walkdowns. Similarly, [REDACTED] had been identified as KOP Team Leader for inspection of the carbon-steel CAC plenum into which boric acid from the CACs had been flushed prior to the mid-cycle outage. KOP team leaders of these different activities were not necessarily aware of the relationships to the Action Plan to identify the source of iron oxide deposits in the radiation monitors.

Like the containment walkdowns during the 1999 mid-cycle outage, containment walkdowns led by [REDACTED] during 12 RFO did not identify a significant source of RCS leakage. Following the plant shutdown on April 1, 2000, the 12 RFO Action Plan indicated that containment walkdowns found "minor primary leakage, does not appear to be cause" of increased RCS leakage. The inspectors concluded that "[w]ith the exception of the CRD flanges and RCP thermocouple leakage, the inspection results are consistent with normal outage inspections that had end of cycle leak rates of less than 0.1 gpm."

[REDACTED] relieved [REDACTED] as Systems Engineer for the RCS prior to the start of 12 RFO. Following 12 RFO, [REDACTED] also relieved [REDACTED] of the project to track and identify possible sources of unidentified RCS leakage. Significantly, not even [REDACTED]—who performed the RPV head inspection in 12 RFO—considered through-wall nozzle cracking as a possible source of the unidentified RCS leakage.

In hindsight, several Davis-Besse Engineering, Operations, and management personnel could possibly have pieced together the various clues to deduce that a through-wall nozzle crack was the source of the unidentified RCS leakage, boric acid deposits on the CACs, iron oxide on the radiation monitor filters, and rust-colored boron on the head. Although such an deduction may have been possible, it would have required rejection of long-held technical positions concerning the significance of boric acid on the RPV head.

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Increasing RCS leakage was monitored and investigated. Nowhere did [REDACTED] or [REDACTED] consider nozzle cracking or pressure boundary leakage as a possible source. Quite the contrary, in light of the RC-2 event, Davis-Besse personnel focused on bolted connections, in particular CRDM flanges as likely sources of the leakage. Additionally, after modifications to the pressurizer relief valve leakage path and rigorous leak maintenance during the 1999 mid-cycle outage, unidentified RCS leakage substantially decreased to a lower average, albeit above the plant's historic average, thereby suggesting to some that the cause of the leakage had been corrected, if not positively identified.

After the mid-cycle outage, a different issue emerged—radiation monitor fouling. Significantly, CAC fouling abated. Because of these changes and recent efforts to reduce RCS leakage, Davis-Besse personnel dealing with the radiation monitors did not believe that the RCS was a likely source of the iron oxide. Secondary-side steam leaks, service water system corrosion, corrosion of the CACs, and corrosion of electrical conduits were all considered more likely sources of the iron oxide.

The evidence here clearly demonstrates that Engineering personnel associated with these issues during the 12th operating cycle [REDACTED] [REDACTED] acted reasonably based upon the available information and did not even suspect RCS pressure boundary leakage, much less through-wall cracking of a CRDM nozzle. Supervisors and managers involved in these issues [REDACTED] [REDACTED] also were influenced by other conflicting evidence pointing toward more likely sources. More senior managers lacked the detailed information necessary to piece together these apparently unrelated issues. Accordingly, FENOC concludes that the evidence clearly shows that none of these individuals acted deliberately to operate the plant with known RCS pressure boundary leakage or acted in careless disregard of a likely through-wall CRDM nozzle crack.

D. CR 2000-0782 and CR 2000-1037 (12 RFO)

As set forth above, the period leading up to 12 RFO was marked by a false sense within Engineering that, as an organization, FENOC understood the technical significance of boron accumulation on the RPV head, and that a plan was in place to address this issue during 13 RFO (e.g., enlarge access holes for enhanced inspection and cleaning). Just prior to 12 RFO, there was also turnover of key personnel, including the RCS System Engineer responsible for overseeing the RPV head inspections and administering the BACC program. Specifically, during 12 RFO, the new RCS System Engineer was [REDACTED] who had joined Davis-Besse in July 1999. Although [REDACTED] had some familiarity with the RCS by virtue of his previous employment at another plant, he had not previously held the position of RCS System Engineer. During his first several months at Davis-Besse, prior to 12 RFO, [REDACTED] attended various training sessions and consulted with previous RCS System Engineers.

12 RFO was [REDACTED]'s first opportunity to provide outage support at Davis-Besse. Prior to the outage, [REDACTED] reviewed applicable procedures and consulted with other Engineering personnel he viewed as technical experts, including [REDACTED]

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For his part, having performed the RPV head inspection in 11 RFO, [REDACTED] was eager to brief [REDACTED] and, if necessary, to perform the 12 RFO head inspection. However, [REDACTED] did not view [REDACTED] as a technical resource with regard to the RCS, in part because [REDACTED] was the Service Water System Engineer. [REDACTED] seemingly did not appreciate the extent of information to be gained from [REDACTED] regarding his inspection of the RPV head in 11 RFO. Their disparate perceptions of each other's roles apparently led to tension and poor communication between [REDACTED] and [REDACTED]. The net result was that Mr. Siemaszko did not benefit from an adequate turnover from [REDACTED].

Davis-Besse shut down for 12 RFO on April 1, 2000. Prior to the initial inspection of the RPV head—which was to be performed by [REDACTED]—on April 5, 2000, [REDACTED] performed an inspection of the RPV head closure bolts and documented boric acid deposits on the bolts outside and below the area of the weep holes. Upon learning of [REDACTED] observation, [REDACTED], on his own initiative, conducted an unscheduled examination of the RPV head area outside the weep holes of the service structure. [REDACTED] observed boron flowing out through the weep holes. On April 6, 2000, [REDACTED] initiated CR 2000-0782 documenting this condition and describing the boron as "red/brown in color." Attached to the CR were digital pictures taken by [REDACTED]. [REDACTED] also initiated a BACC Inspection Checklist, which he attached to the CR. On the Checklist, he characterized the leakage as "heavy," and checked off that corrosion was present as evidenced by the red/brown boron deposits. He also recommended that a detailed inspection be performed.

Resolution of this CR was assigned to the new RCS System Engineer, [REDACTED]. As part of this effort, [REDACTED], along with [REDACTED], observed Framatome's video inspection of the as-found CRDM flanges in 12 RFO. Five flanges were identified in the inspection as leaking. A steam cut on the D10 CRDM flange was also identified. [REDACTED] reviewed and discussed the CRDM flange inspection results with [REDACTED] and with experienced Framatome representatives. Based on these inspection results, System Engineering concluded that the leaking CRDM flanges were the source of the boron, and recommended flange repairs and gasket replacements, as appropriate.

On April 17, 2000, [REDACTED] initiated CR 2000-1037 to address the separate issue of boron on the RPV head. [REDACTED]'s supervisor, [REDACTED] approved CR 2000-1037 for resolution by his group, the Mechanical Systems group within Plant Engineering. [REDACTED] focused his efforts on cleaning the RPV head and, toward that end, generated Work Order 00-001846-000: "Clean boron accumulation from top of reactor head." Shift Supervisor [REDACTED] approved the work order.

CR 2000-1037 was originally designated a Mode 4 Restraint. Once [REDACTED] confirmed that the cleaning was scheduled, he removed the mode restraint from the CR. He relied upon the date shown in the computer database to corroborate that the work was scheduled prior to removing the mode restraint. [REDACTED] documented his basis for removing the mode restraint on April 27, 2000:

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CR2000-0782 addressed the concern of boron on the Reactor Vessel Head. This CR was written for boron on the CRD nozzles on the head, but the review performed under CR2000-0782 encompassed this area. No separate review or evaluation is necessary. The Reactor Vessel Head will be cleaned of all boron deposits following completion of CRD flange repairs by FTI. The cleaning is scheduled and will occur prior to [when] the head is moved from the head stand. No evaluation is needed to support a Mode 4 entry, therefore this CR can be removed from the Mode 4 restraint list.

In attempting to clean the RPV head, [redacted] first implemented traditional (e.g., mechanical scrubbing) and then alternative methods (e.g., hydrolasing). When mechanical scrubbing proved unsuccessful, [redacted] sought to use the alternative hydrolasing method. [redacted] objected out of concern that adding water would activate the otherwise benign dry boric acid. [redacted] appealed and obtained the approval of [redacted], the Engineering Director, and the Site Vice President, [redacted]. [redacted] proceeded to clean the RPV head using pressurized demineralized water heated to approximately 175°F. Despite these efforts, some boron remained on the RPV head.

On April 25, 2000, [redacted] dispositioned the work order. [redacted] wrote "work performed without deviations." A few days later, on May 1, 2000, [redacted] with the concurrence of his supervisor, [redacted] closed CR 2000-1037. [redacted] documented the results of the cleaning and subsequent inspection in the CR and the work order. He wrote: "Accumulated boron deposited between the reactor head and the thermal insulation was removed during the cleaning process performed under WO 00-001846-000. No boric acid-induced damage to the head surface was noted during the subsequent inspection." At the time, [redacted] efforts to clean the head appeared to outage management to have been greater and more successful than in recent previous outages.

[redacted] close-out of CR 2000-1037 and WO 00-001846-000 documented only that the RPV head had been cleaned and inspected. While it is true that neither the CR nor the work order stated that boron was left on the RPV head, it is also true that neither expressly stated that all boron was removed. Moreover, the documentation was associated with contemporaneous videotape, which when considered together, would be a complete and accurate account of the condition of the RPV head. By his annotations, [redacted] did not necessarily intend to convey the message that every bit of boron had been removed. For example, by "work performed without deviations," [redacted] intended to convey only that the head had been cleaned in accordance with the work order; that is, the planned activities had been executed. Likewise, by the notation "[a]ccumulated boron . . . was removed . . .," [redacted] intended to convey only that boron had been removed from the head, and that no damage to the RPV head surface was observed. [redacted] believed that it was generally understood that boron was removed to the extent possible. In [redacted] view, the RPV head had been cleaned better than at any time in recent history. This view was shared by many, at the time, and helped to create a misimpression that the RPV head had been totally cleaned of residual boron.

The language used by [redacted] in dispositioning these documents was ambiguous. Such ambiguity, however, does not equate to falsity nor do the circumstances suggest wrongdoing on

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the part of [REDACTED]. Significantly, English is not [REDACTED] native language. At the time, [REDACTED] did not realize the ambiguity of his wording nor its import. In addition, when taken in context, it does not appear that [REDACTED] harbored an intent to deceive when he closed this CR and associated work order. Notably, CR 2000-1037 also states that the cleaning "will be repeated until most of the boric acid deposits are removed." In addition, others within the Engineering group knew that [REDACTED] had not gotten all the boron off the head. Lastly, the videotape of the post-cleaning inspection showed boron remaining on the head.

Nevertheless, the ambiguity created by the language used in these documents led to miscommunication and misunderstanding. These documents could easily have been, and apparently were, misinterpreted by some to mean that all boron had been removed from the RPV head, which led to a general misunderstanding of the condition of the RPV head after 12 RFO. [REDACTED] all thought that the boron was attributable to flange leakage, and that it had been, or would be, removed before the end of the outage. Others knew that boron remained on the RPV head at the end of the outage, including [REDACTED]. [REDACTED] learned after the outage that some boron remained. However, these individuals viewed the residual boron as a housekeeping matter, not a safety issue, and their view was consistent with planned corrective action to resolve this previously-identified issue, scheduled to be implemented during 13 RFO. Contributing to this view was the fact that the Framatome experts did not identify concerns with boric acid on the RPV head. Neither Framatome nor the Engineering personnel who knew boron remained on the head, interposed any objection to coming up out of the outage.

Like [REDACTED] 12 RFO was [REDACTED] first refueling outage at Davis-Besse. At that time, [REDACTED] and possibly other senior managers lacked familiarity and experience with the NRC's Generic Letters 88-05 and 97-01 and with boric acid corrosion and nozzle cracking issues, generally. This lack of familiarity exhibited by [REDACTED] is explained, in part, by their recent reassignments to Davis-Besse. Not only were they relatively new to Davis-Besse, they came from boiling water reactors ("BWR"). Thus, they not only lacked a historical perspective with regard to Davis-Besse plant-specific issues, they also lacked a full appreciation for concerns related to boric acid corrosion from RCS leakage, because BWRs do not use boric acid in the reactor coolant. [REDACTED] were also relatively new to their positions in Plant Engineering.

A combination of mistakes and misunderstandings on the part of those involved resulted in incomplete and/or ineffective remedial actions in response to the issues raised in CR 2000-0782 and CR 2000-1037. They also contributed to a general misunderstanding of the condition of the RPV head following 12 RFO. These deficiencies, however, were not born out of defiance of, or obstinate refusal to comply with, a known requirement—as would be necessary for a finding of careless disregard. Thus, the acts or omissions of those involved do not amount to deliberate or willful misconduct. The NRC has specifically stated, "Willfulness does not include acts that do not rise to the level of careless disregard, e.g., violations caused by simple error, misjudgment, miscalculation, ignorance, or confusion on the part of the individual." 56 Fed. Reg. at 40,676-677.

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Therefore, FENOC concludes that the human error which led to this missed opportunity to prevent or earlier detect the RPV head wastage was not the result of any deliberate or willful misconduct, but rather poor performance on the part of several individuals.

* * *

Review of the documentation associated with these earlier PCAQRs and CRs is the best evidence that the involved individuals exercised poor judgment in dispositioning the PCAQR/CRs, but were not engaged in deliberate or willful misconduct. First, they documented the as-found conditions. Second, their mistaken assumptions and faulty technical analyses were similarly documented. Third, they dispositioned the PCAQRs and CRs consistent with those mistaken views. Fourth, in 10, 11, and 12 RFO, they attempted to clean the RPV head, and the cleaned areas had no evidence of any significant corrosion. Thus, the evidence clearly shows that, while there was a lack of diligence, questioning attitude, and attention to detail on the part of those involved, there was no deliberate or willful violation of requirements.

E. September 4, 2001 Response to NRC Bulletin 2001-01

In August 2002, FENOC conducted a review of docketed communications with the NRC on the subject of NRC Bulletin 2001-01. The purpose of this review was to understand apparent inaccuracies in these communications and missed opportunities to identify earlier the RPV head issue. The review, in the form of a memorandum from [REDACTED] to [REDACTED], re: Davis-Besse Response to NRC Bulletin 2001-01—previously provided to NRC, addressed gaps in knowledge that led to errors in the correspondence and missed opportunities. This review addressed three misperceptions created by the Company's initial September 4, 2001 response to the NRC Bulletin that can be summarized as follows:

- The response did not clearly discuss limitations on previous head inspections caused either by the physical configuration of the RPV support structure or by pre-existing boron not cleaned from previous outages.
- The response did not clearly articulate the extent to which boron remained on the head after cleanings in 1998 and 2000.
- The response did not address the possibility that boron deposits could mask evidence of nozzle cracking.

In considering the role played by individuals, FENOC has further reviewed the Company's initial response to the NRC Bulletin, supplemental responses, and interactions with the NRC on this subject. As reflected below, FENOC concludes that the inaccuracies and incomplete statements occurred not because any individual(s) sought to deceive the NRC but because: (1) technical ownership of the submittals was fragmented; (2) the Regulatory Affairs and Engineering organizations did not effectively challenge each other or critically assess proposed changes; (3) no single knowledgeable individual reviewed the entire proposed final submittal to confirm the overall message; and (4) managers did not challenge the information being provided nor did they understand the sufficiency of individual inputs to the various submittals. As

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explained in Section II, such performance deficiencies have resulted in personnel actions with respect to the individuals involved. Nevertheless, FENOC concludes that no individual acted either deliberately or willfully to deceive the NRC relative to the completeness and accuracy of the information being provided.

Based on FENOC's reviews of the initial response, dated September 4, 2001, the Company determined that a number of statements in that submittal were incomplete or inaccurate. FENOC has identified the following inaccurate or incomplete statements, which, individually and collectively, could have caused the misperceptions noted above:

- It stated unequivocally that design of the RPV head service structure did not create an impediment to inspection.
- Boric acid deposits at the top of the head predating the 1998 inspection were not identified as an impediment to subsequent inspection.
- No limitations or qualifications were provided on the statement that the head was cleaned in 1998, during 11 RFO.
- It stated that the 1998 and 2000 inspections were performed "in accordance with" the BACC procedure.

These inaccurate or incomplete statements surfaced at different times during the preparation, review, comment, and ultimate approval of FENOC's September 4, 2001 submittal (Serial 2731). The submittal went through four main drafts, which were circulated for review and comment. The events leading to finalizing Serial 2731 are next discussed.⁴

By the summer of 2001, nozzle cracking had gained increasing attention within the industry, particularly after the discovery of circumferential cracking at Oconee in February and April of that year. And in August, the NRC responded by issuing NRC Bulletin 2001-01. The NRC Bulletin requested that licensees describe their inspection history and plans for inspection of RPV head penetrations for cracking by December 31, 2001, or describe their basis for compliance with applicable regulatory requirements if inspections are planned later. On receipt of NRC Bulletin 2001-01, [REDACTED] the Davis-Besse Site Directors, and the Regulatory Affairs Manager discussed how best to respond, and decided that accelerating 13 RFO, which had been planned for April 2002, was neither necessary nor practical. [REDACTED] mistakenly believed that Davis-Besse had a relatively good inspection history in this area, and a strong

⁴ As discussed later in this paper, by the time NRC took action in late November 2001, based upon the issues which were the subject of NRC Bulletin 2001-01, FENOC had corrected many of the initial inaccuracies in its September 4, 2001 submittal. As a result, many of the noted inaccuracies are not material under a 10 CFR § 50.9 analysis. This paper is not limited to those inaccuracies that NRC may ultimately conclude went uncorrected and were material to an agency decision.

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technical argument to support continued operation until the planned start of 13 RFO. Working-level personnel from Regulatory Affairs and Engineering then met to develop a plan for preparing the Company's response and assigning responsibility for addressing the various questions posed in the NRC Bulletin

During this timeframe, Regulatory Affairs personnel were busy with many other activities. For example, in addition to the normal press of licensing activities, Regulatory Affairs personnel were playing a significant role in the preparation for an INPO plant evaluation scheduled for late September. In the midst of these other activities, the 30-day response time required by NRC Bulletin 2001-01 presented a significant challenge for the Regulatory Affairs organization.

The Regulatory Affairs organization, managed at that time by [REDACTED], included two groups. The first, supervised by [REDACTED], had primary responsibility for licensing matters. They principally dealt with the Office of Nuclear Reactor Regulation ("NRR") project manager and NRC headquarters. [REDACTED] supported [REDACTED]. The second group, led by [REDACTED], had primary responsibility for compliance matters. They principally dealt with the Resident and Region III personnel. [REDACTED], a contractor, was assigned to [REDACTED] to support that group. [REDACTED] originally assigned [REDACTED] responsibility for integrating the various inputs and comments into an integrated draft response for management review. Due in part to the press of [REDACTED] other responsibilities, however, by August 8, 2001, [REDACTED] [REDACTED] agreed that responsibility for coordinating Davis-Besse's response to the NRC Bulletin would be reassigned to [REDACTED] under [REDACTED] supervision.

Individual engineers were tasked to provide input to [REDACTED]. [REDACTED] was assigned responsibility for preparing the majority of responses to NRC's questions. Significantly, [REDACTED] was assigned responsibility for question 1d—regarding previous head inspections. Question 1d of the NRC Bulletin asked licensees to describe vessel head inspections during the preceding four years, results of those inspections, and limitations (such as insulation or other impediments) to accessibility of the bare metal for visual examinations. As assigned, [REDACTED] drafted an input to this question and provided it to [REDACTED].

[REDACTED] responded with comments, copied to the Plant Engineering and Design Engineering Supervisors, [REDACTED] and [REDACTED] respectively. [REDACTED] comments corrected [REDACTED] assertion that RPV head inspections were performed using the guidance of the RCS Leakage and Hydrostatic Test procedure and referenced instead the BACC procedure. As shown later, this comment contributed to the perception of compliance with the procedure. [REDACTED] also challenged [REDACTED] assertion that the "majority of the nozzles were inspected." [REDACTED] questioned, "how do you know when there was so much boron on top of the head? Are you comfortable with 95%[?]." [REDACTED] cautioned [REDACTED] about asserting any number or percentage he could not quantify objectively. Failure to follow up on these comments more thoroughly, by any of these individuals, contributed to the failure to identify pre-existing boron as an impediment to inspection.

Three of the inaccurate or incomplete statements in the final letter began with the initial input by the two individuals most knowledgeable with the subject matter—[REDACTED]. [REDACTED]. This input made the following points:

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- "The thermal insulation is located well above the head and does not interfere with the visual inspection."
- "The scope of the visual inspection was to inspect the entire head (bare metal) area accessible through the weep holes to identify any boric acid leaks / deposits."
- "The general guidance of procedure NG-EN-00324 (Boric Acid Corrosion Control) was used for these inspections."

input as to inspection limitations spoke only in terms of the plant design, and did not consider limitations presented by residual boron on the RPV head. He did not address reference to the pre-existing boron creating an impediment. Engineering gave NRC's question about impediments a narrow interpretation, relating only to physical-design limitations, and this, in turn, contributed to the misperception by management that no impediments existed.

Other Davis-Besse personnel involved in the NRC Bulletin response interpreted the question on inspection limitations similarly. Management's insufficient appreciation for the extent of boron left on the RPV head allowed this incomplete answer to survive in Serial 2731. The second two statements about the scope of the inspections and procedure under which it was performed, similarly, were responsive to the request to describe the inspection methodology. However, they, too, are incomplete as and both experienced impediments, in the form of pre-existing boron, to following the BACC procedure. Subsequent comments from attempted to address this misperception. Unfortunately, the corrections were not effective in describing the boron deposits as an impediment.

initial input, unlike the docketed response, was clear on the inability to fully clean the RPV head during 11 RFO. As shown below, however, editing errors appear to have removed the original limiting language. With respect to the 1998 inspection during 11 RFO, original input explained: "The head cleaning was limited by the location and opening size of the weep holes. The head was cleaned as best as it could be considering the dose and the method." Unfortunately, this limiting language was dropped. The deletion appears to have been either unintentional or without an appreciation for the significance of the deletion. None of the participants recalls suggesting the removal or noticing the deletion in subsequent drafts.

Other changes to input factored into the misperception of unimpeded access to the entire RPV head. With respect to the 2000 inspection during 12 RFO, originally indicated: "Majority of [the] nozzles were inspected." This statement reflects a limitation on the more general statement that there were no impediments. agreed with the inclusion of a limiting statement and attempted to better quantify that limit. Subsequent removal of limiting language contributed to the misimpression held by senior managers that the entire RPV head was visible and had been inspected.

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On Monday, August 20, Mr. Cook circulated the first integrated draft to [REDACTED]. This draft faithfully reflects the original inputs from [REDACTED] and, therefore, the original three inaccuracies, making only minor editorial corrections without substantive revision. [REDACTED] indicated that he planned to issue a revised draft for concurrence—"Green Sheet review"—that same day. [REDACTED] initiated a Green Sheet on August 20, 2001, and initialed his own approval on August 21.

[REDACTED] received several comments from other Regulatory Affairs personnel on this draft. Specifically, he received guidance from one of the supervisors to define the phrase "majority of the nozzles" with greater specificity and to better address the NRC Bulletin's request for a description of the previous nozzle inspections. [REDACTED] met with [REDACTED] seeking that greater specificity. [REDACTED], wanting to be accurate, was reluctant to guess but, apparently, accepted an approximation. In an August 22 update to [REDACTED] [REDACTED] noted: "In response to questions I have received concerning the definition of the 'majority of the nozzles' that were inspected during 12RFO, Andrew stated that approximately 90% were inspected. This will be used in the Bulletin response."

That same afternoon, [REDACTED] questioned the change and sought even greater accuracy. [REDACTED] copied a smaller group of non-supervisory employees including [REDACTED]. [REDACTED] said: "I think we need to make sure what 90% inspected means. Does this 90% inspected means [sic] prior to cleaning the head or after the head was cleaned. I would think prior to head cleaning. [REDACTED] please clarify." Despite [REDACTED] skepticism and [REDACTED] reluctance, [REDACTED] 90% language survived the next two drafts. It ultimately was removed from the final version. As shown later, through an editing error, upon deleting the 90% assertion, [REDACTED] inadvertently did not reinsert the original "majority" limitation. Thus, Serial 2731 gave the misperception of no impediments at all to inspection.

On the afternoon of August 22, [REDACTED] issued the second principal draft to [REDACTED]. The August 22 draft made the following significant changes from the previous revision:

- It added the sentence: "Inspections of the RPV head are performed with the RPV head insulation installed in accordance with DBNPS procedure NG-EN-00324, 'Boric Acid Corrosion Control Program,' which was developed in response to GL 88-05."
- The language describing limitations on head cleaning in 1998 was cut. ("The head cleaning was limited by the location and opening size of the weep holes and was as best as it could be considering the dose and method.")
- For the 2000 inspection, it said: "Approximately 90% of the nozzles were inspected."

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The deletion of the limitations on the 1998 cleaning created an overall impression that the RPV head was cleaned fully in 1998, and that the 2000 inspection was not significantly impeded by the presence of pre-existing boric acid. None of the individuals copied on the draft or later reviewers challenged these errors or their combined effect.

Like the deletion of the 1998 cleaning limitations, none of the participants have a clear recollection of the basis for the language referencing compliance with the BACC procedure. [REDACTED] speculated that he likely responded to a comment from a supervisor in Regulatory Affairs, noting that the NRC Bulletin asked for a description of the inspection method. It appears that [REDACTED] responded to that comment by relying on [REDACTED] August 9 reference to the BACC procedure. Neither [REDACTED] nor [REDACTED] recall saying that the inspections were performed "in accordance with" that procedure. Nor does either engineer recall noticing that language change during the review process.

Late in the morning of August 23, [REDACTED] circulated the third principal draft for comment, incorporating additional discussion on inspection techniques. [REDACTED] sent the draft to [REDACTED]. He also copied [REDACTED]. No significant changes were made to the response to NRC Bulletin question 1d. That afternoon, [REDACTED] sent an advanced copy of the proposed response to [REDACTED]. The transmittal notes: "This is on Green Shett [sic] review at this time and should be coming from your managers today, but since this is time critical, the advanced copy is deemed prudent." (Emphasis in original.) Notably, limitations on the 1998 and 2000 inspections due to the physical design of the support structure already had been removed before review by the managers. References to pre-existing boron as an impediment to visual inspection and incomplete cleaning in 1998 also were not present in this draft. This version still included reference to "Approximately 90% of the nozzles" having been inspected during the 2000 inspection. Accordingly, unless a reviewing manager had independent knowledge of the inspection history and physical-design limitations to inspection—knowledge those individuals did not possess—the draft would not have suggested a problem.

On Monday, August 27, [REDACTED] issued what he identified as "Version 1b," the fourth principal draft, to [REDACTED]. A change by [REDACTED] in this draft further exacerbated the misperception that FENOC had unimpeded access to inspect all the nozzles. [REDACTED] explained the changes as follows:

It deleted the reference to 90% of the nozzles being inspected during the 2000 inspection, and revises the first paragraph of the response to 1d concerning the scope of the inspections as "The scope of the visual inspection was to inspect bare metal RPV head area that was accessible through the weep holes to identify any boric acid leaks/deposits." This is to ensure that we state that not all of the head was accessible or inspected for inspection [sic] for whatever reason. . . . [This version also] incorporates a discussion of the review of the 1998 and 2000 video tapes since May 2001 (Emphasis added.)

The original language that [REDACTED] removed and substituted with the language in quotations, above, read: "The scope of the visual inspection was to inspect the entire head (bare metal) area

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accessible through the weep holes to identify any boric acid leaks/deposits." (Emphasis added.) The explanation accompanying the change appears to have addressed a reviewer's comment suggesting that the original language created an inaccurate impression. Although the change did eliminate the express reference to the "entire head," the revision is not nearly as clear as [REDACTED] explanation of the reason for the change.

The deletion of the reference to "Approximately 90%" came in response to the question from [REDACTED] on August 22 and [REDACTED] inability to provide a definitive quantification. Unfortunately, the way [REDACTED] addressed the issue was to delete this qualifying language in its entirety. In fact, [REDACTED] erroneously believed he had reinserted the "majority" language. What originally said "Majority of the nozzles were inspected" now gave the erroneous impression that the entire RPV head was inspected. It appears that [REDACTED] and subsequent reviewers, did not appreciate the overall effect of the change on the description of the 2000 inspection.

When considered together with the change to the introductory paragraph regarding scope of RPV head inspections generally, it appears that FENOC personnel reasonably believed that they had clearly communicated that neither RPV head inspection covered 100% of the nozzles. In hindsight, the drafting process resulted in changes that—taken collectively—created the opposite impression regarding the scope of the RPV head inspections.

Later in the day on Monday, August 27, [REDACTED] made additional comments to [REDACTED]—among them:

Subsequent review of the 1998 and 2000 inspection videotape results. The discussion here gives an impression to the reader that we were able to look at all of the CRDMs. It is very difficult to look at the CRDMs when there is boric acid around it. Do we want to reword this?

[REDACTED] discussed these comments, but missed the opportunity to correct the response. [REDACTED] disagreed that the language describing the RPV head inspections created a misimpression. Apparently, [REDACTED] accepted [REDACTED] view; he did not elevate the issue to any Regulatory Affairs or Engineering supervisor. No changes were made.

The record does not suggest that in responding to question 1d, any FENOC manager ever considered addressing boron deposits as a possible impediment to inspection. The engineers most knowledgeable about the status of the RPV head and limitations on previous inspections appear to have interpreted NRC's question as limited to design impediments only. Although they recognized that the weep holes and two-inch top clearance created challenges, they believed that, with modern tooling recently purchased, those challenges were manageable.

On Tuesday, August 28, [REDACTED] initialed the Green Sheet, giving their approval. [REDACTED] also gave their concurrence, by delegation. [REDACTED] gave the document only cursory review. He did not apply his knowledge of the history of RPV head inspections in 1996, 1998, and 2000, or the need for a design modification. [REDACTED] approved it without additional comment. It appears that [REDACTED]

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Siemaszko did not participate meaningfully in the review of the response after August 9. He does not recall reviewing or commenting on the integrated, final document. Clearly, he did not incorporate his knowledge of the limitations on inspection and cleaning into the document. Similarly, his supervisor, [REDACTED] who approved a related modification at about the same time, did not recall reviewing the document.

The next day, on Wednesday, August 29, [REDACTED] distributed a slightly revised, near-final version 1g to [REDACTED] with copies to [REDACTED]. On August 29, 2001, [REDACTED] added his concurrence. On August 30, [REDACTED] initialed the Green Sheet, and [REDACTED] initialed for [REDACTED] by delegation. A post-it note attached to the Green Sheet indicates: "Plant Engrg Green Sheet in [REDACTED] office." By August 30, everyone who substantively participated in the development of the response to NRC Bulletin question 1d had concurred.

As a conservative suggestion, early on the morning of August 30, [REDACTED] sent an e-mail to [REDACTED] with copies to [REDACTED] regarding RPV head inspections planned for 13 RFO. [REDACTED] knew that [REDACTED] request to buy a "crawler" (a small, mobile camera that could fit through the weep holes and then crawl over the RPV head) had been approved. Nonetheless, he recommended doing the paperwork and analysis to cut access holes during 13 RFO should they be necessary, especially in light of the commitments the Company was making in the NRC Bulletin response for enhanced inspections during that outage. [REDACTED] noted:

I have not seen any EWR to cut openings in the service structure in the 13th RFO. If we need these it should be funded and P.O issued to Framatome immediately. We do not say anywhere in our response to the bulletin that inspection thru the mouse holes creates an impediment for 100% visual examination. (management need to know this). Even with the crawler we may not be able to inspect the nozzles at the top of the head because of only 2" gap.

In the context of planning for inspections during 13 RFO, [REDACTED] understood that a proposal to modify the service structure before 13 RFO, although approved, had been deferred. Through his experience conducting the 1996 inspection, involvement with PCAQRs for the 1996 and 1998 inspections, proposals for service structure modifications, and involvement with cleaning plans during 12 RFO, [REDACTED] was familiar with the physical configuration of the Davis-Besse service structure and the challenge it created for RPV head inspections using the rigid pole technique. [REDACTED] recognized that recent changes in inspection technology created new inspection capabilities. In accordance with his determination in PCAQR 96-0551 that the service structure modification should be implemented, [REDACTED] suggested an Engineering Work Request ("EWR") to cut access holes to provide flexibility and to further enhance RPV head access should the need arise during 13 RFO. This understanding is reflected in a September 14 letter from [REDACTED] of Piedmont Management and Technical Services to [REDACTED] said:

CRDM Inspection and Repair Project team members are not in agreement concerning the need to proceed with cutting access holes in the Reactor Service

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Structure at the start of 13 RFO. Some see this as a contingency action for which all preparations should be in place and implemented only if required.

In his September 14, 2001 letter, [redacted] recommended "the most prudent course of action to avoid outage delays would be to [cut] access holes . . ." (Emphasis added.) The project team included [redacted] and others.

Although [redacted] August 30 comment said "management need[ed] to know this," he did not copy it to [redacted] or any Engineering manager. ([redacted] was the only supervisory person included on [redacted] note.) [redacted] like [redacted], appreciated both the challenges presented by the service structure configuration and the expanded capability presented by new equipment and techniques. [redacted] believed that 100% visual inspection through the mouse holes was possible because another B&W plant recently had performed the same inspection with a similar configuration. A Davis-Besse employee had witnessed the use of the crawler. Further, [redacted] had reviewed the technology with Framatome. These individuals saw this note as a conservative suggestion, not a suggestion that the response to the NRC Bulletin was inaccurate. [redacted] who was more distanced from the subject matter and, therefore, more likely to interpret the note as an apparently-inconsistent statement, either did not review the e-mail or did not appreciate the significance of [redacted] comments. He did not question what information "management need[ed] to know," or why. This was a missed opportunity to detect misperceptions created by the submittal relative to the service structure not creating an impediment to inspection.

Upon receipt of [redacted] e-mail, [redacted] initiated the suggested Engineering Work Request (EWR 01-0378-00). Like [redacted] he referenced the NRC Bulletin response, but did not view the request as inconsistent with that letter. He saw the EWR as a standby measure should the crawler not be adequate. In the Statement of Problem block, [redacted] provided:

NRC Information Bulletin 2001-01 requires all licensees to visually inspect 100% of the Control Rod Drive Nozzles. Video inspection performed during 12RFO indicates that there are some deposits of boric acid accumulated on the top of the Reactor Head. These boric acid deposits have to be removed to permit visual inspection. Previous attempts to remove these deposits performed during 12RFO were unsuccessful. This was due to the inadequate size of the access holes (weep holes) located on the bottom of the Reactor Head Service Structure flange. Larger access holes need to be provided to enable removal of the boric acid and inspection of the nozzles.

Both [redacted] signed this EWR on Thursday, August 30, 2001. Like [redacted] [redacted] expected greater success with inspection and cleaning during 13 RFO than previous outages because of improved techniques. Funding for a crawler similar to that which [redacted] observed in use at another plant had already been approved. Both men saw this EWR as a conservative option should it become necessary during the outage.

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After August 30, the only remaining approvals necessary for issuance of the response to NRC Bulletin 2001-01 were [REDACTED]. [REDACTED] gave the document to [REDACTED] on August 30, prior to the Labor Day weekend. Neither manager had any knowledge of the EWR discussion. [REDACTED] reviewed and approved the document after the three-day weekend, on Tuesday, September 4. Although he had no specific feedback, [REDACTED] believed the RPV head had been cleaned because of his involvement in authorizing the enhanced cleaning technique during 12 RFO, and his general impression that the cleaning effort went well.

In hindsight, FENOC's September 4, 2001 response to NRC Bulletin 2001-01, Serial 2731, contained statements that created an inaccurate and incomplete impression with regard to the Davis-Besse inspection history and the condition of the RPV head. At the time, however, that was not apparent to those preparing and reviewing the response. The factual chronology outlined above shows that no individual acted either deliberately or willfully to deceive the NRC as to the condition or inspection history of the Davis-Besse RPV head. Through the review process by Regulatory Affairs and Engineering personnel, individual changes were made that collectively created a misimpression.

[REDACTED] who came to FENOC in 1999, and had no personal involvement in the RPV head inspections before 12 RFO, was relied upon as a primary technical contributor to this process. His initial input to the NRC Bulletin response indicated that the RPV head had not been fully cleaned either in 1998 or 2000, but did not quantify how much boron had been left behind nor disclose its color or the impediment it created for subsequent inspections. [REDACTED] interpreted NRC's question about inspection impediments to focus on design constraints. And, although he recognized that access through the weep holes and two-inch top clearance made the job difficult, he believed they did not prevent comprehensive inspections, particularly with improvements then available in inspection technology. [REDACTED] reported that he could inspect only "a majority of the nozzles" and refused to accept a definitive statement regarding a number of nozzles inspected when he could not objectively quantify that number.

After his initial input and response to questions from [REDACTED] about the number of nozzles inspected in 2000, [REDACTED] had no further input to the NRC Bulletin response. Apparently, he did not review or comment on intermediate drafts sent to him by [REDACTED]. [REDACTED] initialed the Green Sheet, but did not meaningfully review the response to question 1d in the final version, nor the rest of the submittal before concurring. [REDACTED] prepared an EWR in case improved inspection and cleaning techniques did not allow access to the entire RPV head, but was not certain it would be required. [REDACTED] performance fell below FENOC's expectations because he did not meaningfully review the entire NRC Bulletin response. However, the facts do not suggest that [REDACTED] acted deliberately or willfully to mislead the NRC, or with careless disregard for the completeness and accuracy of the information provided. He considered himself to be an initial contributor to input to the letter, but left to Regulatory Affairs and management future editing.

[REDACTED] provided the main technical input to the NRC Bulletin response. In addition to the relatively straightforward questions regarding past inspections, [REDACTED] contributed to the justifications for operation past December 31, 2001, future inspection plans, and inputs from

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contractors Framatome and Structural Integrity Associates. The record of comments and changes to drafts demonstrate that he worked to improve the quality and accuracy of the NRC Bulletin response. Perhaps because he was so close to the issues, [REDACTED] did not appreciate the extent to which the response to question 1d contained unqualified, inaccurate statements and created exactly the misimpressions he sought to prevent. He noted that inspections were governed by the BACC procedure, not the RCS hydrostatic test procedure; he sought clarification and explanation for the 90% quantification; he alerted others to possible misperceptions; and he suggested an EWR to be certain that future access supported plans for inspection and cleaning in 13 RFO.

Unfortunately, [REDACTED] review of this section of the NRC Bulletin response was not sufficient to detect the errors that deleted the limitation on cleaning in 1998 and number of nozzles inspected in 2000. He appeared to have accepted a narrow interpretation of the question that construed inspection limitations to mean design impediments. In the one instance where he did raise pre-existing boron as an impediment, he accepted the interpretation of [REDACTED] the individual drafting the response, rather than elevating the question to Engineering management.

[REDACTED] collected the inputs and comments from the technical organization and incorporated them into an integrated response. [REDACTED] did not ensure that comments and corrections were accurately incorporated and did not sufficiently highlight changes for subsequent review. [REDACTED] did not notice the impact of changes he made, removing limitations that left unqualified statements in the NRC Bulletin response. He also did not consider fully statements made by [REDACTED] that should have caused him to question the draft, especially [REDACTED] e-mail suggesting an EWR and the need for management to know. Overall, [REDACTED] performance did not meet FENOC expectations, but does not suggest any deliberate or willful attempt to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] became [REDACTED] supervisor after 12 RFO and had no direct involvement in the prior RPV head inspections. He had no involvement in the NRC Bulletin response prior to the final review. His review did not detect inaccurate or incomplete statements in the response. Significantly, [REDACTED] approved the NRC Bulletin response, which indicated that there were no impediments to inspection, contemporaneously with approving an EWR to enhance access. Although technically consistent with his understanding that the EWR might not be necessary given improved inspection techniques (the crawler), [REDACTED] did not appreciate the misimpression created regarding access during previous inspections. His focus during review of the EWR was on activities during 13 RFO, not in connection with question 1d. The facts do not suggest any deliberate or willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

As [REDACTED] supervisor since 1997, [REDACTED] was familiar with limitations on access to the RPV head during 10, 11, and 12 RFO. [REDACTED] also had knowledge of boron left on the RPV head after all three outages. [REDACTED] had no involvement in preparation of the NRC Bulletin response and placed reliance upon [REDACTED]-who he knew to be the site expert on the issues presented. He did not provide any meaningful review prior to initialing his approval. Although this reflects insufficient oversight by [REDACTED] these facts do not suggest any deliberate or

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willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] originally had drafting responsibility for the NRC Bulletin response, but did not have substantive involvement once Regulatory Affairs managers transferred that responsibility to [REDACTED]. Although [REDACTED] continued to copy [REDACTED] on e-mails, he was occupied with preparations for the INPO evaluation, and had no further substantive contribution to preparation or review of the NRC Bulletin response. These facts do not suggest any deliberate or willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] supervised [REDACTED] and coordinated with his counterparts at other plants. [REDACTED] copied him on each draft. Like [REDACTED] did not appreciate the overall effect of the changes, particularly removal of statements qualifying broad assertions. Additionally, [REDACTED] received the e-mail from [REDACTED] stating that the draft response says no impediments limit FENOC's ability to inspect, that an EWR was necessary before the next outage, and that management needed to be aware of this issue. [REDACTED] did not question the apparent inconsistency of processing a modification to facilitate inspections with the statement in the draft NRC Bulletin response that there were no impediments to inspection. [REDACTED] performance fell below FENOC expectations, but these facts do not suggest any deliberate or willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] participated in review and approval of the NRC Bulletin response as the Regulatory Affairs supervisor responsible for dealings with NRR. Like [REDACTED] did not appreciate the overall effect of the changes, particularly removal of statements qualifying broad assertions. [REDACTED] performance fell below FENOC expectations, but these facts do not suggest any deliberate or willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] provided the primary technical input regarding plans for future inspections. He was part of the team receiving revised drafts from [REDACTED] and comments from [REDACTED]. Because he had responsibility for planning future inspections, he had knowledge of the configuration of the RPV head and inspection techniques. Additionally, [REDACTED] received the e-mail from [REDACTED] stating that the draft response says no impediments limit FENOC's ability to inspect, that an EWR was necessary before the next outage, and that management needed to be aware of this issue. [REDACTED] did not question the apparent inconsistency with the draft NRC Bulletin response. [REDACTED] performance fell below FENOC expectations, but these facts do not suggest any deliberate or willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

As Regulatory Affairs Manager, [REDACTED] had the responsibility for the process used to prepare the NRC Bulletin response including the review process. That process did not prevent the inclusion of inaccurate and incomplete statements in the NRC Bulletin response. [REDACTED] had no involvement in prior RPV head inspections or cleanings. He saw only the later drafts of the NRC Bulletin response. He did not receive [REDACTED] comments. [REDACTED] relied on his staff to assure appropriate preparation of the response. These facts do

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not suggest any deliberate or willful attempt by [REDACTED] to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] approved the draft submittal, but lacked knowledge that the noted statements contained within the document were incomplete or inaccurate. Although each had some involvement in 12 RFO and the RPV head cleaning during that outage, each had only limited appreciation for the limitations on extent of the cleaning. None viewed the videotapes. Although these managers did not challenge the inputs they received, nor question their technical staffs, these facts do not suggest any deliberate or willful attempt to mislead the NRC or to provide incomplete or inaccurate information.

Importantly, no supervisor or manager with knowledge of the subject matter gave the entire document a critical review before passing it up the chain for approval. [REDACTED] the Engineering Director, and [REDACTED], the Site Vice President, having extensive BWR background, but little pressurized water reactor ("PWR") experience, and both being relatively new to Davis-Besse, were not well versed in boric acid corrosion issues, CRDM nozzle cracking phenomena, or Davis-Besse's plant-specific inspection history. They, too, did not challenge the substance of the proposed response. The individuals who participated in preparing this submittal did not meet FENOC's standards for ensuring the accuracy of NRC correspondence. However, the evidence unambiguously demonstrates that these errors occurred because of the failure of individuals to adequately do their job—not because of any attempt to deliberately or willfully mislead the NRC or to provide incomplete or inaccurate information.

F. October 17, 2002 Supplemental Response to NRC Bulletin 2001-01

In addition to the September 4, 2001 initial submittal, FENOC provided supplemental responses to NRC Bulletin 2001-01 on October 17, October 30 (three letters), and November 1. FENOC reviews since the discovery of the RPV head wastage issue also looked at these submittals and identified additional statements which created an incomplete and/or inaccurate impression. As was the case with the initial submittal, FENOC concludes that deficiencies in these documents resulted not from any attempt to deceive the NRC, but rather, from deficiencies in individual performance. This section discusses events after September 4, 2001 that affected the thinking of individuals involved in the preparation and review of the October 17, 2001 submittal, Serial 2745.

Following the Company's submittal of its initial NRC Bulletin response on September 4, activities continued at Davis-Besse at a rapid pace. [REDACTED] continued planning for inspections during 13 RFO. For example, [REDACTED] worked with [REDACTED] of Piedmont Management & Technical Services in a review of plans for RPV nozzle inspections during 13 RFO. In a letter to [REDACTED] dated September 14, 2001, [REDACTED] noted, "it is evident that the project team has a good start." Copies of the letter were sent to [REDACTED] and others.

In addition to the discussion about disagreement regarding the need for new access holes prior to the 13 RFO inspection, [REDACTED] also provided observations based upon his review of FENOC's September 4 initial NRC Bulletin response. [REDACTED] did not identify any inaccurate

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or incomplete statements in FENOC's response. Rather, he stated: "Davis-Besse stated in its response to NRC Bulletin 2001-01 that the top head visual inspection would not be compromised due to any pre-existing boric acid crystal deposits."

The language tracks a sentence in FENOC's response to question 3a regarding plans for inspections in the upcoming outage. Citing those inspection plans, difficulty in removing boric acid in previous outages at Davis-Besse, and Dukes' recent experience, ██████████ recommended performing the proposed EWR to cut access holes at the start of the outage as "the most prudent course of action." Nowhere did ██████████ state in his letter that the NRC Bulletin response contained inaccuracies. ██████████ does not recall reading ██████████ letter before discovery of the head wastage. To the extent ██████████ reviewed the letter, none of these individuals perceived such a suggestion. ██████████ understood the recommendation as an enhancement for cleaning.

Also on September 28, 2001, during an INPO-exit briefing, ██████████ received a telephone call from FENOC President, ██████████, calling him out of the briefing and asking him to participate in a telephone call with ██████████ of the NRC to discuss the Company's response to NRC Bulletin 2001-01. ██████████ was surprised that ██████████ had contacted the President of FENOC. The departure from the NRC's usual adherence to communication protocols, the timing of the call, and ██████████ sense of urgency caused ██████████ concern. ██████████ asked ██████████ the Design Engineering and Regulatory Affairs managers, respectively, to participate on the call. ██████████ asked ██████████ to remain behind to support the INPO exit. ██████████ joined ██████████ in a call with ██████████.

The message the FENOC managers received from ██████████ was clear: (1) the NRC Staff was not satisfied with FENOC's response to the NRC Bulletin expressing plans to operate until the next planned refueling outage; (2) the NRC Staff wanted FENOC to shut down voluntarily and inspect the CRDM nozzles for cracking prior to December 31, 2001; and (3) the NRC Staff already had begun the regulatory process to force FENOC to shut the plant down for inspection if the Company did not do so voluntarily. FENOC managers were surprised by this message. As a result, ██████████ requested a follow-up telephone call between Davis-Besse technical personnel and NRR Staff to further discuss the technical rationale for each side's position on this issue.

In response to ██████████ request, on Wednesday, October 3, 2001, ██████████ and members of the Davis-Besse Engineering and Regulatory Affairs organizations participated in a conference call with Messrs. Sheron, Bateman, and other members of the NRR Staff. ██████████ also listened but did not participate in the discussion. During the discussion between the Company and NRC engineering staffs, NRC expressed disagreement with FENOC's crack growth rate model—a tool used to predict how quickly a pre-existing crack would grow to a length of concern. NRC participants suggested that FENOC's model was non-conservative and that NRC's own model suggested a shorter time to critical length. ██████████ suggested that NRC provide FENOC with a copy of its crack growth rate model so that FENOC could better understand the differences or, in his words, give it a "sanity check."

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suggestion met with silence on both ends of the phone, and a mixed interpretation from those on the call from FENOC. FENOC personnel, more accustomed to interactions with the NRC Staff, saw the suggestion of a licensee "sanity checking" the NRC as unusual. Engineering personnel and others took the NRC's silence as an indication that NRC may not have completed a crack growth rate model supporting the December 31 deadline. In response to suggestion, NRC said they would see whether they could provide the model to FENOC. Nonetheless, some within Engineering interpreted NRC's silence as an affirmation that FENOC had the better technical position. Toward the end of this call, the Davis-Besse staff and the NRC agreed to continue the dialogue, and the NRC requested that FENOC provide additional information regarding its CRDM nozzle inspection history before that discussion.

After the call, FENOC managers became concerned that the NRC would issue an order before FENOC had an opportunity to review the technical basis for the Staff's concern and to be heard. Accordingly, they initiated plans to give a briefing to the Commissioner's technical assistants ("TAs") to ensure FENOC had that opportunity to make its case on the merits before the NRC.

On October 11, 2001, and others met with the Commissioner's TAs and made the argument that, before the Commission issued an order requiring a plant shutdown, the licensee should first have the opportunity to be heard. Two members of the NRR Staff, also having been invited by the TAs to attend the meeting, attended but did not participate. At the close of the meeting, the Staff members invited the FENOC contingent to meet with and approximately a dozen other members of the NRR Staff to make their points. explained that other meetings had already been scheduled and, after a brief discussion, asked to schedule further discussion.

That week, and discussed gathering the more-detailed information about the previous inspection history requested by the NRC Staff. met with the RCS Systems Engineer, and told him that he wanted to develop a nozzle-by-nozzle inspection history for the last two inspections. At suggestion, asked the Training Department to convert the 1998 and 2000 as-found inspection videotapes to digital images, and then provided the CD ROM files to . did not review the videotapes or digital image files.

began identifying individual nozzles from the digital files using audio and visual cues. asked for support from the ISI group to assist in confirming nozzle identifications. asked , a lead in ISI, for support. agreed to support the nozzle-identification portion of the effort. and assisted in the nozzle-identification effort. After looking at a few of the digitized images collected by others in the ISI group, informed that he did not believe the images on the video were sufficient to make a determination regarding nozzle leakage in accordance with the new standards the NRC was imposing for inspections after August 3, 2001. did not address earlier inspection criteria. Specifically, noted that the inspections were not qualified VT-2 inspections, showing a 360° circumference as would be required if the inspections were covered by the new inspection standards.

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saved a digital image of each nozzle he could identify based on the audio and visual cues. Unfortunately, not every nozzle was recorded on the videotapes. During the 1998 inspection, and the Framatome representatives attempted to videotape the entire RPV head. But some of the nozzles were not visible because of surrounding boron deposits. Unlike 1998, during the 2000 inspection, and the Framatome representatives recorded only those nozzles with nearby boron deposits; relatively-clean nozzles were not recorded. Thus, images were not generally available for nozzles that were free of boric acid during the 2000 inspection. identification effort produced a limited collection of digital images, annotated by nozzle number.

From the collection of digital images, then broke the nozzles into classes: (1) nozzles for which no videotape was available, which he interpreted to mean no indications of leakage during the inspection; (2) nozzles that appeared clean on the videotape; and (3) nozzles surrounded by boron—presumed to be from CRDM flange leakage because it did not appear in popcorn form on the downhill side of the nozzle penetration, as had observed during his visits to plants with nozzle leakage. did not review CRDM flange inspection videos in connection with this effort, nor did he consult with regarding leaking flanges. collected the results of this review in a spread sheet.

reviewed results and portions of the digitized videotape inspections. appreciated that the 2000 videotape would not support a qualified visual inspection. He considered going beyond the requested four-year period to the 1996 inspection. decided that FENOC needed to review the 1996 inspection history to determine whether a reliable baseline could be established from which to project crack growth rates. He realized that the crack growth rate model showed that a crack, even if initiated in 1996, would not grow to a critical length before the 13 RFO planned start date. Based on these discussions, gave some refinement of the terminology in the spread sheet and directed a similar detailed review of the 1996 videotape. also informed of the status of the work.

attempted to perform the same task with the 1996 videotape inspection. Unfortunately, the 1996 inspection tape also is very short, like the 2000 tape. Additionally, it lacks the audio cues necessary to orient the viewer on the RPV head. Accordingly, reliable identification of individual nozzles was not possible. conferred with and left with the understanding that, in 1996, inspected the entire RPV head, with the exception of four nozzles at the very top of the RPV head that were not visible. understood that visually observed the other 65 nozzles and confirmed that they were free of evidence of cracking (white, popcorn-shaped boron on the downhill side of the nozzle). did not review the 1996 or 1998 PCAQRs related to the RPV head inspection. That did not further research the previous problems represents a significant missed opportunity.

During the week of October 15, NRC and FENOC planned a meeting for the following week at NRC headquarters in order for FENOC to present additional information. requested that, if FENOC planned to present significant new information, it provide the material

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to the NRC Staff a week before the meeting. Accordingly, ██████████ asked ██████████ to expedite the supplemental information regarding the inspection history and additional data supporting FENOC's crack growth rate model.

Based on ██████████ recommendation, ██████████ agreed that a graphical representation might better communicate the status of the nozzles. ██████████ asked ██████████ to prepare a graphical representation of ██████████ data for 11 RFO and 12 RFO. ██████████ assigned this task to an intern. The assignment was limited to presenting ██████████ data. No additional video or picture reviews were conducted. Mr. Geisen then collected the inputs from ██████████ and prepared narrative input to a transmittal letter. ██████████ summary discussed the 1996, 1998, and 2000 inspections. It noted that four nozzles were obscured by boron in 1996, 19 in 1998, and 24 in 2000. Further, it noted that the 19 obscured in 1998 were still obscured in 2000. A separate portion of the letter explained that the four top nozzles, obscured since 1996, were unlikely to leak even if a crack occurred, and explained that industry experience showed that nozzles on the outer periphery, with greater localized stresses, were more likely to leak than lower-stress center nozzles. Accordingly, it concluded that the risk of significant circumferential cracking from these four center nozzles was low.

██████████ write-up clarified the misstatements in the original September 4 letter regarding unimpeded access to the RPV head as well as the extent of prior cleaning. ██████████ discussed with ██████████ his observation that the original submittal contained errors. Together, they decided to clarify any misstatements by providing more complete information in the October 17th letter. For example, with respect to cleaning in 1998 after 11 RFO, ██████████ noted: "Following 11 RFO, the RPV head was mechanically cleaned in localized areas as limited by the service structure design." (Emphasis added.) The previous unlimited assertion was, thus, clarified.

██████████ approved the letter on October 17. ██████████ and Regulatory Affairs personnel approved it the same day and forwarded it to ██████████, who issued it, because ██████████ was away on an INPO assist visit. Overall, the October 17 letter explained that: (1) the 1996 inspection provides a reliable basis to conclude that no prior crack existed; and (2) crack-initiation and growth-rate modeling confirmed the low probability that a crack of significant length would develop prior to the planned refueling outage in April 2002.

In hindsight, this document also contained statements creating an inaccurate and incomplete impression:

- The categorization of "No-leakage" in Attachment 2 did not address the possibility of nozzle cracking masked by boron deposits.
- The categorization of "Flange Leakage Evident" in Attachment 2 was based on the presence of large quantities of boron and the assumption that the boron came from the flanges, but the source was not actually verified.

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Pursuant to 10 CFR 2.390(a)(6).

Conversely, some errors from the previous letter were corrected. Specifically, the October 17 letter included:

- Statements indicating physical limits on the 1998 cleaning effort.
- Statements identifying pre-existing boron deposits as an impediment to earlier inspections, and discussing the extent of the impediment.

On balance, the events surrounding the issuance of the October 17, 2001 submittal show that the new and continuing uncorrected misstatements resulted from performance weaknesses, not from deliberate wrongdoing. [REDACTED] undertook the nozzle identification effort using available information and technology, and sought independent confirmation. His assessments of "no leakage" were based upon his personal observation of the indications of nozzle cracks at other plants. [REDACTED] did not appreciate sufficiently that boron deposits could mask nozzle cracking. [REDACTED] either relied on [REDACTED] representation, or made assumptions about how [REDACTED] conducted the 1996 inspection based on how [REDACTED] conducted the 2000 RPV head inspection. Neither [REDACTED] nor [REDACTED] noted these deficiencies during his review and approval. In discussing his nozzle identification and classification efforts with [REDACTED], [REDACTED] described the limitations on that effort and the reasons he believed his conclusions were accurate. [REDACTED] did not review the records of the inspections or CRDM flange inspections. [REDACTED] performance fell below FENOC expectations. However, the record does not indicate that he acted deliberately or willfully to deceive FENOC management or the NRC, or that he acted with careless disregard for the accuracy of the information he provided.

[REDACTED] acted to provide more—not less—information to the NRC. Upon discovery of earlier errors, he acted to provide additional detail so that NRC would have a more accurate picture. He acted to keep [REDACTED] informed. When FENOC managers learned of weaknesses in the 1998 and 2000 inspections, they described those weaknesses. Like the initial response, due to weaknesses in the review process, their efforts did not identify and correct all errors in this submittal. [REDACTED] could have highlighted the errors or provided greater amplification. [REDACTED] also did not challenge the information he received from [REDACTED]. Even after learning that the September 4 letter contained inaccurate statements, he accepted [REDACTED] supplemental input without personally reviewing the tapes or interviewing [REDACTED] about the 1996 inspection. These deficiencies fell below FENOC's expectations for [REDACTED] performance. However, the evidence does not suggest that [REDACTED] sought to deliberately or willfully mislead the NRC or acted with careless disregard to provide incomplete or inaccurate information.

[REDACTED]—supervisors and managers who reviewed this submittal—also did not challenge the new information being presented. After learning or being placed on notice by [REDACTED] new language that the September 4 letter contained statements that had not been sufficiently verified, these managers continued to rely upon the same verification process—less the two responsible supervisors ([REDACTED]), and less the subject matter expert ([REDACTED]). Rather, they relied on the increased involvement of [REDACTED]. The performance of these managers also fell below FENOC's expectations.

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However, the evidence does not suggest that any of these individuals sought to deliberately or willfully mislead the NRC or to provide incomplete or inaccurate information.

G. October 30, 2001 Supplemental Submittal and Presentation of Videotapes in November 2001

Throughout October and November 2001, the NRC and Davis-Besse staff pursued greater technical understanding of the condition of the RPV head and the risks it might pose. As the NRC Staff expressed repeated interest in the documented condition of the Davis-Besse RPV head, FENOC's communications provided additional technical arguments explaining why, even if a crack existed, it would not grow to critical length before the planned April outage. Although NRC formally articulated its safety concern in terms of the consequences of CRDM nozzle cracking, NRC apparently was also concerned with the possibility of the existence of a crack, not just its consequences.

In part because FENOC managers perceived that the threat of a shutdown order would be based on the consequences of a through-wall circumferential nozzle crack, [REDACTED] his senior managers, and the Engineering staff placed their attention and resources on modeling that possibility. They modeled localized conditions around each nozzle, crack initiation possibility, likelihood of detection during previous inspections, crack growth rate, consequences of a possible CRDM failure, and impact on the public health and safety.

On October 18, the NRC Staff sent to FENOC, via facsimile, a formal Request for Additional Information ("RAI"), posing questions related to the Company's initial NRC Bulletin response and to the SIA and Framatome analyses. Overall, the vast majority of NRC's questions addressed the SIA and Framatome analyses. Three questions in the five-page RAI addressed the initial NRC Bulletin response. One of those addressed the inspection history. The first information request (BR-1) focused on the 2000 inspection record:

For the April 2000 nozzle inspection, provide additional detail regarding the scope of the visual examination, in particular, the ability to view the bare metal at the interface of the nozzles and the reactor pressure vessel (RPV) head, any restrictions to viewing any of the nozzles, and any boric acid deposits from other sources that could have masked leakage from the nozzles. Provide documentary evidence (such as photographs) characterizing the condition of each nozzle.

FENOC managers (none of whom had reviewed the tapes themselves) believed that the October 17 submittal addressed this request, with the exception of the requested photographs. Accordingly, [REDACTED] began preparation of an additional supplement addressing this information request.

On Wednesday, October 24, [REDACTED] other Davis-Besse staff, as well as representatives of SIA and Framatome, met with approximately 16 members of the NRC Staff, led by [REDACTED]. Additional Davis-Besse personnel and others participated by telephone. Representatives of Davis-Besse, Framatome, and SIA discussed the substance of FENOC's planned responses to the RAI questions, including

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the plant-specific risk assessment. NRC reiterated the request for visual evidence, requesting that FENOC make available the videotapes of the previous inspections. FENOC personnel again asked for an opportunity to review the NRC Staff's crack growth rate model. The NRC Staff committed to provide that model to FENOC no later than one week before the Advisory Committee on Reactor Safeguards ("ACRS") meeting scheduled for November 9.

Upon his return from the October 24 meeting, [REDACTED] collected from [REDACTED] the electronic files of the 1996, 1998, and 2000 nozzle images used to prepare the tabular inspection data. [REDACTED] added additional text blocks to the photo collections based upon his understanding of those inspections and his discussions with [REDACTED]. [REDACTED] did not discuss the 1996 or 1998 inspections with either [REDACTED] or [REDACTED]. Neither did he personally review the tapes nor research CRs/PCAQRs related to those inspections. [REDACTED] based the photo collection and related commentary solely on his discussion with [REDACTED].

On October 30, FENOC submitted a second supplemental response to the NRC Bulletin. This response repeated the description of previous head inspections from the October 17 supplement nearly verbatim. In an effort to be more accurate, the submittal provided a slightly updated version of the previously-submitted inspection data table and RPV head graphics. Changes from the previous table, however, were not clearly identified. It also provided annotated pictures of CRDM nozzles, extracted from the videotapes of the 1996, 1998, and 2000 as-found RPV head inspections. [REDACTED] narrative comments accompanying the CRDM nozzle photos addressed the subject of the nozzle inspection, but did not provide a representative description of the entire videotape.

Green Sheet review records for Serial 2744 of October 30 show [REDACTED] as the only technical input. [REDACTED] were not asked to review the submittal. The other FENOC managers who reviewed and approved this letter had even less technical understanding than [REDACTED] on the circumstances of these inspections. Also, like [REDACTED], [REDACTED] focused their attention on the preparation of the Company's response to the RAI that was also issued on Tuesday, October 30, Serial 2741, and a submittal of FENOC's probabilistic risk assessment, issued on Thursday, November 1, Serial 2745. (A third submittal on October 30, Serial 2743, requested confidential treatment under 10 CFR 2.790 for a document previously submitted.)

[REDACTED] effort to provide information to the NRC, based on the unverified inputs from [REDACTED], fell below Company expectations. Although [REDACTED] narrative comments to the three photograph collections were based on his understanding from conversations with [REDACTED], he did not ask [REDACTED] to review the comments, and did not review the tapes himself or discuss the earlier inspections with [REDACTED]. As with the October 17 submittal, he did not involve either the most knowledgeable personnel or their supervisors. These actions, however, do not suggest any deliberate or willful attempt to mislead the NRC or to provide incomplete or inaccurate information.

[REDACTED] again did not provide a sufficiently critical review of the information in this submittal. The performance of these managers fell below

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FENOC's expectations but does not support any deliberate or willful attempt to mislead the NRC or to provide incomplete or inaccurate information.

FENOC continued to follow industry activity related to CRDM cracking in PWRs. FENOC managers planned to make a presentation before the ACRS on November 9, to more fully discuss their apparent differences with the NRC Staff. On Thursday, November 8, the evening before the ACRS meeting, FENOC responded to NRC's request to view the inspection videos. [REDACTED] brought copies of the three as-found videotapes, for 10, 11, and 12 RFO, to NRC headquarters. Late on the afternoon of November 8, [REDACTED] asked [REDACTED] to show the tapes to the NRC Staff. [REDACTED] who had never seen the tapes in their entirety himself, delivered the videotapes. [REDACTED] was led to a conference room with [REDACTED] and a number of other members of the NRC Staff and asked to show the tapes.

[REDACTED] inserted the 2000 as-found videotape into a VCR. The film began showing a large deposit of boron. Members of the NRC Staff observed that that view was not depicted in the photographs previously submitted. When the video moved to a nozzle, the NRC Staff asked [REDACTED] which nozzle it was and how it was represented in the tabular data. [REDACTED] explained that he had not performed the nozzle identification himself and, from the videotape (as opposed to the electronic video file), identification would be very difficult. Because he could not identify the nozzle, he could not identify its description in the tabular data. The NRC Staff noted the poor quality of the videotape. No other tapes were reviewed. The meeting concluded without reviewing the other videotapes.

[REDACTED] did not independently verify the information being provided to the NRC, in the October submittals or the October 24 presentation. In that regard, his performance fell significantly below FENOC's expectations. However, there is no evidence of any effort or intent by [REDACTED] to mislead the NRC. [REDACTED] acted to respond to NRC's request for information regarding previous RPV head inspection by providing the information as he knew it, and as it was understood by other FENOC managers. [REDACTED] relied upon representations from [REDACTED] to provide summary information to the NRC in the October 30 photograph submittal. [REDACTED] not having viewed the videotapes himself, had no basis to understand that any information in that submittal was incomplete or inaccurate. Additionally, he supported NRC's request to view the videotapes.

In hindsight, [REDACTED] could have better verified the photographic depictions and narrative descriptions by reviewing the videotapes himself before the October 30, 2001 submittal. That action likely would have alerted him to a misimpression created by the digital images selected and would have better prepared him for the November 8 meeting with the NRC Staff. Nevertheless, the facts, as outlined above, do not support a conclusion that [REDACTED] acted deliberately or willfully to mislead the NRC or with careless disregard for the completeness and accuracy of the information he provided.

As with the initial September 4 response, FENOC's review of these supplemental responses to NRC Bulletin 2001-01, and the records of other FENOC-NRC interactions in October and

November 2001, do not suggest that any individual deliberately or willfully provided incomplete or inaccurate information to the NRC. The review did show a lack of sufficient appreciation by individuals involved in the process for the technical and regulatory significance of this information, and the need for ensuring the completeness and accuracy of the information being provided.

V. Conclusion

As first described above, this paper is the culmination of a diligent and comprehensive review by the Company of the roles of individuals relative to the missed opportunities to prevent or earlier detect RPV head wastage at Davis-Besse. The results of that review, as discussed and analyzed above, show that the missed opportunities, including the disposition of the PCAQR/CRs outlined above and the preparation of the Company's responses to NRC Bulletin 2001-01, were the consequence of poor performance on the part of several individuals, including site-level management, as well as weaknesses in the plant organization detailed in FENOC's management and human performance root cause report.

In short, FENOC's review identified numerous, significant performance deficiencies on the part of those individuals directly involved with these missed opportunities. These individuals performed in a manner best characterized as lacking: diligence, attention to detail, and a questioning attitude. The Company concluded that such performance fell below the normal business expectations for personnel in their positions of responsibility, and appropriate personnel action was taken. FENOC's review, however, does not lead to the conclusion that the Company or any individual deliberately or willfully violated a known requirement in connection with any of the foregoing matters.

Although hindsight reveals that some decisions made by Davis-Besse engineers, supervisors and managers, alike, may have resulted in procedural and regulatory violations, including the submission of incomplete and/or inaccurate information to the NRC, those decisions, when made, were in good faith. Underlying all of those decisions were mistaken engineering judgments and assumptions, which were based, at least in part, on available NRC and industry data. Such mistakes, made in good faith, do not constitute deliberate misconduct nor do they rise to the level of careless disregard.

Under the NRC's standard for determining that a violation of 10 CFR § 50.5 occurred, the agency must find, by a preponderance of the evidence, that an individual acted deliberately in violating an NRC requirement. In this case, the evidence does not establish that any individual involved in the subject missed opportunities deliberately set out to act in a way knowingly inconsistent with procedural or regulatory requirements. Accordingly, no violation of 10 CFR § 50.5 is supported by these facts. Likewise, to support a finding of a willful violation of 10 CFR § 50.9, a preponderance of the evidence must show that an individual made an untrue statement about a material fact, or omitted material information from that statement, and the individual must have done so either deliberately or with careless disregard for the falsity of his statement. The facts do not support a finding that any individual involved in the subject missed opportunities committed a willful violation of 10 CFR § 50.9.

ATTACHMENT 1

Principal Reports and Reviews Concerning
Davis-Besse RPV Head Degradation

Report/Review	Responsible Organization	Date Issued
"Davis-Besse 13RFO CRDM Nozzle Examination Report," Revision 1	Framatome ANP	March 11, 2002
Memorandum: "Assessment of Management Issues"	FirstEnergy (J. Martin)	March 28, 2002
Investigation Concerning CR 2000-1037	FirstEnergy (R. Smoot)	April 4, 2002
"Elastic-Plastic Finite Element Stress Analysis of Davis-Besse RPV Head Wastage Cavity"	Structural Integrity Associates, Inc.	April 8, 2002
Root Cause Analysis Report, "Significant Degradation of the Reactor Pressure Vessel Head"	FirstEnergy	April 15, 2002
INPO Industry Oversight Team Evaluation	INPO	May 29, 2002
"Davis-Besse Reactor Vessel Head Deposit Characterization Results Final Report 51-5018613-00"	Framatome ANP	June 2002
FENOC Nuclear Quality Assurance Assessment, "Examination of Five Closed Nonconformances Related to the Reactor Pressure Vessel Head"	FirstEnergy	June 13, 2002
Root Cause Analysis Report, "Failure to Identify Significant Degradation of the Reactor Pressure Vessel Head"	FirstEnergy	August 13, 2002
Assessment of FENOC Company Nuclear Review Board	D. Eisenhut	August 13, 2002
Memorandum from R. Rossomme to L. Pearce re Davis-Besse responses to NRC Bulletin 01-01	FirstEnergy	August 20, 2002
Root Cause Analysis Report, "Significant Degradation of the Reactor Pressure Vessel Head," Rev. 1	FirstEnergy	August 27, 2002
Root Cause Analysis Report, "Failure in Quality Assurance Oversight to Prevent Significant Degradation of Reactor Pressure Vessel Head"	FirstEnergy	September 10, 2002

**EXHIBIT 4 TO
STATEMENT OF DEFENSES
DATED DECEMBER 15, 2006**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:

Michael C. Farrar, Chairman
E. Roy Hawkens
Nicholas G. Trikouros

_____)	
In the Matter of)	Docket No. IA-05-052
)	
DAVID GEISEN)	ASLBP No. 06-845-01-EA
)	
_____)	

INITIAL DISCOVERY DISCLOSURE OF DAVID GEISEN

David Geisen (“Geisen”), by counsel, and pursuant to 10 C.F.R. § 2.704(a), makes the following initial discovery disclosure in the above-captioned action:

A. Introduction

1. Pursuant to 10 C.F.R. § 2.704(a), Geisen objects to, and is not hereby, disclosing any information or documents relating to issues in the “Order Prohibiting Involvement In NRC-Licensed Activities” by the U.S. Nuclear Regulatory Commission (“NRC”) dated January 4, 2006 in the above-referenced action (“January 4, 2006 Order”) that (a) were not alleged with particularity in the January 6, 2004 Order, (b) constitute mere speculation or (c) reflect purely legal conclusions. Geisen also objects to disclosing information or documents simply to prove the non-occurrence of events, communications and conditions alleged in the January 4, 2006 Order for which the NRC has not provided any factual basis or support. In that regard, Geisen incorporates herein by reference the statements, allegations and information contained in the Answer that he filed and served on February 23, 2006 in response to the January 4, 2006 Order.

2. Except as otherwise described in Section D below, Geisen is not hereby disclosing, listing or describing any information in his possession, custody or control that is protected from disclosure by the attorney-client privilege, the attorney work-product doctrine or other applicable statutory or common law privileges. Geisen is making this Initial Disclosure subject to and without waiving such privileges and/or work product protection.

3. The disclosures herein are based on certain non-privileged information that is presently available to Geisen. Formal discovery has not commenced in this matter, and Geisen reserves the right, if and as required under 10 C.F.R. § 2.704(e), to supplement this Initial Disclosure as discovery commences and proceeds in this matter.

4. The identification of any persons or documents herein is not attended, and shall not be deemed or construed, as an assertion or admission by Geisen that such persons actually have knowledge (or such documents are) relevant to disputed issues alleged with particularity in the pleadings in the above-captioned action. Geisen expressly reserves any objections he may have to the admissibility of any testimony, documents or other evidence at the hearing of this matter.

B. 10 C.F.R. § 2.704(a)(1) Disclosure

Geisen hereby identifies the following persons or entities of whom he is presently aware and who may have discoverable information that may be relevant to disputed issues alleged with particularity in the pleadings.

1. Attached hereto as Exhibit 1 are the names (including last known addresses and telephone numbers) of persons who are or were employees of FirstEnergy Nuclear Operating Company (“FENOC”) and who may have information relating, in whole or in part, to disputed issues alleged with particularity in the pleadings, including, without limitation, the following

issues: (a) the condition of pressurized water nuclear power reactors (“PWR”) at the Davis-Besse Nuclear Power Station (“Davis-Besse”) during certain time periods alleged in the January 4, 2006 Order; (b) the timing, substance and reporting of inspections of PWR at Davis Besse during certain time periods alleged in the January 4, 2006 Order; (c) the occurrence or non-occurrence of any events, communications or conditions alleged with particularity in the January 4, 2006 Order; (d) Geisen’s knowledge or lack of knowledge of any events, communications or conditions alleged with particularity in the January 4, 2006 Order; (e) any actions or omissions of Geisen alleged with particularity in the January 4, 2006 Order; and (f) information and documents communicated or made available to the NRC regarding the topics described in paragraph B(1)(a)-(e) above.

2. Attached hereto as Exhibit 2 are the names (including any last known addresses and telephone numbers) of persons who are or were employed as or by consultants or subcontractors to FENOC and who may have information relating, in whole or in part, to disputed issues alleged with particularity in the pleadings, including, without limitation, the issues listed in paragraph B(1) above.

3. Attached hereto as Exhibit 3 are the names (including any last known addresses and telephone numbers) of persons who are or were employees of the NRC who may have information relating, in whole or in part, to disputed issues alleged with particularity in the pleadings, including, without limitation, the issues listed in paragraph B(1) above: These persons include, without limitation, persons who signed, or otherwise participated in the drafting and preparation of, the August 22, 2003 Office of Inspections Report. Geisen expressly reserves the right to disclose and identify other current or former employees of the NRC who may have

information relating, in whole or in part, to disputed issues alleged with particularity in the pleadings but whose identities and/or potential knowledge are not presently known to Geisen.

4. Attached hereto as Exhibit 4 are the names (including any last known addresses and telephone numbers) of persons other than those described in paragraphs B(1)-(3) who may have information relating, in whole or in part, to disputed issues alleged with particularity in the pleadings, including, without limitation, the issues listed in paragraph B(1) above.

5. Geisen also refers to the names, identities and locations of certain persons or entities listed in non-privileged documents that have been produced or disclosed in this matter by the NRC Staff, Geisen or any non-parties, including such documents falling within the categories described in Section C, below.

C. 10 C.F.R. § 2.704(a)(2) Disclosure

With respect to any non-privileged documents, data compilations, and tangible things that are relevant to disputed issues alleged with particularity in the pleadings in the above-captioned action, Geisen states as follows:

1. Effective October 20, 2002, Geisen voluntarily ended his employment with FENOC. Upon his departure from FENOC, Geisen did not have or take any “documents, data compilations, [or] tangible things in [his] possession, custody or control” that were “relevant to the disputed issues alleged with particularity in the pleadings” in the above-captioned matter, within the meaning of 10 C.F.R. § 704(a)(2).

2. During the above-captioned action, Geisen, through his attorneys, has received copies of the documents referenced on Exhibit 5 attached hereto, which were produced or disclosed by the NRC Staff. Unless requested and required to do so, Geisen shall not individually list or re-produce those documents to NRC Staff pursuant to 10 C.F.R. § 704(a)(2).

3. Geisen, through his attorneys, has received from the U.S. Department of Justice copies of grand jury testimony relating to the criminal matter styled *United States v. David Geisen*, Case No. 3:06CR712 (N.D. Ohio). Pursuant to Fed. R. Crim. Proc. 6(e) and a protective order entered by the United States District Court for the Northern District of Ohio, neither Geisen nor his counsel are permitted at this time to disclose those documents to non-parties to the Northern District of Ohio matter. Accordingly, at this time, Geisen cannot and will not list or produce copies of those documents in the above-captioned action.

4. Except for the documents described above, Geisen does not currently have in his possession, custody or control any non-privileged documents, data compilations, and tangible things that are relevant to disputed issues alleged with particularity in the pleadings in the above-captioned action.

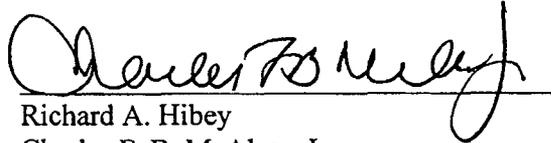
D. Privileged Documents, Data Compilation and Tangible Things

Since approximately October 2002, Geisen has been represented by counsel relating to the subject matter of the January 4, 2006 Order and the underlying investigation. At varying times during that period, Geisen's attorneys have included the law firms of Killian & Gephart, LLP and Miller & Chevalier Chartered. Geisen hereby asserts and preserves all protections, including the attorney-client privilege, the work product doctrine and other applicable statutory and common law privileges, regarding all communications he has sent to or received from his attorneys since October 2002 relating to the above-captioned action, including any such communications or documents relating in any way to disputed issues alleged with particularity in the pleadings in the above-captioned action. Unless required by order of the panel in the above-referenced action, Geisen shall not log or specifically identify such communications or documents.

Unless required by order of panel in the above-captioned action, Geisen shall not log or specifically identify any communications or documents in the possession, custody or control of his attorneys that constitute or reflect attorney work product, including, without limitation, any such communications or documents prepared by or on behalf of Miller & Chevalier Chartered.

Unless required by order of the panel in the above-captioned action, and on the basis of the joint defense and common interest privileges, Geisen shall not log or specifically identify any communications or documents that his attorneys may have sent to or received from counsel for any persons or entities who are the subject of any criminal, civil or administrative indictment, charges, investigations, allegations or claims that are similar or relate to those of which Geisen is or was the subject and that give rise to the joint defense or common interest privileges.

Respectfully Submitted,



Richard A. Hibey
Charles F. B. McAleer, Jr.
Andrew T. Wise
Matthew T. Reinhard
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Counsel for David Geisen

Dated: July 28, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:

Michael C. Farrar, Chairman
E. Roy Hawkens
Nicholas G. Trikouros

_____)	
In the Matter of)	Docket No. IA-05-052
)	
DAVID GEISEN)	ASLBP No. 06-845-01-EA
)	
_____)	

CERTIFICATE OF SERVICE

I HEREBY CERTIFY, on the 28th day of July, 2006, that copies of David Geisen's Initial Discovery Disclosure in the above-captioned matter were served on the following persons via email as indicated by an (*) and by regular mail as indicated by an (**):

Office of the Secretary (*), (**)
Attn: Rulemaking and Adjudications Staff
U.S. Nuclear Regulatory Commission
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Washington, D.C. 20005
E-mail: hearingdocket@nrc.gov

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Adjudicatory File (**)
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U.S. Nuclear Regulatory Commission
Mail Stop: T-3 F23
Washington, D.C. 20555

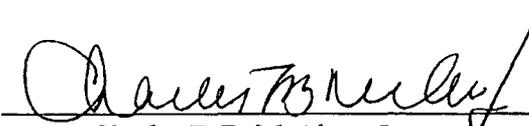

Charles F. B. McAleer, Jr.

EXHIBIT 1

GEISEN DISCOVERY DISCLOSURE EXHIBIT 1

**FIRSTENERGY NUCLEAR OPERATING COMPANY (FENOC)
EMPLOYEES**

Name	Title	Address	Telephone Number
Ackerman, Charles E.	Supervisor, Quality Assurance Engineering	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Ambrozy, John	Carpenter, Contractor	Davis-Besse Nuclear Power Station c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Baumgardner, Bradley J.	Radiation Protection Health Physicist	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Bergendahl, Howard W.	Former Vice President (former Plant Manager)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Bunker, Philip A.	Master Mechanic	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Byrd, Kendall W.	Supervisor - Analysis and Probabilistic Safety Assessment Unit at Davis-Besse	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Campbell III, Guy G.	Former Vice President (FENOC)	c/o John F. McCaffrey, Esq. McLaughlin & McCaffrey, LLP Easton Center, Suite 1350 1111 Superior Avenue Cleveland, OH 44114- 2500	216-623-0900
Chambers, Diana	Administrative Assistant	Davis-Besse c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Chimahusky, Edward	System Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
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Coad Jr., Robert B.	Radiation Protection Manager, Perry Nuclear Plant (former Assistant Plant Manager, Davis-Besse)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Coakley, Scott A.	Former Project Manager (Outage Manager)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Cobbledick, Thomas D.	Shift Engineer (former Operations Superintendent)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Cook, Rodney M.	Regulatory Affairs Consultant (Contract with FENOC)	c/o John F. Conroy, Esquire Gordon & Ermer Two Lafayette Center 1133 21 st Street, NW, Suite 450 Washington, D.C. 20036-3354	202-883-3400

Name	Title	Address	Telephone Number
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Daft, Charles T.	Staff Nuclear Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Donnellon, Robert	Director of Maintenance (former Director of Engineering)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Eischen, Gary V.	Senior Health Physics Serviceman	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Eshelman, David L.	Manager, Fleet Asset Management (former Plant Engineering; Manager)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Feckley, James W.	Radiation Protection Supervisor	Davis-Besse Nuclear Power Station c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Fehr, Kathryn N.	Administrative Support	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Gillespie, Greg W.	Acting Supervisor, Radiation Protection Chemistry	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Goyal, Praseon	Former Senior Design Engineer (FENOC)	c/o James C. Howarth, Esquire 2000 Penobscot Bldg. 645 Griswold Street Detroit, MI 48226-4009	313-962-3500
Gudger, Dave	Manager, Performance Improvement (Corrective Action Owner)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Haley, Daniel E.	System Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Hartigan, John	Senior Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Hengge, Craig	System Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Hilkens, Bill	Quality Control Inspector	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Hovland, Robert C.	Supervisor of Electrical Controls Unit	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Huston, Roger W.	Contractor (For FENOC)	Licensing Support Services	
Jennison, Laura	Clerk - Licensing department	Davis-Besse c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Johnson, John	PCAQR Review Board Chairman	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Kennedy, Frank W.	Retired (previously - Licensing Specialist)	Davis-Besse Nuclear Power Station c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Klett, Lee D.	Senior Reactor Operator License Training	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Lang, Ted	Root Cause Investigation Team	Davis-Besse c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Leisure, Michael K.		c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Lewis, Arthur J.	Shift Manager, Shift 5	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Liska, Dennis A.	Mechanical Maintenance Planner	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Lockwood, David H.	Former Manager of Regulatory Affairs	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Mainhardt, Peter J.	System Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
McIntyre, Glenn R.	Former Supervisor, Mechanical Systems	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
McLaughlin, Mark	Senior Project Manager (Former Alloy 600 Team Leader, Davis-Besse, FENOC)	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Messina, John	Director Work Management	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Miller, Dale L.	Consultant, Perry Nuclear Plant (former Supervisor of Compliance, Davis-Besse)	c/o Jane G. Penny, Esq. Killian & Gephart, LLP P.O. Box 886 Harrisburg, PA 17108	717-238-5430
Moffitt, Steve	Former Director, Technical Services	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Molpus, Walt	System Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Morrison, Neil	System Engineer, Beaver Valley	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Mugge, William A.	Work management	Davis-Besse c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Munson, Dewey	In-Service Inspection group	Davis-Besse Nuclear Plant c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Myers, Lew	Chief Operating Officer and Acting Vice President	Davis-Besse c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Otermat, Jonathan E.	Advanced Nuclear Engineer	Davis-Besse c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Rogers, Joseph W.	Former Outage Director and Plant Engineering Manager	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Rossomme, Randall L.	Supervisor of Nuclear Quality Assessment, Beaver Valley	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Saunders, Robert F.	President	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Seniuk, Peter J.	Inservice Inspection Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Shepherd, Michael D.	Senior Staff Nuclear Advisor (former Inservice Inspector)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Siemaszko, Andrew	Former System Engineer (FENOC)	c/o Billie Pirner Garde, Esquire John M. Clifford, Esquire Clifford & Garde 1707 L Street, NW, Suite 500 Washington, D.C. 20036	202-289-8990
Simon, Joseph P.	Lead Radiation Technician	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Slyker, Rebecca J.	Director Nuclear Services	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
St. Clair, Virgil	Health Physics Services Manager	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Swim, Theo S.	Nuclear Consultant (former Supervisor of Mechanical Structural Engineering (Design))	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Tabbert, Terry A.	Senior Health Physics Serviceman	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Tipton, Carl A.	Nuclear Qualifications Instructor	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

Name	Title	Address	Telephone Number
Vamdenabeele, Allan J.	Ombudsman/Employee Concerns Program Owner	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Villines, Jr., Bobbie G.	Component Engineer	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Waggoner, Chris	Graphic Services Formatter, Communications Department	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Weakland, Denis	Nuclear Consultant/Engineer, Beaver Valley	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Willoughby, Michael M.	Former Quality Assurance Auditor	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Wilson, Andrew S.	Superintendent, Maintenance	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Wolf, Gerald M.	Regulatory Affairs	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Wood, John	Former Site Vice President	Will provide home address	

Name	Title	Address	Telephone Number
Worley, Lonnie	Director Nuclear Services	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Wuokko, Dale	Regulatory Affairs Supervisor	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Zellers, Kevin S.	Design Engineering Group - analysis section	Davis-Besse Power Station c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308

EXHIBIT 2

GEISEN DISCOVERY DISCLOSURE EXHIBIT 2

FENOC SUBCONTRACTORS

Name	Title	Address	Telephone Number
Cope, William	Former Framatome video technician	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Currence, Fred	Field Service Engineer, Refueling Services	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Fyfitch, Stephen	Metallurgist/ Advisory Engineer	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Gibbs, Gregory A.	Former contractor (former engineering director, FENOC)	Piedmont Management & Technical Services, Inc. 2502 South 17 th St., Suite 118 Wilmington, NC 28401	910-452-3088
Harris Jr., James R.	Component Engineer - Integrated head replacements	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Killian, Douglas E.		Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
King, Christine	Former title unknown	Formerly of Framatome ANP	

Name	Title	Address	Telephone Number
Kurasz, Alex	Regional Account Manager	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Loehlein, Steven A.	Principal Nuclear Consultant (Head of root cause team for FENOC)	c/o FirstEnergy Nuclear Operating Company (FENOC) Legal Department 76 S. Main Street Akron, OH 44308	330-384-5308
Martin, John (Jack)	Consultant (Contract with FENOC)	Martin Sigmund Consulting Services, Inc.	
McKim, Alvin D.	Manager of Materials and Structural Analysis Unit	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Pillow, Ronald C.	Control Rod Drive Mechanism Component Engineer	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000
Schroeder, David R.	Equipment Lead for the Refuel and Video Equipment	Framatome c/o AREVA NP Inc. 3315 Old Forest Road Lynchburg, VA 24501	432-832-3000

EXHIBIT 3

GEISEN DISCOVERY DISCLOSURE EXHIBIT 3

NUCLEAR REGULATORY COMMISSION (NRC) EMPLOYEES

Name	Title	Address	Telephone Number
Bateman, William H.		U.S. Nuclear Regulatory Commission	301-415-2795
Caldwell, James	Deputy Regional Region Administrator	U.S. Nuclear Regulatory Commission	
Collins, Samuel J.	Deputy Executive Director - Reactor Program	U.S. Nuclear Regulatory Commission	
Diaz, Nils	Chairman	U.S. Nuclear Regulatory Commission	
Gavula, James	Senior Reactor Inspector	Office of Investigations Region III, U.S. NRC 801 Warrenville Road, Suite 255 Lisle, IL 60532-4352	630-829-9775
Hiser Jr., Allen L.	Senior Materials Engineer, Nuclear Reactor Regulation	U.S. Nuclear Regulatory Commission	301-415-5650
Holmberg, Melvin	Reactor Inspector	U.S. Nuclear Regulatory Commission, Region 3 office	
Janicki, Michele	Special Agent	Office of Investigations Region III, U.S. NRC 801 Warrenville Road, Suite 255 Lisle, IL 60532-4352	630-829-9668

Name	Title	Address	Telephone Number
Lee, Andrea D.	Senior Materials Engineer	U.S. Nuclear Regulatory Commission; Office of Nuclear Regulatory Research	
Long, Steven	Senior Reliability and Risk Analyst, Probabilistic Safety Assessment Branch	U.S. Nuclear Regulatory Commission	
Sands, Stephen	Engineer	U.S. Nuclear Regulatory Commission	
Sheron, Brian W.	Associate director - project licensing and technical assessment	U.S. Nuclear Regulatory Commission	
Simpkins, Douglas	NRC Resident Inspector	U.S. Nuclear Regulatory Commission	
Strosnider Jr., Jack R.	Deputy Director	U.S. Nuclear Regulatory Commission; Office of Nuclear Regulatory Research	301-415-7800
Ulie, Joseph M.	Senior Special Agent	Office of Investigations Region III, U.S. NRC 801 Warrenville Road, Suite 255 Lisle, IL 60532-4352	630-829-9678
Zimmerman, Jacob I.		U.S. Nuclear Regulatory Commission	301-415-1220
Zwolinski, John		U.S. Nuclear Regulatory Commission	

EXHIBIT 4

GEISEN DISCOVERY DISCLOSURE EXHIBIT 4

MISCELLANEOUS

Name	Title	Address	Telephone Number
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Hunt, Edwin Steven	Principal Officer	Dominion Engineering 11730 Plaza America Drive, Suite 310 Reston, VA 20190	703-437-1155
Marion, Alexander	Director of Engineering, Nuclear Generation Division	Nuclear Energy Institute 1776 I. Street, NW Suite 400 Washington, DC 20006	202.739.8000
Phillips, Donald R.	Operations Department	Arkansas Nuclear One GBS Building 1448 S.R. 333 Russelville, AK 72801	
Whitaker, David E.	Engineer, Piping Materials Group	Duke Energy Corporation 526 S. Church St. Charlotte, NC 28202	

EXHIBIT 5

GEISEN DISCOVERY DISCLOSURE EXHIBIT 5

NRC DISCLOSURES AND PRODUCTIONS

Date Received	Title	Bates Range
June 5, 2006	Mandatory Disclosures Part 1	00017 - 31652; NRC001-0420 - NRC034-1845 (as detailed in Index dated June 5, 2006)
June 5, 2006	Mandatory Disclosures Part 2	04300 - 20955; NRC001-0446 - NRC034-3074; (as detailed in Index dated June 5, 2006)
June 5, 2006	Mandatory Disclosures Part 3	05352 - 20075; NRC001-0388 - NRC032-2117; (as detailed in Index dated June 5, 2006)
June 5, 2006	Mandatory Disclosures Part 4	00014 - 32464; NRC001-0001 - NRC034-0388 (as detailed in Index dated June 5, 2006)
June 5, 2006	Letter enclosing pages 17 and 18 of the OI Report	30018-C and 30018-D
June 7, 2006	Production Box 1	08459 - 11123; 11384 - 455; 11507 - 12294
June 7, 2006	Production Box 2	15851 - 16013; 16059 - 16071; 16077 - 16081; 16272 - 16318; 16346 - 48; 16351-53; 16357-74; 16048-55; 16387-817; 16837-38; 16847-17035; 17098-219; 17314-358; 17359-411; 17513-605; 17412-512; 17606-634; 17635-735; 17736-18034; 18035-216; 18226-364; 18379-86; 18447; 18411-729; 18740-976; 19017-116; 19119-128; 19408-556
June 7, 2006	Production Box 3	12385 - 454; 12468 - 13064; 13193 - 14005; 14009 - 13; 14018 - 41; 14046 - 273; 14282 - 482; 14484 - 494; 14731 - 15098; 15101 - 15130; 15146 - 478; 15496 - 523; 15668 - 688; 15524; 15568 - 574; 15689 - 15850
June 7, 2006	Production Box 4	05112 - 05157A; 05318 - 05321; 05352 - 06124; 06140 - 170; 06353 - 374; 06466 - 521A; 06539 - 568; 06619 - 637A; 06711 - 735; 06782 - 849; 06898

		- 923A; 06938 - 940A; 07060 - 7707A; 07725 - 823; 07828 - 855A;
July 07, 2006	Production Box 5 (Proprietary)	CD: NRC001-1715 - NRC015-3018; NRC016-0995 - NRC034-3044; DOCUMENTS: 05050 - 05111; 05158-05317; 05322 - 05351; 06125 - 06139; 06171 - 06352; 06375 - 06465; 06569 - 06618; 06638 - 36710; 06736 - 06781; 06850 - 06897; 06924 - 06937; 06941 - 07059; 07708 - 07724; 07824 - 07827; 07856 - 07948
July 07, 2006	Production Box 6 (Proprietary)	03099 - 18979
June 7, 2006	Production Box 7	30000 - 30232; 04770-772; 04822-05009; 05013-016; 07949-959; 08020-385; 19579-593; 19639-645; 19730-20027-1A; 20047-75; 20622-29; 20955; 31792-93; 20961-64; 20967-68; 20971-73; 20988-90; 20996-97; 21027-28; 21032-37; 21039-50; 21062-63; 21074-77; 21081-82; 21099-100; 21112-13; 31794-808; 31917-922; 32101-125; 32146-204; 32206-464
June 7, 2006	Production Box 8	Videos/DVDs and 30722-745; 31023-678; 31771-72; 31809-818; 31820 (2 pages); 31822 (2 pages); 31824 (2 pages); 31827 (2 pages); 31831; 31825-894
June 7, 2006	Production Box 9	00014 - 04704