UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Samuel J. Collins, Director

In the Matter of	)	Docket No. 50-346
	)	
FirstEnergy Nuclear Operating Company	)	License No. NPF-3
	)	
	)	
(Davis-Besse Nuclear Power Station, Unit 1)	)	
	)	

DIRECTOR'S DECISION UNDER 10 CFR 2.206

I. Introduction

By letter dated February 3, 2003, Congressman Dennis Kucinich, Representative for the 10th Congressional District of the State of Ohio in the United States House of Representatives, filed a Petition pursuant to Section 2.206 of Title 10 of the *Code of Federal Regulations* (10 CFR). The Petitioner requested that the U.S. Nuclear Regulatory Commission (NRC) immediately revoke the FirstEnergy Nuclear Operating Company's (FENOC's or the licensee's) license to operate the Davis-Besse Nuclear Power Station, Unit 1 (Davis-Besse), located in Ottawa County, Ohio. As an alternative, the Petitioner asked the NRC to reexamine its denial of a previous 2.206 petition, submitted by the Toledo Coalition for Safe Energy et al., that requested the NRC issue an order to the licensee requiring a verification by an independent party for issues related to the reactor vessel head damage at Davis-Besse.

The basis for the request was that FENOC "has operated outside the parameters of their operating license for several years, has violated numerous federal laws, rules and regulations, and has hidden information from the NRC and lied to the NRC to justify the continuing operation of the Davis-Besse Nuclear Power Station." The Petitioner supported his

request by citing various publicly available documents and information related to the reactor pressure vessel head damage. The documents describe noncompliance with the Davis-Besse operating license and violations of NRC regulations. The documents include NRC inspection reports, newspaper articles, and reports published by the Union of Concerned Scientists.

In a letter dated February 10, 2003, the NRC informed the Petitioner that the issues in the petition were accepted for review under 10 CFR 2.206 and had been referred to the Office of Nuclear Reactor Regulation (NRR) for appropriate action. A copy of the acknowledgment letter is publicly available in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession No. ML030360647.

On March 27, 2003, the Petitioner submitted supplemental information to support the petition. The petition and the supplement to the petition are available in ADAMS under Accession Nos. ML030370067 and ML030900613, respectively, or are available for inspection at the Commission's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records are accessible from the ADAMS Public Electronic Reading Room on the NRC Web site, http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR reference staff at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr@nrc.gov.

The licensee responded to the Petition on February 27, 2003, and to the supplement on April 11, 2003. These responses were considered by the staff in its evaluation of the petition. Copies of the licensee's responses are publicly available in ADAMS under Accession Nos. ML030640112 and ML031200095.

The NRC sent a copy of the proposed Director's Decision to the Petitioner and to the licensee for comment on June 6, 2003. The Petitioner responded with comments on [date],

and the licensee responded on [date]. Copies of these documents are also publicly available under ADAMS Accession Nos. ML031390067, ML031390138, MLXXXXXXXXX, and MLXXXXXXXXX, respectively. The comments and the NRC staff's responses to them are attached to this Director's Decision.

II. Discussion

In the March 27, 2003, supplement, the Petitioner argues that investigations being conducted by the NRC's Office of Investigations to determine whether FENOC willfully violated NRC requirements and whether FENOC deliberately misled the NRC must be completed before the NRC makes any decisions regarding the merits of this petition. The NRC staff has carefully evaluated the Petitioner's request to delay consideration of this petition pending completion of the NRC's wrongdoing investigations and has determined that such a delay is not warranted. As discussed in this decision, FENOC has initiated, and is still implementing, extensive corrective actions to address hardware, programmatic, and human performance issues in order to demonstrate or achieve compliance with NRC regulations. The corrective actions taken by the licensee and the NRC's oversight of those corrective actions make it unnecessary for the NRC to delay consideration of this petition's merits pending the outcome of the wrongdoing investigations.

The following outline is provided to assist readers in understanding the structure of the NRC staff's response to the petition and the associated supplement. The headings for Sections B.1 through B.5 merely paraphrase the Petitioner's arguments. These headings are *not* intended to convey any NRC staff conclusions regarding the petition or the supplement.

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The NRC staff has reviewed the petition and has not identified any new information on Davis-Besse of which the NRC staff was unaware. The supporting information in the petition contains

a number of allegations and other issues. The NRC staff determined that all of these allegations and issues are appropriately (a) being addressed under the NRC's allegation process, or (b) have been addressed, or are being addressed, by the NRC's inspection process.

A. Reactor Pressure Vessel Head Issues

On March 6, 2002, while Davis-Besse was shut down for refueling, FENOC employees discovered a cavity in the reactor vessel head. The cavity was the result of corrosion caused by long-term leakage of reactor coolant, which contains boric acid, from small cracks in one of the control rod drive mechanism nozzles that passes through the reactor vessel head. The damaged area of the head was approximately 5 inches long, 4 inches wide, and 6 inches deep. The cavity penetrated the carbon steel portion of the reactor vessel head, leaving only the stainless steel lining. The liner thickness varies somewhat with a minimum design thickness of 1/8 inch. Subsequent examination by Framatome, FENOC's contractor, found evidence of a series of cracks in the liner, none of which was entirely through the liner wall.

A.1 NRC response to reactor pressure vessel head damage at Davis-Besse

The NRC took a series of actions in response to the discovery of the cavity in the Davis-Besse reactor vessel head. An Augmented Inspection Team was sent to Davis-Besse on March 12, 2002, to collect factual information regarding the conditions that led to the head degradation. Additionally, the NRC issued a Confirmatory Action Letter to the licensee on March 13, 2002, which confirmed the licensee's agreement that NRC approval is required for restart of the Davis-Besse plant. The Confirmatory Action Letter also documented a number of actions that the licensee must implement before the NRC will consider a restart. By letter dated April 29, 2002, the NRC informed FENOC that its corrective actions at Davis-Besse would

receive enhanced NRC oversight as described in NRC Inspection Manual Chapter 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems." That enhanced monitoring began on May 3, 2002, and included the creation of an oversight panel (the 0350 panel, referred to here as the NRC Davis-Besse Oversight Panel) to provide the required oversight during the plant shutdown, any future restart, and following restart until a determination is made that the plant is ready for return to the NRC's normal Reactor Oversight Process.

On August 16, 2002, the NRC Davis-Besse Oversight Panel issued a Restart Checklist, which is a list of issues that require resolution before restart can be considered. The Restart Checklist includes the following issues:

- Adequacy of root cause determinations
- Adequacy of safety-significant structures, systems, and components
- Adequacy of safety-significant programs
- Adequacy of organizational effectiveness and human performance, and
- Readiness of systems and the Davis-Besse organization for restart

The NRC's inspection and oversight activities, and the associated Restart Checklist, evaluate the licensee's corrective actions related to the reactor vessel head issues. Additionally, the NRC's activities and Restart Checklist go beyond the issues specific to the reactor vessel head and look broadly at the safety-related plant systems and programs. This broader perspective is necessary to ensure (a) that the conditions that led to the reactor head corrosion are not widespread throughout the plant; (b) that the physical condition of the plant is adequate; and (c) that the licensee's operations, maintenance, and engineering organizations are prepared to operate the plant safely if it is permitted to restart.

Through a series of inspections, the NRC Davis-Besse Oversight Panel is evaluating the adequacy of FENOC's Return-to-Service Plan, which is divided into seven areas of performance. These inspections consist of independent inspections performed by the NRC staff and NRC reviews of a sample of work performed by FENOC's staff in each of the seven areas. By comparing the results of the NRC's independent inspections to the results that the licensee obtained from its reviews of the same systems and programs, the NRC is able to gauge the depth and quality of FENOC's review processes. If the licensee's reviews produce the same or similar findings to those of the NRC independent inspections, then it is reasonable to conclude that the NRC can ensure adequate safety through an inspection program that combines independent inspections with reviews of the licensee's evaluations rather than having to perform independent inspections and evaluations for each of the systems or programs evaluated under FENOC's Return-to-Service Plan. If, however, the NRC's independent inspections produce results that are significantly different from those obtained by the licensee's reviews, the NRC will notify FENOC of the weaknesses discovered so that FENOC can take action to improve its evaluation processes. The NRC will then conduct followup reviews. In the case of significant differences between the results of NRC inspections and licensee reviews, the NRC may also perform additional independent inspections to ensure that appropriate actions are taken to identify and correct deficiencies in plant systems or programs evaluated under FENOC's Return-to-Service Plan.

The NRC's activities also include an inspection of FENOC's corrective actions to improve management and human performance at Davis-Besse and an assessment of whether the Davis-Besse organization will be effective at running the plant safely. As part of its evaluation, the NRC hired independent consultants who have expertise in creating and assessing an

effective safety-conscious work environment in which employees are encouraged to raise safety concerns and a safety culture where such concerns receive appropriate management attention based on their potential safety significance. This evaluation is ongoing and results will be documented following agency guidelines.

Finally, the NRC is conducting routine meetings with the licensee and the general public, at locations near the Davis-Besse facility, to discuss FENOC's corrective actions. The meetings with the licensee are open to members of the public so that they can observe the NRC's oversight of Davis-Besse. The meetings with the general public provide opportunities for members of the public to voice concerns and ask the NRC staff questions.

A.2 Licensee Corrective Actions

Corrective actions taken by the licensee include the development of a Return-to-Service Plan, which was initially described in FENOC's May 16, 2002, letter responding to a 2.206 Petition submitted by the Toledo Coalition for Safe Energy, et al. This Return-to-Service Plan, which was submitted to the NRC on May 21, 2002, describes FENOC's intended course of action for Davis-Besse's safe and reliable return to service. It contains corrective actions in the following areas:

- Reactor head resolution
- Containment health assurance
- System health assurance
- Program compliance
- Management and human performance
- Restart testing
- Restart action plan

Revisions to the Return-to-Service Plan were submitted on July 12, August 21, and September 23, 2002, as well as on January 9, and April 6, 2003. Copies of the plan and its revisions are publicly available in ADAMS under Accession Nos. ML021430429, ML022030464, ML022670616, ML022740488, ML 030150732, and ML031000739, respectively. The Return-to-Service Plan includes actions to address the issues identified in Congressman Kucinich's petition and the supplement to the petition concerning the material condition of the plant, the licensee's compliance with NRC regulations and the Davis-Besse operating license, conformance to the Davis-Besse design and licensing bases, and human performance and safety culture improvements at Davis-Besse.

As part of the implementation of its Return-to-Service Plan, the licensee established a Restart Organization, which includes not only reorganized and realigned internal senior leadership, but also four separate oversight review and verification teams. Two of those teams include either an independent community representative or independent industry experts. Specifically, these two teams are (1) the Restart Overview Panel, consisting of licensee and nonlicensee executives and the local Ottawa County Administrator, which provides global oversight of implementation of the Return-to-Service Plan; and (2) the Engineering Assessment Board, consisting of independent industry experts and members of the licensee's engineering organization, which is charged with reviewing engineering products and programs. Additionally, the licensee's restart organization includes a Restart Station Review Board, consisting of site managers and an independent quality assurance representative, which makes initial decisions regarding actions required for restart.

In its April 11, 2003, response to the petition supplement, FENOC stated that its corrective actions have included the replacement of several senior and mid-level managers who had been

in positions of responsibility prior to February 2002.

A.3 NRC Regulatory Philosophy

The NRC regards compliance with regulations, license conditions, and technical specifications as mandatory. However, the NRC also recognizes that plants will not operate trouble-free. This is clearly articulated in 10 CFR Part 50, Appendix B, "Quality Assurance for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion XVI, "Corrective Action." This criterion states that "[m]easures shall be established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

The NRC's approach to protecting public health and safety is based on the philosophy of "defense-in-depth." Briefly stated, this philosophy (1) requires the application of conservative codes and standards to establish substantial safety margins in the design of nuclear plants; (2) requires high quality in the design, construction, and operation of nuclear plants to reduce the likelihood of malfunctions, and promotes the use of automatic safety system actuation features; (3) recognizes that equipment can fail and operators can make mistakes and, therefore, requires redundancy in safety systems and components to reduce the chance that malfunctions or mistakes will lead to accidents that release fission products from the fuel; (4) recognizes that, in spite of these precautions, serious fuel-damage accidents cannot be completely prevented and, therefore, requires containment structures and safety features to prevent the release of fission products; and (5) further requires that comprehensive emergency plans be prepared and periodically exercised to assure that actions can and will be taken to notify and protect citizens in the vicinity of a nuclear facility.

The appropriate response to an identified deficiency can and should vary, depending on the safety significance of the deficiency. For example, for rapidly developing situations, when prompt action is required to ensure that plants are not in an unsafe condition, automatic safety systems are in place to shut down the reactor. In other, less time-critical situations, technical specifications relating to structures, systems, and components vital to the safe operation of a nuclear plant require that specific actions be taken within a predetermined time period when the structure, system, or component is determined to be inoperable.

In summary, the licensee's compliance with NRC regulations, license conditions, and licensing commitments is fundamental to the NRC's confidence in the safety of licensed activities; and the licensee must demonstrate that corrective actions have been effectively implemented; that the Davis-Besse unit is in conformance with applicable NRC regulations, its license conditions, and its Updated Final Safety Analysis Report; and that applicable licensing commitments have been met before the NRC staff will consider a plant restart.

B. Evaluation of Petitioner's concerns

The Petitioner's request for enforcement states that the NRC must revoke the Davis-Besse operating license, "[b]ecause [FENOC] (1) has admittedly operated the plant in violation of NRC rules and regulations and its own operating license, (2) has admittedly failed to observe safety standards necessary to protect health and minimize danger to life or property, and (3) has deliberately withheld information from the NRC and fraudulently misrepresented plant conditions in order to continue to operate the plant in an unsafe manner...." As an alternative, in a footnote, the Petitioner asks the NRC to reexamine its denial of a previous 2.206 petition, submitted by the Toledo Coalition for Safe Energy et al., that requested the NRC to issue an order to the licensee requiring a verification by an independent party for issues related to the

reactor vessel head damage that occurred at Davis-Besse.

The February 3, 2003, petition offers five basic arguments, in various forms, of why revocation of the Davis-Besse license is required. These arguments may be summarized as follows:

1. NRC regulations and guidelines require revocation of the Davis-Besse license.
2. Revocation of the Davis-Besse license is necessary to hold FENOC accountable for its violations of NRC regulations and its own operating license.
3. If the NRC doesn't revoke the Davis-Besse license, NRC isn't appropriately using the authority granted it by Congress.
4. Revocation of the Davis-Besse license is necessary to ensure that FENOC is complying with all NRC regulations, guidelines, and the Davis-Besse design and licensing bases.
5. Revocation of the Davis-Besse license is required in order for there to be consistency in the manner that the NRC enforces its regulations.

The information in the main petition that the Petitioner uses to support these arguments was taken from NRC inspection reports, newspaper articles, reports from various citizen action groups, or licensee internal documents that had previously been made public. The NRC was already aware of all of these documents. The NRC staff reviewed the supporting information used by the petitioner to determine if it contained any new allegations; nothing new was found. Since the specific supporting information used in the main petition was already known to the NRC, and is already addressed by other NRC inspection or investigation activities, the following discussion in Sections II.B.1 through II.B.5 will address each of the general arguments summarized above rather than the specific supporting information.

The March 27, 2003, supplement to the petition raised the following specific concerns or issues, some of which are related to the fourth general argument of the main petition:

a. Boric acid dust in the reactor containment building (from the reactor vessel head leakage) may have caused corrosion of the electrical system and cable trays.

b. The as-built design of the plant may not be consistent with the plant's design or licensing bases. As a result, the training of FENOC personnel may not match the plant's licensing basis.

c. Davis-Besse does not have the ability to detect a 1-gallon-per-minute leak from the reactor coolant system within 1 hour. Thus, Davis-Besse does not meet the requirements of the general design criteria contained in 10 CFR, Part 50, Appendix A, or the guidance of NRC Regulatory Guide 1.45.

d. Two of the four reactor coolant pumps still have gasket leaks that have not been corrected by the licensee.

e. The NRC's Davis-Besse Oversight Panel will end and the Davis-Besse plant will return to normal monitoring under the NRC's reactor oversight process before NRC has implemented changes to its reactor oversight process that were recommended by an NRC Lessons Learned Task Force.

f. The NRC's enhanced oversight and inspection of FENOC's corrective actions does not allow intervenors or the public to participate in the licensing decision through a formal hearing. Such participation would be possible if the Davis-Besse license were revoked and FENOC had to reapply for another operating license.

g. The investigation being performed by the NRC's Office of Investigations to determine whether FENOC willfully violated NRC requirements and an associated investigation to determine if FENOC deliberately misled the NRC must be completed before the NRC considers the petition. Furthermore, the NRC must consider the petition before allowing the Davis-Besse plant to restart.

h. There are continuing safety culture problems at Davis-Besse.

With the exception of Item b, these specific concerns and issues are addressed individually in Section B.6 of this decision. Item b is addressed in Sections B.4 and B.6. The headings for Sections B.1 through B.5 merely paraphrase the general arguments made by the Petitioner. These headings are *not* intended to convey any NRC staff conclusions regarding the petition or

the supplement.

B.1 Enforcement actions "required" by NRC rules and guidelines

The Petitioner asserts that NRC rules and guidelines require that the NRC revoke FENOC's operating license for Davis-Besse. However, the petition does not specify the regulations and guidelines which contain the asserted requirement. The petition does reference a footnote in a previous version of the NRC's enforcement policy (63 FR 26630-01, 26642, footnote 9) regarding exercise of enforcement discretion, but that particular footnote is associated with a section of the enforcement policy dealing with the use of noncited violations instead of Severity Level IV violations (nonescalated and low safety significance) under specific circumstances. The footnote is not applicable to the Petitioner's requested enforcement action because the referenced guidance does not pertain to revocation of a license.

Under the NRC's enforcement policy a license *may* be revoked —

- when a licensee is unable or unwilling to comply with NRC requirements;
- when a licensee refuses to correct a violation;
- when a licensee does not respond to a notice of violation which required a response;
- when a licensee refuses to pay an applicable fee under the Commission's regulations; or
- for any other reason for which revocation is authorized under Section 186 of the Atomic Energy Act.

Similar to the enforcement policy, Section 186 of the Atomic Energy Act states that, "[a]ny license *may* [emphasis added] be revoked...." Thus, the NRC's authority to revoke a license is discretionary. With regard to the damage to the reactor vessel head at Davis-Besse, the NRC's rules and guidelines neither require nor preclude revocation of the license. Rather, the NRC's rules and guidelines allow for a broad spectrum of enforcement actions to be taken, and the

NRC's enforcement policy provides guidance on when revocation of a license may be appropriate.

B.2 Revocation of license is necessary to hold FENOC accountable

The Petitioner's second argument is that revocation of the Davis-Besse license is required in order to hold FENOC accountable for its "egregious violations and willful non-compliance."

As noted in the discussion of the Petitioner's first argument, revocation of the license is not the only course of action that is available to the NRC for holding the licensee accountable for the violations of NRC regulations and the Davis-Besse operating license that have been identified by NRC inspections. The NRC's enforcement considerations are still ongoing, as are its investigations into the alleged willfulness of these violations. These matters will be appropriately handled consistent with NRC policies for enforcement and interface with the U.S. Department of Justice.

As a related issue, the Petitioner alleges that FENOC deliberately withheld information from the NRC and intentionally misrepresented plant conditions to the NRC in order to continue to operate the plant for economic gain. While the NRC's Augmented Inspection Team followup report, and the NRC Davis-Besse Lessons Learned Task Force report, did cite examples of information provided to the NRC that was inaccurate or incomplete, these reports *did not* make any findings regarding willfulness on the part of the licensee. The NRC is still conducting activities related to this issue. These matters will be appropriately handled consistent with NRC policies for enforcement and interface with the U.S. Department of Justice.

Even if the NRC's investigations do conclude that there were willful violations or deliberate misrepresentation of information by FENOC, such findings, in and of themselves,

likely would not provide a sufficient basis to revoke the Davis-Besse operating license. Although such a finding could provide a basis for taking enforcement action against the licensee (and/or specific individuals), as discussed further in the following sections the corrective actions taken by the licensee would weigh against taking the most severe sanction.

B.3 NRC must revoke the Davis-Besse License in order to appropriately use the authority granted by Congress

The Petitioner asserts several times that if the NRC does not revoke the Davis-Besse operating license, the NRC isn't appropriately using the authority granted it by Congress. The petition cites 42 U.S.C. Section 2133(b) as giving the NRC authority to grant licenses and 42 U.S.C. Section 2137 as giving the NRC authority to revoke licenses. The Petitioner also cites 42 U.S.C. Section 2272 and 10 CFR 50.100 as relevant law or regulation.

A reading of 42 U.S.C. Section 2137 shows that it pertains to the revocation of operator licenses held by individuals rather than to facility operating licenses held by corporations or government entities. Thus, this portion of the law cited by the Petitioner does not apply to Petitioner's requested action — revocation of the Davis-Besse facility operating license. The appropriate portion of the U.S. Code is 42 U.S.C. Section 2236 (Section 186 of the Atomic Energy Act). As discussed in Section B.1 of this decision, the authority to revoke facility operating licenses granted in Section 186 of the Atomic Energy Act is discretionary.

At this point, the NRC investigations with regard to the potential willfulness of the violations are still ongoing and no findings have been made. Those investigations include evaluations of the involvement of specific individuals, which may be used to determine whether matters involving those individuals should be referred to the U.S. Department of Justice for further action.

With regard to the need for immediate action, the Davis-Besse plant is currently shut down and is subject to increased scrutiny through the NRC's enhanced oversight process. Thus there is no immediate need to revoke the Davis-Besse license in order to protect the health and safety of the public.

The NRC agrees with the Petitioner's goal of ensuring the health and safety of the public. The ongoing processes associated with Davis-Besse will achieve the safety results that the Petitioner is seeking without revoking the Davis-Besse operating license. The FENOC Return-to-Service Plan, as monitored by the NRC Davis-Besse Oversight Panel, provides an appropriate opportunity for FENOC to demonstrate or achieve compliance with NRC requirements. Thus far, the NRC has not observed an inability or unwillingness on the part of FENOC to achieve compliance with NRC regulations and the Davis-Besse operating license.

B.4 NRC must revoke the Davis-Besse license in order to ensure that FENOC is complying with all NRC regulations, guidelines, and the Davis-Besse design and licensing bases

The Petitioner requests that the "burden-of-proof" be placed on FENOC to show that it is in compliance with NRC requirements and operating the Davis-Besse plant safely. According to the petition, the only way to do that is for the NRC to revoke the Davis-Besse operating license and "force the Davis-Besse operating facility to undergo the exhaustive and meticulous inspections, tests, and inquiries necessary to obtain a new operating license. These inspections will cover Davis-Besse's entire facility, not just those parts the NRC can justify inspecting based on their knowledge of past problems." The Petitioner argues further that the NRC's Davis-Besse Oversight Panel "cannot adequately ensure public safety. [The NRC Davis-Besse Oversight Panel is] fundamentally encumbered by the fact that the NRC has the

burden of proving that [FENOC] is not operating safely. Because of [FENOC's] failings, the burden-of-proof needs to be placed with [FENOC] to prove that they are operating safely."

In related arguments the March 27, 2003, supplement states that "[t]he procedures instituted by the NRC concentrate on the corrosion of the reactor head, and seek to correct the causes of that corrosion.... The convened process may not uncover other systems that may be similarly degraded and that may contain hidden dangers of similar caliber to the hole discovered in the reactor head." The Petitioner also asserts in the supplement that "[c]urrently, the NRC is not concerned with making sure that the Davis-Besse safety systems match the design and licensing basis of the plant."

The Petitioner argues that the very reason for revoking FENOC's license is to put the burden-of-proof on the licensee to demonstrate compliance because the NRC is "fundamentally encumbered." In other words, the Petitioner is arguing that the Davis-Besse operating license should be revoked in order to force the licensee to demonstrate compliance with NRC requirements because the NRC is unable to prove that the licensee *isn't* in compliance. In a license revocation proceeding, the NRC would have the burden of proving that the license should be revoked. If the NRC is unable to satisfy its burden-of-proof in a revocation proceeding, then the license cannot be revoked. The NRC's authority to revoke licenses does not allow the NRC to summarily revoke a license simply because it wishes to shift the burden to the licensee.

The NRC staff shares the Petitioner's concerns about verifying the adequacy of plant operator performance and ensuring that any future operation of the plant is conducted safely and in compliance with NRC requirements. Contrary to the Petitioner's assertion, the licensee's corrective actions and the NRC's oversight and inspection activities are not narrowly focused on

the root causes and corrective actions associated with the reactor vessel head corrosion. FENOC's Return-to-Service Plan includes Operational Readiness Reviews, System Health Readiness Reviews, and Latent Issue Reviews for safety-related systems beyond the reactor vessel head issues. In plain terms, the licensee is evaluating, testing, or inspecting plant safety-related systems to ensure that they are able to perform their design-basis functions as defined in the plant's technical specifications and Updated Final Safety Analysis Report. Additionally, the licensee's Return-to-Service Plan includes activities to foster a safety-conscious work environment in which employees are encouraged to raise concerns and a culture where plant safety issues receive appropriate management attention. The results of the licensee's corrective actions are being closely monitored by the NRC staff through independent NRC inspections and reviews of FENOC's evaluations, tests, and inspections. Important issues that are discovered are being added to the NRC's Restart Checklist or carried as unresolved issues in the inspection tracking system as appropriate. The NRC inspections include a Systems Health Inspection, a Management and Human Performance Inspection, and a Program Effectiveness Inspection.

Regardless of where the "burden-of-proof" lies, the important point is that evaluations, inspections, and testing needed to ensure that the plant can operate safely are being performed. The NRC Davis-Besse Oversight Panel has specified in the NRC Restart Checklist the safety-significant issues that must be addressed before the NRC will consider a restart. The NRC's oversight activities for Davis-Besse will ensure that the licensee's corrective actions adequately address these issues before the NRC will consider allowing the facility to restart.

With regard to the Petitioner's assertion that the NRC is not concerned with making sure that the Davis-Besse safety systems match the design and licensing bases of the plant, the

NRC points to the very example cited by the Petitioner. The petition supplement states: "Several problems with the design-basis have been identified during the [NRC's enhanced oversight] process, including finding that the plant has operated outside of its design-basis since it was built...." If the NRC were unconcerned as the Petitioner asserts, these items would not have been added to the NRC's Restart Checklist or tracked as open items by the NRC's inspection program. The fact that these issues were identified as part of the NRC's enhanced oversight process and added to the NRC's Restart Checklist, or added to the issues being tracked by the NRC inspection program, demonstrates that the NRC *is* ensuring that FENOC complies with the Davis-Besse design and licensing bases. The specific actions being taken by the NRC and FENOC with regard to this particular issue are discussed further in Section B.6.b.

B.5 Revocation of the Davis-Besse license is required in order to ensure consistency in NRC enforcement

The Petitioner argues that revocation of the Davis-Besse operating license is required in order for there to be consistency in the manner that the NRC enforces its regulations. To support this argument, the Petitioner cites a number of enforcement actions taken by the NRC to modify, suspend, or revoke the licenses of materials licensees. The petition implies that the NRC is inconsistently enforcing its requirements with regard to Davis-Besse because the NRC has not revoked FENOC's operating license for the Davis-Besse facility. The petition states: "[FENOC] has clearly violated NRC regulations and policies to a much greater degree with potentially much greater consequences than others who have had their licenses revoked by the NRC. If NRC does not act here, it raises the question of a double-standard - one consequence for those who have greater resources to challenge the NRC's decision, and a different and much more serious consequence for those with fewer resources to challenge the NRC. The

NRC is abusing the authority granted to it by Congress if it does not operate fairly and consistently with all of its licensees."

In its February 27, 2003, response to the petition, FENOC argued that "[a]ll the license revocation cases cited by Petitioner involve materials licenses and are [irrelevant] and unpersuasive." FENOC's response correctly argues that a crucial factor in the NRC decision process on license revocation is whether a licensee is able and willing to comply with NRC requirements. To support this position, the licensee's response cites a previous NRC denial of a 2.206 petition to shut down the Gore, Oklahoma, facility owned by Sequoyah Fuels. The denial stated that, although serious violations had occurred, the violations in and of themselves didn't warrant suspension or revocation of the license. In denying that petition, the decision also noted that the Sequoyah Fuels history didn't reflect an inability or unwillingness to comply with NRC requirements.

The fact that the enforcement actions cited by the Petitioner are all from materials licenses does not in and of itself make these cases irrelevant. Indeed, the NRC staff believes that a close study of these enforcement actions shows, contrary to Petitioner's assertion that the NRC uses a double-standard, that the NRC *does* treat its licensees fairly. Of the eight cases cited, only one involved the revocation of the license; two involved immediate suspension of the license, in one case after an employee of the affected licensee had received a significant overexposure to radiation; and the balance of the cited enforcement actions either involved confirmatory orders regarding commitments the licensees had made, or were notices of violations and/or fines. The one cited enforcement action that revoked the license was taken only after the affected licensee had a substantial opportunity to comply with NRC requirements and had demonstrated an unwillingness to comply.

The NRC's ongoing inspection and oversight process for Davis-Besse affords FENOC an opportunity to demonstrate that all relevant restart issues have been satisfactorily addressed. NRC evaluations related to potential enforcement actions are still ongoing, as are NRC activities associated with the alleged willfulness of apparent violations and alleged willful withholding of information or deliberate misrepresentation of facts. In its oversight of the licensee's corrective actions for the apparent violations, the NRC has not observed an inability or unwillingness on the part of FENOC to achieve compliance with NRC regulations, the Davis-Besse operating license, or the Davis-Besse design and licensing bases.

B.6 Petition supplement

The supplement raised the following specific concerns:

a. Boric acid dust in the reactor containment building (from the reactor vessel head leakage) may have caused corrosion of the electrical system and cable trays.

b. The as-built design of the plant may not be consistent with the plant's design or licensing bases. As a result, the training of FENOC personnel may not match the plant's licensing basis.

c. Davis-Besse does not have the ability to detect a 1-gallon-per-minute leak from the reactor coolant system within 1 hour. Thus, Davis-Besse does not meet the requirements of the general design criteria contained in 10 CFR, Part 50, Appendix A, or the guidance of NRC Regulatory Guide 1.45.

d. Two of the four reactor coolant pumps still have gasket leaks that have not been corrected by the licensee.

e. The NRC's Davis-Besse Oversight Panel will end and the Davis-Besse plant will return to normal monitoring under the NRC's reactor oversight process before NRC has implemented changes to its reactor oversight process that were recommended by an NRC Lessons Learned Task Force.

f. The NRC's enhanced oversight and inspection of FENOC's corrective actions does not allow intervenors or the public to participate in the licensing decision through a formal hearing. Such participation would be possible if the Davis-Besse license were revoked and FENOC had to reapply for another operating license.

g. The investigation being performed by the NRC's Office of Investigations to determine whether FENOC willfully violated NRC requirements and an associated investigation to determine if FENOC deliberately misled the NRC must be completed before the NRC considers the petition. Furthermore, the NRC must consider the petition before allowing the Davis-Besse plant to restart.

h. There are continuing safety culture problems at Davis-Besse.

The NRC staff has evaluated these concerns and, as discussed in the following sections, finds that they do not individually, collectively, or in combination with the original petition concerns warrant revocation of the Davis-Besse operating license.

B.6.a Effect of boric acid dust in containment

The Petitioner expresses a concern that the boric acid dust released into the containment atmosphere through the leak in the reactor vessel head may have caused corrosion of electrical systems and cable trays within the containment. Part of this concern is that the NRC's current inspection program, which looks at a sample of the licensee's work, may not identify such degraded conditions. The Petitioner argues that the inspections and examinations that would be conducted if FENOC had to reapply for an operating license would identify and correct any electrical system or cable tray deficiencies caused by the boric acid dust.

The structure of the NRC's inspection program and the means by which it provides reasonable assurance that FENOC is taking appropriate corrective actions to adequately protect the health and safety of the public have already been discussed in Section A.1 of this decision. With regard to this particular issue, the intent of the NRC inspection program is to ensure the licensee has a program in place that (a) will result in a complete inspection of the containment and (b) will result in implementation of appropriate corrective actions. The NRC inspection program accomplishes this by verifying that the licensee has a program that will be able to address the concern then verifying, through a sampling process, that the licensee's

program is effectively implemented. This process would be used to address the concern for restart after an extended shutdown or requalification for an operating license.

The licensee has included this issue within the scope of its inspections and evaluations. Specifically, FENOC's "Containment Boric Acid Extent of Condition Plan" is included as a subset of the "Containment Health Assurance" portion of FENOC's Return-to-Service Plan. Under the "Containment Boric Acid Extent of Condition Plan," the licensee is conducting inspections and evaluating the extent of any damage that boric acid dust has caused to structures, systems, and components within the containment. Cable trays, conduit, electrical junction boxes, ventilation ducts, and other electrical and mechanical components are included in the scope of these inspections and evaluations. Additionally, the NRC Davis-Besse Oversight Panel has included adequacy of structures, systems, and components inside containment in the NRC's Restart Checklist of items that must be satisfactorily addressed before the NRC will consider allowing the facility to restart.

The NRC has conducted two inspections of the licensee's evaluations and corrective actions for this issue to ensure that FENOC has adequately addressed the effects of the boric acid dust in containment. These inspections are documented in NRC Inspection Reports 50-346/02-09 and 50-346/02-12 (ADAMS Accession Nos. ML022560237 and ML023370132). In the first inspection, the NRC determined that FENOC's "Containment Boric Acid Extent of Condition Plan" was sufficiently comprehensive to identify potentially degraded components affected by boric acid within containment. However, this inspection concluded that the licensee's initial implementation efforts were not effective. FENOC subsequently completed corrective actions, such as revision of inspection plans and re-training of inspection personnel, to address implementation deficiencies and performed repeat inspections. The NRC's second

inspection determined that FENOC had implemented appropriate corrective actions to address the performance deficiencies identified during the first NRC inspection. The NRC inspectors found that FENOC's inspection staff was appropriately trained, had adequate equipment and tools, and followed procedures with adequate standards and guidance. The net result was that boric acid and corrosion deposits observed by the NRC inspectors on components within the containment, including electrical components and safety-related equipment, had in each case been independently identified and documented by the licensee staff. Where the licensee's inspections identified corrosion, corrective actions had been developed to address the deficiency. This led the NRC staff to conclude that FENOC was effectively implementing its "Containment Health Assurance Plan."

As noted in Section B.4, the important point is that evaluations, inspections, and testing needed to ensure that the plant can operate safely are being performed and are being closely monitored by the NRC field inspection staff. The cable trays and electrical systems are included within this scope of work. Additionally, the NRC is still maintaining an open item on the NRC's Restart Checklist regarding the adequacy of structures, systems, and components inside of the containment. This item must be adequately addressed before the NRC will approve restart of the facility.

Thusfar, although there are still open items that the licensee must address, the results of the NRC's inspections indicate that FENOC is effectively implementing inspections and corrective actions to adequately identify and resolve equipment deficiencies caused by boric acid dust inside containment. Therefore, the NRC staff concludes that, although this issue may provide a basis for withholding approval of a plant restart, it does not provide a sufficient basis to revoke the Davis-Besse operating license.

B.6.b Conformance to the Davis-Besse design and licensing bases

The Petitioner alleges that the Davis-Besse facility may not meet its design or licensing bases and that neither the licensee nor the NRC is concerned with assessing and correcting the problem. As discussed in Section B.4 above, the NRC is concerned with ensuring that Davis-Besse conforms to its design and licensing bases. Not only is the licensee evaluating its plant safety systems and programs for compliance with NRC requirements such as design and licensing bases, but the NRC's oversight activities include independent NRC inspections and NRC reviews of the licensee's evaluations to ensure conformance of safety systems and programs to the design and licensing bases. Where deficiencies are identified by the licensee, they are entered into the licensee's formal corrective action program and prioritized based on safety significance. Safety-significant deficiencies identified by the NRC are being added to the NRC's Restart Checklist, and they must be resolved before the NRC will consider any future restart. Additionally, some issues that are identified by the licensee may also be added to the NRC Restart Checklist, depending on the safety significance of the issues. Some items of low safety-significance would not be required to be completed before a plant restart, but would be required to be captured within FENOC's corrective action program.

Finally, the Petitioner raises a separate but related issue with regard to training of FENOC personnel. Specifically, the supplement states: "The NRC has not concentrated on ensuring that the training of personnel matches the licensing basis of the plant as they would have to do if they conducted a full licensing and examination process."

In accordance with a 1996 Memorandum of Agreement between the NRC and the Institute of Nuclear Power Operations (INPO), INPO maintains a formal process for periodically evaluating the training programs of licensees for personnel who operate or maintain safety-

related equipment. FENOC's training program has maintained its INPO accreditation. Additionally, the NRC's Operator Licensing program evaluates licensee requalification programs for licensed operators to ensure that the operators maintain proficiency in operating the plant during normal and upset conditions, including responses to accidents.

The licensee's training program is correctly focused on both the licensing basis and component performance. The requalification program for licensed operators appropriately covers responses to various accident scenarios where components fail to operate as expected. While the training covers required design parameters to ensure that the reactor core remains in a safe condition and components operate properly, the training also emphasizes use of the site's emergency operating procedures for alternate means of responding to plant events or accidents if some equipment fails to operate as designed. Furthermore, when design issues are identified that warrant implementation of modifications or procedure revisions, the licensee's training program includes requirements to conduct training for plant operations personnel on revisions or modifications that are made to plant equipment.

The deficiencies in the Davis-Besse design and licensing bases that have been identified by the NRC's inspections or FENOC's reviews have been entered into the licensee's corrective action program as part of the FENOC Return to Service Plan. Additionally, this issue is being tracked under the NRC Restart Checklist "System Readiness for Restart" line item and it must be adequately addressed before the NRC will consider a restart of the plant. Furthermore, the NRC's oversight includes a specific inspection of the licensee's corrective action program. Therefore, since the licensee's ongoing corrective actions, as monitored by the NRC Davis-Besse Oversight Panel, are addressing this issue, the NRC staff considers that this concern does not provide a sufficient basis to revoke the Davis-Besse operating license.

B.6.c Davis-Besse leak detection capability

The Petitioner's stated concern is that the new leak detection system being installed by FENOC is not capable of detecting a 1-gallon-per-minute reactor coolant system leak within 1 hour. Thus, Petitioner asserts, Davis-Besse will not be in compliance with General Design Criterion 30 specified in 10 CFR, Part 50, Appendix A, or in conformance with the guidance provided in NRC Regulatory Guide 1.45. Additionally, the new leak detection system will only detect leakage from the reactor and not from other piping systems connected to the reactor. Finally, the Petitioner expresses a concern that containment radiation monitors are not capable of detecting a 1-gallon-per-minute reactor coolant leak within the 1-hour guideline and industry experience has shown that radiation monitors may take significantly more time to detect small reactor coolant system leaks than technical specifications allow to complete a plant shutdown when leakage exceeds the technical specification limits. The Petitioner argues that this issue would be rectified if FENOC were forced to reapply for a license to operate the Davis-Besse facility.

General Design Criterion 30 specifies that (a) "[c]omponents which are part of the reactor coolant pressure boundary shall be designed, fabricated, erected, and tested to the highest quality standards practical," and (b) "[m]eans shall be provided for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage." The Petitioner's stated concern deals with the second part of this general design criterion.

The NRC staff has reviewed this concern and determined that the enforcement action suggested by the Petitioner would not provide the relief that is sought. Because the Davis-Besse construction permit was issued before the general design criteria specified in 10 CFR, Part 50, Appendix A, were incorporated into the regulations and became effective, Davis-Besse

is not required to meet the literal requirements of these general design criteria. Even if the license were revoked, it is not likely that these requirements would be imposed on the facility in a new licensing proceeding. That is because the requirement to comply with the general design criteria is based on the date that the NRC issued a *construction* permit to the facility; which would not change if the license were to be revoked. Furthermore, if the NRC were to impose the requirement of General Design Criterion 30 on the licensee, revocation of the operating license would not be required to accomplish that change in the Davis-Besse licensing basis.

As described in the Davis-Besse Updated Final Safety Analysis Report, the design and licensing bases of the facility do, however, contain leakage detection systems and the facility does have the ability to detect and monitor leakage that is of the magnitude about which the Petitioner expresses concern. The Davis-Besse facility has methods to detect and monitor reactor coolant system leakage other than the new leak detection system that is being installed. In addition to this new system and the radiation monitoring systems that the Petitioner has already noted, Davis-Besse has a containment sump level and flow monitoring system that provides a separate leak detection ability. The plant's technical specifications include requirements for the operability of the containment sump level and flow monitoring system, and the containment radiation monitors during plant operation. The technical specifications also include requirements for routine monitoring and trending of water inventory balances which provide indications of potential reactor coolant system leakage. The Davis-Besse Updated Final Safety Analysis Report describes an additional capability to detect leakage through trending of changes in makeup tank water level.

The NRC staff reviewed the Davis-Besse leakage detection systems during the plant's initial licensing. As documented in NUREG-0136, Supplement 1, "Safety Evaluation Report Related

to Operation of Davis-Besse Nuclear Power Station Unit 1," dated April 1977, the NRC staff concluded that the plant design conformed sufficiently to the recommendations of NRC Regulatory Guide 1.45 to satisfy the intent of General Design Criterion 30. The fact that the new leak detection system may not be capable of detecting a 1-gallon-per-minute reactor coolant system leak within 1 hour does not negate the NRC staff's previous conclusion that the plant design meets the intent of General Design Criterion 30. That is because the principal leak detection systems described in the plant's Updated Final Safety Analysis Report are still in place and still part of the plant design and licensing bases. The new leakage detection system provides an additional level of diversity in the plant's leakage detection capability.

The NRC staff notes that inability to detect reactor coolant system leakage was not a contributing factor to the corrosion of the Davis-Besse reactor vessel head. Rather, the corrosion was the result of the licensee's failure to understand the indications that were available (in addition to the physical flaws in the reactor vessel head). In other words, the licensee had ample indication that a problem existed, but failed to take an appropriate response. Indeed, as Petitioner noted in Section E of the main petition, "[b]eginning in the spring of 1999, the [radiation detector air filters] were becoming clogged on an increasingly frequent basis, sometimes as often as every day... Although engineers suspected a coolant leak, they did not find it. Instead, they continued to clean and change the filters, sometimes every day. Workers, moreover, moved the monitor intakes to different spots, and even bypassed one of the devices' three sensors because it continued to trigger alarms." The actual leakage rate throughout the plant's last operating cycle never reached 1 gallon per minute, and averaged less than 0.3 gallon per minute. Thus, the actual plant experience demonstrates that the plant does have an ability to detect small leakage rates through direct or indirect effects of

leaks.

Because the general design criterion cited by the Petitioner does not apply to Davis-Besse, because the NRC staff has previously reviewed the plant design and determined that the intent of the general design criterion is met, and because actual plant experience has demonstrated that the physical systems can detect a small reactor coolant system leak, the NRC staff concludes that the Petitioner's stated concern regarding Davis-Besse's leak detection capability does not provide a basis to revoke the Davis-Besse operating license. Hence, the associated issue regarding the amount of time required for radiation monitors to detect reactor coolant system leakage is not relevant to the question of whether the Davis-Besse operating license should be revoked. In and of itself, this issue does not provide a basis for revoking an operating license. For the sake of completeness, however, this issue will be addressed here.

The Petitioner argues that the amount of time required to detect reactor coolant system leakage using radiation monitors must be consistent with the amount of time allowed by the technical specifications to complete a shutdown. Although it might seem that the amount of time required to detect leakage is linked to the amount of time that technical specifications allow to complete a shutdown, in actuality there is no such link. The technical specification limits are set conservatively low in order to prompt operators to initiate action before leakage gets worse and seriously challenges plant safety. The amount of time that the technical specifications allow to complete a shutdown when the leakage limits are exceeded, on the other hand, provides a reasonable amount of time to conduct an orderly shutdown of the plant once it is concluded that a technical specification leakage limit has been exceeded.

The NRC staff is aware, as the Petitioner correctly points out, that improvements in nuclear fuel integrity since 1973, when NRC Regulatory Guide 1.45 was issued, have resulted in

decreases in reactor coolant radioactivity levels at many plants. This has created reductions in radiation monitor sensitivities to detect reactor coolant system leakage at some plants. However, radiation monitors may be able to detect a 1-gallon-per-minute leak rate within a period longer than 1 hour and still provide adequate leak-before-break detection capability. Moreover, when considered in conjunction with other diverse leakage detection systems, the NRC staff concludes that the availability of at least one detection method that is capable of detecting a leak rate increase of about 1-gallon-per-minute within 1 hour provides adequate leak-before-break detection capability. That detection method might not employ radiation monitors. For Davis-Besse, the containment sump level and flow monitoring system described in the plant's Updated Final Safety Analysis Report is capable of detecting a 1-gallon-per-minute leak rate within such a period that meets the intent of NRC Regulatory Guide 1.45.

The NRC's "Action Plan for Addressing Davis-Besse Lessons Learned Task Force Recommendations Regarding Assessment of Barrier Integrity Requirements," includes a milestone to re-evaluate the bases for reactor coolant system leakage requirements and re-assess the capabilities of currently used and state-of-the-art leakage detection systems. This will appropriately address the issues regarding detector capabilities and technical specification requirements on an industry-wide basis rather than an ad-hoc manner.

B.6.d Reactor coolant pump gaskets

The Petitioner expresses a concern that FENOC has only replaced gaskets in two of the four reactor coolant pumps at Davis-Besse. To support this concern, the Petitioner cites a complaint by a former FENOC employee filed with the Department of Labor, and a March 27, 2003, report issued by the Union of Concerned Scientists. Both of those documents claim that known deficiencies exist with gaskets on all four of the Davis-Besse reactor coolant pumps.

The Union of Concerned Scientists report draws on internal FENOC documents and a July 2, 2002, letter from a reactor coolant pump technical support vendor (Flowserve) to support its argument that the reactor coolant pump gaskets are deficient and, further, that both FENOC and the NRC have failed to take appropriate corrective actions.

The statements made in the petition supplement regarding the condition of the reactor coolant pump gaskets are restatements of allegations that are currently under review by the NRC. In its April 11, 2003, response to the supplement, FENOC stated that all four of the reactor coolant pumps will be tested with water at normal operating pressure and temperature prior to restart to inspect for reactor coolant pump gasket leakage. The NRC staff will monitor the results of this test and ensure that needed corrective actions are incorporated into the licensee's corrective action process. Therefore, the NRC staff concludes that it is necessary for this issue to be dispositioned before the NRC will consider a plant restart, but it does not provide a sufficient basis to revoke the Davis-Besse operating license.

B.6.e Completion of monitoring Davis-Besse under the NRC's 0350 process

The Petitioner expresses a concern that the NRC's enhanced oversight (0350) process will be terminated after the Davis-Besse plant is allowed to restart but before the NRC has implemented changes to the NRC's Reactor Oversight Process as recommended by an NRC Lessons Learned Task Force. Additionally, the Petitioner asserts that there is no mechanism that allows for public involvement to ensure that the Lessons Learned Task Force recommendations relative to the NRC's reactor oversight process are implemented prior to the end of the NRC's enhanced oversight of Davis-Besse.

The Petitioner is essentially arguing that the NRC's normal Reactor Oversight Process is inadequate and that the recommendations of the NRC Lessons Learned Task Force must be

implemented in order to correct the Reactor Oversight Process's deficiencies. This is a separate issue from the question of whether the Davis-Besse operating license should be revoked. Neither the NRC Lessons Learned Task Force nor the Petitioner identified fundamental flaws in the NRC Reactor Oversight Process. Rather, the NRC Lessons Learned Task Force recommended actions to improve and enhance the normal oversight process. The need for such improvements in the NRC's normal Reactor Oversight Process, however, is not a basis for revoking a facility operating license since the existence of a flawless NRC oversight program is not a prerequisite for a licensee to be granted or to retain a facility operating license.

Considering that the conditions leading to Davis-Besse's reactor vessel head damage developed during a period of minimal NRC oversight at the plant, and that the NRC Lessons Learned Task Force identified areas for improvement in the normal Reactor Oversight Process, it is understandable, however, that the Petitioner seeks assurance that future NRC oversight of Davis-Besse will adequately ensure that FENOC operates and maintains the plant in compliance with NRC requirements. If the NRC does approve a restart of the Davis-Besse facility, the NRC's Inspection Manual Chapter 0350, which governs the NRC's Enhanced Oversight Process, specifies that enhanced NRC oversight will continue after restart until such time that the NRC Davis-Besse Oversight Panel determines that the licensee has demonstrated acceptable performance. Post-restart enhanced oversight will not be terminated unless the NRC Davis-Besse Oversight Panel recommends to the appropriate NRC Regional Administrator that the plant be returned to monitoring under the normal Reactor Oversight Process. That Regional Administrator, in consultation with the NRC Director of the Office of Nuclear Reactor Regulation and the Office of the Executive Director for Operations, will decide whether a return to the normal Reactor Oversight Process is warranted.

The recommendation of the NRC Davis-Besse Oversight Panel to return Davis-Besse to the normal Reactor Oversight Process would also provide the basis for the panel's conclusion that the plant can be returned to routine monitoring. The NRC's evaluation process to reach such a conclusion will include the use of an inspection plan that is specifically tailored to the particular circumstances of the Davis-Besse plant. Under that plan, critical licensee performance areas of concern, for example Management and Human Performance, will be inspected. A return of the Davis-Besse facility to the normal Reactor Oversight Process would include an assessment of the plant's performance and a determination of whether significant additional NRC oversight is required in accordance with the normal Reactor Oversight Process guidance.

Additionally, some of the Lessons Learned Task Force's near-term recommendations are already being functionally accomplished through the NRC's enhanced oversight of Davis-Besse. For example, the Lessons Learned Task Force recommendations included development of inspection guidance (a) to ensure that reactor vessel head penetrations nozzles and the reactor pressure vessel head area are periodically reviewed by the NRC during licensee inservice inspections activities and (b) provide for timely periodic inspections of pressurized water reactor boric acid corrosion control programs. The NRC's Restart Checklist for Davis-Besse includes the adequacy of the reactor pressure vessel head replacement and the adequacy of the Davis-Besse Boric Acid Corrosion Management Program as issues that must be satisfactorily addressed before the NRC will consider a plant restart. Thus, for these examples, the issues are being addressed as part of the NRC Davis-Besse Oversight Panel's activities and, in the short-term, the associated recommendations of the Lessons Learned Task Force will be functionally accomplished even though the NRC's programmatic implementation of the NRC Lessons Learned Task Force recommendations may not be fully implemented at

the time a decision regarding restart of the Davis-Besse plant is made.

With regard to the Petitioner's assertion that there is a lack of opportunity for public involvement to ensure that the Lessons Learned Task Force recommendations relative to the NRC's reactor oversight process are implemented prior to the end of the NRC's enhanced oversight of Davis-Besse, the NRC is planning to conduct public meetings to discuss the NRC's action plans that will address the NRC Lesson's Learned Task Force's recommendations. These meetings will provide members of the public an opportunity to voice concerns and comment on the action plans. Additionally, the NRC's Inspection Manual Chapter 0350 recommends that the NRC Davis-Besse Oversight Panel conduct public meetings with the licensee to discuss licensee performance, and hold separate meetings with the public, prior to termination of the NRC Enhanced Oversight Process. Consistent with the NRC's practice of conducting routine public meetings, as has been done throughout the entire Enhanced Oversight Process for Davis-Besse, such meetings would afford members of the public an opportunity to ask questions of the NRC staff and voice concerns about returning Davis-Besse to the NRC's normal Reactor Oversight Process. Finally, the NRC's normal Reactor Oversight Process also provides a means for public participation through the annual performance review, which includes a public meeting with the licensee at which the public can ask questions of the NRC staff regarding licensee performance and raise issues for NRC followup.

B.6.f Public participation in NRC's oversight of Davis-Besse

Petitioner expresses a concern that the NRC's enhanced oversight and inspection of FENOC's corrective actions does not allow the public to participate in the licensing decision through a formal hearing. The Petitioner states that such participation would be possible if the Davis-Besse license were revoked and FENOC had to reapply for another operating license.

The NRC staff believes that the enhanced oversight of FENOC's corrective actions under its Return-to-Service Plan is transparent and affords substantial opportunities for interested members of the public to voice safety concerns. The NRC Davis-Besse Oversight Panel has been conducting public meetings with the licensee and the general public on a routine basis. The meetings held with the licensee are open for the public to observe and time is provided after the business portions of these meetings for public questions and comments. The meetings with the general public allow interested parties to voice their concerns and ask questions of the NRC staff. Since the discovery of the damaged reactor vessel head at Davis-Besse in March 2002, the NRC has conducted more than 25 meetings with FENOC that were open for public observation/participation and more than 12 meetings directly with the public to discuss the licensee's corrective actions and listen to the public's concerns. Furthermore, the local residents of Ottawa County have a representative on the FENOC Restart Overview Panel to whom they can communicate concerns. While it is true that the current process does not afford hearing rights, the fact that a potential intervenor desires a hearing is not in and of itself a sufficient basis to revoke a plant operating license. The criteria and guidance regarding revocation of plant operating licenses that have already been discussed must still be satisfied.

B.6.g Ongoing NRC Office of Investigation activities

The Petitioner asserts that the investigations being conducted by the NRC's Office of Investigations to determine whether FENOC willfully violated NRC requirements and whether FENOC deliberately misled the NRC must be completed before considering this petition or allowing the Davis-Besse plant to restart. This decision has already discussed the reasons for considering the petition prior to completion of the NRC's wrongdoing investigations. Therefore, the following discussion will focus on the matter of a potential NRC decision to allow plant

restart.

The wrongdoing investigations look at the past actions of any suspect individuals. However, an NRC decision to allow plant restart would be based on an assessment of the licensee's current performance and its effectiveness in following conservative decision making processes to ensure adequate nuclear and personnel safety. Hence, although it may be informed by interim or final results of the NRC's wrongdoing investigations, an NRC decision regarding restart of the plant would not be linked to the *completion* of the NRC's wrongdoing investigations.

The NRC's enhanced oversight of Davis-Besse's corrective actions includes a Management and Human Performance Inspection, a Program Effectiveness Inspection, and an assessment of the effectiveness of FENOC's activities to foster a healthy safety culture. Any future NRC decision to allow a restart of the Davis-Besse facility will be based on the NRC's assessment of whether FENOC has adequately addressed the issues covered by the NRC Restart Checklist. That assessment will include, but is not limited to, a determination of whether (a) the conditions that led to the reactor head corrosion have been adequately addressed; (b) the physical condition of the plant, including safety systems, is adequate; and (c) the licensee's management, operations, maintenance, and engineering organizations are committed to, and capable of, operating the plant safely if it is permitted to restart.

B.6.h Safety culture at Davis-Besse

The Petitioner asserts that there are continuing deficiencies in the safety culture of the Davis-Besse staff. To support this argument, the Petitioner repeats allegations made by a former FENOC employee who claims that FENOC terminated his employment in retaliation for his engaging in protected activities. The petition states: "[t]he NRC should thoroughly

investigate [FENOC's] refusal to test or repair the remaining two Reactor Coolant Pumps, and [the former employee's] claims of retribution.... This is also offered as a supplement to the 2-206 petition, Section G, detailing [FENOC's] lack of rehabilitation in its safety culture following the discovery of the hole in the reactor head."

As discussed in Section B.6.d, the licensee's test plan includes a test of all four reactor coolant pumps with water at normal operating temperature and pressure prior to any future restart to inspect for reactor coolant pump gasket leakage in accordance with the pump vendor's recommendations. The NRC staff will monitor the results of this test and ensure that needed corrective actions are incorporated into the licensee's corrective action process. Therefore, there is no FENOC refusal to test the reactor coolant pumps for the NRC to investigate as requested by the Petitioner.

The NRC 2.206 process is not an appropriate forum for addressing wrongful termination claims of a former employee. The allegations made by the former employee, which the Petitioner cites in the supplement, are contained in a formal complaint filed with the U.S. Department of Labor by that individual, and they are also being investigated by the NRC's Office of Investigation. The Department of Labor and NRC Office of Investigation processes are the appropriate means for addressing the former FENOC employee's complaint and allegations.

With regard to the broader safety culture issue, FENOC has developed a "Management and Human Performance Corrective Action Plan," to address deficiencies in the safety culture at Davis-Besse. The plan includes training sessions for all FENOC employees on raising safety concerns and the proper handling of safety issues. The plan also includes an independent assessment of FENOC's safety culture at the Davis-Besse facility conducted by an industrial

psychologist. Additionally, with the support of industry experts, the NRC is assessing the licensee's approach to improving the safety culture and safety-conscious work environment at Davis-Besse. The NRC will not authorize restart of the Davis-Besse plant unless the NRC Davis-Besse Oversight Panel is satisfied that FENOC has effectively implemented corrective actions to foster a safety-conscious work environment in which employees are encouraged to raise concerns and a culture where plant safety issues receive appropriate management attention based on safety significance.

Therefore, the NRC staff concludes that, although this issue may provide a basis for withholding approval of a plant restart, it does not provide a sufficient basis to revoke the Davis-Besse operating license.

C. Petitioner's Alternative Request

The petition includes an alternative request that the NRC revisit its previous denial of a 2.206 petition that sought NRC action to issue an order to FENOC requiring verification by independent party for issues related to the Davis-Besse reactor head corrosion. The director's decision issued for that 2.206 petition concluded:

> The NRC staff finds that its ongoing actions are sufficient to verify the adequacy of the licensee's performance related to [reactor vessel] head degradation issues and to reassure the public that all reasonable safety measures have been taken prior to plant restart. The combined efforts of the [NRC Augmented Inspection Team] and the [NRC Davis-Besse Oversight Panel] will adequately identify and evaluate the technical and programmatic issues at Davis-Besse. The [NRC] staff has adequate expertise and resources to monitor the licensee's corrective and preventative actions. Thus, the enforcement-related action requested by the Petitioners for [verification by independent party] is not warranted. Additionally, the licensee is already taking action to provide an adequate level of independent verification for restart activities. Therefore, the Petitioners' request for the NRC to issue an Order to the licensee requiring the establishment of a [verification by independent party] is denied. If further assessment by the [NRC Davis-Besse Oversight Panel] identifies new and/or different issues that warrant consideration of an enforcement-related action similar to Millstone, a change to the current staff regulatory approach will be considered.

Since that director's decision was issued, FENOC has continued to include independent industry experts in its restart oversight organization, and the NRC Davis-Besse Oversight Panel continues to closely monitor the licensee's corrective actions. Additionally, FENOC has contracted with an industrial psychologist to perform an independent assessment of FENOC's safety culture at the Davis-Besse facility. The February 3, 2003, petition did not provide information of a new or different nature that warrants reconsideration of the previous director's decision.

III. Conclusion

The NRC staff has carefully considered the Petitioner's arguments regarding why FENOC's operating license for the Davis-Besse Nuclear Power Station should be revoked, as well as the alternative request for reconsideration of a previous request for verification by an independent party. The NRC staff shares the Petitioner's concerns about verifying the adequacy of plant operator performance and ensuring that future operation of the plant is conducted safely and in compliance with NRC requirements. The licensee has established, and is implementing, a Return-to-Service Plan that is comprehensive and addresses human factors, programmatic, and equipment issues as well as issues associated with the corrosion of the reactor vessel head. This includes evaluating, testing, or inspecting plant safety-related systems to ensure that they are able to perform their design-basis functions as defined in the plant's technical specifications and Updated Final Safety Analysis Report. Additionally, the NRC's inspection activities and the NRC's Restart Checklist go beyond ensuring that the direct causes of the damage to the reactor vessel head are properly identified and corrected. The NRC's activities also look broadly at safety-related plant systems and programs to ensure that the physical condition of the plant is adequate and the licensee's operations, maintenance, and engineering

organizations are prepared to operate the plant safely if it is permitted to restart. Thus the NRC believes that the FENOC Return-to-Service Plan, as monitored by the NRC Davis-Besse Oversight Panel, provides an appropriate opportunity for FENOC to demonstrate or achieve compliance with NRC requirements, and that these activities will provide results that adequately address the Petitioner's stated safety concerns.

With regard to the specific punitive action of revoking the Davis-Besse operating license sought by the Petitioner, the NRC staff finds that there is insufficient basis to take the requested action. While serious violations did occur at the Davis-Besse facility, the violations in and of themselves do not warrant revocation of the license. The Davis-Besse facility is currently shut down, and will remain so until the NRC is fully satisfied that there is reasonable assurance of adequate protection of the public health and safety and that any restart issues associated with management of the facility and potential wrongdoing have been satisfactorily addressed. In its oversight of the licensee's corrective actions for the apparent violations, the NRC has not observed an inability or unwillingness on the part of FENOC to achieve compliance with NRC regulations, the Davis-Besse operating license, or the Davis-Besse design and licensing bases. Therefore, the Petitioner's request that the NRC revoke FENOC's license to operate the Davis-Besse Nuclear Power Station is denied. Additionally, the NRC staff finds that the petition provides an insufficient basis for the NRC to reverse its previous decision on the alternative request for verification by independent party.

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

Dated at Rockville, Maryland, this day of 2003.

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Attachment: Staff Responses to Comments on
Proposed Director's Decision DD-03-xx . [Attachment included with Final DD only]

PROPOSED