



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

April 30, 2010

EA-09-332

Mr. Barry Allen
Site Vice President
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2, Mail Stop A-DB-3080
Oak Harbor, OH 43449-9760

**SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – NOTICE OF VIOLATION
NRC INSPECTION REPORT NO. 05000346/2010007(DRS)**

Dear Mr. Allen:

This refers to the Component Design Bases inspection conducted at your Davis-Besse Nuclear Power Station on November 3, 2009, through January 14, 2010. During the inspection, apparent violations of U.S. Nuclear Regulatory Commission (NRC) requirements were identified. Details regarding the apparent violations were provided in NRC Inspection Report No. 05000346/2009007(DRS) dated February 19, 2010.

In the letter transmitting the inspection report, we provided you with the opportunity to address the apparent violations identified in the report by either attending a Predecisional Enforcement Conference or by providing a written response before we made our final enforcement decision. You provided a written response to the apparent violations in a letter dated March 22, 2010. In your written response, you acknowledged the violations; however, you requested that the NRC consider the categorization of the apparent violations. You also questioned the application of the associated cross-cutting aspect.

In your response you stated that Supplement I, Example C.10 of the NRC's Enforcement Policy, which corresponds to a Severity Level III violation, did not apply based on the results of acceptable "as-found" tests in 2005 and 2010. The NRC agrees that Supplement I, Example C.10 is not applicable. However, the NRC determined that the fuel transfer tube blind flange assembly seal configuration had been modified multiple times since the 2000 equivalency replacement review such that the information about the as-found test results in either 2005 or 2010 did not provide a basis for concluding that there was an "excellent testing history" such as was documented in the NRC Safety Evaluation Report.

You also stated that Supplement VII, Example C.1 of the NRC's Enforcement Policy, which also corresponds to a Severity Level III violation, did not apply because, at the time the license amendment request (LAR) was submitted, the information was complete and accurate. Further, you stated that, at the time the equivalent replacement review was performed, the updated safety analysis was correct, such that the equivalent replacement review did not have to consider the

information in the not-yet-approved LAR. The NRC acted in good faith in granting the Davis-Besse LAR based upon the presumption that the information provided in the LAR remained complete and accurate. This led to the NRC reaching a conclusion that was no longer justified as the plant design basis had changed. The NRC determined that, had the NRC reviewers known at the time that the basis upon which the NRC intended to grant the amendment request was no longer valid, the NRC might well have requested additional information or have reached a different conclusion.

You also questioned whether it was appropriate to issue a cross-cutting aspect in the area of human performance, as there was no pattern of behavior spanning the ten year period between 2000 and the present. Specifically, you noted that there were no examples within the past three years to indicate that the error made in the 1999 - 2000 period was indicative of current performance. The NRC considered the information provided and determined that the cross-cutting aspect should be rescinded.

Based on the information developed during the inspection and the information that you provided in your written response, the NRC has determined that violations of NRC requirements occurred. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in NRC Inspection Report No. 05000346/2009007(DRS). In July 1999, your staff submitted a LAR to, in part, eliminate the requirement to perform as-found containment local leak rate testing of the fuel transfer tube blind flange assemblies. Your staff justified the elimination of the testing based on the then-installed double O-ring seal configuration with a history of no test failures from September 1991 through May 1998. On March 28, 2000, the NRC approved the license amendment based, specifically, on the excellent test history of the configuration. However, your staff did not capture this licensing basis information as part of the Updated Final Safety Analysis Report (USAR) for your facility. This failure was a violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.71(e). In November 1999, while the LAR was under review by the NRC, your staff initiated a change to the fuel transfer tube blind flange assembly seal configuration from the double O-ring design described in the LAR to a flat gasket design which did not have an established as-found test history. This change negated the basis which the NRC relied upon in approving the amendment. The fuel transfer tube gasket configuration was subsequently modified during the May 2000 outage. The failure to translate the licensing basis into the design at time of installation was a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." Since the March 2000 approval of the license amendment, your staff has modified the configuration of the fuel transfer tube blind flange seals multiple times.

The root cause of the 10 CFR 50.71(e) violation appeared to be that the procedures for updating the USAR did not provide adequate guidance for determining the appropriate content for updating the USAR to incorporate the effects of license amendments. The root cause of the 10 CFR Part 50, Appendix B, Criterion III violation appeared to be that the staff performing the equivalent replacement resolution did not have procedural guidance to ensure that they reviewed pending LARs to ensure that the planned modification did not alter the basis provided to the NRC in the LAR.

The NRC determined that the violations were significant because they impacted the NRC's ability to perform its regulatory function. Specifically, as noted above, the NRC reached a conclusion about the acceptability of a LAR based upon the design basis information provided about the test history of the fuel transfer tube blind flange assembly seal configuration. However, the design basis information was being modified in the interim between when the LAR was submitted and

when it was granted, which directly impacted the basis for the conclusion reached by the NRC. Had the NRC been informed of this, the NRC would likely have requested additional information or would have reached a different conclusion. Therefore, these violations have been categorized collectively as a Severity Level III problem.

In accordance with the NRC Enforcement Policy, a base civil penalty in the amount of \$55,000 is considered for a Severity Level III problem. However, because over five years has transpired since the violations occurred, a civil penalty was not considered based upon the Statute of Limitations (28 USC §2462). The NRC noted that your corrective actions already taken included: (1) reviewing other Davis-Besse Technical Specification amendment request safety evaluations that may have been requested with exceptions or exemptions with no similar instances identified; (2) performing an as-found test in January 2010 on the installed configuration, and review of the 2005 as-found and 2005 and 2006 as-left test results with no operability issues identified; and (3) revising procedure DB-MM-09 186, "Fuel Transfer Tube Blind Flange Removal and Reinstallation," to specify the use of one piece, seamless O-rings for both the inner and outer grooves of the Fuel Transfer Tube Blind Flange seal configuration. As corrective actions to prevent recurrence, you plan to: (1) incorporate information regarding the fuel transfer tubes blind flanges as-found testing exception basis into the USAR; (2) conduct industry benchmarking for updating the USAR and coordinating Technical Specification changes; and (3) review and revise procedures appropriately to ensure they are adequate.

The NRC has concluded that information regarding the reasons for the violations, the corrective actions taken and planned to correct the violation and to prevent recurrence, and the date when full compliance was achieved, was already adequately addressed on the docket in the inspection report dated February 19, 2010, and in your reply dated March 22, 2010. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such information, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). The NRC also includes significant enforcement actions on its Web site at www.nrc.gov/about-nrc/regulatory/enforcement.html.

B. Allen

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Should you have any questions, please contact Ms. Ann Marie Stone, Chief, Engineering Branch 2, at (630) 829-9729.

Sincerely,

/RA by Cynthia D. Pederson Acting for/

Mark A. Satorius
Regional Administrator

Docket No. 50-346
License No. NPF-3

Enclosure:
Notice of Violation

cc w/encl: Distribution via ListServ

Letter to Mr. Barry Allen from Mr. Mark A. Satorius dated April 30, 2010

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – NOTICE OF VIOLATION
NRC INSPECTION REPORT NO. 05000346/2010007(DRS)

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NOTICE OF VIOLATION

FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station

Docket No. 50-346
License No. NPF-3
EA-09-332

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted on November 3, 2009, through January 14, 2010, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

1. Title 10 of the Code of Federal Regulations (10 CFR), Section 50.71(e) requires, in part, that each licensee periodically update the Final Safety Analysis Report (FSAR) originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. The submittal shall contain all the changes necessary to reflect information and analyses submitted to the Commission by the licensee or prepared by the licensee pursuant to Commission requirement since the submittal of the last update to the FSAR under this section. The submittal shall include, in part, the effects of all safety analyses and evaluations performed by the licensee either in support of approved license amendments or in support of conclusions that changes did not require a license amendment in accordance with 10 CFR 50.59(c)(2).

By letter dated July 26, 1999, the licensee submitted a safety analysis to the Commission in support of a license amendment to allow no "as-found" local containment leak rate testing of the fuel transfer tubes. The safety analysis identified that each fuel transfer tube had a double O-ring seal and that a review of surveillance test history from September 1991 through May 1998 showed no test failures. Based on this information, the Commission approved a license amendment on March 28, 2000. With this Commission approval, the double O-ring seal configuration with a history of no test failures formed part of the design basis as specified in the license application.

Contrary to the above, as of November 20, 2009, the licensee failed to include the effects of all safety analyses and evaluations performed by the licensee in support of an approved license amendment into the Updated Final Safety Analysis Report (USAR) submitted to the Commission. Specifically, USAR change notice (UCN) 99-037, approved March 31, 2000, and incorporated into the November 15, 2000, USAR update submittal to the Commission, did not include the effects of all safety analyses and evaluations performed by the licensee in support of an approved license amendment, in that, UCN 99-037 failed to identify that a surveillance of test history from September 1991 through May 1998, using a double O-ring configuration, showed no test failures and that this information was used to support approval of the March 28, 2000, license amendment. As a result of this omission, the licensee failed to perform a 10 CFR 50.59 safety evaluation which addressed the test history of the double O-ring seal configuration for the fuel transfer tubes and associated licensing basis when the configuration was changed to a different configuration.

2. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, measures be established to assure that applicable regulatory requirements and design basis, as defined in Section 50.2 and as specified in the license application, for those structures, systems, and components are correctly translated into specifications, drawings,

procedures, and instructions. In addition, 10 CFR Part 50, Appendix B, Criterion III, requires, in part, that design control measures provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Contrary to the above, in May 2000, the licensee failed to implement design control measures which assured that the design basis, as specified in the license application, was correctly translated into specifications, drawings, procedures, and instructions. In addition, the licensee failed to provide adequate measures for verifying and checking the adequacy of design. Specifically, Equivalent Replacement Resolution (ERR) 60-0003-070 permitted changing the fuel transfer tube blind flange seal configuration from a double O-ring configuration having a test history of no "as-found" local leak rate test failures to a flat gasket configuration without a comparable test history. ERR 60-0003-070 did not specify a suitable testing program for the flat gasket configuration. The change in configuration permitted by ERR 60-0003-070 was contrary to the licensing basis which became effective March 28, 2000, through approval of a license amendment. As a result of this failure, a fuel transfer tube blind flange seal configuration contrary to the design basis, without an established test history, and without a suitable confirmatory testing program was installed during the refueling outage completed on May 18, 2000.

This is a Severity Level III problem (Supplement VII).

The NRC has concluded that information regarding the reasons for the violations, the corrective actions taken and planned to be taken to correct the violations and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in the inspection report dated February 19, 2010, and in your reply dated March 22, 2010. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," EA-09-332, and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at the Davis-Besse Nuclear Power Station, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 30th day of April 2010

ENCLOSURE

B. Allen

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Should you have any questions, please contact Ms. Ann Marie Stone, Chief, Engineering Branch 2, at (630) 829-9729.

Sincerely,

/RA by Cynthia D. Pederson Acting for/

Mark A. Satorius
Regional Administrator

Docket No. 50-346
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Notice of Violation

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¹: OE concurrence received via e-mail from G. Gulla on April 27, 2010.