



October 17, 2005

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Serial No. 05-663  
KPS/LIC/GR R3  
Docket No. 50-305  
License No. DPR-43

**DOMINION ENERGY KEWAUNEE, INC**  
**KEWAUNEE POWER STATION**  
**REPLY TO A NOTICE OF VIOLATION (EA-05-157)**  
**NRC INSPECTION REPORT 05000305/2005014**

In a September 16, 2005 letter, the Nuclear Regulatory Commission (NRC) provided the results of the final significance determination process for a white finding and a notice of violation involving the Auxiliary Feedwater (AFW) System design. As previously discussed with the NRC staff on August 26, 2005, Dominion Energy Kewaunee, Inc. (DEK) did not contest the preliminary characterization of the risk significance of the finding and declined the opportunity to discuss the issue in a regulatory conference or written response. The attachment to this letter provides a written response to the notice of violation regarding the failure to implement adequate design control measures to verify and check the adequacy of the AFW system design.

Should you have any questions or require additional information, please contact Mr. Gerald Riste (920) 388-8424.

Very truly yours,

A handwritten signature in black ink, appearing to read "W. R. Matthews".

William R. Matthews  
Senior Vice-President Nuclear Operations

Attachment

Commitments made in this letter: None

cc: U.S. Nuclear Regulatory Commission  
Administrator, Region  
Region III  
2443 Warrenville Road, Suite 210  
Lisle, Illinois 60532-4352

Mr. S. C. Burton  
NRC Senior Resident Inspector  
Kewaunee Power Station

Mr. J. F. Stang  
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**Attachment**

**Serial No. 05-663**

**Reply to a Notice of Violation (EA-05-157)  
NRC Inspection Report 05000305/2005014**

**Dominion Energy Kewaunee, Inc.  
Kewaunee Power Station**

**REPLY TO A NOTICE OF VIOLATION  
NRC INSPECTION REPORT 05000305/2005014**

**Excerpt from EA-05-157:**

During an NRC inspection conducted from April 15 through July 29, 2005, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that the design basis for safety-related functions of structures, systems, and components are correctly translated into specifications, drawings, procedures, and instructions. Further, Criterion III requires that the design control measures shall provide for verifying or checking the adequacy of designs.

Contrary to the above, prior to February 11, 2005, the licensee failed to implement design control measures to verify and check the adequacy of the auxiliary feedwater (AFW) system design to mitigate all postulated accidents. Specifically, the AFW system design relied upon pump discharge pressure trip switches that would not have protected the pumps from air ingestion during natural events such as tornado and seismic events. In addition, the AFW system design would not have protected the pumps from "runout" conditions that may be encountered during other design and license basis scenarios, including steam line breaks and station blackouts.

This violation is associated with a White Significance Determination Process finding.

Pursuant to the provisions of 10 CFR 2.201, Dominion Energy Kewaunee Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at the Kewaunee Power Station, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-05-157" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

**Dominion Energy Kewaunee, Inc. Response**

**1) The Reason for the violation, or, if contested the basis for disputing the violation or severity.**

The violation is correct as stated. The root cause of this failure to implement adequate design control measures was concluded to be due to a lack of engineering knowledge and understanding of what constituted proper rigor of analysis, review, and documentation in the resolution of issues related to the design basis of the AFW system. Significant contributing causes include:

- Weak program and process guidance.
- Poor planning and issue management of the modification.

The violation regarding the AFW pump is due to specific application of these underlying causes

**2) The corrective steps that have been taken, and results achieved.**

The AFW system design was re-evaluated to develop and implement necessary modifications to ensure that the AFW system can perform its intended safety function. The following modifications and actions were taken:

- Re-routed and resized a portion of the suction piping between the condensate storage tanks (CST) and the AFW pumps to ensure that an adequate volume of water is available to accommodate coast down of all three AFW pumps.
- Installed suction pressure switches in suction piping to the AFW pumps.
- Modified the setpoint of the existing AFW pump discharge pressure switches to provide run-out protection for the AFW pumps during steam generator depressurization scenarios.
- Requested a Technical Specification amendment and license basis change to modify the design and licensing basis of the AFW system to: 1) add operability requirements for the suction pressure switches in Technical Specifications, 2) change the design function of the discharge pressure switches, and 3) approve the use of operator actions for steam generator depressurization scenarios. The amendment and licensing basis change were approved, by letter dated June 20, 2005 (ML051600091), prior to unit restart in June 2005.

Integrated AFW System testing was performed to confirm the adequacy of the modified AFW system design and instrument setpoints. The operator actions were verified and

validated to ensure adequate time was available to perform the required manual actions to restart an AFW pump after steam generator depressurization.

**3) The corrective steps that will be taken to avoid further violations.**

Design change processes which were in place during the installation of the AFW discharge pressure switches in 1993, are no longer in use. Numerous changes and upgrades to these processes have been made. The current process is not representative of the process in place in 1993. The current process was reviewed and considered adequate to avoid further violations in this area.

Additional initiatives are underway or have been completed to strengthen engineering product quality. Examples of these engineering initiatives include:

- Development and implementation of procedure guidance that can be used by Engineering personnel to improve Engineering product quality. The following steps will be or have been performed in development of this procedural guidance.
  - ◆ MPR Associates performed an independent assessment of engineering. Recommendations from this assessment are contained in a letter to the NRC (ML050820213) dated March 18, 2005.
  - ◆ As an interim measure, an Independent Review Group (IRG) has been implemented and is currently performing duties in accordance with station procedures (NAD-04.08 and GNP-04.08.01). The IRG performs an in-line quality and technical review of station Engineering products including operability recommendations, 50.59 evaluations, calculations important to safety, and modifications important to safety.
  - ◆ A Quality Review Team (QRT) was implemented to assess station Engineering product quality on an on-going basis.
- Training was conducted to reinforce expectations regarding Engineering product quality as described in the letter to the NRC dated March 18, 2005. These expectations will also be included as part of Engineering continuing training.

Other engineering improvement initiatives were described in a letter to the NRC dated March 18, 2005.

**4) The date when full compliance will be achieved.**

Full compliance has been achieved. AFW System modification and testing has been completed to ensure that the AFW system can perform its intended safety function.

Although full compliance has been achieved, an additional AFW system modification is in progress to allow removal of the local manual operator actions. On June 20, 2005, the NRC issued license amendment 183 for the Kewaunee Power Station (ADAMS Accession No. ML051600091 and ML051720028). License amendment 183 added a license condition to the KPS Operating License that stated:

The auxiliary feedwater system local manual operator actions as described in the License Amendment Request submitted May 5, 2005, and supplemented on June 9, 2005, shall be eliminated no later than completion of Kewaunee refueling outage R-29.

The additional engineering enhancements identified as part of "Kewaunee Improvement Initiatives," in the letter to the NRC dated March 18, 2005 will be completed as identified in that letter to the NRC. These enhancements include items in areas such as Design Basis Documentation and Validation, Electrical Calculations, and Engineering Organizational Effectiveness.