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ATTN: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Serial No. 09-368  
LIC/MJH/RO  
Docket No.: 50-305  
License No.: DPR-43

**DOMINION ENERGY KEWAUNEE, INC.**  
**KEWAUNEE POWER STATION**  
**SUMMARY OF FACILITY CHANGES, TESTS AND EXPERIMENTS AND SUMMARY**  
**OF COMMITMENT CHANGES**

Pursuant to 10CFR 50.59(d)(2), enclosed is a summary description of Facility Changes, Tests and Experiments evaluated in accordance with 10 CFR 50.59(c) and implemented at the Kewaunee Power Station during the last reporting period, which is defined as not to exceed 24 months.

A commitment change evaluation summary for those commitment changes that occurred during the last reporting period is also enclosed.

The enclosed summary encompasses all changes that occurred in both of the stated areas since our prior submittal of this information.

If you have questions or require additional information, please feel free to contact Ms. Mary Jo Haese at 920-388-8277.

Very truly yours,

Michael J. Wilson  
Director Safety and Licensing, Kewaunee Power Station

Commitments made by this letter: NONE

IE47  
NRR

cc: Regional Administrator, Region III  
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**ATTACHMENT 1**

**SUMMARY OF FACILITY CHANGES, TESTS AND EXPERIMENTS  
AND SUMMARY OF COMMITMENT CHANGES**

**KEWAUNEE POWER STATION  
DOMINION ENERGY KEWAUNEE, INC.**

**10CFR50.59 Evaluations**

There are currently no 50.59 Evaluations to report on at this time. Four evaluations have been prepared and approved but the plant has not yet been modified to reflect those changes.

## **Commitment Change Evaluation Summary**

### **Document(s) Evaluated:**

1. NRC Generic Letter 95-07: Pressure Locking and Thermal Binding of Safety-Related Power Operated Gate Valves, dated August 17, 1995
2. Letter from C.R. Steinhardt (WPSC) to Document Control Desk (NRC) dated October 16, 1995, Response to Generic Letter 95-07.
3. Letter from R.J. Laufer (NRC) to M.L. Marchi (WPSC) dated November 3, 1995, 60-Day Response to Generic Letter 95-07.
4. Letter from C.R. Steinhardt (WPSC) to Document Control Desk (NRC) dated November 15, 1995, Response to Generic Letter 95-07.
5. Letter from C.R. Steinhardt (WPSC) to Document Control Desk (NRC) dated November 15, 1995, Supplemental Response to Generic Letter 95-07-Clarification.
6. Letter from C.R. Steinhardt (WPSC) to Document Control Desk (NRC) dated February 13, 1996, Response to Generic Letter 95-07.
7. Letter from R.J. Laufer (NRC) to M.L. Marchi (WPSC) dated June 11, 1996 Request for Additional Information - Generic Letter 95-07.
8. Letter from C.R. Steinhardt (WPSC) to Document Control Desk (NRC) dated July 18, 1996, Response to Request for Additional Information - Generic Letter 95-07.
9. Letter from R.J. Laufer (NRC) to M.L. Marchi (WPSC) dated January 13, 1998 Safety Evaluation of Licensee Response to Generic Letter 95-07, Pressure Locking and Thermal Binding of Safety-Related Power Operated Gate Valves, for the Kewaunee Nuclear Power Plant.

**Brief Description:** In response to NCR Generic letter 95-07, Kewaunee Power Station committed to monthly containment sump inspections to verify the sump is empty. Maintaining the sump and the piping that contains valves SI-350A/B in a dry condition eliminated the susceptibility of the valves to thermal-induced pressure locking.

Approved Commitment Change dated 9/6/2002 changed the containment sump inspection frequency from monthly to quarterly.

With the replacement of the Containment Sump B suction strainers, sump inspections could not be directly performed. Therefore, the Containment Sump B Water Level is verified to be below the containment sump recirculation suction piping monthly via plant procedures.

**Bases for change:** It was determined that, since replacement of the Containment Sump B suction strainers, sump inspections cannot be directly performed without opening the maintenance hatch, which would render both trains of sump recirculation inoperable. Monthly checks of Containment Sump B water level have been implemented through the performance of plant procedures.

The plant procedures cycle valves SI-350A and B to ensure their bonnets are drained. The procedures also drain Containment Sump B and the piping between the sump and

SI-350A and B. This ensures that SI-350A and B cannot become pressure locked due to water being forced into their bonnets from the containment sump.

**Summary:** The plant procedures perform the intent of the original licensing commitment to check Containment Sump B water level monthly.

### **Commitment Change Evaluation Summary**

#### **Document(s) Evaluated:**

1. Letter from E.W. James (WPSC) to A. Schwencer (USNRC) dated October 25, 1978, title: "Response to Request for Additional Information on Fire Protection."
2. Letter from A. Schwencer (USNRC) to E.W. James (WPSC) dated December 12, 1978, no title, "The commission has issued the enclosed Amendment No. 23 to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant."
3. Letter from E. R. Mathews (WPSC) to A. Schwencer (USNRC) dated October 19, 1979, title: "Proposed Technical Specification Amendment No. 40 Fire Protection."
4. Letter from E. R. Mathews (WPSC) to A. Schwencer (USNRC) dated April 16, 1980, title: "Proposed Technical Specification Amendment No. 40a Fire Protection."

**Brief Description:** In Response to Reference 1, Kewaunee Power Station committed to providing a mastic coating over the motor control in the material storage area, MCC 62-B, to protect it from water impingement. This mastic coating was not applied.

Bases for change: Based upon the following the spray system and the deluge system installed in the area near MCC-62B is acceptable as is and a mastic coating is not required to protect the MCC from water impingement.

**Scope:** Evaluate MCC-62B for damage due to sprinkler water spray, fire water pipe rupture and flooding.

**Spray System Sprinkler Evaluation:** The spray nozzles installed in the area of the MCC are automatic directional spray nozzles type EA-1 protectospray UL listed and approved by Factory Mutual. These nozzles have a nominal orifice size of 1/4 inch (0.220") and a temperature rating of 175°F. The fixed angle spray nozzles are designed to provide protection to specific equipment and not damage other equipment in the area due to water impingement.

The branch line of the spray system providing protection to the area is routed in an east to west direction. The end of MCC-62B is located south of the branch line at a distance of 7'-0". The nozzle orifice size, fixed angle of discharge and location of the spray nozzles are depicted on drawing XK204-2415 Rev. A4.

Field verification noted that there are seven spray nozzles in the overhead near the MCC. Four of the nozzle spray patterns are directed away from the MCC. The remaining three nozzles are installed at a fixed angle of 90° parallel to the floor and have spray angles of 65° as depicted on the drawing. As shown on the EA-1 data sheet "Directional Spray Nozzles TD610A" Maximum Axial Distance Table E as the fixed spray angle increases the axial spray angle decreases.

The following addresses the three nozzles that are not installed such that the spray patterns are not directed away from MCC-62B.

The 1<sup>st</sup> nozzle is located at a distance of 7'-0" horizontally (radial), 2'-2" above and 2'-2" behind (axial) the MCC. The spray nozzle is installed at a fixed angle of 90° parallel to the floor. The plane of protection, of the nozzle, as shown on the data sheet includes both the axial and radial distances. As depicted on the Design Spray Profiles the maximum radial distance for a nozzle with a design spray profile of 65°, at an axial distance 2'-2" and at a fixed angle of 0° is less than 2'-0". Since the MCC is at a radial distance of 7'-0" from the nozzle and at a 90° fixed angle then the MCC is not subject to direct water impingement.

There is a conduit cover located 1-inch below and 2-inches in front of the 65° spray nozzle that obstructs the plane of protection. Water spray on MCC-62B due to the obstruction is not an issue because the spray nozzle is installed at a fixed angle of 90°. As noted in table "E" the data sheet "Directional Spray Nozzles TD610A" lists the maximum axial distance for a 65° spray angle installed in the fixed angle of 90° is 7'-6". Even though the axial distance is 6-inches greater than the distance to the MCC water impingement would not occur because of the following:

- The spray pattern impact upon the obstruction would foreshorten the axial distance of the spray pattern.
- The radial distance is not shown in the table but the plane of projection distance would be less due to gravity.

The 2<sup>nd</sup> nozzle is located at a distance of 7'-0" horizontally, then routed 7'-6" east (behind) and 8'-3" above the MCC. The spray nozzle is installed at a fixed angle of 90° parallel to the floor. As noted above a 65° spray angle maximum axial distance is 7'-6". Since the spray nozzle is located at an axial distance of 7'-6" from the MCC then water impingement is not an issue. Additionally, due to obstructions in the area of the nozzle there is no spray path to the MCC.

The 3<sup>rd</sup> nozzle with a 65° spray angle is located at a distance of 7'-0" horizontally, then routed 13'-6" east (behind) and 8'-3" above the MCC. The spray nozzle is installed at a fixed angle of 90° parallel to the floor. As noted above a 65° spray angle maximum axial distance is 7'-6". Since the spray nozzle is located at an axial distance greater than 7'-6" from the MCC then water impingement is not an issue.

**Deluge System Sprinkler Evaluation:** The sprinkler heads installed in the area of the MCC are open head deluge system depicted on drawing XK-204-2414. The sprinkler piping branch line #3 runs parallel to MCC-62B and there is a block wall that separates the sprinklers from the MCC. The bottom of the sprinkler head deflector and the block wall are located in the same plane at 8'-0" above the finished floor. MCC-62B is located 4-inches below the wall and 2'-6" from the branch line.

The sprinkler heads installed on the deluge system are 1/2 inch pendant heads. These sprinklers create a downward umbrella type spray pattern when actuated. As the spray pattern develops the area of coverage increases. Since the wall obstructs the pattern, the deflector does provide a 180° spray angle, and the sprinklers are 2'-6" from the wall then water impingement on MCC-62B is not an issue.

**Summary:** There are no safety-related motor control centers that require protection from water spray and flooding caused by fire protection system failure or inadvertent actuation.