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March 13, 2015

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

Serial No. 15-109
NSSL/MLC R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
10 CFR PART 21 REPORT OF BINDING IN ABB K-LINE BREAKER SECONDARY
CLOSE LATCHES (PART NUMBER 716610K01)

Pursuant to 10 CFR 21.21(d)(3)(ii), Dominion Nuclear Connecticut, Inc. (DNC) is providing written notification regarding a defect in ABB K-Line circuit breaker secondary close latches, Part Number 716610K01, that was identified at Millstone Power Station Unit 3 (MPS3) on January 12, 2015. An initial notification of this defect was provided to the NRC Operations Center on February 25, 2015.

The attachment to this letter provides information required by 10 CFR 21.21(d)(4) for this defect, including details associated with the defective secondary close latches. DNC has concluded that this defect could create a substantial safety hazard since it could prevent a circuit breaker from remaining open following a trip signal.

If you have any questions regarding to this submittal, please contact Wanda Craft at (804) 273-4687.

Sincerely,

Mark D. Sartain
Vice President – Nuclear Engineering

Commitments made in this letter: None

Attachment:

10 CFR Part 21 Report - Defect Identified in ABB K-Line Breaker Secondary Close Latches (Part Number 716610K01)

JEI9
MRR

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ATTACHMENT 1

10 CFR PART 21 REPORT

**DEFECT IDENTIFIED IN ABB K-LINE BREAKER
SECONDARY CLOSE LATCHES (PART NUMBER 716610K01)**

**MILLSTONE POWER STATION UNIT 3
DOMINION NUCLEAR CONNECTICUT, INC.**

10 CFR Part 21 Report
Defect Identified in ABB K-Line Breaker
Secondary Close Latches (Part Number 716610K01)

In accordance with 10 CFR Part 21.21(d)(4)(i)-(ix), Dominion Nuclear Connecticut, Inc. (DNC) provides the following written notification:

(i) Name and address of the individual or individuals informing the Commission.

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(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

The basic component which is the subject of this notification is a secondary close latch (Part No. 716610K01) used in ABB K-Line circuit breakers.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

The affected secondary close latches were supplied by ABB (Florence, South Carolina) as safety-related components.

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

On January 12, 2015, during the overhaul of an ABB K600 load center circuit breaker at Millstone Power Station Unit 3 (MPS3), a defect in a new safety-related secondary close latch (Part No. 716610K01, Batch No. 0000150471) was identified when the secondary close latch did not fit properly into the breaker mechanism. The vertical piece on the front edge of the latch was contacting the manual close lever. Upon closer inspection, it was found that the angle of the bend in the secondary close latch was not correct, causing it to bind on the manual close lever when actuated. When the manual close lever was actuated, it would also bind due to the secondary latch pressing it into the left mechanism side sheet. If a defective secondary close latch was installed in the circuit breaker, the circuit breaker would still close on demand but would not stay open following a trip signal. A picture of one of the defective latches, including a schematic of the incorrect bend angle, is provided in Figure 1.

For this type of breaker, after opening, the closing spring charging motor runs to charge the closing springs and configure the breaker for the next closing demand. With a stuck or bound secondary close latch, the breaker would trip open on demand, the springs would recharge, and the breaker would reclose. If the trip

signal was still present, the breaker would trip again and reclose again. This cycle would continue until the charging motor failed or the associated control power fuses blew. The safety significance of this condition is that circuit breakers credited to open and isolate failed components, protect electrical containment penetrations, prevent emergency diesel generator overloading, or perform other opening control functions, would not perform their intended safety function.

Of the eight (8) additional secondary close latches in stock in the Millstone warehouse, all four (4) latches from Batch No. 0000150471, as well as two (2) latches from Batch No. 0000153854, were found to have improper bends. The two (2) remaining latches from Batch No. 0000119420 were found to have the correct bend angle.

DNC determined that the defect meets the criteria of a substantial safety hazard since it could prevent a circuit breaker from staying open following a trip signal and thereby result in a failure of the circuit breaker to perform its intended safety function.

(v) The date on which the information of such defect or failure to comply was obtained.

The first defective secondary close latch was identified by DNC on January 12, 2015 during a circuit breaker overhaul. On February 24, 2015, DNC concluded that the defect could create a substantial safety hazard, as defined in 10 CFR Part 21, and the responsible company officers were notified. An initial notification of this defect in a basic component was provided to the NRC Operations Center on February 25, 2015 (Reference: Event Notification (EN) 50848).

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

A total of seven defective secondary close latches, Part No. 716610K01, were identified by DNC (one found during overhaul of a MPS3 K600 breaker and six identified in the warehouse). The seven defective secondary close latches were from Batch Nos. 0000150471 and 0000153854. These secondary close latches are used in ABB K-Line circuit breakers. At MPS3, K-Line circuit breakers are used to open and isolate failed components, protect electrical containment penetrations, prevent emergency diesel generator overloading, and perform other opening control functions.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

Following identification of the defective secondary close latch, the warehouse stock was checked to determine the extent of condition. As detailed above, six additional

defective secondary close latches were found. These latches were immediately placed in restricted stock and returned to ABB for evaluation under 10 CFR Part 21.

The defective latch identified during the breaker overhaul was replaced with a conforming latch from the warehouse and the breaker tested successfully.

- (viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.**

None.

- (ix) In the case of an early site permit, the entities to whom an early site permit was transferred.**

This is not an early site permit concern.

Figure 1

Defective ABB K-Line Secondary Close Latch

