

# Cutler-Hammer

*Nuclear Programs  
130 Commonwealth Drive, Warrendale, PA 15086*

LTR99186

November 12, 1999

Document Control Desk  
United States Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Director, Office of Inspection and Enforcement

Subject: Potential Non Operability of the Cutler-Hammer DS and DSL Circuit  
Breaker Due to Over Torquing

The following information is provided pursuant to the requirements of 10CFR Part 21 to report a potential safety concern. This issue concerns the potential for the malfunction of the Cutler - Hammer DS and DSL circuit breakers due to the application of incorrect torque values.

Previous industry DS Circuit Breaker Maintenance Guidance originally published by Westinghouse Nuclear Services Division in June 1993 and subsequently revised in March of 1999 contained incorrect torque specifications for DS Circuit Breaker Arc Chute Mounting Bolts.

Specifically, this guidance as originally published, was in error by a factor of at least 2 (two) regarding the DS 206 and by a factor of at least 3 (three) for the DS 416 when compared to the torque values identified in the Manufacturing Instructions utilized by the OEM (Cutler - Hammer) factory during the manufacturing process. The current revision information while being closer to the proper values is still incorrect.

Eaton Power Plant Controls/Eaton Cutler-Hammer Nuclear Programs Inspection personnel have observed the results of this chronic over torquing during the performance of Class 1E Breaker Reconditioning. Multiple instances of longitudinal cracks have been observed in the Mounting Bolt Block portion of the Arc Chute Case. In addition the "O" Rings used as a retaining or capture device for the Arc Chute Mounting Bolts have been damaged. Pieces of the "O" rings have been found laying around the inside of circuit breakers.

The failure of the Arc Chute Case to maintain its design integrity due to cracking and the potential for the total separation of pieces during a seismic event or normal

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operation and their subsequent infiltration of the breaker operating assembly could cause the failure of the breaker to perform its design function. Likewise "O" Ring failure could result in the same final effect.

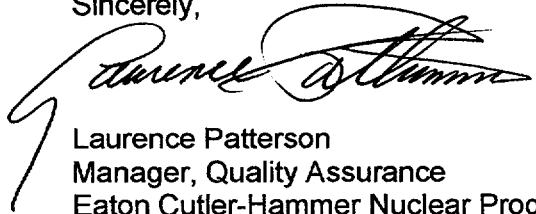
This deficiency was identified and determined to be of a chronic reportable nature on approximately October 12, 1999.

The installed base of the DS style circuit breakers is spread throughout the nuclear industry however, it is unknown to Eaton PPC specifically which utilities may have incorporated this erroneous information into their maintenance programs.

Eaton Power Plant Controls recommends that a through inspection be conducted with the Arc Chutes properly torqued into place on the circuit breaker. Please note that the cracks may not be visible once the Arc Chutes have been removed from the breaker. A second inspection should be conducted of the "O" Rings following removal of the Arc Chute from the breaker.

Should you have any questions regarding this matter or need the applicable torque values please contact Pat Patterson, Eaton Cutler-Hammer Nuclear Programs at 724/779-5931.

Sincerely,



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