UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

May 22, 1979

Docket No. 50-412

Duquesne Light Company
ATTN: Mr. E. J. Woolever
Vice President
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Gentlemen:

Enclosed is IE Bulletin 79-11 which requires action by you with regard to your power reactor facility(ies) with an operating license or a construction permit.

Should you have questions regarding this Bulletin or the actions required by you, please contact this office.

Sincerely,

Robert T. Carlson
for Boyce H. Grier
Director

Enclosures:
1. IE Bulletin No. 79-11
2. List of IE Bulletins
Issued in Last
Twelve Months

cc w/encls:
R. J. Washabaugh, Quality Assurance Manager

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

IE Bulletin No. 79-11
Date: May 22, 1979

FAULTY OVERCURRENT TRIP DEVICE IN CIRCUIT BREAKERS FOR ENGINEERED SAFETY SYSTEMS

Discussion:

We have received information from Westinghouse and an NRC licensee relating to the potential failure of a circuit breaker in an engineered safety system of a nuclear power plant. This circuit breaker had a defect in one of its three time delay dashpots which resulted in a reduced time delay for overcurrent protection. The defect was a small hairline crack in the end cap of the dashpot. Further investigation by this licensee disclosed that 7 out of 17 spare dashpot end caps and 2 non-engineered safety feature breakers also had similar defects. The circuit breaker is a Westinghouse type DB-75. Westinghouse type DB-50 breakers also use the same type of dashpot and end cap. DB-50 and -75 breakers are used extensively in PWR's, and some BWR's may also have the same breakers.

Similar make and model circuit breakers, when used for scram purposes, do not require the overcurrent trip feature and thus are not of concern. A cap crack defect, if severe enough, could result in premature tripping of the breaker because of insufficient time delay in overcurrent protection. A motor starting (inrush) current could cause the breaker to trip inadvertently and thus prevent the motor start.

The defects reported by the licensee in April 1979, occurred in the replacement end caps which were provided to solve the problem described in IE Bulletin 73-1. The subject of Bulletin 73-1 was end caps made of a black phenolic material. As a result of that Bulletin, the black end caps were replaced with a new type made of fibre-filled polyester material called "navy-gray". Prior to the April 1979 report, there have been no reports of suspect "navy-gray" end caps either from scheduled testing or unusual behavior in service. The manufacturer of the "navy-gray" end caps believes the crack defects may be linked to a raw material batch problem. That is, the molding ingredient materials used may have neared the end of their shelf life before use. It is not believed the end caps, after fabrication, have a significant shelf life limit, due to the low residual stress and low crack propagation probabilities.

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