

Report on CRDCS Breaker Cabinet Seismic Qualification

This report, pursuant to 10 CFR 50.53(e) on Significant Deficiencies, is to document the investigation of the significant deficiency in the seismic qualification on the Control Rod Drive Control System Trip Breaker Cabinets.

Identification of Problems

A reevaluation of the seismic qualification of the control rod drive control system AC breaker cabinets has found that the recommended attachment of the cabinet to the floor is inadequate to withstand the SSE acceleration levels.

Analysis

The Control Rod Drives are tripped by Loss of Power to the Drive Stators. Power is interrupted by disengaging either the AC or DC CRD breakers. Should the breaker function be disabled in some manner, the Control Rods would have to be driven into the core to shut the reactor down.

In the event of an SSE, the AC Breaker Cabinets could, as per the finite element stress analysis, break loose from the floor mounting. With the cabinets unattached, the random motion or even falling over could cause accelerations of the breakers that have not been analyzed or damage to the breakers, wiring, or connections which could compromise the ability of the breakers to trip the control rods. Analyses cannot show that the failure will always be fail safe. Therefore, the deficiency in the design of the structural attachment of the AC Breakers Cabinets to the floor could adversely affect safety. This problem is thus considered to be a Significant Deficiency as per 10 CFR 50.55 (e).

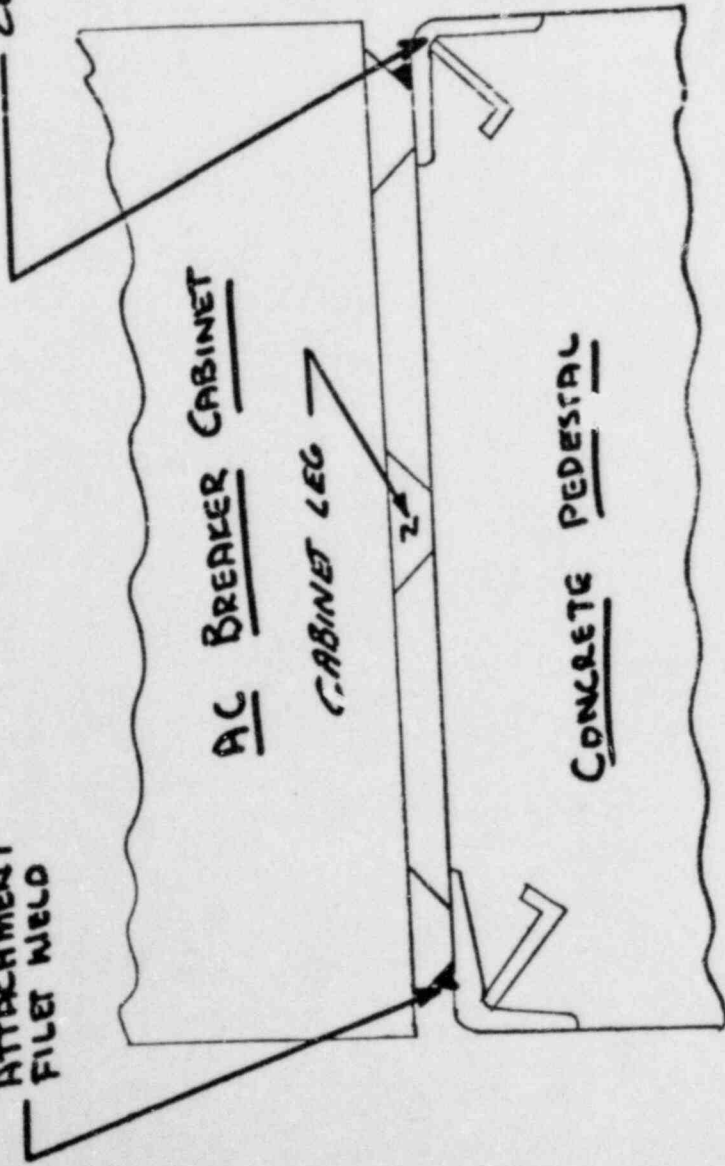
Corrective Action

The attachment of the AC Breaker Cabinet to the floor has been redesigned (see attached figure). Depending upon the arrangement at the particular site, either additional bolts will be included or a series fillet welds will be added to increase the attachment strength. Each plant with a construction permit or operating license is being evaluated on an individual basis. Newer plants are employing cabinet holddown designs which will assure the ability to withstand SSE loadings.

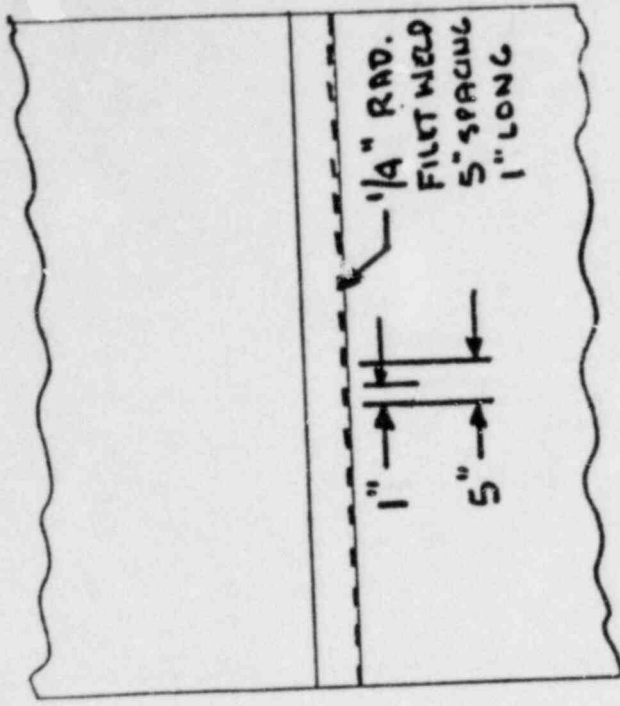
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CONCRETE ANCHOR

ATTACHMENT
FILET WELD



SIDE VIEW



FRONT & REAR VIEW

AC BREAKER CABINET
ATTACHMENT MODIFICATION