Westinghouse Electric Corporation
Water Reactor Divisions
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NS-EPR-2932

June 14, 1984

50-445

Mr. Robert L. Baer, Chief
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Phillips Building
7920 Norfolk Avenue
Bethesda, Maryland 20014

Attention: Mr. W. Anderson

Dear Mr. Baer:

The purpose of this letter is to respond to your request for information concerning the Comanche Peak DS-416 breaker moving secondary contact mounting frame welds. This issue was initiated when two frame welds in a Comanche Peak breaker were found to have separated. In the ensuing investigation a number of frames were selected to be returned to Westinghouse for purposes of the investigation.

The Westinghouse investigation began by assuming a worst case operating load in order to establish testing parameters. The nominal load is 65 lbs. maximum but for purposes of this investigation 150 lbs. was assumed as a worst case operational load. The normal operating load per switch assembly is 4 lbs., and the maximum this value can be is 9 lbs. For a set of 16 switches in the bracket, the total maximum service load possible is thus (9x16) 144 lbs., which was rounded off to 150 lbs. for the purposes of investigating in the worst-mode condition.

The first phase of testing loaded half of the sample welds to 450 lbs. in order to establish a minimum factor of three times the worst case operating load. All welds sustained the 450 lb. load without yielding. The second phase of testing was to establish the maximum load carrying capability of the frame welds. The other half of the welds were loaded until yielding occured. In these tests the minimum force necessary to fail the welds was over 900 lbs., six times the assumed worst case operational load.

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Westinghouse conducted a metallurgical investigation of the separated welds which showed that the weld separation is the result of lack of fusion at the weld metal to base metal interface due to the presence of slag inclusions. Metallographic examination of two welds from the field confirmed tht lack of fusion does exist in these welds varying from 30% to 70%. However, as noted above, the as-welded condition of the brackets can sustain at least six (6) times the maximum service load.

It is the Westinghouse position that the separated bracket welds are not indicative of a generic issue. Their occurrence is attributed to the statistical probability of random failures in any Quality Assurance system. The mounting frame design is very conservative as demonstrated by the above.

Very truly yours,

E. P. Rahe, Jr., Manager
Nuclear Safety Department

JTC/KEG