

# LIMITORQUE CORPORATION

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Telephone—804-528-4400 • Telex—82-9448



February 21, 1984

50-483

Office of the Director  
Nuclear Regulatory Commission  
Inspection & Enforcement  
Washington DC 20555

Subject: Limitorque Advisory

Gentlemen:

A recent experience at the Union Electric Company, Callaway Nuclear Station, has prompted an evaluation by our Design Review Committee.

It was judged that, although a design deficiency is not involved, the possibility of similar situations arising in the nuclear industry would suggest a 10CFR (Part 21) advisory might be appropriate from the standpoint of maintenance and on-going equipment inspection by the various utilities.

We enclose a copy of our letter February 15, 1984, to the Westinghouse Electric Corporation which contains full detail on this situation along with our evaluation and recommendations.

Yours very truly,

LIMITORQUE CORPORATION

F. K. Denham  
Executive Vice President

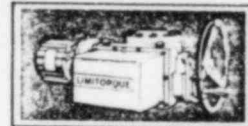
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February 15, 1984

Westinghouse Electric Corporation  
Electro Mechanical Division  
Cheswick Avenue  
Cheswick, PA 15024

Attention: Mr. Rudy Mrozowski

Gentlemen:

Subject: Limitorque Limit Switch Rotors

Over the past three years we have had sporadic reports of surface cracks on our white color limit switch molded components. In each case, we requested that samples be returned to us for analysis. Our investigation concluded in every instance that these were surface cracks resulting from post mold shrinkage, cosmetic in nature and having no effect on the integrity of the part.

Recently, we have had another report from Union Electric Company, Callaway Station, of white limit switch rotors having cracks. Two samples were returned to us from the Callaway site. The components were subjected to a material analysis and also found to be in conformance with the material specifications. These cracks very definitely had a greater depth than the surface cracks which we have investigated previously and could possibly effect the integrity of the component.

In examining the samples to determine the crack depth, we found that it required several sharp blows to break the molding. Although the limit switch rotor is not a load bearing component, piping vibration or normal in-service shock might possibly cause a similar significantly cracked rotor to break and impair its ability to function. It should be noted that the more severe cracks observed in the Calloway samples may have resulted from rough handling during shipment and installation.

In summary, these are the first cracked white limit switch moldings that we have examined which cannot be classified as cosmetic. The extent of these cracks cannot be determined by a visual examination, consequently, the component must be destroyed to determine the crack

Westinghouse Electric Corp.  
Mr. Rudy Mrozowski  
February 15, 1984

depth. It is our recommendation that any white limit switch components which are found with cracks should be replaced as we are unaware of any non-destructive procedure that would differentiate between a harmless shrinkage crack and a crack that could impair operation.

Our current standard rotor for inside containment service is made of a brown material. In 1979, the white material was replaced by the brown compound because the white material was no longer available from the supplier. The brown rotors are directly interchangeable with the white components and there have not been any reports of cracking in the brown material.

Replacement parts of the current design (brown color material) can be purchased from Limitorque Corporation.

Very truly yours,

LIMITORQUE CORPORATION

*Daniel S. Warsing*

Daniel S. Warsing  
Technical Manager

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