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 MILLS, L.M. Tennessee Valley Authority  
 RECIP. NAME RECIPIENT AFFILIATION  
 O'REILLY, J.P. Region 2, Atlanta, Office of the Director

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SUBJECT: Final deficiency rept re Intl Telephone & Telegraph actuator  
 for Ruskin dampers. Actuators supplied at facility will  
 deliver sufficient torque w/o spring mod & have been  
 accepted for use.

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 TITLE: Construction Deficiency Report (10CFR50.55E)

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

September 24, 1980

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 3100  
101 Marietta Street  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - ITT ACTUATOR FOR RUSKIN DAMPERS  
- NCR MEB 80-06 - FINAL REPORT

On March 19, 1980, Bruce Cochran, NRC-OIE Region II, was informed that the subject nonconformance was determined to be reportable in accordance with 10 CFR 50.55(e). This was followed by our interim reports dated April 17 and August 13, 1980. Enclosed is our final report. We consider 10 CFR Part 21 to be applicable to this nonconformance.

If you have any questions concerning this matter, please get in touch with D. L. Lambert at FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Jr., Director (Enclosure) ✓  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
ITT ACTUATOR FOR RUSKIN DAMPERS  
NCR MEB 80-06  
10 CFR 50.55(e)  
FINAL REPORT

Description of Deficiency

A particular spring used in ITT actuators was manufactured from incorrect material. The spring does not possess the designed strength and will, upon actuation of a greater than 3-inch stroke, take a permanent set, resulting in a decreased force output.

Safety Implications

As reported to TVA by Ruskin, springs in the NH96 series dampers used for tornado isolation dampers at Bellefonte Nuclear Plant may be defective. Failure of the spring and thus failure of the damper could lead to the depressurization of a safety-related area during the time a tornado was passing over the plant because equipment inside the buildings may not be qualified for the depressurization and, consequently, could adversely affect the safe operation of the plant.

Corrective Action

Information supplied Ruskin by ITT General Controls shows the minimum net thrust is 546 pounds minus 30 pounds for every 0.10 inch of spring length greater than 10.05 inches. Field measurement of the spring is 10.125 inches. Therefore the minimum thrust is  $546 - 30 = 516$  pounds.

The maximum calculated torque requirement at  $3 \text{ lbs/in}^2$  pressure differential is 730 in. lb. The force required is:

$$\frac{730 \text{ in. lb.}}{2.4375 \text{ in. lever arm}} = 299 \text{ pounds}$$

The safety factor of  $\frac{516 \text{ lb.}}{299 \text{ lb.}} = 1.72$  is adequate.

Since the actuators supplied at Bellefonte Nuclear Plant will deliver sufficient torque without spring modification, the actuators have been accepted for use as is.