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Controls

Rotork Controls, Inc.
675 Mile Crossing Blvd.
Rochester, New York
14624

tel: +1 585 247 2304
fax: +1 585 247 2308
www.rotork.com
info@rotork.com

U.S. Nuclear Regulatory Commission,
Washington, DC 20555-0001

From: Robert H. Arnold, P.E
To: NRC Document Control Desk
Date: April 7, 2011
Subject: Rotork Inc. Part 21 Notification
30NA1 Spare Motor Sub-Assemblies

Dear Sir/Madame,

Rotork designs and manufactures Valve Actuators; a motorized gear assembly that enables a valve to be remotely operated.

I am writing to notify the NRC that a manufacturing defect was discovered in Rotork's 30NA1 motor cover casting part number 47481. When stroking a valve, the motor cover supports the loads developed from the stator torque and the rotor thrust reactions. The failure occurred at the rotor end bearing support. Investigation has shown that the casting was not manufactured to our drawing specification. It had inadequate material thickness at this area. The cover failed at Rotork during production testing on our Load Test Rig under motor stall conditions (maximum load conditions on the motor).

A study by Rotork Engineering strongly indicates that defective machined castings will fail at the Production Test Rig. Note that only one failure (30NA1) has occurred at Rotork during final production testing. We have no reason to believe that actuators we have shipped will not complete their design life and function. We also have shipped 30NA1 motor assemblies as spares. These spare motors did not experience a stall condition as part of their manufacturing process.

As recommended by Rotork, actuators fitted with a replacement motor sub-assembly require calibration. Rotork understands that Users perform this task either on a test rig or on a valve. We cannot verify whether each spare motor sub-assembly has been stalled (maximum load condition). If the User's testing includes stall no further action is needed.

We are taking several immediate steps. Summarized as follows:

- A full Engineering report and analysis will be issued within 30 days from this notification date.
- All motor cover drawings are being updated to specify that the dimension governing the material thickness at the end bearing support area is controlled by machining only (not an as cast dimension).
- An inspection of all inventory removed all defective parts from production
- We are completing testing to make sure the problem is defined and bounded
- New motor cover castings will be machined and checked to guarantee minimum metal conditions are met. As a result, the motor assemblies will have acceptable safety margins.
- We are searching our spares data base to determine where we have supplied these particular motors. After compiling this list we will inform the utility.

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Please contact me with any questions or concerns.

Sincerely,

Robert Arnold, P.E
President
Tel (585) 719-1240