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**Power Division**

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DATE: 5/22/19

TELECOPY COVER SHEET

**To:** Nuclear Regulatory Commission

**Fax Number:** (301)816-5151

**Subject:** Notification of potential defect applicable to Hytork XL1126 pneumatic actuator

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May 22, 2019  
U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001

**Subject: Notification of a potential defect applicable to Hytork XL1126 Pneumatic Actuators**

Gentlemen:

The following information is submitted per 10 CFR 21 - "Reporting of Defects and Nonconformance".

On May 10, 2019, SSM Industries, Inc. discovered during electronic research of literature for Hytork actuators that an Important Product Safety Notice (safety notice) was issued by Emerson Valve Automation/Hytork concerning Hytork models XL1126 and XL1371 pneumatic rack and pinion actuators, manufactured after 2005 and before June 2015. Emerson stated that a model XL1371 actuator developed a crack in the side wall just underneath the dual stroke adjustment (DSA) pad. Emerson issued a list of serial numbers for both XL1371 and XL1126 actuators to which the safety notice applies. SSM Industries, Inc. contacted our Hytork representative who informed us that it was an error on their part for not notifying SSM Industries, Inc. in 2015 when the safety notice was issued.

SSM immediately reviewed all projects supplied with Hytork actuators. SSM Industries, Inc. did not supply any of our customers with XL1371 actuators. SSM Industries, Inc. did supply a total of three (3) Hytork model XL1126 actuators as part of the specialty ventilation dampers we manufacture for the nuclear industry. These damper actuators were dedicated by SSM Industries, Inc. at that time and were provided as Safety Related (the serial numbers for these three actuators are on the Emerson list of affected actuators). One (1) of the damper actuators was supplied to Dominion Millstone Nuclear Plant and two (2) were supplied to Dominion North Anna Nuclear Plant. Both utilities have been notified. SSM Industries, Inc. was informed by both utilities that all three actuators were visually inspected and no cracks were discovered. On May 22, 2019 SSM Industries, Inc. made the determination that the defect was reportable under 10CFR21.

The customers and applicable information is listed below.

Customer	Approximate Ship Date	Customer PO / Date	Equipment Description
Dominion / Millstone	August / 2006	70152403 / Dated 12/22/2005	One Hytork EIA-XL1126-SR70-A00 Actuator Damper Tag# 2-HV-208/ s/n137117003
Dominion / North Anna	December / 2008	45587381 / Dated 4/3/2008	Two Hytork EIA-11126-S50-A00 Actuators Damper Tag# 1-HV-AOD-128-2 Damper Tag# 1-HV-AOD-228-2 s/ns 184426003 & 184426004

Emerson Valve Automation/Hytork states that there is a small possibility that a crack may develop in the actuator body under normal operation. The Emerson investigation determined that the actuator body structural design may cause higher than allowable stresses to occur in the actuator body, which could lead to crack initiation. If a crack does develop, and the actuator continues to operate, the crack may propagate to the end of the body and the end caps could be forcefully ejected. In addition to operational concerns, this condition may present a personnel safety hazard.



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Emerson stated that only one model XL1371, which developed a crack, has been reported out of approximately 10,000 supplied. They also stated that the failed actuator was in a "severe" (mechanical, operational) application with very high cycle frequency and likely experienced high impact loading. The actuators used by SSM Industries, Inc. on the dampers supplied to Dominion are the XL1126 model. They are used in low cycle conditions and the stopping mechanism is the blade stops of the dampers. While the actuators see very little stress in the cycling process, it is still very important that the Emerson required action be followed.

Hytork ceased production of the XL1126 and XL1371 actuators in June 2015 due to the described problem. Hytork redesigned the two actuator models to eliminate stress risers and changed the model numbers to XL1127 and XL1372.

SSM Industries, Inc. has performed seismic analysis on the Hytork line of actuators and seismically tested smaller Hytork models, which provides reasonable assurance the actuators will survive and operate under normal and seismic conditions. However, it is recommended that the actuators be replaced as soon as practical. In the interim, it is recommended that the Emerson safety notice actions be followed, which include:

- a) For all persons who are or could be in the area where the affected equipment is present, ensure they are warned of the potential danger.
- b) Visually inspect these model actuators for cracks, especially underneath the Dual Stroke Adjustment (DSA) pad and on top of the actuator body in the pinion area.
- c) If you are unsure whether a crack is present, perform a soap bubble test.
- d) If you identify a crack or leak, immediately remove this actuator from service.

Hytork has created Hytork Brace Mechanism kits with the following design objectives:

- Safeguard the actuator, personnel and equipment/property around the actuator from being damaged.
- The intent of the design is to allow the actuator to cease to function gradually and safely if cracks are detected on the housing.
- The brace assembly is designed to add additional redundancy and to prevent the end caps from being forcibly ejected in event of a crack in the housing.

SSM Industries, Inc. will send Hytork Brace Mechanisms to the aforementioned customers in accordance with the Emerson safety actions. This ensures the safety and integrity of the existing actuators.

SSM Industries, Inc. has ordered Hytork XL1127 replacement actuators for immediate replacement of installed XL1126 Hytork actuators. Expected delivery of these actuators is anticipated to be less than 4 weeks.

For additional information please contact the following SSM Industries, Inc. personnel:

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Sincerely,

A handwritten signature in black ink that reads "Lou Reda".

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