

June 30, 2000

Documents Control Desk  
United States Nuclear Regulatory Commission  
Washington, DC 20555

SUBJECT: ASCO General Controls NH Series  
Hydramotor® Actuators

Gentlemen:

This is to inform you of a potential manufacturing problem with certain relief valve assemblies used in ASCO General Controls' pump assemblies supplied either as components of series NH Hydramotor® actuators, or as spare parts in kits. These Hydramotor® actuators are used in various applications in nuclear plants, including dampers in HVAC systems.

### Problem Description

A total of 2 series NH Hydramotors®, in service for approximately 2 months in two different nuclear power plants reportedly failed to maintain the pistons in their fully retracted position. These units were removed from service and returned to the ASCO facility in Aiken, South Carolina.

Analysis of the returned units confirmed that the actuator was not maintaining the piston in the retracted position although the pump was running. Further analysis revealed that the adjustment screw in the relief valve assembly had backed out slightly, preventing the build-up of sufficient hydraulic pressure to overcome the piston spring force. Inspection of the relief valve revealed that the adjustment screw had not been staked. This staking operation is intended to prevent movement of the adjustment screw (see attached drawing). Although not documented on the relief valve assembly drawing, assemblers had been instructed to perform this operation on every relief valve. We have determined that this procedure was followed regularly by assembly personnel except for one assembler. All unstaked relief valves from on hand and distributor stock have been traced to this assembler. All records are being reviewed to identify product built by the assembler, so that customers can be notified. ASCO Engineering and QA have immediately initiated changes to assembly procedures to insure that all critical steps including the staking operation are documented and verified.

One of the returned units has been extensively tested with the adjustment screw of the relief valve in the proper position, but not staked. The problem could not be duplicated (adjustment screw did not back out). Additional tests are in progress. Furthermore, there have been only two incidents of the adjustment screw backing out in almost 4 years of ASCO's production of these Hydramotor® actuators.

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The potential failure described above may result in the actuator not maintaining the piston in the retracted position although the pump is running. We believe that in most, if not all, cases the return of the piston to the extended position is considered the fail-safe condition for the Hydramotor® actuator. As such, the described condition would result in the unit moving to the fail-safe condition. Each utility should determine the fail-safe mode of their Hydramotor®.

However, ASCO does not have adequate knowledge of the actual installation and operating conditions of these actuators to determine whether their malfunction would create a "substantial safety hazard" as defined in 10CFR21.3. We are likewise unable to conduct the evaluation necessary to make such a determination, which must be based on the specific applications of the product.

**Identification of Affected Items/ Notification of Customers**

Our investigation of this problem is continuing. ASCO plans to send a similar notification to affected customers delineating the potential problem with these relief valves by July 7<sup>th</sup>. This notification will list all potentially affected product. Within two weeks of this interim notice, ASCO will provide individual purchasers with information (customer PO, quantity, product number, etc.) so that affected product can be identified. The notification will also include options to inspect for and correct the relief valve problem or offer assistance as necessary.

Should you wish to discuss this further, or obtain any additional information, please let us know. As additional information becomes available, we will forward it to you.

Yours truly,

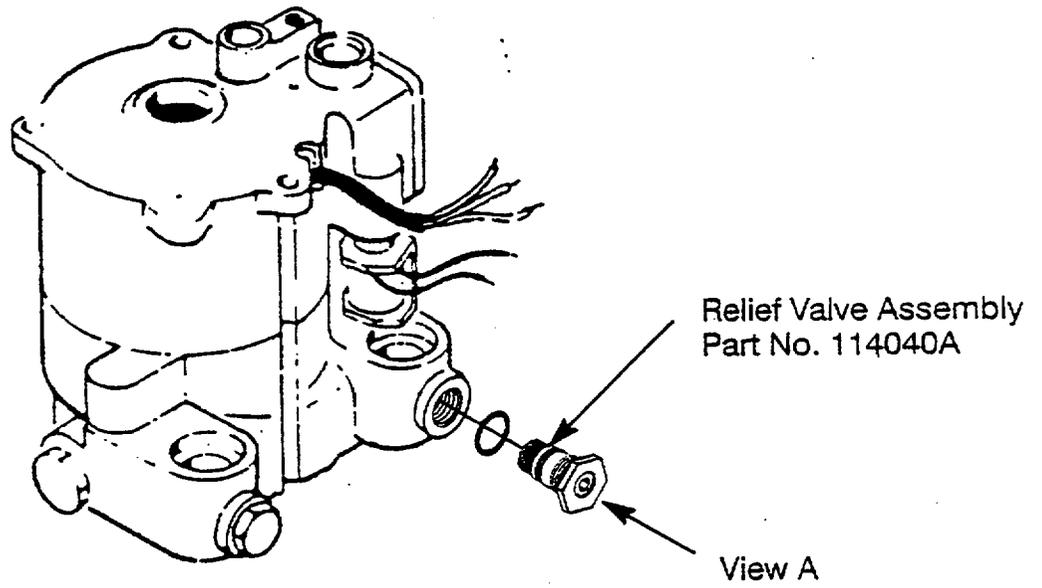


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RB/rd

Enclosure

**View of NH90 Pump Assembly illustrating location of Relief Valve Assembly, 114040A**



Location of stake in vicinity  
of threaded area between  
adjustment screw and re-  
lief valve body.

