

U. S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
REGION IV

Report No. 99900056/79-01

Program No. 51300

Company: Henry Pratt Company  
401 South Highland Avenue  
Aurora, Illinois 60507

Inspection  
Conducted: June 25 and 29, 1979

Inspector: R. E. Oller 7/16/79  
R. E. Oller, Contractor Inspector Date  
Vendor Inspection Branch

Approved by: D. M. Hunnicutt 7/16/79  
D. M. Hunnicutt, Chief, Components Section II Date  
Vendor Inspection Branch

Summary

Special inspection on June 25 and 29, 1979 (99900056/79-01)

Areas Inspected: Implementation of 10 CFR, Part 21 and other NRC requirements including, assessment of the cause, corrective action and generic considerations relative the deficiency found in solenoid valves in a sub-vendor's actuators used on Henry Pratt 36" butterfly valves supplied for Three Mile Island Unit 2, as identified in the 10 CFR, Part 21 report by Henry Pratt Company.

The inspection involved eleven (11) inspector-hours on site.

Results: In the area inspected, no deviations were identified. The following unresolved item was identified.

Unresolved Item: Reported 10 CFR Part 21 Deficiency - Further evaluation and reporting appears necessary concerning the Part 21 report. (See Details, paragraph C.4.b.)

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## DETAILS SECTION

### A. Persons Contacted

A. K. Wilson, QA Manager  
R. P. Saar, Vice President and General Manager

### B. Preinspection Conference

A preinspection conference was held on June 25, 1979, with Messrs Wilson and Saar. The NRC inspector defined the scope of the inspection as being limited to a follow-up on Henry Pratt Company's 10 CFR Part 21 report to the Nuclear Regulatory Commission on April 10, 1979, concerning a deficiency in ASCO solenoid valves in a subvendor's actuators used on four (4) Henry Pratt 36" butterfly valves supplied for use in the Containment Purge/Exhaust Isolation System of Three Mile Island Unit No. 2.

### C. Reported 10 CFR Part 21 Deficiency

#### 1. Deficiency Reported

The equipment in question is a solenoid valve, Model HT-8331A45, manufactured by Automatic Switch Company of Florham Park, New Jersey. It is used to control Bettis Model T-516-SR-3 pneumatic, spring return valve actuators installed on 36" butterfly valves manufactured by Henry Pratt Company, used as containment purge/exhaust isolation valves. The non-conformity is that the disc holder and bottom part in pilot valve assembly of the ASCO solenoid are made of Delrin plastic, which has been reported to have a maximum service limitation of  $4 \times 10^5$  RAD integrated radiation dosage and 200°F maximum service temperature. Burns and Roe Specification No. 2555-100 requires a maximum environmental condition of  $2 \times 10^7$  Rad integrated dosage and 286°F maximum service temperature. The actuator is required to operate the valve after exposure to these conditions. The exposure of the Delrin parts to the specified maximum environmental conditions may render the actuator unoperable. Similar solenoid valves may have been furnished on other containment purge/exhaust isolation valves delivered prior to 1977 to other nuclear power plants. Henry Pratt Company is searching its files to identify projects where such equipment may have been delivered.

#### 2. Objectives

The objectives of this follow-up inspection were to ascertain that the reporting organization had implemented the requirements of 10 CFR Part 21 and had:

- a. Met the requirements for reporting the deficiency.
- b. Performed an evaluation of the condition, including making an assessment of generic implications.
- c. Assigned responsibility and implemented a plan of corrective action.

3. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Discussions with cognizant personnel on June 25 regarding the Henry Pratt 10 CFR Part 21 report dated April 10, 1979.
- b. Review of Henry Pratt's Part 21 Report dated April 10, 1979, to verify the following:
  - (1) The reporting requirements of 10 CFR Part 21 were met.
  - (2) The deficiency was properly evaluated and an assessment of generic implications was made.
  - (3) Appropriate corrective action was implemented in a timely manner.
- c. Review of Henry Pratt letter, dated April 23, 1979, to G. H. Bettis Corporation (supplier of valve actuators containing the suspect solenoid valves) transmitting a list of Henry Pratt actuator orders to Bettis, covering all known valves for containment service, and requesting Bettis to identify orders containing the suspect solenoids.
- d. Review of the above (paragraph c.) Henry Pratt list.
- e. Review of Henry Pratt approved procedure No. QAP-33, dated January 3, 1978, "Reporting of Defects and Non-compliances for Safety Related Basic Components".
- f. Review of Henry Pratt "10 CFR Part 21 Log of Deviations Requiring Evaluation".
- g. Review of Henry Pratt Purchase Order No. U-9749, dated January 13, 1972 to Bettis for eight (8) actuators to be used for the Three Mile Island, H.P.Co. butterfly valves. The P.O. referenced the requirements of the attached Henry Pratt N-7 Form applies.

- h. Review of the above N-7 form specifications for P.O. No. U-9749.
- i. Review of the Burns & Roe Specification 2555-100, Three Mile Island Nuclear Station Table No. 1 "Design Conditions", Item 1, 4-36" valves, tags AH-VZA and B, and AH-V3A and B.
- j. Discussion on June 29, 1979 with cognizant personnel concerning the Bettis response letter dated June 25, 1979, and the need for Henry Pratt to amend their 10 CFR Part 21 Report.
- k. Telephone conversation with Mr. A. K. Wilson on July 5, 1979.

#### 4. Findings

##### a. Deviations from Commitments

None

##### b. Unresolved Items

The generic consideration and the corrective action indicated in Henry Pratt's 10 CFR Part 21 Report dated April 10, 1979, were preliminary in nature. Since reporting, Henry Pratt researched their files and submitted to Bettis, the actuator supplier, a list of Henry Pratt orders to Bettis which included all known Bettis actuators with solenoid valves, which would be used inside nuclear power plant containments. The Henry Pratt management indicated that the Bettis response letter dated June 25, 1979, identified other models of ASCO solenoid valves which contained suspect plastic parts similar to those in the actuators for Three Mile Island Unit 2. This information will affect other nuclear power plants. The Henry Pratt management will submit an amended 10 CFR, Part 21 Report to the NRC.

This matter remains unresolved pending receipt of Henry Pratt's amended 10 CFR Part 21 Report and Verification of its contents during a subsequent NRC inspection.

##### c. Other Findings (Comments)

- (1) Discussions and review of documents on June 25, 1979, established that the Henry Pratt 10 CFR Part 21 Report dated April 10, 1979, met the requirements of 10 CFR Part 21. However, the corrective action and generic considerations were in an evaluation phase. (See paragraph C.4.b.)

- (2) The Henry Pratt Management indicated on June 29, 1979, that the Bettis response letter, dated June 25, 1979, identified other models of ASCO valves for actuators on the Henry Pratt List, which contained suspect plastic parts similar to those used in solenoid valves for Three Mile Island Unit 2.
- (3) The Henry Pratt Management indicated on June 29, 1979, that an amended 10 CFR Part 21 Report will be sent to the USNRC.

D. Exit Meeting

1. The inspector met with Messrs. Wilson and Saar at the conclusion of the inspection on both June 25 and 29, 1979.
2. The status of Henry Pratt's 10 CFR Part 21 report dated April 10, 1979, and the Bettis response letter, dated June 25, 1979, was discussed on June 29, 1979.
3. Managements comments related to the above item, D.2.