

November 27, 2001

Mr. Robert Taylor, General Manager  
Anvil International, Inc.  
160 Frenchtown Road  
North Kingston, RI 02852

SUBJECT: NRC INSPECTION REPORT 99901348/2001-201

Dear Mr. Taylor:

On November 15, 2001, the U.S. Nuclear Regulatory Commission (NRC) performed an inspection at the Anvil International, Inc. (Anvil) facility in North Kingston, Rhode Island. The enclosed report presents the findings of that inspection. The inspection was conducted to review selected portions of your quality assurance program, and its implementation, as it relates to the supply of snubbers to the nuclear industry. This inspection specifically reviewed activities related to Anvil's review and analysis of the supply of replacement snubber fluid to the nuclear industry. Within the scope of this inspection, we found no instance in which Anvil failed to meet NRC or customer requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC's Public Document Room.

Sincerely,

***/RA/ D. Trimble for/***

Theodore R. Quay, Chief  
Equipment and Human Performance Branch  
Division of Inspection Program Management  
Office of Nuclear Reactor Regulation

Docket No. 99901348

Enclosure: Inspection Report 99901348/2001-201

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**OFFICE OF NUCLEAR REACTOR REGULATION**

Report No: 99901348/2001-201

Organization: Anvil International, Incorporated

Contact: William P. Golini, Quality Assurance Manager  
(401) 886-3030

Nuclear Activity: Manufacturer and supplier of snubbers and replacement parts  
used in nuclear applications.

Dates: November 15, 2001

Inspectors: Gregory C. Cwalina, Senior Operations Engineer  
Carl Mohrwinkel, NRR Staff

Approved by: Theodore R. Quay, Chief  
Equipment and Human Performance Branch  
Division of Inspection Program Management

Enclosure

## **1 INSPECTION SUMMARY**

On November 15, 2001, the U. S. Nuclear Regulatory Commission (NRC) performed an inspection of Anvil International, Incorporated, North Kingston, Rhode Island (Anvil). The inspection reviewed selected portions of the Anvil quality assurance program, and its implementation, as it relates to the supply of replacement snubber fluid to the nuclear industry. Specifically, the inspection reviewed activities related to Anvil's review and analysis of potentially contaminated snubber fluid which had been supplied to a nuclear licensee, and Anvil's evaluation performed in accordance with 10 CFR Part 21.

The inspection bases were:

- 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."
- 10 CFR Part 21, "Reporting of Defects and Noncompliance."

No violations or nonconformances were identified.

## **2 STATUS OF PREVIOUS INSPECTION FINDINGS**

This was the first inspection performed at Anvil. Anvil was formerly known as the Grinnell Corporation. There were no open inspection findings reviewed during this inspection.

## **3 INSPECTION FINDINGS AND OTHER COMMENTS**

### **3.1 Background**

Anvil sells nuclear grade snubbers and supplies, including bulk fluid, to the nuclear industry. In addition, Anvil will refurbish customer's snubbers, including cleaning, replacing parts as needed, and filling reservoirs with fluid. Anvil uses GE SF1154 silicone hydraulic fluid purchased as a commercial grade item and dedicated by Anvil for use in their nuclear grade snubbers. The snubber fluid reservoirs are filled from a snubber purge rig which is filled from a 55-gallon drum of snubber fluid. The purge rigs are filled with fluid by suctioning the fluid from the 55-gallon drum through a suction rod which is placed in a 1" hole in the drum lid. At the time of the event, when not in use, the suction rod was removed and a cap placed over the hole in the lid. In addition, a pump assembly is used in a separate hole in the drum lid to remove bulk fluid from the drum. The snubber purge rig includes a 10 micron filter between the rig and the snubber fluid reservoir. However, bulk fluid removed from the drum through the pump assembly is not filtered.

On September 14, 2001, during a routine visit to the snubber room, an Anvil staff member noticed the cap was off the suction rod hole on a drum of nuclear snubber fluid and small dust particles were visible on the cap and the drum lid. Anvil management was notified and a "Potential Part 21 Meeting" was held on the same day to discuss whether contaminated snubber fluid may have been supplied to nuclear customers.

### 3.2 Review of the Supply of Potentially Contaminated Snubber Fluid

#### a. Scope

The inspectors reviewed Anvil documents associated with the supply of potentially contaminated snubber fluid to the nuclear industry. Documents reviewed included snubber fluid receipt documents, commercial grade dedication documents, and Anvil's Part 21 evaluation of the issue.

#### b. Observations and Findings

The inspectors reviewed the minutes of the September 14, 2001, meeting and interviewed selected participants. Anvil determined that the particles visible on the drum lid and cap could potentially affect snubber operation if they contaminated the snubber fluid. During the meeting, Anvil determined that the potential problem could affect the bulk fluid sales but would not affect internal snubber filling operations because Anvil filters the fluid prior to filling the snubbers. Anvil quarantined the affected drum (which had only 10 gallons of fluid remaining) and sent a sample of the fluid to a laboratory for particle size analysis. The inspectors concluded that Anvil took prompt and adequate corrective action following the identification of the potential problem.

Anvil's records indicated that only one bulk fluid sale from the affected drum had been provided to a nuclear customer. The inspectors noted that 20 gallons of bulk fluid from the affected drum was shipped on March 23, 2001. The inspectors reviewed receipt records and determined that one 55-gallon drum of GE SF1154 Silicone Hydraulic Fluid (Batch KC959) had been received and dedicated on March 24, 2000. The drum of fluid was placed in inventory. A review of sales record indicated that the only sale of bulk fluid from the drum was the sale of the 20 gallons shipped on March 23, 2001. The inspectors did not identify any concerns with regard to the receipt, dedication or sale of the snubber fluid.

On October 18, Anvil received the results of the particle count test from National Tribology Services, Inc. The report concluded that no particles exceeding 100 microns was observed in the fluid sample. Anvil reviewed the lab report and concluded that the fluid is acceptable for use in the snubbers. Anvil's conclusions are based upon their current filtering standard of 140 microns as the minimum size that could potentially affect snubber performance. (Note: the inspectors questioned the conclusion on size based upon the use of a 10 micron filter in the purge rig. The inspectors were informed the purge rig originally contained a much larger filter. However, Anvil later changed to the 10 micron filter because they are more readily available and are disposable.) Following receipt of the test report, on October 24, 2001, Anvil held a product concern meeting to discuss final resolution of the issue. Anvil determined that the contamination in the snubber fluid would not affect operation of the snubbers and released the remaining 10 gallons of the quarantined fluid for use. The inspectors reviewed documentation associated with Anvil's Part 21 review. The inspectors did not identify any concerns with Anvil's Part 21 determination. The inspectors agreed with Anvil's conclusions in this matter.

c. Conclusions

Based on their review of documentation associated with the issue and interviews with personnel, the inspectors concluded that Anvil took prompt and appropriate action in quarantining and analyzing the affected fluid. The inspectors concluded that Anvil's actions were in compliance with the requirements of Part 21. The inspectors did not identify any concerns in this area.

3.3 Review of Qualifications of Snubber Technicians

a. Scope

The inspectors reviewed documents related to the qualification of personnel as snubber technicians to determine the adequacy of Anvil's snubber training and qualification program.

b. Observations and Findings

Snubber technicians are qualified in accordance with Anvil procedure QA-5, "Qualification of Test Personnel." QA-5 provides the general requirements for all test personnel. In addition, QA-5 contains specific qualification and training requirements for each level of snubber technician, i.e., Trainee, Junior Technician, Technician, Senior Technician and Technical Services Engineer. Each of the Technician positions requires a specified level of experience at the lower position. The engineer position requires Trainee experience as well as a college engineering degree. All snubber technicians, with the exception of Trainee are allowed to work independently. Trainees must work under the direction of other certified personnel.

The inspectors noted that each technician attended required training. The training records were signed by both the technician and the training provider. In addition, technician proficiency was demonstrated through the completion of written tests. Snubber technicians noted that they had taken the appropriate training. They also noted that, as trainees, they had only worked under the direction of a certified technician. Junior snubber technicians noted that, although they are permitted to work independently, more senior personnel occasionally observe and check their work.

c. Conclusions

Based on the above, the inspectors concluded that the Anvil snubber training and qualification program are being conducted in accordance with established procedures. The inspectors did not identify any concerns in this area.

## PARTIAL LIST OF PERSONS CONTACTED

Stephen J. Perrault	Manager of Engineering Services
William P. Golini	Quality Assurance Manager
Frank Birch	Product Engineering Manager
Gary Lussier	Production Manager
Richard E. Richards	Product Engineering Supervisor
Joseph Carreiro	Snubber Supervisor
Richard A. DeTora	Nuclear Estimator
David Lacy	Snubber Technician