



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

Mr. Daniel J. Young
President
EHS Associates, Inc.
3301 Bentwillow Drive
Fuquay-Varina, NC 27526

DEC 23 2008

Ref. No. 08-0185

Dear Mr. Young:

This responds to your letter regarding the approval of explosives under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask whether your client's product (surge arresters) containing a small amount (2.8 grams) of a Division 5.1, Packing Group II hazardous material (potassium chlorate), is excepted from the explosive approval process prescribed in § 173.56. Additionally, it is your understanding that the negligible risk posed by your client's product in transportation should except it from the HMR under the conditions described in your letter.

Under §173.56(i) of the HMR, the Associate Administrator for Hazardous Materials Safety may specify a classification or except an explosive material from the requirements of the HMR. We agree with your client's assessment that because there is no explosion when the surge arrester is activated, and the surge arrester can only be activated by a high-level of predetermined electric current, the product is not subject to the explosive approval and classification process under § 173.56. We find, however, that your client's product would more appropriately be described as "Dangerous goods in apparatus, Class 9, UN3363," and packaged in accordance with § 173.222. Under Special provision 136 assigned to the entry "Dangerous goods in apparatus," in column 7 of the Hazardous Materials Table, the small quantity of potassium chlorate (2.8 grams) in each surge arrester qualifies for the small quantity exceptions found in § 173.4 and, when packaged in accordance with § 173.222, is excepted from the HMR.

I trust this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,

Edward T. Mazzullo
Director
Office of Hazardous Materials Standards

EHS ASSOCIATES, INC.
3301 Bentwillow Drive, Fuquay-Varina, NC 27526 (919) 552-6978

Stevens
§173.56
Explosive
08-0185

May 7, 2009

Mr. Paul Shelton
Office of Hazardous Materials Safety
PHH-32
Pipeline and Hazardous Materials Safety Administration
U.S Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

Dear Mr. Shelton:

I represent a client who would like to obtain PHMSA authorization, or approval under 49 CFR 173.56 if necessary, to ship surge arresters that contain 2.8 grams of potassium chlorate as DOT non-regulated devices without restrictions. We believe that the devices are not capable of posing an unreasonable risk to health, safety and property when transported in commerce.

The surge arresters contain a disconnecter which holds 2.8 grams of potassium chlorate. The potassium chlorate is located inside a sealed plastic housing which prevents moisture from entering the device and surrounds a resistor within the disconnecter. If the surge arrester develops an internal fault when it is installed on an electrical power line and the current level flowing through the surge arrester/disconnector arrangement exceeds a design threshold, the potassium chlorate powder is heated by the resistor and expands. The resistor concentrates the heat from the high fault current on the power line and causes the potassium chlorate to rapidly expand and release gases at a temperature of about 300°C. The gases rupture the plastic housing around the device, separating the top and bottom end fittings of the disconnecter and electrically disconnects the faulted surge arrester from the power line so that power is restored quickly to the affected customers.

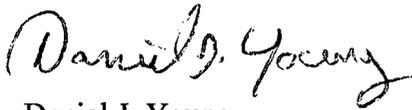
The only known way that the disconnecter activates is by passing a high electrical current through the device. There is no risk of the device activating during a transportation or handling accident or fire. My client has tested the device by placing it in a fire next to a traditional cartridge-type disconnecter that contains a gunpowder charge (see enclosed DVD). The surge arrester on the left in the Test 1 and Test 2 videos is manufactured by Cooper Power Systems (Cooper Arrester with AV144Y Isolator and Restraint). This surge arrester is subject to a DOT approval which allows the firm to ship the devices as "Not Regulated." The surge arrester on the right in the Test 1 and Test 2 videos is the surge arrester manufactured by my client.

The Cooper Power Systems surge arrester explodes in the fire with a sound level of about 99 – 105 dBA being recorded at a distance of 20 feet for the samples that were tested.

My client's surge arrester does not explode, but at a temperature of 160 - 170°C, the plastic housing melts and only a fizzing sound is heard (see Test 3 video). As there is no explosion, we believe that the device can be safely shipped via all modes of transportation in the United States without restrictions or restraints. The surge arresters would be cushioned, packaged and shipped in strong outside packagings.

I would like to receive a letter of authorization or interpretation from PHMSA indicating that the surge arrester that I have described may be shipped within the United States via all modes of transportation without restrictions. Please contact me at (919) 552-6878 or at EHSDan521@aol.com if you need further information about this request. Thank you for your assistance with this question.

Sincerely,

A handwritten signature in cursive script that reads "Daniel J. Young". The signature is written in black ink and is positioned above the typed name and title.

Daniel J. Young
President