



RUSKIN *air handling specialties*

Division of Philips Industrial Components Inc.

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Representatives in all Major Cities

May 10, 1983

50-400
-461

Director, Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 10555

Sir:

In accordance with the requirements of 10 CFR part 21, Ruskin Manufacturing Company, located at 3900 Dr. Greaves Road, Grandview, Missouri 64030, is herewith reporting that we have discovered a deficiency with equipment furnished by Ruskin Manufacturing Company for Nuclear Power Plant application.

On April 29, 1983, it was determined that Seismic Report Number 1018 for Backdraft Dampers (Model CBS-7 and CBS-8) did not address the counterbalance assemblies for seismic characteristics required by Ebasco Services, Inc. for their Shearon Harris Nuclear jobsite. Corrective Action for this jobsite has been identified, Ebasco notified, and arrangements are being made to install an additional counterbalance arm.

Subsequent to the above, a review was conducted to determine if like conditions existed for other Nuclear sites where Ruskin Manufacturing Company has supplied Backdraft Dampers (CBS-7 and CBS-8, specification sheets enclosed).

On May 10, 1983, information was available which reasonably indicated a deficiency. The deficiency discovered indicated that the counterbalance arm assemblies were not addressed in Ruskin Manufacturing Company's Seismic Reports. It was further discovered that, because the counterbalance assembly has a natural frequency less than 33 Hz., certain weight-acceleration combinations result in unacceptable stresses in the counterbalance arm.

Attachment I to this letter identifies the affected jobsites by location and the number of units supplied for each. Please note that three of the jobsites have been determined to be acceptable as built and delivered.

Further testing, as identified on Attachment II will be conducted to attempt to prove that the dampers supplied are acceptable as built. Time frame and test facility are identified on this attachment.

In the event that testing should prove additional work is required, Ruskin Manufacturing Company will install an additional counterbalance arm on every damper supplied to Nuclear Power Plant sites as required.

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CONTROL DAMPERS • FIRE DAMPERS • BACKDRAFT DAMPERS • LOUVERS

LASCO DIVISION • LAU DIVISION • MALTA DIVISION • MANUFACTURED HOUSING/RECREATIONAL VEHICLE GROUP • TWIN PANE DIVISION • RUSKIN DIVISION

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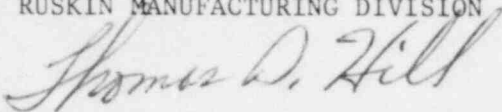
In closing, please find enclosed a copy of the letter describing the situation contained in this letter, which will be sent to each affected site.

If further questions should arise, please contact us at once.

Thank you for your cooperation.

Sincerely,

RUSKIN MANUFACTURING DIVISION



Thomas D. Hill
President

TDH:csh

Enclosures: CES-7 Spec. Sheet
CBS-8 Spec. Sheet
Attachment I
Attachment II
Notification Form Letter

NOTE: For further discussions, questions, or concerns on this matter, please contact:

Richard J. Yarges
Quality Assurance Manager
1-816-761-7476

**HEAVY DUTY
COUNTERBALANCED
BACKDRAFT DAMPER**

CBS 7

STANDARD CONSTRUCTION

(Pressure Differentials Up To 4 in. w.g.)

FRAME: 8" x 2" x 14 gage steel channel.

BLADES: Maximum width 7", 16 gage galvanized steel.

AXLES: 1/2" diameter plated steel.

BEARINGS: Bail bearings pressed into frame.

FINISH: Mill galvanized.

MAXIMUM DAMPER SIZE: 48" w x 96" h.

MINIMUM DAMPER SIZE: 6"w x 6"h.

MAXIMUM TEMPERATURE: 250°.

VARIATIONS

(At Additional Cost)

Backdraft Dampers of the CBS7 design can be fabricated to meet a wide variety of special design requirements based on temperatures, pressures, velocities, and environmental conditions. Some of the more frequent design variations are listed below:

Neoprene Blade Seals

Jamb Seals

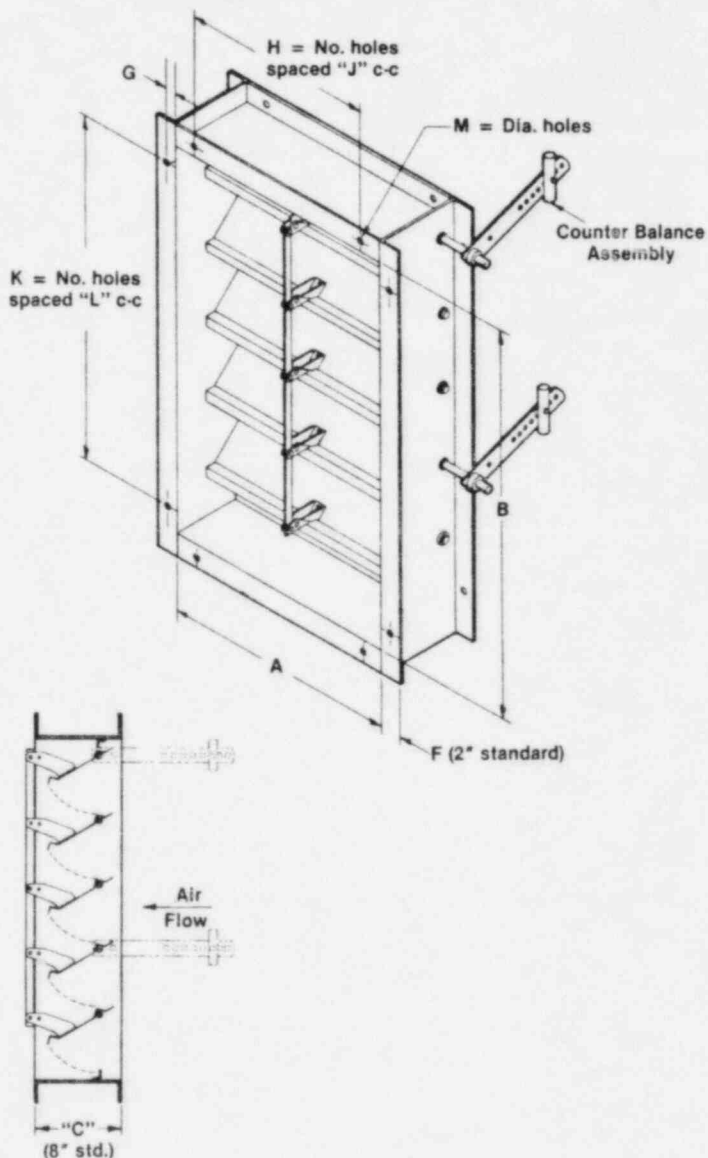
Special Materials

All parts in airstream of 304 ss

All parts in airstream of 316 ss

Bolt holes in flanges

Special Finishes

[illegible]

JOB

LOCATION

CONTRACTOR

RUSKIN Mfg. Co.

P. O. Box 129

Grandview, Mo. 64030



Attention:

Subject: Backdraft Damper Counterweights

It has recently come to our attention that external counterweight assemblies on CBS7 and CBS8 type Backdraft Dampers may, in some instances, not meet seismic qualification criteria.

We have compiled and attached a list of all subject dampers supplied to you, and have indicated which dampers have counterweight assemblies that definitely do meet seismic qualification criteria, are questionable, or definitely do not meet the proper criteria. A dynamic test is being scheduled to determine which of the questionable assemblies are acceptable.

The counterweight assembly will, in most cases, have a natural frequency less than 33 Hz for its weaker axis (perpendicular to the damper axle). Where peak acceleration levels result in unacceptable stresses in the arm, a second arm will be required to stiffen the assembly.

Ruskin Manufacturing Company has notified the Nuclear Regulatory Commission of this situation in accordance with the requirements of 10 CFR part 21.

We will be contacting you with further information and making arrangements to have an additional arm installed where necessary as soon as possible.

Sincerely,

RUSKIN MANUFACTURING COMPANY

ATTACHEMENT I

Browns Ferry Nuclear Plant
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 27902
5 Units

Sequoyah Nuclear Plant
Tennessee Valley Authority
See Above
11 Units

Watts Bar Nuclear Plant
Tennessee Valley Authority
See Above
3 Units

Watts Bar Nuclear Plant
CTI Nuclear
4955 Bannock St.
Denver, Colorado 80316
8 Units

Palo Verde Nuclear Generating Station
The Waldinger Corporation
P.O. Box 215
Buckeye, AZ 85326
81 Units

Savannah River Plant
E.I. DuPont De Nemours & Co.
P.O. Box 117
Augusta, GA 20903
2 Units *

Turkey Point
Florida Power and Light
P.O. Box 3088
Florida City, Florida 33034
1 Unit

W.P.P.S.S. Unit 1
University Nuclear Systems
Hanford Project
Caller Box 700
Richland, WA 99352
27 Units

Wm. H. Zimmer Nuclear Power Station
Waldinger-Young & Bertke
2601 Bell Avenue
Des Moines, Iowa 50321
3 Units *

Oconee Nuclear Station
Bahnson Service Co.
P.O. Box 159
Seneca, S.C. 29778
6 Units*

Diablo Canyon
Pacific Gas & Electric
77 Beal St.
San Francisco, CA 94106
2 Units

Shearon Harris Nuclear Power Plant
Ebasco Services
Two World Trade Center
New York, New York 10048
38 Units

Philippine Nuclear Power Plant
Westinghouse Electric Corporation
See Below
15 Units

KRSKO Nuclear Power Plant
Westinghouse Electric Corporation
Parkway Center
875 Greentree Road
Pittsburg, PA 15220
24 Units

* These dampers meet specification requirements as fabricated.

ATTACHMENT II

COUNTERWEIGHT ARM ON BACKDRAFT DAMPER

It has been determined that Ruskin Manufacturing Company's counterweight arm used on Backdraft Dampers, CBS-7 and CBS-8, for Nuclear Power Stations had an actual natural frequency less than 33 Hz (mainly depending on the size of the weight and the location at which it is mounted on the arm). Therefore, as a flexible assembly ($f_n < 33$ Hz) it can no longer be considered rigid so as to use the "ZPA" accelerations specified in each different specification.

Since the amount of weight used on each arm differs every time depending on the damper's size, Ruskin Manufacturing Company will test dynamically, dampers with a total of six (6) arms with weights varying from one pound (1 lb.) to six pounds (6 lbs) (one pound increments). The test will show which size of weight (mounted at the far end of the arm) will stand the level of the test. Any counterweight arm assembly that fails to meet the test level, would require an additional arm mounted on the same axle and connected to the other arm and weight to stiffen the assembly, which in turn will raise the strength and natural frequency and subsequently lower the deflection of the assembly.

The tests will be conducted at the Wyle Laboratory facilities during the first week of June, or before. Samir Khouzam will be responsible for this investigation and it is anticipated that approximately eight weeks will be required for completion.