



**Commonwealth Edison**

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August 27, 1973

Mr. Boyce H. Grier  
Regional Director  
Directorate of Regulatory  
Operations - Region III  
U.S. Atomic Energy Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: Updated Report on Inspection of Bergen-Patterson Shock Suppressors and Restraints at the Dresden, Quad-Cities and Zion Nuclear Generating Stations, AEC Dkts 50-10, 50-237, 50-249, 50-254, 50-295 and 50-304

Dear Mr. Grier:

On July 27, 1973, you requested inspection of Bergen-Patterson shock suppressors and restraints in use at Commonwealth Edison's nuclear generating stations. My letter of August 6, 1973 summarized the results of the inspections as of that date. This letter revises and expands the data contained in the August 6 letter based upon more detailed examination of the "snubbers". Minor errors in the previous tabulation are also corrected.

There are no Bergen-Patterson "snubbers" in use at Dresden Unit 1. Of the total of seven (7) "snubbers" furnished by others, five have been inspected and found to be operable. The other two will be inspected during the refueling outage scheduled to begin in mid-September, 1973.

Dresden Units 2 and 3 each utilize forty-three (43) Bergen-Patterson "snubbers" on safety-related systems. A total of twenty-eight (28) on Unit 2 and twenty-nine (29) on Unit 3 were found to be inoperable due to loss of fluid resulting from seal failures. The inoperable units were all located inside the drywell. To avoid releasing more oil in the drywell and to expedite repairs the units were rebuilt without determining specifically which seals on each unit were failed.

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Commonwealth Edison Company

Mr. Boyce H. Grier

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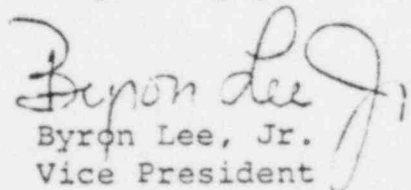
The previous report listed eleven "snubbers" on each unit which were not manufactured by Bergen-Patterson. It has been determined that eight out of the eleven are not installed on safety-related systems. Of the remaining three per unit, none were found to be inoperable.

There are twenty-nine (29) Bergen-Patterson "snubbers" on each of the two Quad-Cities units. It has been determined that twenty-five (25) of those on Unit 1 and twenty (20) on Unit 2 were inoperable as a result of seal failures. All the "snubbers" are tabulated in the attachment to this letter. Specific seal failures on each "snubber" were not identified. Unit 1 safety-related systems utilize eighteen (18) "snubbers" made by other manufacturers. Two were inoperable but neither failure was related to seal deterioration. A Grinnel model G 5 x 5 (bore x stroke), serial No. 4451, on the main steam piping outside the containment had a broken oil line with resultant fluid loss. A Grinnel model G 3-3/4 x 5, serial No. 4443, outside the containment on the feedwater piping had a loose connection and had lost its oil. Unit 2 has twenty (20) non-Bergen-Patterson "snubbers" including four (4) which were not included in the previous report. All except one were found to be operable. A Grinnel model G 5 x 5, serial No. 4694, on the main steam piping outside the containment had a loose tubing connection with resulting oil loss.

It has been determined that the safety-related systems on Zion Unit 1 contain sixteen (16) Bergen-Patterson "snubbers" and a total of 503 others. All were checked during hot functional testing early this year. The Bergen-Patterson units were reinspected on July 27, 1973 and found to be satisfactory in all respects. Of the 503 others, all but 136 have been inspected and found to be operable. It is planned to complete the inspection of the others before proceeding above 50% power.

Defective "snubbers" identified during these inspections were repaired prior to resumption of operation.

Very truly yours,

  
Byron Lee, Jr.  
Vice President

DRESDEN FAILED BERGEN-PATTERSON "SNUBBERS"

DRESDEN 2

<u>System</u>	<u>Size</u> <u>Stroke x Bore</u>	<u>Model No.</u>	<u>Serial No.</u>
HPCI	6" x 2-1/2"	HSSA-10	487511
	6" x 2-1/2"	HSSA-10	487556
	6" x 2-1/2"	HSSA-10	487560
	6" x 2-1/2"	HSSA-10	487508
	6" x 2-1/2"	HSSA-10	487541
LPCI	6" x 2-1/2"	HSSA-10	487567
	6" x 2-1/2"	HSSA-10	487533
Core Spray	6" x 2-1/2"	HSSA-10	487500
	6" x 2-1/2"	HSSA-10	487539
Feedwater	6" x 2-1/2"	HSSA-10	487570
	6" x 2-1/2"	HSSA-10	487553
	6" x 2-1/2"	HSSA-10	487575
Cleanup	6" x 2-1/2"	HSSA-10	487572
	6" x 2-1/2"	HSSA-10	487544
	6" x 2-1/2"	HSSA-10	487545
Recirculation	6" x 4"	HSSA-30	487769
	6" x 4"	HSSA-30	487776
	6" x 4"	HSSA-30	487759
	6" x 4"	HSSA-30	487781
	6" x 4"	HSSA-30	488788
	6" x 4"	HSSA-30	487757
	6" x 4"	HSSA-30	487762
	6" x 4"	HSSA-30	487814
	6" x 4"	HSSA-30	487756
	6" x 3-1/4"	HSSA-20	487616
	6" x 3-1/4"	HSSA-20	487617
	6" x 2-1/2"	HSSA-10	482597
	6" x 2-1/2"	HSSA-10	482596

DRESDEN 3

HPCI	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	F51035
LPCI	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	F51035
Core Spray	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	51035
Cleanup	6" x 2-1/2"	HSSA-10	F51035
	6" x 2-1/2"	HSSA-10	F51035
	6" x 2-1/2"	HSSA-10	F51035
Feedwater	6" x 2-1/2"	HSSA-10	51035
	6" x 2-1/2"	HSSA-10	F51035
	6" x 2-1/2"	HSSA-10	F51035
Recirculation	6" x 4"	HSSA-30	Missing
	6" x 4"	HSSA-30	Illegible
	6" x 4"	HSSA-30	487785
	6" x 4"	HSSA-30	42781
	6" x 4"	HSSA-30	487784
	6" x 4"	HSSA-30	487767
	6" x 4"	HSSA-30	487771
	6" x 4"	HSSA-30	487800
	6" x 4"	HSSA-30	487783
	6" x 4"	HSSA-30	487819
	6" x 4"	HSSA-30	487789
	6" x 3-1/4"	HSSA-20	487631
	6" x 2-1/2"	HSSA-10	482595
6" x 2-1/2"	HSSA-10	482603	

QUAD-CITIES FAILED BERGEN-PATTERSON "SNUBBERS"

QUAD-CITIES 1

<u>System</u>	<u>Size</u> <u>Stroke x Bore</u>	<u>Model No.</u>	<u>Serial No.</u>
Core Spray	6" x 2-1/2"	HSSA-10	F-61284-1
	6" x 2-1/2"	HSSA-10	61284-1
	6" x 2-1/2"	HSSA-10	Missing
	6" x 2-1/2"	HSSA-10	F-61284
RHR	6" x 2-1/2"	HSSA-10	61284-1
	6" x 2-1/2"	HSSA-10	F-61284-1
	6" x 2-1/2"	HSSA-10	Missing
	6" x 2-1/2"	HSSA-10	F-61284-1
Recirculation	6" x 2-1/2"	HSSA-10	482594
	6" x 2-1/2"	HSSA-10	482604
	6" x 2-1/2"	HSSA-10	482580
	6" x 2-1/2"	HSSA-10	482605
Recirculation	6" x 2-1/2"	HSSA-10	482559
	6" x 4"	HSSA-30	487792
	6" x 4"	HSSA-30	487761
	6" x 4"	HSSA-30	48780-9
	6" x 4"	HSSA-30	87775
	6" x 4"	HSSA-30	487820
	6" x 4"	HSSA-30	487780
	6" x 4"	HSSA-30	487760
	6" x 4"	HSSA-30	487774
	6" x 5"	HSSA-50	68290
	6" x 5"	HSSA-50	68290

QUAD-CITIES 2

Core Spray	6" x 2-1/2"	HSSA-10	F62955-2
	6" x 2-1/2"	HSSA-10	F62955-2
	6" x 2-1/2"	HSSA-10	F62955-2
	6" x 2-1/2"	HSSA-10	F62955-2
RHR	6" x 2-1/2"	HSSA-10	F-6128-1
	6" x 2-1/2"	HSSA-10	F-6128-1
	6" x 2-1/2"	HSSA-10	F-6128-1
	6" x 2-1/2"	HSSA-10	F-6128-1
Recirculation	6" x 2-1/2"	HSSA-10	6128411
	6" x 5"	HSSA-50	68290
	6" x 4"	HSSA-30	487722
	6" x 4"	HSSA-30	487801
Recirculation	6" x 4"	HSSA-30	487773
	6" x 4"	HSSA-30	487811
	6" x 4"	HSSA-30	487796
	6" x 2-1/2"	HSSA-10	482590
Recirculation	6" x 2-1/2"	HSSA-10	F-61284-1
	6" x 2-1/2"	HSSA-10	F-61284-1
	6" x 2-1/2"	HSSA-10	F-61284-1
	6" x 2-1/2"	HSSA-10	F-61284-1

**POOR ORIGINAL**