

PROJECT NAME: LaSalle CountyPROJECT NO.: 6548-00FILE NO.: CQD-002844SPEC. NO.: J-2500Reviewed By: [Signature]Date: 7-6-82

Review

(signature)

Approved By: [Signature]

Date: _____

(signature)

☐ BOP☒ NSSSCOMPONENT NAME: Safety Valve

PART 2201-FO13 A-H, J, K, L, M, N

P, R, S, U, V

VENDOR/MANUFACTURER: CrosbyCOMPONENT NO./MODEL NO.: TMF-2VENDOR'S REPORT NO. AND DATE: Wyle Report # 44600-1, 8-20-79Wyle Report # 44220, 11-5-79 and Crosby Test Report # 3977

3-17-82

A. CONCLUSION OF REVIEW☒ Accepted☐ Rejected

Comments: _____

B. CLASSIFICATION AND FUNCTION1. Classification

- ☒ Nuclear Safety-Related, Active
☐ Nuclear Safety-Related, Passive
☐ Non-Nuclear Safety-Related

2. The component function is To open the safety valve manually3. Operability Requirements (Active Components Only)

This component is required to operate:

- ☒ During and after postulated dynamic and accident events
☐ Only after postulated dynamic and accident events

MECHANICAL DEPARTMENT STANDARD

CHECKLIST FOR DYNAMIC QUALIFICATION OF
MECHANICAL AND ELECTRICAL EQUIPMENTFOR OFFICE USE ONLY - NOT TO BE
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Location and Mounting

1. Location

Building: D9 Well

Elevation: Piping MS-Systems on the Pilot valves

2. Field Mounting Condition

☒ Panel/Pipe/HVAC Duct: Mounted on valves

☐ Wall/Floor

☐ Other: _____

3. Mounting Attachment

Per manufacturers' recommendations

☒ Bolting

Number: _____, Size: _____

Material: _____

☐ Welding

Welding Type: _____

Leg: _____, Length: _____, Pitch: _____

☐ Other: _____

D. METHOD OF QUALIFICATION

☐ Static Analysis

☒ Test

☐ Dynamic Analysis

☒ Other: Deflection analysis of extended IMF-2 Pilot mounting

E. VIBRATION INPUT

1. Dynamic Loads Considered

☐ Seismic

☐ Hydrodynamic

☒ Seismic and Hydrodynamic

☐ Other: _____

2. Required Frequency Range: all 100 Hz

3. Required Input

☐ Response Spectra

a) Required response spectra (attach graphs, identify): _____

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b) Method of combining required response spectra:

- ☐ Absolute Sum
☐ SRSS
☐ Not applicable

c) Damping Upset/Service Level B _____

Emergency/Service Level C }
Faulted/Service Level D }

d) Basis for Damping: _____

☒ Seismic Coefficients (Required acceleration in each direction)
Upset/Service Level B

H₁ _____, H₂ _____, V _____

Emergency/Service Level C }
Faulted/Service Level D }

H₁ 2.7, H₂ 2.9, V 2.5

4. Is support amplification considered?

☒ Yes ☐ No ☐ Not Applicable

Comments: _____

There are unit-1 piping analysis loads. Unit-2 piping loads will be compared with Unit-1 loads after piping analysis is completed.

5. Is fatigue considered?

☐ Yes ☒ No ☐ Not applicable

Comments: Fatigue issue was recently addressed for LaSalle on a generic basis.

F. QUALIFICATION BY TESTING

1. Does the Vendor's report indicate that the component is identical to that to be installed?

☒ Yes
☐ No - justify similarity: _____

2. Mounting

a) Mounting Method:

☐ Bolting

Number: _____

Size: _____

Material: _____

☐ Welding Welding Type: _____

Leg: _____, Length: _____, Pitch: _____

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☐ Other: _____b) Does the Vendor's report indicate that the laboratory mounting
simulates the actual service mounting?☒ Yes☐ No - explain differences: _____

_____3. Input Motion☐ Single-Axis☒ Multi-Axis *Biserial*☐ Other: _____Comments: _____
_____4. Test Method☐ Sine dwell (single frequency):

a) Frequency range: _____

b) Dwells at: _____

(Hz)

c) Number of tests in each orientation:

Upset/Service
Level B _____Emergency/Service Level C }
Faulted / Service Level D } _____

d) Duration: _____

e) Input acceleration in each direction:

Upset/Service Level B

Emergency/Service Level C }
Faulted / Service Level D }H₁ _____, H₂ _____, V _____H₁ _____, H₂ _____, V _____f) How is cross coupling and modal participation accounted for?

_____☐ Sine beat (single frequency):

a) Frequency range: _____

b) Number of tests in each orientation:

Upset/Service
Level B _____Emergency/Service Level C }
Faulted / Service Level D } _____FOR OFFICE USE ONLY - NOT TO BE
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- c) Number of beats: _____, Number of cycles per beat: _____
- d) Beats at: _____ (Hz)
- e) Input acceleration in each direction:
- | | |
|---------------------------|---|
| Upset/Service Level B | H ₁ _____, H ₂ _____, V _____ |
| Emergency/Service Level C | H ₁ _____, H ₂ _____, V _____ |
| Faulted / Service Level D | |
- f) How is cross coupling and modal participation accounted for?
- _____
- _____
- _____

☒ Random motion (multi frequency):

- a) Frequency range: 1 to 40 Hz
- b) Number of tests in each orientation:
- | | | | |
|-----------------------|----------|---------------------------|----------|
| Upset/Service Level B | <u>5</u> | Emergency/Service Level C | <u>1</u> |
| | | Faulted / Service Level D | |
- c) Duration: 30 Sec each

- d) Does Test Response Spectra (TRS) envelop the Required Response Spectra (RRS)?

☐ Yes - Provide RRS and TRS as attachment

☒ No - Explain: required response spectra a Solenoid or valve location is not available. However, the TRS of the test response spectra exceed the required quantities

5. Dynamic Characteristics

- ☐ Natural frequencies: H₁ _____, H₂ _____, V _____
- ☒ Natural frequencies not determined.

6. Additional Loads

Are normal operating loads considered?

- ☐ Not applicable
- ☒ Yes
- ☐ No - explain: _____
- _____

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7. Monitoring

a) Is the component functionally monitored?

☒ Yes

☐ No

☐ Not applicable

b) Is component's operability verified?

☒ Yes

☐ No

☐ Not applicable

8. Does the test meet the requirements of IEEE 344 19 7 5 ?

☒ Yes

☐ No-explain: _____

G. QUALIFICATION BY ANALYSIS

N/A

1. Type of Analysis

☐ Static Analysis

☐ Simplified Dynamic Analysis

☐ Modal Analysis

☐ Time History Analysis

☐ Other: _____

2. Analytical Model

☐ Finite Element

☐ Other: _____

3. Method of Analysis

☐ Computer-Aided Calculation

a) Programs used: _____

b) Have the programs been validated?

☐ Yes

☐ No

☐ Hand Calculation

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4. Operating Loads

Are the operating loads considered in the analysis?

☐ Not applicable☐ Yes☐ No - explain: _____5. Static/Simplified Dynamic Analysis

a) Acceleration coefficients:

Upset/Service Level B

 H_1 _____, H_2 _____, V _____

Emergency/Service Level C

Faulted / Service Level D

 H_1 _____, H_2 _____, V _____

b) Are dynamic loads applied in the horizontal and vertical directions simultaneously?

☐ Yes☐ No-explain: _____6. Modal Analysis

a) Identify Response Spectra used: _____

b) Damping factor used: _____

c) Number of significant modes considered: _____

d) Natural period/frequency of each: _____

e) Method of combining modal responses:

☐ Absolute Sum☐ Square root of sum of the squares (SRSS)☐ In compliance with NRC Regulatory Guide 1.92,
Rev. _____, Date _____☐ Other: _____

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7. Time History Analysis

8. Results

a) Stress evaluation at critical locations:

LOCATION	LOAD COMBINATION	DYNAMIC STRESS	TOTAL STRESS	ALLOWABLE STRESS

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b) Deflection evaluation at critical locations(Active Components only):

LOCATION	CALCULATED DEFLECTION	ALLOWABLE DEFLECTION

H. COMMENTS

Form MAS-EMD-2.4
Rev. A (1-20-82)

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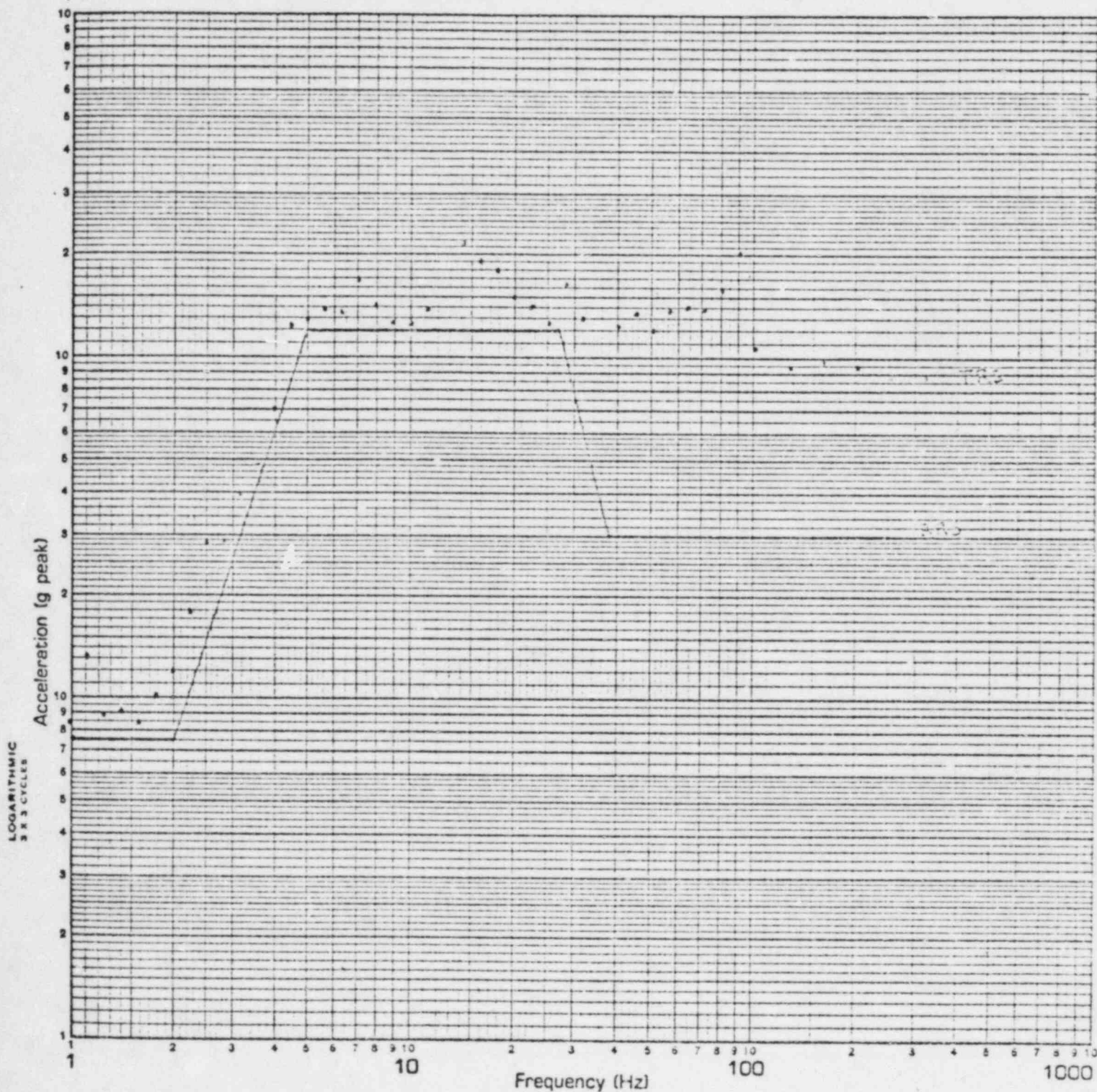
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FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING ☒ 5%



SPECIMEN QV-5

LOCATION NO. NEA

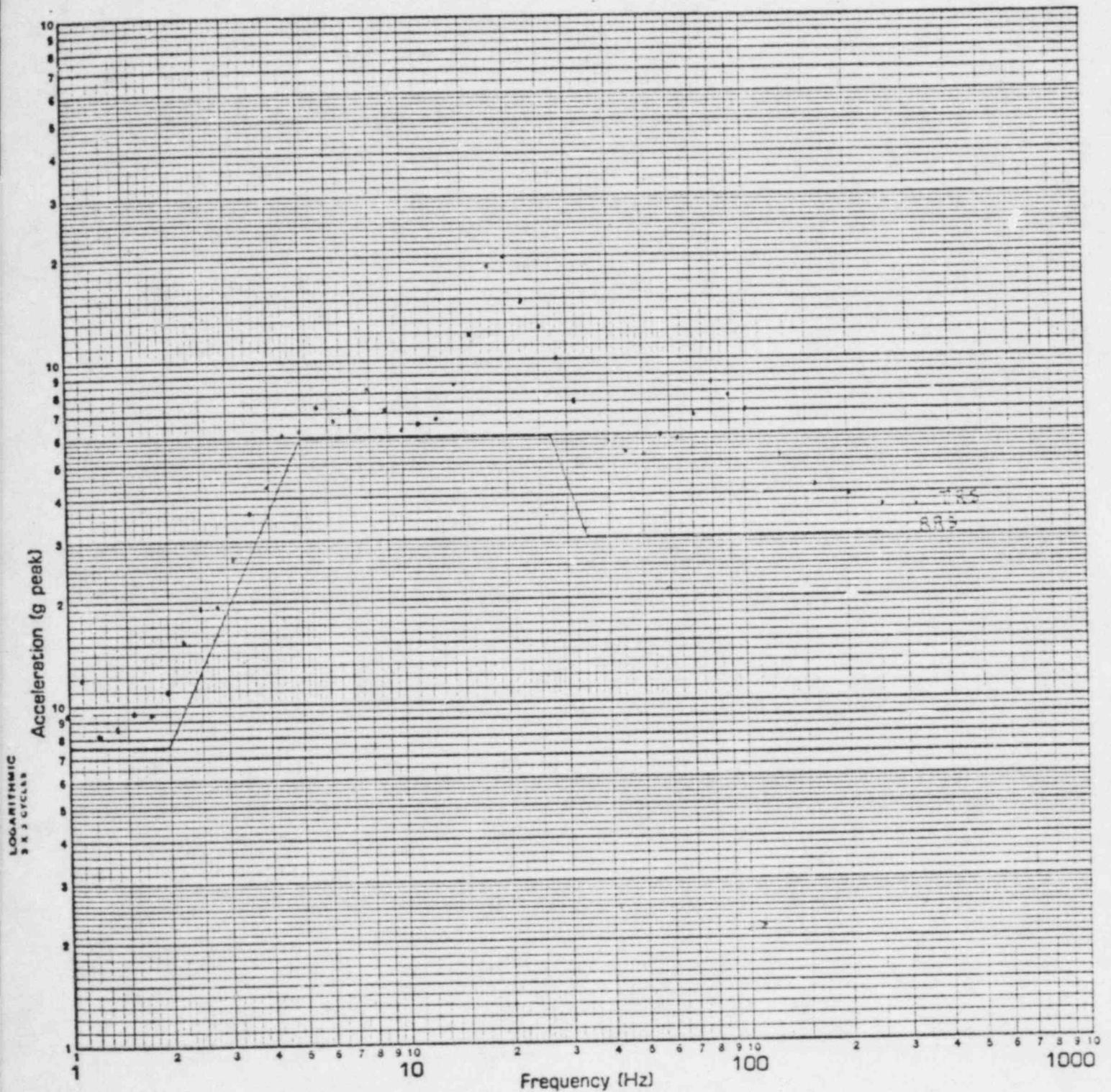
AXIS Long/V

TEST RUN NO. 46

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING



SPECIMEN QV-5

LOCATION NO. VCA

AXIS Long/V

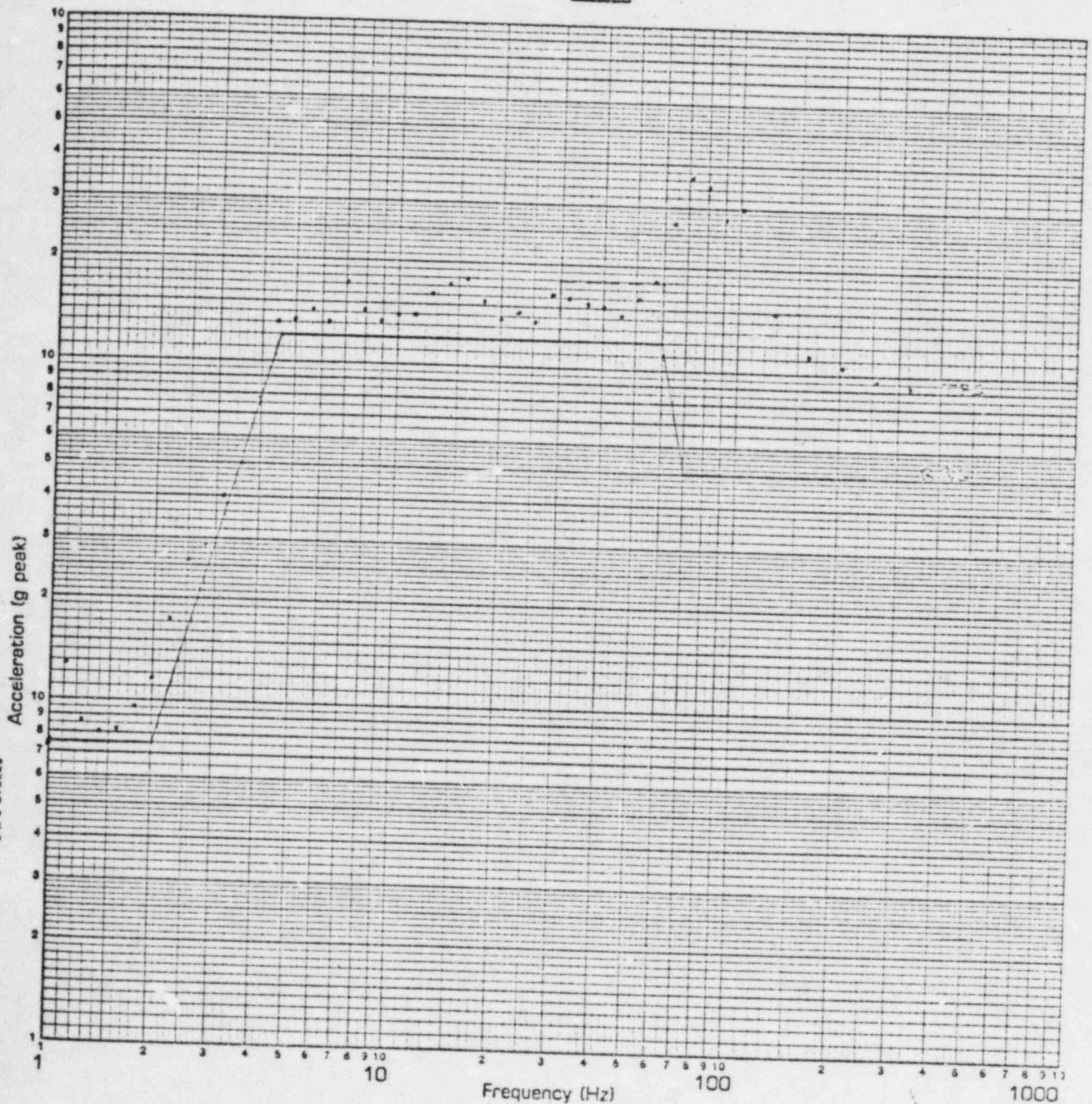
TEST RUN NO. 46

FULL SCALE SHOCK SPECTRUM (g Peak)

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1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING ☒ 5%



SPECIMEN QV-5

AXIS LAT/vert

LOCATION NO. HCA

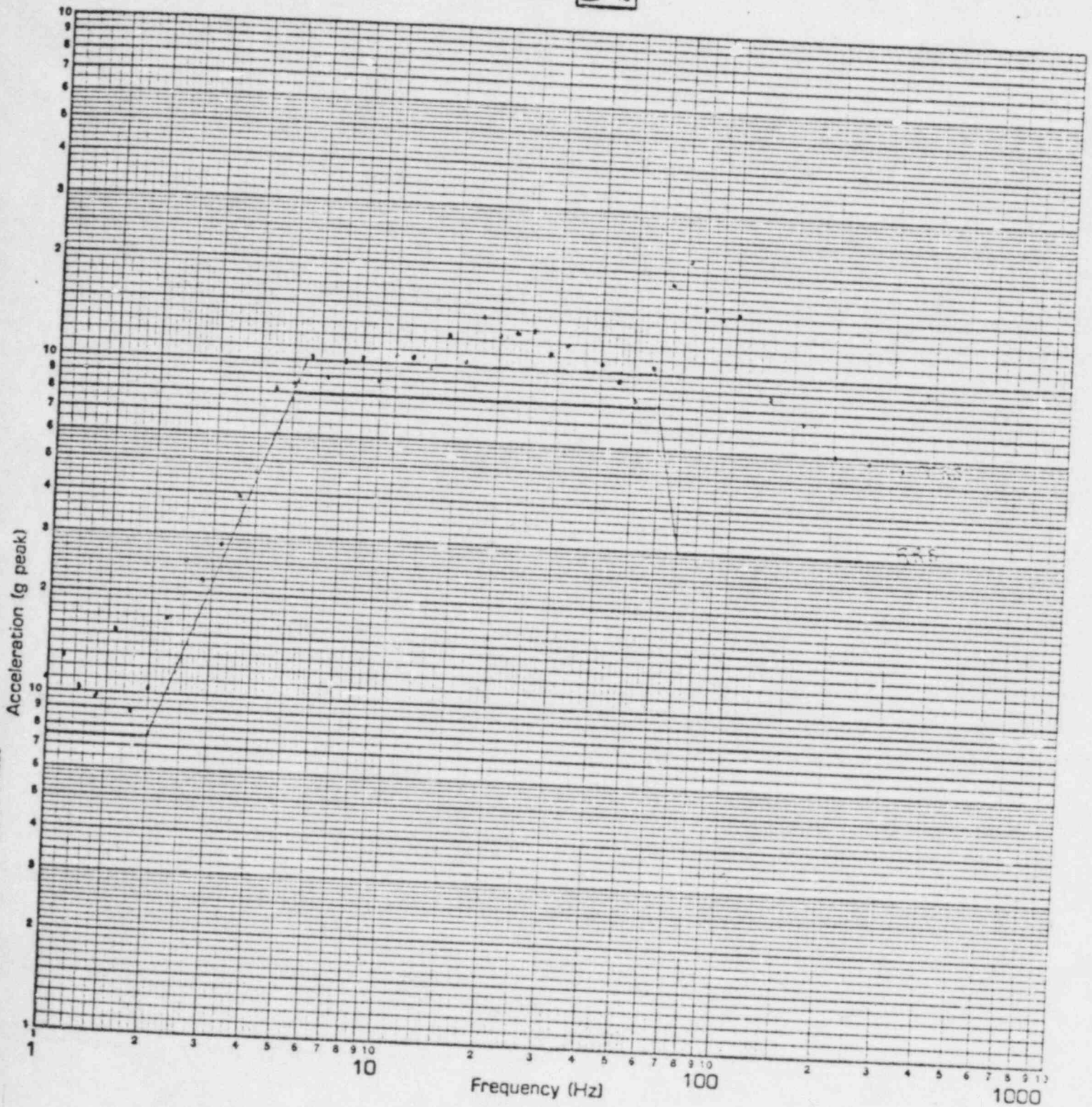
TEST RUN NO. 128

FULL SCALE SHOCK SPECTRUM (g Peak)

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1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING ☐ 5% ☒



SPECIMEN QV-5

AXIS LAT/V

LOCATION NO. VCA

TEST RUN NO. 128