

# TEST REPORT



WESTERN OPERATIONS, NORCO FACILITY

APW  
28545 Livingstone Avenue  
Valencia, CA 91355

Report No. 44425  
Our Job No. DE 44425  
Contract —  
Your P.O. No. 024494  
Date June 9, 2000

This report contains true and correct data obtained in the performance of the test program set forth in your purchase order. Test methods, results, and equipment used are recorded on these data sheets.

Where applicable, instrumentation used in obtaining this data has been calibrated using standards which are traceable to the National Institute of Standards and Technology.

## SUMMARY:

One Seismic Cabinet, Part No. SFS2007830 (no serial number), was subjected to Zone 4 Seismic Testing in accordance with GR-63-CORE, Paragraph 4.4.1/5.4.1. Complete test requirements and results are contained in this report. Also included are test setup photo and equipment list.

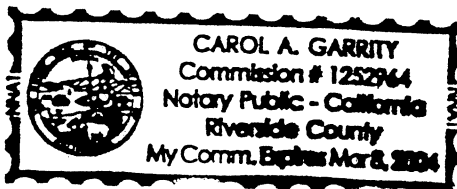
STATE OF CALIFORNIA }  
COUNTY OF RIVERSIDE } SS.

Keith A. Anderson

being duly sworn, deposes and says:  
That the information contained in this report is the result of complete and carefully conducted tests and is to the best of his knowledge true and correct in all respects.

SUBSCRIBED and sworn to before me this 9 day of June, 2000

Notary Public in and for the County of Riverside, State of California. My Commission expires on March 8, 2004.



## TEST OPERATIONS

TEST ENGINEER T. Mullen 6/9/2000  
T. Mullen

DEPT. MANAGER K. Anderson 6/9/00  
K. Anderson

QUALITY ASSURANCE G. Montgomery 6/9/00  
G. Montgomery

# DATA SHEET

Customer APW Job No. 44425  
Date 6/1/2000  
Specimen Seismic Cabinet

## RECEIVING INSPECTION

No. of Specimens Received: One (1)

Record identification information exactly as it appears on the tag or specimen:

Manufacturer: APW

| P/N's             | S/N's      |
|-------------------|------------|
| <u>SFS2007830</u> | <u>N/A</u> |
| _____             | _____      |
| _____             | _____      |
| _____             | _____      |
| _____             | _____      |
| _____             | _____      |
| _____             | _____      |
| _____             | _____      |
| _____             | _____      |

How does identification information appear: (name plate, tag, painted, imprinted, etc.)  
Customer provided information

**Examination:** Visual, for evidence of damage, poor workmanship, or other defects, and completeness of identification.

**Inspection Results:** There was no visible evidence of damage to the specimen(s) unless otherwise noted below.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

recinsp

W614-8/97 QA Form Approval GM.

Inspected By \_\_\_\_\_  
Sheet No. 1 of 1  
Approved J. Mullin Date 6/1/2000

# DATA SHEET

 Test Title Seismic Zone 4

 Customer APW

 Job No. 44425

 Specimen Seismic Cabinet

 Date Started 6/1/2000

 Part No. See Recv. Insp.

 Serial No. See Recv. Insp.

 Date Comp. 6/1/2000

 Spec. GR-63-CORE

 Par. 4.4.1 / 5.4.1

 Photo Yes

 Amb. Temp. 75° ±15F

## Test Requirements

Specimen Mounting:

On 6" concrete slab

# bolts / size / grade / torque:

4
HSL M 12/25
Hilti
60 ft-lbs

Orientation:

Front to back, side to side, and vertical

Loading:

600 pound dummy weights

No. of Accelerometers:

 Controls: 2

 Response: 3

 # Locations: 3

## Resonance Search

No. of Axes:

3

Range:

1

to

50

Hz.

Sweep Rate:

1

octave per

Min.

Acceleration:

0.2

g

## Zone 4 Synthesized Waveform

No. of Tests &amp; Dampings:

2

Tests

2

% Damping.

Frequency Range:

1

to

100

Hz.

Input Source:

"VERTEQ" Time History

tuned with a

digital control system to provide a transfer function to meet the RRS.

Response Analysis:

Performed in

1/6

octave frequency increments.

## Inspection

Following each axis of test.

## Functional Requirements

Structural test only.

Chatter Monitoring:

none

channels; for chatter in excess of

2 msec.

(continued)

Bellcore4

 W614A-10/98 QA Form Approval GM.

Tested By

Engineer

J. Muller

# DATA SHEET

Test Title Seismic Zone 4 Date 6/1/2000  
Customer APW Job No. 44425  
Specimen Seismic Cabinet Technician J. Meehan  
Part No. See Recv. Insp. Serial No. See Recv. Insp. Engineer T. Mullen

## Test Results:

### Visual Inspection

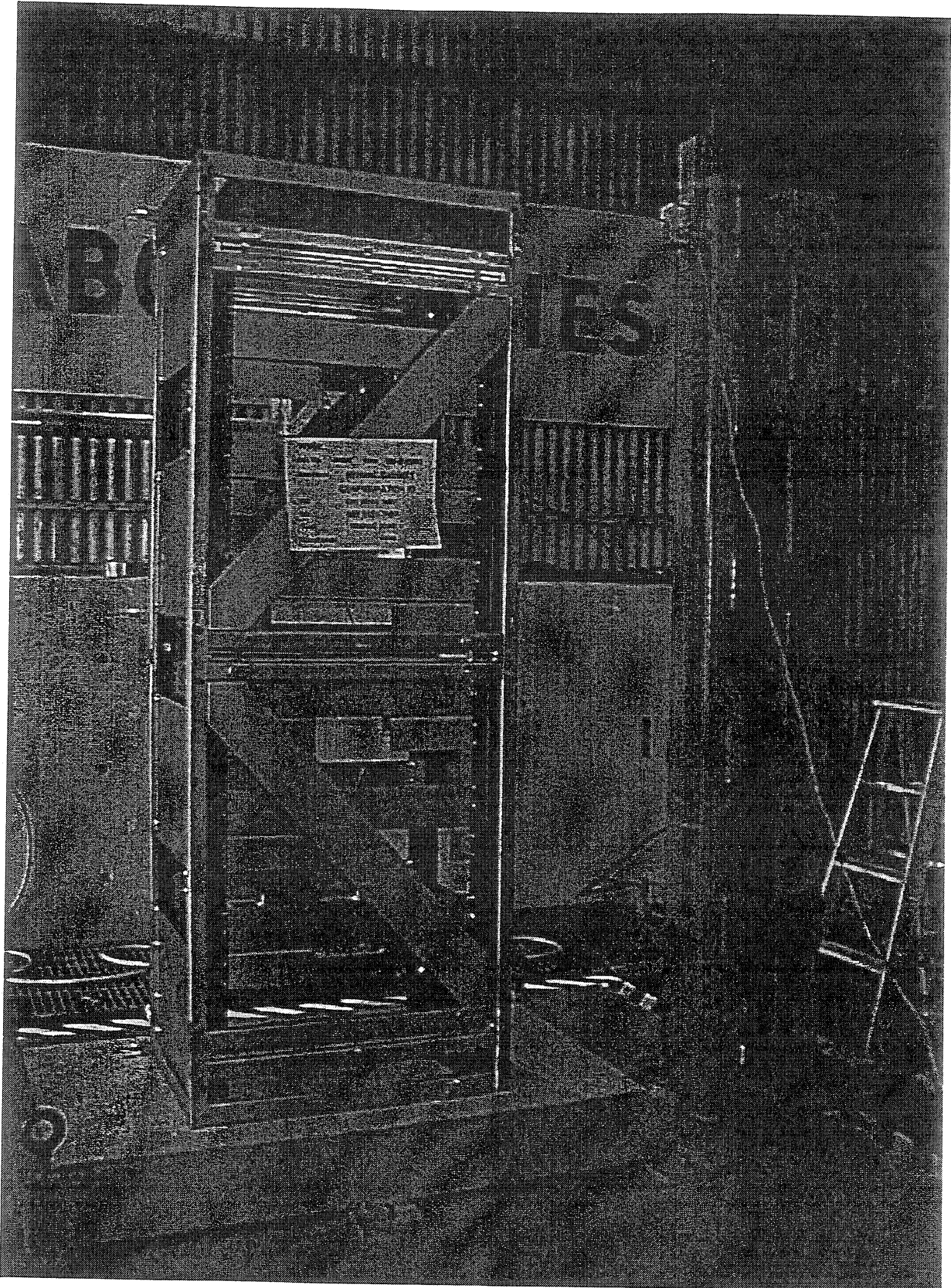
The test was performed in accordance with the test requirements of GR-63-CORE. After  
Front to Back axis, the cross braces came loose due to popped rivets, and one brace bent.  
The test continued and completed with no further damage.

### Functional

N/A

Functional Test by \_\_\_\_\_

seismic2



*Photograph 1*  
*Seismic Cabinet Test Setup*

**wyle** laboratories

## Dynamics Section

### Vibration Test Data Sheet

Job No. 44425

|          |     |                 |     |                 |     |                 |
|----------|-----|-----------------|-----|-----------------|-----|-----------------|
| Customer | APW | Seismic Cabinet | P/N | See Recv. Insp. | S/N | See Recv. Insp. |
| Customer | APW | Seismic Cabinet | P/N | See Recv. Insp. | S/N | See Recv. Insp. |

[illegible]

# DATA SHEET

|            |                 |            |                 |
|------------|-----------------|------------|-----------------|
| Test Title | Seismic Zone 4  | Date       | 6/1/2000        |
| Customer   | APW             | Job No.    | 44425           |
| Specimen   | Seismic Cabinet | Technician | J. Meehan       |
| Part No.   | See Recv. Insp. | Serial No. | See Recv. Insp. |
|            |                 | Engineer   | T. Mullen       |

[illegible]

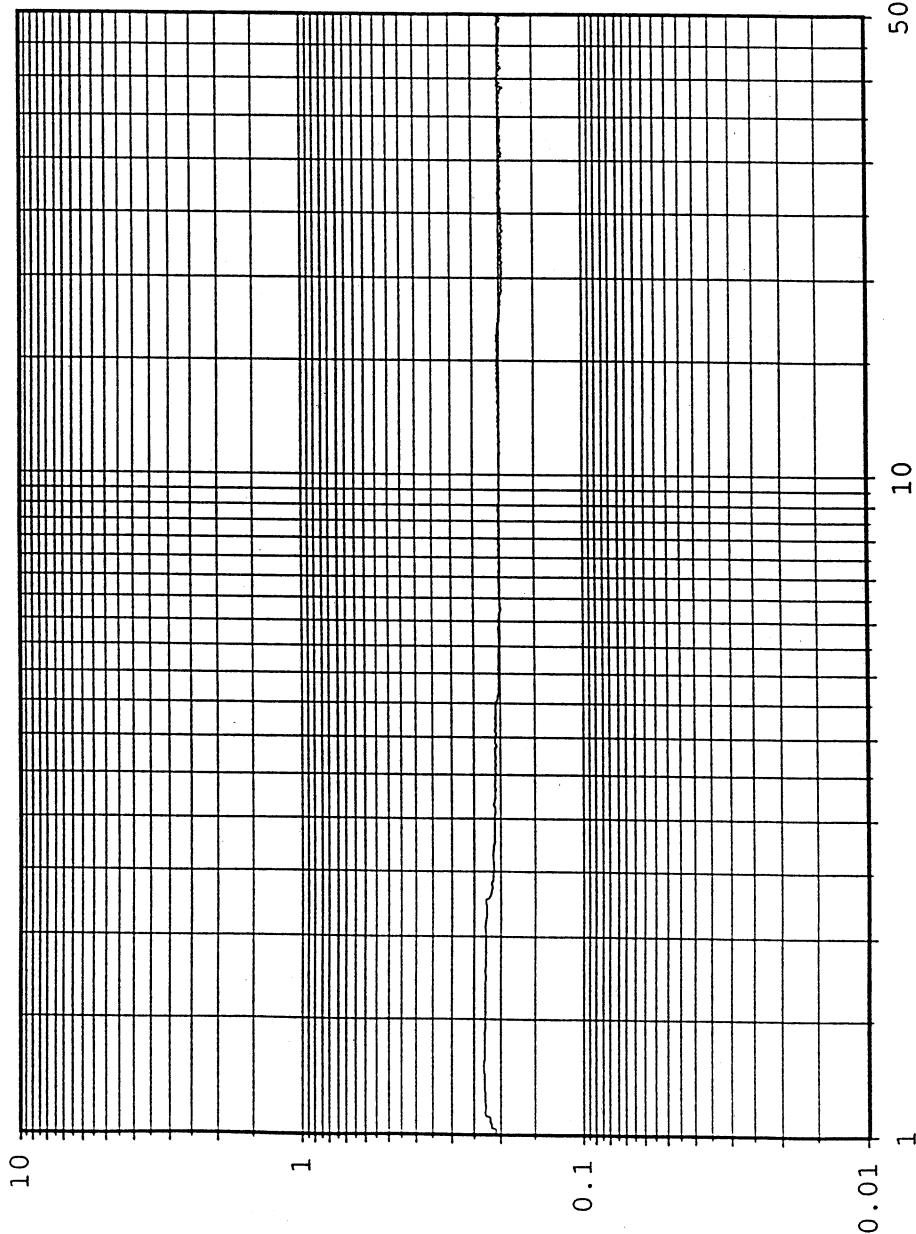
seismic-ds

# Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g]



[Hz]

Side to Side Axis Resonance Search

Rev C 600 Lbs., 75% Panels

Chan.no: 1  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

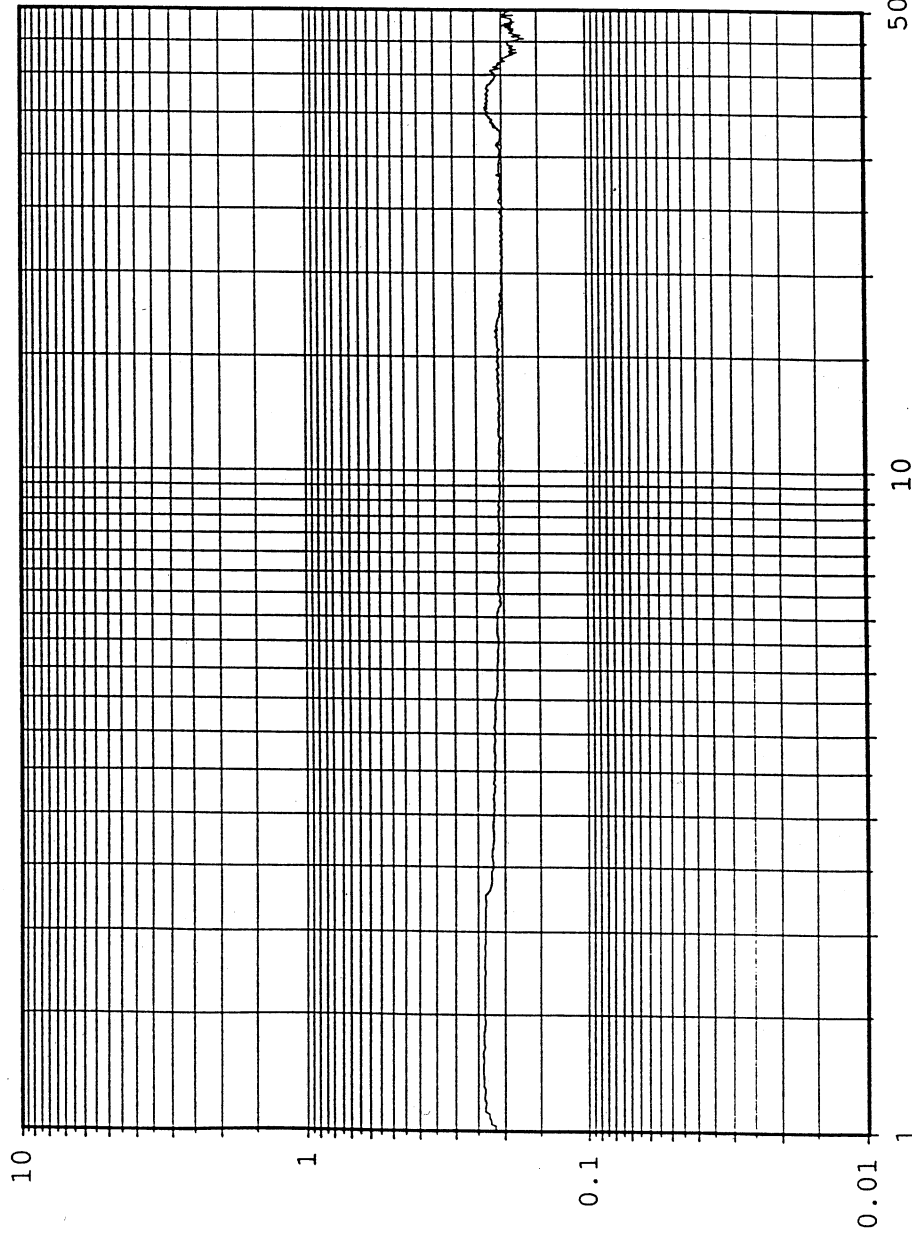
Date: 06-01-00  
Time: 15:39:25



# Rack Bottom

APW JN 44425  
Seismic Cabinet Configuration #3

[g]



Chan.no: 3  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-01-00  
Time: 15:39:25

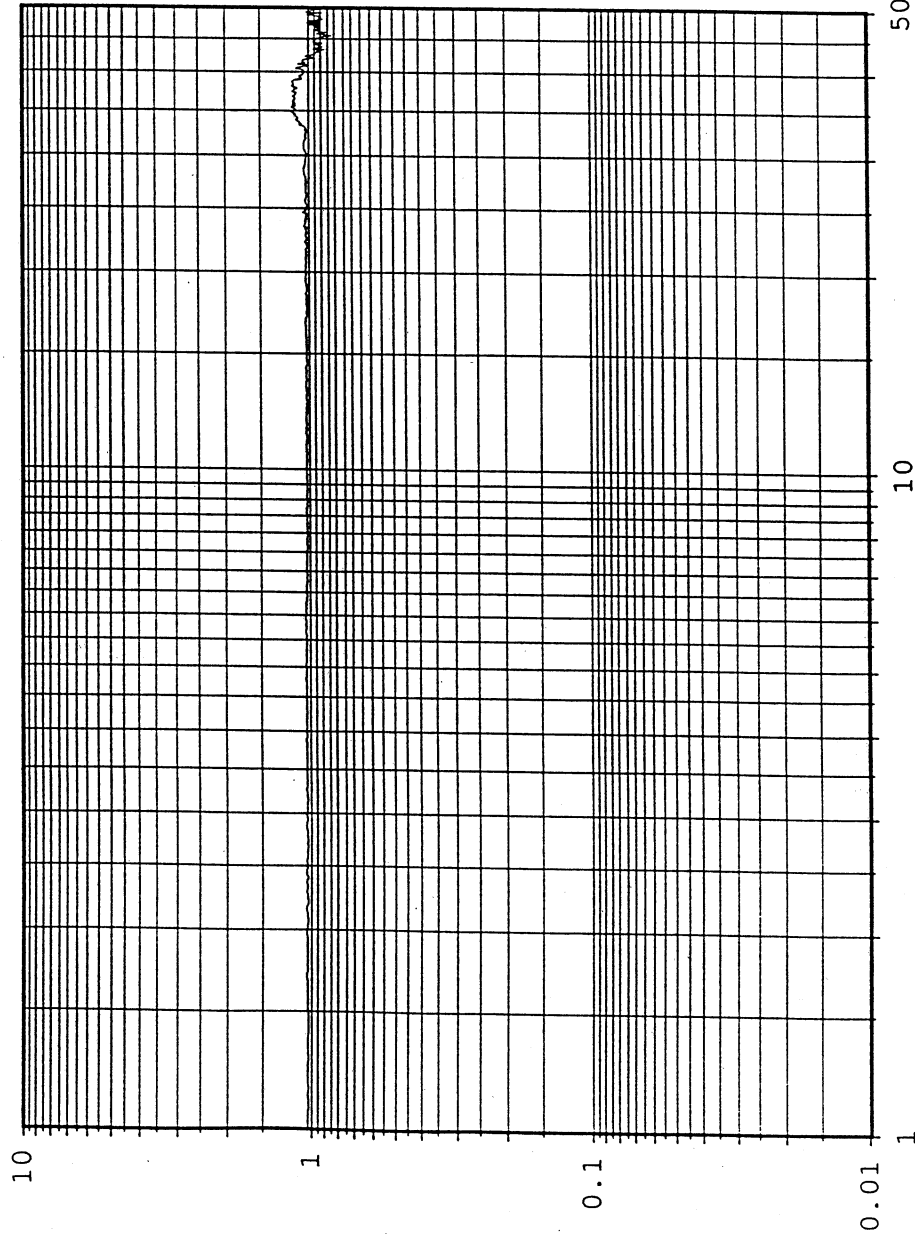
Side to Side Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

# Rack Bottom vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 3  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-01-00  
Time: 15:39:25

[Hz]

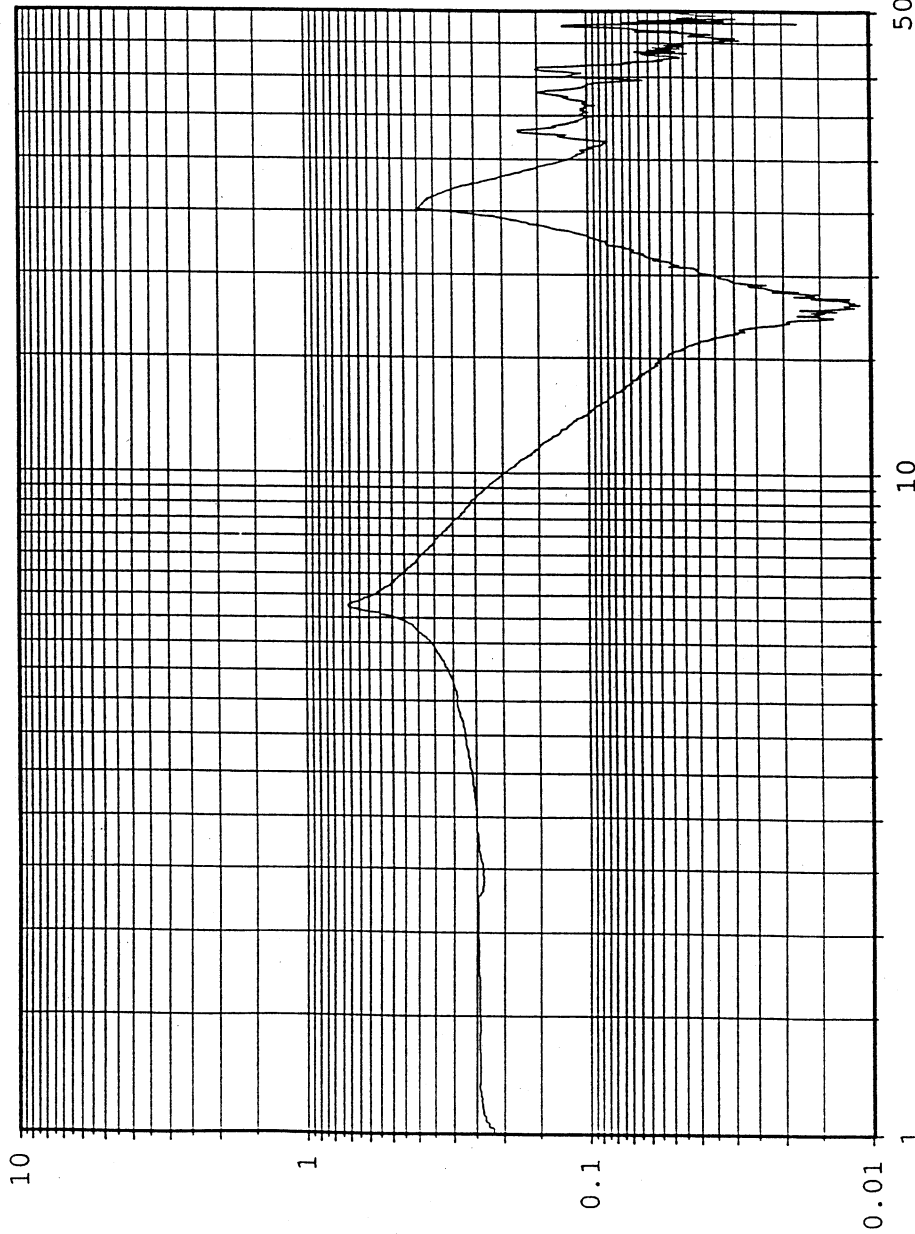
Side to Side Axis Resonance Search

Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 4  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-01-00  
Time: 15:39:25

Side to Side Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

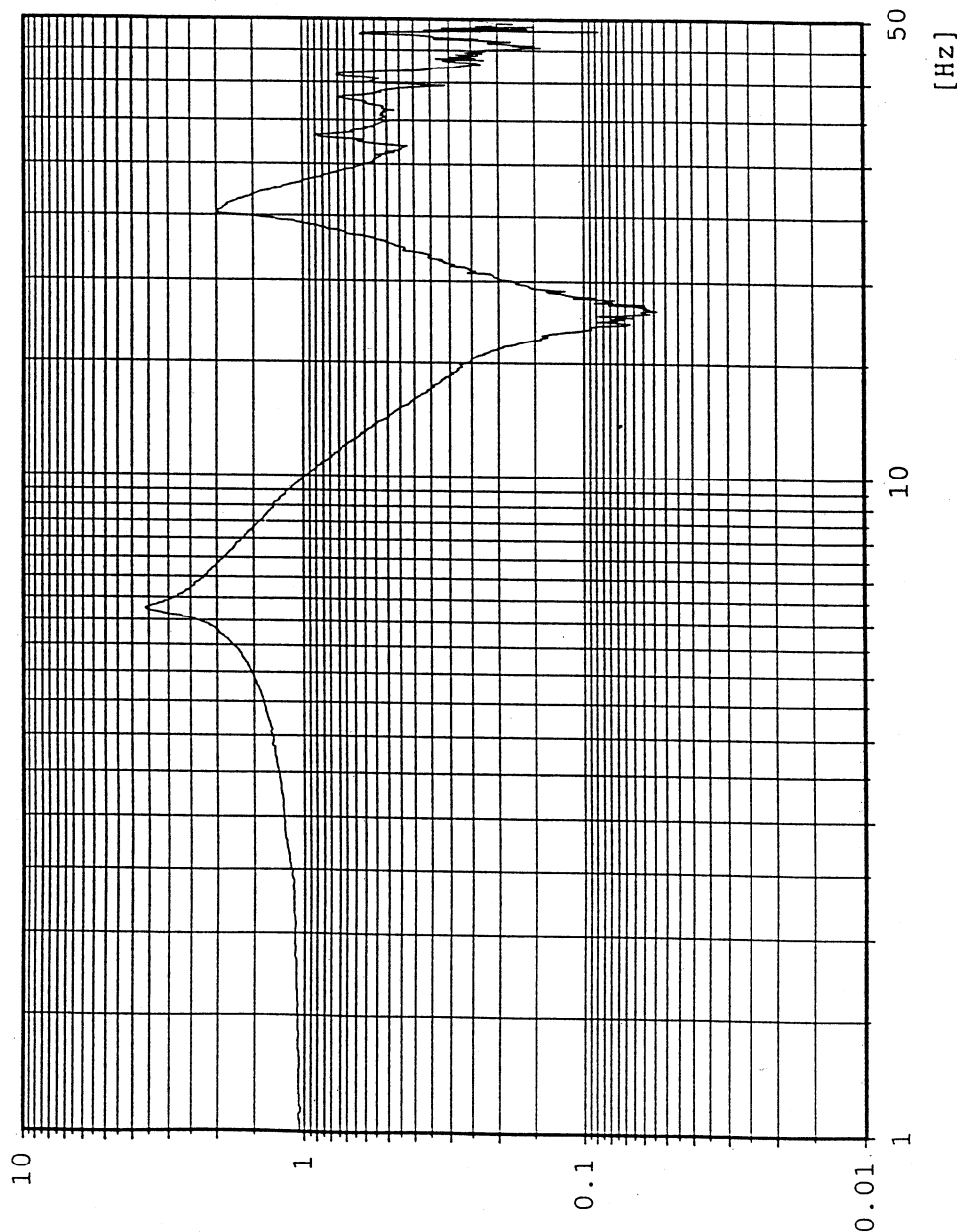
C:\VcpNT\Daten\APW44425\ResSearch\_008.rsn

# Rack Middle vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 4  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-01-00  
Time: 15:39:25

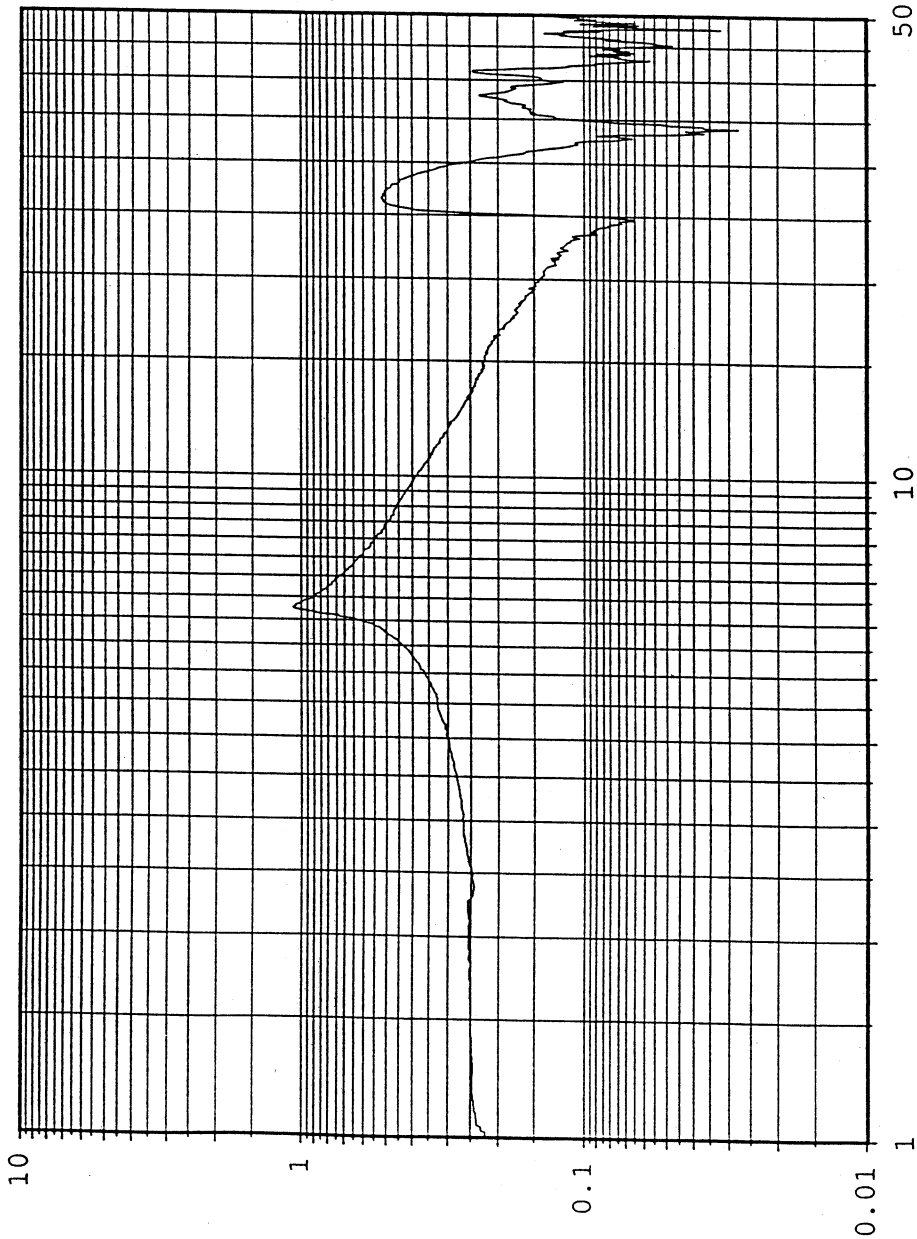
Side to Side Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\ResSearch\_008.rsn

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 5  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-01-00  
Time: 15:39:25

Side to Side Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

C:\VcpNT\Datn\APW44425\ResSearch\_008.rsn

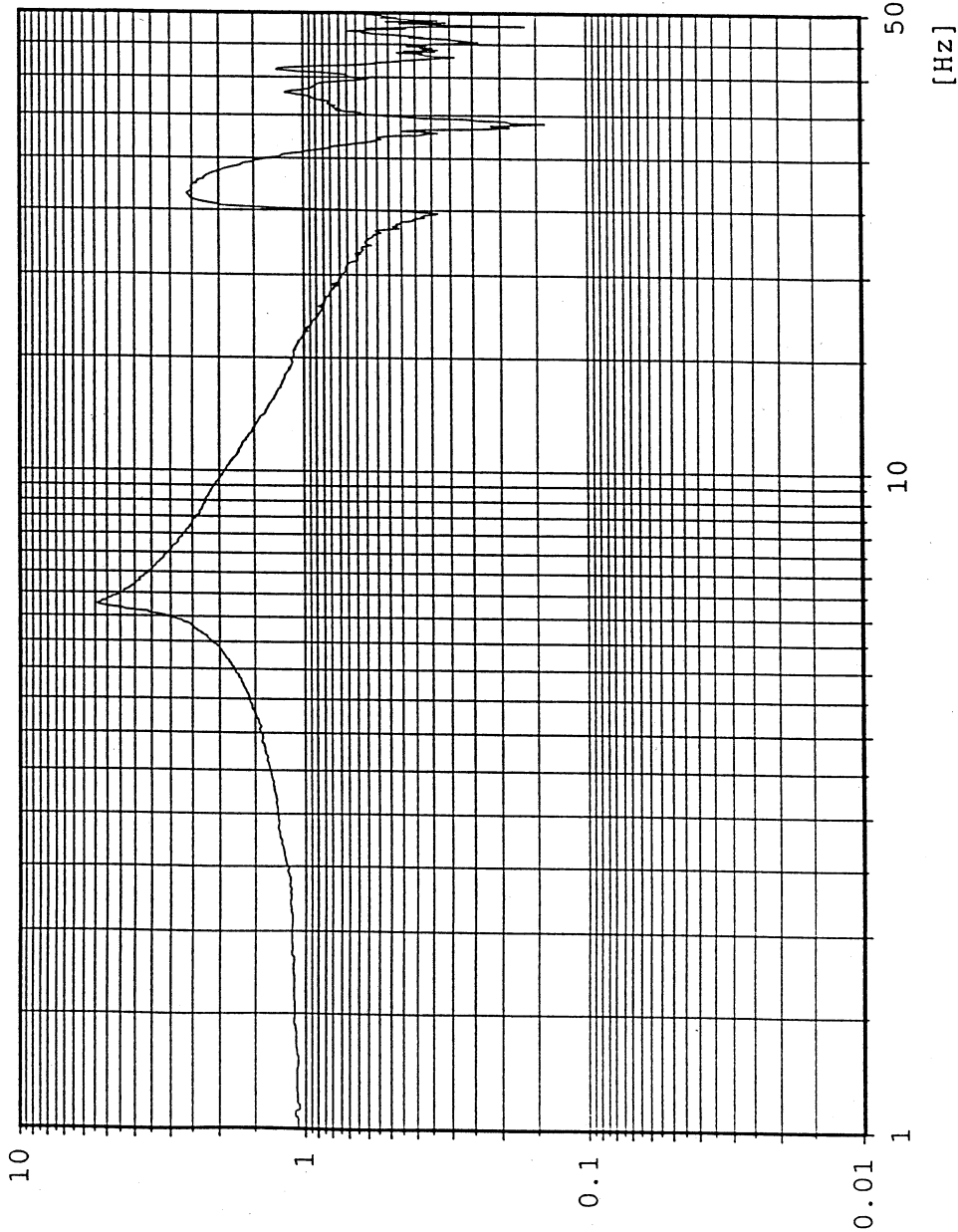
**wyle**  
Laboratories

# Rack Top vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 5  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-01-00  
Time: 15:39:25

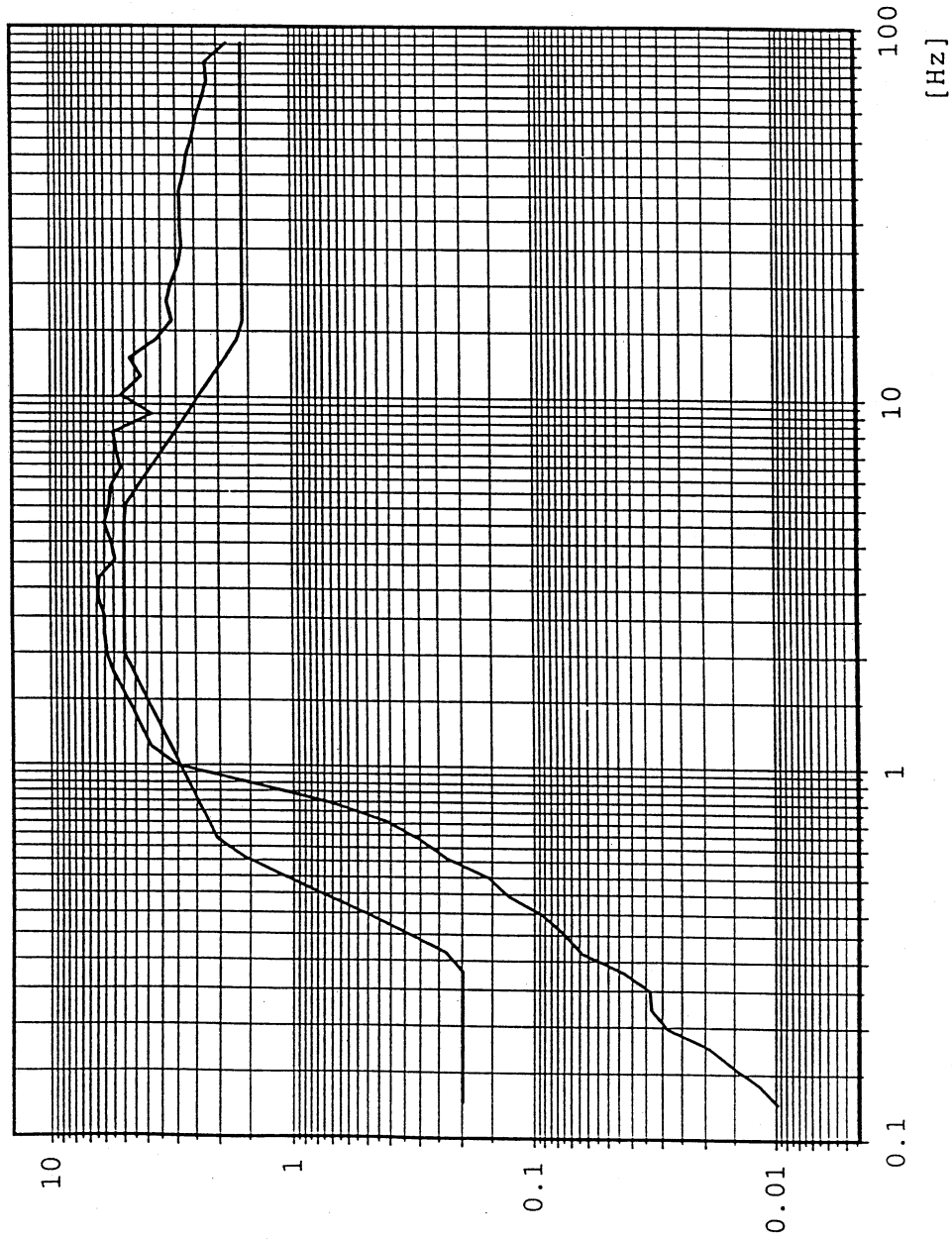
Side to Side Axis Resonance Search

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\ResSearch\_008.rsn

APW JN 44425  
Seismic Cabinet Configuration #3

[g]



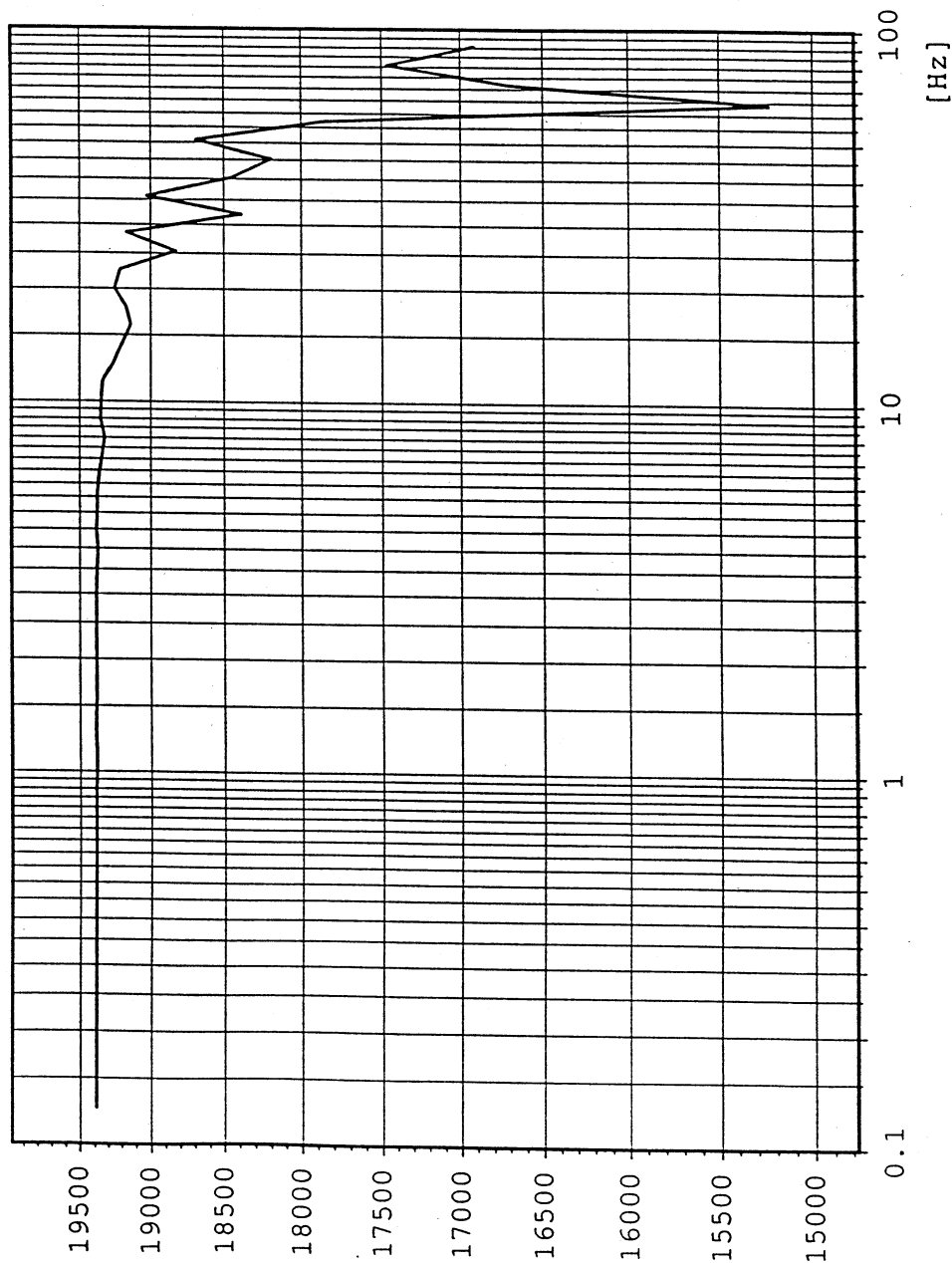
Chan.no: 1  
Chan.type: C  
Unit: g  
Damping: 2.00 %  
  
Date: 06-01-00  
Time: 15:57:43

Side to Side Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 3  
Chan.type: M  
Unit: g  
Damping: 2.00 %

Date: 06-01-00  
Time: 15:57:43

Side to Side Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4h\_006.rss



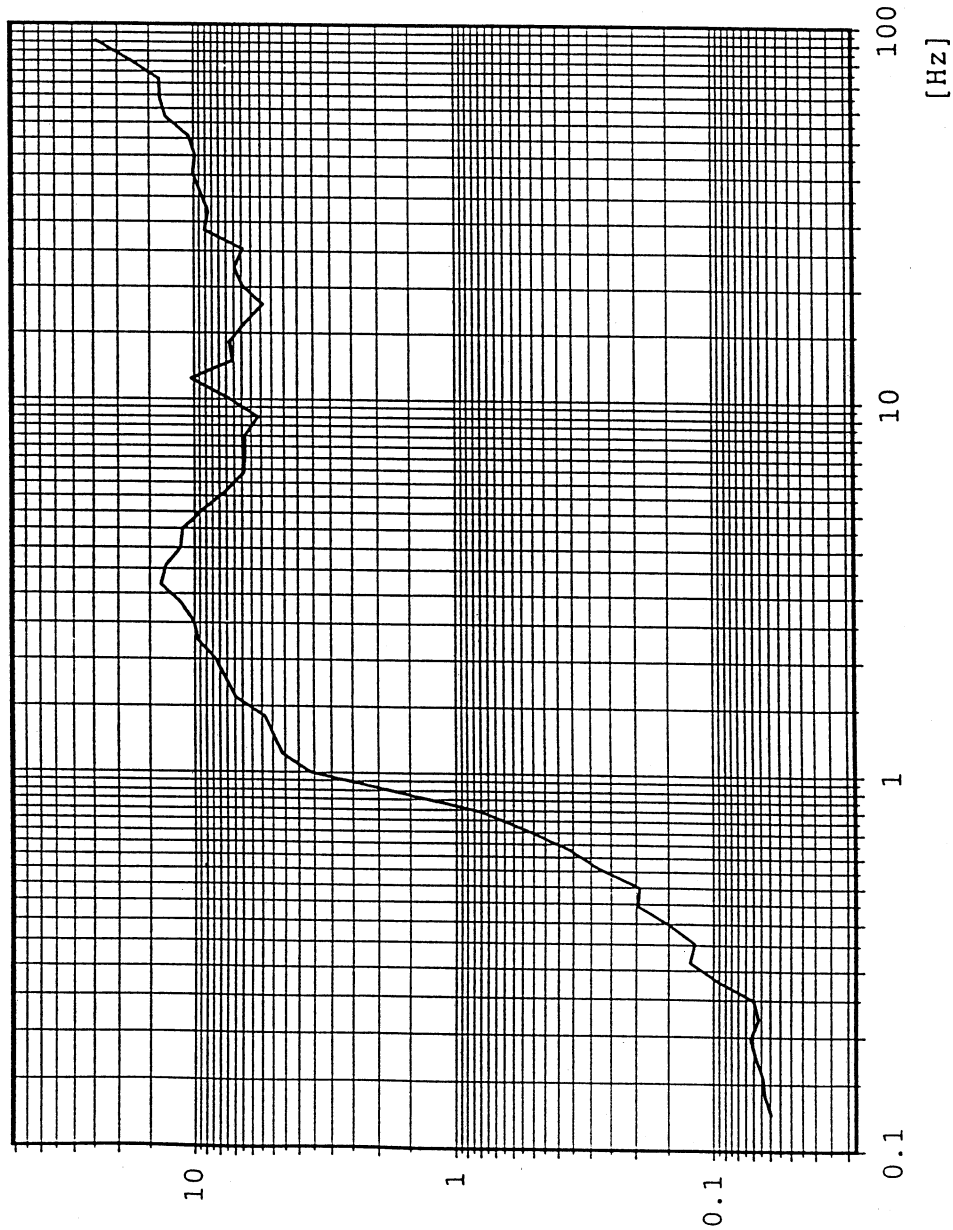
**wyle**  
Shocks

Rack Middle (SRS: d=2.00%)

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 4  
Chan.type: M  
Unit: g  
Damping: 2.00 %  
Date: 06-01-00  
Time: 15:57:43

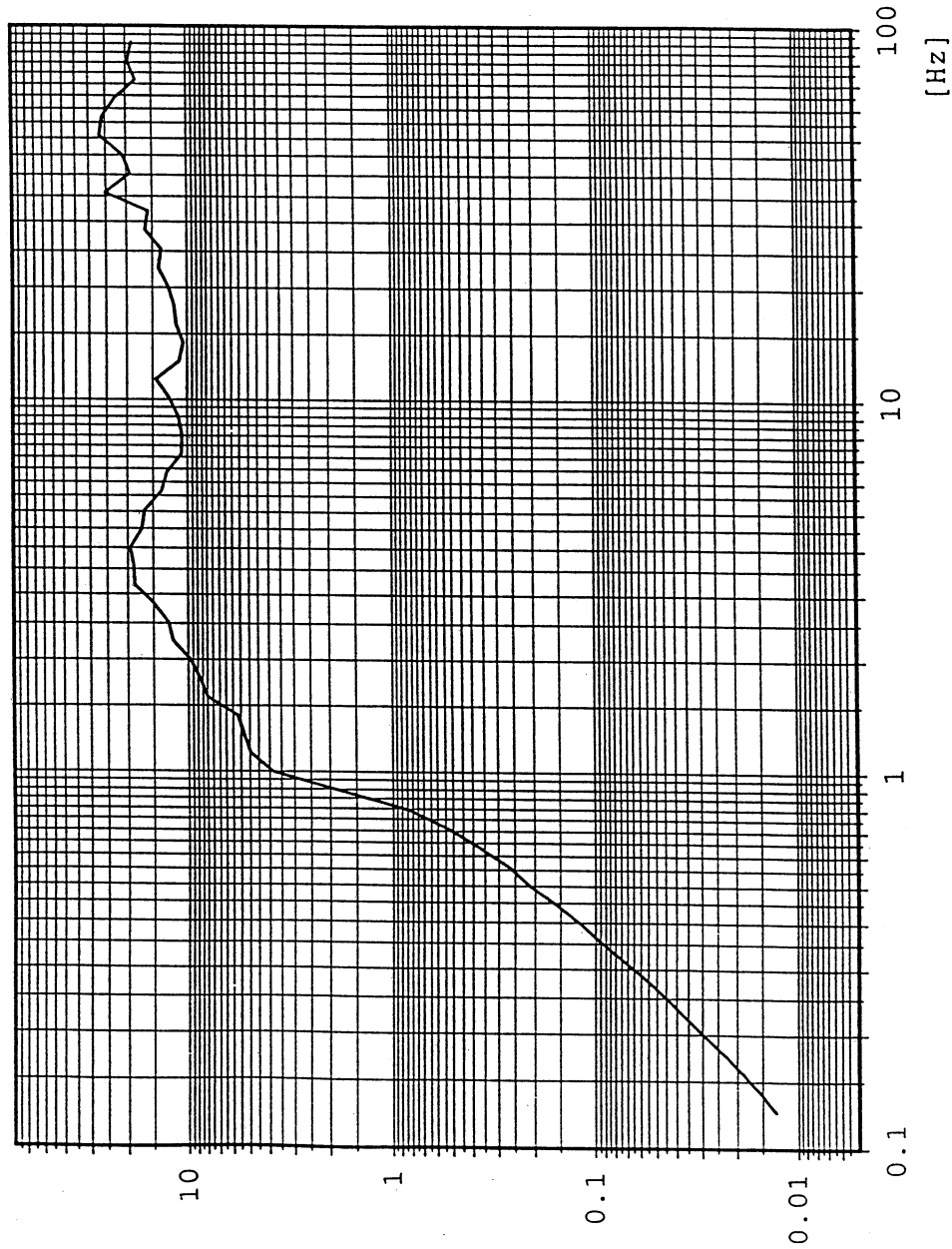
Side to Side Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

# Rack Top (SRS: d=2.00%)

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 5  
Chan.type: M  
Unit: g  
Damping: 2.00 %  
Date: 06-01-00  
Time: 15:57:43

Side to Side Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

**wyle**  
SHOCKTESTERS

# Control

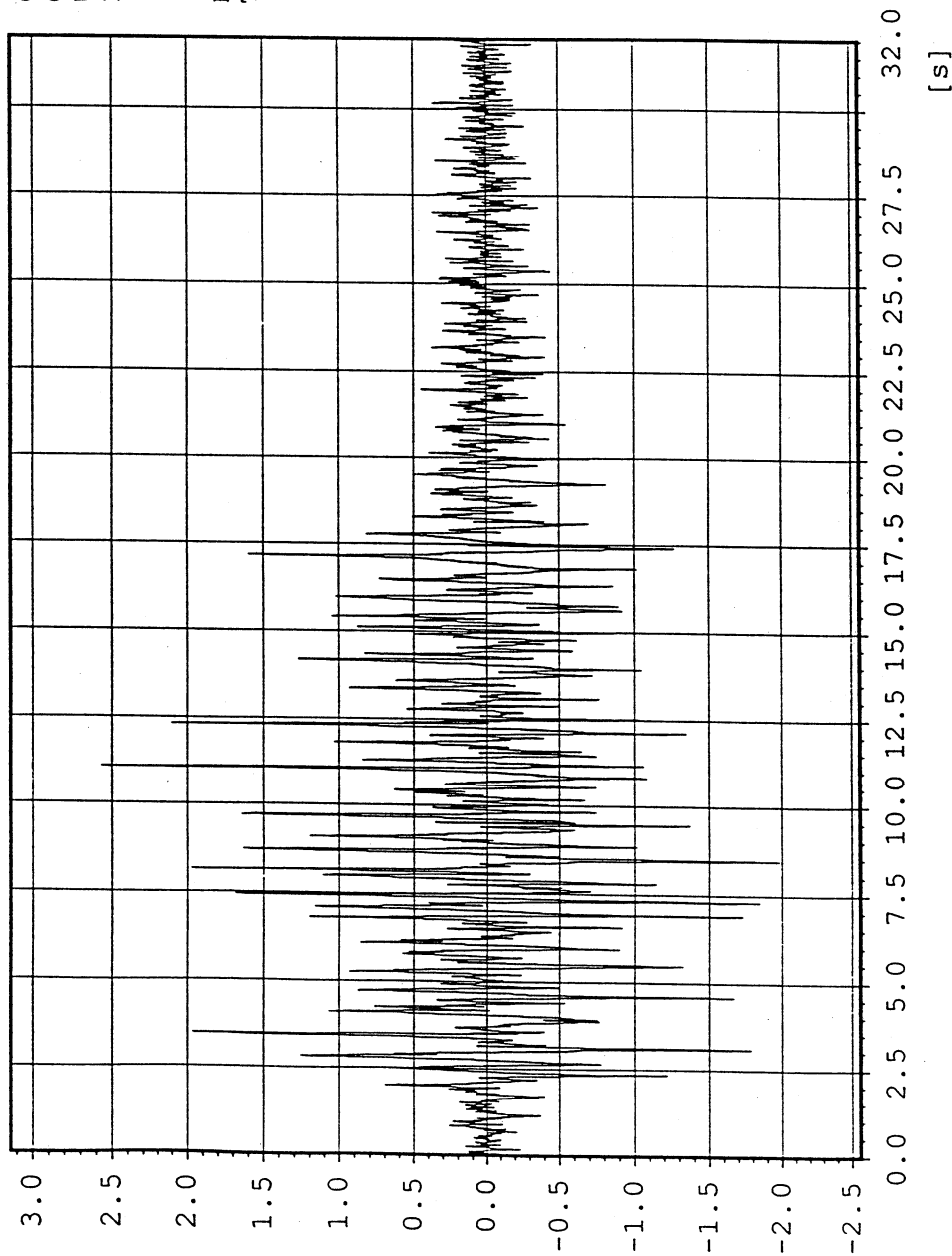
APW JN 44425

Seismic Cabinet Configuration #3

[g]

Chan.no: 1  
Chan.type: C  
Unit: g  
RMS (act.): 0.3987 g

Date: 06-01-00  
Time: 15:57:43



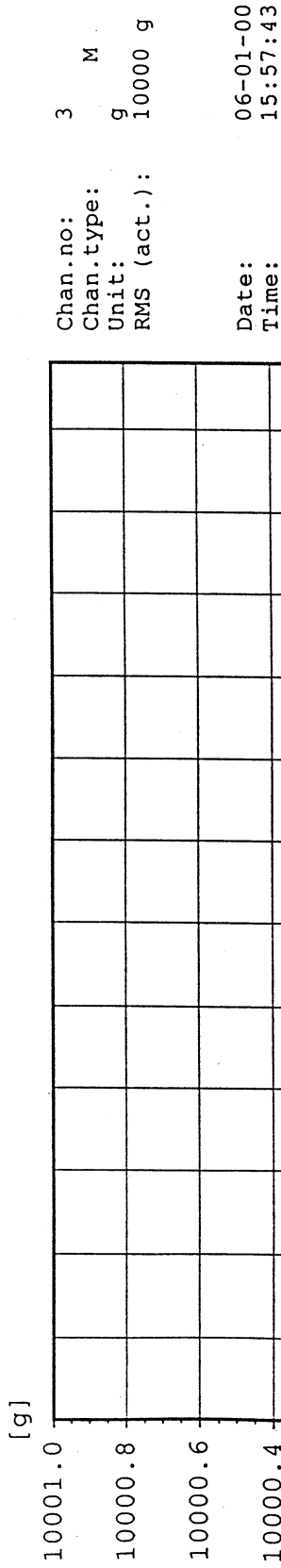
Side to Side Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4h\_006.rss

APW JN 44425

Seismic Cabinet Configuration #3



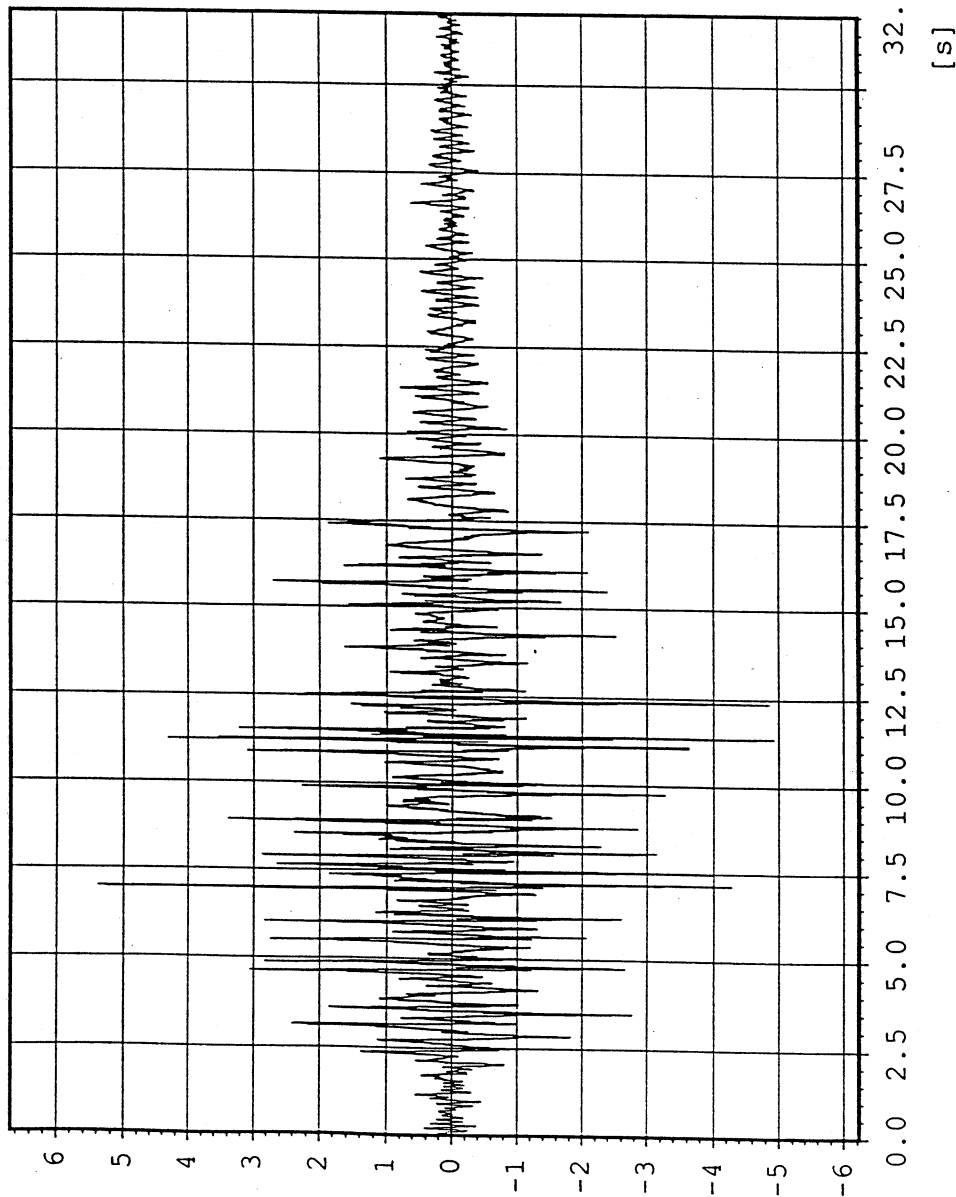
Side to Side Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 4  
Chan.type: M  
Unit: g  
RMS (act.): 0.6759 g

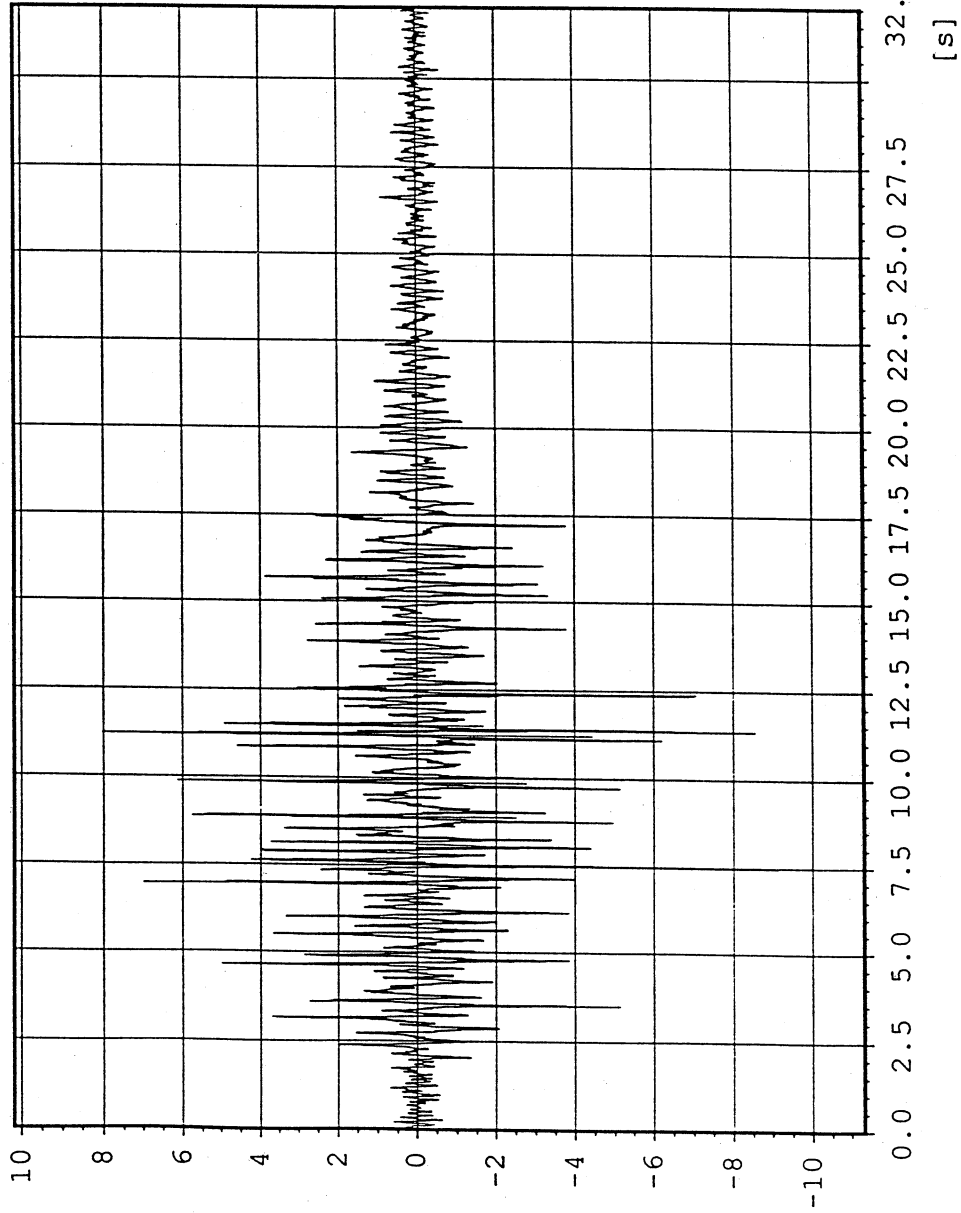
Date: 06-01-00  
Time: 15:57:43

Side to Side Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 5  
Chan.type: M  
Unit: g  
RMS (act.): 0.9745 g

Date: 06-01-00  
Time: 15:57:43

Side to Side Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

**wyle**  
SINCE 1985

LVDT

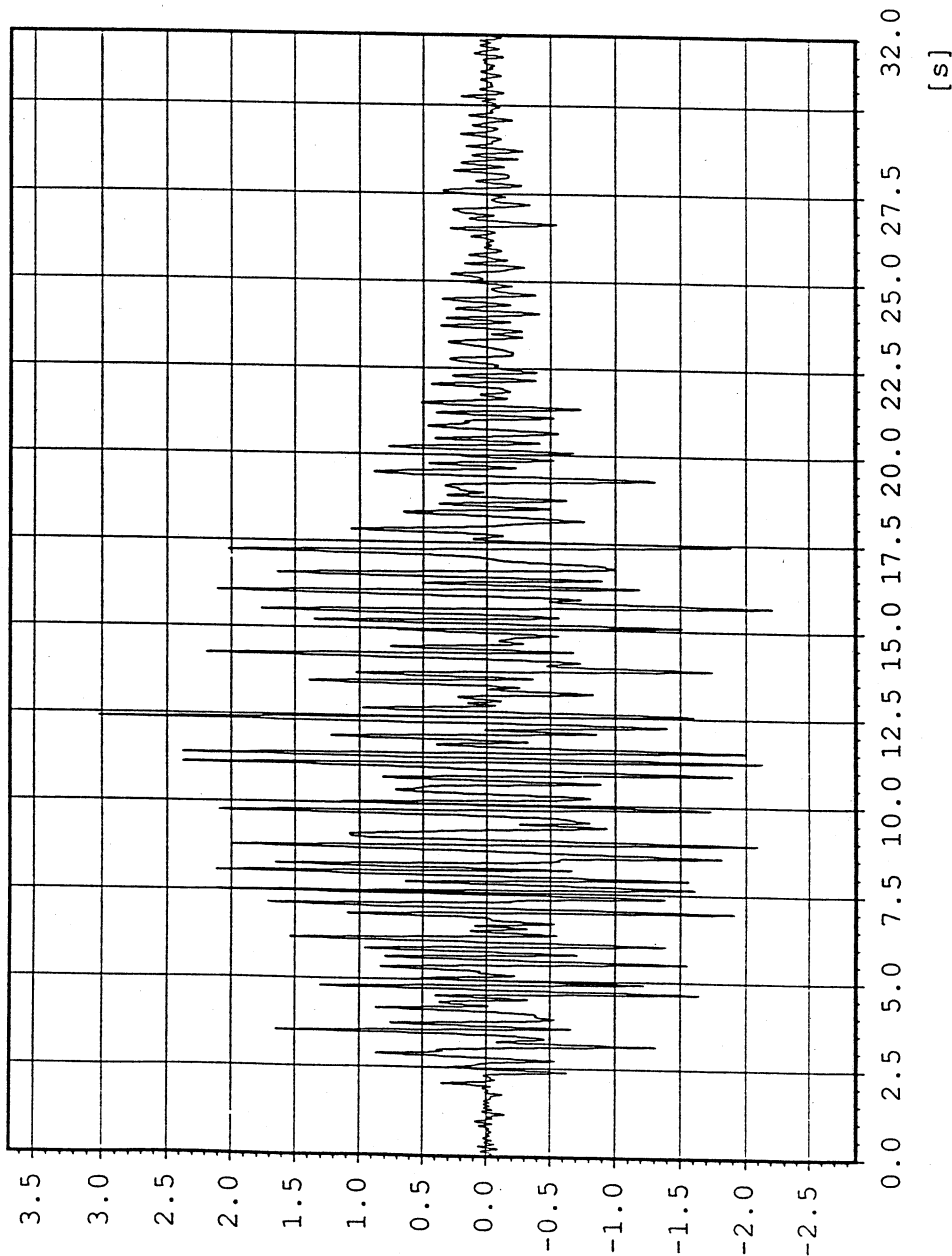
APW JN 44425

Seismic Cabinet Configuration #3

[INCH]

Chan.no: 6  
Chan.type: M  
Unit: INCH  
RMS (act.): 0.6429 INCH

Date: 06-01-00  
Time: 15:57:43



Side to Side Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

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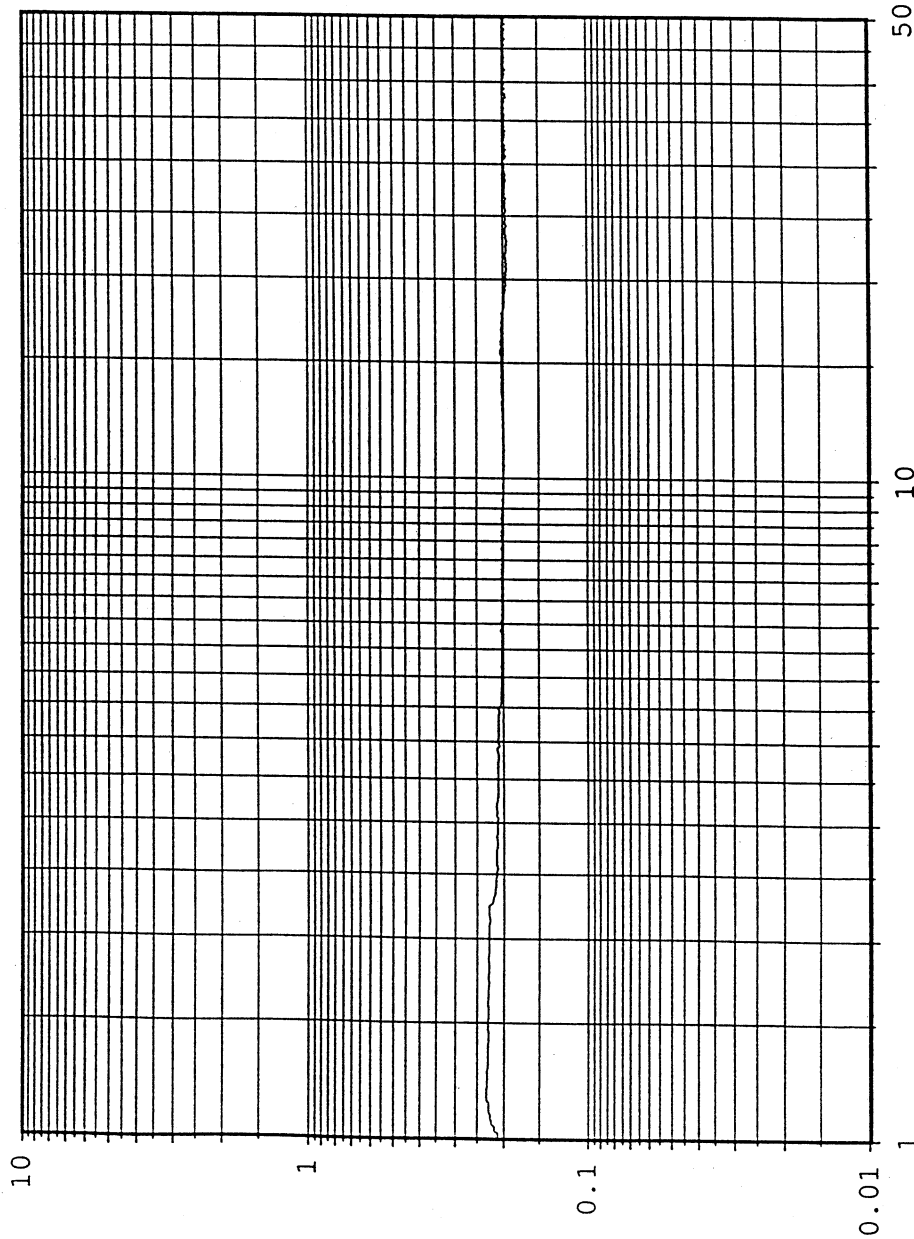


# Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g]



[Hz]

Chan.no: 1  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-02-00  
Time: 07:36:06

Front to Back Axis Resonance Search

Rev C 600 Lbs., 75% Panels

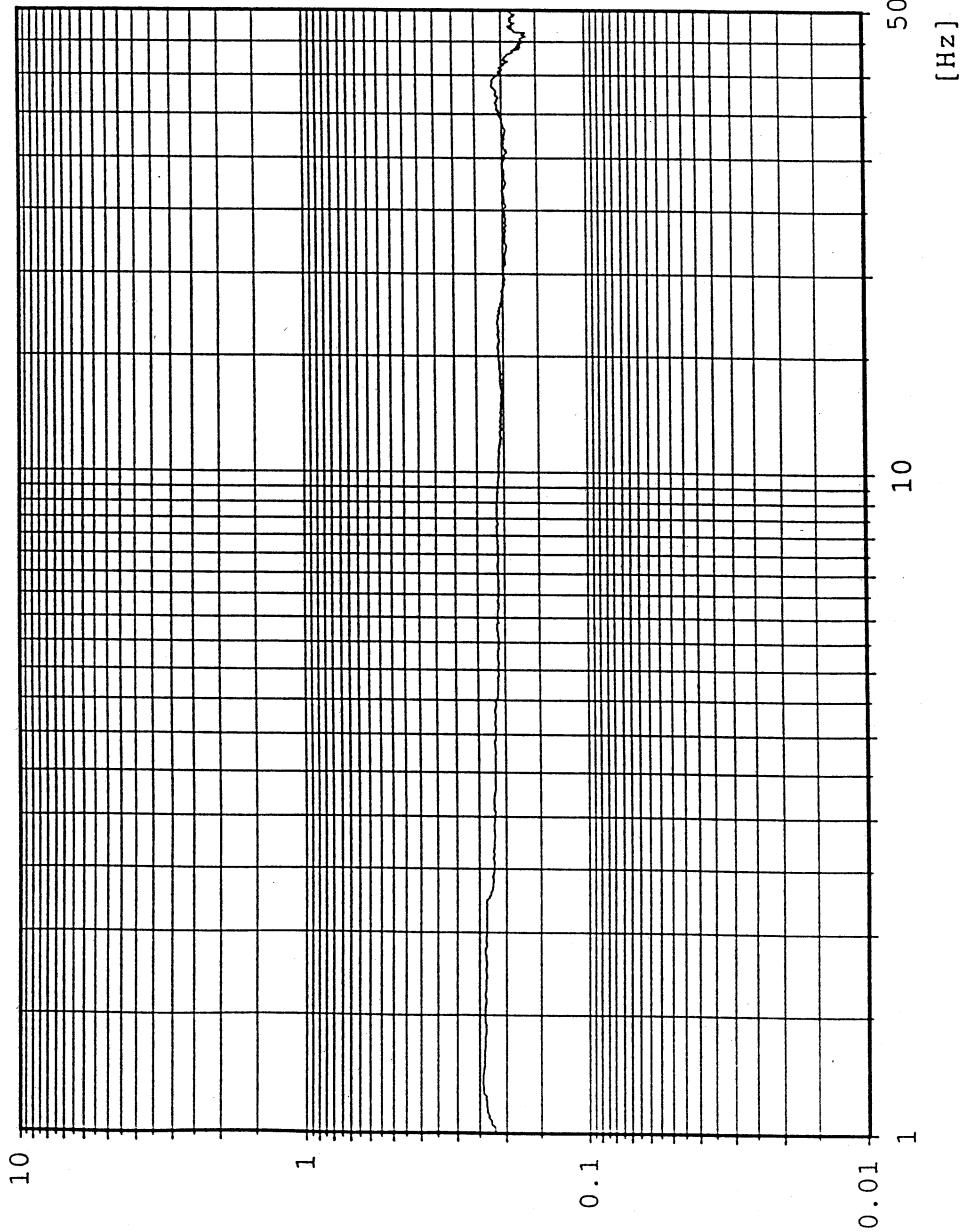


# Rack Bottom

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 3  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-02-00  
Time: 07:36:06

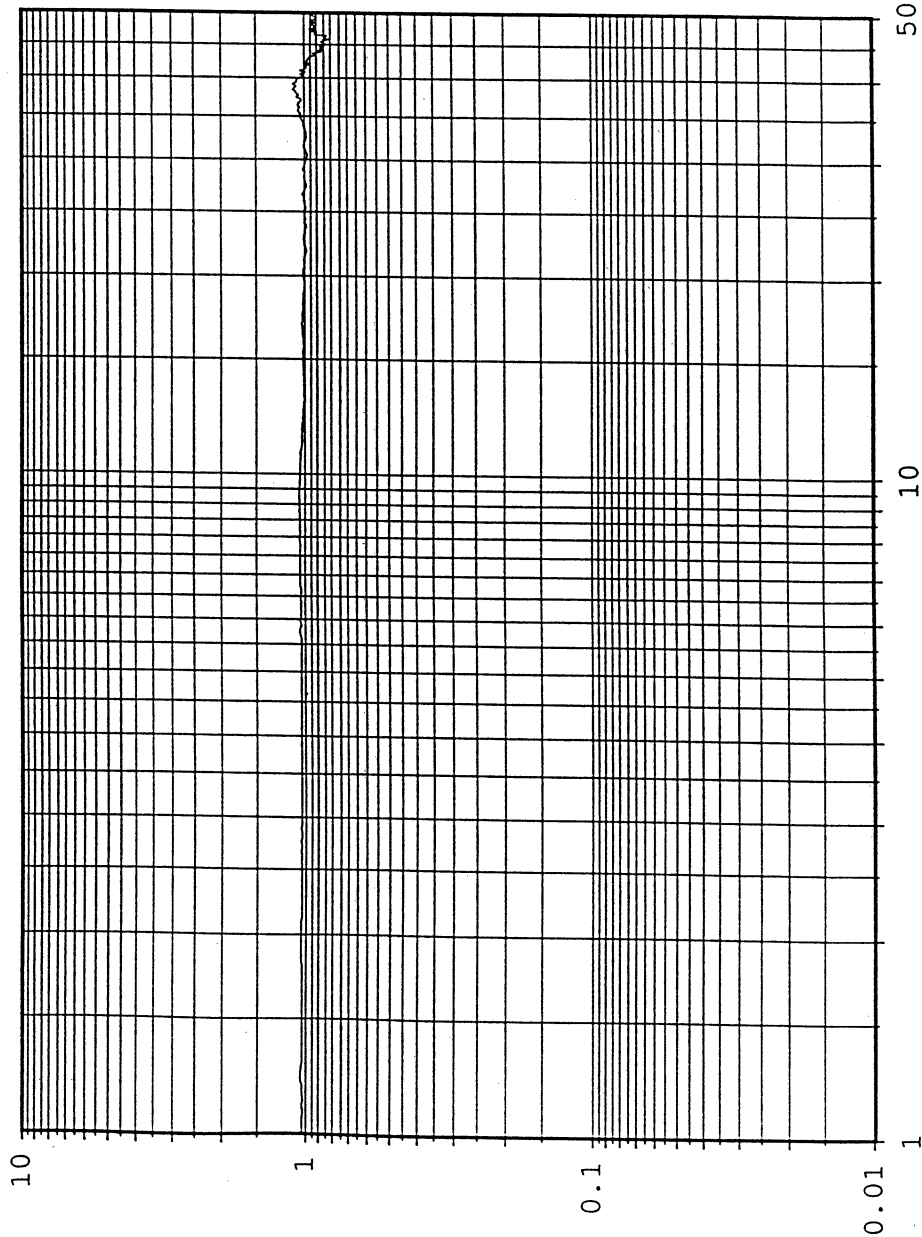
Front to Back Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

# Rack Bottom vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



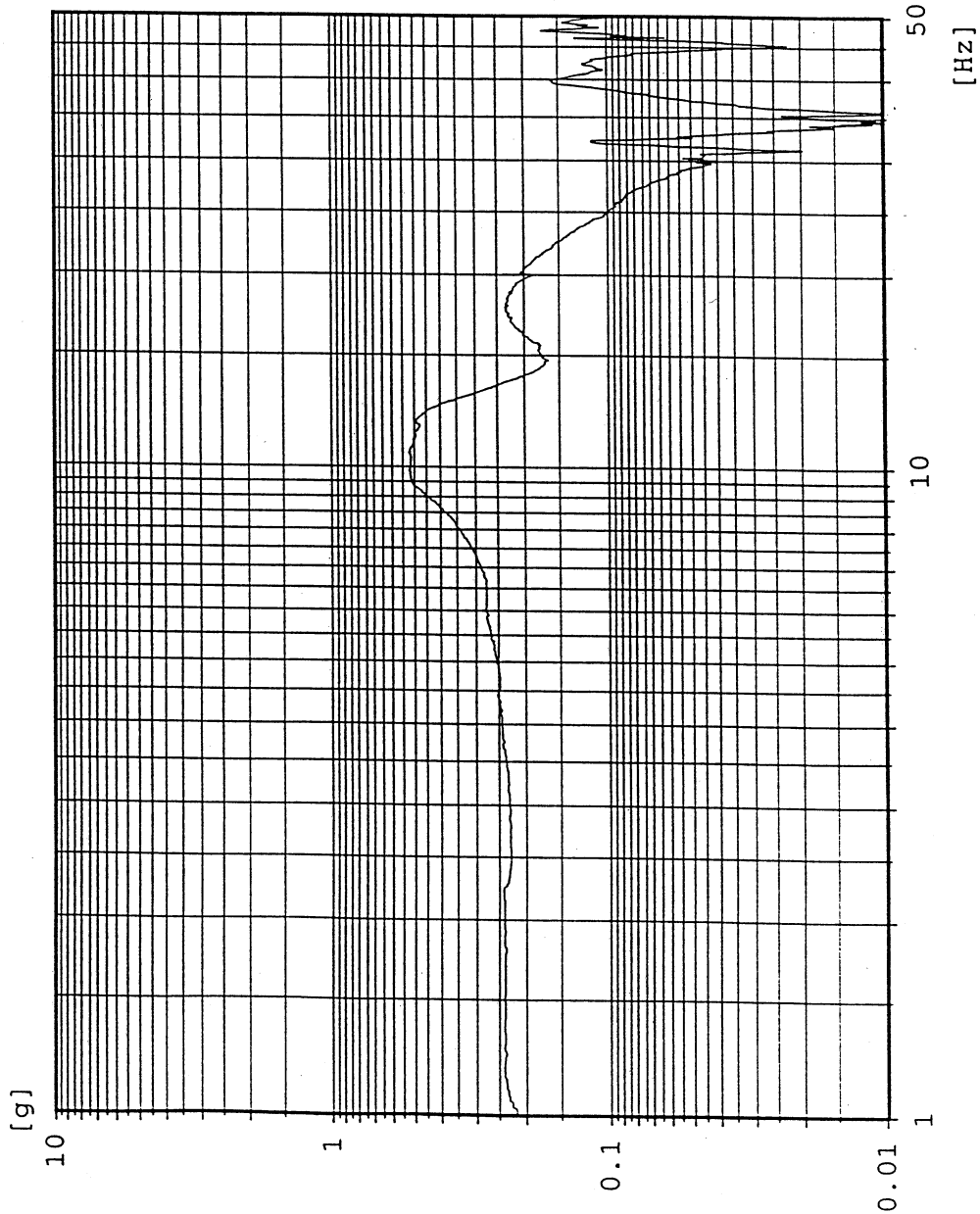
Ref.Chan.: 1  
Chan.no: 3  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00  
Date: 06-02-00  
Time: 07:36:06

Front to Back Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3



Chan.no: 4  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-02-00  
Time: 07:36:06

Front to Back Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

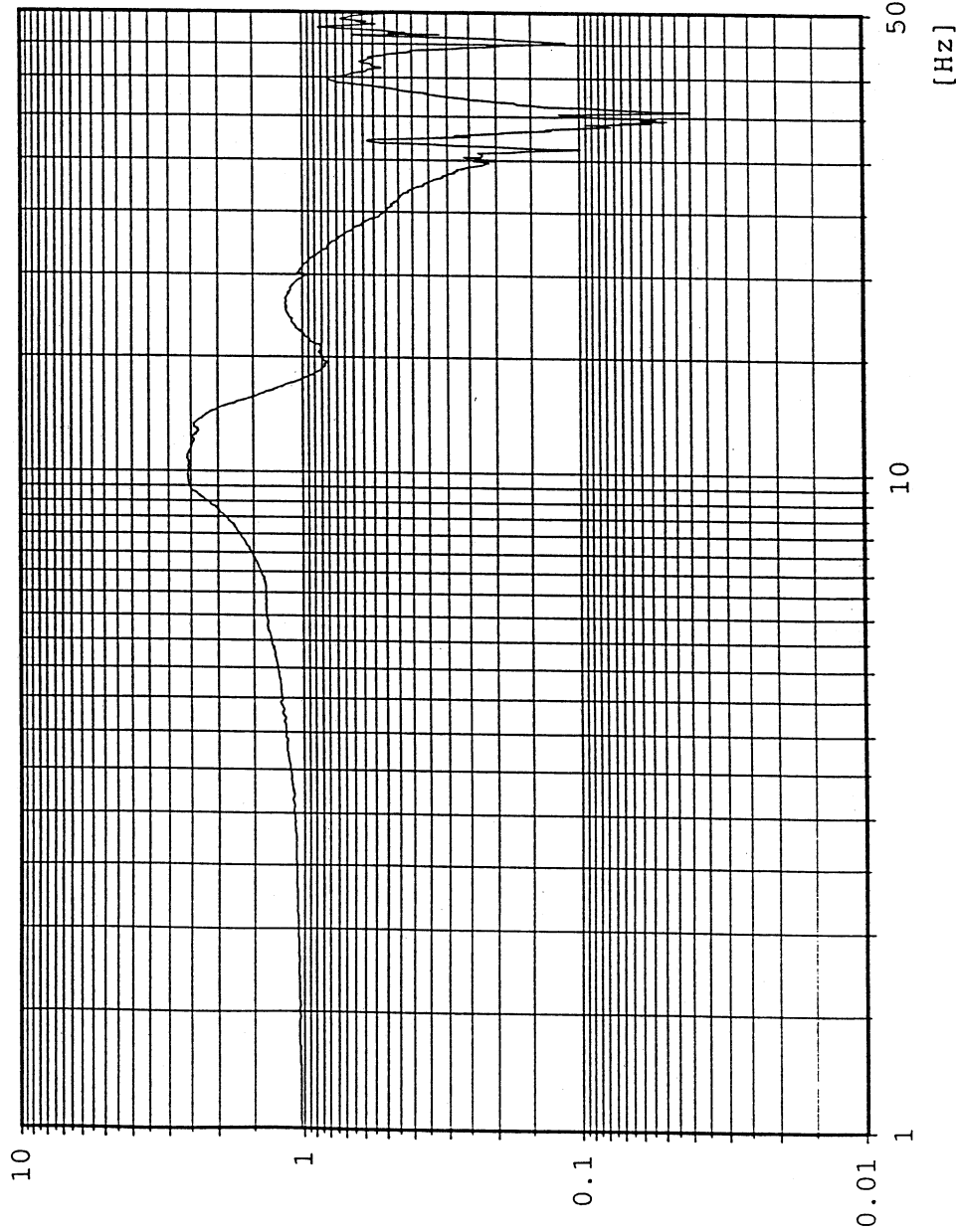
C:\VcpNT\Daten\APW44425\ResSearch\_009.rsn

# Rack Middle vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 4  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00  
Date: 06-02-00  
Time: 07:36:06

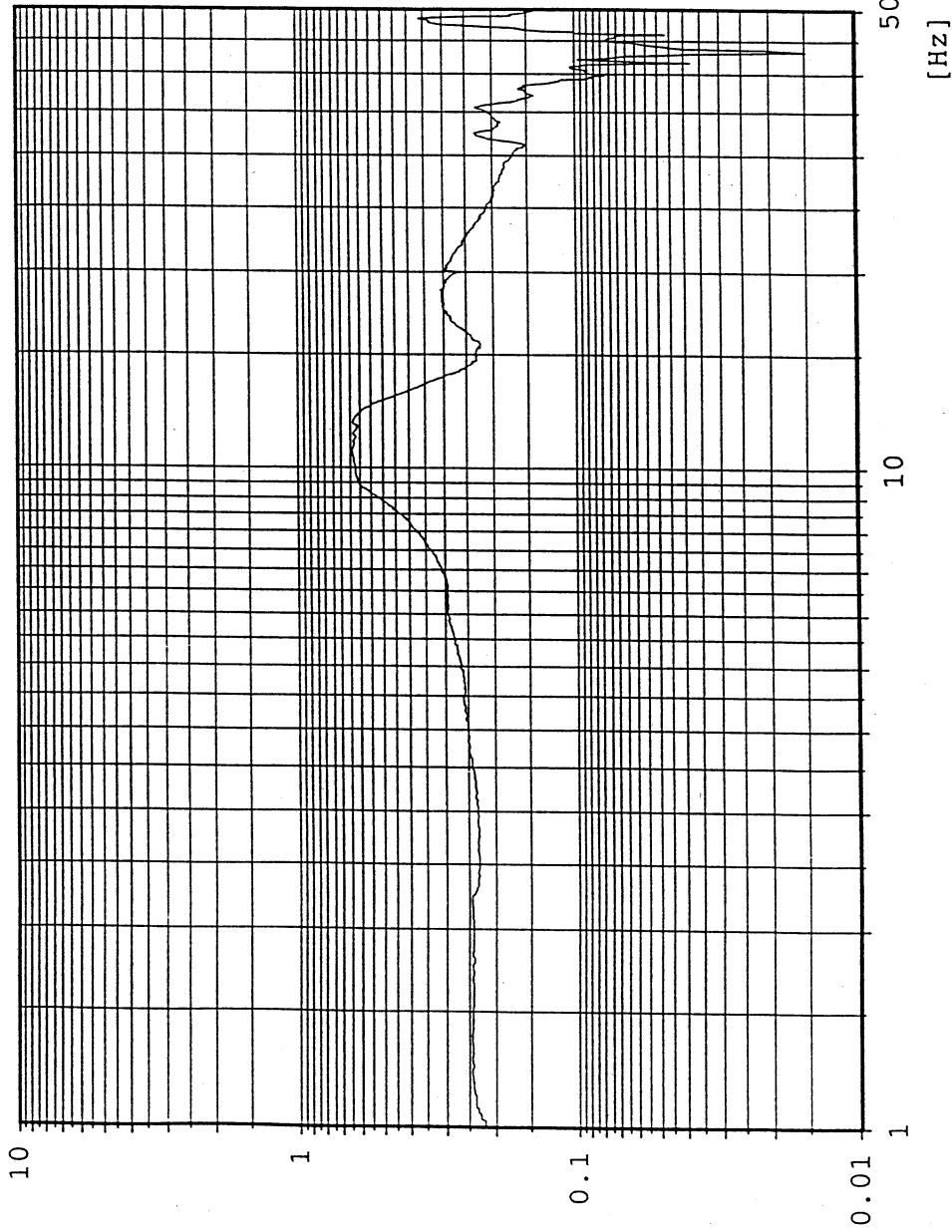
Front to Back Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\ResSearch\_009.rsn

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 5  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-02-00  
Time: 07:36:06

Front to Back Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

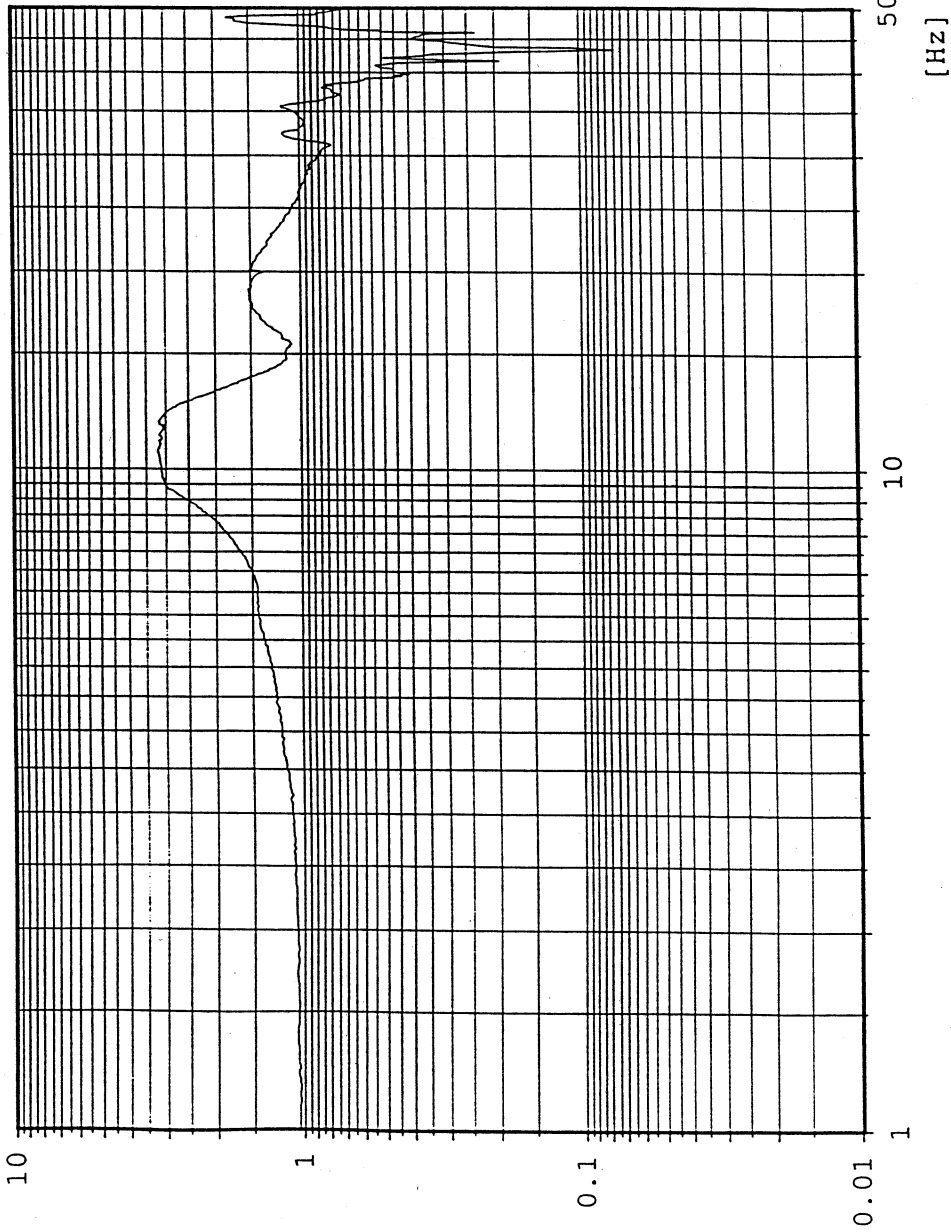
C:\VcpNT\Daten\APW44425\ResSearch\_009.rsn

# Rack Top vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 5  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:37  
remaining: 000:00:00

Date: 06-02-00  
Time: 07:36:06

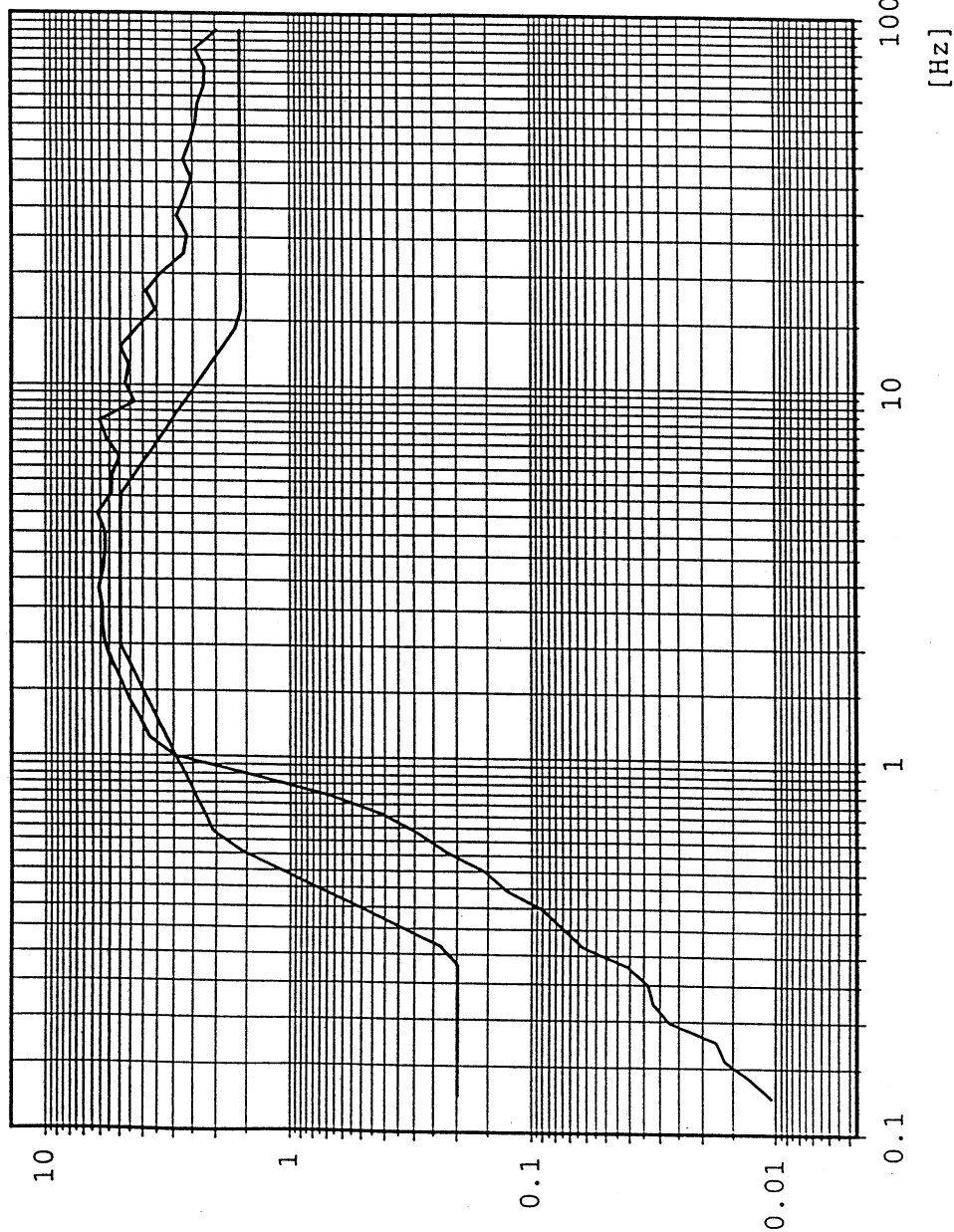
Front to Back Axis Resonance Search

Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 1  
Chan.type: C  
Unit: g  
Damping: 2.00 %

Date: 06-02-00  
Time: 07:56:03

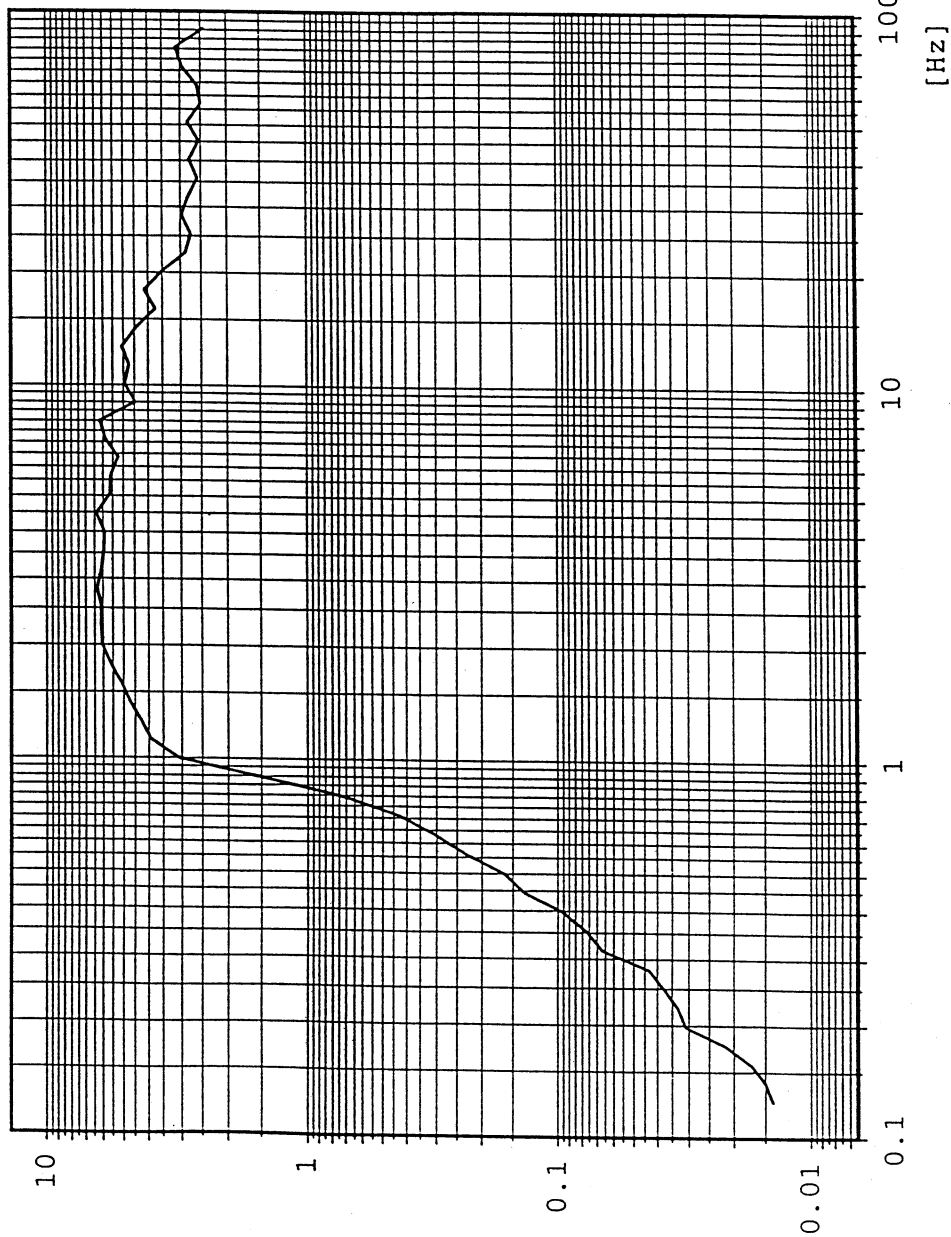
Front to Back Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 3  
Chan.type: M  
Unit: g  
Damping: 2.00 %

Date: 06-02-00  
Time: 07:56:03

Front to Back Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4h\_007.rss



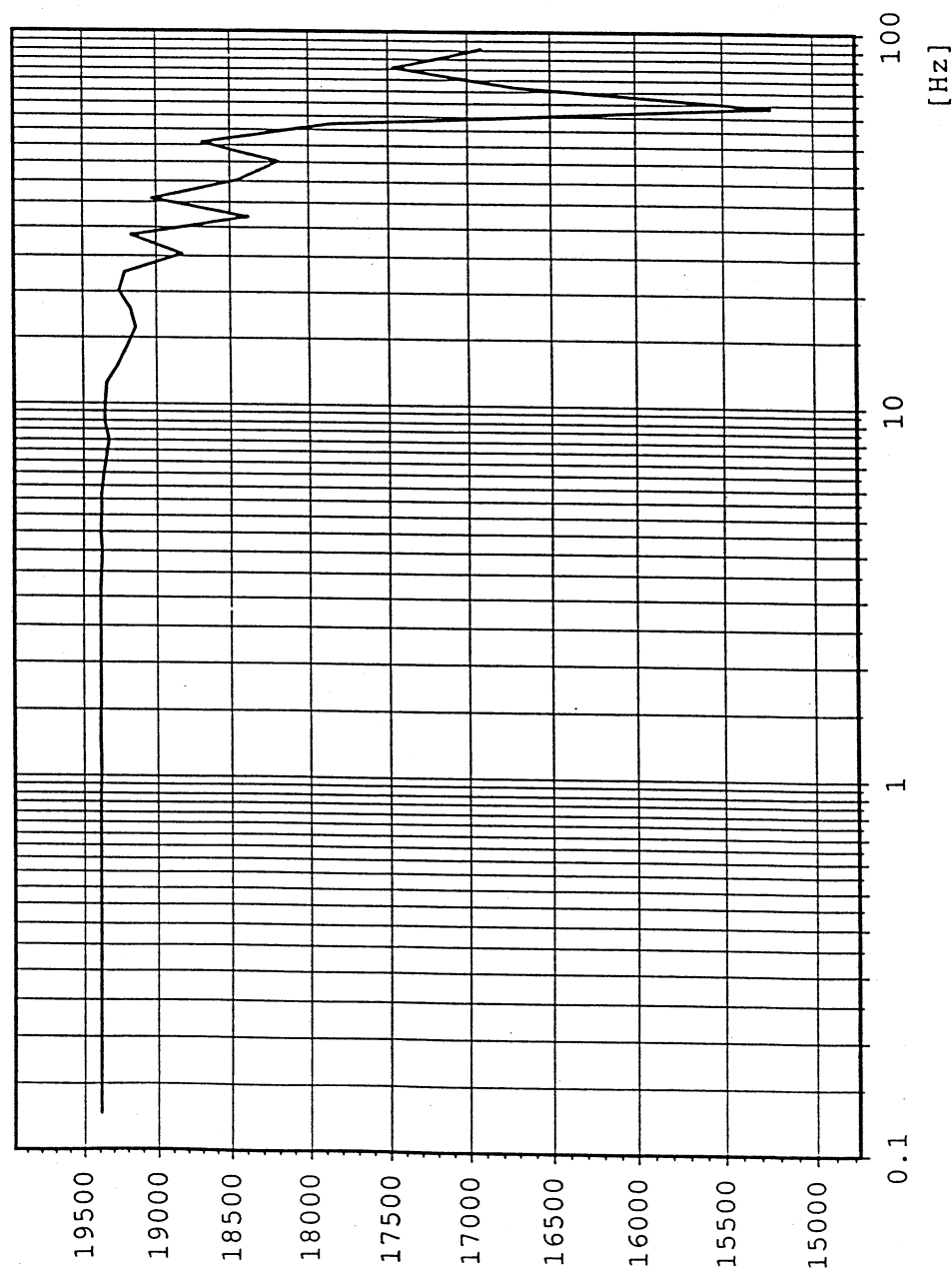
**wyle**  
Shocktest

Rack Middle (SRS: d=2.00%)

APW JN 44425

Seismic Cabinet Configuration #3

[g]



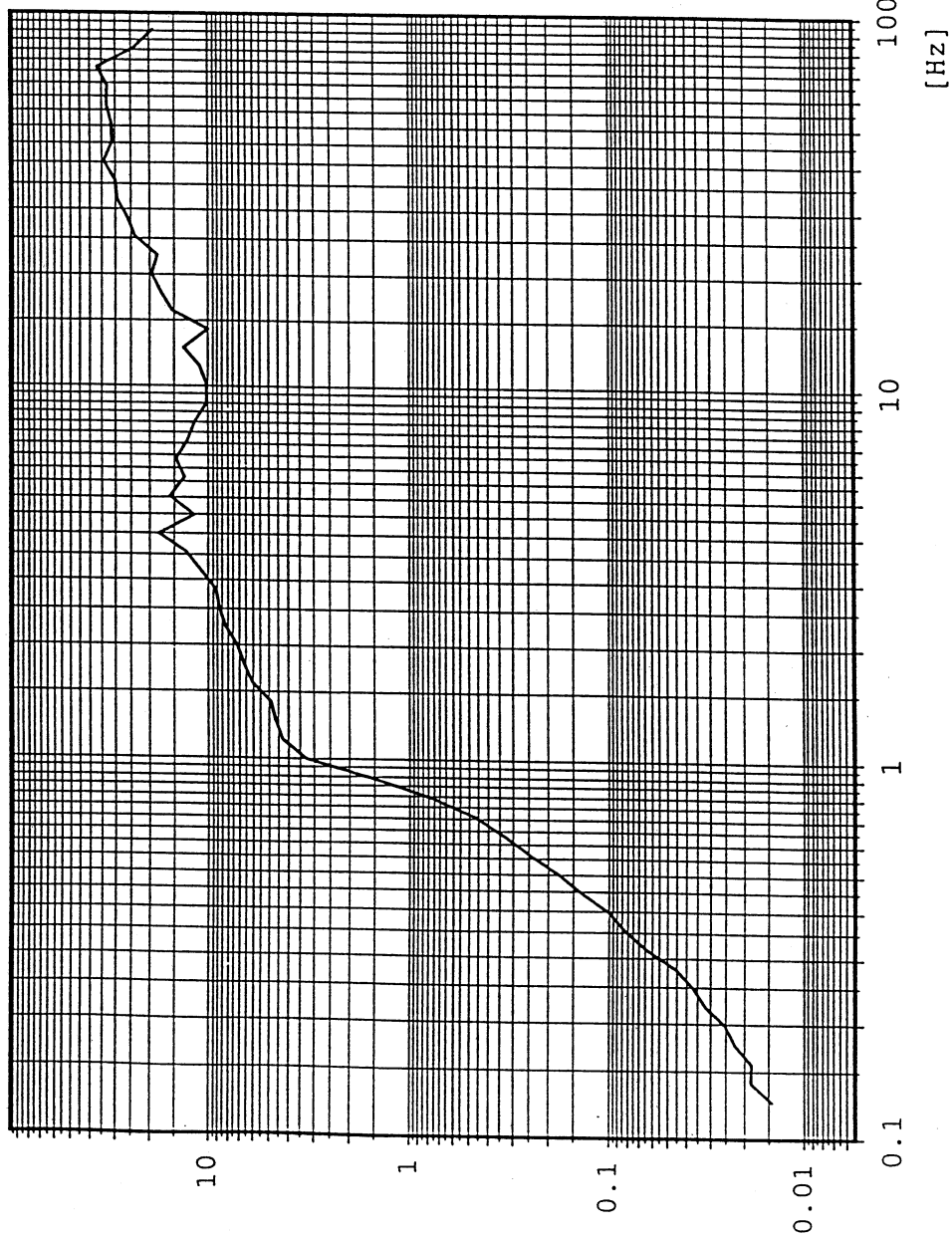
Chan.no: 4  
Chan.type: M  
Unit: g  
Damping: 2.00 %  
Date: 06-02-00  
Time: 07:56:03

Front to Back Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4h\_007.rss

[g]



Chan.no: 5  
Chan.type: M  
Unit: g  
Damping: 2.00 %  
Date: 06-02-00  
Time: 07:56:03

Front to Back Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

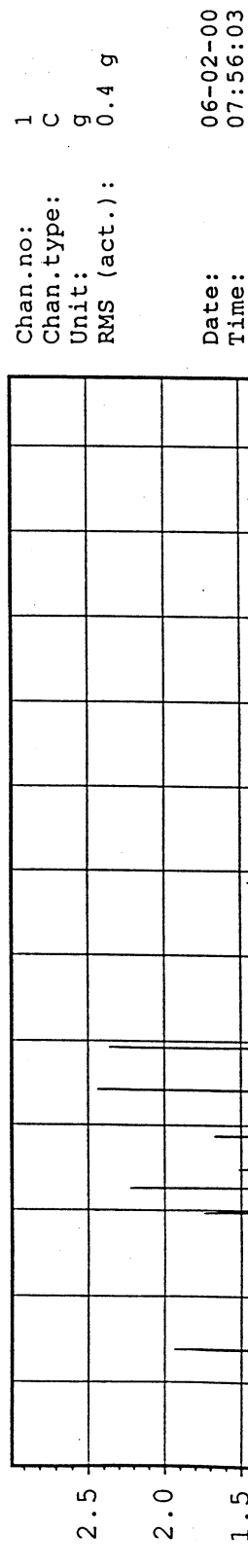
**wyle**  
INTECHNICS

Control

APW JN 44425

Seismic Cabinet Configuration #3

[g]



[s]

Front to Back Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

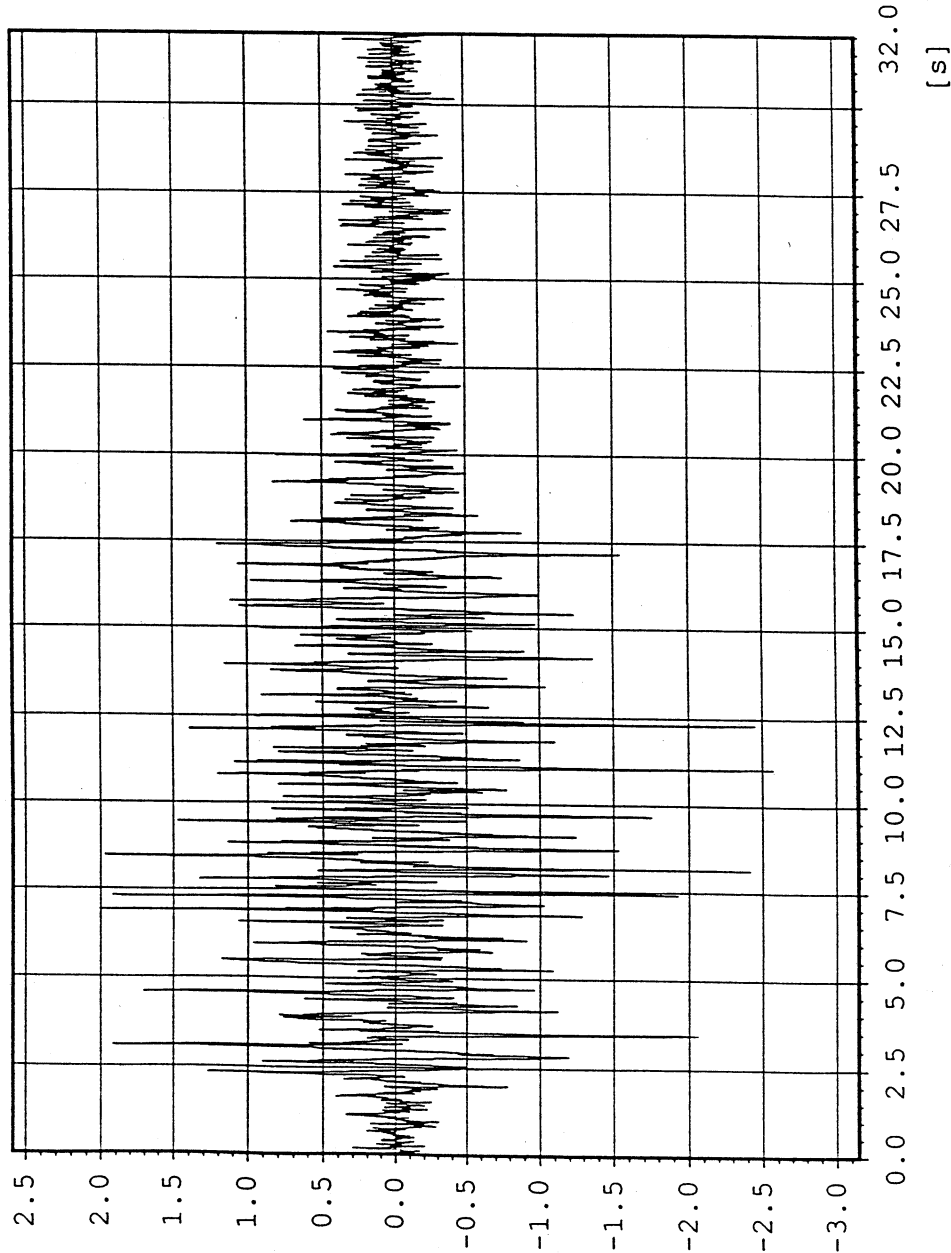
C:\VcpNT\Daten\APW44425\zone4h\_007.rss

**wyle**  
Seismotronics

# Rack Bottom

APW JN 44425  
Seismic Cabinet Configuration #3

[g]



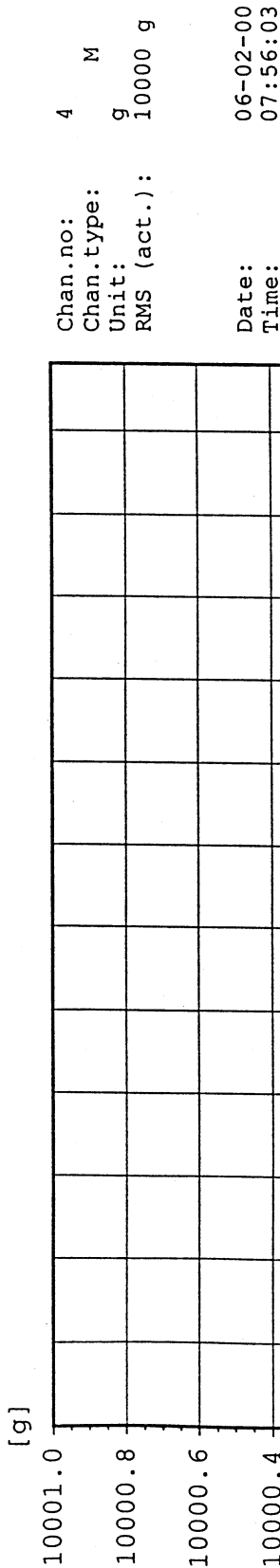
Chan.no: 3  
Chan.type: M  
Unit: g  
RMS (act.): 0.418 g

Date: 06-02-00  
Time: 07:56:03

Front to Back Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3



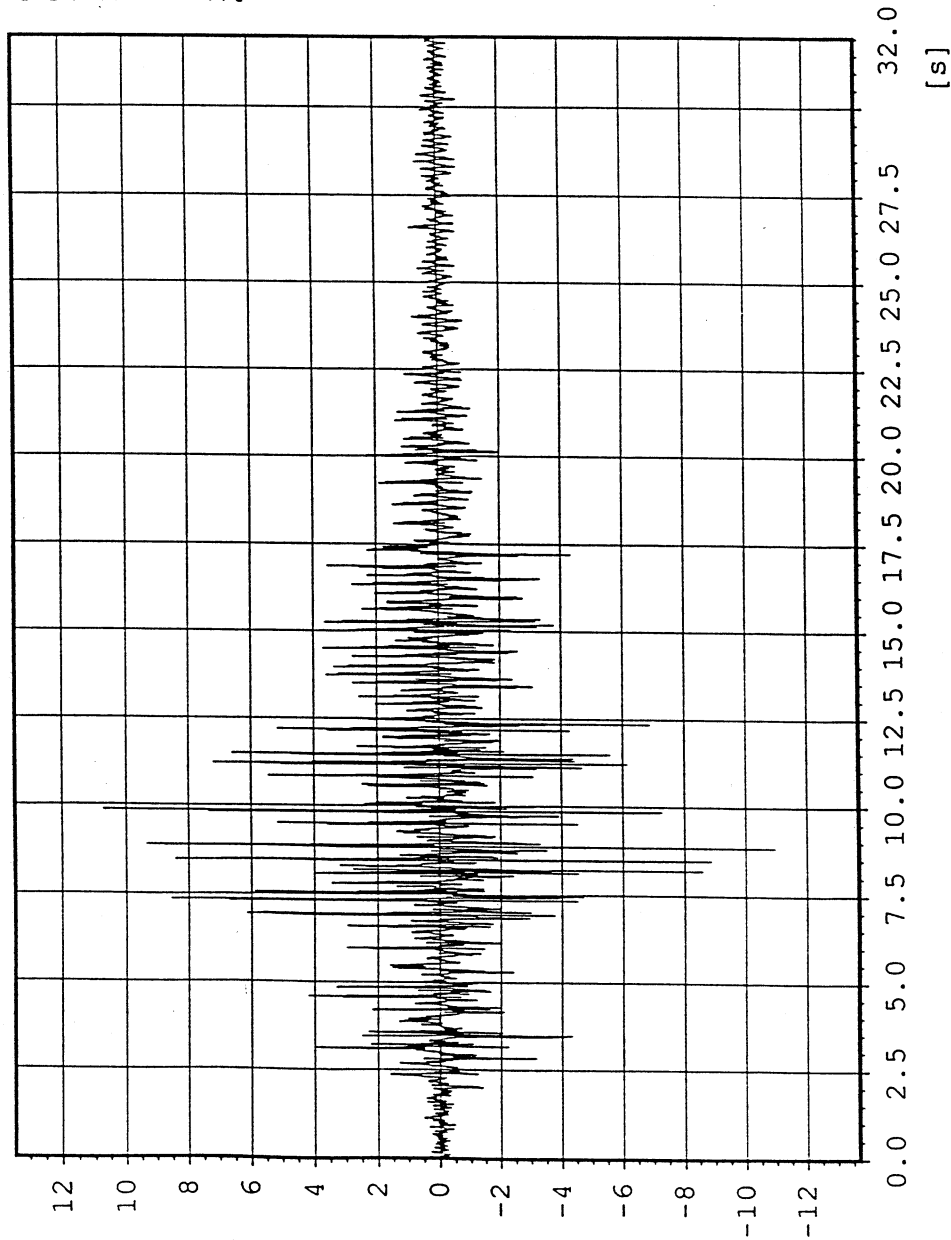
0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5 32.0  
 [s]

Front to Back Axis Seismic (Zone 4)  
 Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 5  
Chan.type: M  
Unit: g  
RMS (act.): 0.9721 g

Date: 06-02-00  
Time: 07:56:03

Front to Back Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4h\_007.rss

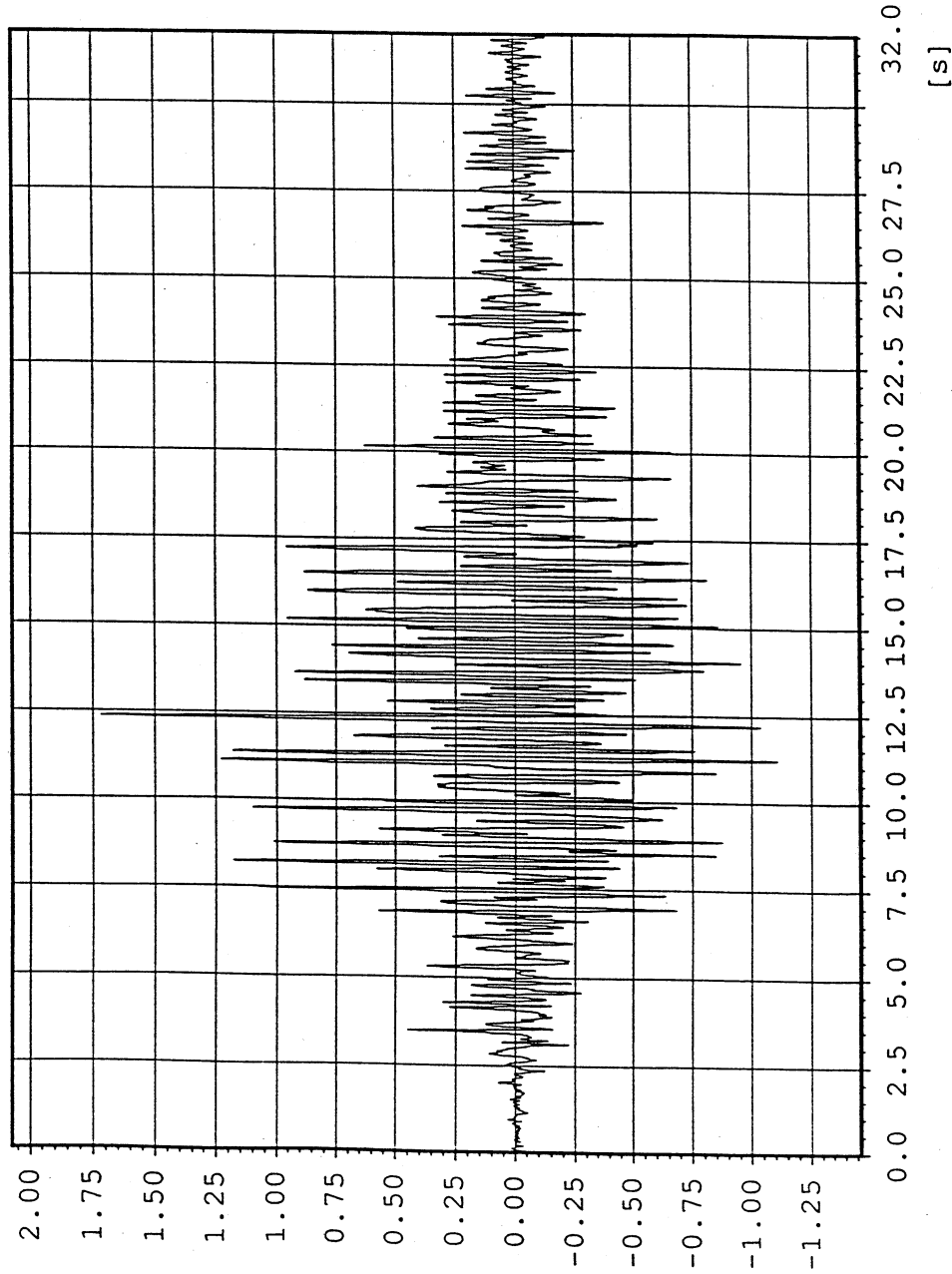
APW JN 44425

Seismic Cabinet Configuration #3

[INCH]

Chan.no: 6  
Chan.type: M  
Unit: INCH  
RMS (act.): 0.3077 INCH

Date: 06-02-00  
Time: 07:56:03



Front to Back Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4h\_007.rss

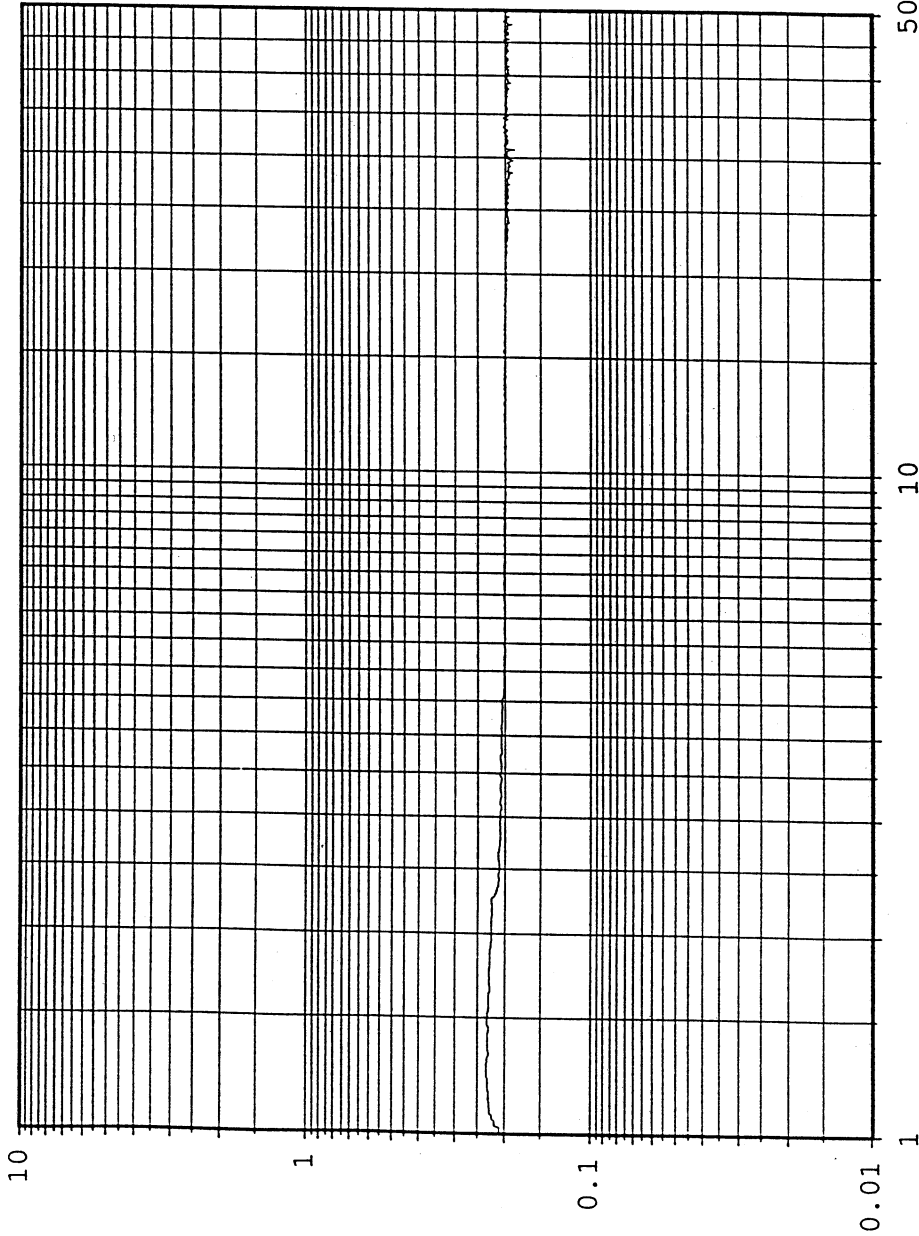


# Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g]



[Hz]

Chan.no: 1  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00

Date: 06-02-00  
Time: 08:15:32

Vertical Axis Resonance Search

Rev C 600 Lbs., 75% Panels

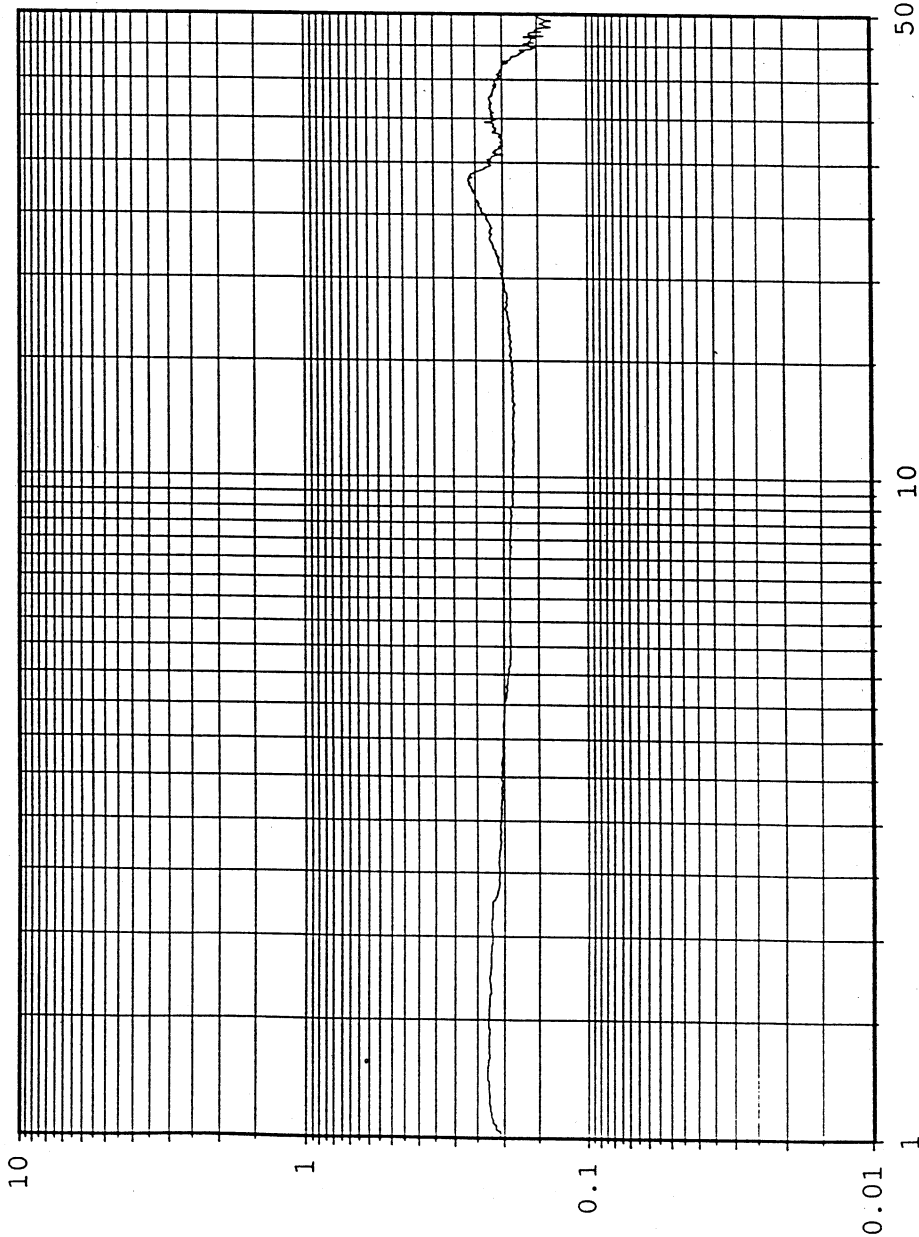
C:\VcpNT\Daten\APW44425\ResSearch\_010.rsn



APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 3  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00

Date: 06-02-00  
Time: 08:15:32

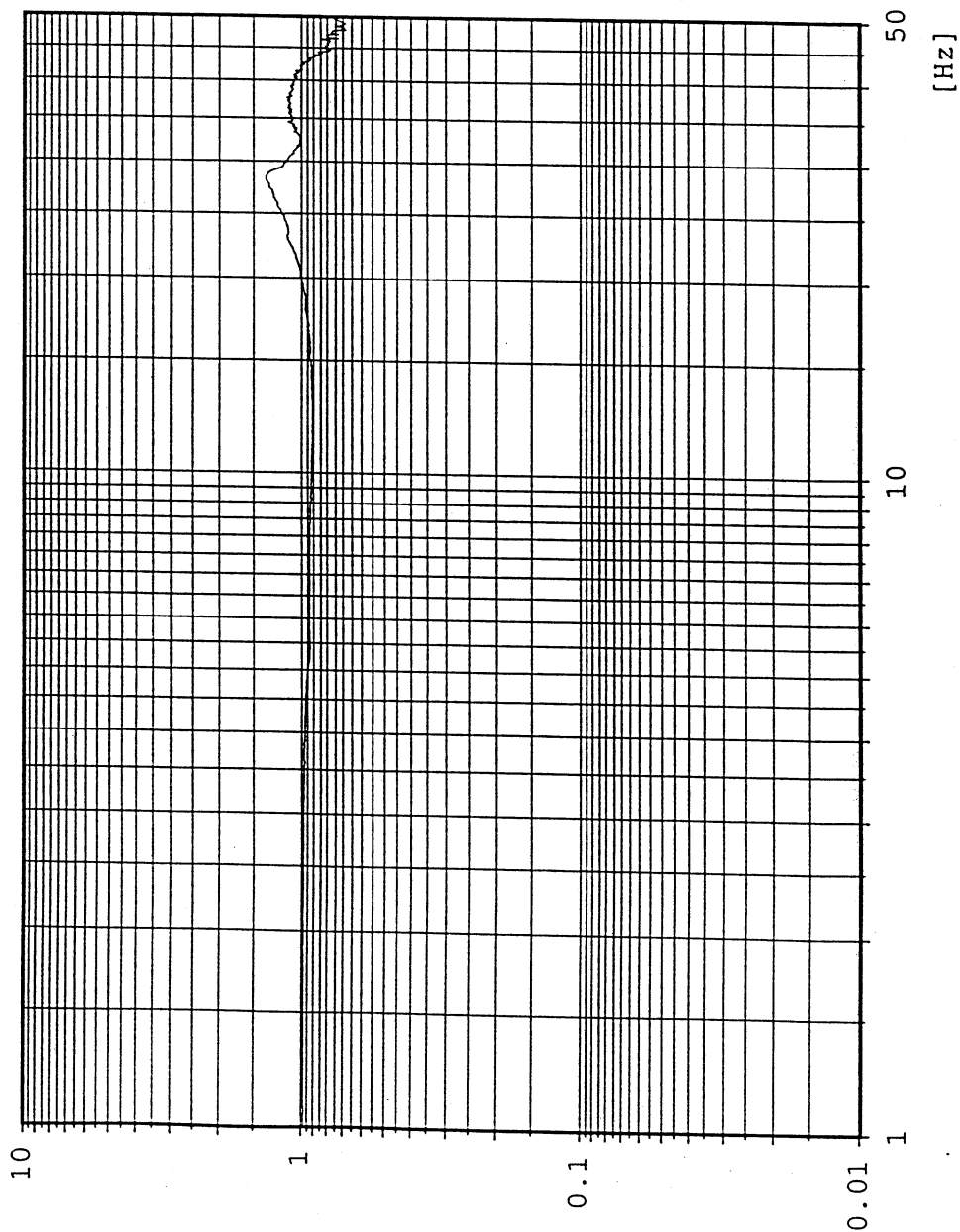
Vertical Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

# Rack Bottom vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



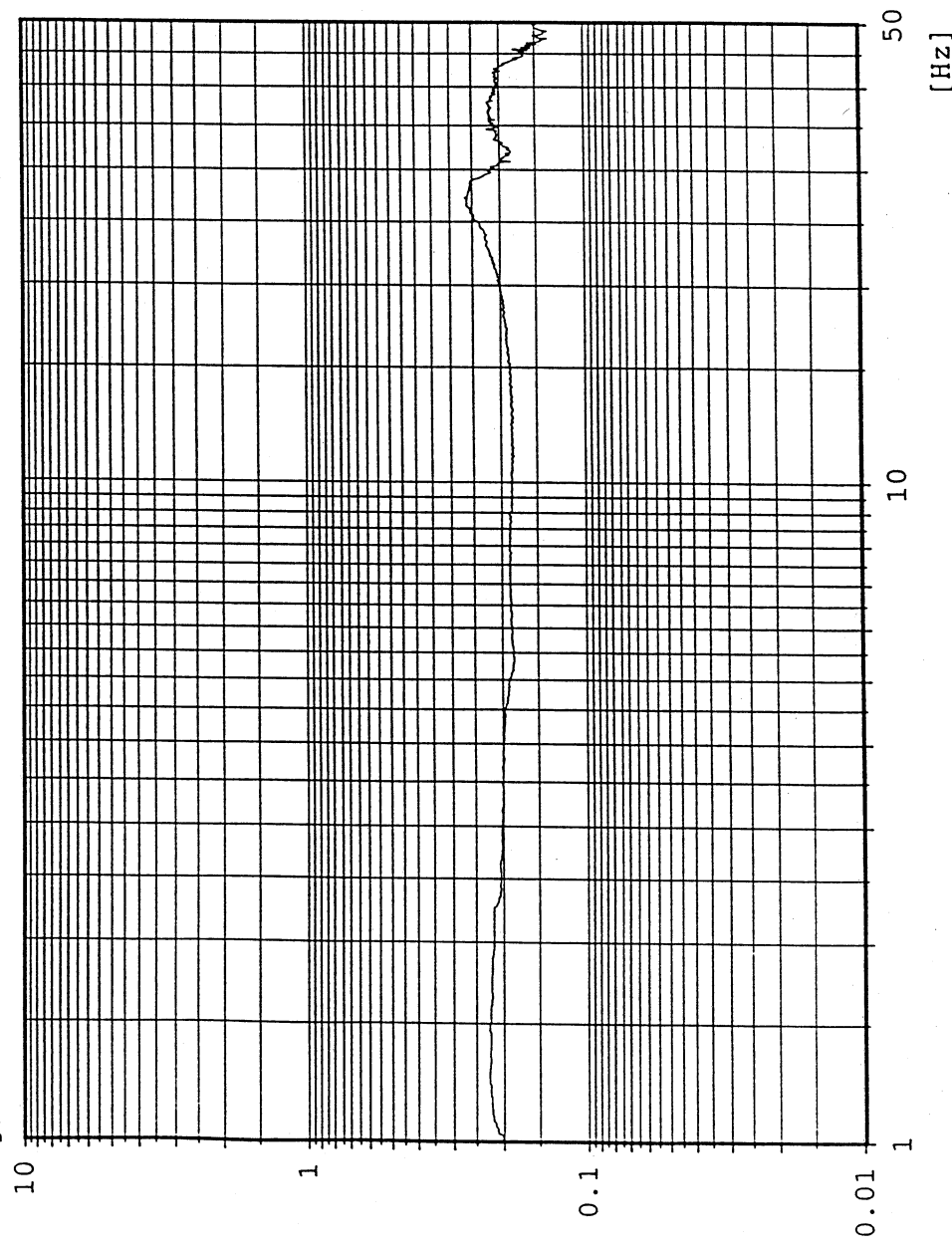
Ref.Chan.: 1  
Chan.no: 3  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g  
-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00  
Date: 06-02-00  
Time: 08:15:32

Vertical Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 4  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00  
Date: 06-02-00  
Time: 08:15:32

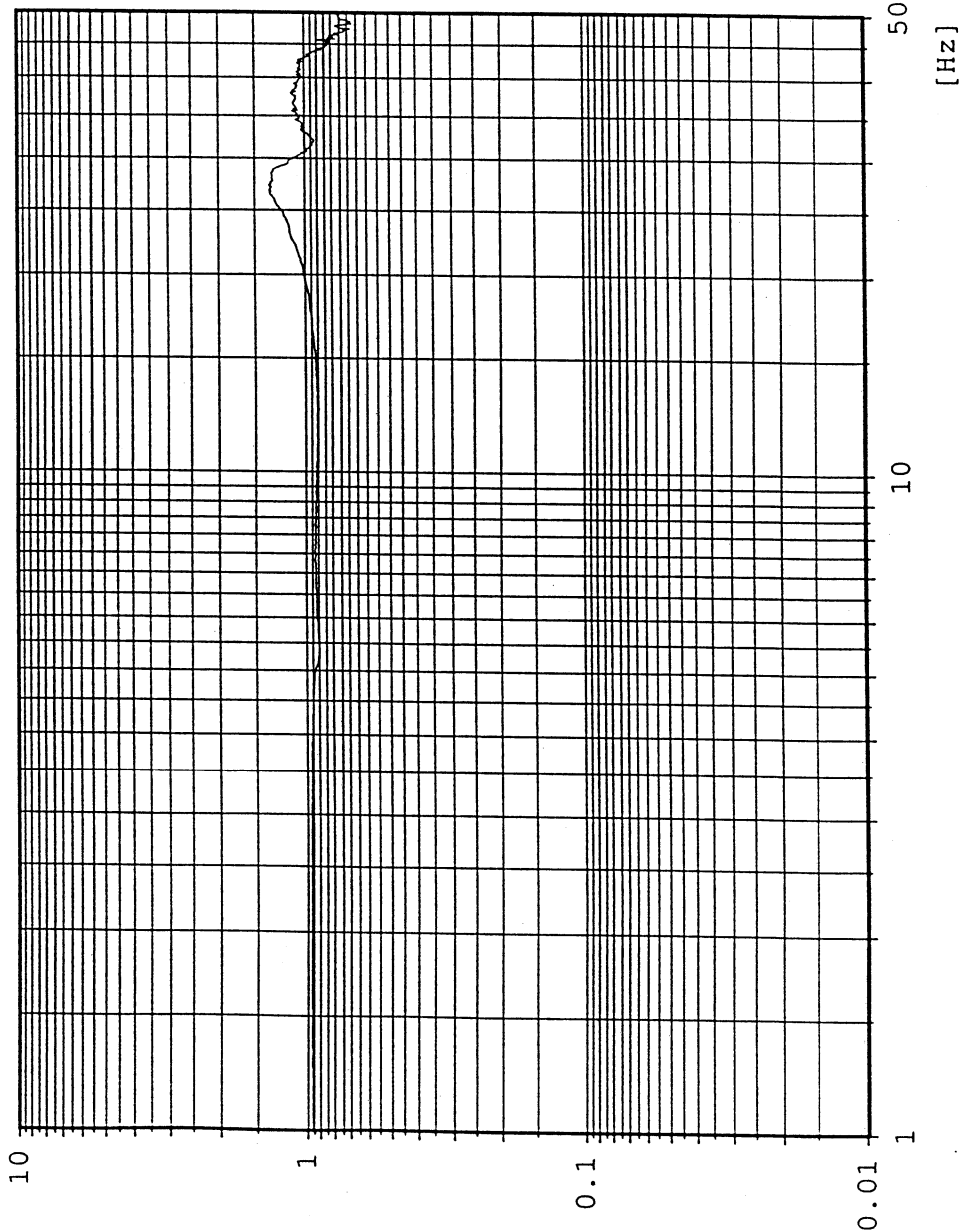
Vertical Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

# Rack Middle vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 4  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00

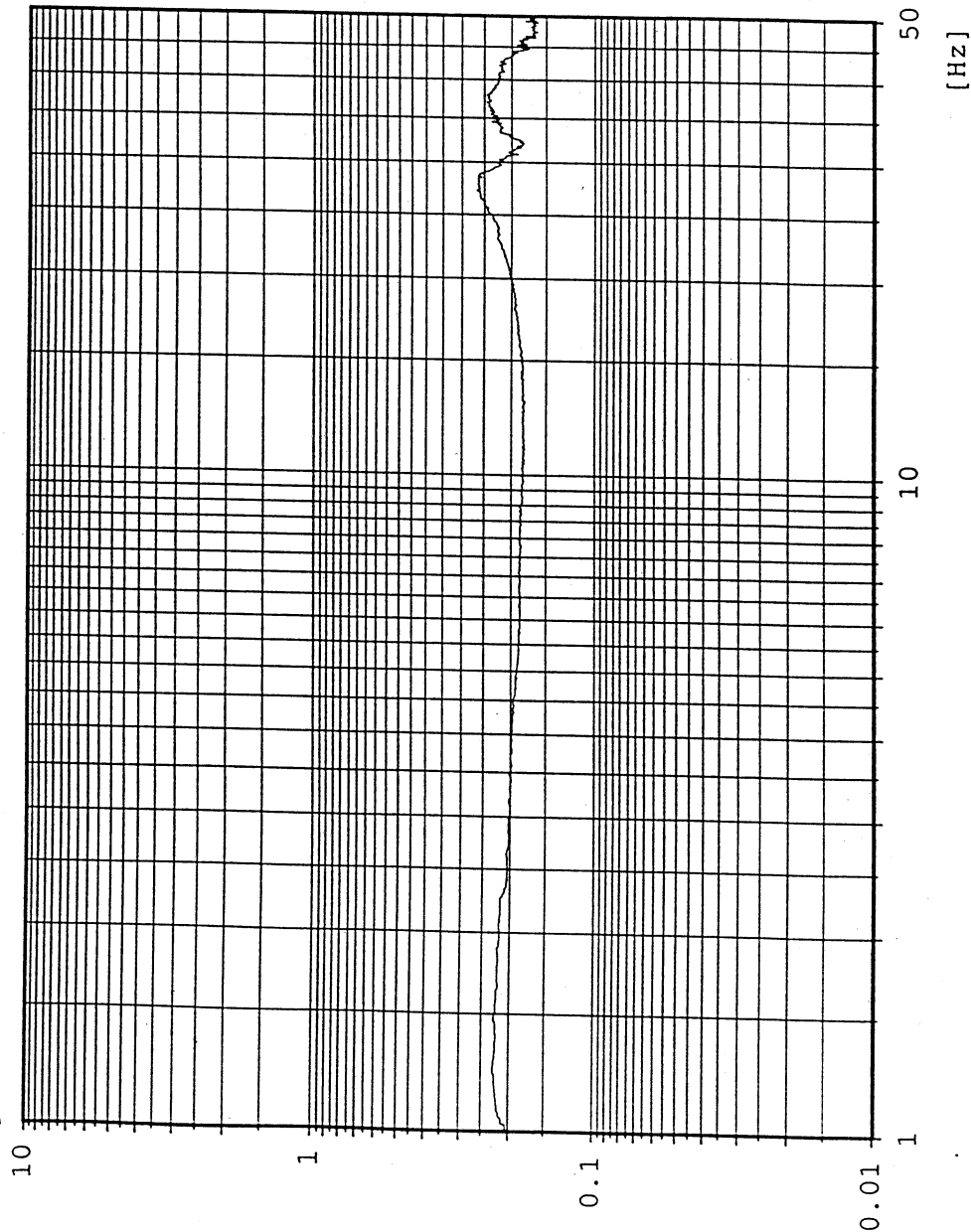
Date: 06-02-00  
Time: 08:15:32

Vertical Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Configuration #3

[g]



Chan.no: 5  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g

-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00

Date: 06-02-00  
Time: 08:15:32

Vertical Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

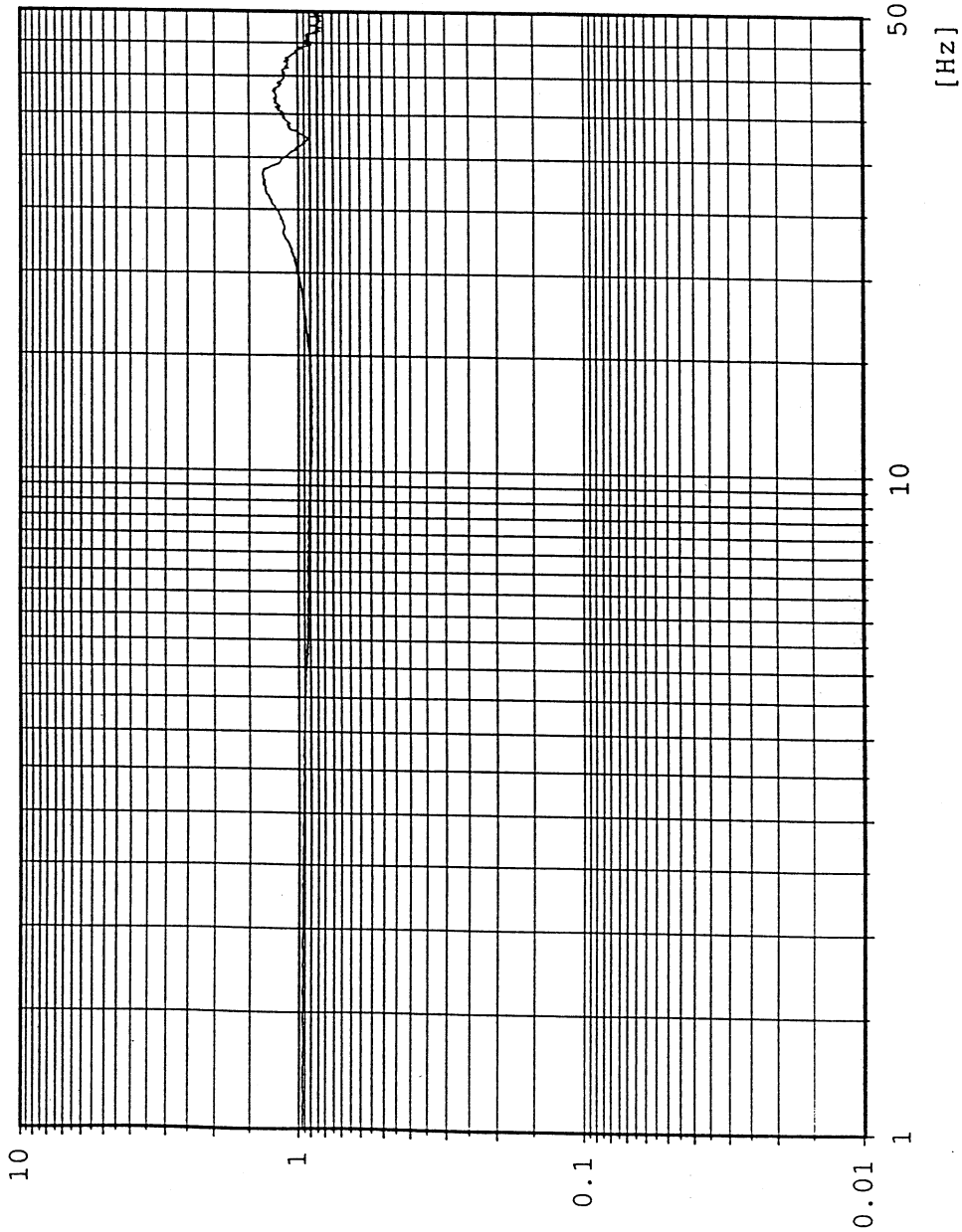
**wyle**  
Laboratories

# Rack Top vs. Control Accel.

APW JN 44425

Seismic Cabinet Configuration #3

[g/g]



Ref.Chan.: 1  
Chan.no: 5  
Sweep type: logarithmic  
Sweep direct.: up  
Sweep rate: 1.00 Oct/min  
Unit: g/g

-- Testing time --  
elapsed: 000:05:36  
remaining: 000:00:00

Date: 06-02-00  
Time: 08:15:32

Vertical Axis Resonance Search  
Rev C 600 Lbs., 75% Panels

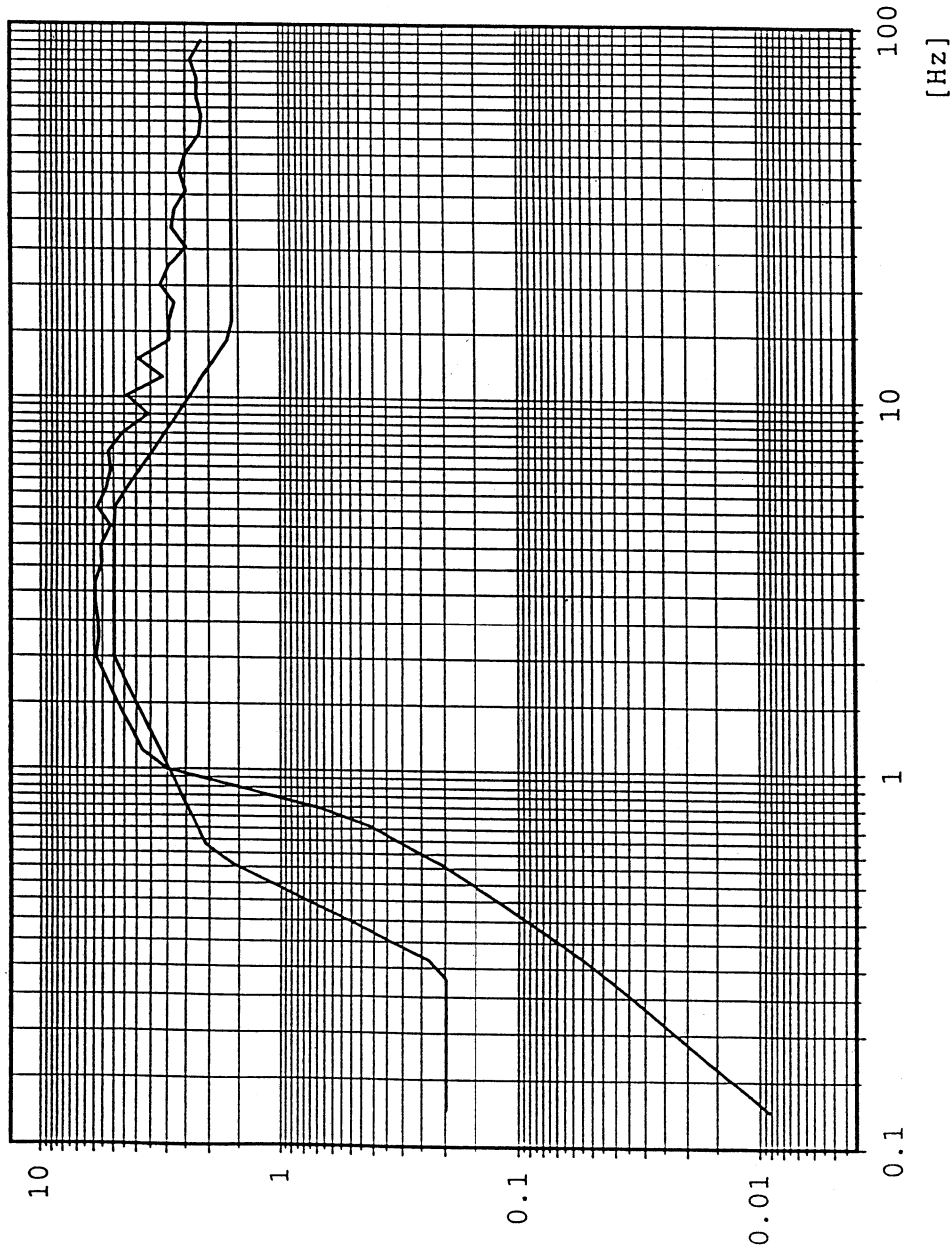
C:\VcpNT\Daten\APW44425\ResSearch\_010.rsn

APW JN 44425

Seismic Cabinet Config. #3

[g]

Chan.no: 1  
Chan.type: C  
Unit: g  
Damping: 2.00 %  
  
Date: 06-02-00  
Time: 08:27:26



Vertical Axis Seismic (Zone 4)

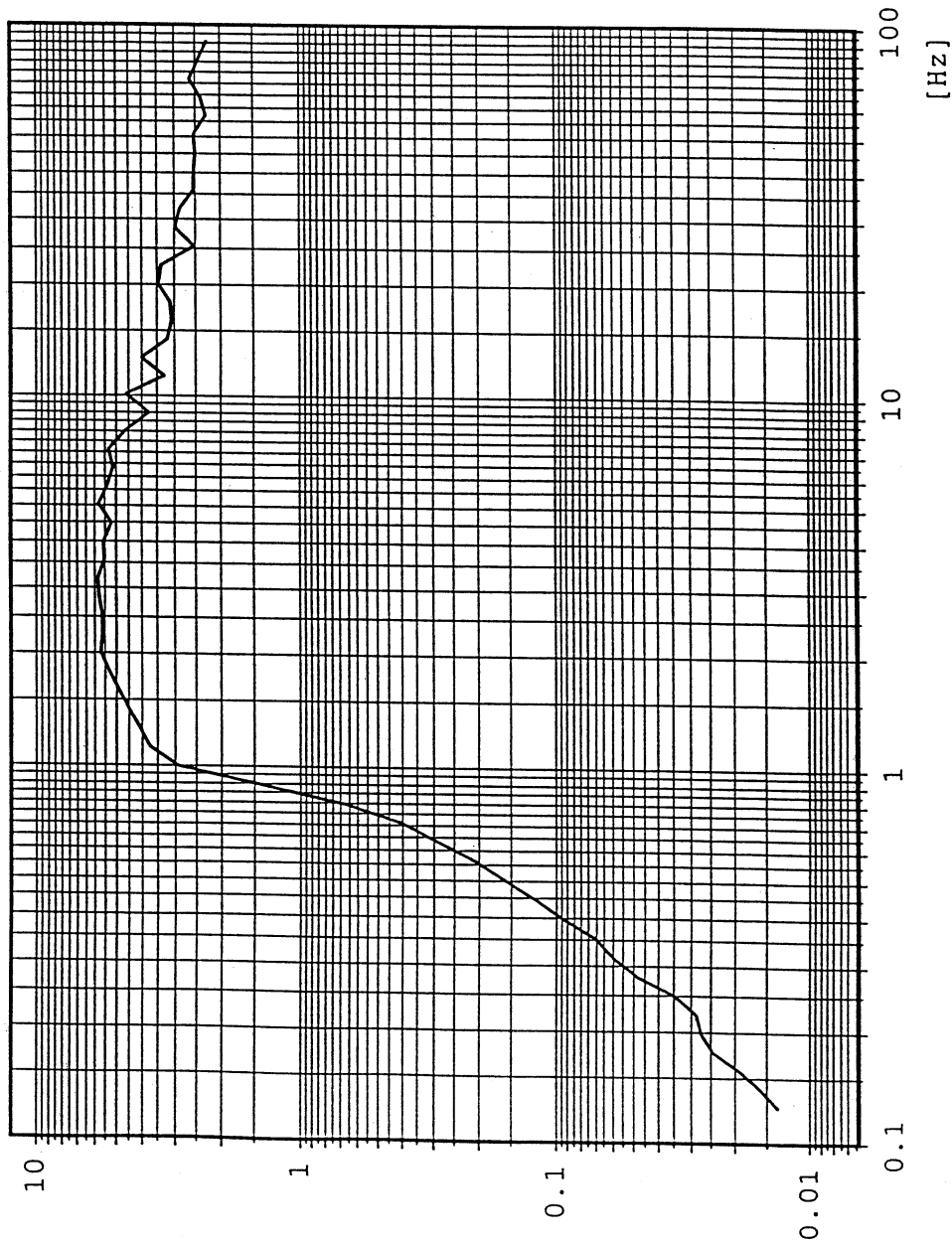
Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Config. #3

[mV/g]

Chan.no: 3  
 Chan.type: M  
 Unit: mV/g  
 Damping: 2.00 %  
 Date: 06-02-00  
 Time: 08:27:26



Vertical Axis Seismic (Zone 4)  
 Rev C 600 Lbs., 75% Panels

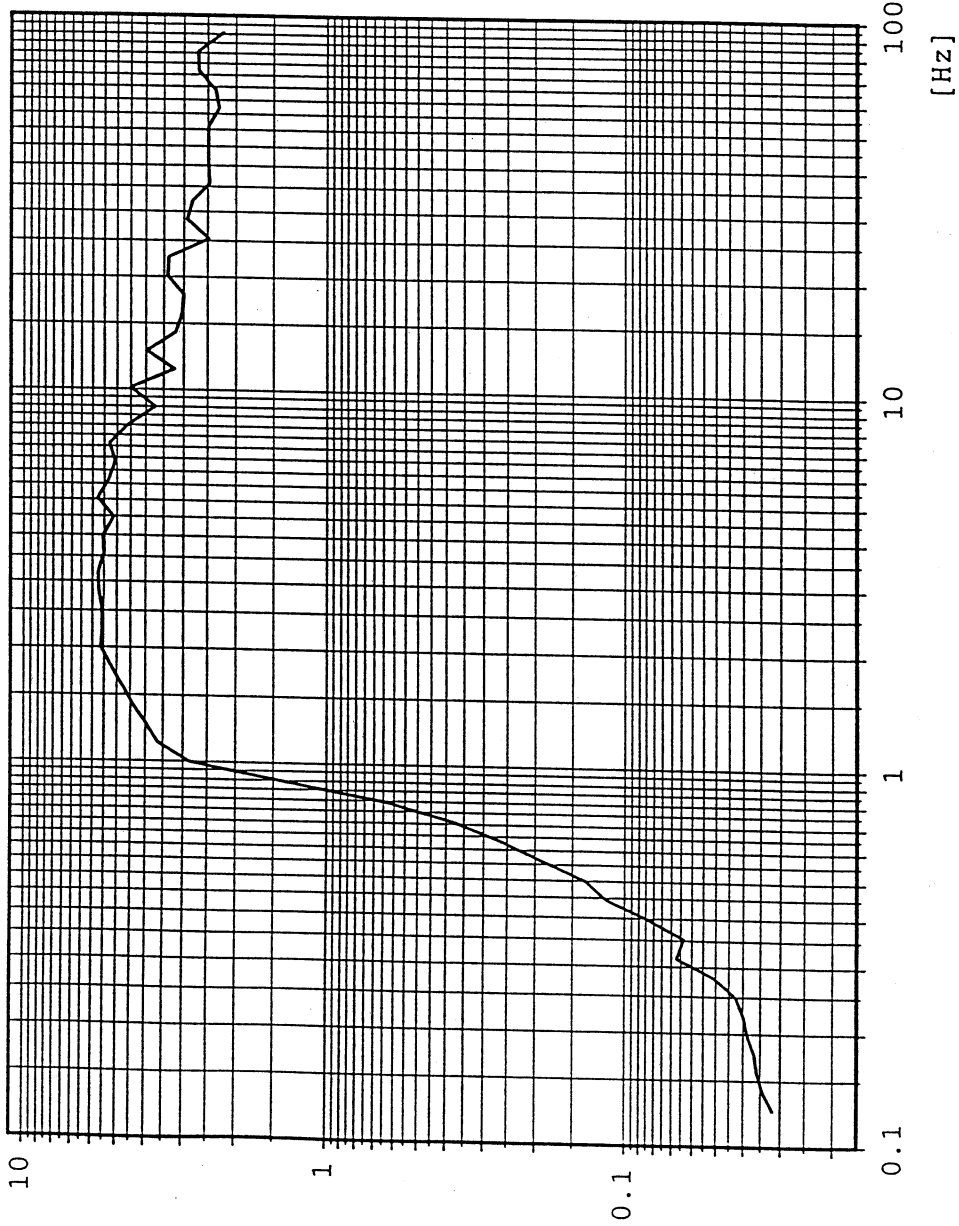


APW JN 44425

Seismic Cabinet Config. #3

[mV/g]

Chan.no: 4  
 Chan.type: M  
 Unit: mV/g  
 Damping: 2.00 %  
 Date: 06-02-00  
 Time: 08:27:26



Vertical Axis Seismic (Zone 4)  
 Rev C 600 Lbs., 75% Panels

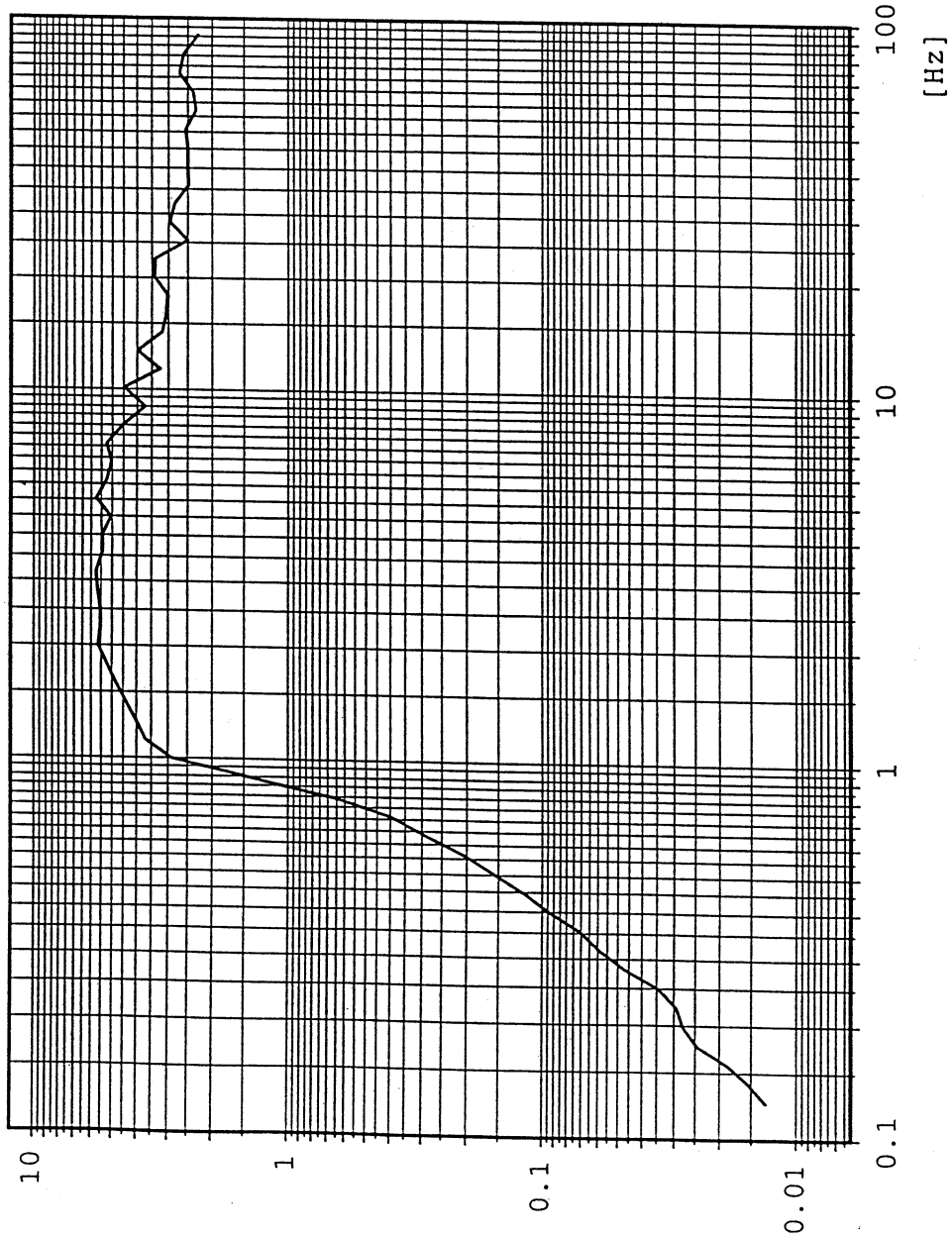
# Rack Top (SRS: d=2.00%)

APW JN 44425

Seismic Cabinet Config. #3

[mV/g]

Chan.no: 5  
 Chan.type: M  
 Unit: mV/g  
 Damping: 2.00 %  
 Date: 06-02-00  
 Time: 08:27:26



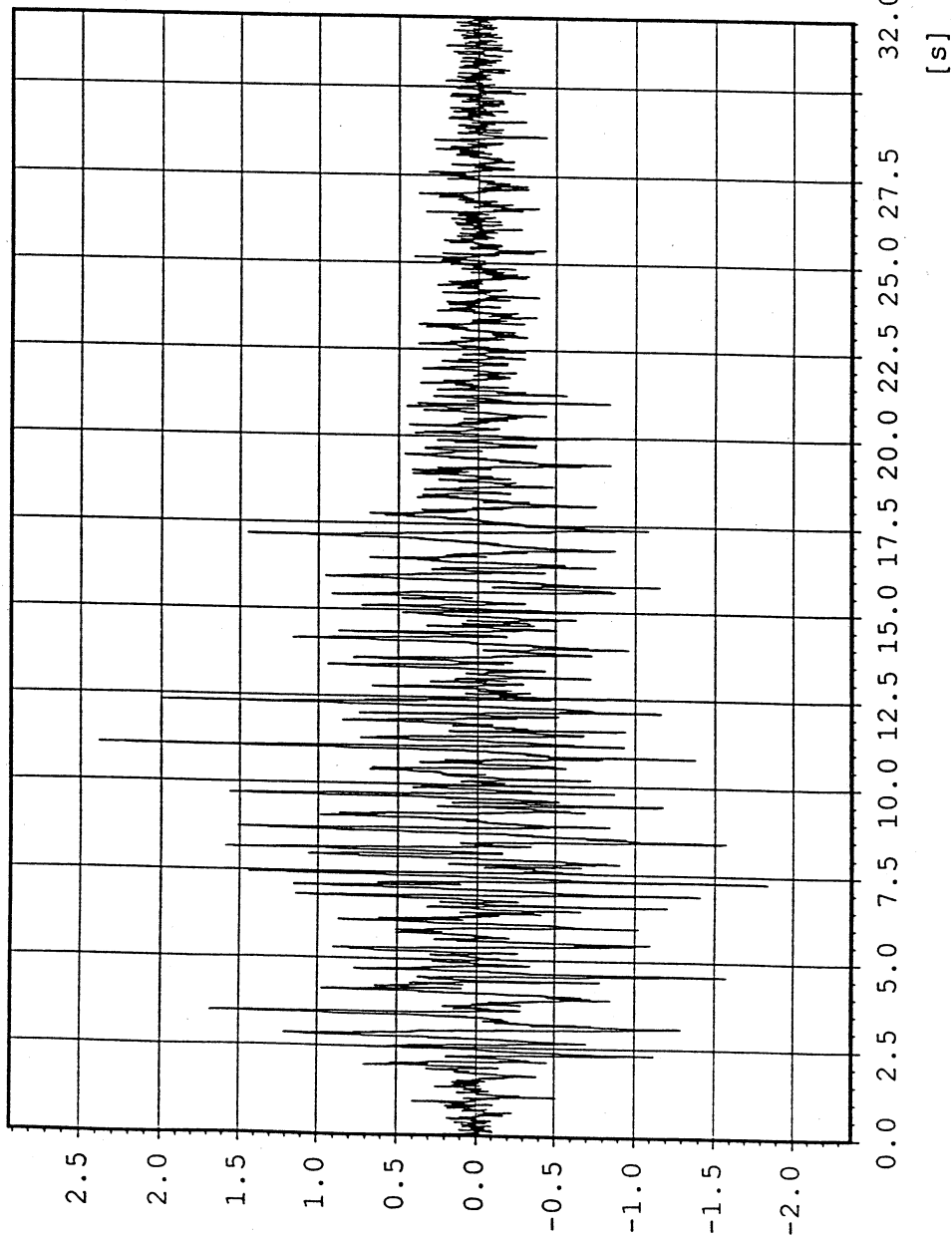
Vertical Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

APW JN 44425

Seismic Cabinet Config. #3

[g]



Chan.no: 1  
Chan.type: C  
Unit: g  
RMS (act.): 0.3844 g

Date: 06-02-00  
Time: 08:27:26

Vertical Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4v\_002.rss

**wyle**  
LABORATORIES

# Rack Bottom

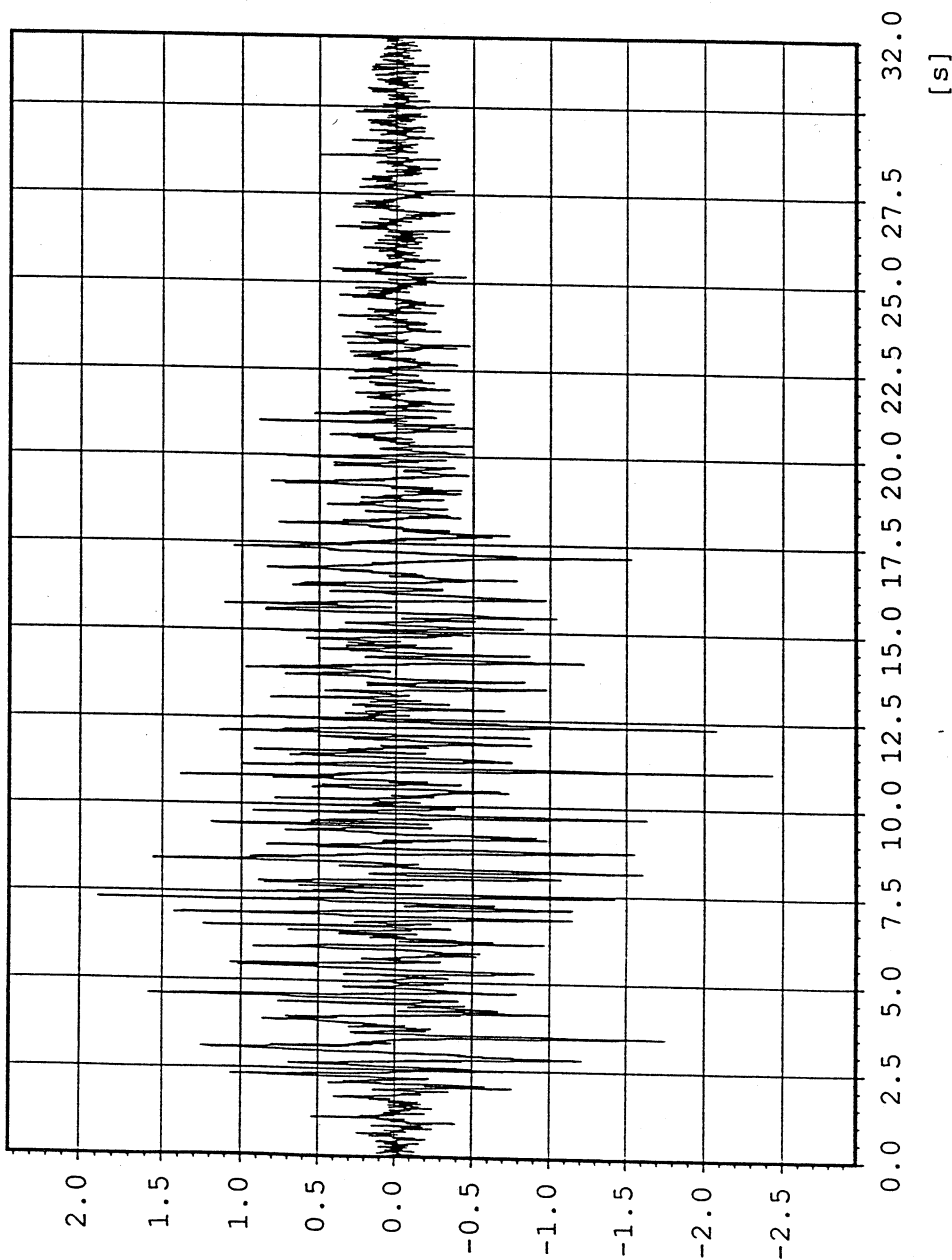
APW JN 44425

Seismic Cabinet Config. #3

[mV/g]

Chan.no: 3  
Chan.type: M  
Unit: mV/g  
RMS (act.): 0.3837 mV/g

Date: 06-02-00  
Time: 08:27:26



Vertical Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

C:\VcpNT\Daten\APW44425\zone4v\_002.rss

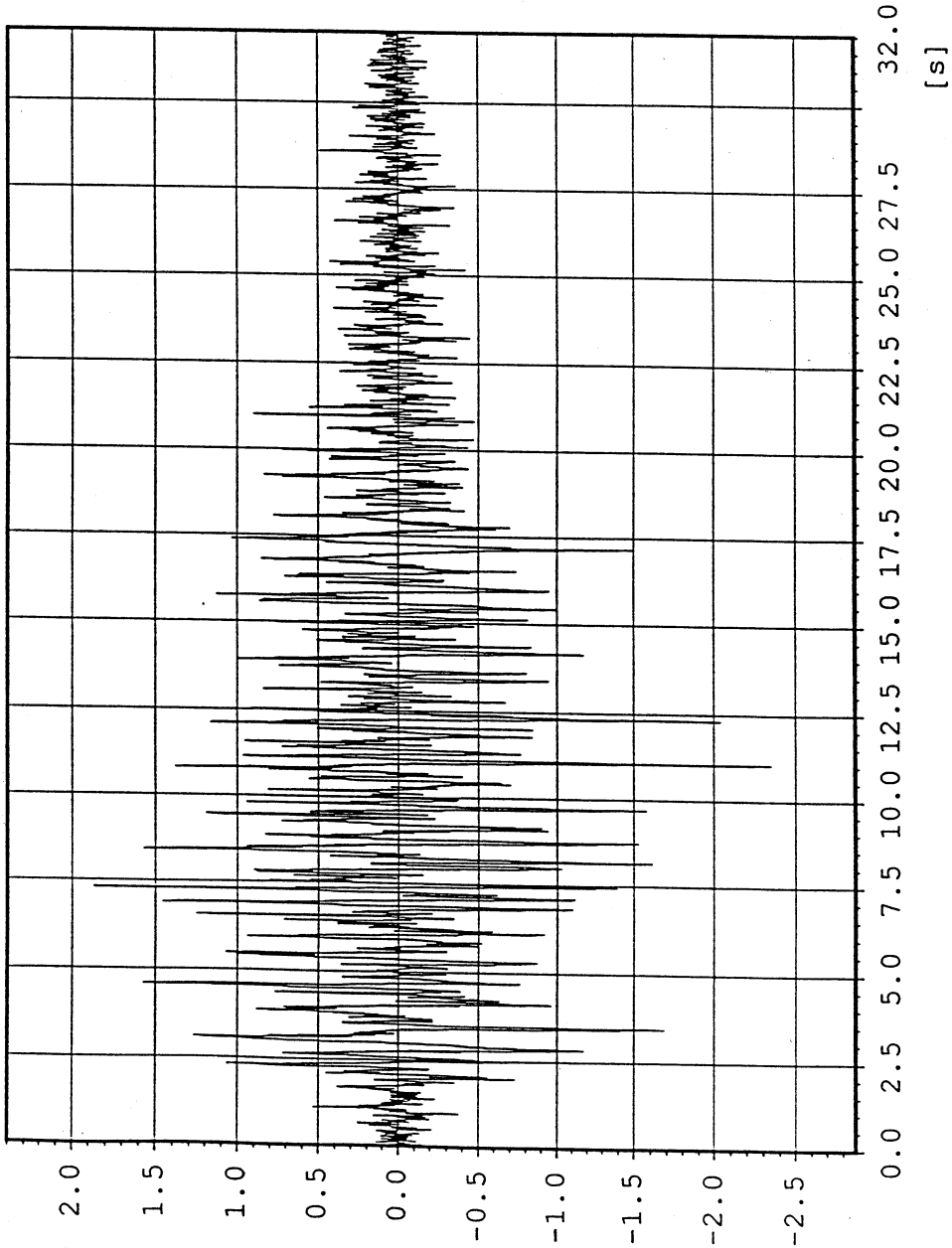
APW JN 44425

Seismic Cabinet Config. #3

[mV/g]

Chan.no: 4  
Chan.type: M  
Unit: mV/g  
RMS (act.): 0.3781 mV/g

Date: 06-02-00  
Time: 08:27:26



Vertical Axis Seismic (Zone 4)

Rev C 600 Lbs., 75% Panels

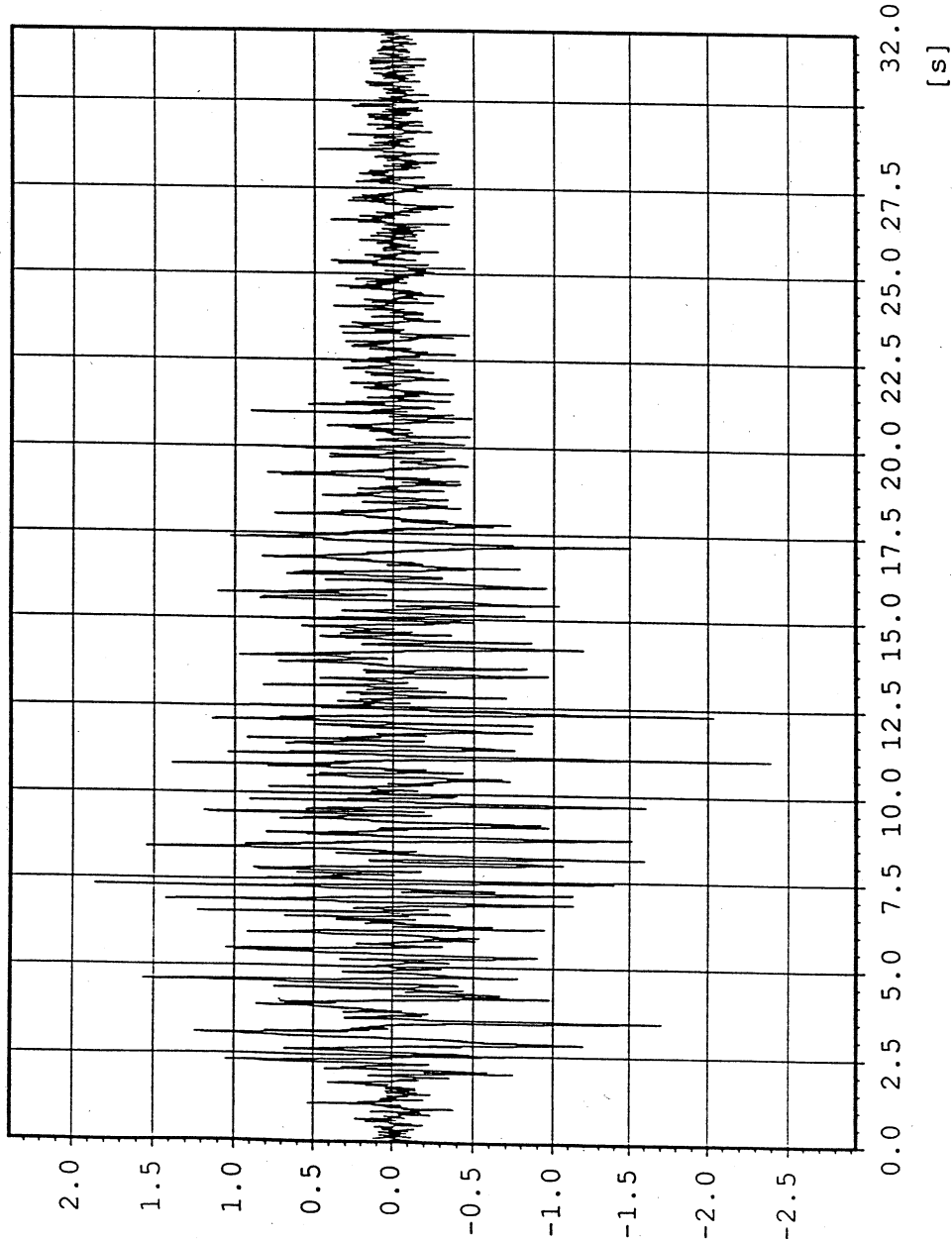
APW JN 44425

Seismic Cabinet Config. #3

[mV/g]

Chan.no: 5  
Chan.type: M  
Unit: mV/g  
RMS (act.): 0.3774 mV/g

Date: 06-02-00  
Time: 08:27:26



Vertical Axis Seismic (Zone 4)  
Rev C 600 Lbs., 75% Panels

CUSTOMER: APW

Job No.: 44425

Date: 05/30/2000

Specimen: Seismic Cabinets,

Technician: J Meehan

Part No.: See Recv. Insp.

Serial No.: See Recv. Insp.

Engineer: T Mullen

| EQUIPMENT                    | MANUFACTURER      | MODEL #    | RANGE         | WYLE # | CALIBRATION |             | ACCY.      |
|------------------------------|-------------------|------------|---------------|--------|-------------|-------------|------------|
|                              |                   |            |               |        | LAST        | DUE         |            |
| Control System - Vibration   | M + P             | VCX 9000   | 16 Channels   | W13611 | System      | Calibration | Mfg. Spec  |
| Controller - Servo/Amplifier | Team Corp.        | 2200       | N/A           | W13619 | System      | Calibration | Mfg. Spec. |
| Exciter Hydraulic            | Team Corp.        | W29000-12  | 12" 29K F/Lbs | W29000 | System      | Calibration | System     |
| Exciter Hydraulic (2)        | Team Corp.        | W18000-12  | 12" 18K F/Lbs | W18000 | System      | Calibration | System     |
| Meter - DMM                  | Hewlett Packard   | 34401A     | Multi         | W13127 | 10/13/99    | 10/13/00    | Mfg. Spec. |
| Meter TRVM/VTVM              | Bruel & Kjaer     | 2416       | .01 - 1000V   | W30606 | 2/22/00     | 6/22/00     | 5%         |
| Oscillator Sweep             | Spectral Dynamics | SD104A5    | 5Hz - 20Khz   | W31307 | System      | Calibration | 2%         |
| Oscilloscope                 | Leader            | LBO514     | 15 MHz        | W10122 | 1/19/00     | 7/19/00     | 3%         |
| Torque Wrench                | Snap-On           | OCR 150    | 150 F/Lbs     | W13649 | 3/6/00      | 9/6/00      | 5%         |
| Transducer - Position        | Celeco            | PT101-0010 | 10 Inches     | W10254 | System      | Calibration | 0.15 %FS   |
| Transducer - Position        | Celeco            | PT101-0010 | 10 Inches     | W10255 | System      | Calibration | 0.15 %FS   |

Where applicable, the listed test equipment has been calibrated using standards which are traceable to the National Institute of Science & Technology. Certificates and reports of all calibrations are retained in the Wyle Laboratories QA files and are available for inspection upon request.

TEST TITLE: Seismic

CUSTOMER: APW

Job No.: 44425

Date: 05/30/2000

Specimen: Seismic Cabinets,

Technician: J Meehan

Part No.: See Recv. Insp.

Serial No.: See Recv. Insp.

Engineer: T Mullen

| EQUIPMENT          | MANUFACTURER    | MODEL #   | RANGE              | WYLE # | CALIBRATION |             | ACCY.      |
|--------------------|-----------------|-----------|--------------------|--------|-------------|-------------|------------|
|                    |                 |           |                    |        | LAST        | DUE         |            |
| Accelerometer      | Endevco         | 7704-50   | 0 - 1000 g's       | W10447 | 1/4/00      | 7/4/00      | 5%         |
| Accelerometer      | Endevco         | 7704-50   | 0 - 1000 g's       | W10460 | 1/4/00      | 7/4/00      | 5%         |
| Accelerometer      | Endevco         | 7704-50   | 0 - 1000 g's       | W10468 | 1/4/00      | 7/4/00      | 5%         |
| Accelerometer      | Endevco         | 7704A-50  | 0 - 1000 g's       | W11810 | 12/15/99    | 6/15/00     | 5%         |
| Accelerometer      | Endevco         | 7704A-50  | 0 - 1000 g's       | W11812 | 12/15/99    | 6/15/00     | 5%         |
| Amplifier - Charge | Unholtz-Dickie  | D22PMGJ 2 | 0 - 1000 g's       | W09269 | 4/13/00     | 10/13/00    | 2% FS      |
| Amplifier - Charge | Unholtz-Dickie  | D22PMGJ 2 | 0 - 1000 g's       | W09270 | 4/13/00     | 10/13/00    | 2% FS      |
| Amplifier - Charge | Unholtz-Dickie  | D22PMGJ 2 | 0 - 1000 g's       | W09271 | 4/13/00     | 10/13/00    | 2% FS      |
| Amplifier - Charge | Unholtz-Dickie  | D22PMGJ 2 | 0 - 1000 g's       | W09273 | 4/13/00     | 10/13/00    | 2% FS      |
| Amplifier - Charge | Unholtz-Dickie  | D22PMGJ 2 | 0 - 1000 g's       | W09274 | 4/13/00     | 10/13/00    | 2%FS       |
| Computer           | Hewlett Packard | XA KL/300 | 300 Mhz Pentium II | W13672 | System      | Calibration | Mfg. Spec. |

Where applicable, the listed test equipment has been calibrated using standards which are traceable to the National Institute of Science & Technology. Certificates and reports of all calibrations are retained in the Wyle Laboratories QA files and are available for inspection upon request