

CHUGGING
REQUIRED RESPONSE SPECTRA (RRS)
FOR THE REACTOR BUILDING

RIVER BEND STATION - UNIT 1
GULF STATES UTILITIES COMPANY
WEST FELICIANA PARISH, LOUISIANA

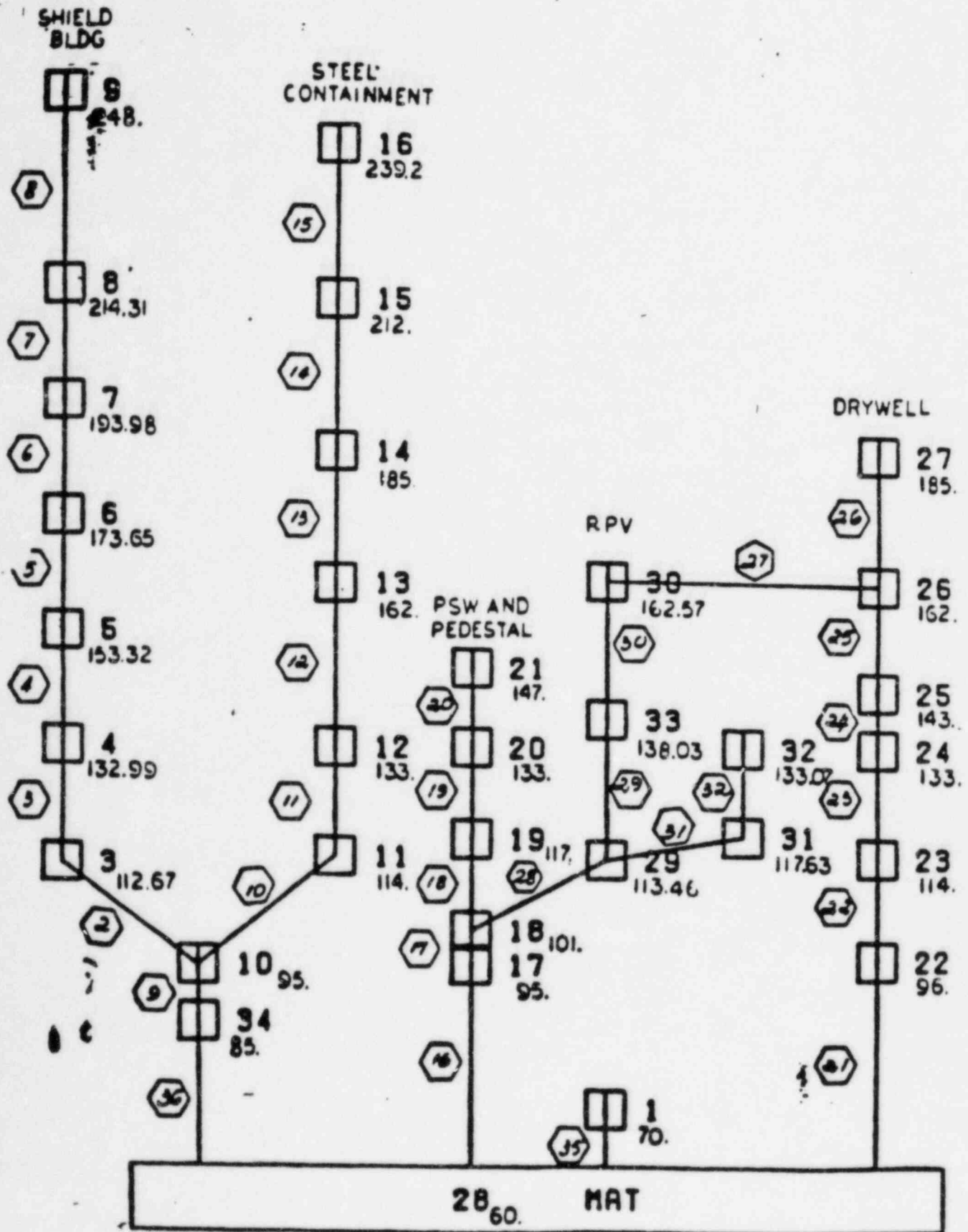
STONE & WEBSTER ENGINEERING CORPORATION
CHERRY HILL OPERATIONS CENTER
CHERRY HILL, NEW JERSEY

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REQUIRED RESPONSE SPECTRA (RRS)

<u>Mass Point - Location</u>	<u>Elevation (ft)</u>	<u>Reference No.*</u>
28 - Mat	60.00	135
1 - Top of Mat	70.00	136
3 - Shield Building	112.67	137
4 -	132.99	138
5 -	153.32	139
6 -	173.65	140
7 -	193.98	141
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9 -	248.00	143
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11 - Steel Containment	114.00	146
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13 -	162.00	148
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31 and 32 - RPV (Internal)	117.63	165
33 - RPV	138.03	166
None - Weir Wall	91.25	167

*Each reference number includes Chugging for horizontal and vertical direction at 3 percent damping.

G.S.U - R.B.1 - J.O 12210 CALC 201.130.124 - A.K.LE
 SEISMIC ANALYSIS OF REACTOR BUILDING W/CONCRETE FIX



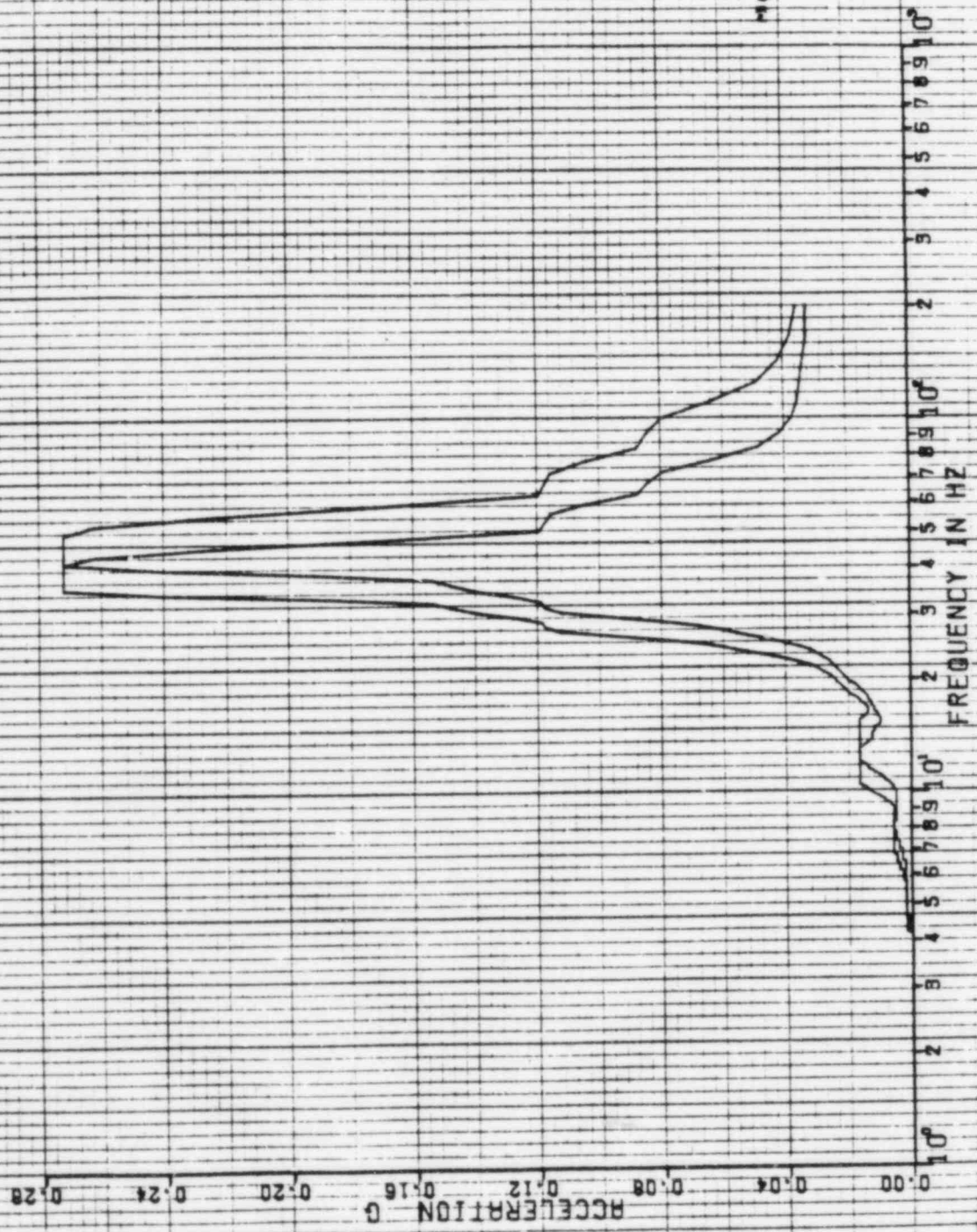
1521A

14 MAR 1983

DAMPING VALUE = 0.080

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC(2210-NA(C)-50E-1983 REV(1))
 RRS OF ACC.-REACTOR BLOC., EL=60.000, MASS=26 SEIS MODEL- MAT
 CHUDDING ENVELOPE--PK.-SPRO. 115Z
 DISK CURVE SET NO.27

CHUDDING
 HOR DIRECTION



15119

14 MAR 1983

CHUDDING

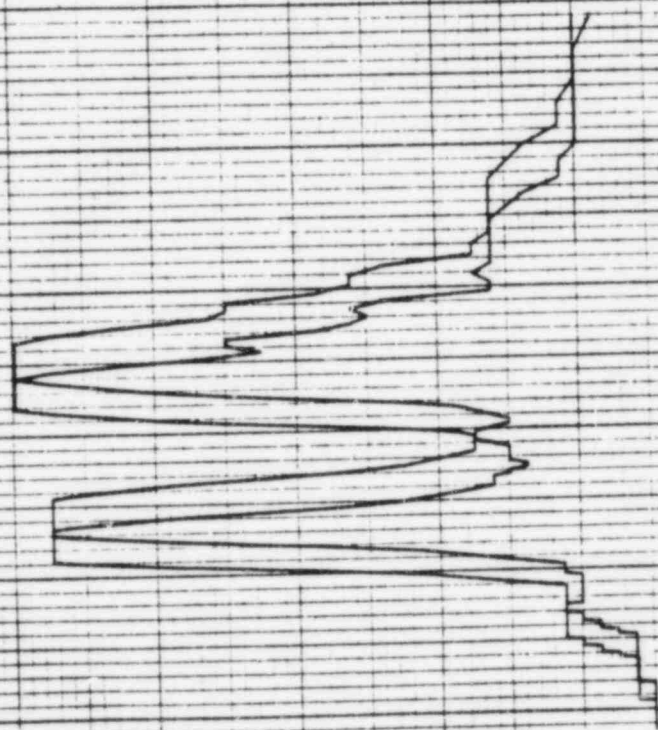
PEPECTRA VER 01 LEV 08
DULF STATES UTILITIES-RBS UNIT 1-CALC12210-WR(CI-50E-1983 REV11)
RRS OF ACC.-REACTOR BLDG.-EL-60.000.MASS=26 SETS MODEL- MAT
CHUDDING ENVELOPE--PK. SPAD. --15Z
DISK CURVE SET NO.27

DAMPING VALUE = 0.030

VER DIRECTION

RECELERATION $\times 10^{-1}$
0.00 0.08 0.16 0.24 0.32 0.40 0.48 0.56

FREQUENCY IN HZ
 10^0 2 3 4 5 6 7 8 9 10^1
2 3 4 5 6 7 8 9 10^2
2 3 4 5 6 7 8 9 10^3



14 MAR 1988

DAMPING VALUE = 0.050

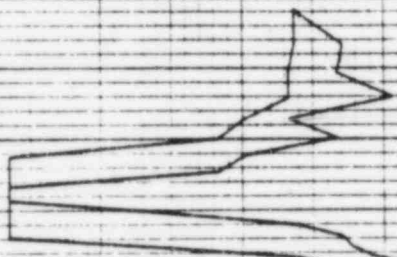
PSPECTRA VER 01 LEV 08
 DULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM(C)-59E-1903 REV(1)
 RRS OF ACC.-REACTOR BLDG.-FL-70.000, MASS=01 SEIS MODEL-TOP OF MAT
 CHUCCING ENVELOPE--PK. 1 SPRD. +-15Z
 DISK CURVE SET NO. 1

CHUCCING

HDR DIRECTION

ACCELERATION 0 0.20 0.40 0.60 0.80 1.00 1.20 1.40

FREQUENCY IN HZ 10⁰ 2 3 4 5 6 7 8 9 10¹



4173A

14 MAR 1969

DAMPING VALUE = 0.090

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NA(C)-68E-1903 REV(1)
 RRS OF ACC.-REACTOR BLDG., EL=70.000, MASS=01 SEIS MODEL-TOP OF MAT
 CHUDDING ENVELOPE--PK. SPND. --15Z
 DISK CURVE SET NO.1

CHUDDING

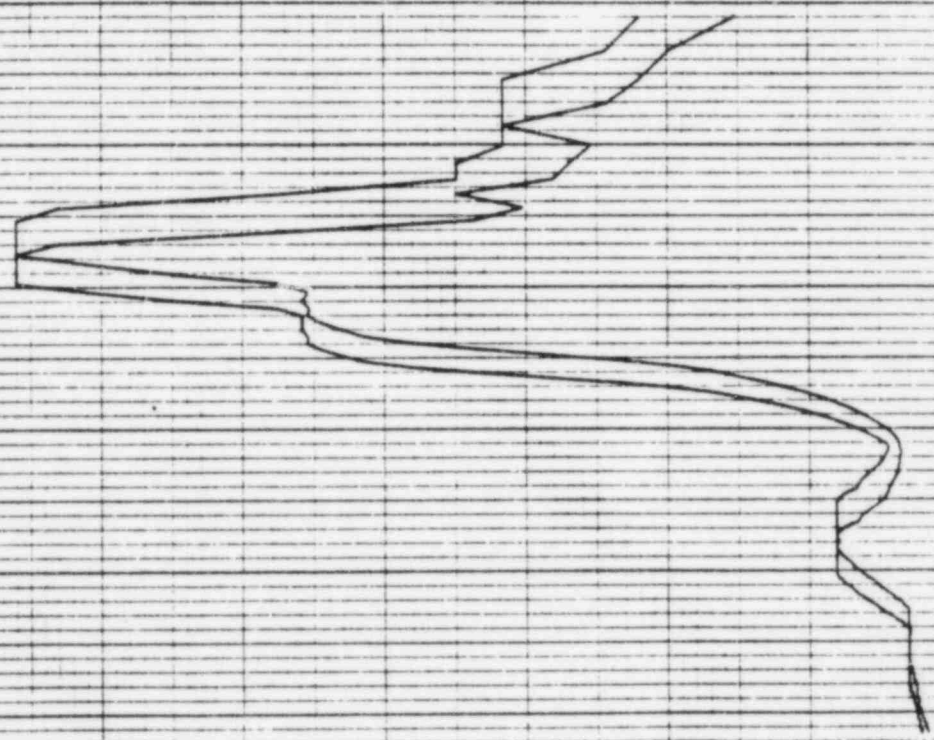
VER DIRECTION

ACCELERATION G

FREQUENCY IN HZ

0.00
 0.08
 0.16
 0.24
 0.32
 0.40
 0.48
 0.56

10⁰
 2
 3
 4
 5
 6
 7
 8
 9
 10¹
 10²
 2
 3
 4
 5
 6
 7
 8
 9
 10³



14 MAR 1969

CHUGGING

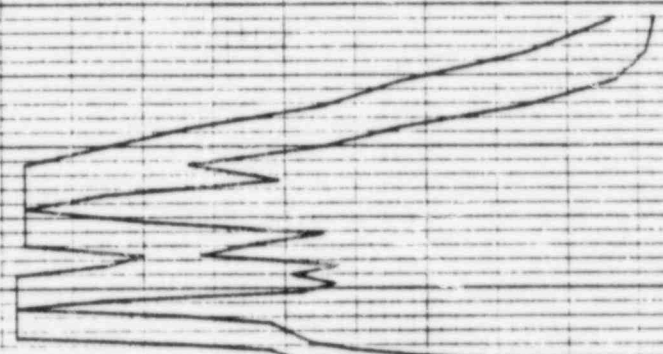
PSPECTRA VER 01 LEV 08
DULF STATES UTILITIES-RBS UNIT 1-CALC 12210-NN(C)-SBE-1903 NEV 11
RBS OF ACC.-REACTOR BLDG. FL=112.67, MASS=03 SEIS MODEL-SHIELD 0608
CHUGGING ENVELOPE--PK. SPD. 1-15Z
DISK CURVE SET NO.2

DAMPING VALUE = 0.030

HOR DIRECTION

ACCELERATION G

FREQUENCY IN HZ



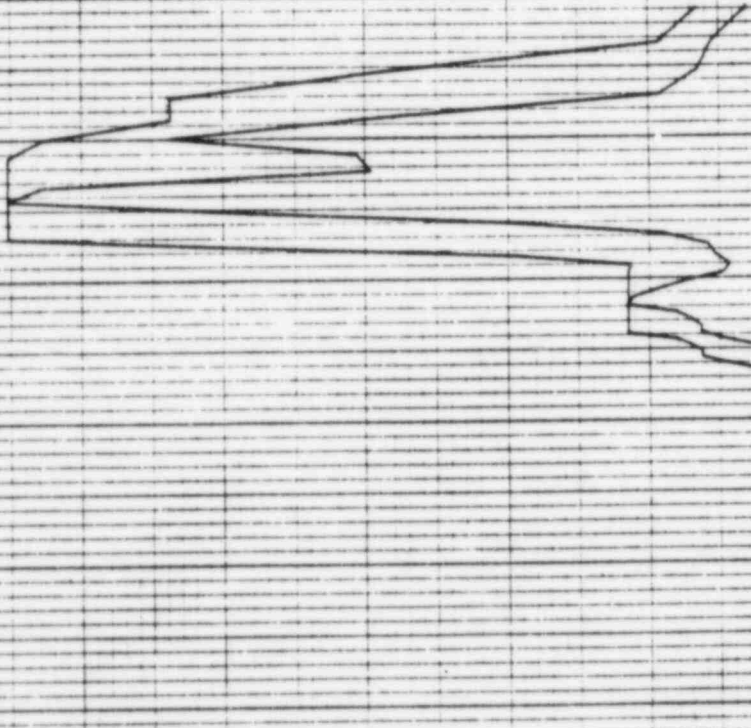
43501

14 MAR 1985

P5PECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-ARAC1-5QE-1903 REV111
 RRS OF ACC.-REACTOR BLDG., EL=112.67, MASS=03 SET6 MODEL-6SHIELD 8L00
 CHUDDING ENVELOPE--PK. SPRD. --15Z
 D16K CURVE SET NO.2
 CHUDDING
 VER DIRECTION
 DRMPING VALUE = D.050

ACCELERATION G
 0.28
0.24
0.20
0.16
0.12
0.08
0.04
0.00

10⁰
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10²
 2 3 4 5 6 7 8 9 10³
 2 3 4 5 6 7 8 9 10⁴
 FREQUENCY IN HZ



REF 138

1476A

14 MAR 1983

DAMPING VALUE = 0.050

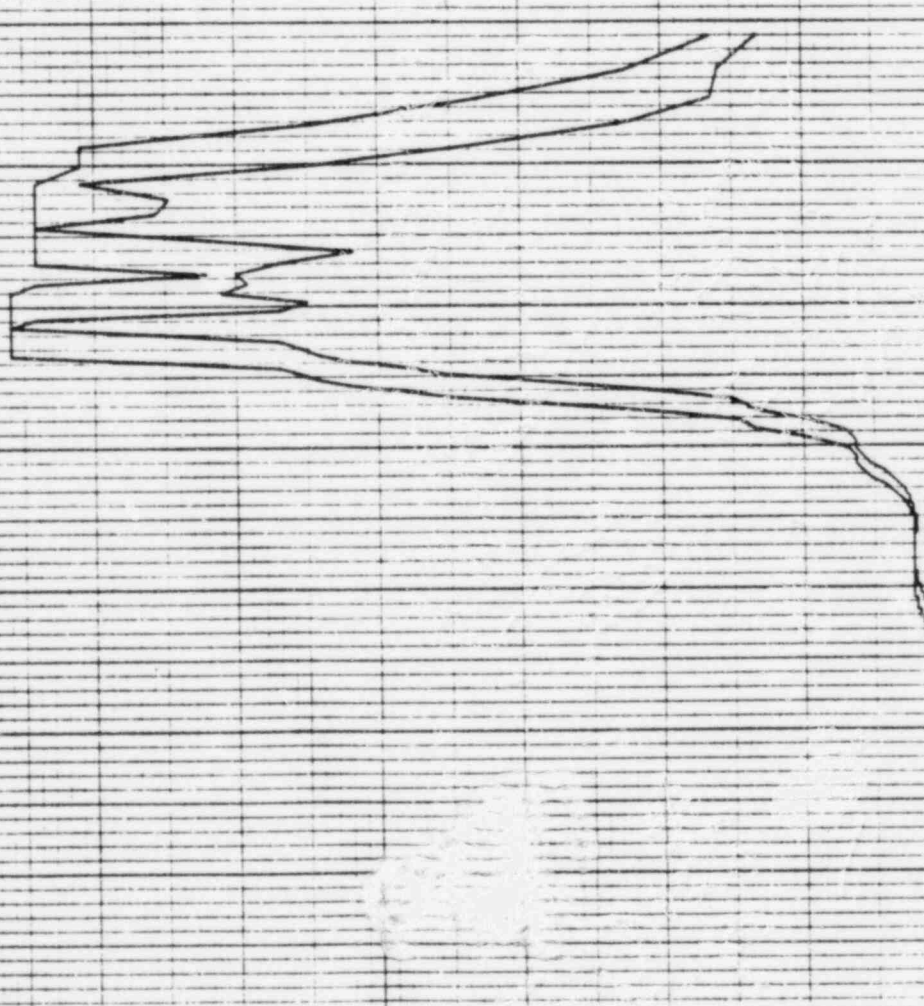
PSECTRA VER 01 LEY 08
 DULF STATES UTILITIES-RBS UNIT 1-CALC12210-KM(CI)-S0E-1903 REV(11)
 RRS OF ACC.-REACTOR BLDG..EL=132.99, MASS=04 SEIS MODEL-6MIELD 0LOG
 CHUOING NO. ENVELOPE--PK. SPND. +-15Z
 DISK CURVE SET NO. 3

CHUOING

HDR DIRECTION

ACCELERATION G

FREQUENCY IN HZ



PHH

14 MAR 1983

14 MAR 1983

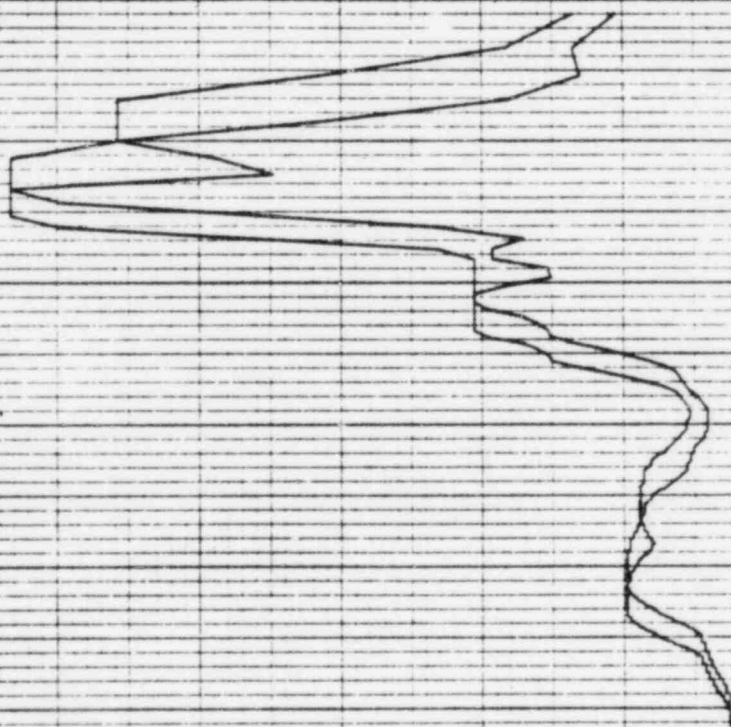
PSPECTRA VER 01 LEV 08
 DULF STATES UTILITIES-RB5 UNIT 1-CALC(2210-NM1C)-50E-1903 REV(11)
 RRS OF RCC--REACTOR BLDG..EL=192.99, MASS=04 SET16. MODEL-6SHIELD BLDG
 CHUDDING ENVELOPE--PK. SPRD..-15Z
 D16K CURVE SET NO. 9

DAMPING VALUE = 0.030

VER DIRECTION

ACCELERATION G
 0.00 0.04 0.08 0.12 0.16 0.20 0.24 0.28

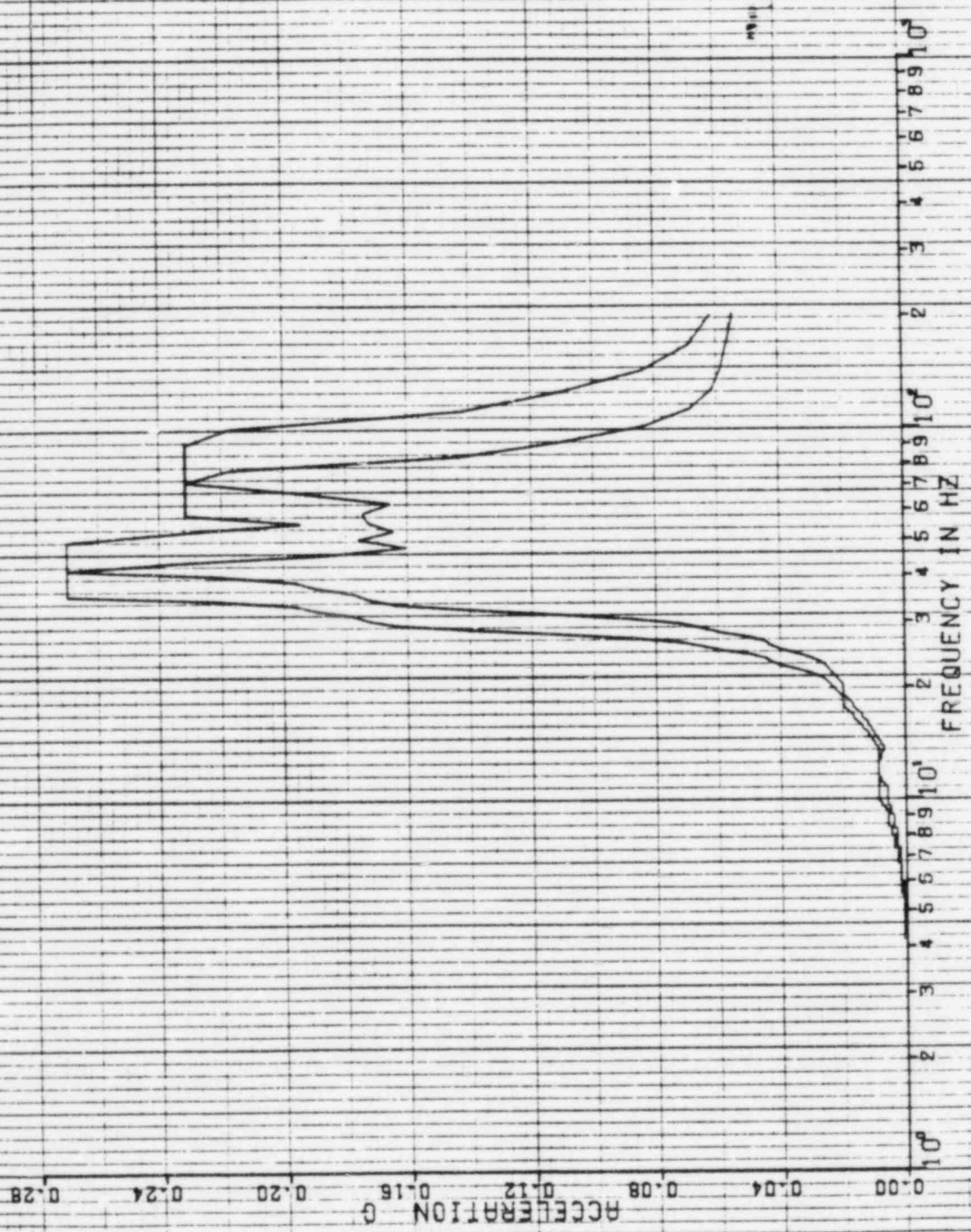
FREQUENCY IN HZ
 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10² 2 3 4 5 6 7 8 9 10³



178A

14 MAR 1963

SPECTRA VER DN LEV 08
 CHUGGING
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NR1CJ-60E-1909 REV113
 RRS DF ACC-REACTOR BLOC-EL-159-92-MASS-05 SETS MODEL-SHIELD BLOC
 CHUGGING ENVELOPE PK SPRD .152
 DISK CURVE SET NO.4
 HOR DIRECTION
 DAMPING VALUE = 0.030



REF 139

14 MAR 1988

PSPECTRA VER 01 LEV DB
DULF STATES UTILITIES-RBS UNIT 1-CALCIP210-NHCTJ-SQE-1909 REV11)
RRS OF ACC.-REACTOR BLDG.-EL=159.92.HASS=05 SEIS MODEL-SHIELD BLOC
CHUCCING ENVELOPE--PK--SPRD--15%
DISK CURVE SET NO.4

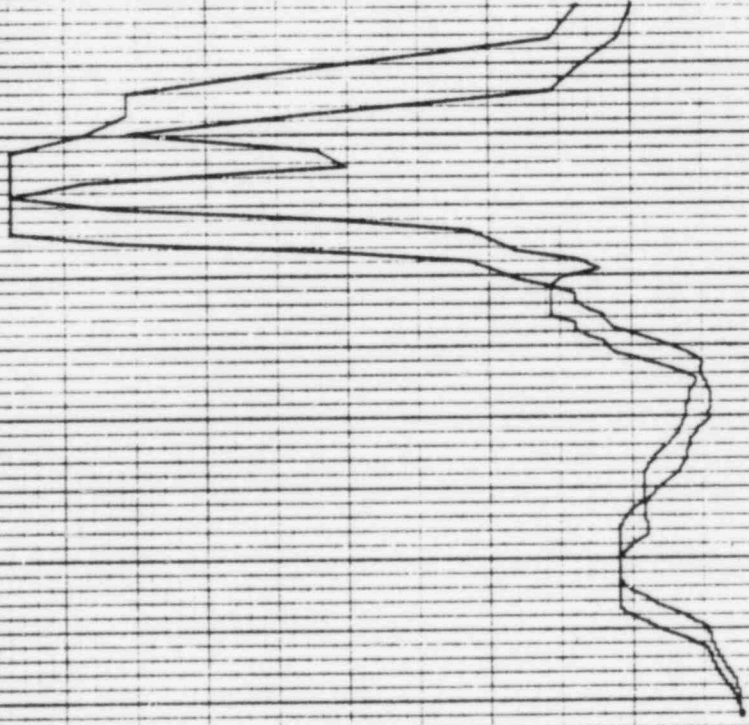
CHUCCING

DAMPING VALUE = 0.050

VER DIRECTION

ACCELERATION 0 0.04 0.08 0.12 0.16 0.20 0.24 0.28

FREQUENCY IN HZ 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²



1430K

14 MAR 1983

P6PECTRA VER 01 LEV DB
DULF STATES UTILITIES-RBS UNIT 1-CALCIPED-NHICJ-5DE-1983 REV11J
RRS OF ACC.-REACTOR BLDG., EL=179.65, MASS=05 SEIS MODEL-SHIELD BLDG
CHUCCING ENVELOPE--PK..SPRD. >15Z
DISK CURVE SET NO.5

CHUCCING

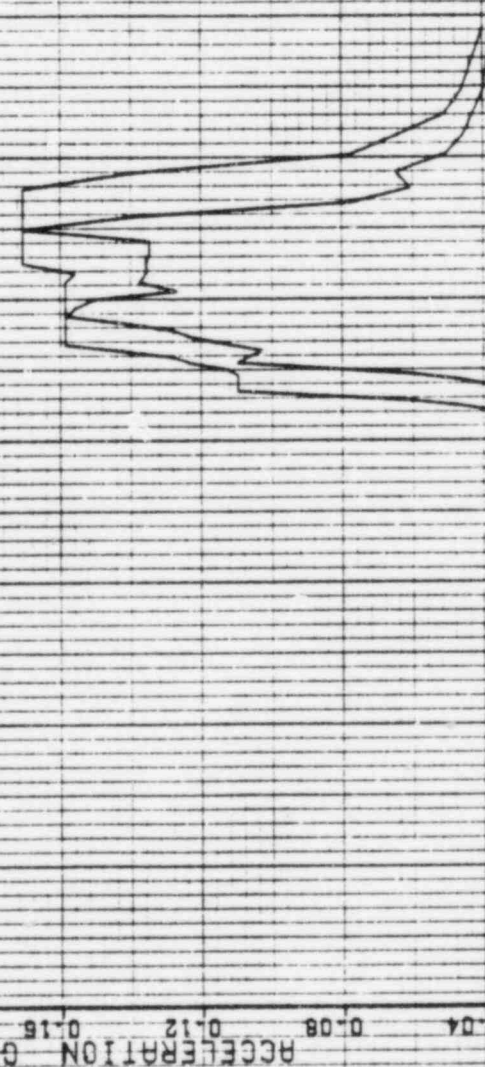
DAMPING VALUE = 0.050

NOR DIRECTION

ACCELERATION 0 0.04 0.08 0.12 0.16 0.20 0.24 0.28

10⁰ 2 3 4 5 6 7 8 9 10¹
10² 2 3 4 5 6 7 8 9 10²
10³ 2 3 4 5 6 7 8 9 10³
10⁴ 2 3 4 5 6 7 8 9 10⁴
10⁵ 2 3 4 5 6 7 8 9 10⁵
10⁶ 2 3 4 5 6 7 8 9 10⁶
10⁷ 2 3 4 5 6 7 8 9 10⁷
10⁸ 2 3 4 5 6 7 8 9 10⁸
10⁹ 2 3 4 5 6 7 8 9 10⁹
10¹⁰ 2 3 4 5 6 7 8 9 10¹⁰

FREQUENCY IN HZ



14 MAR 1983

CHUCCING

PSPECTRA VER 01 LEV 08

GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM1C1-6QE-1903 REV(1)
PARS OF ACC.-REACTOR BLDG.-EL-179.65, MASS=06 SETS MODEL-SHIELD BLDG
CHUCCING ENVELOPE--PK. SPRD...152

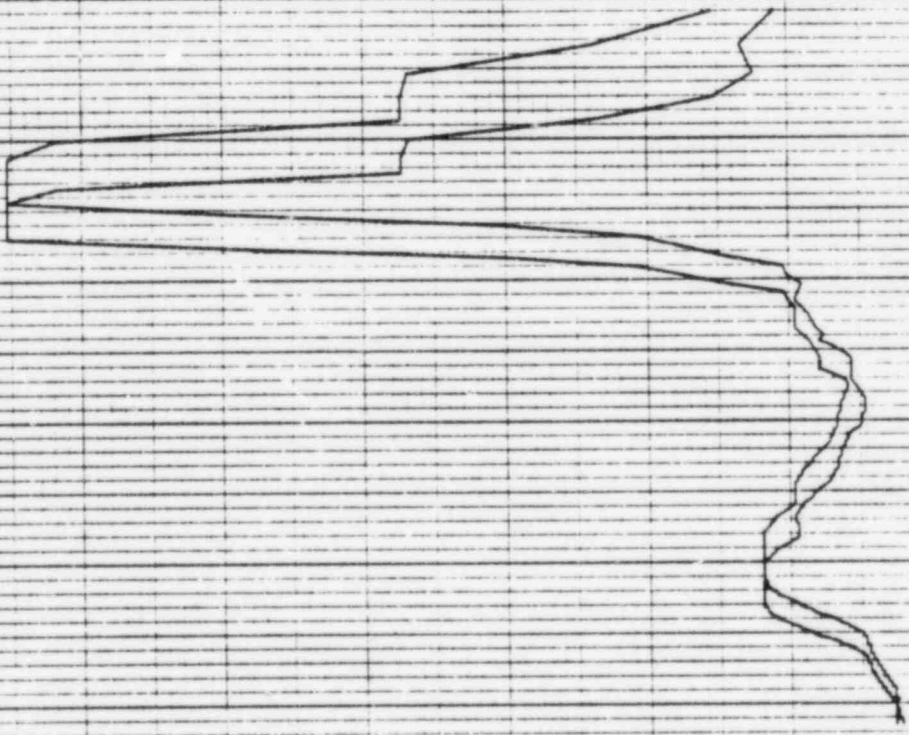
VER DIRECTION

DISK CURVE SET NO.5

DAMPING VALUE = 0.090

ACCELERATION G
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FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



14 MAR 1983

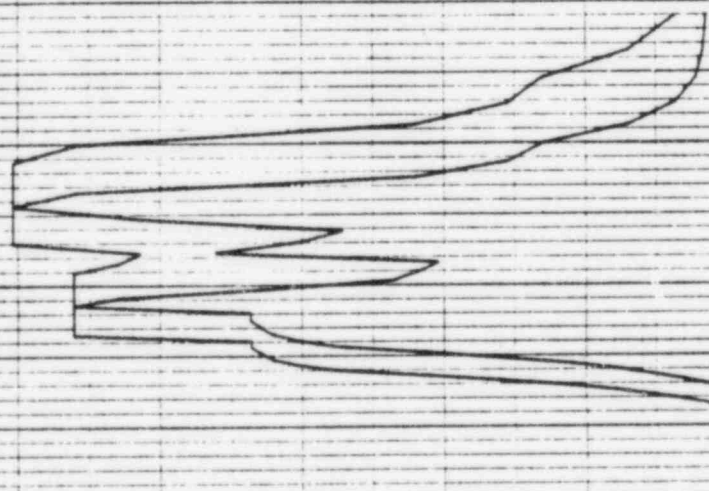
14 MAR 1983

DAMPING VALUE = 0.030

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC122.0-NMIC-50E-1903 REV11
 RRS OF ACC.-REACTOR BLDG., EL=193.98, MASS=07 SET6 MODEL-SHIELD BLDG
 CHUDDING ENVELOPE-PK. SPRD. +-15Z
 DISK CURVE SET NO. 6
 CHUDDING
 HOR DIRECTION

ACCELERATION G
 0.00 0.04 0.08 0.12 0.16 0.20 0.24 0.28

10⁰
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10²
 2 3 4 5 6 7 8 9 10³
 FREQUENCY IN HZ



14 MAR 1983

14 MAR 1983

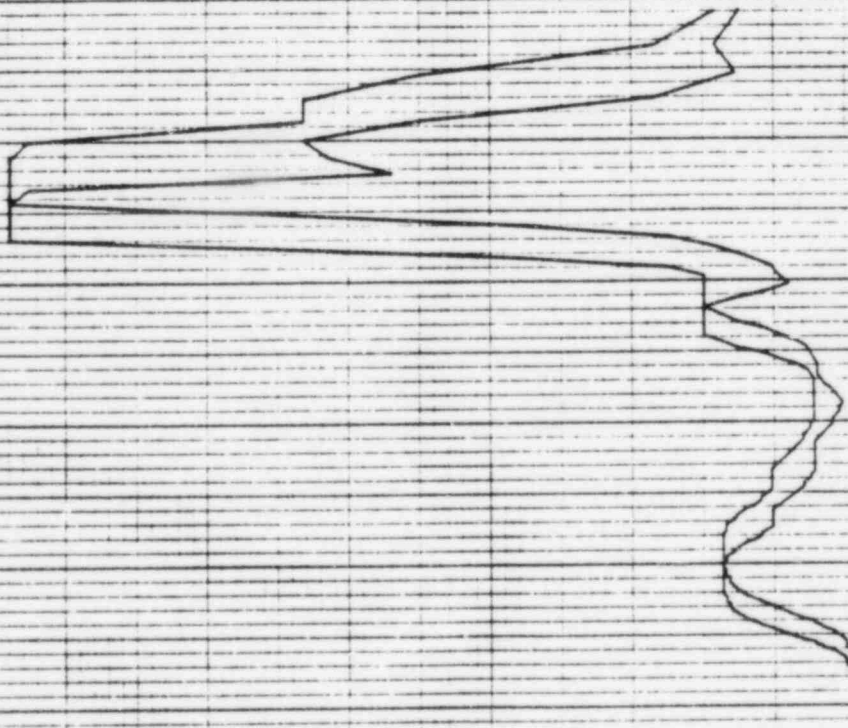
PSPECTR VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NH(C)-50E-190: REV(1)
 RRS OF ACC.-REACTOR BLDG., EL=193.98, MASS=07 SEIS MODEL-SHIELD 8LOG
 CHUCCING ENVELOPE--PK--SPRD. --15Z
 DISK CURVE SET NO. 6

DAMPING VALUE = 0.050

VER DIRECTION

ACCELERATION G

FREQUENCY IN HZ



44A

14 MAR 1983

CHUGGING

PEPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM1C1-50E-1903 REV(1)
RRS OF ACC.-REACTOR BLDG.-EL-21A.91, MASS=08 SEIS MODEL-SHIELD BLDG
CHUGGING ENVELOPE--PK. SPD...+15%

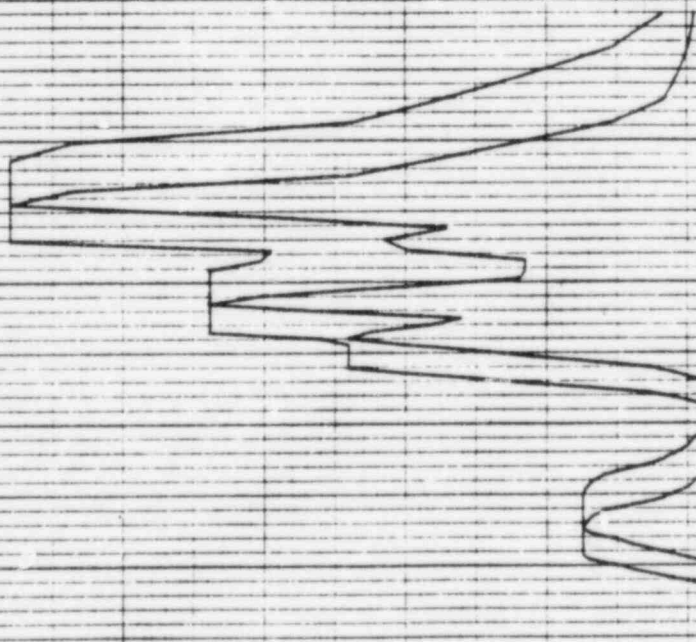
DAMPING VALUE = 0.080

HOR DIRECTION

DISK CURVE SET NO.7

ACCELERATION G
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹
2 3 4 5 6 7 8 9 10²
2 3 4 5 6 7 8 9 10³



1435A

14 MAR 1983

CHUCCING

PSPECTRA VER 01 LEV 08

CULF STATES UTILITIES-RBS UNIT 1-CALC12210-NAIC1-SOE-1903 REV(1)
RR6 OF ACC.-REACTOR BLDG., EL=214.91, MASS=08 SE16 MODEL-SHIELD BLDG
CHUCCING ENVELOPE--PK. SPRD. +-152

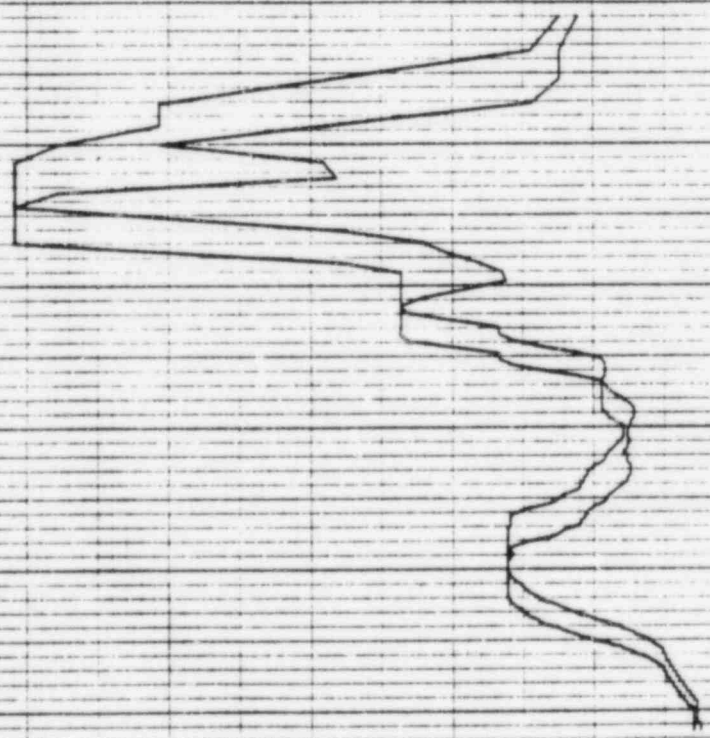
VER DIRECTION

DISK CURVE SET NO.7

DAMPING VALUE = 0.030

ACCELERATION G
0.00 0.04 0.08 0.12 0.16 0.20 0.24 0.28

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



1480A

14 MAR 1989

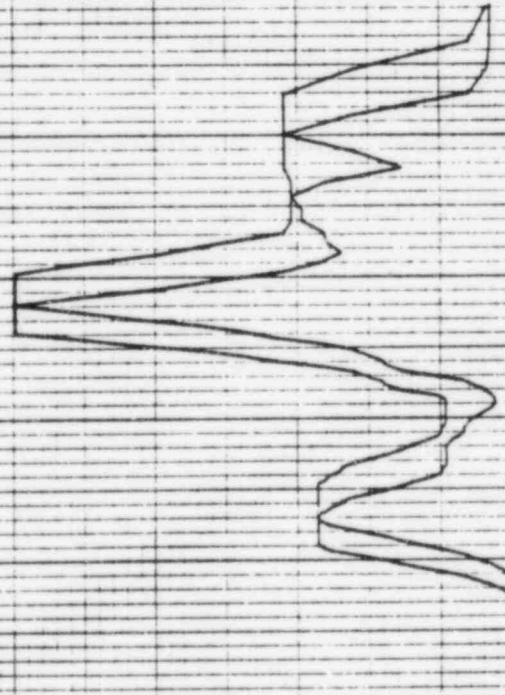
DAMPING VALUE = 0.080

P6PECTRA VER 01 LEV 08
 CULF STRA25 UTILITIES-R85 UNIT 1-CALC12210-WH(C1)-50E-1903 REV(1)
 RRS OF ACC.-REACTOR BLDG., EL=248.00, MASS=09 SETS MODEL-SHIELD BLDG
 CHUDDING ENVELOPE--PK. SPED. +-15Z
 DISK CURVE SET NO.8
 CHUDDING
 HOR DIRECTION

ACCELERATION G
 0.00 0.04 0.08 0.12 0.16 0.20 0.24 0.28

FREQUENCY IN HZ
 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²

1480



14279

14 MAR 1983

PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC(2210-NRAC)-S0E-1903 REV11)
RRS OF ACC.-REACTOR BLDG.-EL-210.00 MASS-09 SEIS MODEL-SHIELD BLDG
CHUGGING ENVELOPE--PK. SPRD. --15X
DISK CURVE SET NO.8

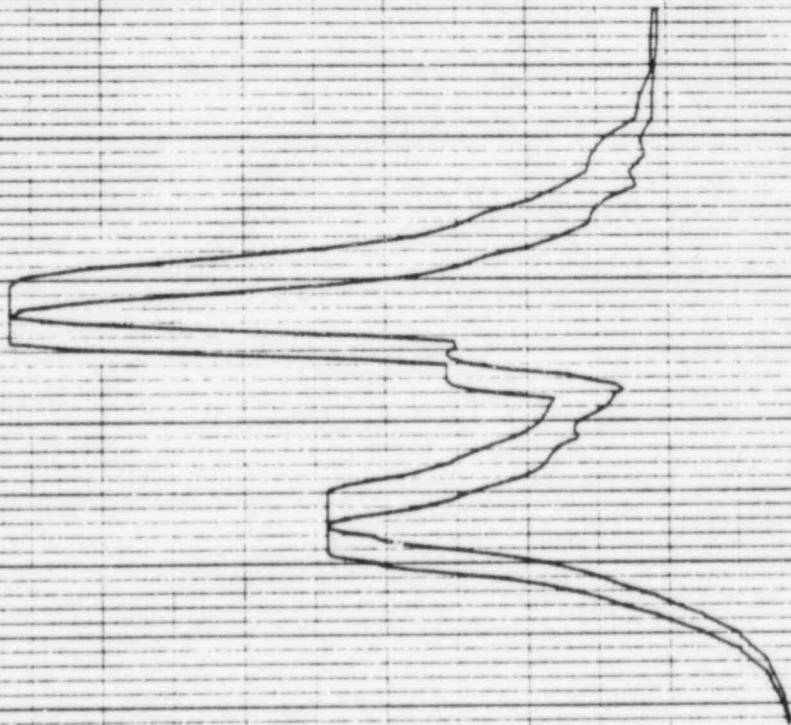
CHUGGING

DAMPING VALUE = 0.030

VER DIRECTION

ACCELERATION G
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



REF 144

14 MAR 1983

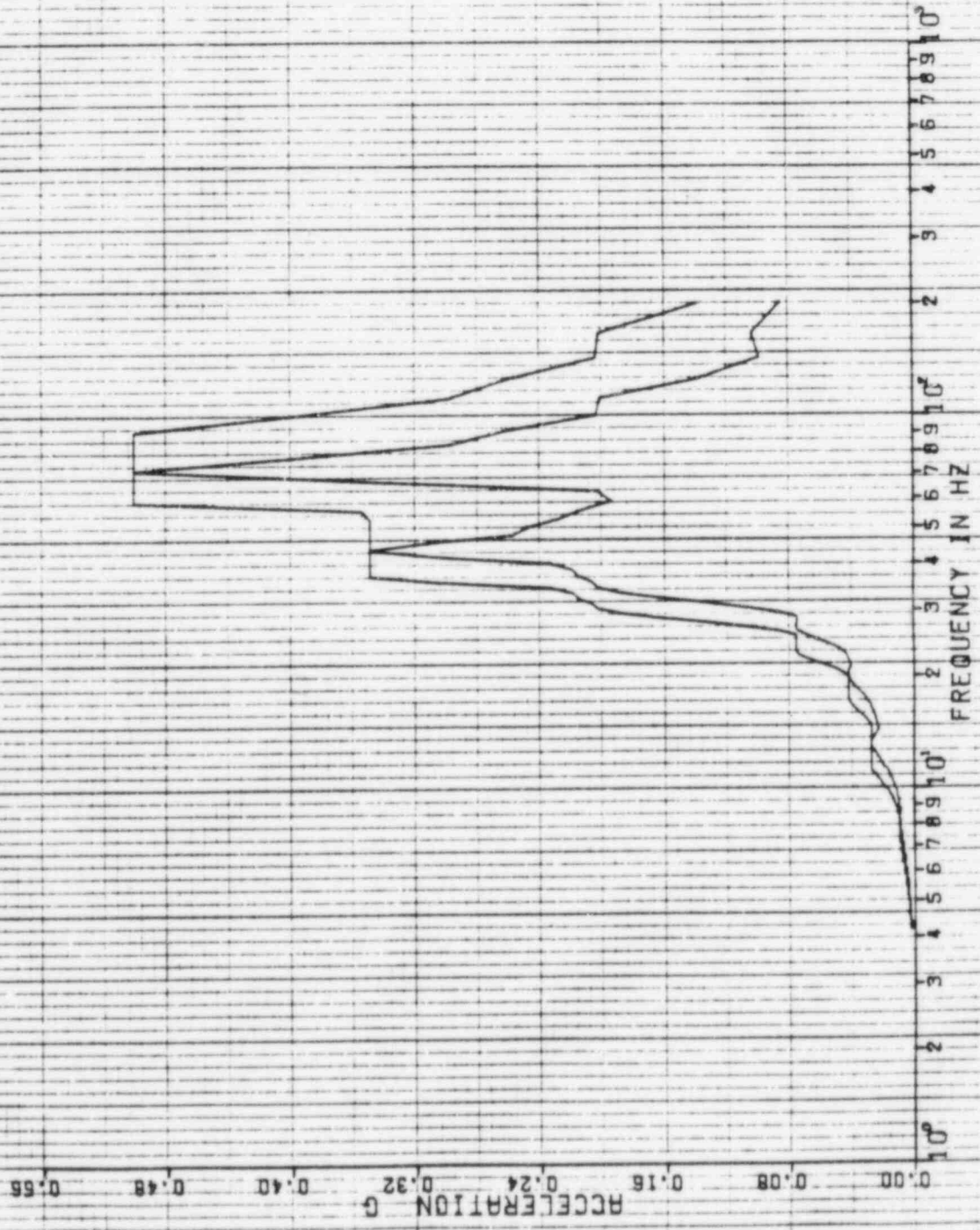
CHUCCING

PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-MM C1-60E-1983 REV11
RRS OF ACC.-REACTOR BLDG.-EL-95.000, MASS-10 SETS MODEL-COMP-SHO.500
CHUCCING ENVELOPE--PK.-SPR.--15%

DAMPING VALUE = 0.030

HOR DIRECTION

DISK CURVE SET NO.9



REF 144

14 MAR 1983

CHUCCING

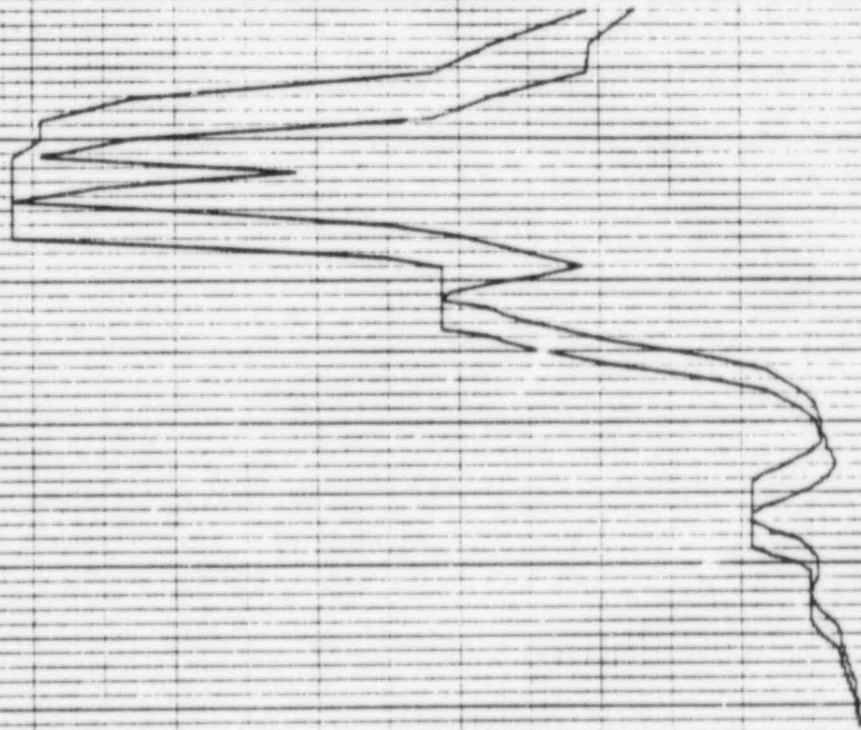
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PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC(2210-NMIC)-50E-1993 REV(1)
 RRS OF ACC.-REACTOR BLDG., EL.=95.000, MASS=10 SEIS MODEL-COMP.\$MD.800
 CHUCCING ENVELOPE--PK. SPED. --15Z
 TASK CURVE SET NO.9

VER DIRECTION

ACCELERATION G

FREQUENCY IN HZ



PSPECTRA VER 01 LEV 08

CHUDDING

14 MAR 1983

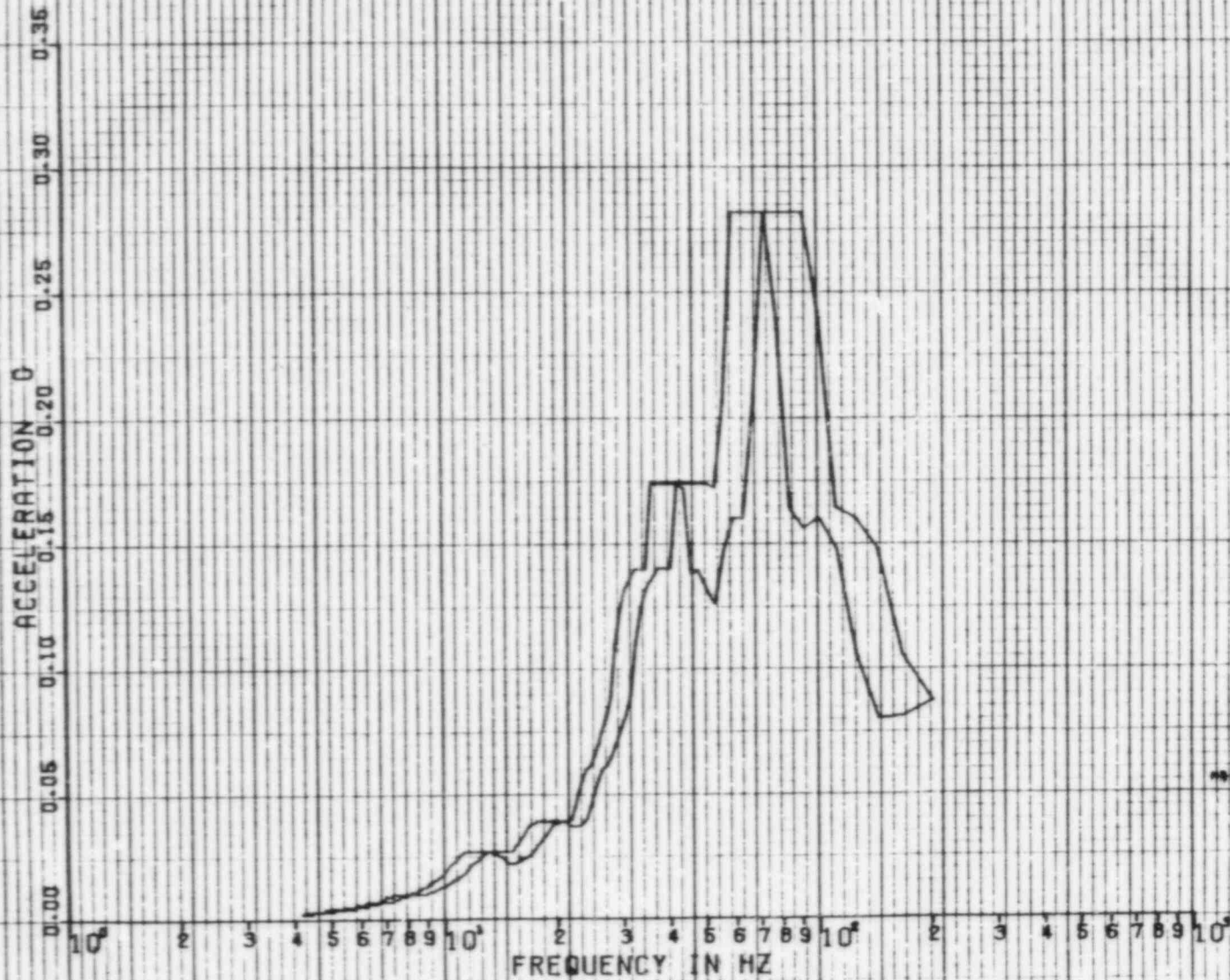
1541

GULF STATES UTILITIES-RBS UNIT 1-CALC(2210-NM(C)-SQE-1903 REV11)
RRS OF ACC.-REACTOR BLDG., EL=85.000, MASS=94 SEIS MODEL-COMP. SHD. BLDG
CHUDDING ENVELOPE--PK. SPRD. --15Z

DISK CURVE SET NO. 32

HOR DIRECTION

DAMPING VALUE = 0.030



REF 145

1391A

14 MAR 1985

DAMPING VALUE = 0.080

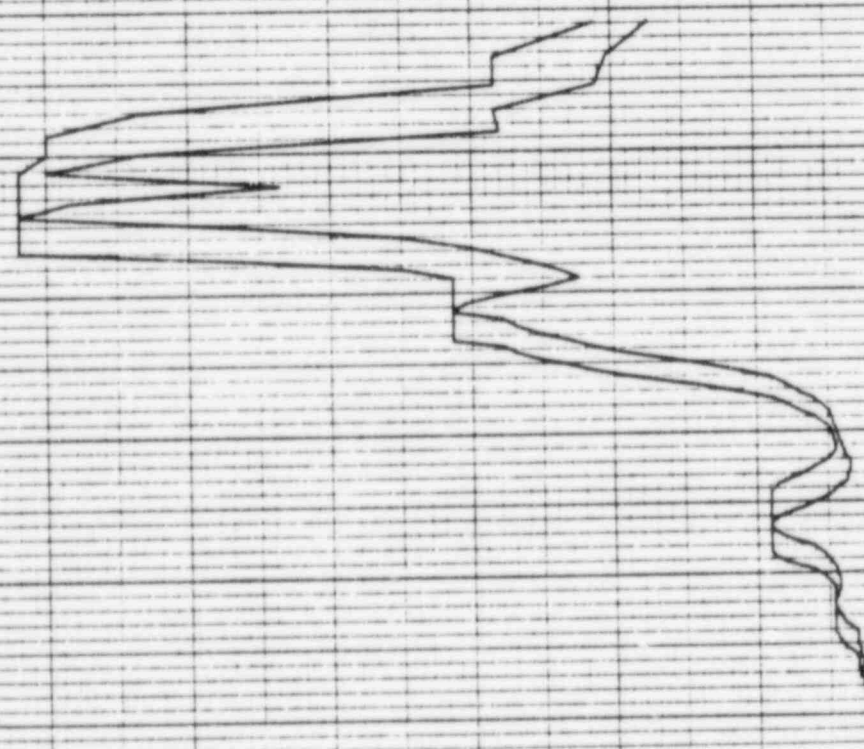
CHUDDING

PSPECTRA VER 01 LEV 08
DULF STATES UTILITIES-RB6 UNIT 1-CALC12210-MM(C)-50E-1903 REV(1)
RMS OF ACC.-REACTOR BLDG.-EL-85.000, MASS=94 SE16 MODEL-COMP-5MO-0100
CHUDDING ENVELDPE--PK. SPID.--15Z
DISK CURVE SET NO.92

VER. DIRECTION

ACCELERATION G
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35

FREQUENCY IN HZ
10
2
3
4
5
6
7
8
9
10



REF 146

144A

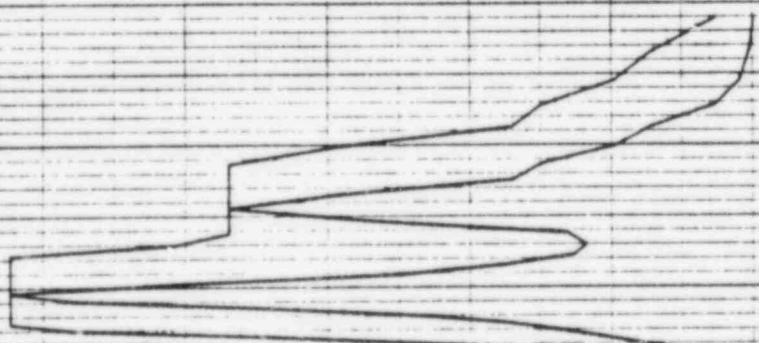
14 MAR 1963

DAMPING VALUE = 0.030

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-MA(C)-SDE-1903 REV11
 RRS OF ACC--REACTOR BLDG--EL-114.00 MASS=11 SEIS MODEL--STEEL CONT
 CHUDDING ENVELOPE--PK. SPRD. --15%
 DISK CURVE SET NO.10
 CHUDDING
 HOR DIRECTION

ACCELERATION G
 0.00 0.08 0.16 0.24 0.32 0.40 0.48 0.56

10⁰
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10¹
 FREQUENCY IN HZ



14 MAR 1983

14319

PSPECTRA VER 01 LEV 08
 CULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM(C)-S0E-1905 REV(1)
 RRS OF ACC.-REACTOR BLDG.-EL=117.00,HRSS=11 SEIS MODEL-STEEL CONT
 CHUCCING ENVELOPE--PK.-SPRD.--15Z
 DISK CURVE SET NO.10

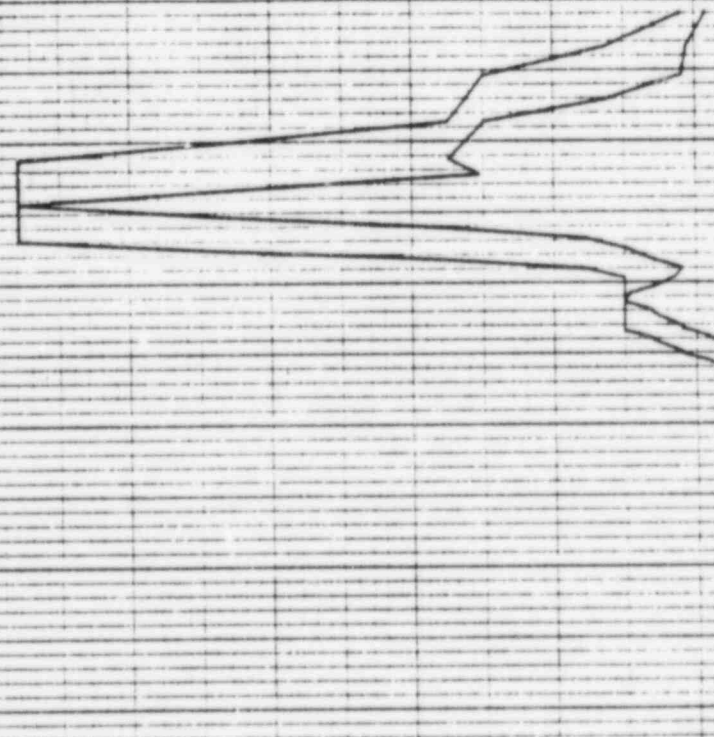
CHUCCING

DAMPING VALUE = 0.090

VER DIRECTION

ACCELERATION G

FREQUENCY IN HZ



144A

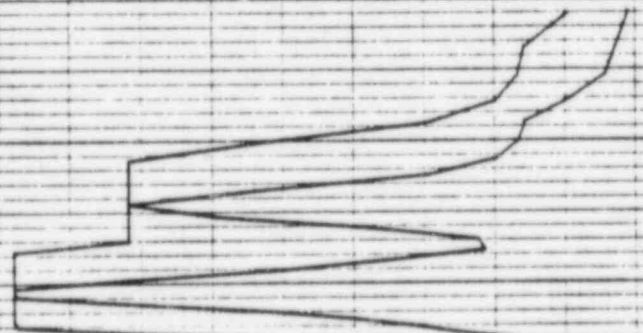
14 MAR 1983

DAMPING VALUE = 0.050

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM(CI)-50E-1903 REV(1)
 RPS OF ACC.--REACTOR BLDG., EL=199.00, MASS=12 SEIS MODEL--STEEL CONT
 CHUDDING ENVELOPE--PK.-SPRO.--15Z
 CHUDDING
 MOR DIRECTION
 DISK CURVE SET NO.11

ACCELERATION 0 0.08 0.16 0.24 0.32 0.40 0.48 0.56

FREQUENCY IN HZ 10⁰ 2 3 4 5 6 7 8 9 10¹



10-17-A

14 MAR 1983

PSPECTRA VER 01 LEV 08
 CULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM(C)-SDE-1903 REY(1)
 RRS OF ACC.-REACTOR BLDG.-FL-199.00,MASS=12 SEIS MODEL-\$STEEL COM
 CHUDDING ENVELOPE--PK. SPRD.--15Z
 DISK CURVE SET NO.11

CHUDDING

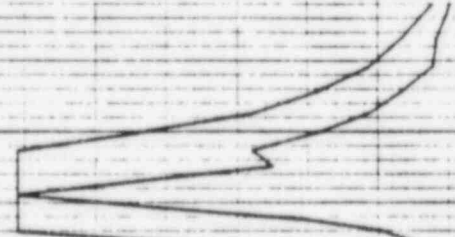
DAMPING VALUE = 0.030

VER DIRECTION

ACCELERATION 0 0.20 0.40 0.60 0.80 1.00 1.20 1.40

10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10² 3 4 5 6 7 8 9 10³

FREQUENCY IN HZ



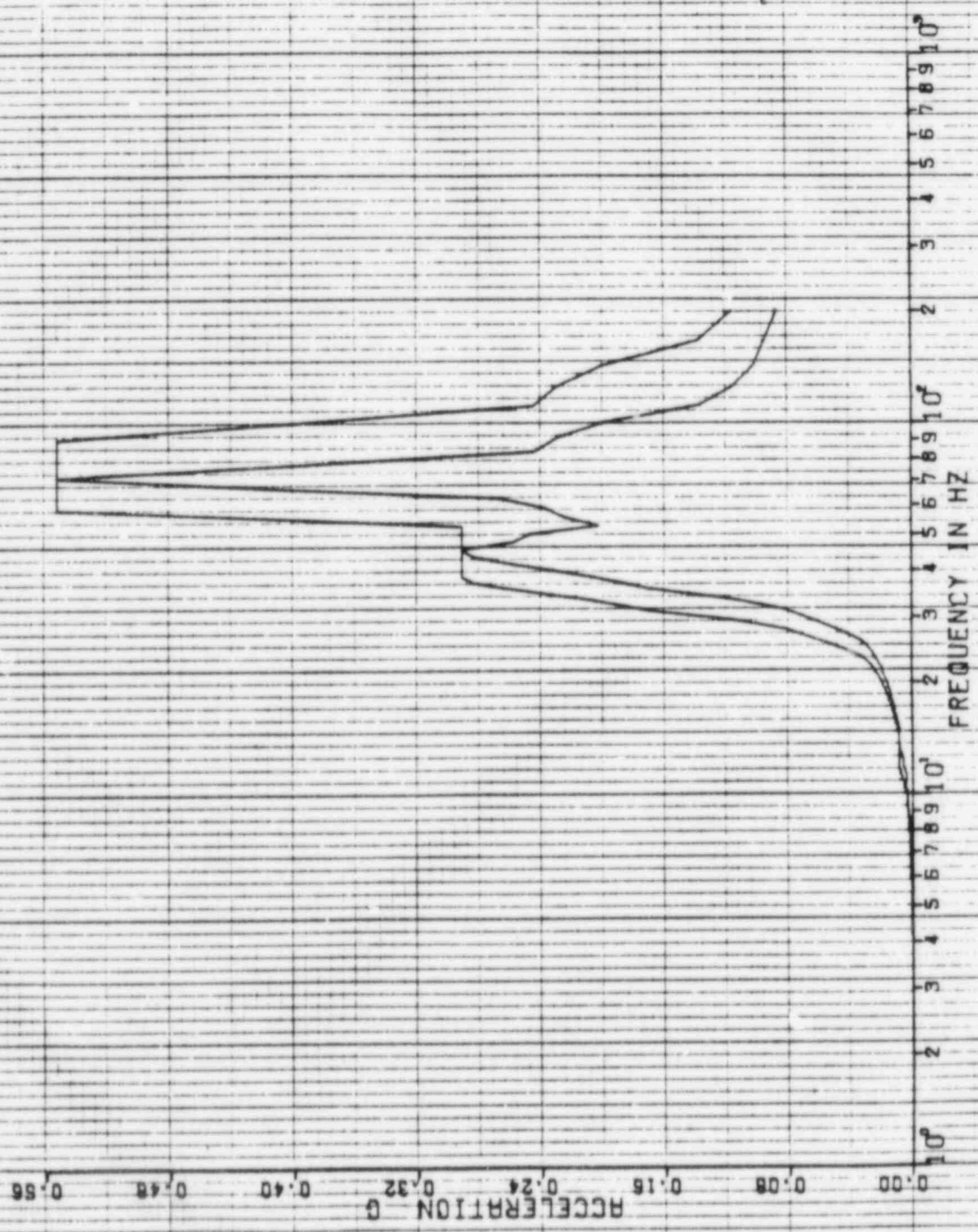
REF 148

14 MAR 1985

PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-WH(C)-602-1903 REV(1)
RRS OF ACC.-REACTOR BLDG.-FL-162.00 MASS=19 SETS MODEL-6STEEL CONT
CHUDDING ENVELOPE--PK. SPRD. +-15%
DISK CURVE SET NO. 12

DAMPING VALUE = 0.030

HOR DIRECTION



REF 148

14 MAR 1963

CHUDDING

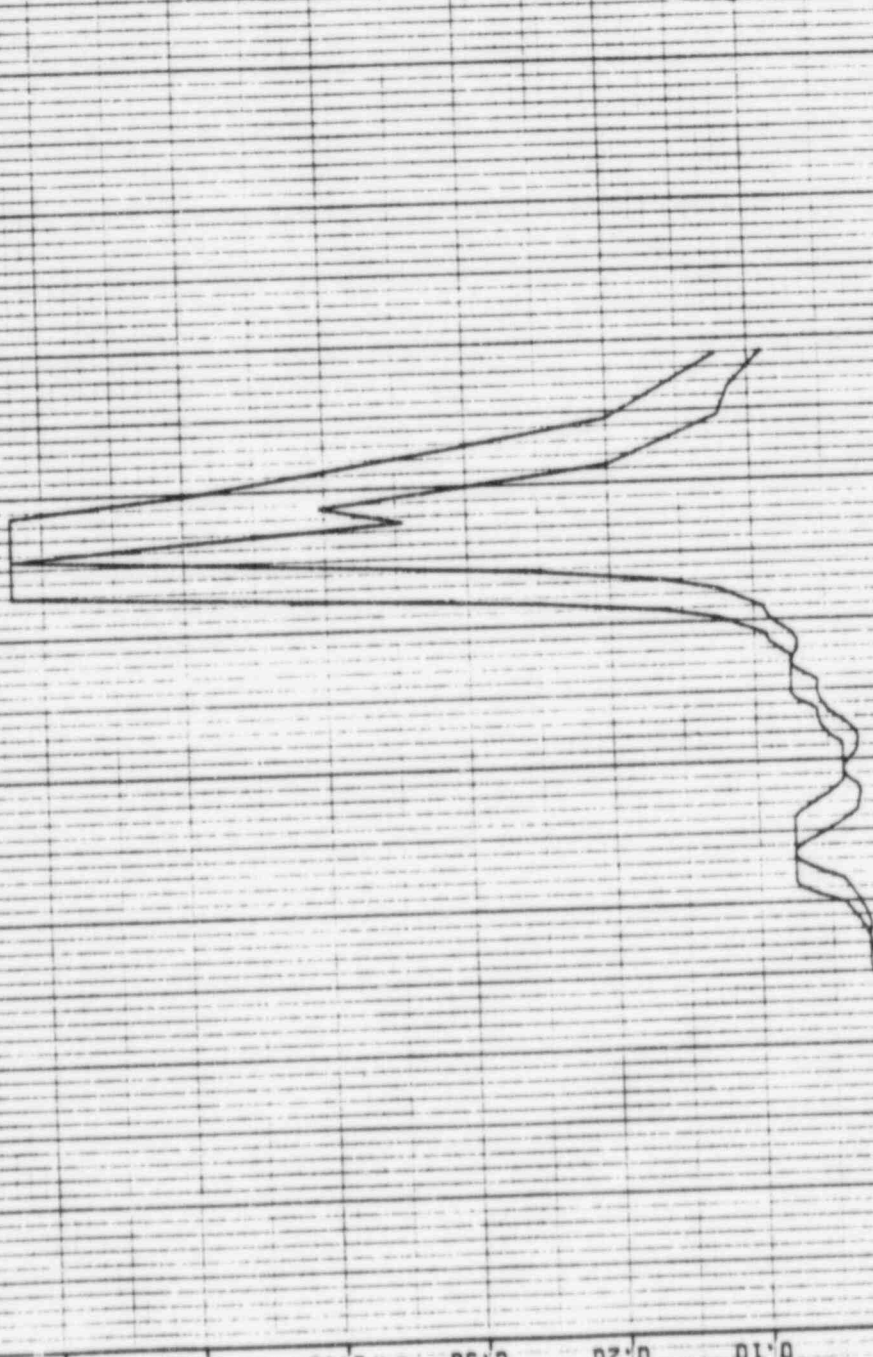
DAMPING VALUE = 0.030

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NR(C)-SDE-1963 REV(1)
 RRS OF REC.-REACTOR BLOC.-EL=162.00, MASS=13 SEIS MODEL-STEEL CONT
 CHUDDING ENVELOPE--PK. SPAD.--15Z
 DISK CURVE SET NO.12

VER DIRECTION

ACCELERATION G

FREQUENCY IN HZ



PSPECTRA VER 01 LEV 08

CHUGGING

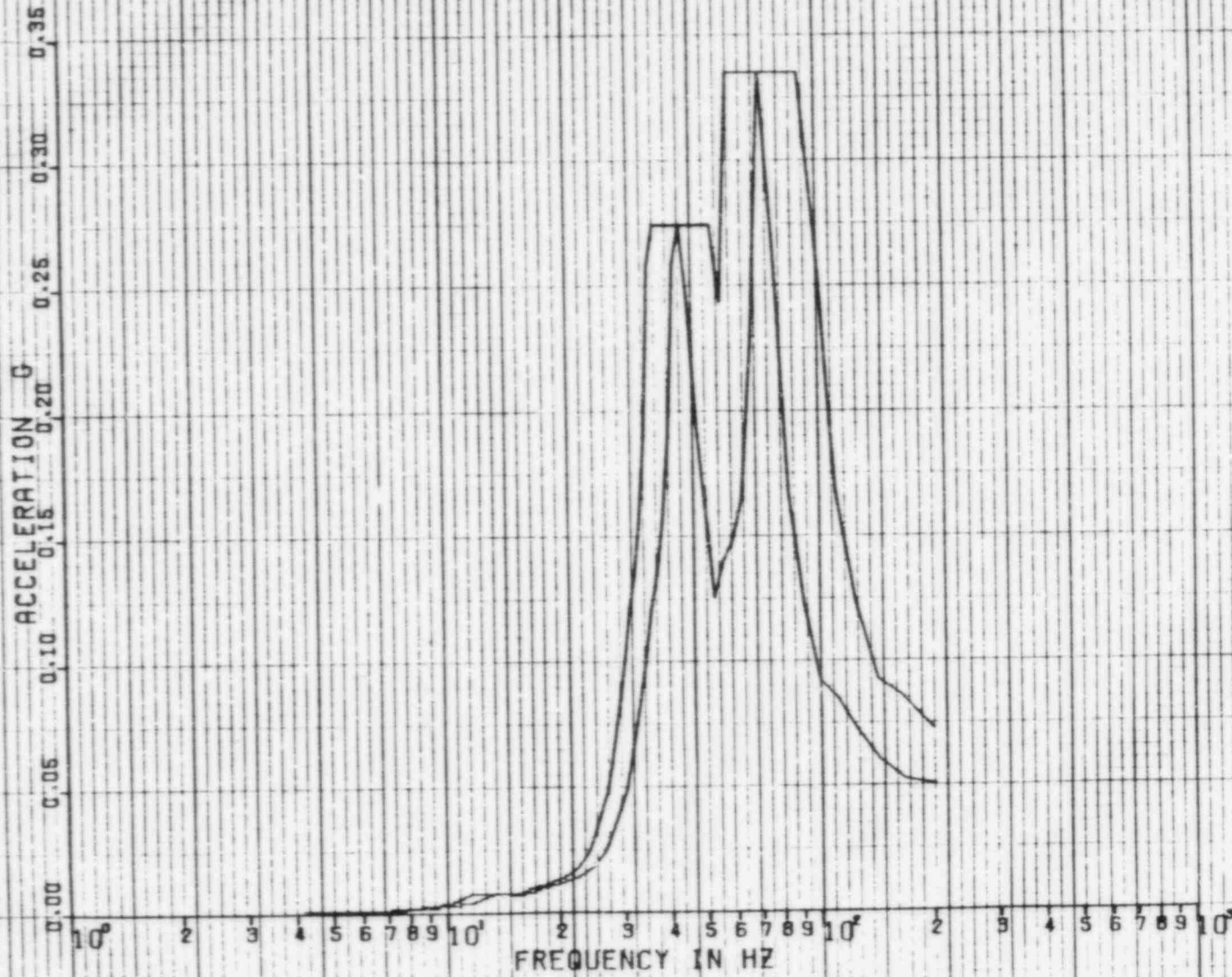
14 MAR 1983

GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NA(C)-50E-1983 REV(1)
RRS OF ACC.-REACTOR BLDG.,EL=185.00,MASS=14 SEIS MODEL-STEEL CONT
CHUGGING ENVELOPE--PK. SPRD. +-15%

DISK CURVE SET NO.19

HDR DIRECTION

DAMPING VALUE = 0.090

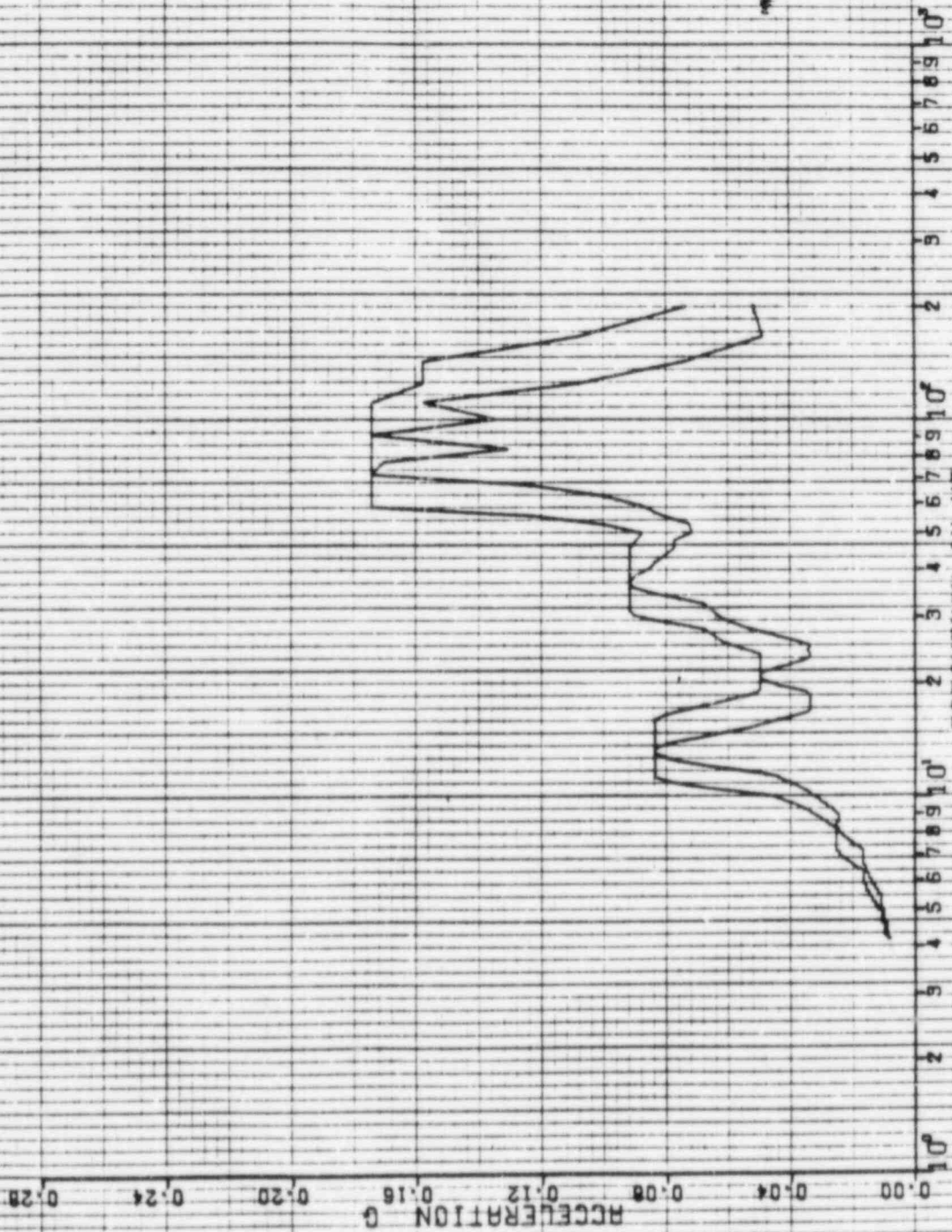


REF 149

REF 149

14 MAR 1983 11:24:14

PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM(C)-50E-1903 REV(1)
RBS OF ACC--REACTOR BLDG. EL=195.00, MASS=14 SEIS MODEL--STEEL CONT
CHUDDING ENVELOPE--PK SPRO...+15Z
DISK CURVE SET NO.13
CHUDDING
VER DIRECTION
DAMPING VALUE = 0.090

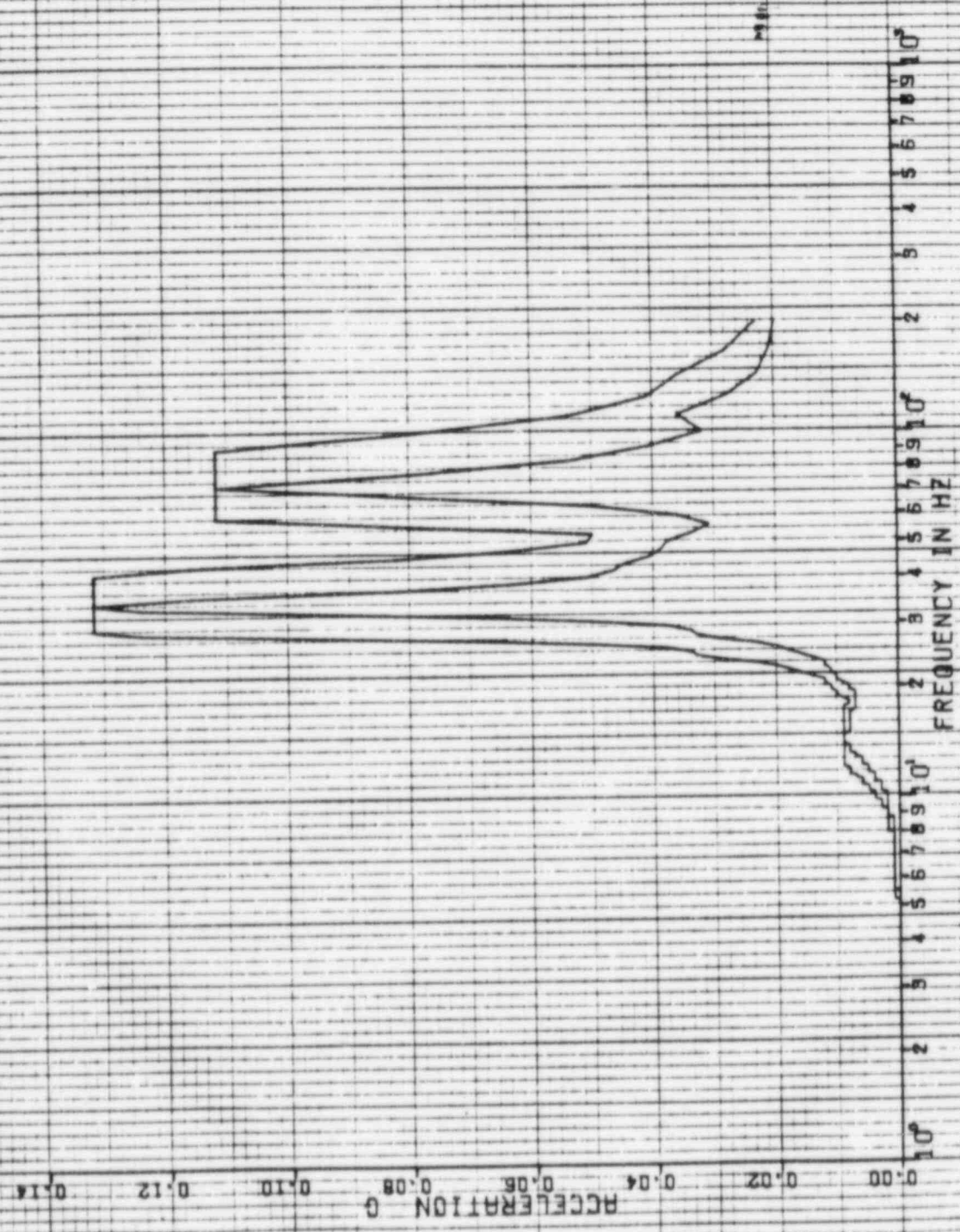


REF 150

14 MAR 1983

498A

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NAIC1-SGE-1903 REV111
 RRS OF ACC--REACTOR BLDG--EL-212.00 MASS+15 S&IS MODEL--STEEL CONT
 CHUDDING ENVELOPE--PA. SPED. --152
 DISK CURVE SET NO.14
 CHUDDING
 HOR DIRECTION
 DAMPING VALUE = 0.050



437A

14 MAR 1969

CHUDDING

PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-WA(C)-SDE-.909 REV(1)
RRS OF ACC-REACTOR BLDG.-EL-212.00 MASS=15 SETS MODEL-STEEL CONT
CHUDDING ENVELOPE--PA. SPRD. --15%

VER DIRECTION

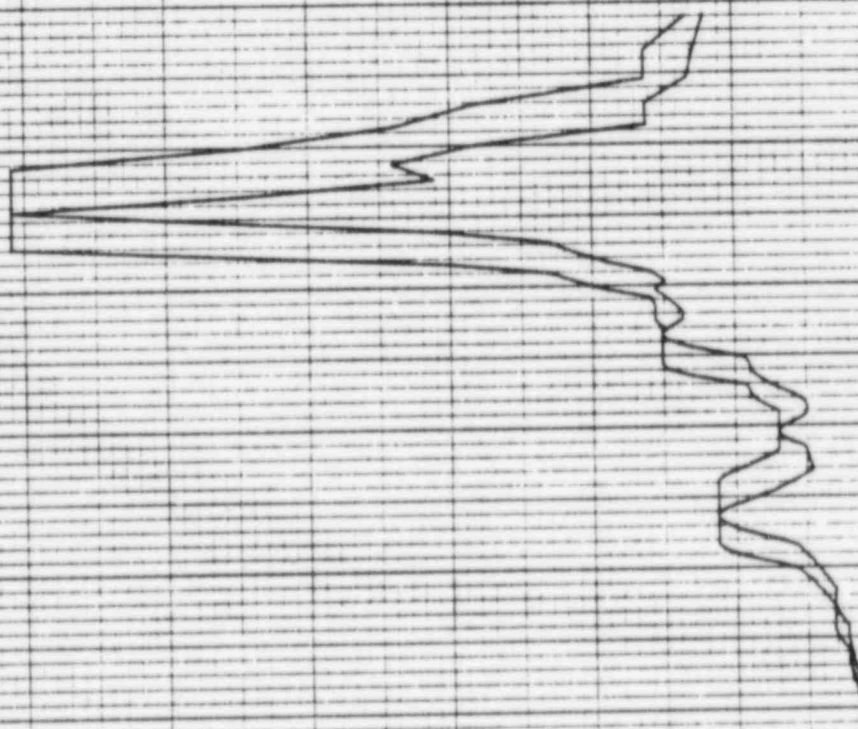
DAMPING VALUE = 0.090

DISK CURVE SET NO. 14

ACCELERATION 0 0.08 0.16 0.24 0.32 0.40 0.48 0.56

10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10² 2 3 4 5 6 7 8 9 10³

FREQUENCY IN HZ



1701A

14 MAR 1983

DAMPING VALUE = 0.030

CHUDDING

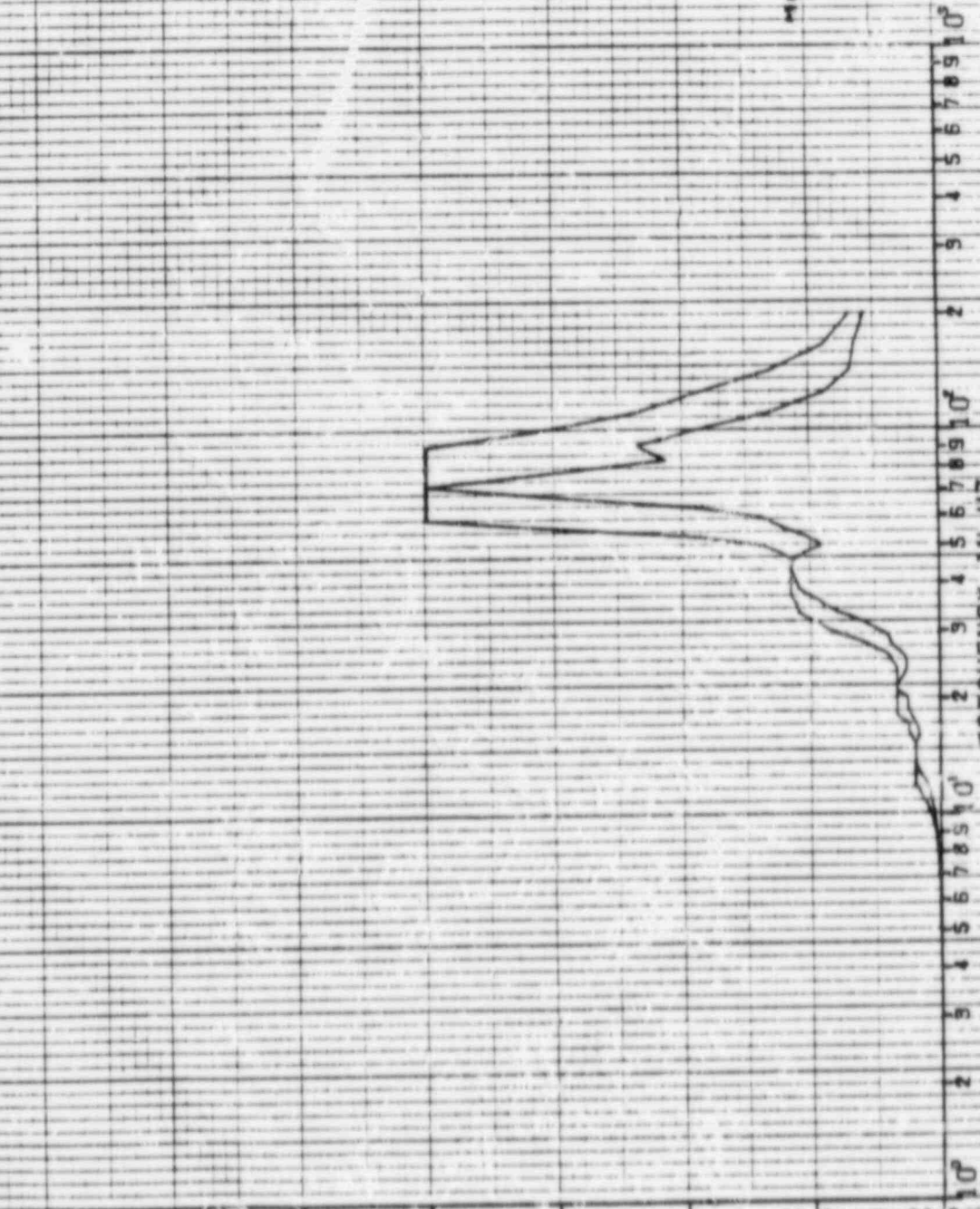
PSPECTRA VER 01 LEY 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-AM(C)-50E-1983 REV(1)
RPS OF ACC.-REACTOR BLDG. EL=239.20, MASS=16 SEIS MODEL--STEEL CONT
CHUDDING ENVELOPE--PK..SPRO. +-152

NOR DIRECTION

DISK CURVE SET NO.15

ACCELERATION

FREQUENCY IN HZ



PSPECTRA VER 01 LEV 08
DULF STRVES UTILITIES-RBS UNIT 1-CALC I 2210-NRMC1-50E-1989 REV111
RPS OF RCC--REACTOR BLDG.-EL-299-20 MASS-16 SETS MODEL-STEEL CONT
CHUCCING ENVELOPE--PK. SPAD.--15Z
DISK CURVE SET NO.15

CHUCCING
VER DIRECTION

14 MAR 1989

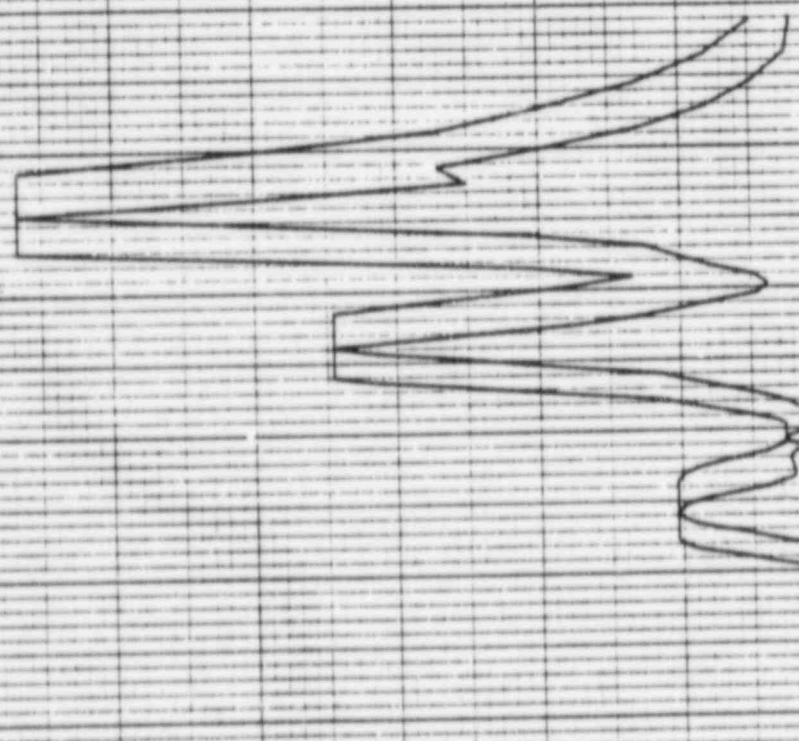
1507A

DAMPING VALUE = 0.050

REF 151

ACCELERATION 0 0.10 0.20 0.30 0.40 0.50 0.60 0.70

10⁰ 2 5 4 5 6 7 8 9 10¹ 2 5 4 5 6 7 8 9 10¹ 2 5 4 5 6 7 8 9 10¹
FREQUENCY IN HZ



REF 152

11-22-81

14 MAR 1983

CHUDDING

PSPECTRA VER 01 LEV 08

GULF STATES UTILITIES-RBS UNIT 1-CALCI2210-NA CI-50E-1903 REV 11
RRS OF ACC.-REACTOR BLDG., EL=95.000, MASS=17 SEIS MODEL-PSM, PEDESTAL
CHUDDING ENVELOPE--PK. SPRD...--LSZ

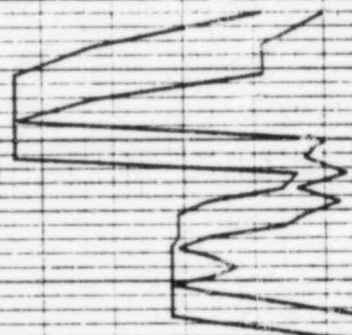
DISK CURVE SET NO.16

HOR DIRECTION

DAMPING VALUE = 0.030

ACCELERATION G

FREQUENCY IN HZ



14 MAR 1983

CHUDDING

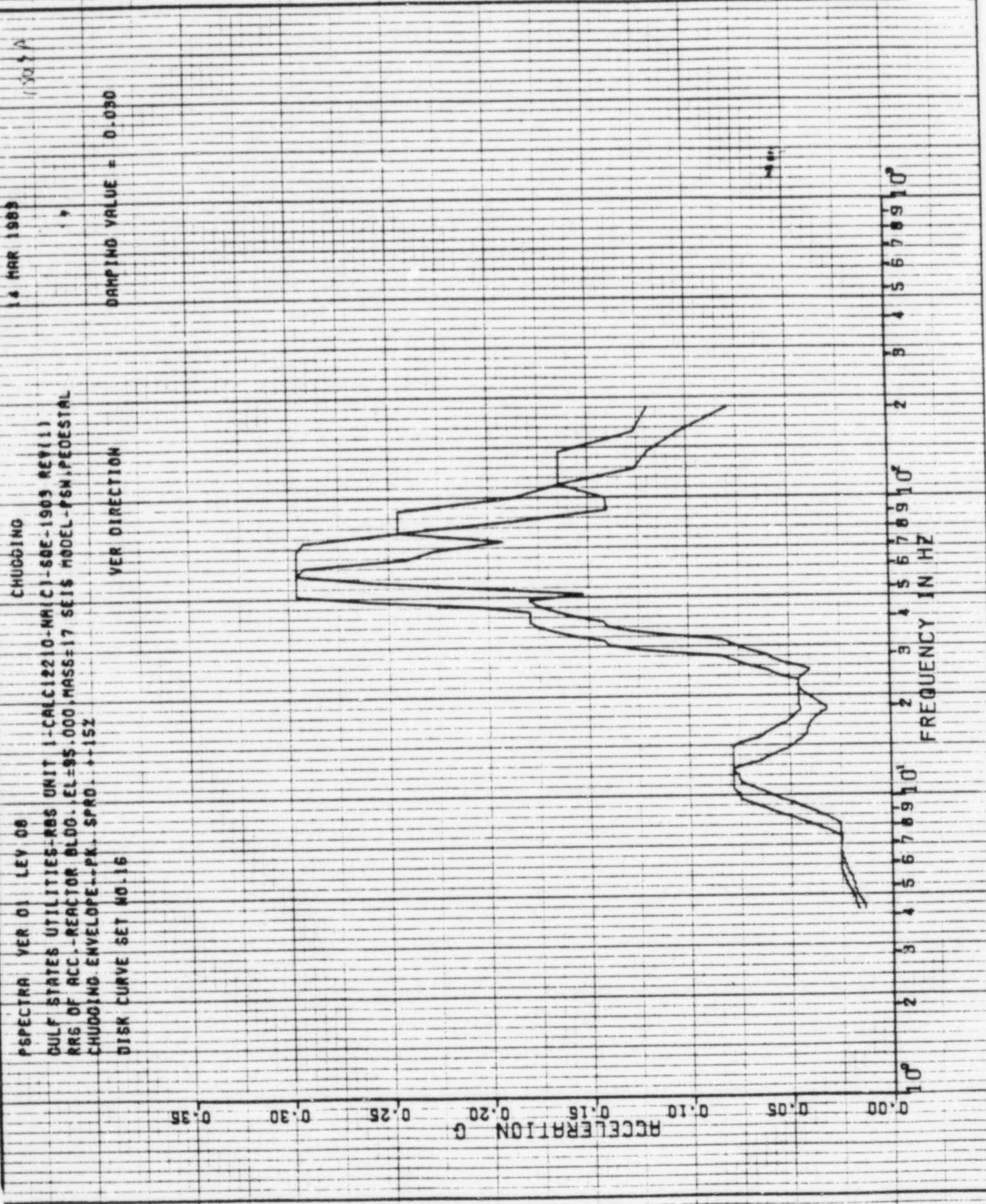
PSPECTRA VER 01 LEV 08
 DULF STATES UTILITIES-RBS UNIT 1-CALC12210-NAIC-50E-1909 REV(1)
 RRS OF ACC.-REACTOR BLDG. EL=95.000, MASS=17 SETS MODEL-PSM, PEDESTAL
 CHUDDING ENVELOPE--PK. SPRD. --15Z
 DISK CURVE SET NO.16

DAMPING VALUE = 0.030

VER DIRECTION

ACCELERATION G

FREQUENCY IN HZ



14 APR 1983

CHUDDING

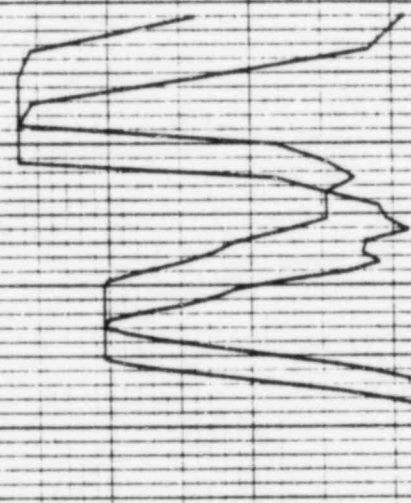
PSPECTRA VER 01 LEV 08
DULF STATES UTILITIES--RBS UNIT 1--CALC 12210-NR(C)-S0E-1903 REV(1)
RRS OF ACC--REACTOR BLDG--EL=101.00, MASS=18 SEIS MODEL--PSM, PEDESTAL
CHUDDING ENVELOPE--PK--SPRD 1--15Z
DISK CURVE SET NO. 17

DRAMPING VALUE = 0.030

HOR DIRECTION

ACCELERATION 0 0.04 0.08 0.12 0.16 0.20 0.24 0.28

FREQUENCY IN HZ 10⁰ 2 3 4 5 6 7 8 9 10¹



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14 MAR 1983

CHUGGING

PSPECTRA VER 01 LEY 08

GULF STATES UTILITIES-R66 UNIT 1-CALC12210-NR1C1-6GE-1983 REV111
NRS OF ACC.-REACTOR BLDG.-EL-101.00 MASS=18 SLS MODEL-PSM.PEDESTAL
CHUGGING ENVELOPE--PK. SPRD. --15Z

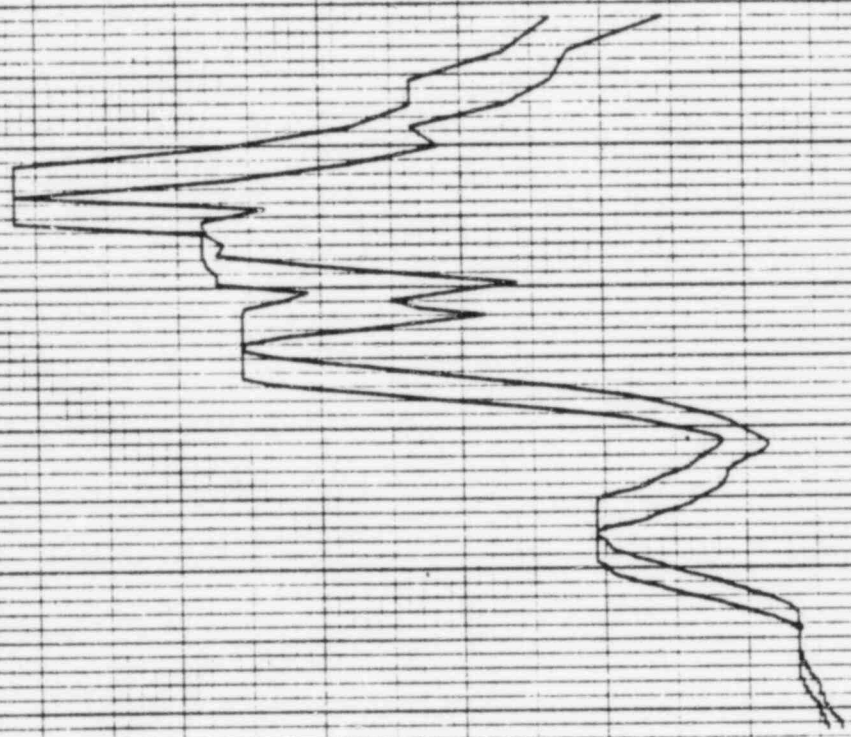
DISK CURVE SET NO.17

VER DIRECTION

DAMPING VALUE = 0.080

ACCELERATION G
0.00 0.04 0.08 0.12 0.16 0.20 0.24 0.28

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



TH

14 MAR 1983

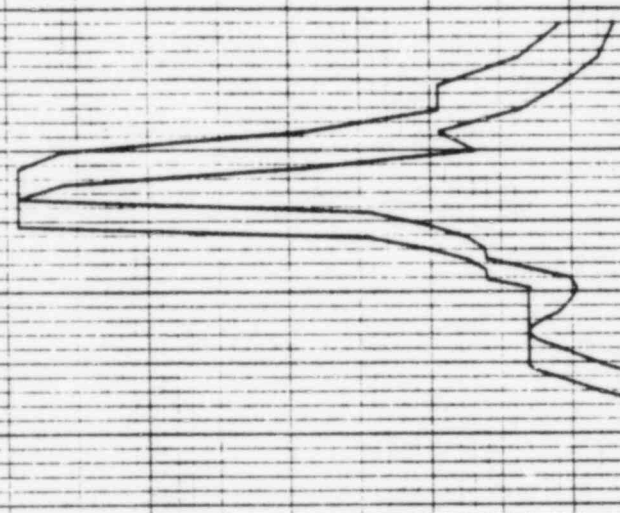
CHUDDING
 CHUDDING VER 01 LEY 08
 DULF STATES UTILITIES-RBS UNIT 1-CALC(2)D-NM(C)-50E-1983 REV(1)
 RRS OF ACC.-REACTOR BLDG.-EL=117.00, MASS=19 SEIS MODEL-PSM
 CHUDDING ENVELOPE--PK. SPD.--.15Z
 DISK CURVE SET NO.18

DAMPING VALUE = 0.030

HOR DIRECTION

ACCELERATION G
 0.00 0.08 0.16 0.24 0.32 0.40 0.48 0.56

FREQUENCY Hz
 10⁰ 2 3 4 5 6 7 8 9 10¹



1567A

14 MAR 1985

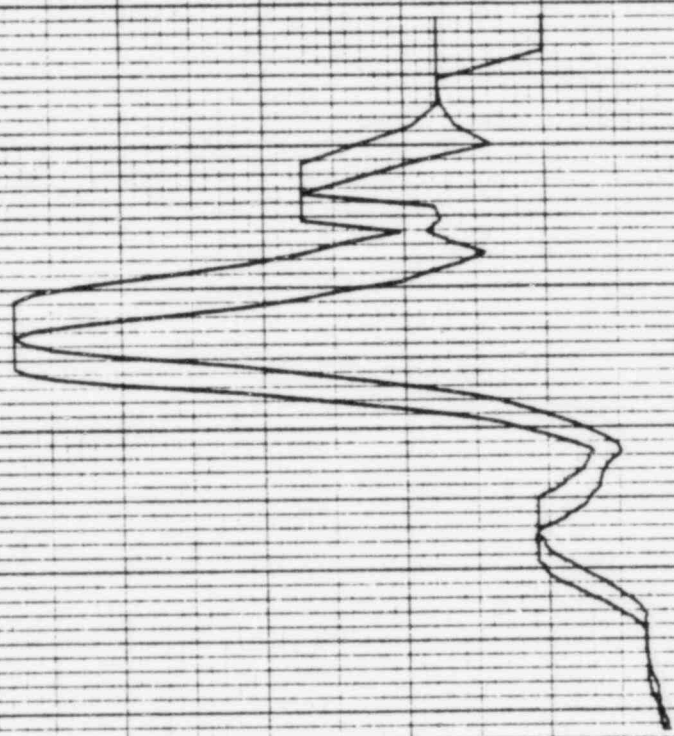
DAMPING VALUE = 0.050

PSPECTRA VER 01 LEV 08
 DULF STATES UTILITIES-RBS UNIT 1-CALC12210-NA(CI-50E-1903 REV(1))
 RRS OF ACC.-REACTOR BLDG., EL=117.00, MASS=19 SEIS MODEL-PSM
 CHUDDING ENVELOPE--PK--SPRO.. --152
 DISK CURVE SET NO. 18

VER DIRECTION

ACCELERATION G
 0.56
 0.48
 0.40
 0.32
 0.24
 0.16
 0.08
 0.00

FREQUENCY IN HZ
 10⁰
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10¹



4400

102A

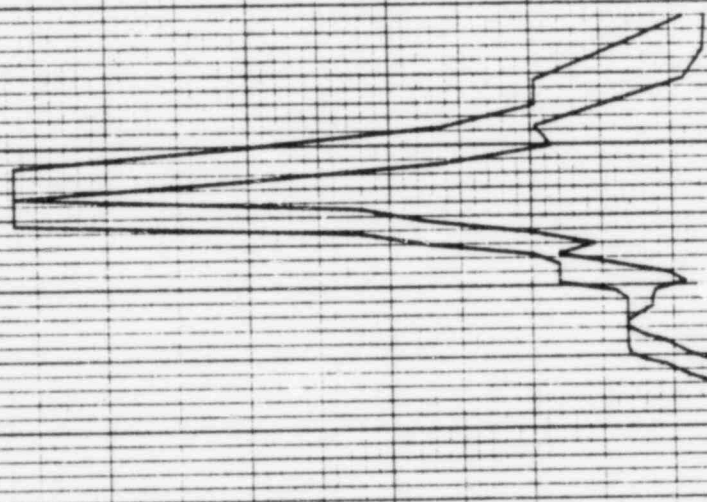
14 MAR 1983

DAMPING VALUE = 0.080

PSPECTRA VER 01 LEY 06
 DULF STATES UTILITIES-RBS UNIT 1-CALC12210-M(CI)-SBE-1903 REV(1)
 RRS OF ACC.-REACTOR BLDG., EL=133.00, MASS=20 SEIS MODEL-PSM
 CHUDDING ENVELOPE--PK--SPRD. --15Z
 DISK CURVE SET NO.19
 CHUDDING
 HDR DIRECTION

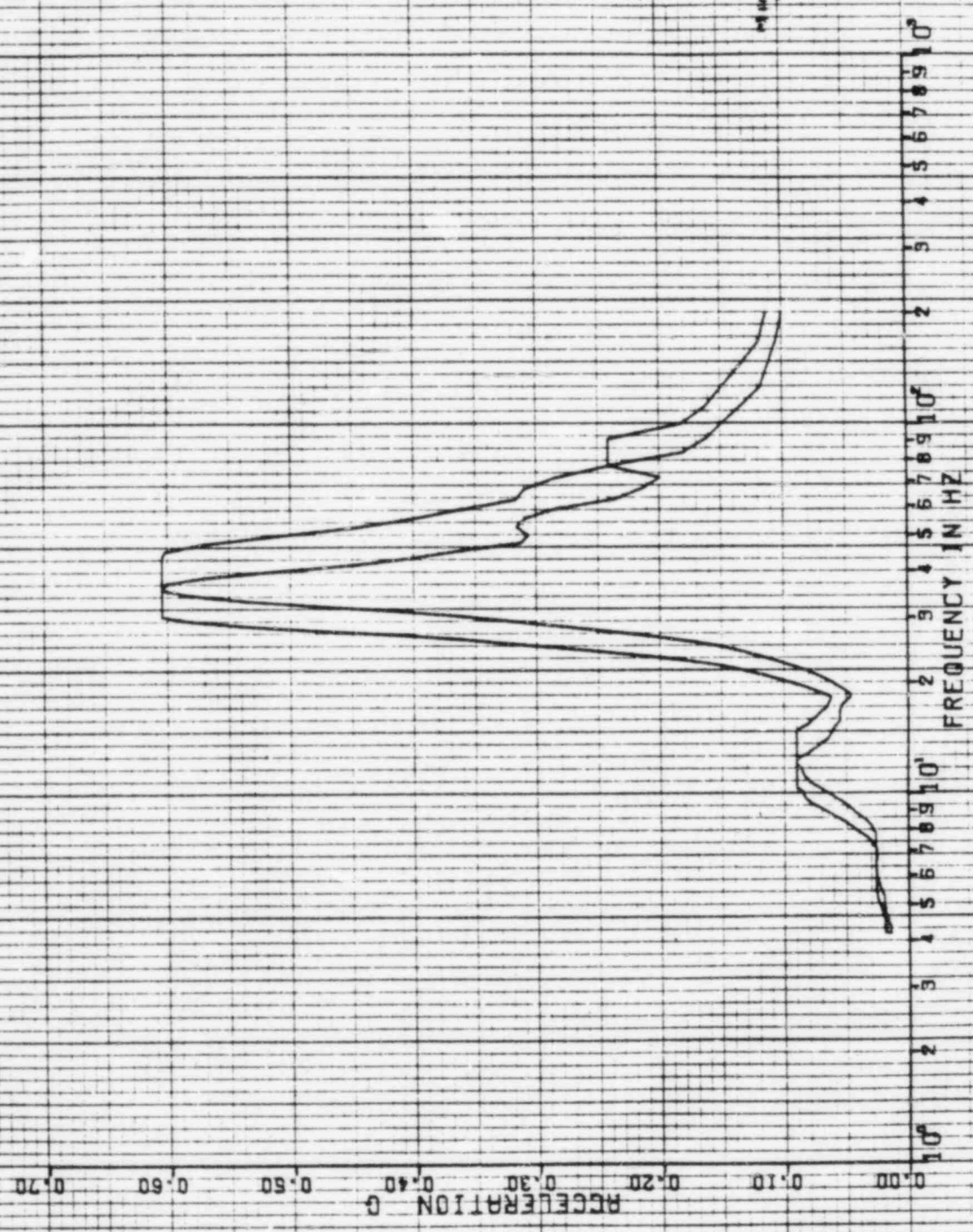
ACCELERATION G
 0.35
 0.30
 0.25
 0.20
 0.15
 0.10
 0.05
 0.00

FREQUENCY IN HZ
 10⁰
 2
 3
 4
 5
 6
 7
 8
 9
 10¹



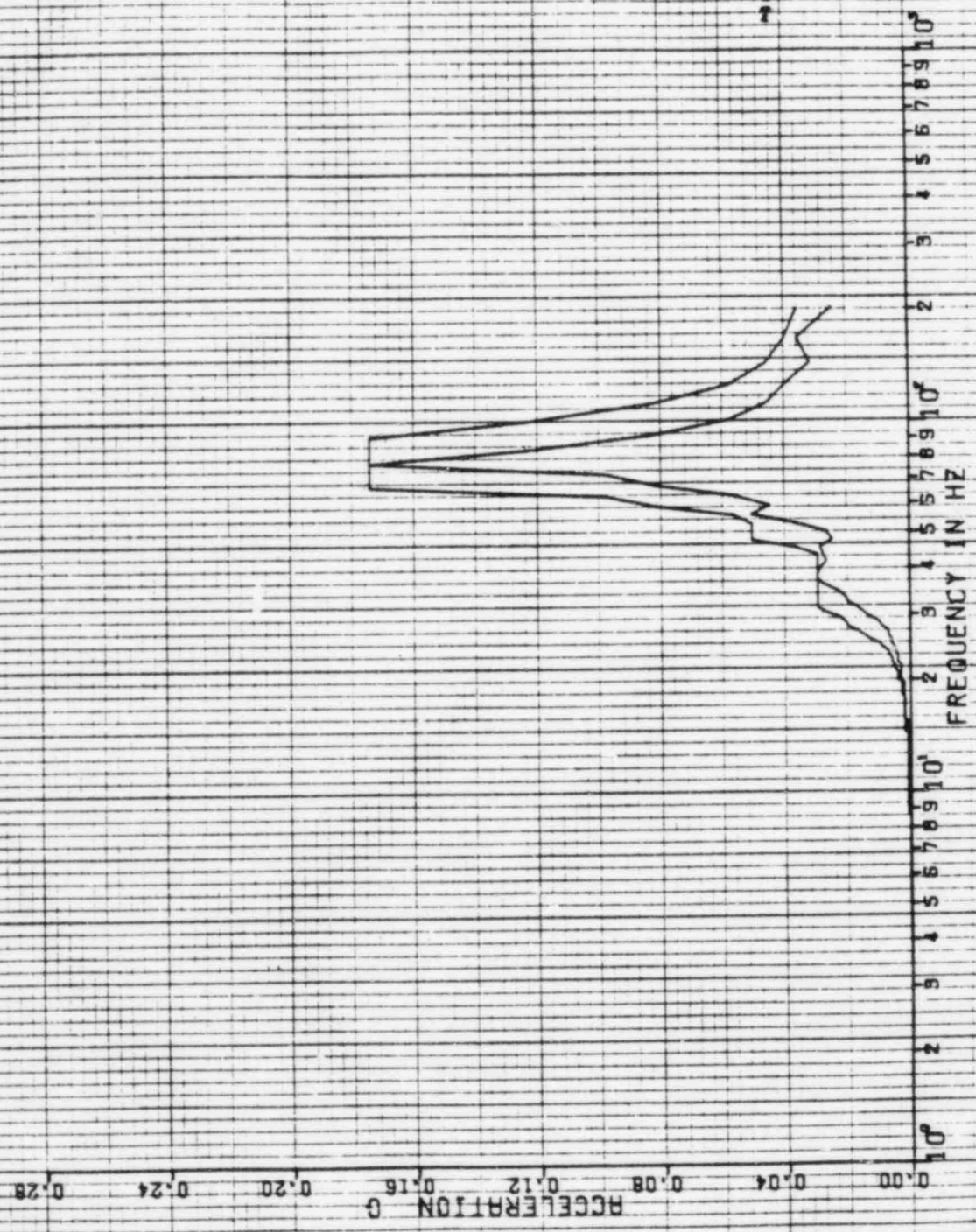
14 MAR 1963
LEO 1A

CHUDDING
SPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC(2210-NAIC)-80E-1909 REV(1)
PKS OF ACC.-REACTOR BLDG.-EL=199.00, MASS=20 SEIS MODEL-PSM
CHUDDING ENVELOPE--PK. SPD.--15Z
DISK CURVE SET NO. 19
VER DIRECTION
DAMPING VALUE = 0.090



14 MAR 1968

PSPECTRA VER 01 LEV 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NR(C)-S0E-1903 REV11
 RRS OF ACC.-REACTOR BLDG.-EL=17.00, MASS=21 SETS MODEL-PSM
 CHUCCING ENVELOPE--PK. SPD. 152
 DISK CURVE SET NO.20
 CHUCCING
 HOR DIRECTION
 DRAPING VALUE = 0.030



15111A

14 MAR 1963

CHUGGING
SPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NR(C)-50E-1903 REV11
RRS OF ACC.-REACTOR BLDG., EL=147.00, MASS=21 5616 MODEL-PSW
CHUGGING ENVELOPE--PK. SPRO--15Z

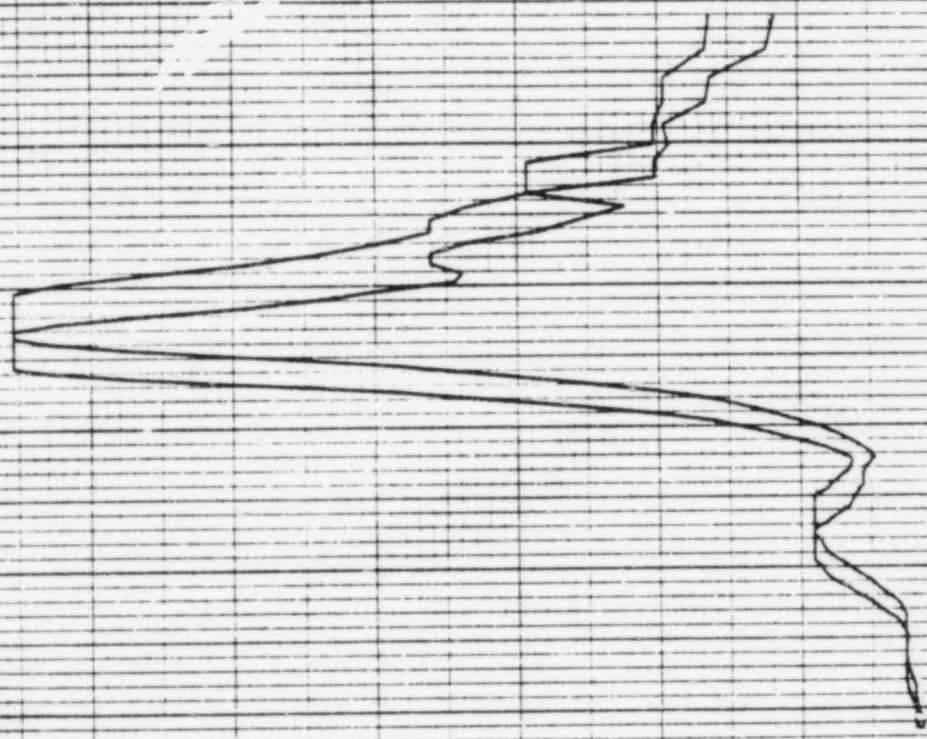
DRIPING VALUE = 0.030

VER DIRECTION

DISK CURVE SET NO. 20

ACCELERATION G
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.01

FREQUENCY IN HZ
10⁰
2 3 4 5 6 7 8 9 10¹
2 3 4 5 6 7 8 9 10¹
2 3 4 5 6 7 8 9 10¹



512A

14 MAR 1989

PSPECTRA VER 01 LEV 08
 DULF STATES UTILITIES-R86 UNIT 1-CALC 12210-NA(C)-SDE-1909 REV 11
 RRS OF ACC-REACTOR BLDG., EL-96.000, MASS-22 SE16 MODEL-DRYWELL
 CHUDDING ENVELOPE--PK--SPRD...152
 DISK CURVE SET NO. 21

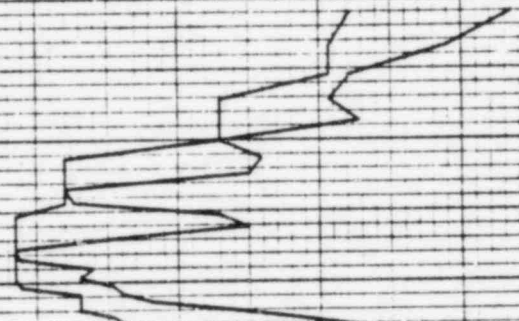
CHUDDING

DAMPING VALUE = 0.090

HDR DIRECTION

ACCELERATION G
 0.00 0.80 1.60 2.40 3.20 4.00 4.80 5.60

FREQUENCY IN HZ
 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²



MS

14 MAR 1985

14 MAR 1985

CHUDDING

PSPECTRA VER 01 LEV 00
DULF STATES UTILITIES-RBS UNIT 1-CALC12210-WHIC1)-50E-1985 REV111
RBS OF ACC.-REACTOR BLOC. FL-96.000, MASS=22 SEIS MODEL-ORWELL
CHUDDING ENVELOPE--PK. SPAD. 1152

DISK CURVE SET NO.21

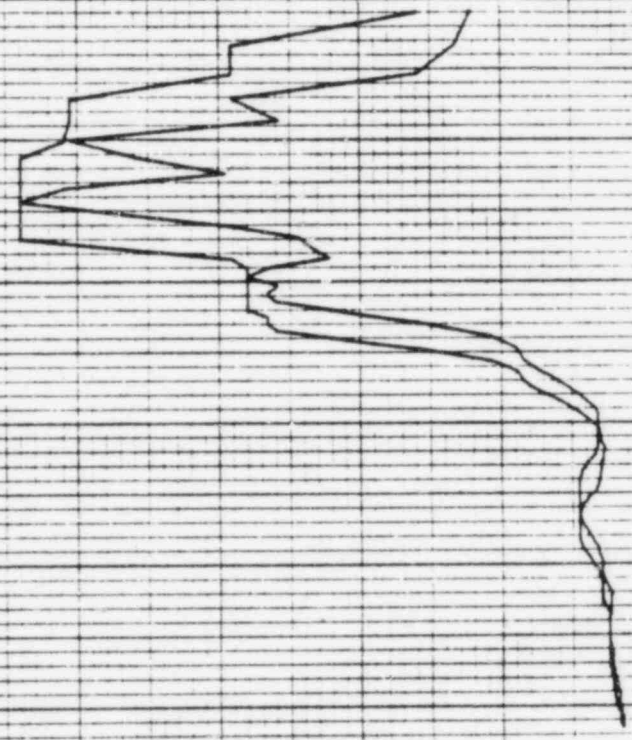
VER DIRECTION

DAMPING VALUE = 0.090

REF 159

ACCELERATION G
0.00 0.08 0.16 0.24 0.32 0.40 0.48 0.56

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



1510A

REF 158

14 MAR 1963

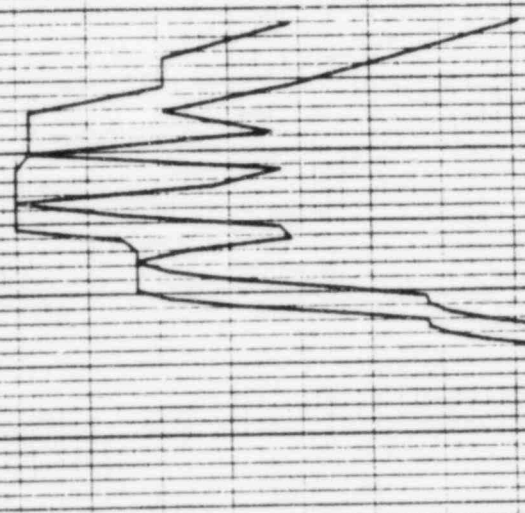
DAMPING VALUE = 0.030

CHUCCING
HOR DIRECTION

PSPECTRA VER 01 LEY 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-WA(C)-SOE-1963 REV(1)
RRS OF ACC.-REACTOR BLDG., EL-114.00 MASS-25 SETS MODEL-ORTWELL
CHUCCING ENVELOPE--PK. SPRD. --15Z
DISK CURVE SET NO.22

ACCELERATION 0 0.40 0.80 1.20 1.60 2.00 2.40 2.80

FREQUENCY IN HZ 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²



Min.

14 MAR 1963

CHUGGING

PEPECTRA VER 01 LEV 08
GULF STATES UTILITIES-R05 UNIT 1-CALC12210-NH(C7-S0E-1909 REV11)
RRS OF ACC--REACTOR BLDG--FL=114.00 MASS=29 SETS MODEL-DRYWELL
CHUGGING ENVELOPE--PK--SPD--15Z

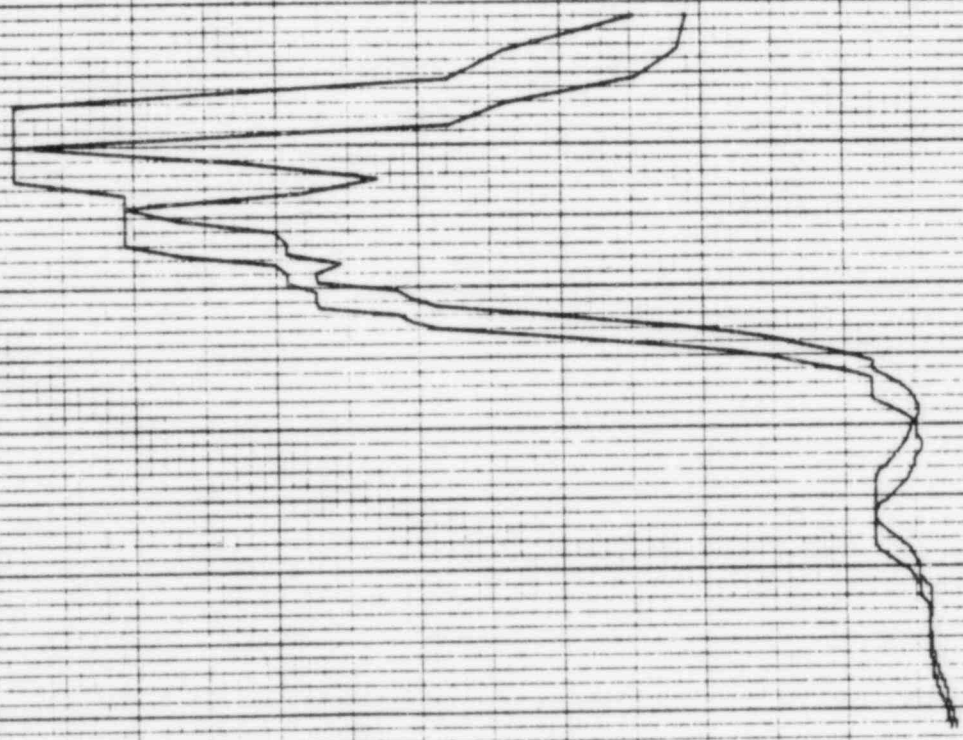
VER DIRECTION

DAMPING VALUE = 0.030

DISK CURVE SET NO.22

ACCELERATION G
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹
10⁰ 2 3 4 5 6 7 8 9 10¹
10⁰ 2 3 4 5 6 7 8 9 10¹



1574 A

14 MAR 1963

PSPECTRA VER 01 LEY 08
 GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NR(C)-602-1903 REV(1)
 RKS OF ACC.-REALTOR BLDG., EL=133.00, MASS=24 SEIS MODEL-DRYWELL
 CHUDDING ENVELOPE--PK.-SPRO. ++152
 DISK CURVE SET NO. 23

CHUDDING

HOR DIRECTION

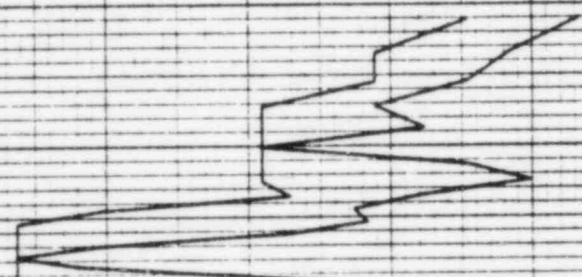
DAMPING VALUE = 0.090

ACCELERATION G

FREQUENCY IN HZ

0.00
 0.40
 0.80
 1.20
 1.60
 2.00
 2.40
 2.80

10⁰
 2
 3
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 6
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 8
 9
 10¹
 10²
 2
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 4
 5
 6
 7
 8
 9
 10³



Min

12 MAR 1969

CHUOINGO

PSPECTRA VER 01 LEV 08

GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NR(C1-58E-1965 REV(1)
RRS OF ACC.-REACTOR BLDG.-EL-199.00 MASS-24 SEIS MODEL-DRYWELL
CHUOINGO ENVELOPE--PK. SPRO. --152

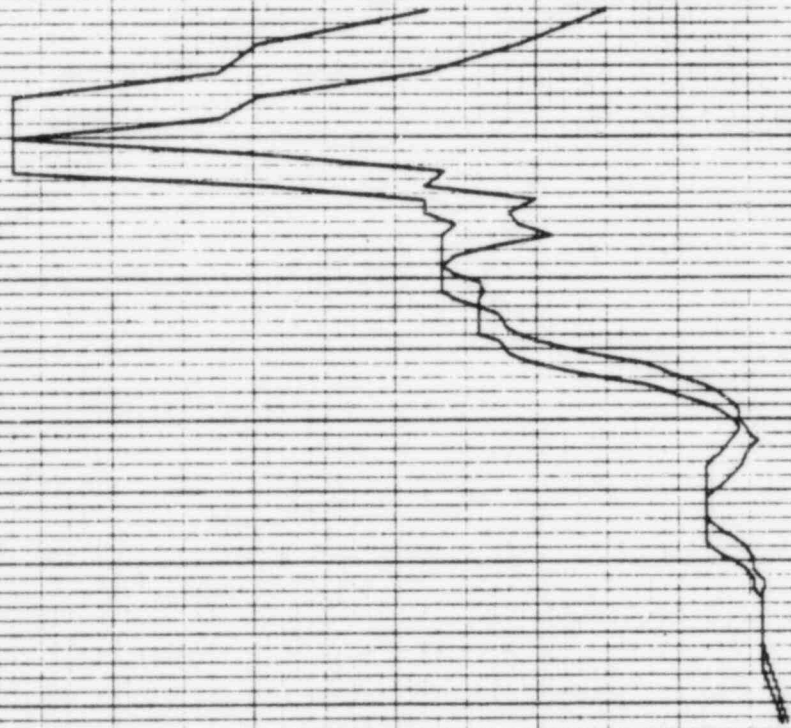
DISK CURVE SET NO. 25

VER DIRECTION

DAMPING VALUE = 0.030

ACCELERATION G

FREQUENCY IN HZ



14 MAR 1983

CHUDDING

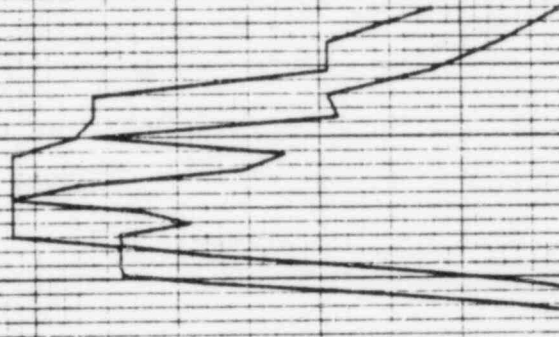
PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-NA(C)-50E-1983 REV(1)
RRS OF ACC.-REACTOR BLDG. EL-143.00, MASS-25 SEIS MODEL-DRYWELL
CHUDDING ENVELOPE--PK--SPD. --15Z
DISK CURVE SET NO.24

DAMPING VALUE = 0.050

HDR DIRECTION

ACCELERATION G
0.00
0.40
0.80
1.20
1.60
2.00
2.40
2.80

FREQUENCY IN HZ
10
2
3
4
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8
9
10



1514

14 MAR 1983

CHUDDING

PSPECTRA VER 01 LEV 08

DULF STATES UTILITIES-RBS UNIT 1-CALC12210-WA(CI)-S&E-1903 REV(1)
RXB OF ACC.-REACTOR BLDG. FL.-43.00.MASS+25 SETS MODEL-ORWELL
CHUDDING.ENVELOPE--PK. SPID. ++152

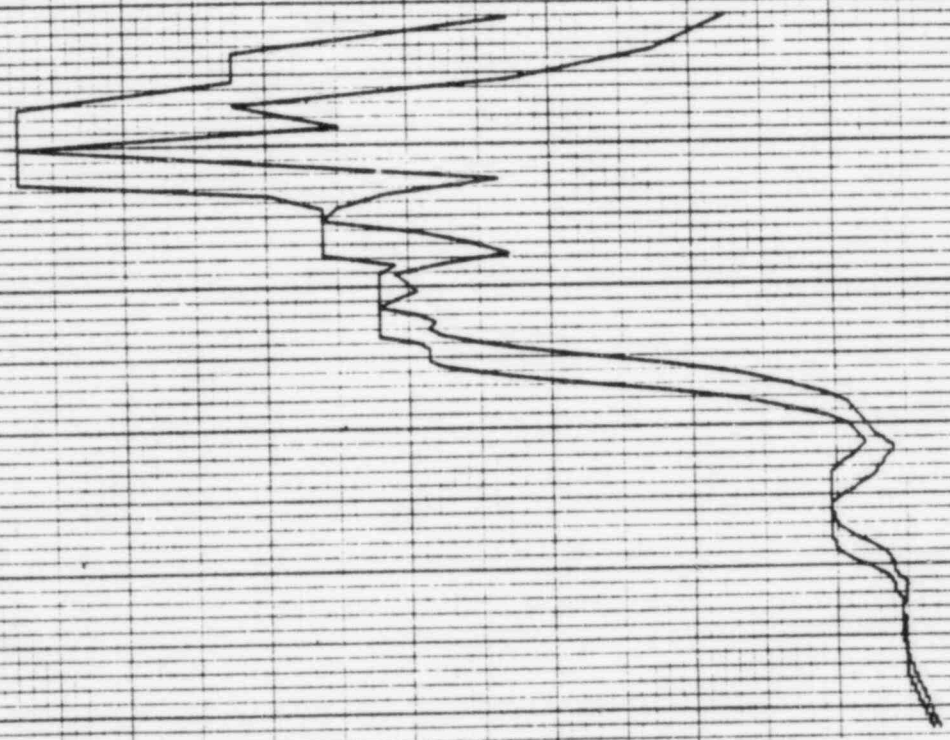
DISK CURVE SET NO.24

VER DIRECTION

DAMPING VALUE = 0.090

ACCELERATION 0 0.04 0.08 0.12 0.16 0.20 0.24 0.28

FREQUENCY IN HZ 10⁰ 2 5 4 5 6 7 8 9 10¹ 2 5 4 5 6 7 8 9 10²



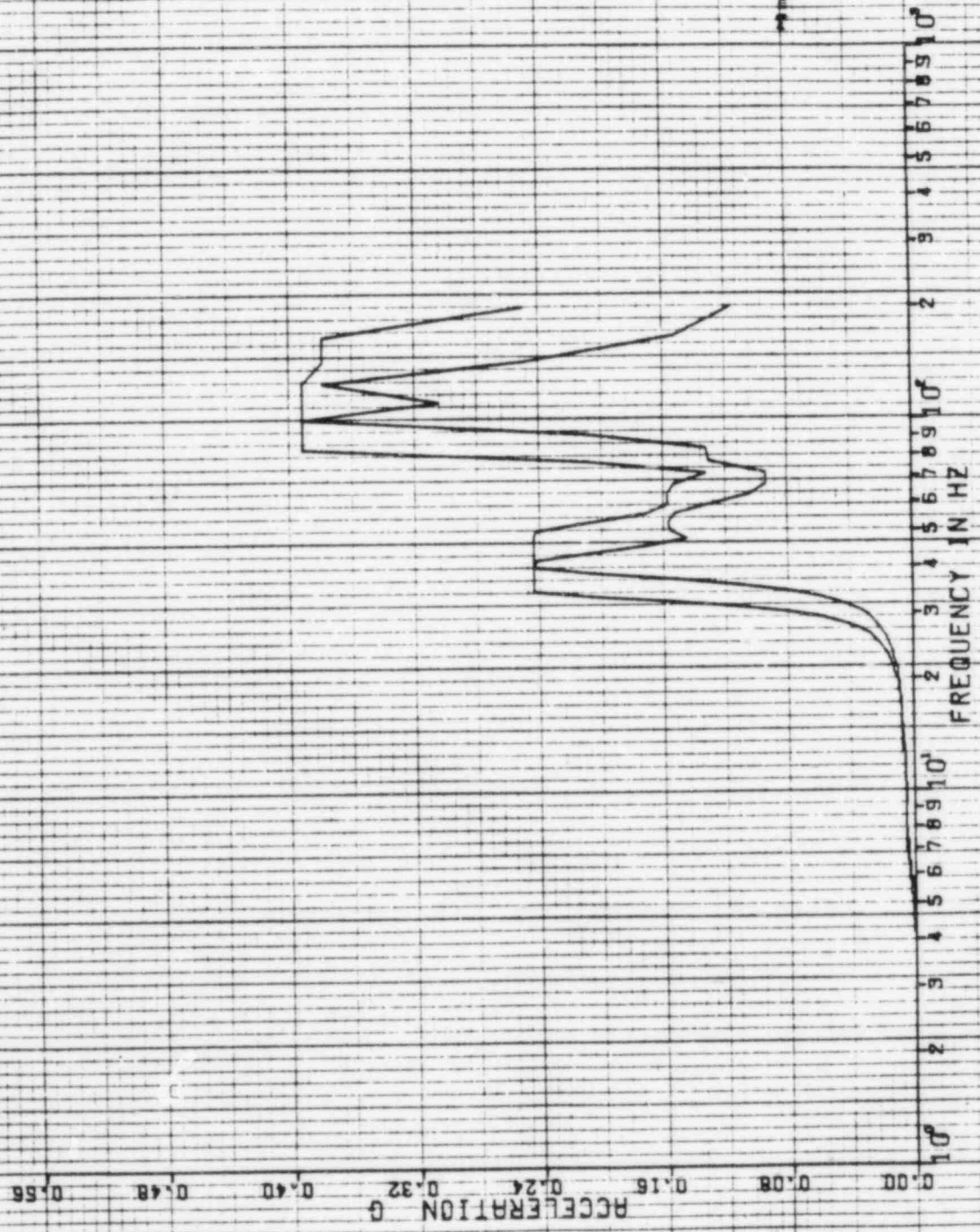
521A

14 MAR 1963

REF 161

PSPECTRA VER 01 LEV 08
 CULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM C1-50E-1903 REV111
 RRS OF ACC.-REACTOR BLDG.-EL-162.00, MASS-26 SEIS MODEL-GRYNELL
 CHUDDING ENVELOPE--PK--SPRD--15Z
 DISK CURVE SET NO. 25

CHUDDING
 HOR DIRECTION
 DAMPING VALUE = 0.030



REF 161

1574

14 MAR 1969

DAMPING VALUE = 0.030

CHUCCING

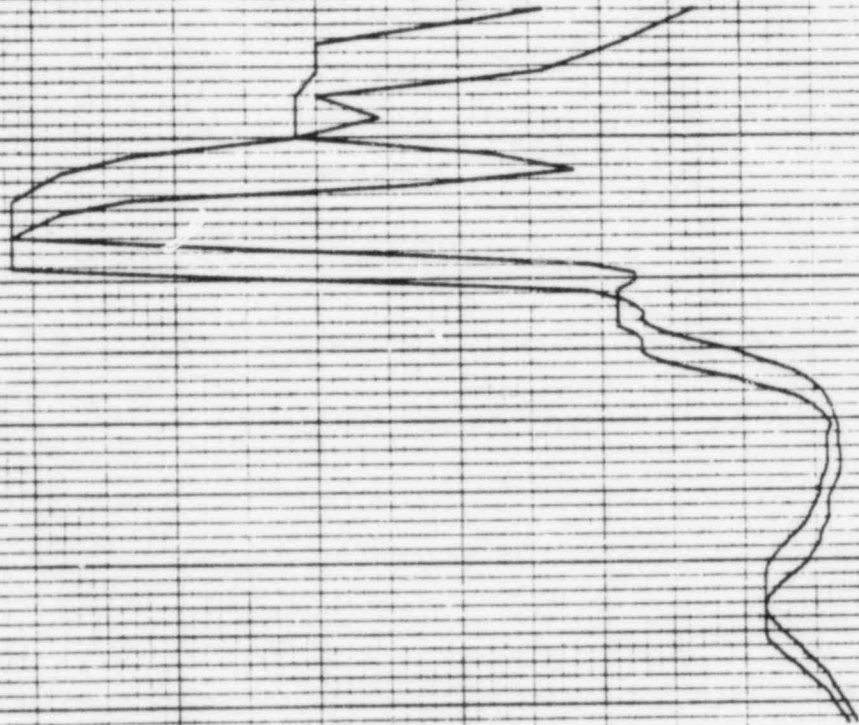
PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC12210-RH(C)-S0E-1969 REV11
RRS OF ACC.-REACTOR BLOG.-EL-162.00 MASS-26 SETS MODEL-DRYWELL
CHUCCING ENVELOPE--PK. SPAD. --15Z

VER DIRECTION

DISK CURVE SET NO.25

ACCELERATION G
0.70 0.60 0.50 0.40 0.30 0.20 0.10 0.00

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



Min

PSPECTRA VER 01 LEY 08

GULF STATES UTILITIES-RBS UNIT 1-CALC 122.0-NR/C1-60E-1903 REV(1)
RRS OF ACC.-REACTOR BLDG., EL-105.00, MASS-27 SETS MODEL-DRYWELL
CHUDDING ENVELOPE--PK--SPRD. --152

DISK CURVE SET NO.26

CHUDDING

NOR DIRECTION

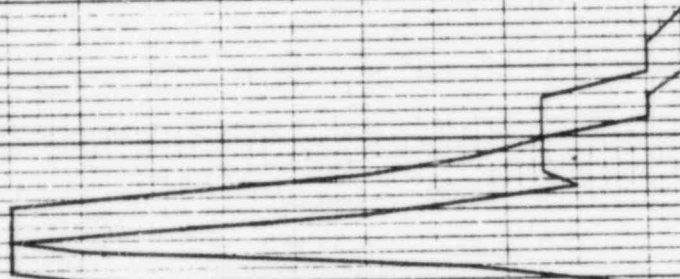
14 MAR 1983

DAMPING VALUE = 0.030

REF 162

ACCELERATION 10^{-1}
0.28 0.24 0.20 0.16 0.12 0.08 0.04 0.00

FREQUENCY IN HZ
 10^0 2 3 4 5 6 7 8 9 10^1



11727A

14 MAR 1963

CHUDDING

PSPECTRA VER 01 LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC 12210-WH(C)-506-1903 REV 11
RRS OF ACC.-REACTOR BLOC.-EL-105-00.MASS-27 SETS MODEL-DRYWELL
CHUDDING ENVELOPE--PK. SPRD. --15X

VER DIRECTION

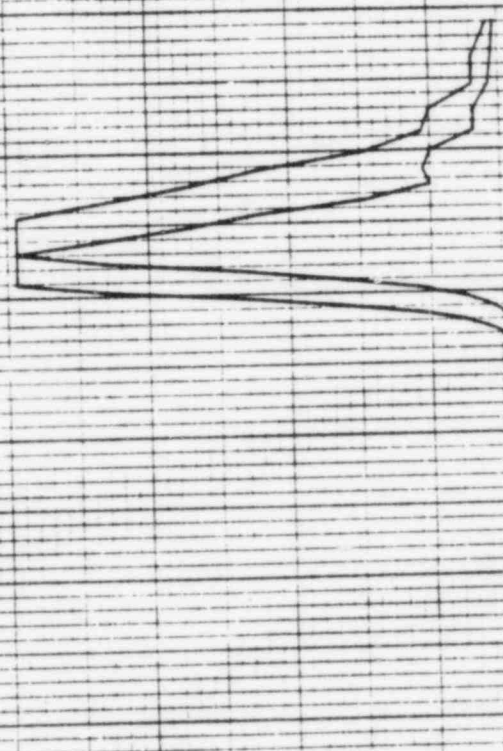
DAMPING VALUE = 0.030

DISK CURVE SET NO-26

REF 162

ACCELERATION G
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40

FREQUENCY IN HZ
10⁰
2
3
4
5
5
6
7
8
9
10¹



1576 A

14 MAR 1985

DAMPING VALUE = 0.030

CHUDDING
HOR DIRECTION

SPECTRA VER D1 LEV 08
DULF STATES UTILITIES-RBS UNIT 1-CALCIPRID-NH(C)-SDE-1985 REV 11
RBS OF REC.-REACTOR BLDG.-EL-119.45.MASS=29 5E16 MODEL-RPV
CHUDDING ENVELOPE--PK-SPRD--15Z
DISK CURVE SET NO.28

ACCELERATION 0 0.02 0.04 0.06 0.08 0.10 0.12 0.14

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



1547A

14 MAR 1985

CHUDDING

PSPECTRA VER DI LEV DB
DULF STRAYES UTILITIES-RBS UNIT 1-CALC12210-NM1C7-SQE-1905 REV(1)
RR6 OF ACC.-REACTOR BLDG., EL=119.46, MR65-29 SETS MODEL-RPV
CHUDDING ENVELOPE--PK..SPRD..+15Z

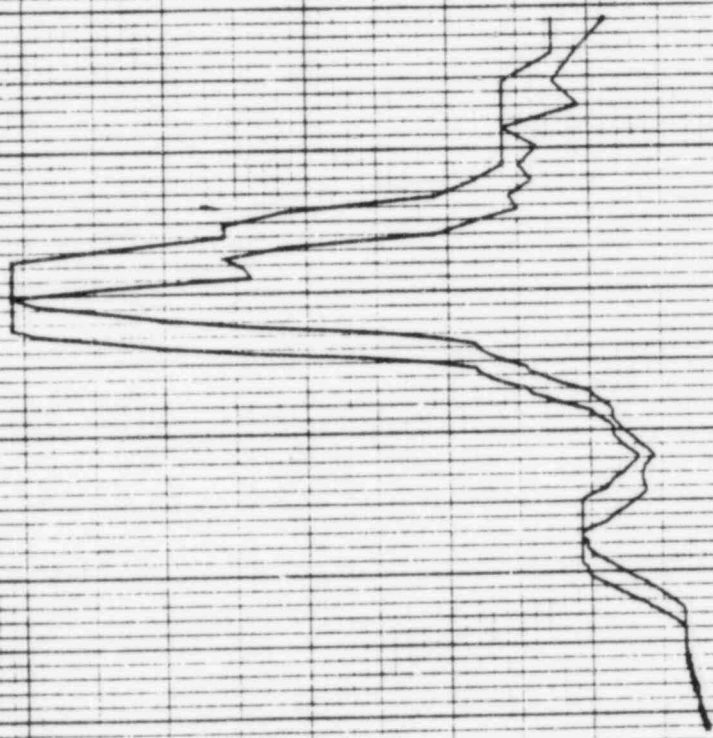
VER DIRECTION

DAMPING VALUE = D.DBD

DISK CURVE SET NO.28

ACCELERATION G
0.00 0.08 0.16 0.24 0.32 0.40 0.48 0.56

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²



1128A

14 MAR 1965

DAMPING VALUE = 0.050

CHUDDING
HOR DIRECTION

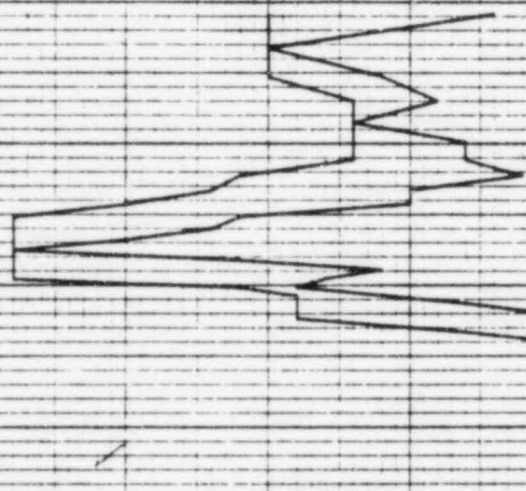
PSPECTRA VER 01 LEV 08

GULF STATES UTILITIES-R86 UNIT 1-CALCIC2210-MH(C1-50E-1909 REV11)
R86 OF ACC.-REACTOR BLDG., EL-162.57, MASS=30 SEIS MODEL-RPV
CHUDDING ENVELOPE--PK. SPRD. 3-15Z

DISK CURVE SET NO.29

ACCELERATION $\times 10^{-1}$
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹
2 3 4 5 6 7 8 9 10²
2 3 4 5 6 7 8 9 10³



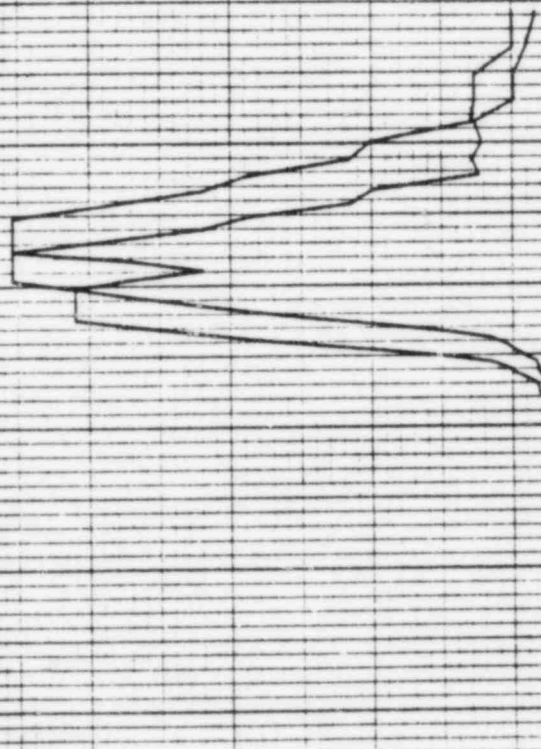
1024 A

14 MAR 1989

PSPECTRA VER 01, LEV 08
 CHUDDING
 CULF STATES UTILITIES-RBS UNIT 1-CALC12210-NM1C1-50E-1903 REV11)
 XRS OF ACC.-REACTOR BLDG.-EL-152.57, MASS=30 5E16 MODEL-RPV
 CHUDDING ENVELOPE--PK. SPRD. +-15Z
 DISK CURVE 5EY NO.29
 VER DIRECTION
 DAMPING VALUE = 0.090

ACCELERATION G
 0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40

FREQUENCY IN HZ
 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²

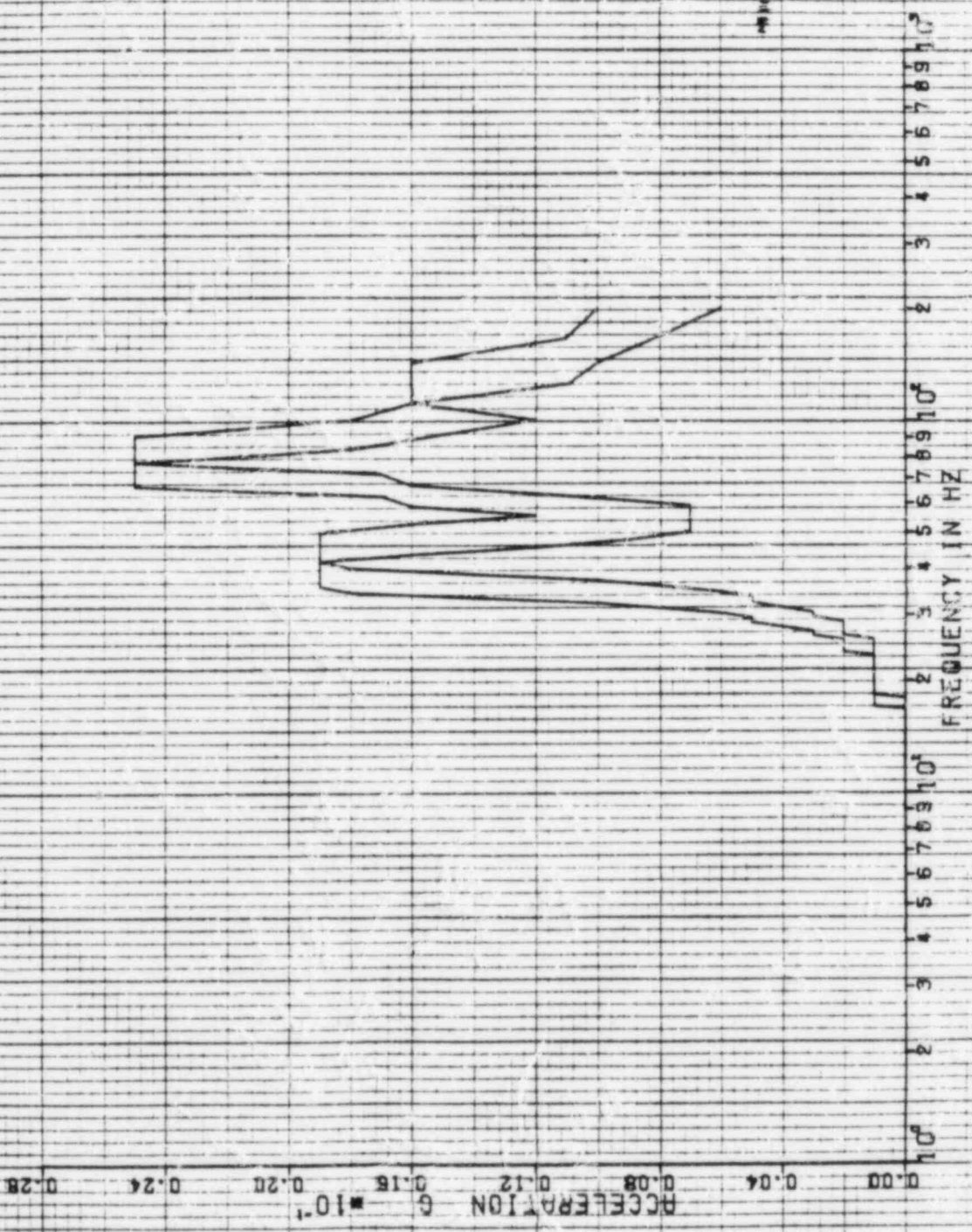


PSPECTRA VER 01 LEV 08
 DULF STATES UTILITIES-RBS UNIT 1-CALCIP210-NM(C)-SDE-1909 REV111
 RRS OF ACC.-REACTOR BLDG., EL=17.69, MASS=51+52 5E16 MODEL-RPV1INT1
 CHUDDING ENVELOPE--PK. SPRD.--15%
 DISK CURVE SET NO.90

CHUDDING
 HOR DIRECTION
 DRMPIND VALUE = 0.090

14 MAR 1985

REF 165



REF 165

14 MAR 1965

CHUGGING

PSPECTRA VER 01 LEV DB
DRLF STATES UTILITIES-RBS UNIT 1-CALCIPPID-NM(C)-6DE-1909 REV(1)
RRS DF ACC.-REACTOR BLDG.-EL=117.53.MR65=91.52 5E16 MODEL-RPV(INT)
CHUGGING ENVELOPE--PK. 5PRD..5.15Z

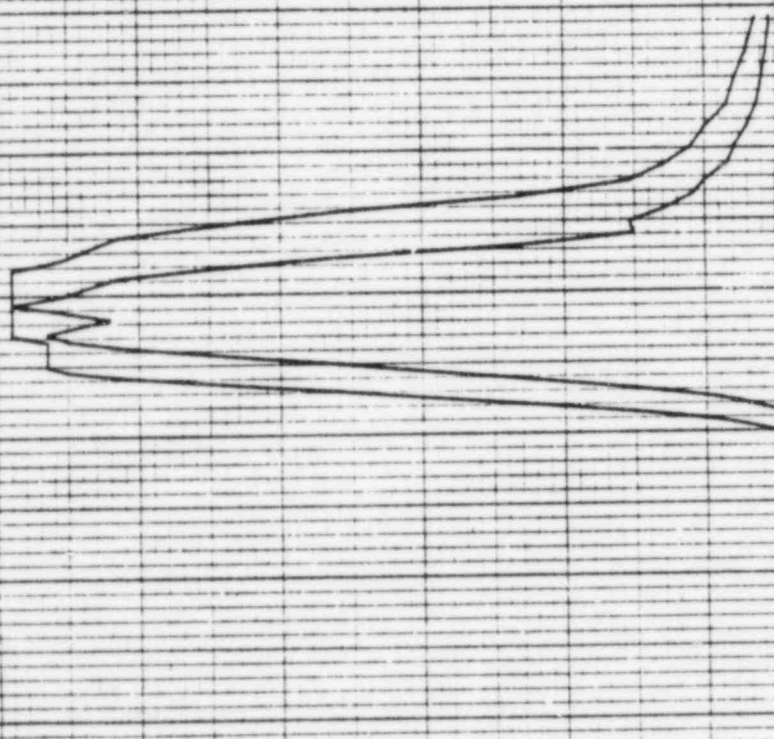
VER DIRECTION

DAMPING VALUE = 0.050

DISK CURVE SET NO. 90

ACCELERATION 0 0.20 0.40 0.60 0.80 1.00 1.20 1.40

FREQUENCY IN HZ 10⁰ 2 3 4 5 6 7 8 9 10¹ 2 3 4 5 6 7 8 9 10²



14 MAR 1965

REF 166

PSPECTRA VER DJ LEV 08
GULF STATES UTILITIES-RBS UNIT 1-CALC1221D-MMICJ-SOE-1903 REV111
RR6 OF ACC.-REACTOR BLDG.-EL=158.09, MASS=59 SEIS MODEL-RPV
CHUDDING ENVELOPE--PK. SPAD. 4-15Z
DISK CURVE SET MD.91

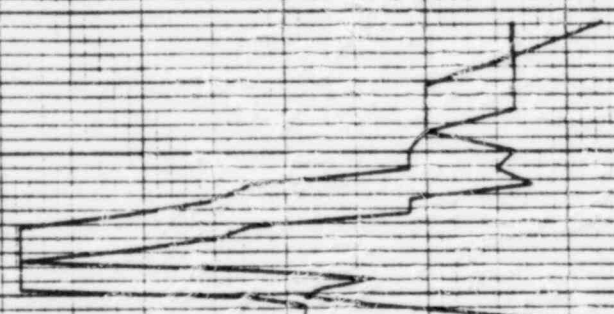
CHUDDING

HDR DIRECTION

DAMPING VALUE = 0.050

ACCELERATION $G \times 10^{-1}$
0.00 0.08 0.16 0.24 0.32 0.40 0.48 0.56

FREQUENCY IN HZ
10⁰ 2 3 4 5 6 7 8 9 10¹



1575A

REF 166

14 MAR 1965

DAMPING VALUE = 0.050

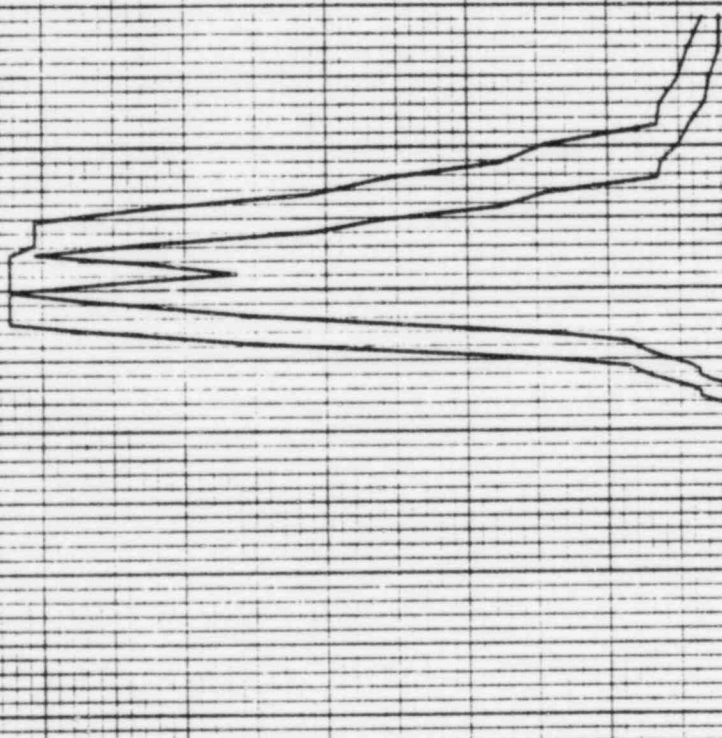
SPECTRA VER DI LEV 08
 DULF STATES UTILITIES-R86 UNIT 1-CALCIP210-NM17-SDE-1903 REV117
 RRS OF ACC.-REACTOR BLDG.-EL-198.09, MASS-99 SE16 MODEL-RPV
 CHUDDING ENVELOPE--PK. 5PRD. 5-15Z
 DISK CURVE SET NO. 91

CHUDDING

VER DIRECTION

ACCELERATION 0 0.10 0.20 0.30 0.40 0.50 0.60 0.70

10⁰
 2 3 4 5 6 7 8 9 10¹
 2 3 4 5 6 7 8 9 10²
 2 3 4 5 6 7 8 9 10³
 FREQUENCY IN HZ

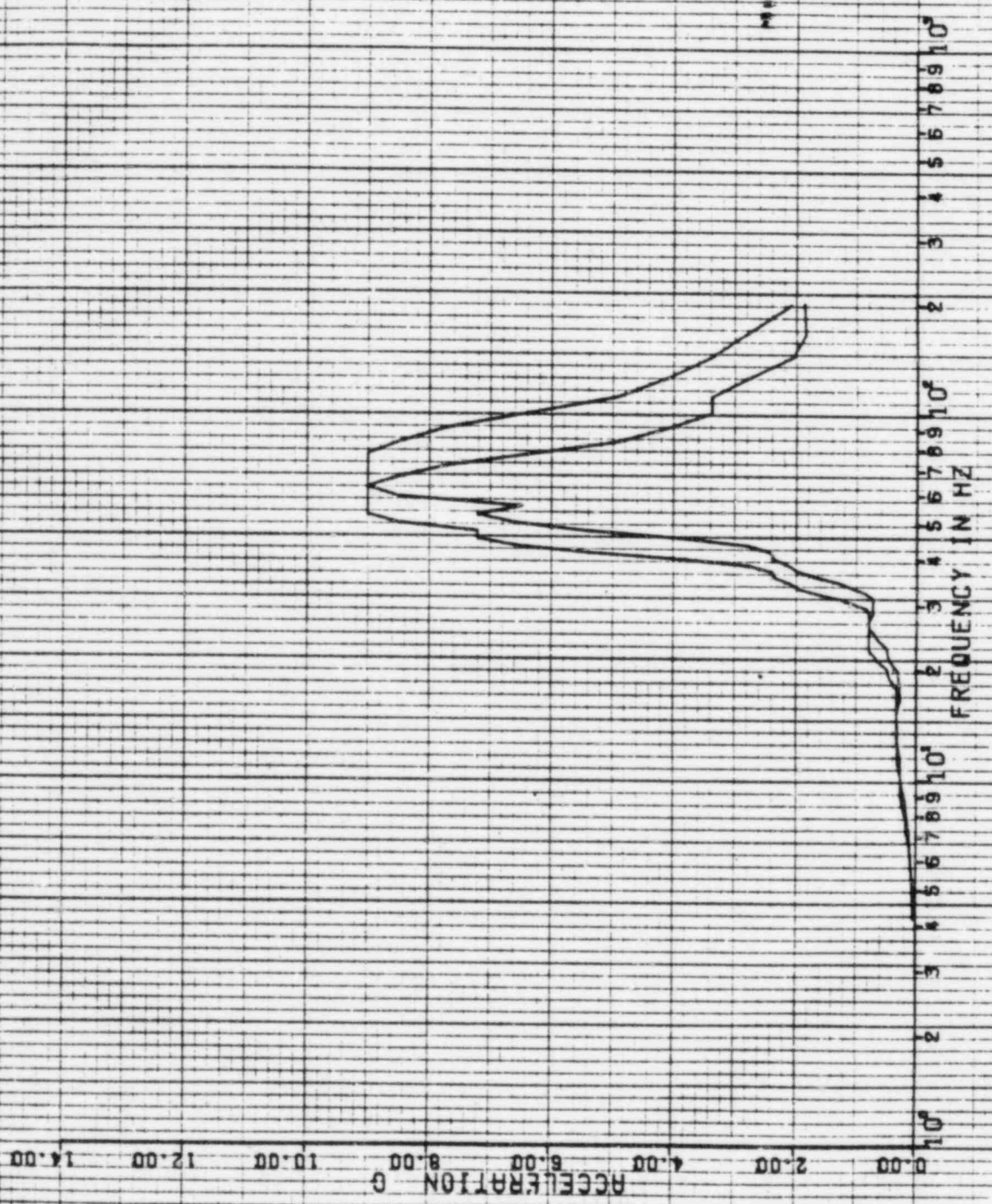


14 MAR 1985
175A

PSPECTRA VER DA LEV DB
DULF STAVES UTILITIES-RBS UNIT 1-CALCICP210-NMIC)-SDE-1808 REV11)
RRS DF ACC.-REACTOR BLDG.-EL-91.250, WEIR WALL
CHUDDING ENVELOPE--PK. SPKD. --15Z
DT6K CURVE SET NO.93

CHUDDING
HDR DIRECTION
DRAPING VALUE = 0.090

REF 167



1777 R

14 MAR 1965

REF 167

PSPECTRA, VER 01, LEV 08
DULF STATES UTILITIES-R86 UNIT 1-CALCIC2210-NH C1-SDE-1903 REV:11
R86 OF ACC.-REACTOR BLDG., ELE-91.250, WEIR WALL
CHUDDING ENVELOPE--PK. 5PRD. 1-15Z
DISK CURVE SET NO.93

CHUDDING

DAMPING VALUE = 0.090

VER DIRECTION

ACCELERATION 0 0.80 1.20 1.60 2.00 2.40 2.80

10⁰ 2 3 4 5 6 7 8 9 10¹
10⁰ 2 3 4 5 6 7 8 9 10¹
10⁰ 2 3 4 5 6 7 8 9 10¹
FREQUENCY IN HZ

