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Determination of Floor Response Spectra for the
Brookhaven HFBR Reactor Building Structure

By

M. Subudhi and H. Goradia
Structural Analysis Group
Department of Nuclear Energy

November 1978

BROOKHAVEN NATIONAL LABORATORY
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ABSTRACT

In order to perform the dynamic analysis of various structural components of the HFBR reactor building at Brookhaven National Laboratory (BNL) subjected to seismic disturbances, it is necessary to obtain the floor response spectra of the primary structure. The mathematical model includes the four floor levels of the internal structure, the dome, and soil spring effects. The standard time history analysis is adopted to obtain the response spectrum for each floor of the internal structure. This report summarizes the results both in tabular and graphical form for various damping values.

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INTRODUCTION

During a seismic event the foundation mat of the reactor building will be displaced by the ground motion. Since this motion is relatively rapid, it will cause deformations throughout the structure. Depending on the structure, large relative motions could be induced because of the differential movements between the supports and masses of the structure. In order to survive these earthquake motions, both the parent structure and the structural components attached to it must be designed to withstand these deformations.

The Brookhaven HFBR Reactor Building structure consists of an internal structure completely surrounded by a steel dome. Both structures are supported on the same floor mat. The internal structure has four floor levels: The equipment level, the experimental level, the balcony level, and the operational level. The internal structure is constructed of reinforced concrete and steel. The dome structure consists of a cylindrical base with a hemispherical cap at the top, the entire structure being made of steel beams and plates.

The purpose of this work was to determine the response spectra for each floor of the internal structure corresponding to seismic excitations of the ground. The work was divided into three separate phases: selection of the design ground motion for the site, development of an analytical model of the reactor building, and analysis of the model when subjected to the selected ground motion.

SELECTION OF DESIGN SPECTRUM

This phase of the work is the most important part in the seismic evaluation of any structure. It requires a great deal of data from past earthquakes, fault locations, and other geological studies of the plant site. Fortunately, an extensive study of the seismic characteristics of this region had already

been done by Newmark and Hall.¹ On the basis of their review, it was recommended that the Design Basis Earthquake for the BNL facility be characterized by a peak transit horizontal ground acceleration of 0.2 g. Also, the operation basis earthquake (OBE) concept was not applicable to this plant.

In order to establish the design spectra to the ground motion at the Brookhaven facility, Newmark and Hall also recommended other parameters necessary for the calculations. Since the plant operates at a low pressure and temperature, 200 psi and 120-140°F respectively, a cumulative probability level of 70 percent was specified instead of 84.1 percent normally used. The corresponding spectrum amplification factors for horizontal elastic response are summarized in Table 1, as recommended in the above report.

After a critical study of the soil characteristic for a Long Island site, it was recommended that a velocity to acceleration ratio ($\frac{v}{a}$) of 48 in/sec/g be used in the calculations. Also, to ensure that the spectrum exhibits an adequate band (frequency) width to accommodate a possible range of earthquakes, it was recommended that $\frac{ad}{v^2}$ be taken equal to 6.0. In the above, a, v, and d are the maximum values of ground motion [acceleration (in/sec²), velocity (in/sec), and displacement (in)], respectively.

In the present study the structural deformations are limited to the elastic regime. Hence, a ductility factor (μ) of 1.0 has been used in establishing the design spectra. Reference (1), however, includes various values of this factor and it would be possible to generate a new design spectrum with ductility effects in case any structural component was found to exhibit inelastic deformations.

Based on the recommended parameters, elastic design spectra for a maximum ground acceleration of 0.2 g were developed and are shown in Figure 1. These were constructed using the concepts and the procedures described in the Newmark report.¹ Table 2 summarizes the spectrum values corresponding to different critical damping levels. For detailed calculations see Appendix I.

For vertical excitation the recommended response spectrum was taken to be 2/3 of that in the horizontal direction for all frequencies.

DEVELOPMENT OF AN ANALYTICAL MODEL

The analytical model used to represent the structure under study should possess all the earthquake resisting element characteristics of the real structure^{2,3}, such as, flexural rigidity of the framework, shear wall strength, etc. Since the structure acts as a filter allowing frequencies of its own natural frequencies to be predominantly magnified, the model should possess all the frequency characteristics of the real system. Ground springs which simulate the soil should be considered in the model.

The HFBR building consists of an internal structure with four floor levels and an outer steel dome structure. Both structures are raised from the same foundation but have no structural connection between them. Since the present study is intended to obtain the response spectra for the four floors due to the ground motions, the dome structure is treated only as an added mass acting on the foundation mat. The internal structure, constructed of reinforced concrete, steel beams, and plates, is included in the analytical model.

The full analytical model is shown in Figure 2. A two-dimensional approximation of the model is shown in Figure 2(a). The models are formed out of lumped mass and beam elements. Each floor of the internal structure consists

of several mass points connected by rigid beam elements. The total weight of each floor given in the FSAR⁴ is equally distributed among the mass points representing that floor. Each floor is connected to each other via beam elements whose stiffnesses were calculated from the flexural deflection of the full system model using the unit load method. Since the entire structure is a symmetrical one, the total dome mass was divided into two equal parts and each mass was connected to the ground floor mat via a beam element whose stiffness was calculated in a manner similar to the internal structure. The detailed calculations of these stiffnesses are given in Appendix II.

Both the dome and the internal structures are fixed to the ground floor mat which is submerged to some extent in the soil. In order to represent the soil boundary conditions on the sides and at the base, equivalent elastic springs are introduced at appropriate locations.⁵ The soil stiffness to horizontal motions at any depth below ground level is given by:

$$k_x = n_h x \quad (1)$$

where n_h = coefficient of modulus of subgrade reaction
 $= 75 \text{ lbs/in}^3$ for this site.

The base resistance to translational and rotational motions is evaluated by treating the soil as an elastic half space. The translational spring stiffness k_y and rotational spring stiffness k_θ are obtained from the following equations.⁵

$$k_y = \frac{32(1-\nu)Gr_o}{7-8\nu} \quad (2)$$

$$k_{\theta} = \frac{8Gr_o^3}{3(1-\nu)} \quad (3)$$

where G = shear modulus of soil

$$= 12.6 \times 10^3 \text{ psi}$$

ν = poisson ratio of soil = 0.3

r_o = radius of raft foundation of the base = 70.5 ft.

The discretation of the soil springs, both magnitude and distribution, was performed in accordance with the procedures developed by Arya, et al.⁵ There are seven vertical springs each having a stiffness of 6.1×10^6 lbs/in. The rotational spring constant was found to be 2.91×10^{13} in-lb/rad. The stiffness of the horizontal spring at the experimental floor is 2.7×10^5 lbs/in. The stiffness of the other three horizontal springs on the foundation mat from top to bottom were found to be 6.075×10^5 , 6.75×10^5 , and 4.306×10^7 lb/in respectively. The spring constant at the bottom level of the mat is equal to the sum of the stiffness obtained from Equation (2) and the lateral stiffness obtained from the sides at this level.

METHOD OF ANALYSES

This part of the work consists of three separate analyses. First, the design spectrum developed in the first section, Selection of Design Spectrum, was used to obtain a number of time histories corresponding to a random phase shift. The worst possible time history was then chosen for our study. The Modified SIMEAR-SPECTRA Computer Code⁶ was used for the above analyses.

Once the ground motion time history was obtained, it was used as an input forcing function exciting the structural model developed in the second section,

Development of an Analytical Model. SAP V,⁷ an all purpose finite element structural analysis code, was used for the structural analysis. The structural damping was considered to be 7 percent as per the Regulatory Guide⁸ for reinforced concrete structures and the SSE. The output of this analysis provided time histories of each floor level.

Further, each floor response time history was then used to develop floor response spectra for various levels of damping. The SPECEQ Code⁹ was used for these analyses. The Regulatory Guide¹⁰ was followed in order to break the frequency scale for obtaining the corresponding maximum acceleration amplitudes.

RESULTS

Figure 1 shows the design spectrum of the ground motion as suggested by Newmark and Hall. This represents a maximum ground acceleration of 0.2 g. The worst possible time history corresponding to this design spectrum is shown in Figure 3 and in digitized form in Table 3.

The stick model of the reactor building is shown in Figure 2 and Figure 2(a). The nodal coordinates and ground spring stiffnesses are tabulated in Tables 4 and 5 respectively. All other pertinent data are shown on the figures. Tables 6 and 7 summarize the first ten fundamental frequencies and corresponding mode shapes of the building. The first two modes are clearly soil modes whereas the higher modes are structural ones. The first mode corresponds to rocking and horizontal motions while the second mode corresponds to vertical motion of the structure. Figures 4 through 7 show the acceleration time history of each floor level corresponding to this worst case ground excitation.

Each floor time history was used to develop floor response spectra for various damping ratios. Figures 8 through 23 show response spectra for all the four floor levels for 0, 2, 5, and 7 percent of critical damping. These results

are summarized in tabular form in Tables 8 through 11. The digitized floor time histories are also included in these tables.

These floor response spectra were used for the seismic analysis of any structural components already existing or to be installed in the reactor building. For damping ratios other than those included in the report, the spectrum values were determined by interpolating between the values presented here.

REFERENCES

1. Newmark, N. M., Hall, W. J., Final Report on Seismic Review of HFBR Unit at Brookhaven National Laboratory, November 21, 1977.
2. Newmark, N. M., Hall, W. J., Procedures and criteria for earthquake resistant design, NBS Building Science Service 46, Boulder, Colorado, pp. 209-326, February 1973.
3. Design response spectra for seismic design of nuclear power plants, U.S. NRC Regulatory Guide, No. 1.60, October 1973.
4. Hendrie, J. M., FSAR on the Brookhaven HFBR Reactor, BNL Report No. 7661, Vol. I and II, April 1964.
5. Arya, A. S., et al., Seismic analysis of reactor building of an atomic power plant on alluvial soil, Sixth World Conference on Earthquake Engineering, V-8, New Delhi, January 1977.
6. SIMEAR-SPECTRA: A Computer Code for Generating Time History from a Given Spectra, University of CA at Berkeley, (modified by BNL Structural Analysis Group), December 1972.
7. Bathe, K. J., Wilson, E. L., Peterson, F. E., SAP V: A Structural Analysis Program for Static and Dynamic Response of Linear Systems, University of CA at Berkeley, April 1974.

8. Damping values for seismic design of nuclear power plants, U.S. NRC, Regulatory Guide, No. 1.61, October 1973.
9. Nigam, N. C., Jennings, P. C., SPECEQ: Digital Calculation of Response Spectra from Strong Motion Earthquake Records, CA Institute of Technology, Pasadena, CA, June 1968.
10. Development of floor design response spectra for seismic design of floor-supported equipment or components, U.S. NRC Regulatory Guide, No. 1.122, September 1976.

APPENDIX I: DESIGN GROUND SPECTRUM CALCULATIONS

The values for the bounds for the spectrum sketched in Figure 1 were computed in accordance with the foregoing discussion as follows:

For maximum ground motions:

$$a = 0.2 \text{ g}$$

$$v = 48 \times 0.2 \text{ g} = 9.6 \text{ in/sec}$$

$$d = \frac{6 \times v^2}{a} = \frac{6 \times (9.6)^2}{0.2 (386)} = 7.2 \text{ in}$$

For Elastic Spectrum Bounds corresponding to 5 percent damping, the above values are multiplied by the amplification factors given in Table 1.

$$A = 0.2 \text{ g} \times 2.41 = 0.482 \text{ g}$$

$$V = 9.6 \times 1.96 = 18.816 \text{ in/sec}$$

$$D = 7.2 \times 1.69 = 12.168 \text{ in}$$

Similar calculations were carried out for different damping ratios.

APPENDIX II: FLEXURAL STIFFNESS CALCULATIONS OF THE INTERNAL AND DOME STRUCTURE

Internal Structure

Referring to Figure 2(a), the vertical beam stiffnesses are given by the following expressions:

$$\begin{aligned}
 k_{11} &= 2\left(\frac{12EI_2}{l_2^3}\right) + 2\left(\frac{12EI_3}{l_2^3}\right) \\
 k_{12} &= k_{21} = -2\left(\frac{12EI_3}{l_3^3}\right) \\
 k_{13} &= k_{31} = -2\left(\frac{12EI_2}{l_2^3}\right) \\
 k_{22} &= 2\left(\frac{12EI_3}{l_3^3}\right) + 2\left(\frac{12EI_3}{(l_2-l_3)^3}\right) \\
 k_{23} &= k_{32} = -2\left(\frac{12EI_3}{(l_2-l_3)^3}\right) \\
 k_{33} &= 2\left(\frac{12EI_2}{l_2^3}\right) + 2\left(\frac{12EI_1}{l_1^3}\right) + 2\left(\frac{12EI_3}{(l_2-l_3)^3}\right)
 \end{aligned} \tag{1}$$

The finite element model of the internal structure was further subjected to unit loads at its respective floors, and the stiffnesses calculations are as follows:

$$\begin{aligned}
 k_{11} &= 0.52 \times 10^9 \text{ lb/in} \\
 k_{12} &= k_{21} = .0067 \times 10^9 \text{ lb/in} \\
 k_{13} &= k_{31} = -.072 \times 10^9 \text{ lb/in} \\
 k_{22} &= .0138 \times 10^9 \text{ lb/in} \\
 k_{23} &= k_{32} = -.0083 \times 10^9 \text{ lb/in} \\
 k_{33} &= .396 \times 10^9 \text{ lb/in}
 \end{aligned} \tag{2}$$

Assuming:

$$E = 30 \times 10^6 \text{ psi}$$

$$l_1 = 268 \text{ in}$$

$$l_2 = 336 \text{ in}$$

$$l_3 = 156 \text{ in}$$

The only unknowns, I_1 , I_2 , and I_3 are calculated from (1) and (2). Since six equations exist for three unknowns, the final and error attempt was adopted to match the best set of I 's. The final result yields to:

$$I_1 = 7.34 \times 10^6 \text{ in}^4$$

$$I_2 = 2.30 \times 10^6 \text{ in}^4$$

$$I_3 = 4.41 \times 10^4 \text{ in}^4$$

Dome Structure

The center of gravity of this structure was calculated to be at a height of 665 in from the floor mat. The stiffness of the vertical beam connecting to the mass at c.g. was calculated in a manner similar to the above procedure. They are given as:

$$K = Z \left(\frac{3EI}{l^3} \right) = 6.23 \times 10^7 \text{ lb/in}$$

With:

$$E = 30 \times 10^6 \text{ psi}$$

$$l = 665 \text{ in}$$

I was found to be equal to $1.02 \times 10^8 \text{ in}^4$.

FIGURE 1.
GROUND MOTION DESIGN SPECTRUM,

BEAM DATA: ($E=30 \times 10^6$ psi)

$$I_1 = 7.34 \times 10^6 \text{ in}^4$$

$$I_2 = 2.30 \times 10^6 \text{ in}^4$$

$$I_3 = 4.41 \times 10^4 \text{ in}^4$$

$$I_4 = 1.02 \times 10^8 \text{ in}^4$$

SOIL SPRING DATA:

$$k_b = 6.1 \times 10^6 \text{ #/in}$$

$$k_\theta = 2.91 \times 10^{13} \text{ in}^2/\text{rad}$$

$$k_1 = 2.7 \times 10^5 \text{ #/in}$$

$$k_2 = 6.075 \times 10^5 \text{ #/in}$$

$$k_3 = 6.75 \times 10^5 \text{ #/in}$$

$$k_4 = 4.306 \times 10^7 \text{ #/in}$$

MATHEMATICAL MODEL OF THE HFBR REACTOR BUILDING

FIGURE 2

COMPUTER MODEL OF THE HFBR REACTOR BUILDING

FIGURE 2A

FIGURE 3

GROUND ACCELERATION TIME HISTORY CORRESPONDING TO 0.2 DESIGN SPECTRUM.

FIGURE 4

ACCELERATION TIME HISTORY OF EQUIPMENT LEVEL.

FIGURE 5

ACCELERATION TIME HISTORY OF EXPERIMENTAL LEVEL.

FIGURE 6
ACCELERATION TIME HISTORY OF BALCONY LEVEL.

FIGURE 7
ACCELERATION TIME HISTORY OF OPERATIONAL LEVEL.

FIGURE 8

FLOOR RESPONSE SPECTRUM FOR 0.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EQUIPMENT LEVEL - 2-D MODEL.

FIGURE 9

FLOOR RESPONSE SPECTRUM FOR 2.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EQUIPMENT LEVEL - 2-D MODEL.

FIGURE 10

FLOOR RESPONSE SPECTRUM FOR 5.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EQUIPMENT LEVEL - 2-D MODEL.

FIGURE 11

FLOOR RESPONSE SPECTRUM FOR 7.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EQUIPMENT LEVEL - 2-D MODEL.

FIGURE 12

FLOOR RESPONSE SPECTRUM FOR 0.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EQUIPMENT LEVEL - 2-D MODEL.

FIGURE 13

FLOOR RESPONSE SPECTRUM FOR 2.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EXPERIMENTAL LEVEL - 2-D MODEL.

FIGURE 14

FLOOR RESPONSE SPECTRUM FOR 5.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EXPERIMENTAL LEVEL - 2-D MODEL.

FIGURE 15

FLOOR RESPONSE SPECTRUM FOR 7.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
EXPERIMENTAL LEVEL - 2-D MODEL.

-61'11-

FIGURE 16

FLOOR RESPONSE SPECTRUM FOR 0.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION,
BALCONY LEVEL -2-D MODEL.

-11,20-

FIGURE 17

FLOOR RESPONSE SPECTRUM FOR 2.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
BALCONY LEVEL - 2-D MODEL.

-II,2I-

FIGURE 18

FLOOR RESPONSE SPECTRUM FOR 5.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION,
BALCONY LEVEL - 2-D MODEL.

FIGURE 19
FLOOR RESPONSE SPECTRUM FOR 7.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
BALCONY LEVEL - 2-D MODEL.

FIGURE 20

FLOOR RESPONSE SPECTRUM FOR 0.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION,
OPERATIONAL LEVEL - 2-D MODEL.

FIGURE 21

FLOOR RESPONSE SPECTRUM FOR 2.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
OPERATIONAL LEVEL - 2-D MODEL.

FIGURE 22

FLOOR RESPONSE SPECTRUM FOR 5.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
OPERATIONAL LEVEL - 2-D MODEL.

-11,26-

FIGURE 23

FLOOR RESPONSE SPECTRUM FOR 7.0 PCT DAMPING WITH SOIL STRUCTURE INTERACTION.
OPERATIONAL LEVEL - 2-D MODEL.

Table 1

Spectrum Amplification Factors for Horizontal
Elastic Response

Damping % Critical	70 Percentile		
	A	V	D
0.5	4.37	3.18	2.50
2.0	3.19	2.46	2.01
5.0	2.41	1.96	1.69
10.0	1.79	1.60	1.44

Table 2

Elastic Spectrum Bounds for a Maximum Ground
Acceleration of 0.2 g

Damping % Critical	A Max. Accel. in 'g'	V Max. Velocity in in/sec	D Max. Displ. in in
0.5	.874	30.528	18.000
2.0	.638	23.616	14.472
5.0	.482	18.816	12.168
10.0	.358	15.360	10.368
Ground	.200	9.600	7.200

TABLE 3

Seismic Time History of Ground Spectrum - HFBR

TIME FUNCTION NUMBER = (1)

FUNCTION DESCRIPTION = (SEISMIC TIME HISTORY OF GROUND SPECTRUM - HFBR)

NUMBER OF ABSCISSAE = (751)

FUNCTION SCALE FACTOR = (.1000E+01)

TIME VALUE	FUNCTION	TIME VALUE	FUNCTION	TIME VALUE	FUNCTION	TIME VALUE	FUNCTION	TIME VALUE	FUNCTION
0.00000	.1400E+01	.02000	.1700E+01	.04000	.2900E+01	.06000	.1000E+01	.08000	.2000E+01
.10000	.1400E+01	.12000	.4500E+01	.14000	.6200E+01	.16000	.8300E+01	.18000	.3200E+01
.20000	.1600E+01	.22000	.5100E+01	.24000	.9400E+01	.26000	.1010E+02	.28000	-.3200E+01
.30000	-.6400E+01	.32000	.1600E+01	.34000	-.1170E+02	.36000	-.2920E+02	.38000	.1620E+02
.40000	-.1420E+02	.42000	.5000E+00	.44000	-.1000E+01	.46000	-.6200E+01	.48000	-.5500E+01
.50000	.1250E+02	.52000	.3710E+02	.54000	-.2800E+01	.56000	.1000E+00	.58000	-.1910E+02
.60000	.5020E+02	.62000	-.1890E+02	.64000	.7080E+02	.66000	.1070E+02	.68000	.1840E+02
.70000	-.3430E+02	.72000	.2400E+02	.74000	.4800E+02	.76000	.1270E+02	.78000	.5800E+01
.80000	.1150E+02	.82000	-.1010E+02	.84000	.5430E+02	.86000	.1250E+02	.88000	.2850E+02
.90000	-.8900E+01	.92000	.3230E+02	.94000	.5500E+01	.96000	.1920E+02	.98000	.2230E+02
1.00000	.1350E+02	1.02000	.5320E+02	1.04000	.5910E+02	1.06000	.4530E+02	1.08000	.6960E+02
1.10000	.5970E+02	1.12000	.3770E+02	1.14000	-.3570E+02	1.16000	-.1500E+02	1.18000	-.5600E+02
1.20000	-.2140E+02	1.22000	-.3230E+02	1.24000	-.4240E+02	1.26000	-.4950E+02	1.28000	.2140E+02
1.30000	-.3940E+02	1.32000	-.2500E+01	1.34000	.1000E+01	1.36000	.5860E+02	1.38000	-.2930E+02
1.40000	-.2000E+01	1.42000	-.2620E+02	1.44000	-.5090E+02	1.46000	-.3330E+02	1.48000	-.2580E+02
1.50000	.2810E+02	1.52000	.1800E+01	1.54000	-.1060E+02	1.56000	.1700E+01	1.58000	.4080E+02
1.60000	.3460E+02	1.62000	-.3900E+01	1.64000	-.3600E+02	1.66000	.4090E+02	1.68000	-.5270E+02
1.70000	-.1880E+02	1.72000	-.1990E+02	1.74000	.3310E+02	1.76000	-.5050E+02	1.78000	-.3920E+02
1.80000	-.6200E+02	1.82000	-.2120E+02	1.84000	.1000E+01	1.86000	.1130E+02	1.88000	.1360E+02
1.90000	.1600E+01	1.92000	-.5420E+02	1.94000	.1710E+02	1.96000	.1020E+02	1.98000	.3490E+02
2.00000	-.1320E+02	2.02000	.1690E+02	2.04000	.1090E+02	2.06000	.4600E+01	2.08000	.1830E+02
2.10000	.3120E+02	2.12000	.2870E+02	2.14000	-.4300E+01	2.16000	.4750E+02	2.18000	.2530E+02
2.20000	.6670E+02	2.22000	-.8200E+01	2.24000	.1090E+02	2.26000	-.1290E+02	2.28000	-.2930E+02
2.30000	-.7300E+01	2.32000	-.2190E+02	2.34000	-.3270E+02	2.36000	-.5800E+01	2.38000	.1460E+02
2.40000	-.3310E+02	2.42000	.2490E+02	2.44000	-.1710E+02	2.46000	-.4900E+01	2.48000	.1380E+02
2.50000	-.1920E+02	2.52000	.3700E+01	2.54000	-.3800E+01	2.56000	.1720E+02	2.58000	-.2200E+01
2.60000	.4000E+00	2.62000	.6500E+01	2.64000	-.2000E+00	2.66000	.8400E+01	2.68000	-.2910E+02
2.70000	-.2080E+02	2.72000	-.1510E+02	2.74000	-.5100E+01	2.76000	-.2700E+02	2.78000	.2960E+02
2.80000	.2130E+02	2.82000	.1090E+02	2.84000	.2330E+02	2.86000	.6500E+01	2.88000	.3500E+02
2.90000	.9260E+02	2.92000	.5400E+01	2.94000	-.2560E+02	2.96000	-.4000E+00	2.98000	.1580E+02
3.00000	.2040E+02	3.02000	.1500E+01	3.04000	.2240E+02	3.06000	-.2950E+02	3.08000	.6600E+01
3.10000	-.4390E+02	3.12000	-.1300E+02	3.14000	.4590E+02	3.16000	.3680E+02	3.18000	.1540E+02
3.20000	.2230E+02	3.22000	-.2300E+01	3.24000	-.6970E+02	3.26000	-.3780E+02	3.28000	-.2690E+02
3.30000	-.4930E+02	3.32000	-.1540E+02	3.34000	-.4380E+02	3.36000	-.8280E+02	3.38000	.1890E+02
3.40000	-.2440E+02	3.42000	-.4450E+02	3.44000	-.4710E+02	3.46000	-.1910E+02	3.48000	-.1720E+02
3.50000	-.1410E+02	3.52000	-.3510E+02	3.54000	-.2280E+02	3.56000	-.2650E+02	3.58000	-.8000E+01
3.60000	.1280E+02	3.62000	.3510E+02	3.64000	.2360E+02	3.66000	-.8000E+00	3.68000	-.5550E+02
3.70000	.2480E+02	3.72000	.2200E+02	3.74000	.2870E+02	3.76000	.4510E+02	3.78000	.7380E+02
3.80000	.5190E+02	3.82000	-.1040E+02	3.84000	.7200E+01	3.86000	-.1870E+02	3.88000	-.3550E+02
3.90000	-.1180E+02	3.92000	-.1640E+02	3.94000	-.4850E+02	3.96000	-.3560E+02	3.98000	-.4040E+02
4.00000	-.5970E+02	4.02000	-.5620E+02	4.04000	-.5480E+02	4.06000	-.2850E+02	4.08000	-.5000E+01
4.10000	-.2580E+02	4.12000	-.1290E+02	4.14000	.1620E+02	4.16000	.2220E+02	4.18000	.1680E+02
4.20000	.2200E+02	4.22000	.1900E+02	4.24000	.5430E+02	4.26000	.1097E+03	4.28000	.6640E+02
4.30000	.1080E+02	4.32000	.3060E+02	4.34000	.1450E+02	4.36000	-.3450E+02	4.38000	.1910E+02
4.40000	-.3630E+02	4.42000	-.3150E+02	4.44000	-.2260E+02	4.46000	-.4690E+02	4.48000	-.2550E+02
4.50000	-.1370E+02	4.52000	-.5220E+02	4.54000	-.9600E+01	4.56000	.2080E+02	4.58000	.3500E+01
4.60000	.1110E+02	4.62000	-.5510E+02	4.64000	-.9000E+01	4.66000	-.1200E+01	4.68000	.2720E+02
4.70000	-.8000E+00	4.72000	-.1890E+02	4.74000	-.1680E+02	4.76000	.3070E+02	4.78000	-.9900E+01
4.80000	.7920E+02	4.82000	.3840E+02	4.84000	-.2500E+01	4.86000	-.2960E+02	4.88000	-.3530E+02
4.90000	-.6800E+01	4.92000	.3800E+01	4.94000	-.2440E+02	4.96000	.2420E+02	4.98000	.1380E+02
5.00000	.6940E+02	5.02000	.2800E+01	5.04000	.6370E+02	5.06000	.5980E+02	5.08000	.1243E+03
5.10000	.1650E+02	5.12000	.6520E+02	5.14000	-.8800E+01	5.16000	.2080E+02	5.18000	.2470E+02
5.20000	-.1440E+02	5.22000	-.3610E+02	5.24000	-.3720E+02	5.26000	-.4310E+02	5.28000	.2500E+01
5.30000	-.2300E+02	5.32000	-.5100E+01	5.34000	-.4940E+02	5.36000	.5400E+01	5.38000	-.5200E+01

Table 3 (Continued)

Seismic Time History of Ground Spectrum - HFBR

5.40000	.2640E+02	5.42000	-.4090E+02	5.44000	-.3400E+02	5.46000	-.1060E+02	5.48000	-.4820E+02
5.50000	-.5600E+01	5.52000	-.1140E+02	5.54000	-.8000E+01	5.56000	-.4480E+02	5.58000	.3280E+02
5.60000	-.1800E+01	5.62000	.1039E+03	5.64000	-.2580E+02	5.66000	.1730E+02	5.68000	.2680E+02
5.70000	.3760E+02	5.72000	-.4400E+01	5.74000	.1550E+02	5.76000	-.3630E+02	5.78000	.1720E+02
5.80000	.9900E+01	5.82000	.3770E+02	5.84000	.1590E+02	5.86000	.3000E+01	5.88000	-.7100E+01
5.90000	.1500E+01	5.92000	-.1960E+02	5.94000	.2900E+02	5.96000	.2460E+02	5.98000	.4790E+02
6.00000	.2280E+02	6.02000	-.1840E+02	6.04000	-.2140E+02	6.06000	-.3500E+01	6.08000	.3700E+01
6.10000	.1990E+02	6.12000	.8900E+01	6.14000	-.2590E+02	6.16000	-.3300E+01	6.18000	.1850E+02
6.20000	-.2020E+02	6.22000	.2700E+02	6.24000	.6500E+01	6.26000	.1180E+02	6.28000	-.1870E+02
6.30000	-.2750E+02	6.32000	.8500E+01	6.34000	.3970E+02	6.36000	.4640E+02	6.38000	.7000E+01
6.40000	-.1460E+02	6.42000	-.2700E+02	6.44000	.1010E+02	6.46000	-.3000E+01	6.48000	.2500E+01
6.50000	-.3070E+02	6.52000	-.4610E+02	6.54000	-.3230E+02	6.56000	-.2900E+02	6.58000	-.4340E+02
6.60000	-.1690E+02	6.62000	-.5960E+02	6.64000	-.2300E+01	6.66000	-.2760E+02	6.68000	.4730E+02
6.70000	-.1770E+02	6.72000	-.4100E+01	6.74000	-.2130E+02	6.76000	.1220E+02	6.78000	.4800E+01
6.80000	.2390E+02	6.82000	.3860E+02	6.84000	-.4600E+01	6.86000	.1310E+02	6.88000	-.8800E+01
6.90000	.1260E+02	6.92000	-.2080E+02	6.94000	.1290E+02	6.96000	-.5050E+02	6.98000	-.6650E+02
7.00000	.4000E+01	7.02000	-.5800E+01	7.04000	.4240E+02	7.06000	.6900E+01	7.08000	.9110E+02
7.10000	.3900E+02	7.12000	.5000E+02	7.14000	.1620E+02	7.16000	.2790E+02	7.18000	-.8660E+02
7.20000	-.2670E+02	7.22000	-.2860E+02	7.24000	-.2770E+02	7.26000	-.5100E+02	7.28000	-.3370E+02
7.30000	-.3620E+02	7.32000	-.2350E+02	7.34000	.2500E+01	7.36000	-.3900E+01	7.38000	-.7000E+00
7.40000	.9100E+01	7.42000	-.2130E+02	7.44000	.9000E+01	7.46000	-.7300E+01	7.48000	-.2070E+02
7.50000	-.2370E+02	7.52000	.2670E+02	7.54000	-.3320E+02	7.56000	-.1480E+02	7.58000	-.7000E+01
7.60000	-.2510E+02	7.62000	.1000E+01	7.64000	.5000E+01	7.66000	.3440E+02	7.68000	-.7000E+00
7.70000	.4980E+02	7.72000	-.2960E+02	7.74000	.2730E+02	7.76000	.1330E+02	7.78000	.2400E+02
7.80000	.3400E+02	7.82000	.1630E+02	7.84000	.1680E+02	7.86000	.2900E+02	7.88000	.4200E+01
7.90000	.7700E+01	7.92000	.3820E+02	7.94000	-.1490E+02	7.96000	-.2710E+02	7.98000	.3230E+02
8.00000	-.7600E+01	8.02000	.2910E+02	8.04000	-.5000E+02	8.06000	.2130E+02	8.08000	-.6100E+02
8.10000	.4860E+02	8.12000	-.3680E+02	8.14000	-.7300E+01	8.16000	.8600E+01	8.18000	.3050E+02
8.20000	.7740E+02	8.22000	.7800E+01	8.24000	.5250E+02	8.26000	.1380E+02	8.28000	.3840E+02
8.30000	.4630E+02	8.32000	.3060E+02	8.34000	.2900E+02	8.36000	.1320E+02	8.38000	-.3070E+02
8.40000	-.1490E+02	8.42000	-.3800E+02	8.44000	-.4720E+02	8.46000	-.6400E+02	8.48000	-.3910E+02
8.50000	-.3490E+02	8.52000	-.1020E+02	8.54000	-.1020E+02	8.56000	.1150E+02	8.58000	.3440E+02
8.60000	-.1040E+02	8.62000	.2540E+02	8.64000	-.6200E+01	8.66000	.1830E+02	8.68000	-.4650E+02
8.70000	-.2830E+02	8.72000	-.3640E+02	8.74000	.1120E+02	8.76000	-.3120E+02	8.78000	-.3230E+02
8.80000	-.4380E+02	8.82000	.3790E+02	8.84000	-.2790E+02	8.86000	.4340E+02	8.88000	.4050E+02
8.90000	.3310E+02	8.92000	.2600E+02	8.94000	.4900E+01	8.96000	.4970E+02	8.98000	.3300E+02
9.00000	.1230E+02	9.02000	.2680E+02	9.04000	.2270E+02	9.06000	-.1490E+02	9.08000	.5700E+01
9.10000	.4710E+02	9.12000	-.3900E+01	9.14000	.1900E+02	9.16000	.1030E+02	9.18000	-.5300E+01
9.20000	.1360E+02	9.22000	.1130E+02	9.24000	.2390E+02	9.26000	-.1680E+02	9.28000	-.5520E+02
9.30000	.3390E+02	9.32000	-.8800E+01	9.34000	-.8500E+01	9.36000	.2680E+02	9.38000	.2080E+02
9.40000	-.2230E+02	9.42000	-.1180E+02	9.44000	.3100E+02	9.46000	.1760E+02	9.48000	-.1700E+01
9.50000	.4340E+02	9.52000	.3910E+02	9.54000	.1340E+02	9.56000	-.1830E+02	9.58000	.2960E+02
9.60000	-.1140E+02	9.62000	-.5000E+01	9.64000	-.1500E+02	9.66000	.5350E+02	9.68000	-.3900E+01
9.70000	-.1190E+02	9.72000	-.8800E+01	9.74000	-.3610E+02	9.76000	.1560E+02	9.78000	-.3960E+02
9.80000	.1020E+02	9.82000	-.2210E+02	9.84000	-.2500E+01	9.86000	-.8800E+01	9.88000	-.5140E+02
9.90000	-.3980E+02	9.92000	-.4740E+02	9.94000	-.4370E+02	9.96000	-.4100E+02	9.98000	-.6840E+02
10.00000	-.2510E+02	10.02000	.2950E+02	10.04000	.1450E+02	10.06000	.1720E+02	10.08000	.5100E+01
10.10000	-.5700E+01	10.12000	-.6970E+02	10.14000	-.4800E+01	10.16000	-.1269E+03	10.18000	-.2170E+02
10.20000	-.6720E+02	10.22000	-.2740E+02	10.24000	-.6160E+02	10.26000	.2400E+01	10.28000	-.5660E+02
10.30000	-.2200E+01	10.32000	-.9800E+01	10.34000	-.6600E+01	10.36000	-.1750E+02	10.38000	.3200E+01
10.40000	-.3920E+02	10.42000	-.1480E+02	10.44000	.1770E+02	10.46000	.1260E+02	10.48000	.6350E+02
10.50000	.6400E+01	10.52000	.7500E+02	10.54000	-.2950E+02	10.56000	.1950E+02	10.58000	.2740E+02
10.60000	.7010E+02	10.62000	.1500E+02	10.64000	.2310E+02	10.66000	-.2200E+01	10.68000	.4040E+02
10.70000	.2930E+02	10.72000	.1910E+02	10.74000	.2750E+02	10.76000	-.1020E+02	10.78000	.4490E+02
10.80000	.1660E+02	10.82000	.4290E+02	10.84000	-.2260E+02	10.86000	-.2150E+02	10.88000	-.4010E+02
10.90000	-.6030E+02	10.92000	-.2810E+02	10.94000	.2930E+02	10.96000	-.7050E+02	10.98000	-.1210E+02
11.00000	-.2160E+02	11.02000	-.1230E+02	11.04000	-.6500E+01	11.06000	.1370E+02	11.08000	-.3600E+01
11.10000	.3120E+02	11.12000	-.3060E+02	11.14000	.3500E+01	11.16000	-.1000E+02	11.18000	.4600E+01
11.20000	.2880E+02	11.22000	.6600E+01	11.24000	.6610E+02	11.26000	.3070E+02	11.28000	.3710E+02
11.30000	.2700E+02	11.32000	.5600E+02	11.34000	.2740E+02	11.36000	.2180E+02	11.38000	.2000E+00
11.40000	.6240E+02	11.42000	-.2660E+02	11.44000	.1250E+02	11.46000	.3500E+02	11.48000	.3040E+02
11.50000	.2010E+02	11.52000	-.5700E+01	11.54000	.1500E+02	11.56000	-.1240E+02	11.58000	.2870E+02
11.60000	.2840E+02	11.62000	.1300E+02	11.64000	.3940E+02	11.66000	.1000E+00	11.68000	.3860E+02

Table 3 (Continued)

Seismic Time History of Ground Spectrum - HFBR

11.70000	-.3420E+02	11.72000	-.2190E+02	11.74000	-.5730E+02	11.76000	.1270E+02	11.78000	-.1730E+02
11.80000	-.2690E+02	11.82000	-.3600E+02	11.84000	-.4730E+02	11.86000	-.2860E+02	11.88000	-.3780E+02
11.90000	-.3340E+02	11.92000	-.4970E+02	11.94000	-.2270E+02	11.96000	-.7500E+01	11.98000	.9990E+02
12.00000	.4080E+02	12.02000	.7470E+02	12.04000	-.1650E+02	12.06000	.2340E+02	12.08000	-.5040E+02
12.10000	.4000E+00	12.12000	-.4070E+02	12.14000	-.2280E+02	12.16000	-.2100E+01	12.18000	-.1860E+02
12.20000	.9200E+01	12.22000	-.9300E+01	12.24000	-.1130E+02	12.26000	-.1030E+02	12.28000	-.4490E+02
12.30000	-.1000E+00	12.32000	.5190E+01	12.34000	.2810E+02	12.36000	.3000E+00	12.38000	.5320E+02
12.40000	.1560E+02	12.42000	.4360E+02	12.44000	.1920E+02	12.46000	-.4110E+02	12.48000	-.2010E+02
12.50000	-.3800E+02	12.52000	-.1920E+02	12.54000	-.2860E+02	12.56000	.3420E+02	12.58000	-.4210E+02
12.60000	.2410E+02	12.62000	-.5960E+02	12.64000	.2780E+02	12.66000	-.6970E+02	12.68000	.7000E+01
12.70000	-.4900E+01	12.72000	.9000E+00	12.74000	-.2610E+02	12.76000	-.2590E+02	12.78000	.2340E+02
12.80000	.3350E+02	12.82000	-.1100E+02	12.84000	.1870E+02	12.86000	.1270E+02	12.88000	.2380E+02
12.90000	.8800E+01	12.92000	-.8700E+01	12.94000	.2640E+02	12.96000	.3000E+00	12.98000	.2920E+02
13.00000	-.1840E+02	13.02000	.2560E+02	13.04000	.7600E+01	13.06000	-.1290E+02	13.08000	.3320E+02
13.10000	-.1000E+00	13.12000	.7290E+01	13.14000	.4800E+01	13.16000	.1210E+02	13.18000	-.3290E+02
13.20000	-.1700E+02	13.22000	.2190E+02	13.24000	.5000E+00	13.26000	.2040E+02	13.28000	-.2880E+02
13.30000	.1780E+02	13.32000	-.3400E+02	13.34000	-.1300E+01	13.36000	-.2370E+02	13.38000	.1260E+02
13.40000	-.2080E+02	13.42000	-.4700E+01	13.44000	-.2240E+02	13.46000	.4060E+02	13.48000	-.9000E+01
13.50000	-.2600E+01	13.52000	-.1550E+02	13.54000	-.1210E+02	13.56000	.9900E+01	13.58000	.2640E+02
13.60000	.8700E+01	13.62000	.1230E+02	13.64000	.3040E+02	13.66000	-.1400E+01	13.68000	.5000E+01
13.70000	.8800E+01	13.72000	-.9900E+01	13.74000	-.3300E+01	13.76000	-.1300E+02	13.78000	-.3000E+00
13.80000	-.7400E+01	13.82000	.1990E+02	13.84000	-.1490E+02	13.86000	.1660E+02	13.88000	-.1010E+02
13.90000	-.4400E+01	13.92000	-.5900E+01	13.94000	-.8300E+01	13.96000	.6800E+01	13.98000	-.3550E+02
14.00000	-.9200E+01	14.02000	-.1990E+02	14.04000	.5300E+01	14.06000	.2000E+01	14.08000	.4300E+01
14.10000	.1600E+02	14.12000	.1280E+02	14.14000	.1630E+02	14.16000	-.9200E+01	14.18000	.6000E+00
14.20000	.2390E+02	14.22000	.4700E+01	14.24000	.2200E+01	14.26000	-.4200E+01	14.28000	-.1280E+02
14.30000	-.2200E+01	14.32000	.7600E+01	14.34000	-.4300E+01	14.36000	-.7700E+01	14.38000	-.2280E+02
14.40000	-.4500E+01	14.42000	-.1570E+02	14.44000	-.2000E+00	14.46000	.9100E+01	14.48000	.4800E+01
14.50000	.3000E+00	14.52000	-.1560E+02	14.54000	-.1310E+02	14.56000	-.1570E+02	14.58000	-.1120E+02
14.60000	-.8700E+01	14.62000	-.3220E+02	14.64000	-.2110E+02	14.66000	-.2020E+02	14.68000	-.7500E+01
14.70000	-.1700E+02	14.72000	-.8600E+01	14.74000	-.8000E+01	14.76000	-.9900E+01	14.78000	.5700E+01
14.80000	-.2600E+01	14.82000	-.4100E+01	14.84000	-.4000E+00	14.86000	-.9000E+00	14.88000	-.4900E+01
14.90000	-.4600E+01	14.92000	-.2800E+01	14.94000	.4300E+01	14.96000	-.4700E+01	14.98000	.1300E+01
15.00000	-.4000E+01								

REQUIRED BLANK COMMON FOR THIS STEP= 18001

REQUIRED BLANK COMMON FOR THIS STEP= 15071

Table 4

Nodal Data

GENERATED NODAL DATA

NODE NUMBER	BOUNDARY CONDITION CODES						NODAL POINT COORDINATES			
	X	Y	Z	XX	YY	ZZ	X	Y	Z	T
1	1	1	1	1	1	1	0.000	-50.000	0.000	-0.000
2	1	1	1	1	1	1	50.000	-50.000	0.000	-0.000
3	1	1	1	1	1	1	450.000	-50.000	0.000	-0.000
4	1	1	1	1	1	1	850.000	-50.000	0.000	-0.000
5	1	1	1	1	1	1	1250.000	-50.000	0.000	-0.000
6	1	1	1	1	1	1	1650.000	-50.000	0.000	-0.000
7	1	1	1	1	1	1	1700.000	-50.000	0.000	-0.000
8	1	1	1	1	1	1	-50.000	0.000	0.000	-0.000
9	1	1	1	1	1	1	-50.000	30.000	0.000	-0.000
10	1	1	1	1	1	1	-50.000	60.000	0.000	-0.000
11	1	1	1	1	1	1	-50.000	328.000	0.000	-0.000
12	-0	-0	1	1	1	-0	0.000	0.000	0.000	-0.000
13	-0	-0	1	1	1	-0	50.000	0.000	0.000	-0.000
14	-0	-0	1	1	1	-0	450.000	0.000	0.000	-0.000
15	-0	-0	1	1	1	-0	850.000	0.000	0.000	-0.000
16	-0	-0	1	1	1	-0	1250.000	0.000	0.000	-0.000
17	-0	-0	1	1	1	-0	1650.000	0.000	0.000	-0.000
18	-0	-0	1	1	1	-0	1700.000	0.000	0.000	-0.000
19	-0	-0	1	1	1	-0	50.000	328.000	0.000	-0.000
20	-0	-0	1	1	1	-0	600.000	328.000	0.000	-0.000
21	-0	-0	1	1	1	-0	1100.000	328.000	0.000	-0.000
22	-0	-0	1	1	1	-0	1650.000	328.000	0.000	-0.000
23	-0	-0	1	1	1	-0	600.000	508.000	0.000	-0.000
24	-0	-0	1	1	1	-0	1100.000	508.000	0.000	-0.000
25	-0	-0	1	1	1	-0	0.000	725.000	0.000	-0.000
26	-0	-0	1	1	1	-0	50.000	664.000	0.000	-0.000
27	-0	-0	1	1	1	-0	600.000	664.000	0.000	-0.000
28	-0	-0	1	1	1	-0	1100.000	664.000	0.000	-0.000
29	-0	-0	1	1	1	-0	1650.000	664.000	0.000	-0.000
30	-0	-0	1	1	1	-0	1700.000	725.000	0.000	-0.000
31	-0	-0	1	1	1	-0	0.000	30.000	0.000	-0.000
32	-0	-0	1	1	1	-0	0.000	60.000	0.000	-0.000
33	-0	-0	1	1	1	-0	850.000	0.000	50.000	-0.000
34	-0	-0	1	1	1	-0	50.000	60.000	0.000	-0.000
35	-0	-0	1	1	1	-0	1650.000	60.000	0.000	-0.000
36	-0	-0	1	1	1	-0	1700.000	60.000	0.000	-0.000

Table 5

BOUNDARY ELEMENTS

Boundary Elements

ELEMENT TYPE = 7
 NUMBER OF ELEMENTS = 12

ELEMENT LOAD CASE MULTIPLIERS

CASE (A) CASE (B) CASE (C) CASE (D)
 -0.0000 -0.0000 -0.0000 -0.0000

ELEMENT NUMBER	NODE (N)	NODES DEFINING (N1)	CONSTRAINT (NJ)	DIRECTION (NK)	DIRECTION (NL)	CODE KU	CODE KR	GENERATION CODE (KN)	SPECIFIED DISPLACEMENT	SPECIFIED ROTATION	SPRING RATE
1	12	1	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
2	13	2	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
3	14	3	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
4	15	4	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
5	16	5	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
6	17	6	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
7	18	7	-0	0	-0	1	-0	-0	-0.	-0.	.6100E+07
8	12	8	-0	0	-0	1	-0	-0	-0.	-0.	.4306E+08
9	31	9	-0	0	-0	1	-0	-0	-0.	-0.	.6750E+06
10	32	10	-0	0	-0	1	-0	-0	-0.	-0.	.6075E+06
11	19	11	-0	0	-0	1	-0	-0	-0.	-0.	.2700E+06
12	15	33	-0	0	-0	-0	1	-0	-0.	-0.	.2910E+14

REQUIRED BLANK COMMON FOR THIS STEP= 421

Table 6

Frequencies

PRINT OF FREQUENCIES

MODE NUMBER	CIRCULAR FREQUENCY (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)
1	.1798E+02	.2861E+01	.3495E+00
2	.1905E+02	.3032E+01	.3298E+00
3	.3398E+02	.5408E+01	.1849E+00
4	.4692E+02	.7467E+01	.1339E+00
5	.5550E+02	.8833E+01	.1132E+00
6	.5783E+02	.9203E+01	.1087E+00
7	.6742E+02	.1073E+02	.9319E+01
8	.1186E+03	.1888E+02	.5298E+01
9	.3309E+03	.5267E+02	.1899E+01
10	.3399E+03	.5410E+02	.1848E+01

REQUIRED BLANK COMMON FOR THIS STEP= 947

PRINT OF EIGENVECTORS

-II,33-

Table 7

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 1

FREQUENCY= 2.86142 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	2.415950-03	6.895090-04	0.	0.	0.	-8.111930-07
13	2.415950-03	6.489490-04	0.	0.	0.	-8.111920-07
14	2.415960-03	3.244720-04	0.	0.	0.	-8.111820-07
15	2.415970-03	3.482080-10	0.	0.	0.	-8.111670-07
16	2.415970-03	-3.244720-04	0.	0.	0.	-8.111820-07
17	2.415980-03	-6.489490-04	0.	0.	0.	-8.111930-07
18	2.415980-03	-6.895080-04	0.	0.	0.	-8.111930-07
19	2.905590-03	6.489510-04	0.	0.	0.	-8.112000-07
20	2.905590-03	2.021970-04	0.	0.	0.	-8.111930-07
21	2.905590-03	-2.021960-04	0.	0.	0.	-8.111930-07
22	2.905590-03	-6.489500-04	0.	0.	0.	-8.112000-07
23	3.914930-03	2.021970-04	0.	0.	0.	-8.111880-07
24	3.914930-03	-2.021970-04	0.	0.	0.	-8.111880-07
25	3.075660-03	6.895090-04	0.	0.	0.	-9.963090-07
26	3.688840-03	6.489510-04	0.	0.	0.	-8.111920-07
27	3.688840-03	2.021970-04	0.	0.	0.	-8.111900-07
28	3.688840-03	-2.021970-04	0.	0.	0.	-8.111900-07
29	3.688840-03	-6.489500-04	0.	0.	0.	-8.111920-07
30	3.075690-03	-6.895080-04	0.	0.	0.	-9.963110-07
31	2.440280-03	6.895090-04	0.	0.	0.	-8.111930-07
32	2.464620-03	6.895090-04	0.	0.	0.	-8.111930-07
34	2.464620-03	6.489500-04	0.	0.	0.	-8.111930-07
35	2.464650-03	-6.489490-04	0.	0.	0.	-8.111940-07
36	2.464650-03	-6.895080-04	0.	0.	0.	-8.111930-07

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 2
 FREQUENCY= 3.03181 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	2.90474D-10	-2.91520D-03	0.	0.	0.	3.23260D-12
13	2.90475D-10	-2.91520D-03	0.	0.	0.	3.29754D-12
14	2.90492D-10	-2.91519D-03	0.	0.	0.	2.74302D-12
15	2.90510D-10	-2.91519D-03	0.	0.	0.	6.37672D-14
16	2.90527D-10	-2.91519D-03	0.	0.	0.	-2.61548D-12
17	2.90545D-10	-2.91520D-03	0.	0.	0.	-3.17000D-12
18	2.90545D-10	-2.91520D-03	0.	0.	0.	-3.10506D-12
19	2.93748D-10	-2.91520D-03	0.	0.	0.	-1.13554D-11
20	2.93740D-10	-2.91521D-03	0.	0.	0.	-5.37397D-12
21	2.93732D-10	-2.91521D-03	0.	0.	0.	5.50151D-12
22	2.93723D-10	-2.91520D-03	0.	0.	0.	1.14830D-11
23	3.72261D-10	-2.91521D-03	0.	0.	0.	6.37706D-14
24	3.72261D-10	-2.91521D-03	0.	0.	0.	6.37703D-14
25	-2.21665D-09	-2.91520D-03	0.	0.	0.	3.69984D-12
26	3.23363D-10	-2.91520D-03	0.	0.	0.	-9.52342D-12
27	3.23349D-10	-2.91521D-03	0.	0.	0.	-4.50157D-12
28	3.23336D-10	-2.91521D-03	0.	0.	0.	4.62910D-12
29	3.23322D-10	-2.91520D-03	0.	0.	0.	9.65096D-12
30	2.70795D-09	-2.91520D-03	0.	0.	0.	-3.57517D-12
31	1.93496D-10	-2.91520D-03	0.	0.	0.	3.23260D-12
32	9.65184D-11	-2.91520D-03	0.	0.	0.	3.23260D-12
34	9.26160D-11	-2.91520D-03	0.	0.	0.	3.29754D-12
35	4.80752D-10	-2.91520D-03	0.	0.	0.	-3.17000D-12
36	4.76849D-10	-2.91520D-03	0.	0.	0.	-3.10506D-12

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 3

FREQUENCY= 5.40822 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	-1.936400-03	3.633720-03	0.	0.	0.	-4.274950-06
13	-1.936400-03	3.419970-03	0.	0.	0.	-4.274950-06
14	-1.936420-03	1.709980-03	0.	0.	0.	-4.274920-06
15	-1.936420-03	-9.071670-11	0.	0.	0.	-4.274850-06
16	-1.936430-03	-1.709980-03	0.	0.	0.	-4.274920-06
17	-1.936430-03	-3.419970-03	0.	0.	0.	-4.274950-06
18	-1.936430-03	-3.633720-03	0.	0.	0.	-4.274950-06
19	-4.160580-04	3.419980-03	0.	0.	0.	-4.274980-06
20	-4.160580-04	1.068740-03	0.	0.	0.	-4.274980-06
21	-4.160580-04	-1.068740-03	0.	0.	0.	-4.274980-06
22	-4.160580-04	-3.419980-03	0.	0.	0.	-4.274980-06
23	1.891610-03	1.068740-03	0.	0.	0.	-4.274980-06
24	1.891610-03	-1.068740-03	0.	0.	0.	-4.274980-06
25	2.021780-03	3.633720-03	0.	0.	0.	-6.787000-06
26	1.981100-03	3.419980-03	0.	0.	0.	-4.274980-06
27	1.981100-03	1.068740-03	0.	0.	0.	-4.274980-06
28	1.981100-03	-1.068740-03	0.	0.	0.	-4.274980-06
29	1.981100-03	-3.419980-03	0.	0.	0.	-4.274980-06
30	2.021760-03	-3.633720-03	0.	0.	0.	-6.787000-06
31	-1.808150-03	3.633720-03	0.	0.	0.	-4.274950-06
32	-1.679910-03	3.633720-03	0.	0.	0.	-4.274960-06
34	-1.679910-03	3.419970-03	0.	0.	0.	-4.274950-06
35	-1.679930-03	-3.419970-03	0.	0.	0.	-4.274950-06
36	-1.679930-03	-3.633720-03	0.	0.	0.	-4.274960-06

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 4

FREQUENCY= 7.46725 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	1.034030-03	1.103190-03	0.	0.	0.	-1.297880-06
13	1.034030-03	1.038290-03	0.	0.	0.	-1.297880-06
14	1.034040-03	5.191440-04	0.	0.	0.	-1.297860-06
15	1.034040-03	1.584400-11	0.	0.	0.	-1.297840-06
16	1.034050-03	-5.191440-04	0.	0.	0.	-1.297860-06
17	1.034040-03	-1.038290-03	0.	0.	0.	-1.297880-06
18	1.034040-03	-1.103190-03	0.	0.	0.	-1.297880-06
19	1.096590-03	1.038290-03	0.	0.	0.	-1.297830-06
20	1.096590-03	3.244690-04	0.	0.	0.	-1.297850-06
21	1.096590-03	-3.244690-04	0.	0.	0.	-1.297850-06
22	1.096590-03	-1.038290-03	0.	0.	0.	-1.297830-06
23	-1.075190-02	3.244690-04	0.	0.	0.	-1.297880-06
24	-1.075190-02	-3.244690-04	0.	0.	0.	-1.297880-06
25	3.498950-03	1.103190-03	0.	0.	0.	-5.647130-06
26	-1.307740-03	1.038290-03	0.	0.	0.	-1.297850-06
27	-1.307750-03	3.244690-04	0.	0.	0.	-1.297860-06
28	-1.307750-03	-3.244690-04	0.	0.	0.	-1.297860-06
29	-1.307740-03	-1.038290-03	0.	0.	0.	-1.297850-06
30	3.498970-03	-1.103190-03	0.	0.	0.	-5.647140-06
31	1.072970-03	1.103190-03	0.	0.	0.	-1.297890-06
32	1.111900-03	1.103190-03	0.	0.	0.	-1.297890-06
34	1.111900-03	1.038290-03	0.	0.	0.	-1.297880-06
35	1.111910-03	-1.038290-03	0.	0.	0.	-1.297880-06
36	1.111920-03	-1.103190-03	0.	0.	0.	-1.297890-06

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 5

FREQUENCY= 8.83276 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	-7.88848D-09	-3.92302D-08	0.	0.	0.	2.64967D-10
13	-7.48249D-09	-2.63718D-08	0.	0.	0.	2.49366D-10
14	-4.23561D-09	4.84129D-08	0.	0.	0.	1.24553D-10
15	-9.88697D-10	7.32716D-08	0.	0.	0.	-2.61190D-13
16	2.25822D-09	4.82039D-08	0.	0.	0.	-1.25075D-10
17	5.50512D-09	-2.67897D-08	0.	0.	0.	-2.49888D-10
18	5.91111D-09	-3.96742D-08	0.	0.	0.	-2.65490D-10
19	-1.68438D-09	-2.63721D-08	0.	0.	0.	-2.63808D-13
20	-1.68301D-09	-2.65170D-08	0.	0.	0.	-2.62085D-13
21	-1.68175D-09	-2.66476D-08	0.	0.	0.	-2.60247D-13
22	-1.68036D-09	-2.67900D-08	0.	0.	0.	-2.58474D-13
23	7.49219D-09	-2.65170D-08	0.	0.	0.	-2.61178D-13
24	7.49219D-09	-2.66476D-08	0.	0.	0.	-2.61178D-13
25	-6.26866D-03	-3.92302D-08	0.	0.	0.	1.82660D-05
26	-3.20083D-09	-2.63723D-08	0.	0.	0.	-2.62268D-13
27	-3.20083D-09	-2.65170D-08	0.	0.	0.	-2.61695D-13
28	-3.20083D-09	-2.66476D-08	0.	0.	0.	-2.60642D-13
29	-3.20083D-09	-2.67902D-08	0.	0.	0.	-2.60057D-13
30	6.26866D-03	-3.96742D-08	0.	0.	0.	-1.82660D-05
31	-1.66109D-08	-3.92302D-08	0.	0.	0.	2.74292D-10
32	-2.56119D-08	-3.92302D-08	0.	0.	0.	2.83543D-10
34	-2.24440D-08	-2.63719D-08	0.	0.	0.	2.49365D-10
35	2.04980D-08	-2.67898D-08	0.	0.	0.	-2.49888D-10
36	2.36659D-08	-3.96742D-08	0.	0.	0.	-2.84066D-10

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 6
 FREQUENCY= 9.20315 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	6.03607D-04	-1.05970D-03	0.	0.	0.	1.24655D-06
13	6.03607D-04	-9.97370D-04	0.	0.	0.	1.24657D-06
14	6.03614D-04	-4.98695D-04	0.	0.	0.	1.24663D-06
15	6.03618D-04	2.02540D-11	0.	0.	0.	1.24664D-06
16	6.03618D-04	4.98695D-04	0.	0.	0.	1.24663D-06
17	6.03614D-04	9.97370D-04	0.	0.	0.	1.24657D-06
18	6.03615D-04	1.05970D-03	0.	0.	0.	1.24655D-06
19	-2.68283D-04	-9.97378D-04	0.	0.	0.	1.24676D-06
20	-2.68282D-04	-3.11682D-04	0.	0.	0.	1.24674D-06
21	-2.68282D-04	3.11682D-04	0.	0.	0.	1.24674D-06
22	-2.68283D-04	9.97378D-04	0.	0.	0.	1.24676D-06
23	4.70908D-03	-3.11682D-04	0.	0.	0.	1.24673D-06
24	4.70908D-03	3.11682D-04	0.	0.	0.	1.24673D-06
25	4.96790D-03	-1.05970D-03	0.	0.	0.	-1.40923D-05
26	-3.47991D-03	-9.97382D-04	0.	0.	0.	1.24675D-06
27	-3.47992D-03	-3.11682D-04	0.	0.	0.	1.24674D-06
28	-3.47992D-03	3.11682D-04	0.	0.	0.	1.24674D-06
29	-3.47991D-03	9.97382D-04	0.	0.	0.	1.24675D-06
30	4.96790D-03	1.05970D-03	0.	0.	0.	-1.40923D-05
31	5.66211D-04	-1.05970D-03	0.	0.	0.	1.24655D-06
32	5.28815D-04	-1.05970D-03	0.	0.	0.	1.24654D-06
34	5.28810D-04	-9.97372D-04	0.	0.	0.	1.24657D-06
35	5.28817D-04	9.97372D-04	0.	0.	0.	1.24657D-06
36	5.28823D-04	1.05970D-03	0.	0.	0.	1.24654D-06

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 7

FREQUENCY= 10.7307 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	6.704320-04	2.385030-03	0.	0.	0.	-2.805770-06
13	6.704320-04	2.244740-03	0.	0.	0.	-2.805770-06
14	6.704420-04	1.122390-03	0.	0.	0.	-2.805830-06
15	6.704470-04	9.861430-12	0.	0.	0.	-2.805820-06
16	6.704460-04	-1.122390-03	0.	0.	0.	-2.805830-06
17	6.704400-04	-2.244740-03	0.	0.	0.	-2.805770-06
18	6.704400-04	-2.385030-03	0.	0.	0.	-2.805770-06
19	1.115500-03	2.244750-03	0.	0.	0.	-2.805860-06
20	1.115510-03	7.014920-04	0.	0.	0.	-2.805910-06
21	1.115510-03	-7.014920-04	0.	0.	0.	-2.805910-06
22	1.115500-03	-2.244750-03	0.	0.	0.	-2.805860-06
23	2.949300-03	7.014910-04	0.	0.	0.	-2.805960-06
24	2.949300-03	-7.014910-04	0.	0.	0.	-2.805960-06
25	-7.492770-04	2.385040-03	0.	0.	0.	7.478350-06
26	-5.438150-03	2.244750-03	0.	0.	0.	-2.805870-06
27	-5.438170-03	7.014910-04	0.	0.	0.	-2.805910-06
28	-5.438170-03	-7.014910-04	0.	0.	0.	-2.805910-06
29	-5.438150-03	-2.244750-03	0.	0.	0.	-2.805870-06
30	-7.492710-04	-2.385040-03	0.	0.	0.	7.478350-06
31	7.546050-04	2.385030-03	0.	0.	0.	-2.805760-06
32	8.387770-04	2.385030-03	0.	0.	0.	-2.805760-06
34	8.387750-04	2.244740-03	0.	0.	0.	-2.805770-06
35	8.387830-04	-2.244740-03	0.	0.	0.	-2.805770-06
36	8.387860-04	-2.385030-03	0.	0.	0.	-2.805760-06

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 8
 FREQUENCY= 18.8751 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	-2.402600-03	-1.167880-03	0.	0.	0.	1.373630-06
13	-2.402600-03	-1.099200-03	0.	0.	0.	1.373630-06
14	-2.402700-03	-5.496410-04	0.	0.	0.	1.373810-06
15	-2.402740-03	-5.293100-11	0.	0.	0.	1.373860-06
16	-2.402710-03	5.496410-04	0.	0.	0.	1.373810-06
17	-2.402630-03	1.099200-03	0.	0.	0.	1.373630-06
18	-2.402630-03	1.167880-03	0.	0.	0.	1.373630-06
19	3.945770-03	-1.099210-03	0.	0.	0.	1.373790-06
20	3.945900-03	-3.435190-04	0.	0.	0.	1.373930-06
21	3.945900-03	3.435190-04	0.	0.	0.	1.373930-06
22	3.945770-03	1.099210-03	0.	0.	0.	1.373790-06
23	-2.088970-04	-3.435180-04	0.	0.	0.	1.374080-06
24	-2.088970-04	3.435180-04	0.	0.	0.	1.374080-06
25	-2.811850-03	-1.167890-03	0.	0.	0.	-1.592590-06
26	-8.432790-04	-1.099220-03	0.	0.	0.	1.374040-06
27	-8.432910-04	-3.435150-04	0.	0.	0.	1.374040-06
28	-8.432910-04	3.435160-04	0.	0.	0.	1.374040-06
29	-8.432790-04	1.099220-03	0.	0.	0.	1.374040-06
30	-2.811880-03	1.167890-03	0.	0.	0.	-1.592610-06
31	-2.443810-03	-1.167880-03	0.	0.	0.	1.373630-06
32	-2.485020-03	-1.167880-03	0.	0.	0.	1.373630-06
34	-2.484970-03	-1.099200-03	0.	0.	0.	1.373600-06
35	-2.485000-03	1.099200-03	0.	0.	0.	1.373600-06
36	-2.485050-03	1.167880-03	0.	0.	0.	1.373630-06

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 9
 FREQUENCY= 52.6668 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	-7.410800-07	-4.244060-07	0.	0.	0.	2.822160-09
13	-6.975720-07	-2.874470-07	0.	0.	0.	2.656050-09
14	-3.494560-07	5.095880-07	0.	0.	0.	1.326820-09
15	-1.273860-09	7.745700-07	0.	0.	0.	-2.898900-12
16	3.469090-07	5.072650-07	0.	0.	0.	-1.332610-09
17	6.950260-07	-2.920900-07	0.	0.	0.	-2.661830-09
18	7.385340-07	-4.293380-07	0.	0.	0.	-2.827950-09
19	-9.144940-12	-2.875500-07	0.	0.	0.	-3.289720-12
20	2.137200-11	-2.894830-07	0.	0.	0.	-3.078070-12
21	4.911010-11	-2.909340-07	0.	0.	0.	-2.726500-12
22	7.960990-11	-2.921940-07	0.	0.	0.	-2.514560-12
23	1.524510-12	-2.894800-07	0.	0.	0.	-2.902890-12
24	1.524520-12	-2.909320-07	0.	0.	0.	-2.902890-12
25	-1.889480-02	-4.244200-07	0.	0.	0.	-6.060080-06
26	-2.780700-11	-2.875950-07	0.	0.	0.	-3.199370-12
27	-2.780980-11	-2.894730-07	0.	0.	0.	-3.043860-12
28	-2.781010-11	-2.909240-07	0.	0.	0.	-2.760920-12
29	-2.780780-11	-2.922380-07	0.	0.	0.	-2.605190-12
30	1.889470-02	-4.293530-07	0.	0.	0.	6.060020-06
31	-8.950730-07	-4.244070-07	0.	0.	0.	2.917920-09
32	-1.051820-06	-4.244070-07	0.	0.	0.	3.005840-09
34	-8.569260-07	-2.874660-07	0.	0.	0.	2.656040-09
35	8.547270-07	-2.921090-07	0.	0.	0.	-2.661830-09
36	1.049620-06	-4.293400-07	0.	0.	0.	-3.011620-09

Table 7 (Continued)

MODAL ANALYSIS

Modal Analysis

MODE NUMBER 10
 FREQUENCY= 54.1029 HZ

EIGENVECTORS NORMALIZED TO A UNIT MASS MATRIX

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
12	8.918650-04	5.202600-04	0.	0.	0.	-6.098950-07
13	8.919090-04	4.897560-04	0.	0.	0.	-6.100650-07
14	8.921800-04	2.450940-04	0.	0.	0.	-6.111630-07
15	8.922730-04	1.615020-11	0.	0.	0.	-6.115540-07
16	8.921860-04	-2.450940-04	0.	0.	0.	-6.111630-07
17	8.919190-04	-4.897560-04	0.	0.	0.	-6.100660-07
18	8.918760-04	-5.202600-04	0.	0.	0.	-6.098950-07
19	-7.247640-05	4.898220-04	0.	0.	0.	-6.122140-07
20	-7.249530-05	1.531080-04	0.	0.	0.	-6.122730-07
21	-7.249530-05	-1.531080-04	0.	0.	0.	-6.122730-07
22	-7.247640-05	-4.898220-04	0.	0.	0.	-6.122140-07
23	9.112420-07	1.531070-04	0.	0.	0.	-6.124300-07
24	9.112420-07	-1.531080-04	0.	0.	0.	-6.124300-07
25	-1.836750-02	5.202780-04	0.	0.	0.	-5.862440-06
26	-3.633350-06	4.898450-04	0.	0.	0.	-6.122900-07
27	-3.633680-06	1.531040-04	0.	0.	0.	-6.123150-07
28	-3.633680-06	-1.531040-04	0.	0.	0.	-6.123150-07
29	-3.633350-06	-4.898450-04	0.	0.	0.	-6.122900-07
30	-1.836770-02	-5.202780-04	0.	0.	0.	-5.862500-06
31	9.100900-04	5.202610-04	0.	0.	0.	-6.097960-07
32	9.283130-04	5.202620-04	0.	0.	0.	-6.097050-07
34	9.285040-04	4.897680-04	0.	0.	0.	-6.100600-07
35	9.285150-04	-4.897680-04	0.	0.	0.	-6.100600-07
36	9.283250-04	-5.202620-04	0.	0.	0.	-6.097060-07

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EIGENSOLUTION TIME LOG

EIGENSOLUTION = .68
 PRINTING = .09

Table 8

SPECIM

Floor Spectra for HFBR, Equipment Level -7% Damping

2 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- EQUIPMENT LEVEL -7 PCT DAMP

NUMBER OF DAMPING VALUES = 4
 NUMBER OF OUTPUT PERIOD CARDS = 5

NUMBER OF ACCELERATION VALUES = 1499
 INTERVAL OF DIGITIZATION = .0100

ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
 .020
 .050
 .070

PERIOD VALUES (SECONDS)

.0294	.0323	.0353	.0382	.0411	.0450	.0475	.0500	.0550	.0577
.0603	.0630	.0670	.0709	.0747	.0786	.0824	.0863	.0901	.0940
.0978	.1017	.1055	.1094	.1132	.1171	.1209	.1250	.1308	.1365
.1423	.1481	.1538	.1596	.1654	.1712	.1769	.1827	.1885	.1942
.2000									

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Table 8 (Continued)

SPECEW Floor Spectra for HFBR, Equipment Level -7% Damping

1 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- EQUIPMENT LEVEL -7 PCT DAMP

NUMBER OF DAMPING VALUES = 4
 NUMBER OF OUTPUT PERIOD CANUS = 3
 NUMBER OF ACCELERATION VALUES = 1499
 INTERVAL OF DIGITIZATION = .0100
 ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
 .020
 .050
 .070

PERIOD VALUES (SECONDS)

.2000	.2047	.2094	.2141	.2189	.2236	.2283	.2330	.2377	.2424
.2471	.2519	.2566	.2613	.2660	.2707	.2755	.2802	.2849	.2896
.2943	.2990	.3037	.3084	.3131	.3178	.3225	.3272	.3319	.3366
1.4423	2.1032	2.2642	2.4251	2.5860	2.7470	2.9079	3.0688	3.2298	3.3907
3.5516	3.7126	3.8735	4.0344	4.1953	4.3563	4.5172	4.6781	4.8391	5.0000

Table 8 (Continued)

ACCELERATION RECORD		Floor Spectra for HFBR, Equipment Level -7% Damping									
TIME (SEC)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)
0.0000	-.3754E-02	-.3687E-02	-.4627E-02	-.5383E-02	-.2017E-02	.1257E-02	.6435E-03	.5575E-05	.1402E-02	.2637E-02	
.1000	-.9935E-03	-.4407E-02	-.5632E-02	-.6505E-02	-.7591E-02	-.8352E-02	.2865E-03	.8490E-02	.1150E-01	.1388E-01	
.2000	.9238E-02	.4484E-02	-.1208E-02	-.6573E-02	-.6842E-02	-.6692E-02	.1138E-01	.2813E-01	.3016E-01	.3088E-01	
.3000	.1651E-01	.2301E-02	.1542E-01	.2715E-01	.4241E-01	.5560E-01	-.1228E-01	.7575E-01	-.3767E-01	-.6733E-03	
.4000	-.2343E-01	-.4391E-01	-.3959E-01	-.3345E-01	-.2339E-01	-.1525E-01	-.1520E-01	-.1378E-01	-.3259E-01	-.4938E-01	
.5000	-.7285E-01	-.9326E-01	-.2798E-01	.3593E-01	.4176E-01	.4575E-01	.7578E-01	.1012E+00	.9943E-02	-.7650E-01	
.6000	.1993E-01	.1117E+00	-.5718E-02	-.1165E+00	-.2624E-01	.6124E-01	.5347E-01	.4163E-01	.1059E+00	.1648E+00	
.7000	.7430E-01	.1671E-01	-.5992E-01	-.9801E-01	-.5528E-01	-.1117E-01	-.5223E-02	.1749E-02	-.6982E-02	-.1555E-01	
.8000	.9790E-02	.3220E-01	-.5598E-01	-.1366E+00	-.7334E-01	-.1115E-01	-.2699E-01	-.4194E-01	.1444E-01	.6889E-01	
.9000	.1770E-01	.3365E-01	.4699E-02	.4205E-01	.2541E-01	.9207E-02	.7785E-02	.6733E-02	.2045E-01	.3290E-01	
1.0000	-.1659E-01	-.6174E-01	-.5886E-01	-.5443E-01	-.2524E-01	.2149E-02	.1995E-01	-.4005E-01	-.1524E-01	.6912E-02	
1.1000	.4052E-01	.7034E-01	.1617E+00	.2437E+00	.1943E+00	.1400E+00	.1621E+00	.1787E+00	.9422E-01	.1278E-01	
1.2000	-.4049E-02	-.1755E-01	-.3137E-01	-.4407E-01	-.5798E-01	-.6889E-01	-.1754E+00	-.2723E+00	-.1918E+00	-.1118E+00	
1.3000	-.1582E+00	-.1981E+00	-.1863E+00	-.1698E+00	-.2198E+00	-.2619E+00	-.1083E+00	.4435E-01	.4422E-01	.4347E-01	
1.4000	.1081E+00	.1670E+00	.2177E+00	.2593E+00	.2394E+00	.2156E+00	.2006E+00	.1796E+00	.9446E-01	.1091E-01	
1.5000	.3391E-01	.9536E-01	.5412E-01	.4824E-01	.8181E-02	-.3124E-01	-.1026E+00	-.1690E+00	-.1713E+00	-.1687E+00	
1.6000	-.1201E+00	-.6943E-01	-.2723E-01	.1274E-01	-.8767E-01	-.1800E+00	-.4570E-01	.8399E-01	.4306E-01	.4223E-02	
1.7000	.1587E-01	.2899E-01	-.2876E-01	-.8404E-01	.3940E-01	.1578E+00	.1459E+00	.1284E+00	.1490E+00	.1611E+00	
1.8000	.8433E-01	.7653E-02	-.4026E-01	-.8238E-01	-.1040E+00	-.1209E+00	-.1221E+00	-.1177E+00	-.9070E-01	-.6249E-01	
1.9000	.1930E-01	.9381E-01	-.8430E-01	-.8935E-01	-.7166E-01	-.5332E-01	-.7642E-01	.9598E-01	-.1674E-01	.6210E-01	
2.0000	.3653E-01	.9653E-02	.2933E-01	.4808E-01	.6544E-01	.8028E-01	.6705E-01	.5262E-01	.3858E-01	.2403E-01	
2.1000	.2858E-01	.3184E-01	.7192E-01	.1071E+00	.2935E-01	-.4624E-01	-.2365E-01	-.2472E-02	-.6402E-01	-.1202E+00	
2.2000	-.2103E-01	.7495E-01	.4358E-01	.1100E-01	.3487E-01	.5744E-01	.6663E-01	.7158E-01	.2545E-01	-.1787E-01	
2.3000	-.1080E-01	-.3658E-02	-.2798E-02	-.2234E-02	-.4754E-01	-.8697E-01	.1123E+00	-.1332E+00	-.6448E-01	.2215E-02	
2.4000	-.6736E-01	-.1305E+00	-.6000E-01	.6399E-02	-.3244E-02	-.1359E-01	-.2832E-01	-.3858E-01	.1778E-01	.6845E-01	
2.5000	.4290E-01	.1969E-01	.3977E-01	.5961E-01	.3917E-01	.1684E-01	.4681E-01	.7614E-01	.7474E-01	.6979E-01	
2.6000	.5637E-01	.4016E-01	.3894E-01	.3640E-01	.1307E-01	-.1040E-01	.2474E-01	.5655E-01	.2676E-01	-.2087E-02	
2.7000	-.2492E-01	-.4521E-01	-.6850E-01	-.8806E-01	-.6238E-01	-.3456E-01	-.1051E+00	-.1686E+00	-.1416E+00	-.1119E+00	
2.8000	-.7860E-01	-.4516E-01	-.4124E-01	-.3611E-01	.5961E-02	.4345E-01	.1895E-01	-.4308E-02	-.9870E-02	-.1276E-01	
2.9000	.6658E-01	.1393E+00	.1837E+00	.2215E+00	.1815E+00	.1379E+00	.1023E+00	.6402E-01	.4044E-01	.1863E-01	
3.0000	.2858E-01	.3697E-01	-.8347E-02	-.5321E-01	-.3573E-02	.4269E-01	-.2738E-01	-.9440E-01	.4609E-01	.5536E-03	
3.1000	-.9290E-01	-.1787E+00	-.2196E+00	-.2484E+00	-.2151E+00	.1766E+00	-.1181E+00	.5679E-01	-.3111E-01	-.6692E-02	
3.2000	.5373E-01	.1066E+00	.2055E+00	.2925E+00	.2413E+00	.1851E+00	.1530E+00	.1179E+00	.1231E+00	.1264E+00	
3.3000	.5842E-01	-.4510E-02	.1563E-01	.3332E-01	.5990E-01	.8174E-01	.7663E-01	-.2239E+00	-.1748E+00	-.1266E+00	
3.4000	-.1117E+00	-.9570E-01	-.9712E-01	-.9438E-01	-.1301E+00	-.1643E-01	-.1602E-01	-.1481E+00	.1283E+00	-.1015E+00	
3.5000	-.4114E-01	.1764E-01	.3202E-01	.4741E-01	.8358E-01	.1159E+00	.1131E+00	.1049E+00	.9065E-01	.7459E-01	
3.6000	.5464E-01	.3231E-01	.5073E-01	.6578E-01	.9435E-01	.1190E+00	.1766E+00	.2242E+00	.9114E-01	-.3777E-01	
3.7000	-.5181E-01	-.8215E-01	-.8290E-01	-.9990E-01	-.1228E+00	-.1383E+00	-.1642E+00	-.1859E+00	-.1398E+00	-.9285E-01	
3.8000	.4834E-02	.9666E-01	.7826E-01	.5593E-01	.8650E-01	.1122E+00	.1215E+00	.1280E+00	.8225E-01	.3948E-01	
3.9000	.3583E-01	.3264E-01	.6404E-01	.9334E-01	.6329E-01	.3363E-01	.2596E-01	.1529E-01	.1963E-01	.2095E-01	
4.0000	-.8244E-02	-.3681E-01	-.6205E-01	-.8671E-01	-.1406E+00	-.1870E+00	-.2194E+00	-.2407E+00	-.1963E+00	-.1470E+00	
4.1000	-.1691E+00	-.1822E+00	-.1410E+00	-.9637E-01	-.5565E-01	-.1649E-01	.3567E-01	.8451E-01	.1138E+00	.1355E+00	
4.2000	.1595E+00	.1760E+00	.1384E+00	.1001E+00	.3756E-01	-.2104E-01	.4990E-01	.1174E+00	.1941E+00	.2617E+00	
4.3000	.2225E+00	.1767E+00	.1702E+00	.1551E+00	.1740E+00	.1851E+00	.6062E-01	-.5927E-01	-.3435E-01	-.1162E-01	
4.4000	-.6801E-01	-.1185E+00	-.1634E+00	-.1978E+00	-.1830E+00	-.1656E+00	-.2022E+00	-.2284E+00	-.2307E+00	-.2251E+00	
4.5000	-.1524E+00	-.8168E-01	-.1149E+00	-.1409E+00	-.1434E+00	-.1416E+00	-.7821E-01	-.1663E-01	.1319E-01	.4539E-01	
4.6000	.1702E+00	.2824E+00	.2360E+00	.1845E+00	.1821E+00	.1776E+00	.1415E+00	.1013E+00	.1309E+00	.1563E+00	
4.7000	.1633E+00	.1630E+00	.1289E+00	.8935E-01	-.9920E-02	-.1041E+00	-.7922E-01	-.5378E-01	-.1925E+00	-.3174E+00	
4.8000	-.2591E+00	-.1947E+00	-.1301E+00	-.6720E-01	-.2246E-01	.2181E-01	.3554E-01	.4451E-01	.6231E-02	-.2972E-01	
4.9000	-.3663E-01	-.3798E-01	.1288E-01	.6142E-01	.9759E-02	-.3733E-01	-.3676E-02	.2881E-01	-.2663E-01	-.7990E-01	
5.0000	.2658E-01	.1271E+00	.5547E-01	-.1701E-01	-.4080E-02	.7788E-02	-.6899E-01	-.1402E+00	.1485E-01	.1624E+00	
5.1000	.9865E-01	.3422E-01	.1283E+00	.2139E+00	.1553E+00	.9373E-01	.6826E-01	.4598E-01	.7842E-01	.1053E+00	
5.2000	.1041E+00	.1000E+00	.6826E-01	.3526E-01	.5868E-02	-.2571E-01	-.1211E+00	-.2065E+00	-.1893E+00	-.1667E+00	
5.3000	-.1965E+00	-.2192E-01	-.1537E+00	-.8492E-01	-.1422E+00	-.1935E+00	-.1537E+00	-.1107E+00	-.1197E+00	-.1241E+00	
5.4000	.1379E-02	.1211E+00	.1363E+00	.1460E+00	.1318E+00	.1159E+00	.1743E+00	.2236E+00	.1624E+00	.1013E+00	
5.5000	.1044E+00	.1048E+00	.8795E-01	.6725E-01	.9648E-01	.1224E+00	-.1321E-02	-.1206E+00	-.9060E-01	-.6106E-01	
5.6000	-.2094E+00	-.3427E+00	-.1594E+00	.1888E-01	-.3567E-01	-.8935E-01	-.9199E-01	-.8881E-01	-.8622E-01	-.8394E-01	
5.7000	-.1243E-01	.5992E-01	.5319E-01	.4702E-01	.1292E+00	.2011E+00	.1293E+00	.5920E-01	.7137E-01	.8168E-01	

Table 8 (Continued)

Floor Spectra for HFBR, Equipment Level -7% Damping

5.8000	.4181E-01	.4124E-03	.2466E-01	.4920E-01	.5948E-01	.6456E-01	.6067E-01	.5332E-01	.2096E-01	-.1031E-01
5.9000	-.2951E-02	.2738E-02	-.8044E-01	-.1556E+00	-.1523E+00	-.1425E+00	-.1638E+00	-.1789E+00	-.1249E+00	-.6821E-01
6.0000	.7381E-02	.7661E-01	.8938E-01	.9725E-01	.7521E-01	.5161E-01	.4047E-01	.2855E-01	.6210E-02	-.1265E-01
6.1000	.6744E-02	.2640E-01	.7407E-01	.1167E+00	.8161E-01	.4650E-01	.1341E-01	-.1937E-01	.2408E-01	.6290E-01
6.2000	-.1087E-01	-.7982E-01	-.5679E-01	-.3487E-01	-.4912E-01	-.6254E-01	-.2653E-01	.1038E-01	.1718E-01	.2102E-01
6.3000	-.3298E-01	-.8137E-01	-.1152E+00	-.1410E+00	-.1290E+00	-.1129E+00	-.3528E-01	.4023E-01	.8736E-01	.1268E+00
6.4000	.1454E+00	.1553E+00	.9583E-01	.3624E-01	.4295E-01	.4912E-01	.3065E-01	.1377E-01	.4870E-01	.8233E-01
6.5000	.8925E-01	.9205E-01	.5464E-01	.1743E-01	-.5306E-02	-.2772E-01	-.2751E-01	-.2767E-01	-.7868E-01	-.1242E+00
6.6000	-.7640E-01	-.2992E-01	-.1127E+00	-.1878E+00	-.1468E+00	-.1022E+00	-.1841E+00	-.2566E+00	-.1386E+00	-.1981E-01
6.7000	-.5922E-02	.6782E-02	.5860E-01	.1067E+00	.8422E-01	.5894E-01	.8469E-01	.1074E+00	.9256E-01	.7593E-01
6.8000	.6396E-01	.5119E-01	.1104E+00	.1630E+00	.1309E+00	.9658E-01	.1116E+00	.1217E+00	.7052E-01	.1825E-01
6.9000	.3741E-01	.5477E-01	-.1618E-01	-.8456E-01	-.2514E-01	.3150E-01	.2291E-01	.1326E-01	-.1038E+00	-.2102E+00
7.0000	-.2024E+00	-.1885E+00	-.2425E+00	-.2834E+00	-.2038E+00	-.1206E+00	-.1910E+00	-.2543E+00	-.1344E+00	-.1556E-01
7.1000	.1611E-01	.4352E-01	.1243E+00	.1970E+00	.2014E+00	.1984E+00	.3484E+00	.4811E+00	.3728E+00	.2601E+00
7.2000	.2273E+00	.1912E+00	.1467E+00	.1000E+00	.8570E-01	.7236E-01	.6228E-02	.6016E-01	-.1006E+00	-.1392E+00
7.3000	-.1928E+00	-.2392E+00	-.2943E+00	-.3402E+00	-.3350E+00	-.3207E+00	-.3091E+00	-.2870E+00	-.2635E+00	-.2315E+00
7.4000	-.1418E+00	-.5041E-01	-.3593E-01	-.1764E-01	.6238E-01	.1379E+00	.2010E+00	.2546E+00	.2858E+00	.3075E+00
7.5000	.2509E+00	.1878E+00	.2593E+00	.3181E+00	.2640E+00	.2049E+00	.1569E+00	.1058E+00	.8391E-01	.5842E-01
7.6000	-.2302E-01	-.9764E-01	-.1361E+00	-.1697E+00	-.2312E+00	-.2839E+00	-.2434E+00	-.1964E+00	-.2547E+00	-.3041E+00
7.7000	-.1789E+00	-.5549E-01	-.1097E+00	-.1574E+00	-.1051E+00	-.5034E-01	-.2865E-01	-.6899E-02	.1845E-01	.4666E-01
7.8000	.1095E+00	.1653E+00	.1888E+00	.2052E+00	.2014E+00	.1927E+00	.2239E+00	.2439E+00	.2172E+00	.1845E+00
7.9000	.1147E+00	.4477E-01	.8018E-01	.1085E+00	.7832E-01	.4769E-01	-.7083E-01	-.1805E+00	-.1552E+00	-.1284E+00
8.0000	-.1962E+00	-.2517E+00	-.1468E+00	-.4288E-01	-.1369E+00	-.2252E+00	-.1069E+00	.1048E-01	-.1216E+00	-.2446E+00
8.1000	-.1059E+00	.3096E-01	.1390E-01	-.2617E-02	.2863E-02	.1138E-01	.1189E-01	.1104E-01	-.2072E-01	-.4702E-01
8.2000	.7902E-01	.1958E+00	.1528E+00	.1043E+00	.1604E+00	.2083E+00	.1642E+00	.1142E+00	.8430E-01	.5492E-01
8.3000	.5591E-01	.5474E-01	.3358E-01	.1303E-01	.1264E-01	.1293E-01	.4746E-01	.7707E-01	.2630E-01	-.2284E-01
8.4000	-.1927E-01	-.1619E-01	-.3275E-01	-.4894E-01	-.5264E-01	-.5324E-01	-.1043E+00	-.1501E+00	-.1630E+00	-.1692E+00
8.5000	-.1941E+00	-.2095E+00	-.1847E+00	-.1545E+00	-.1485E+00	-.1379E+00	-.1241E+00	-.1066E+00	-.2202E-02	.9503E-01
8.6000	.8083E-01	.6446E-01	.1328E+00	.1933E+00	.1719E+00	.1456E+00	.2309E+00	.3075E+00	.2663E+00	.2191E+00
8.7000	.2017E+00	.1803E+00	.8490E-01	.7845E-02	.1853E-01	.4285E-01	.1034E-01	-.2315E-01	-.4267E-01	-.6218E-01
8.8000	-.1992E+00	-.3254E+00	-.2496E+00	-.1699E+00	-.2624E+00	-.3415E+00	-.3085E+00	-.2661E+00	-.2131E+00	-.1570E+00
8.9000	-.9720E-01	-.3373E-01	.4712E-01	.1214E+00	.1031E+00	.8246E-01	.1404E+00	.1933E+00	.2423E+00	.2801E+00
9.0000	.2630E+00	.2399E+00	.2350E+00	.2224E+00	.2437E+00	.2548E+00	.1843E+00	.1126E+00	.1558E-01	.7803E-01
9.1000	-.5039E-01	-.2420E-01	-.9228E-01	-.1533E+00	-.1660E+00	-.1753E+00	-.1745E+00	-.1712E+00	-.2056E+00	-.2295E+00
9.2000	-.2169E+00	-.1990E+00	-.1959E+00	-.1856E+00	-.9946E-01	-.1138E-01	.6992E-01	.1436E+00	.4855E-01	-.4132E-01
9.3000	.4363E-01	.1236E+00	.1392E+00	.1495E+00	.1136E+00	.7904E-01	.9544E-01	.1049E+00	.1541E+00	.1960E+00
9.4000	.1636E+00	.1282E+00	.4821E-01	-.3262E-01	-.3964E-01	-.4443E-01	-.3842E-01	-.2997E-01	-.1019E+00	-.1678E+00
9.5000	-.1634E+00	-.1541E+00	-.1140E+00	-.7220E-01	-.2284E-01	.2389E-01	-.3402E-01	-.8902E-01	-.2637E-01	.3412E-01
9.6000	.3041E-01	.2697E-01	.4619E-01	.6479E-01	-.1821E-01	-.9627E-01	-.7187E-02	.7938E-01	.9661E-01	.1096E+00
9.7000	.1051E+00	.9681E-01	.1218E+00	.1387E+00	.4943E-01	-.3609E-01	.2024E-01	.7269E-01	-.1480E-01	-.9837E-01
9.8000	-.6855E-01	-.3580E-01	-.6995E-01	-.1017E+00	-.9523E-01	-.8409E-01	-.2452E-01	.3174E-01	.1396E-01	-.4394E-02
9.9000	.2948E-02	.9738E-02	.2912E-03	-.9821E-02	-.1738E-01	-.2235E-01	.1286E-01	.4617E-01	-.1280E-01	-.6749E-01
10.0000	-.1287E+00	-.1802E+00	-.1350E+00	-.8793E-01	-.6319E-01	-.3728E-01	.7334E-02	.4746E-01	.7824E-01	.1011E+00
10.1000	.1844E+00	.2573E+00	.1559E+00	.5497E-01	.1938E+00	.3194E+00	.1420E+00	-.2759E-01	.9697E-02	.4883E-01
10.2000	-.2548E-01	-.9720E-01	-.6622E-01	-.3119E-01	-.1216E+00	-.2082E+00	.1335E+00	-.6184E-01	-.1373E+00	-.2054E+00
10.3000	-.1851E+00	-.1617E+00	-.1516E+00	-.1384E+00	-.1009E+00	-.5772E-01	-.5189E-01	-.4389E-01	.4539E-01	.1308E+00
10.4000	.1266E+00	.1216E+00	.1052E+00	.8637E-01	.1115E+00	.1308E+00	.7456E-01	.1977E-01	.1028E+00	.1751E+00
10.5000	.7492E-01	.2463E-01	.1010E+00	.2172E+00	.1234E+00	.2782E-01	-.9251E-02	-.4062E-01	-.1121E+00	-.1765E+00
10.6000	-.1079E+00	-.3702E-01	-.4705E-01	-.5523E-01	-.2030E-01	.1081E-01	-.4858E-01	-.1047E+00	-.4858E-01	-.6446E-01
10.7000	-.4435E-01	-.2498E-01	-.2868E-01	-.2959E-01	.2982E-01	.8503E-01	.1705E-01	-.4720E-01	.1294E-02	.4927E-01
10.8000	.2376E-01	-.1754E-02	.9085E-01	.1768E+00	.1676E+00	.1513E+00	.1549E+00	.1525E+00	.1456E+00	.1328E+00
10.9000	.5008E-01	-.2933E-01	-.1336E+00	-.2268E+00	-.1096E+00	.5313E-02	-.8497E-01	-.1662E+00	-.1494E+00	-.1295E+00
11.0000	-.1353E+00	-.1402E+00	-.1352E+00	-.1233E+00	-.1258E+00	-.1268E+00	-.7972E-01	-.3324E-01	-.5153E-01	-.6394E-01
11.1000	.4992E-01	.1558E+00	.1289E+00	.1005E+00	.1349E+00	.1663E+00	.1544E+00	.1361E+00	.1030E+00	.7091E-01
11.2000	.9829E-01	.1199E+00	.3073E-01	-.5681E-01	-.1800E-01	.1947E-01	-.9826E-03	-.2323E-01	-.2358E-01	-.2301E-01
11.3000	-.7135E-01	-.1158E+00	-.8205E-01	-.4689E-01	-.4041E-01	-.3184E-01	-.1350E-02	.2769E-01	-.5168E-01	-.1253E+00
11.4000	.6192E-03	.1209E+00	.6855E-01	.1664E-01	-.9490E-02	-.3264E-01	-.2112E-01	-.1154E-01	.5031E-02	.2268E-01
11.5000	.5966E-01	.9158E-01	.5728E-01	.2065E-01	.4617E-01	.7028E-01	.5137E-02	-.5676E-01	-.6052E-01	-.6101E-01
11.6000	-.4023E-01	-.1892E-01	-.5013E-01	-.7772E-01	-.1891E-01	.3591E-01	-.1344E-01	-.6052E-01	.3790E-01	.1299E+00
11.7000	.1031E+00	.7249E-01	.1024E+00	.1292E+00	.1789E-01	-.8821E-01	-.5813E-01	-.2529E-01	-.1827E-01	-.1030E-01
11.8000	-.1815E-02	.6593E-02	.1574E-01	.2160E-01	-.1301E-01	-.4588E-01	-.4023E-01	-.3417E-01	-.4627E-01	-.5756E-01
11.9000	-.4034E-01	-.2199E-01	-.5798E-01	-.9005E-01	-.1017E+00	-.1081E+00	-.2248E+00	-.3256E+00	-.1982E+00	-.7005E-01
12.0000	-.6536E-01	-.5946E-01	.1072E+00	.2606E+00	.2268E+00	.1822E+00	.2764E+00	.3573E+00	.2645E+00	.1677E+00

Table 8 (Continued)
Floor Spectra for HFBR, Equipment Level -7% Damping

12.1000	.1889E+00	.2065E+00	.1443E+00	.8316E-01	.2326E-01	-.3070E-01	-.3293E-01	-.3497E-01	-.9337E-01	-.1470E+00
12.2000	-.1360E+00	-.1243E+00	-.1357E+00	-.1474E+00	-.1604E+00	-.1689E+00	-.1283E+00	-.8759E-01	-.1473E+00	-.1977E+00
12.3000	-.1835E+00	-.1597E+00	-.1540E+00	-.1406E+00	-.5391E-01	.3440E-01	.1792E-01	.2258E-02	.1010E+00	.1897E+00
12.4000	.1820E+00	.1666E+00	.2119E+00	.2460E+00	.3111E+00	.3588E+00	.2886E+00	.2142E+00	.1884E+00	.1589E+00
12.5000	.8047E-01	.5510E-02	-.2699E-01	-.5202E-01	-.1621E+00	-.2622E+00	-.1748E+00	-.8829E-01	-.1859E+00	-.2749E+00
12.6000	-.1638E+00	-.3767E-01	-.1780E+00	-.2904E+00	-.1528E+00	-.1535E-01	-.1055E+00	-.1884E+00	-.1443E+00	-.9150E-01
12.7000	-.5749E-01	-.2118E-01	.5850E-01	.1362E+00	.1738E+00	.2041E+00	.1634E+00	.1180E+00	.1194E+00	.1160E+00
12.8000	.1757E+00	.2242E+00	.1673E+00	.1062E+00	.8917E-01	.6876E-01	.2376E-01	-.1968E-01	-.2492E-01	-.2606E-01
12.9000	-.2186E-01	-.1738E-01	-.7889E-01	-.1339E+00	-.1034E+00	-.7130E-01	-.1099E+00	-.1448E+00	-.7738E-01	-.1192E-01
13.0000	-.6738E-01	-.1201E+00	-.8811E-01	-.5422E-01	-.1746E-01	.1840E-01	-.2979E-01	-.7145E-01	-.6000E-02	.5699E-01
13.1000	.6290E-01	.6718E-01	.8402E-01	.9899E-01	.9661E-01	.8850E-01	.1419E+00	.1877E+00	.1485E+00	.1060E+00
13.2000	.3269E-01	-.3904E-01	-.3067E-01	-.2124E-01	-.6249E-01	-.9790E-01	-.4026E-01	.1479E-01	-.5642E-01	-.1231E+00
13.3000	-.5707E-01	.8028E-02	-.3899E-01	-.8415E-01	-.5407E-01	-.2267E-01	-.6663E-01	-.1072E+00	-.5412E-01	-.1038E-02
13.4000	-.1266E-01	-.2273E-01	.1228E-01	.4573E-01	-.2569E-01	-.9215E-01	-.8712E-02	.7187E-01	.7438E-01	.7360E-01
13.5000	.9557E-01	.1133E+00	.1041E+00	.8943E-01	.4834E-01	.8655E-02	-.2082E-01	-.4738E-01	-.2826E-01	-.9295E-02
13.6000	-.1714E-01	-.2270E-01	-.4440E-01	-.6394E-01	-.1924E-01	.2225E-01	.1185E-01	.1698E-02	-.4360E-02	-.1106E-01
13.7000	.9070E-02	.2653E-01	.1098E-01	-.2114E-02	.7927E-02	.1746E-01	-.2938E-02	-.2188E-01	-.1224E-01	-.6995E-03
13.8000	-.3249E-01	-.6207E-01	-.1043E-01	.3858E-01	-.3378E-03	-.3769E-01	.1248E-02	.3687E-01	.2609E-01	.1355E-01
13.9000	.1113E-01	.9681E-02	.9104E-02	.7490E-02	-.1626E-01	-.3666E-01	.1960E-01	.7350E-01	.3544E-01	-.2075E-02
14.0000	.1015E-01	.2211E-01	-.1335E-01	-.4769E-01	-.4290E-01	-.3671E-01	-.3725E-01	-.3764E-01	-.4940E-01	-.5933E-01
14.1000	-.4712E-01	-.3417E-01	-.3153E-01	-.2795E-01	.1428E-01	.5427E-01	.4596E-01	.3661E-01	.1050E-01	-.1369E-01
14.2000	.1781E-01	.4736E-01	.5288E-01	.5699E-01	.6479E-01	.6984E-01	.7365E-01	.7337E-01	.4611E-01	.1931E-01
14.3000	-.4964E-02	-.2790E-01	-.2223E-01	-.1661E-01	-.2126E-01	-.2433E-01	-.1145E-01	.3585E-03	-.3176E-01	-.6176E-01
14.4000	-.5047E-01	-.3746E-01	-.5777E-01	-.7547E-01	-.8145E-01	-.8365E-01	-.6557E-01	-.4635E-01	-.2655E-01	-.6902E-02
14.5000	.2627E-01	.5655E-01	.5977E-01	.6021E-01	.6503E-01	.6790E-01	.6000E-01	.5111E-01	.4440E-01	.3749E-01
14.6000	.6306E-01	.8544E-01	.6018E-01	.3417E-01	.2148E-01	.8422E-02	-.2003E-01	-.4707E-01	-.4321E-01	-.3798E-01
14.7000	-.5477E-01	-.6972E-01	-.7244E-01	-.7311E-01	-.6870E-01	-.6259E-01	-.7681E-01	-.8759E-01	-.6453E-01	-.4044E-01
14.8000	-.2490E-01	-.8909E-02	.1042E-02	.1138E-01	.2648E-01	.3995E-01	.5585E-01	.6956E-01	.7541E-01	.7863E-01
14.9000	.7689E-01	.7223E-01	.5855E-01	.4391E-01	.4927E-01	.5290E-01	.3547E-01	.1759E-01	.1442E-01	

Table 8 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	.0007	.1229	-1.0167	.1532	1.0166
.032	-.0015	-.2607	1.7034	-.2822	-1.7033
.035	.0016	.2381	-1.5400	.2782	1.5399
.038	-.0061	.9522	5.1401	-1.0056	-5.1398
.041	.0072	1.0849	-5.2039	1.0961	5.2036
.045	.0071	.9719	-4.2866	.9885	4.2864
.048	-.0066	.8228	3.5647	-.8677	-3.5645
.050	.0030	.3590	-1.4713	.3770	1.4712
.055	-.0070	.7882	2.8187	-.7945	-2.8185
.058	.0069	.7129	-2.5315	.7481	2.5313
.060	-.0075	-.7540	2.5131	-.7770	-2.5130
.063	.0058	-.5319	-1.8028	.5820	1.8027
.067	.0079	.6535	-2.1633	.7428	2.1632
.071	.0148	1.2683	-3.6039	1.3085	3.6037
.075	.0076	.5989	-1.6712	.6398	1.6711
.079	-.0115	1.3764	3.4694	-1.3966	-3.4692
.082	.0140	.9739	-2.5190	1.0637	2.5189
.086	.0095	-.6915	-1.5688	.6934	1.5687
.090	-.0161	-1.0740	2.4313	-1.1226	-2.4311
.094	-.0129	.7862	1.7871	-.8604	-1.7870
.098	.0101	-.5676	-1.2893	.6462	1.2892
.102	.0156	.8746	-1.8497	.9635	1.8496
.106	-.0223	1.2325	2.4558	-1.3277	-2.4557
.109	.0317	-1.7823	-3.2529	1.8229	3.2527
.113	.0274	-1.5127	-2.6219	1.5210	2.6217
.117	-.0248	1.2566	2.2201	-1.3317	-2.2200
.121	-.0363	1.7683	3.0489	-1.8890	-3.0487
.125	.0282	-1.3732	-2.2159	1.4195	2.2158
.131	-.0361	1.6119	2.5859	-1.7330	-2.5858
.137	.0199	.8665	-1.3058	.9137	1.3057
.142	.0392	1.6923	-2.3750	1.7320	2.3749
.148	-.0339	1.4213	1.8934	-1.4368	-1.8933
.154	-.0239	.8622	1.2355	-.9740	-1.2354
.160	.0610	2.3569	-2.9372	2.4026	2.9371
.165	-.0307	-1.0145	1.3774	-1.1674	-1.3773
.171	-.0723	-2.4968	3.0273	-2.6552	-3.0271
.177	-.0717	2.5103	2.8070	-2.5450	-2.8068
.183	-.0733	-2.5124	2.6941	-2.5223	-2.6940
.188	.0736	2.3968	-2.5396	2.4527	2.5394
.194	.0486	-1.3881	-1.5791	1.5718	1.5790
.200	.0545	-1.5829	-1.6693	1.7110	1.6692

Table 8 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0545	-1.5829	-1.6693	1.7110	1.6692
.205	.0553	-1.5726	-1.6188	1.6983	1.6187
.209	.0526	-1.4490	-1.4705	1.5782	1.4704
.214	.0840	2.2964	-2.2469	2.4658	2.2468
.219	.0403	1.1361	-1.0317	1.1571	1.0316
.224	.0675	-1.7461	-1.6550	1.8962	1.6549
.228	.0636	1.6040	-1.4965	1.7508	1.4965
.233	-.0876	2.1727	1.9782	-2.3620	-1.9780
.238	.0697	1.6838	-1.5130	1.8432	1.5129
.242	.1133	2.7597	-2.3639	2.9368	2.3637
.247	-.1019	-4.0006	3.2493	-4.1153	-3.2491
.252	.1561	3.7614	-3.0177	3.8949	3.0175
.257	.0940	-2.1551	-1.7508	2.3020	1.7507
.261	.1664	3.9471	-2.9884	4.0014	2.9882
.266	-.1051	4.2666	3.2076	-4.3724	-3.2074
.277	.1314	-2.8053	-2.0997	2.9806	2.0996
.288	.3945	-8.4262	-5.8512	8.6207	5.8508
.298	.2847	-5.8263	-3.9302	6.0020	3.9300
.309	.2941	5.9151	-3.7886	5.9896	3.7884
.319	.4599	-9.0228	-5.5408	9.0579	5.5405
.333	.3710	6.9982	-4.1017	6.9996	4.1015
.494	.1986	-2.6643	-.9981	2.5264	.9980
.655	.1549	-1.7623	-.4430	1.4866	.4429
.816	.0699	.8058	-.1289	.5387	.1289
.977	.0890	.9580	.1144	-.5725	-.1144
1.138	.0520	-.6274	-.0493	.2872	.0493
1.299	.0431	-.6493	-.0313	.2085	.0313
1.460	-.0487	.6205	.0280	-.2096	-.0280
1.620	.0508	-.6137	-.0237	.1970	.0237
1.781	.0567	.5932	-.0219	.1999	.0219
1.942	-.0399	.6092	.0130	-.1289	-.0130
2.103	.0545	.5652	-.0151	.1629	.0151
2.264	.0403	-.5731	-.0096	.1120	.0096
2.425	-.0396	-.5556	.0082	-.1025	-.0082
2.586	.0353	.5541	-.0065	.0857	.0065
2.747	-.0334	.5611	.0054	-.0764	-.0054
2.908	.0486	.5609	-.0070	.1049	.0070
3.069	-.0576	.5579	.0075	-.1179	-.0075
3.230	-.0634	.5554	.0075	-.1234	-.0075
3.391	.0676	.5547	-.0072	.1252	.0072
3.552	-.0683	.5556	.0066	-.1209	-.0066
3.713	-.0657	.5573	.0058	-.1111	-.0058
3.873	.0623	.5590	-.0051	.1011	.0051
4.034	.0617	.5602	-.0046	.0961	.0046
4.195	-.0650	.5608	.0045	-.0974	-.0045
4.356	.0709	.5608	-.0046	.1022	.0046
4.517	-.0770	.5601	.0046	-.1071	-.0046
4.678	.0821	.5591	-.0046	.1102	.0046
4.839	-.0855	.5578	.0045	-.1109	-.0045
5.000	-.0874	.5563	.0043	-.1098	-.0043

Table 8 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	-.0004	.0443	.5426	-.0817	-.5424
.032	.0005	-.0525	-.5861	.0969	.5852
.035	-.0007	-.0972	.6922	-.1250	-.6920
.038	.0011	.1580	-.9544	.1872	.9567
.041	.0014	-.1836	-1.0146	.2131	1.0117
.045	-.0017	.2058	1.0370	-.2392	-1.0371
.048	.0013	.1725	.7216	-.1750	-.7188
.050	-.0013	.1250	.6333	-.1623	-.6332
.055	-.0017	.1672	.6928	-.1947	-.6909
.058	.0019	.1660	-.7093	.2102	.7114
.060	.0026	-.2310	-.8847	.2727	.8819
.063	-.0024	-.1758	.7483	-.2414	-.7476
.067	.0032	-.2277	.8770	-.3006	-.8755
.071	-.0039	-.3160	.9476	-.3426	-.9436
.075	.0037	-.2682	.8192	-.3139	-.8198
.079	-.0043	.3112	.8666	-.3478	-.8639
.082	.0043	.3030	-.7703	.3249	.7694
.086	-.0041	-.2556	.6689	-.2963	-.6704
.090	.0046	-.2776	.6946	-.3213	-.6959
.094	-.0048	.2497	.6616	-.3186	-.6617
.098	.0064	.3450	.8221	-.4117	-.8213
.102	-.0080	.4426	.9504	-.4945	-.9493
.106	.0083	-.4149	.9195	-.4969	-.9190
.109	.0096	.4189	-.9865	.5539	.9884
.113	-.0087	-.3927	-.8348	.4830	.8325
.117	.0118	.5096	-1.0624	.6351	1.0587
.121	-.0099	-.5011	.8277	-.5143	-.8300
.125	.0108	.5178	.8447	-.5412	-.8449
.131	-.0130	.5920	.9364	-.6259	-.9339
.137	.0124	-.5175	.8170	-.5698	-.8142
.142	-.0145	-.5267	.8778	-.6392	-.8764
.148	.0180	-.6362	-1.0044	.7620	1.0041
.154	-.0198	.7162	1.0270	-.8101	-1.0274
.160	.0251	.8854	-1.2074	.9893	1.2094
.165	-.0219	.6764	.9852	-.8336	-.9835
.171	.0242	-.7345	1.0125	-.8889	-1.0134
.177	-.0311	.9701	1.2186	-1.1061	-1.2199
.183	.0323	.9772	-1.1852	1.1100	1.1855
.188	.0331	.9593	-1.1439	1.1051	1.1442
.194	.0395	1.1471	-1.2886	1.2792	1.2851
.200	-.0335	.8966	-1.0220	1.0511	1.0255

Table 8 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.200	.0335	.8966	-1.0220	1.0511	1.0255
.205	.0302	.7921	.8848	-.9279	-.8845
.209	.0324	.8394	-.9034	.9713	.9050
.214	.0368	.9237	-.9875	1.0800	.9841
.219	.0390	.9199	-.9985	1.1187	.9973
.224	.0412	.9205	-1.0098	1.1583	1.0109
.228	.0449	.9885	-1.0568	1.2364	1.0568
.233	.0493	-1.1340	-1.1136	1.3288	1.1128
.238	.0490	1.1641	-1.0672	1.2955	1.0634
.242	.0569	1.3355	-1.1865	1.4744	1.1867
.247	.0632	-1.3951	1.2644	-1.6058	-1.2678
.252	.0743	1.6077	1.4365	-1.8531	-1.4356
.257	.0709	1.5560	-1.3251	1.7354	1.3198
.261	.0730	-1.5630	-1.3088	1.7554	1.3109
.266	.0856	-1.9147	-1.4805	2.0224	1.4836
.277	.0996	2.0314	1.5960	-2.2591	-1.5913
.288	.1424	-2.9462	2.1113	3.1110	2.1114
.298	.1606	-3.3232	-2.2221	3.3859	2.2170
.309	.1598	3.0940	-2.0570	3.2538	2.0580
.319	-.1832	-3.4099	2.2082	-3.6084	-2.2071
.333	.2351	4.3544	-2.6048	4.4363	2.5995
.494	.1019	1.5789	.5125	-1.2957	-.5118
.655	-.0905	-1.2487	.2591	-.8686	-.2588
.816	.0653	-.7691	-.1205	.5028	.1203
.977	-.0624	.8547	.0803	-.4014	-.0802
1.138	.0507	-.6370	-.0483	.2798	.0480
1.299	-.0409	-.6262	.0299	-.1978	-.0297
1.460	.0415	.6008	-.0241	.1788	.0239
1.620	.0436	-.5954	-.0206	.1690	.0204
1.781	.0458	.5720	-.0179	.1614	.0177
1.942	-.0403	.5965	.0131	-.1305	-.0131
2.103	-.0458	.5667	.0127	-.1368	-.0127
2.264	.0373	-.5657	-.0091	.1036	.0089
2.425	-.0363	-.5537	-.0076	-.0941	-.0076
2.586	.0342	.5535	-.0066	.0831	.0063
2.747	-.0352	.5591	.0057	-.0805	-.0057
2.908	-.0461	.5596	.0067	-.0996	-.0067
3.069	.0542	.5576	.0071	-.1110	-.0071
3.230	-.0597	.5559	.0070	-.1161	-.0070
3.391	-.0632	.5553	.0067	-.1171	-.0067
3.552	-.0643	.5559	.0062	-.1137	-.0062
3.713	-.0631	.5571	.0056	-.1067	-.0056
3.873	.0616	.5584	.0050	-.0999	-.0050
4.034	.0619	.5594	.0047	-.0963	-.0047
4.195	-.0647	.5599	.0045	-.0969	-.0045
4.356	-.0693	.5598	.0045	-.0999	-.0045
4.517	.0742	.5593	.0045	-.1032	-.0045
4.678	.0784	.5584	.0044	-.1053	-.0044
4.839	.0816	.5573	.0043	-.1059	-.0043
5.000	-.0837	.5560	.0041	-.1052	-.0041

Table 8 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	-.0004	.0379	.5612	-.0846	-.5612
.032	-.0005	.0499	.5604	-.0926	-.5590
.035	-.0006	-.0768	.6339	-.1143	-.6325
.038	-.0009	.1081	.7841	-.1533	-.7837
.041	-.0011	-.1257	.7795	-.1633	-.7754
.045	-.0010	-.1296	.6179	-.1415	-.6134
.048	-.0010	.1182	.5544	-.1346	-.5529
.050	.0011	-.0940	-.5363	.1365	.5326
.055	-.0015	.1209	.5925	-.1666	-.5911
.058	.0015	-.1222	-.5677	.1666	.5638
.060	.0018	.1451	-.6054	.1868	.6040
.063	-.0020	.1278	.6172	-.1990	-.6162
.067	-.0026	.1499	.7088	-.2423	-.7057
.071	-.0026	-.1780	.6395	-.2316	-.6377
.075	-.0027	-.1916	.6006	-.2281	-.5957
.079	-.0030	-.2000	.5972	-.2400	-.5962
.082	.0033	-.1990	-.5983	.2510	.5944
.086	.0033	-.1736	-.5526	.2424	.5484
.090	.0037	-.1718	-.5622	.2584	.5596
.094	-.0040	-.1839	.5551	-.2666	-.5537
.098	-.0048	.2338	.6106	-.3052	-.6090
.102	-.0056	-.2576	.6732	-.3471	-.6663
.106	-.0064	-.2822	.7098	-.3802	-.7031
.109	-.0067	-.2845	.6867	-.3842	-.6856
.113	-.0068	-.2754	.6582	-.3798	-.6546
.117	-.0075	-.2896	.6746	-.4030	-.6717
.121	-.0077	.3093	.6448	-.3984	-.6431
.125	-.0082	.3491	.6496	-.4134	-.6453
.131	-.0093	-.3715	.6683	-.4476	-.6679
.137	-.0093	-.3514	.6180	-.4298	-.6142
.142	-.0103	-.3613	.6265	-.4537	-.6221
.148	.0118	-.4337	-.6595	.4991	.6576
.154	.0128	.4666	-.6657	.5230	.6633
.160	.0154	.5163	-.7419	.6050	.7396
.165	-.0173	.4933	.7774	-.6573	-.7754
.171	-.0199	.5852	.8354	-.7317	-.8341
.177	-.0216	.6567	.8521	-.7685	-.8475
.183	.0228	.6804	-.8410	.7845	.8379
.188	.0253	.7211	-.8758	.8439	.8738
.194	.0272	.7621	-.8853	.8788	.8829
.200	.0266	.7191	-.8158	.8362	.8158

Table 8 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0266	.7191	-.8158	.8362	.8158
.205	-.0262	.6690	.7758	-.8051	-.7674
.209	+.0284	.7189	.7903	-.8510	-.7928
.214	.0308	.7609	-.8211	.9035	.8233
.219	.0334	.7902	-.8617	.9593	.8553
.224	.0362	.8166	-.8860	1.0159	.8867
.228	.0385	.8358	-.9142	1.0609	.9068
.233	.0411	-.8777	-.9266	1.1072	.9272
.238	.0429	-.9307	-.9367	1.1333	.9303
.242	+.0458	-.9927	.9568	-1.1864	-.9549
.247	-.0504	-1.0669	1.0189	-1.2802	-1.0107
.252	+.0546	-1.1262	1.0584	-1.3614	-1.0548
.257	-.0566	1.1512	1.0548	-1.3856	-1.0538
.261	+.0570	1.1709	1.0283	-1.3707	-1.0236
.266	+.0580	1.1855	1.0119	-1.3709	-1.0057
.277	.0756	1.5263	-1.2137	1.7149	1.2080
.288	.0744	1.8506	-1.4033	2.0622	1.3996
.298	.1020	-2.0279	-1.4148	2.1515	1.4088
.309	+.1034	-2.0058	1.3345	-2.1059	-1.3320
.319	-.1296	2.4064	1.5641	-2.5533	-1.5618
.333	+.1608	3.0088	1.7857	-3.0341	-1.7778
.494	.0925	-1.4194	-.4682	1.1767	.4649
.655	-.0807	1.0196	.2329	-.7746	-.2308
.816	+.0564	-.7260	-.1056	.4346	.1039
.977	-.0483	.7735	.0634	-.3110	-.0621
1.138	+.0445	-.6275	.0440	-.2457	-.0421
1.299	+.0404	-.6065	.0303	-.1953	-.0293
1.460	+.0391	.5869	-.0239	-.1683	-.0225
1.620	+.0391	-.5789	.0194	-.1515	-.0182
1.781	.0407	.5691	-.0168	.1434	.0157
1.942	+.0378	.5842	.0130	-.1223	-.0123
2.103	+.0391	.5671	.0122	-.1169	-.0108
2.264	.0349	-.5575	.0099	.0969	.0084
2.425	+.0343	-.5507	-.0082	-.0888	-.0071
2.586	-.0337	.5536	-.0073	-.0818	-.0062
2.747	+.0366	.5574	-.0064	-.0837	-.0059
2.908	-.0438	.5581	.0064	-.0946	-.0063
3.069	+.0503	.5572	.0066	-.1029	-.0065
3.230	-.0550	.5562	.0065	-.1069	-.0065
3.391	+.0581	.5558	.0062	-.1076	-.0062
3.552	+.0595	.5561	.0058	-.1053	-.0058
3.713	+.0598	.5568	.0053	-.1011	-.0053
3.873	+.0599	.5577	.0049	-.0971	-.0049
4.034	+.0610	.5584	.0046	-.0949	-.0046
4.195	+.0634	.5587	.0044	-.0950	-.0044
4.356	+.0669	.5586	.0043	-.0964	-.0043
4.517	+.0706	.5582	.0043	-.0982	-.0042
4.678	+.0740	.5575	.0042	-.0994	-.0041
4.839	+.0769	.5566	.0040	-.0998	-.0040
5.000	+.0791	.5556	.0039	-.0995	-.0039

Table 8 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	-.0004	.0355	.5587	-.0842	-.5586
.032	-.0005	.0481	.5611	-.0927	-.5597
.035	-.0006	-.0674	.6226	-.1122	-.6212
.038	-.0009	-.0921	.7285	-.1422	-.7266
.041	-.0010	-.1082	.7235	-.1516	-.7199
.045	-.0009	-.1090	.5744	-.1313	-.5695
.048	-.0009	.1037	-.5148	.1248	.5126
.050	-.0011	.0933	.5240	-.1340	-.5228
.055	-.0014	.1080	.5734	-.1612	-.5718
.058	-.0015	.1100	.5619	-.1649	-.5579
.060	-.0017	.1220	.5636	-.1730	-.5596
.063	-.0019	.1135	.6022	-.1932	-.5984
.067	-.0024	.1270	.6489	-.2214	-.6448
.071	-.0025	-.1363	.6048	-.2175	-.5990
.075	-.0024	-.1593	.5349	-.2040	-.5329
.079	.0027	-.1613	-.5328	.2126	.5282
.082	.0030	-.1664	-.5476	.2285	.5412
.086	.0032	-.1572	-.5269	.2307	.5219
.090	.0034	.1512	-.5167	.2367	.5126
.094	-.0036	.1675	.5078	-.2438	-.5064
.098	-.0043	.1992	.5545	-.2759	-.5506
.102	-.0051	-.2188	.6097	-.3147	-.6040
.106	-.0057	-.2467	.6366	-.3406	-.6299
.109	-.0061	-.2584	.6335	-.3519	-.6279
.113	-.0065	-.2593	.6242	-.3592	-.6191
.117	-.0069	-.2652	.6250	-.3729	-.6216
.121	-.0073	-.2636	.6164	-.3813	-.6154
.125	-.0079	-.2909	.6203	-.3946	-.6160
.131	-.0086	-.3078	.6181	-.4111	-.6134
.137	-.0086	-.3078	.5733	-.3972	-.5676
.142	-.0095	-.3151	.5801	-.4191	-.5746
.148	-.0103	-.3635	.5766	-.4355	-.5739
.154	-.0119	.3765	.6186	-.4848	-.6149
.160	-.0136	.4115	.6604	-.5356	-.6548
.165	-.0160	.4404	.7187	-.6061	-.7150
.171	-.0180	.5138	.7597	-.6626	-.7554
.177	-.0195	.5679	.7670	-.6911	-.7622
.183	-.0201	.5925	.7442	-.6919	-.7390
.188	.0215	.6112	-.7471	.7174	.7428
.194	.0230	.6372	-.7537	.7452	.7487
.200	-.0235	.6229	.7295	-.7387	-.7207

Table 8 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Equipment Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0235	.6229	.7295	-.7387	-.7207
.205	.0250	.6165	.7404	-.7682	-.7322
.209	.0267	.6561	.7470	-.8004	-.7457
.214	.0282	.6909	-.7560	.8270	.7536
.219	.0307	.7202	-.7914	.8806	.7851
.224	.0332	.7478	-.8176	.9335	.8147
.228	.0355	.7648	-.8431	.9771	.8352
.233	.0379	.7883	-.8570	1.0218	.8557
.238	.0399	-.8386	-.8749	1.0534	.8647
.242	.0423	-.8981	-.8852	1.0951	.8815
.247	.0455	-.9530	.9189	-1.1568	-.9133
.252	.0487	-1.0022	.9499	-1.2154	-.9416
.257	.0515	-1.0348	.9653	-1.2613	-.9592
.261	.0538	1.0672	.9719	-1.2942	-.9665
.266	.0565	1.1277	.9897	-1.3341	-.9786
.277	.0680	1.3665	1.0931	-1.5424	-1.0865
.288	.0810	1.5837	-1.2089	1.7700	1.2013
.298	.0882	1.6797	-1.2255	1.8592	1.2173
.309	.0959	-1.8034	-1.2474	1.9536	1.2356
.319	.1115	2.0843	-1.3576	2.1956	1.3430
.333	-.1322	2.4501	1.4762	-2.4944	-1.4616
.494	.0905	-1.3598	-.4618	1.1513	.4548
.655	-.0759	.9690	.2205	-.7282	-.2170
.816	.0523	-.7017	-.0980	.4029	.0964
.977	.0446	.7422	.0607	-.2872	-.0574
1.138	.0447	.6239	.0459	-.2471	-.0424
1.299	.0389	-.5982	.0310	-.1880	-.0282
1.460	.0382	.5830	-.0247	.1643	.0220
1.620	-.0376	-.5721	-.0201	-.1459	-.0176
1.781	.0384	.5689	-.0171	.1354	.0148
1.942	.0357	.5789	.0141	.1155	.0116
2.103	-.0372	.5668	.0131	-.1112	-.0103
2.264	.0346	.5539	.0110	-.0961	-.0083
2.425	.0336	.5512	.0092	-.0871	-.0070
2.586	.0340	.5540	-.0082	-.0826	-.0062
2.747	.0369	.5567	-.0074	-.0844	-.0060
2.908	-.0426	.5575	.0069	-.0920	-.0062
3.069	-.0481	.5569	.0064	-.0985	-.0063
3.230	.0524	.5562	.0062	-.1019	-.0062
3.391	.0553	.5559	.0060	-.1025	-.0059
3.552	.0570	.5561	.0056	-.1008	-.0055
3.713	-.0578	.5567	.0052	-.0978	-.0051
3.873	-.0586	.5573	.0048	-.0950	-.0048
4.034	.0600	.5578	.0046	-.0934	-.0045
4.195	-.0623	.5580	.0044	-.0932	-.0043
4.356	.0653	.5580	.0043	-.0941	-.0042
4.517	.0685	.5576	.0042	-.0953	-.0041
4.678	.0715	.5570	.0040	-.0961	-.0040
4.839	.0742	.5562	.0039	-.0964	-.0039
5.000	.0765	.5553	.0038	-.0961	-.0038

SPECU

Floor Spectra for HFBR, Experimental Level -7% Damping

2 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- EXPERIMENTAL LEVEL - 7 PCT

NUMBER OF DAMPING VALUES = 4
 NUMBER OF OUTPUT PERIOD CARDS = 5
 NUMBER OF ACCELERATION VALUES = 1499
 INTERVAL OF DIGITIZATION = .0100
 ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
 .020
 .050
 .070

PERIOD VALUES (SECONDS)

.0294	.0323	.0353	.0382	.0411	.0450	.0475	.0500	.0550	.0577
.0603	.0630	.0670	.0709	.0747	.0786	.0824	.0863	.0901	.0940
.0978	.1017	.1055	.1094	.1132	.1171	.1209	.1250	.1308	.1365
.1423	.1481	.1538	.1596	.1654	.1712	.1769	.1827	.1885	.1942
.2000									

-11.57-

Table 9 (Continued)

SPECEN Floor Spectra for HFBR, Experimental Level -7% Damping

1 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- EXPERIMENTAL LEVEL - 7 PCT

NUMBER OF DAMPING VALUES = 4
 NUMBER OF OUTPUT PERIOD CARDS = 3
 NUMBER OF ACCELERATION VALUES = 1499
 INTERVAL OF DIGITIZATION = .0100
 ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
 .020
 .050
 .070

-II,58-

PERIOD VALUES (SECONDS)

.2000	.2047	.2094	.2141	.2189	.2236	.2283	.2330	.2377	.2424
.2471	.2519	.2566	.2613	.2660	.2770	.2875	.2980	.3085	.3190
.3330	.4939	.6549	.8158	.9767	1.1377	1.2986	1.4595	1.6204	1.7814
1.9423	2.1032	2.2642	2.4251	2.5860	2.7470	2.9079	3.0688	3.2298	3.3907
3.5516	3.7126	3.8735	4.0344	4.1953	4.3563	4.5172	4.6781	4.8391	5.0000

Table 9 (Continued)

ACCELERATION RECORD Floor Spectra for HFBR, Experimental Level -7% Damping

TIME (SEC)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)
0.0000	-.3909E-02	-.4052E-02	-.5135E-02	-.5959E-02	-.2619E-02	.7313E-03	.2472E-03	-.3663E-03	.9860E-03	.2324E-02
.1000	-.1052E-02	-.4337E-02	-.5689E-02	-.6782E-02	-.8005E-02	-.8832E-02	-.1778E-03	.8324E-02	.1184E-01	.1463E-01
.2000	.1011E-01	.5210E-02	-.6345E-03	-.6026E-02	-.6249E-02	-.6117E-02	.1205E-01	.2953E-01	.3272E-01	.3417E-01
.3000	.1963E-01	.4510E-02	.1717E-01	.3016E-01	.4780E-01	.6298E-01	-.5585E-02	-.7422E-01	-.4207E-01	-.5497E-02
.4000	-.2406E-01	-.4319E-01	-.4383E-01	-.4459E-01	-.3720E-01	-.2601E-01	-.2146E-01	-.1876E-01	-.3995E-01	-.5948E-01
.5000	-.8293E-01	-.1010E+00	-.3280E-01	.3500E-01	.4477E-01	.5067E-01	.8130E-01	.1091E+00	.2133E-01	-.6617E-01
.6000	.2601E-01	.1191E+00	.7420E-02	-.1056E+00	-.2681E-01	.5347E-01	.4984E-01	.4554E-01	.1119E+00	.1690E+00
.7000	.7733E-01	-.1428E-01	-.5855E-01	-.9782E-01	-.5541E-01	-.1004E-01	-.1364E-02	.4811E-02	-.7876E-02	-.2078E-01
.8000	.3285E-02	.2852E-01	-.5744E-01	-.1431E+00	-.8902E-01	-.2922E-01	-.3845E-01	-.4676E-01	.1004E-01	.6298E-01
.9000	.1390E-01	-.3311E-01	.9065E-02	.5016E-01	.3674E-01	.2099E-01	.1724E-01	.1351E-01	.2637E-01	.3982E-01
1.0000	-.9847E-02	-.5977E-01	-.6448E-01	-.6516E-01	-.3627E-01	-.6580E-02	-.2858E-01	-.5313E-01	-.3324E-01	-.9920E-02
1.1000	.3202E-01	.7262E-01	.1729E+00	.2632E+00	.2227E+00	.1744E+00	.1996E+00	.2202E+00	.1398E+00	.5645E-01
1.2000	.2992E-01	.4316E-02	-.1929E-01	-.3997E-01	-.6373E-01	-.8788E-01	-.2099E+00	-.3231E+00	-.2539E+00	-.1731E+00
1.3000	-.2111E+00	-.2468E+00	-.2378E+00	-.2219E+00	-.2632E+00	-.2915E+00	-.1249E+00	.4171E-01	.5580E-01	.6404E-01
1.4000	.1324E+00	.1962E+00	.2564E+00	.3088E+00	.2948E+00	.2687E+00	.2466E+00	.2205E+00	.1327E+00	.4272E-01
1.5000	.5350E-01	.6249E-01	.5326E-01	.4264E-01	-.2977E-02	-.5104E-01	-.1319E+00	.2054E+00	-.2099E+00	-.2046E+00
1.6000	-.1513E+00	-.9567E-01	-.4832E-01	-.1831E-02	-.9578E-01	-.1864E+00	-.5187E-01	.8674E-01	.6101E-01	.2935E-01
1.7000	.3479E-01	.3775E-01	-.2394E-01	-.7811E-01	.4668E-01	.1671E+00	.1570E+00	.1379E+00	.1552E+00	.1675E+00
1.8000	.9534E-01	.2134E-01	-.2948E-01	-.7769E-01	-.1040E+00	-.1229E+00	-.1261E+00	-.1267E+00	-.1072E+00	-.8544E-01
1.9000	-.5047E-02	.7448E-01	-.1371E-01	-.1050E+00	-.9407E-01	-.7580E-01	-.8886E-01	-.9687E-01	-.1222E-01	.6832E-01
2.0000	.4557E-01	.2226E-01	.4448E-01	.6466E-01	.8259E-01	.9715E-01	.8225E-01	.6427E-01	.4570E-01	.2725E-01
2.1000	.2972E-01	.3267E-01	.7370E-01	.1111E+00	.3479E-01	-.4420E-01	-.2746E-01	-.7679E-02	-.6606E-01	-.1220E+00
2.2000	-.2738E-01	.6725E-01	.4088E-01	.1301E-01	.3684E-01	.5793E-01	.6915E-01	.8003E-01	.3896E-01	-.5272E-02
2.3000	-.3593E-02	.1444E-03	.2426E-02	.5829E-02	-.4098E-01	-.8858E-01	-.1245E+00	-.1527E+00	-.8523E-01	-.1491E-01
2.4000	-.8280E-01	-.1527E+00	-.9158E-01	-.2410E-01	-.2046E-01	-.1691E-01	-.2705E-01	-.4044E-01	.1547E-01	.7596E-01
2.5000	.6469E-01	.4759E-01	.6220E-01	.7402E-01	.5176E-01	.3246E-01	.6368E-01	.8940E-01	.8153E-01	.7111E-01
2.6000	.5544E-01	.3917E-01	.3777E-01	.3438E-01	.1022E-01	-.1344E-01	.2321E-01	.5943E-01	.3448E-01	.6707E-02
2.7000	-.1927E-01	-.4342E-01	-.6847E-01	-.8873E-01	-.6490E-01	-.4018E-01	-.1155E+00	-.1872E+00	-.1688E+00	-.1425E+00
2.8000	-.1065E+00	-.6832E-01	-.6225E-01	-.5777E-01	-.1432E-01	.3127E-01	.1906E-01	.4808E-02	.1822E-02	-.1156E-02
2.9000	.8174E-01	.1645E+00	.2199E+00	.2627E+00	.2197E+00	.1687E+00	.1275E+00	.8762E-01	.6301E-01	.3614E-01
3.0000	.3668E-01	.3593E-01	-.1539E-01	-.6495E-01	-.1961E-01	.2556E-01	-.4295E-01	-.1109E+00	-.6557E-01	-.1730E-01
3.1000	-.1044E+00	-.1877E+00	-.2339E+00	-.2710E+00	-.2412E+00	-.1993E+00	-.1356E+00	-.7275E-01	-.4990E-01	-.2855E-01
3.2000	.3417E-01	.9679E-01	.2099E+00	.3122E+00	.2731E+00	.2230E+00	.1941E+00	.1643E+00	.1772E+00	.1861E+00
3.3000	.1155E+00	.3878E-01	.4016E-01	.4386E-01	.6347E-01	.7990E-01	-.9075E-01	-.2611E+00	-.2345E+00	-.1913E+00
3.4000	-.1643E+00	-.1346E+00	-.1329E+00	-.1341E+00	-.1687E+00	-.1911E+00	-.1700E+00	-.1451E+00	-.1217E+00	-.9676E-01
3.5000	-.3655E-01	.2728E-01	.4756E-01	.6303E-01	.9355E-01	.1212E+00	.1194E+00	.1156E+00	.1037E+00	.8562E-01
3.6000	.6184E-01	.3762E-01	.5785E-01	.7707E-01	.1091E+00	.1352E+00	.1941E+00	.2461E+00	.1174E+00	-.1532E-01
3.7000	-.4062E-01	-.5990E-01	-.8264E-01	-.9982E-01	-.1287E+00	-.1572E+00	.1969E+00	-.2271E+00	-.1821E+00	-.1316E+00
3.8000	-.2899E-01	.6904E-01	.5863E-01	.4453E-01	.8459E-01	.1238E+00	.1494E+00	.1704E+00	.1326E+00	.8979E-01
3.9000	.8179E-01	.7446E-01	.1023E+00	.1261E+00	.8526E-01	.3915E-01	.1476E-01	-.6769E-02	-.6153E-02	-.4935E-02
4.0000	-.3497E-01	-.6606E-01	-.9215E-01	-.1127E+00	-.1590E+00	-.1996E+00	-.2311E+00	-.2549E+00	-.2120E+00	-.1605E+00
4.1000	-.1802E+00	-.1970E+00	-.1650E+00	-.1271E+00	-.8557E-01	-.4010E-01	.1842E-01	.7168E-01	.1060E+00	.1364E+00
4.2000	.1733E+00	.2040E+00	.1774E+00	.1438E+00	.8073E-01	.1873E-01	.8668E-01	.1542E+00	.2313E+00	.2959E+00
4.3000	.2492E+00	.1919E+00	.1761E+00	.1590E+00	.1822E+00	.1989E+00	.7495E-01	-.5311E-01	-.3782E-01	-.1506E-01
4.4000	-.6329E-01	-.1104E+00	-.1644E+00	-.2151E+00	-.2123E+00	-.1967E+00	-.2315E+00	-.2630E+00	-.2785E+00	-.2847E+00
4.5000	-.2125E+00	-.1297E+00	-.1484E+00	-.1690E+00	-.1734E+00	-.1704E+00	-.9510E-01	-.1413E-01	.3137E-01	.6821E-01
4.6000	.1923E+00	.3111E+00	.2793E+00	.2378E+00	.2334E+00	.2206E+00	.1792E+00	.1381E+00	.1666E+00	.1871E+00
4.7000	.1856E+00	.1764E+00	.1362E+00	.9301E-01	-.1035E-01	-.1124E+00	-.9637E-01	-.7391E-01	-.2119E+00	-.3430E+00
4.8000	-.2984E+00	-.2421E+00	-.1734E+00	-.9886E-01	-.4523E-01	.1449E-02	.1640E-01	.3220E-01	.6565E-02	-.1795E-01
4.9000	-.1992E-01	-.2120E-01	.3049E-01	.8435E-01	.3790E-01	-.1252E-01	.9715E-02	.3215E-01	-.2744E-01	-.8464E-01
5.0000	.1481E-01	.1109E+00	.3966E-01	-.3321E-01	-.2249E-01	-.1026E-01	-.8067E-01	-.1458E+00	.1362E-01	.1705E+00
5.1000	.1197E+00	.6041E-01	.1504E+00	.2358E+00	.1850E+00	.1306E+00	.1030E+00	.7114E-01	.9528E-01	.1215E+00
5.2000	.1236E+00	.1183E+00	.7772E-01	.3295E-01	-.3650E-02	-.3562E-01	-.1304E+00	-.2221E+00	-.2168E+00	-.2020E+00
5.3000	-.2318E+00	-.2526E+00	-.1883E+00	-.1212E+00	-.1774E+00	-.2271E+00	-.1857E+00	-.1382E+00	-.1400E+00	-.1385E+00
5.4000	-.8780E-02	.1193E+00	.1477E+00	.1691E+00	.1605E+00	.1460E+00	.2075E+00	.2658E+00	.2139E+00	.1518E+00
5.5000	.1431E+00	.1312E+00	.1089E+00	.8699E-01	.1125E+00	.1307E+00	-.3562E-02	-.1360E+00	-.1171E+00	-.9005E-01
5.6000	-.2368E+00	-.3772E+00	-.2070E+00	-.2876E-01	-.6702E-01	-.1061E+00	-.1079E+00	-.1108E+00	-.1070E+00	-.9189E-01
5.7000	-.3845E-02	.7927E-01	.7381E-01	.6301E-01	.1441E+00	.2248E+00	.1649E+00	.9598E-01	.9718E-01	.9661E-01

Table 9 (Continued)

Floor Spectra for HFBR, Experimental Level -7% Damping

5.8000	.5448E-01	.1482E-01	.3624E-01	.5212E-01	.5342E-01	.5479E-01	.5301E-01	.4946E-01	.1839E-01	-.1477E-01
5.9000	-.0741E-02	-.4241E-04	-.7868E-01	-.1551E+00	-.1595E+00	-.1567E+00	-.1801E+00	-.1953E+00	-.1438E+00	-.9104E-01
6.0000	-.1703E-01	.5591E-01	.7598E-01	.9044E-01	.7262E-01	.5285E-01	.4821E-01	.4562E-01	.3181E-01	.1636E-01
6.1000	.3402E-01	.5065E-01	.9705E-01	.1399E+00	.1025E+00	.5878E-01	.1331E-01	-.2964E-01	.1032E-01	.5225E-01
6.2000	-.1870E-01	-.9251E-01	-.7832E-01	-.5821E-01	-.6407E-01	-.6712E-01	-.2689E-01	.9132E-02	.1593E-01	.2385E-01
6.3000	-.2506E-01	-.7350E-01	-.1135E+00	-.1473E+00	-.1400E+00	-.1246E+00	-.4640E-01	.2925E-01	.7622E-01	.1167E+00
6.4000	.1394E+00	.1566E+00	.1050E+00	.5028E-01	.5948E-01	.6984E-01	.5756E-01	.4443E-01	.7795E-01	.1075E+00
6.5000	.1110E+00	.1111E+00	.6959E-01	.2449E-01	-.8249E-02	-.3904E-01	-.4347E-01	-.4518E-01	-.9811E-01	-.1486E+00
6.6000	-.1053E+00	-.5614E-01	-.1309E+00	-.2024E+00	-.1650E+00	-.1229E+00	-.2023E+00	-.2736E+00	-.1584E+00	-.3974E-01
6.7000	-.2007E-01	-.1043E-02	.5389E-01	.1047E+00	.8784E-01	.6966E-01	.1017E+00	.1297E+00	.1190E+00	.1041E+00
6.8000	.9132E-01	.7630E-01	.1341E+00	.1883E+00	.1577E+00	.1196E+00	.1263E+00	.1299E+00	.7715E-01	.2384E-01
6.9000	.3922E-01	.5262E-01	-.2051E-01	-.9140E-01	-.3448E-01	.2401E-01	.2113E-01	.1528E-01	-.1049E+00	-.2220E+00
7.0000	-.2252E+00	-.2140E+00	-.2650E+00	-.3085E+00	-.2395E+00	-.1647E+00	-.2357E+00	-.2977E+00	-.1781E+00	-.5523E-01
7.1000	-.1235E-01	.2850E-01	.1211E+00	.2060E+00	.2252E+00	.2376E+00	.4036E+00	.5554E+00	.4650E+00	.3565E+00
7.2000	.3137E+00	.2653E+00	.2136E+00	.1603E+00	.1318E+00	.9510E-01	.2493E-02	-.8687E-01	-.1435E+00	-.1928E+00
7.3000	-.2553E+00	-.3106E+00	-.3731E+00	-.4215E+00	-.4124E+00	-.3891E+00	-.3668E+00	-.3355E+00	-.3036E+00	-.2624E+00
7.4000	-.1610E+00	-.5503E-01	-.2756E-01	-.3207E-02	.7793E-01	.1570E+00	.2293E+00	.2938E+00	.3319E+00	.3552E+00
7.5000	.2977E+00	.2330E+00	.3049E+00	.3689E+00	.3199E+00	.2568E+00	.1960E+00	.1312E+00	.1017E+00	.7407E-01
7.6000	-.1166E-01	-.9933E-01	-.1564E+00	-.2047E+00	-.2733E+00	-.3306E+00	-.2964E+00	-.2553E+00	-.3163E+00	-.3668E+00
7.7000	-.2393E+00	-.1044E+00	-.1416E+00	-.1782E+00	-.1227E+00	-.6272E-01	-.2751E-01	.1111E-01	.4738E-01	.7723E-01
7.8000	.1379E+00	.1957E+00	.2258E+00	.2472E+00	.2413E+00	.2250E+00	.2501E+00	.2705E+00	.2483E+00	.2163E+00
7.9000	.1401E+00	.5977E-01	.8870E-01	.1197E+00	.9588E-01	.6490E-01	-.6472E-01	-.1919E+00	-.1796E+00	-.1538E+00
8.0000	-.2176E+00	-.2782E+00	-.1877E+00	-.9168E-01	-.1808E+00	-.2624E+00	-.1429E+00	-.2225E-01	-.1455E+00	-.2627E+00
8.1000	-.1232E+00	.2078E-01	.1910E-01	.1480E-01	.2158E-01	.2492E-01	.2314E-01	.2619E-01	-.1350E-02	-.3106E-01
8.2000	.8588E-01	.1993E+00	.1611E+00	.1160E+00	.1691E+00	.2149E+00	.1756E+00	.1337E+00	.1089E+00	.7927E-01
8.3000	.7775E-01	.7601E-01	.5596E-01	.3409E-01	.2769E-01	.1978E-01	.4839E-01	.7687E-01	.2614E-01	-.2772E-01
8.4000	-.3280E-01	-.3528E-01	-.5060E-01	-.6220E-01	-.6329E-01	-.6451E-01	-.1172E-01	-.1640E+00	-.1767E+00	-.1824E+00
8.5000	-.2085E+00	-.2288E+00	-.2106E+00	-.1850E+00	-.1801E+00	-.1696E+00	-.1568E+00	-.1401E+00	-.3251E-01	.7598E-01
8.6000	.7710E-01	.7122E-01	.1446E+00	.2129E+00	.2056E+00	.1930E+00	.2863E+00	.3676E+00	.3308E+00	.2837E+00
8.7000	.2614E+00	.2318E+00	.1263E+00	.1983E-01	.3010E-01	.4140E-01	-.6150E-04	-.4264E-01	-.7332E-01	-.1027E+00
8.8000	-.2460E+00	-.3780E+00	-.3062E+00	-.2222E+00	-.3054E+00	-.3811E+00	-.3539E+00	-.3148E+00	-.2552E+00	-.1850E+00
8.9000	-.1131E+00	-.4451E-01	.3860E-01	.1202E+00	.1151E+00	.1059E+00	.1690E+00	.2255E+00	.2816E+00	.3298E+00
9.0000	.3212E+00	.3990E+00	.2889E+00	.2712E+00	.2912E+00	.3034E+00	.2296E+00	.1457E+00	.3060E-01	-.8039E-01
9.1000	-.6339E-01	-.3979E-01	-.1098E+00	-.1808E+00	-.2088E+00	-.2282E+00	-.2262E+00	-.2147E+00	-.2436E+00	-.2694E+00
9.2000	-.2611E+00	-.2406E+00	-.2270E+00	-.2054E+00	-.1128E+00	-.2050E-01	.6808E-01	.1538E+00	.6959E-01	-.1979E-01
9.3000	.5896E-01	.1395E+00	.1659E+00	.1863E+00	.1497E+00	.1033E+00	.1083E+00	.1166E+00	.1733E+00	.2222E+00
9.4000	.1884E+00	.1435E+00	.5358E-01	-.3207E-01	-.3899E-01	-.4251E-01	-.3832E-01	-.3510E-01	-.1136E+00	-.1867E+00
9.5000	-.1884E+00	-.1819E+00	-.1415E+00	-.9829E-01	-.4764E-01	.1427E-02	-.5293E-01	-.1055E+00	-.3992E-01	.2909E-01
9.6000	.3826E-01	.4472E-01	.6697E-01	.8526E-01	.2023E-02	-.7829E-01	.6593E-02	.9189E-01	.1108E+00	.1232E+00
9.7000	.1130E+00	.9749E-01	.1195E+00	.1407E+00	.5756E-01	-.2881E-01	.2118E-01	.7272E-01	-.8124E-02	-.8806E-01
9.8000	-.6358E-01	-.3873E-01	-.7635E-01	-.1084E+00	.1041E+00	-.9834E-01	-.4409E-01	.1184E-01	-.1690E-02	-.1670E-01
9.9000	-.9052E-02	-.1393E-02	-.5855E-02	-.7940E-02	-.8578E-02	-.1067E-01	.2476E-01	.5948E-01	.2679E-02	-.5430E-01
10.0000	-.1244E+00	-.1885E+00	-.1531E+00	-.1087E+00	-.8311E-01	-.5915E-01	.1993E-01	.1733E-01	.5316E-01	.8816E-01
10.1000	.1865E+00	.2749E+00	.1863E+00	.9085E-01	.2332E+00	.3723E+00	.2117E+00	.4205E-01	.5920E-01	.7772E-01
10.2000	-.4819E-02	-.8088E-01	-.6321E-01	-.5023E-01	-.1630E+00	-.2668E+00	-.2008E+00	-.1265E+00	-.1945E+00	-.2606E+00
10.3000	-.2424E+00	-.2140E+00	-.1872E+00	-.1527E+00	-.9959E-01	-.4930E-01	-.4005E-01	-.2744E-01	.6943E-01	.1640E+00
10.4000	.1649E+00	.1564E+00	.1305E+00	.1032E+00	.1255E+00	.1464E+00	.8972E-01	.2689E-01	.9974E-01	.1715E+00
10.5000	.7964E-01	-.1630E-01	.1047E+00	.2208E+00	.1366E+00	.4922E-01	.1009E-01	-.2987E-01	-.1083E+00	-.1761E+00
10.6000	-.1095E+00	-.4034E-01	-.5459E-01	-.7091E-01	-.4466E-01	-.1654E-01	.7306E-01	-.1272E+00	-.1100E+00	-.8896E-01
10.7000	-.6358E-01	-.3448E-01	-.2938E-01	-.2624E-01	.3492E-01	.9570E-01	.3617E-01	-.2519E-01	.1858E-01	.6163E-01
10.8000	.3554E-01	.9692E-02	.9912E-01	.1830E+00	.1751E+00	.1611E+00	.1660E+00	.1652E+00	.1622E+00	.1548E+00
10.9000	.7539E-01	-.6977E-02	-.1204E+00	-.2259E+00	-.1175E+00	-.1637E-02	-.8873E-01	-.1790E+00	-.1826E+00	-.1782E+00
11.0000	-.1845E+00	-.1805E+00	-.1701E+00	-.1611E+00	-.1679E+00	-.1660E+00	-.1062E+00	-.4225E-01	-.4756E-01	-.5640E-01
11.1000	.5832E-01	.1734E+00	.1624E+00	.1432E+00	.1741E+00	.1975E+00	.1831E+00	.1682E+00	.1368E+00	.9842E-01
11.2000	.1145E+00	.1286E+00	.3728E-01	-.5433E-01	-.2482E-01	.4687E-02	-.1751E-01	-.3801E-01	-.3780E-01	-.3850E-01
11.3000	-.9798E-01	-.1325E-01	-.9658E-01	-.5611E-01	-.4355E-01	-.3184E-01	-.1254E-02	.2842E-01	-.4912E-01	-.1240E+00
11.4000	-.1312E-02	.1222E+00	.7847E-01	.2938E-01	.9366E-02	-.3707E-01	-.2868E-01	-.1372E-01	.9539E-02	.2790E-01
11.5000	.6028E-01	.8951E-01	.5829E-01	.2653E-01	.5433E-01	.7896E-01	.1395E-01	-.4972E-01	-.5710E-01	-.6060E-01
11.6000	-.4104E-01	-.2013E-01	-.5365E-01	-.8736E-01	-.3487E-01	.1990E-01	-.2438E-01	-.6948E-01	.2674E-01	.1211E+00
11.7000	.1044E+00	.8417E-01	.1193E+00	.1487E+00	.4044E-01	-.6549E-01	-.2883E-01	-.8832E-02	-.3109E-02	.1445E-02
11.8000	.1900E-02	-.1818E-03	.7834E-03	.3575E-02	-.3093E-01	-.6484E-01	-.6181E-01	-.5611E-01	-.6404E-01	-.6907E-01
11.9	-.4661E-01	-.2453E-01	-.5772E-01	-.8845E-01	-.1002E+00	-.1073E+00	-.2275E+00	-.3391E+00	-.2254E+00	-.1017E+00
12.0	-.9220E-01	-.8383E-01	.7974E-01	.2358E+00	.2166E+00	.1901E+00	.2992E+00	.3953E+00	.3197E+00	.2352E+00

Table 9 (Continued)

Floor Spectra for HFBR, Experimental Level -7% Damping

12.1000	.2611E+00	.2811E+00	.2205E+00	.1554E+00	.8184E-01	.6440E-02	-.1869E-01	-.3961E-01	-.1144E+00	-.1872E+00
12.2000	-.1975E+00	-.2013E+00	-.2170E+00	-.2239E+00	-.2289E+00	-.2291E+00	-.1776E+00	-.1196E+00	-.1583E+00	-.1934E+00
12.3000	-.1729E+00	-.1465E+00	-.1372E+00	-.1208E+00	-.3497E-01	.4907E-01	.2596E-01	.8917E-03	.9135E-01	.1796E+00
12.4000	.1783E+00	.1683E+00	.2151E+00	.2533E+00	.3308E+00	.3987E+00	.3472E+00	.2801E+00	.2521E+00	.2205E+00
12.5000	.1436E+00	.6663E-01	.2146E-01	-.2560E-01	-.1612E+00	-.2868E+00	-.2212E+00	-.1468E+00	-.2512E+00	-.3523E+00
12.6000	-.2546E+00	-.1479E+00	-.2512E+00	-.3466E+00	-.1998E+00	-.4933E-01	-.1170E+00	-.1790E+00	-.1244E+00	-.6744E-01
12.7000	-.2852E-01	.1403E-01	.9710E-01	.1727E+00	.2037E+00	.2261E+00	.1786E+00	.1270E+00	.1230E+00	.1168E+00
12.8000	.1779E+00	.2330E+00	.1834E+00	.1246E+00	.1056E+00	.8534E-01	.4484E-01	.5394E-02	-.1577E-02	-.9870E-02
12.9000	-.1405E-01	-.1575E-01	-.8267E-01	-.1468E+00	-.1282E+00	-.1039E+00	-.1441E+00	-.1793E+00	-.1135E+00	-.4668E-01
13.0000	-.9622E-01	-.1433E+00	-.1077E+00	-.6837E-01	-.2161E-01	.2648E-01	-.1329E-01	-.5503E-01	.6155E-02	.6997E-01
13.1000	.8264E-01	.9122E-01	.1043E+00	.1107E+00	.1025E+00	.9456E-01	.1520E+00	.2025E+00	.1651E+00	.1202E+00
13.2000	.4262E-01	-.3238E-01	-.2455E-01	-.1319E-01	-.5425E-01	-.9567E-01	-.4741E-01	.3062E-02	-.6736E-01	-.1361E+00
13.3000	-.7728E-01	-.1635E-01	-.6036E-01	-.1011E+00	-.6992E-01	-.3813E-01	-.7927E-01	-.1162E+00	-.5969E-01	-.1718E-02
13.4000	-.7650E-02	-.1499E-01	.1932E-01	.5244E-01	-.1821E-01	-.8720E-01	-.9101E-02	.7034E-01	.7738E-01	.8052E-01
13.5000	.1017E+00	.1172E+00	.1089E+00	.9930E-01	.6339E-01	.2442E-01	-.8907E-02	-.4026E-01	-.2345E-01	-.3813E-02
13.6000	-.1178E-01	-.2181E-01	-.5142E-01	-.7842E-01	-.3648E-01	.8137E-02	.2362E-02	-.7236E-02	-.1637E-01	-.2439E-01
13.7000	.3440E-03	.2733E-01	.2032E-01	.9891E-02	.1835E-01	.2759E-01	.1008E-01	-.6803E-02	.2951E-03	.5751E-02
13.8000	-.3256E-01	-.6793E-01	-.2021E-01	.2845E-01	-.9456E-02	-.4904E-01	-.1432E-01	.2165E-01	.1761E-01	.1296E-01
13.9000	.1441E-01	.1327E-01	.1357E-01	.1594E-01	-.2912E-02	-.2210E-01	.3148E-01	.8370E-01	.4635E-01	.7383E-02
14.0000	.1403E-01	.2006E-01	-.1856E-01	-.5472E-01	-.5249E-01	-.4907E-01	-.5122E-01	-.5150E-01	-.6228E-01	-.7155E-01
14.1000	-.5881E-01	-.4407E-01	-.3819E-01	-.3132E-01	.1368E-01	.5718E-01	.5306E-01	.4658E-01	.2078E-01	-.4966E-02
14.2000	.2566E-01	.9728E-01	.6598E-01	.7054E-01	.7505E-01	.7617E-01	.7873E-01	.8013E-01	.5446E-01	.2609E-01
14.3000	-.2384E-02	-.2915E-01	-.2461E-01	-.1775E-01	-.2173E-01	-.2694E-01	-.1773E-01	-.7648E-02	-.3883E-01	-.6832E-01
14.4000	-.5852E-01	-.4707E-01	-.6738E-01	-.8469E-01	-.9137E-01	-.9516E-01	-.7798E-01	-.5762E-01	-.3513E-01	-.1274E-01
14.5000	.2258E-01	.9554E-01	.6259E-01	.6705E-01	.7523E-01	.8091E-01	.7552E-01	.6863E-01	.6285E-01	.5562E-01
14.6000	.8016E-01	.1021E+00	.7604E-01	.4650E-01	.2769E-01	.8702E-02	-.2371E-01	-.5376E-01	-.5334E-01	-.5142E-01
14.7000	-.7060E-01	-.8715E-01	-.9073E-01	-.9114E-01	-.8531E-01	-.7692E-01	-.8896E-01	-.9873E-01	-.7505E-01	-.4865E-01
14.8000	-.2909E-01	-.9324E-02	.2687E-02	.1371E-01	.2992E-01	.4604E-01	.6547E-01	.8197E-01	.8891E-01	.9205E-01
14.9000	.9023E-01	.8609E-01	.7285E-01	.5744E-01	.6085E-01	.6282E-01	.4427E-01	.2460E-01	.1833E-01	

Table 9 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Experimental-Level -7% Damping

RENI00	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	.0007	.1221	-1.0255	.1545	1.0255
.032	.0014	-.2568	-1.6790	.2781	1.6789
.035	.0016	.2333	-1.5465	.2794	1.5464
.038	-.00060	.9254	5.0566	-.9892	-5.0563
.041	.0069	1.0471	-5.0343	1.0603	5.0340
.045	.0067	.9187	-4.0606	.9364	4.0603
.048	-.0063	.7640	3.4142	-.8311	-3.4140
.050	.0028	.3311	-1.3834	.3545	1.3833
.055	.0070	.7697	-2.8258	.7965	2.8257
.058	.0078	-.7904	-2.8831	.8520	2.8829
.060	-.0087	-.8773	2.9223	-.9035	-2.9221
.063	.0067	-.6084	-2.0803	.6716	2.0802
.067	.0089	.7241	-2.4432	.8389	2.4430
.071	.0163	-1.3870	-3.9831	1.4462	3.9828
.075	.0083	.6510	-1.8310	.7009	1.8309
.079	-.0187	-1.4709	3.7143	-1.4952	-3.7141
.082	.0130	1.0284	-2.7023	1.1411	2.7022
.086	.0101	-.7293	-1.6615	.7344	1.6614
.090	.0169	-1.1236	-2.5565	1.1804	2.5564
.094	-.0132	.8051	1.8385	-.8852	-1.8384
.098	.0104	-.5717	-1.3286	.6659	1.3285
.102	.0163	.8764	-1.9317	1.0062	1.9315
.106	-.0231	-1.2380	2.5413	-1.3739	-2.5411
.109	.0322	-1.8019	-3.2992	1.8488	3.2990
.113	.0281	-1.5442	-2.6894	1.5601	2.6892
.117	-.0262	-1.2952	2.3423	-1.4050	-2.3422
.121	-.0377	1.7978	3.1615	-1.9588	-3.1613
.125	.0288	-1.3932	-2.2621	1.4491	2.2620
.131	-.0369	1.6114	2.6475	-1.7742	-2.6473
.137	.0197	-.8491	-1.2947	.9059	1.2946
.142	.0372	1.6047	-2.2536	1.6435	2.2535
.148	-.0329	1.3538	1.8382	-1.3949	-1.8381
.154	-.0234	.8163	1.2111	-.9548	-1.2110
.160	.0556	2.1027	-2.6769	2.1896	2.6767
.165	-.0301	.9362	1.3493	-1.1436	-1.3492
.171	-.0636	2.1379	2.6620	-2.3349	-2.6619
.177	.0583	2.0354	-2.2853	2.0720	2.2852
.183	.0623	-2.0904	-2.2888	2.1428	2.2886
.188	.0779	2.3803	-2.6882	2.5962	2.6880
.194	.0807	-1.7662	-1.9715	1.9624	1.9714
.200	.0669	-2.0124	-2.0508	2.1020	2.0507

Table 9 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Experimental Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0669	-2.0124	-2.0508	2.1020	2.0507
.205	-.0762	2.1664	2.2282	-2.3376	-2.2281
.209	.0750	2.1748	-2.0966	2.2502	2.0965
.214	.1167	3.2919	-3.1189	3.4227	3.1187
.219	.0573	1.5996	-1.4658	1.6440	1.4657
.224	.0893	-2.3664	-2.1906	2.5098	2.1905
.228	.0830	2.1568	-1.9526	2.2843	1.9525
.233	-.1172	-2.8799	2.6476	-3.1613	-2.6474
.238	.0882	2.2166	-1.9137	2.3313	1.9136
.242	.1478	-3.6747	-3.0837	3.8311	3.0836
.247	-.2152	-5.3250	4.3198	-5.4711	-4.3195
.252	.2014	4.8245	-3.8918	5.0231	3.8916
.257	.1196	-2.7678	-2.2267	2.9277	2.2266
.261	.2130	5.0355	-3.8248	5.1214	3.8246
.266	-.2345	5.4339	4.0639	-5.5397	-4.0637
.277	.1623	-3.4621	-2.5935	3.6815	2.5933
.288	.4861	10.4100	-7.2108	10.6239	7.2104
.298	.3490	7.1491	-4.8181	7.3579	4.8178
.309	.3595	7.2136	-4.6311	7.3215	4.6308
.319	.5590	10.9942	-6.7345	11.0092	6.7341
.333	.4491	-8.4645	-4.9650	8.4728	4.9647
.494	.2333	-3.1967	-1.1726	2.9680	1.1725
.655	.1794	-2.1024	-.5129	1.7211	.5128
.816	.0817	.9448	-.1505	.6290	.1504
.977	-.1042	1.1284	.1339	-.6702	-.1339
1.138	.0604	-.7879	-.0572	.3336	.0572
1.299	.0514	-.8122	-.0374	.2489	.0374
1.460	-.0585	.7337	.0337	-.2519	-.0337
1.620	.0593	-.7700	-.0277	.2299	.0277
1.781	.0675	.6978	-.0261	.2380	.0261
1.942	.0483	.7197	-.0157	.1561	.0157
2.103	-.0650	-.7109	.0180	-.1943	-.0180
2.264	.0480	-.7220	-.0115	.1332	.0115
2.425	-.0485	-.7015	.0101	-.1257	-.0101
2.586	.0422	-.6821	-.0077	.1026	.0077
2.747	.0416	-.6746	-.0068	.0952	.0068
2.908	-.0592	-.6750	.0086	-.1279	-.0086
3.069	-.0698	-.6772	.0091	-.1430	-.0091
3.230	-.0768	-.6779	.0090	-.1494	-.0090
3.391	.0818	-.6765	-.0087	.1515	.0087
3.552	.0828	-.6739	-.0080	.1464	.0080
3.713	.0799	-.6710	-.0071	.1353	.0071
3.873	.0765	-.6685	-.0063	.1241	.0062
4.034	-.0762	-.6668	.0057	-.1187	-.0057
4.195	.0803	-.6661	-.0056	.1203	.0056
4.356	-.0872	-.6661	.0056	-.1257	-.0056
4.517	.0743	-.6667	-.0057	.1311	.0057
4.678	-.1001	-.6678	.0056	-.1344	-.0056
4.839	.1040	-.6690	-.0054	.1350	.0054
5.000	-.1063	-.6704	.0052	-.1336	-.0052

Table 9 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Experimental Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	-.0004	.0429	.6277	-.0946	-.6279
.032	-.0006	-.0506	.6652	-.1102	-.6650
.035	-.0007	-.0955	.7298	-.1316	-.7285
.038	-.0011	-.1517	.9593	-.1877	-.9593
.041	.0013	-.1769	-.9775	.2052	.9740
.045	-.0016	-.1937	.9987	-.2301	-.9975
.048	-.0014	.1689	.7714	-.1870	-.7680
.050	-.0014	.1248	.6626	-.1698	-.6627
.055	-.0019	.1706	.7774	-.2192	-.7776
.058	.0021	.1850	-.7945	.2342	.7926
.060	.0030	-.2591	-1.0210	.3162	1.0225
.063	-.0028	-.1988	.8662	-.2788	-.8636
.067	-.0037	-.2509	1.0149	-.3475	-1.0121
.071	-.0042	-.3407	1.0245	-.3702	-1.0194
.075	-.0040	-.2866	.8784	-.3363	-.8784
.079	-.0047	.3310	.9261	-.3728	-.9261
.082	.0047	.3209	-.8507	.3587	.8494
.086	-.0045	-.2746	.7381	-.3269	-.7395
.090	.0050	-.2881	-.7567	.3484	.7545
.094	-.0054	-.2591	.7555	-.3635	-.7549
.098	-.0064	.3531	.8179	-.4090	-.8159
.102	.0083	.4471	.9847	-.5120	-.9828
.106	.0085	-.4268	-.9383	.5060	.9359
.109	.0103	.4360	-1.0594	.5946	1.0610
.113	-.0094	-.4119	.9025	-.5235	-.9024
.117	.0125	.5324	-1.1224	.6708	1.1182
.121	.0102	-.5079	.8577	-.5326	-.8596
.125	.0110	-.5138	.8651	-.5540	-.8648
.131	.0135	-.6006	.9639	-.6475	-.9661
.137	.0127	-.5088	.8382	-.5845	-.8353
.142	.0160	-.5172	.9684	-.7063	-.9684
.148	.0169	-.6394	-.9414	.7150	.9421
.154	-.0196	.6476	1.0159	-.8022	-1.0175
.160	.0233	.7969	-1.1218	.9154	1.1190
.165	-.0227	.6677	1.0214	-.8636	-1.0189
.171	-.0247	.7408	1.0364	-.9070	-1.0340
.177	-.0295	.9192	1.1557	-1.0494	-1.1573
.183	.0343	.9979	-1.2613	1.1790	1.2592
.188	.0388	1.1076	-1.3380	1.2936	1.3393
.194	.0453	-1.2715	-1.4732	1.4651	1.4719
.200	.0375	-1.0074	-1.1507	1.1765	1.1479

Table 9 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Experimental Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0375	-1.0074	-1.1507	1.1765	1.1479
.205	-.0382	1.0126	1.1227	-1.1738	-1.1188
.209	.0420	1.0471	-1.1790	1.2614	1.1753
.214	.0484	1.1642	-1.2949	1.4207	1.2945
.219	.0504	1.1446	-1.2870	1.4469	1.2900
.224	.0530	-1.2274	-1.3041	1.4897	1.3001
.228	.0573	-1.3224	-1.3530	1.5773	1.3482
.233	.0632	-1.5221	-1.4320	1.7044	1.4273
.238	.0618	1.4175	-1.3391	1.6339	1.3412
.242	.0730	1.6833	-1.5298	1.8930	1.5236
.247	-.0811	-1.8174	1.6231	-2.0606	-1.6268
.252	-.0944	2.0589	1.8278	-2.3559	-1.8252
.257	-.0889	1.9618	1.6594	-2.1763	-1.6551
.261	.0905	-1.9440	-1.6237	2.1763	1.6253
.266	.1075	-2.4201	-1.8605	2.5386	1.8622
.277	-.1228	2.5103	1.9695	-2.7864	-1.9628
.288	.1746	-3.6266	2.5911	3.8160	2.5899
.298	-.1970	-4.0849	-2.7242	-4.1545	-2.7203
.309	.1933	-3.7183	-2.4856	3.9360	2.4895
.319	-.2221	-4.1439	2.6781	-4.3748	-2.6759
.333	.2835	5.2351	-3.1421	5.3487	3.1341
.494	.1206	1.8813	-.6063	1.5340	.6060
.655	-.1057	-1.4798	.3025	-1.0139	-.3021
.816	.0758	-.9533	-.1398	.5835	.1396
.977	-.0735	1.0074	.0945	-.4727	-.0944
1.138	.0589	-.7989	-.0560	.3251	.0558
1.299	-.0482	-.7855	.0352	-.2332	-.0350
1.460	.0498	.7108	.0288	-.2142	-.0286
1.620	.0511	-.7489	-.0242	.1982	.0239
1.781	.0530	-.6774	-.0207	.1870	.0205
1.942	-.0487	.7050	.0159	-.1577	-.0158
2.103	-.0550	-.7035	.0153	-.1644	-.0153
2.264	.0445	-.7134	-.0109	.1234	.0106
2.425	-.0446	-.6994	.0093	-.1157	-.0093
2.586	.0410	-.6842	-.0079	.0997	.0075
2.747	-.0437	-.6770	.0071	-.0998	-.0071
2.908	-.0563	-.6760	.0082	-.1218	-.0082
3.069	-.0659	-.6769	.0086	-.1349	-.0086
3.230	-.0724	-.6770	.0085	-.1408	-.0085
3.391	-.0767	-.6758	.0082	-.1421	-.0082
3.552	-.0780	-.6737	.0076	-.1380	-.0076
3.713	-.0769	-.6712	.0068	-.1301	-.0068
3.873	-.0755	-.6691	.0062	-.1224	-.0062
4.034	-.0761	-.6677	.0057	-.1186	-.0057
4.195	-.0797	-.6670	.0056	-.1193	-.0055
4.356	-.0851	-.6669	.0055	-.1227	-.0055
4.517	-.0908	-.6673	.0055	-.1263	-.0055
4.678	-.0957	-.6681	.0054	-.1286	-.0054
4.839	-.0994	-.6692	.0052	-.1291	-.0052
5.000	-.1020	-.6703	.0050	-.1282	-.0050

Table 9 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Experimental Level -7% Damping

REH100	DISPLACEMENT SD (FT)	VELOCITY SV1 (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	.0005	.0367	.6439	-.0969	-.6429
.032	.0005	.0487	.6430	-.1064	-.6425
.035	.0007	-.0757	.7086	-.1276	-.7065
.038	.0010	-.1040	.8652	-.1689	-.8632
.041	.0012	-.1237	.8639	-.1809	-.8586
.045	.0011	-.1266	.6909	-.1585	-.6872
.048	.0011	.1187	-.5827	-.1417	-.5823
.050	.0013	.0976	.6251	-.1602	-.6251
.055	.0017	.1241	.6842	-.1920	-.6811
.058	.0018	.1339	-.6559	.1940	.6563
.060	.0021	.1594	-.7051	.2164	.6998
.063	.0023	.1405	.7241	-.2332	-.7222
.067	.0030	.1650	.8297	-.2830	-.8241
.071	.0031	-.1901	.7573	-.2754	-.7586
.075	.0030	-.2056	.6703	-.2563	-.6696
.079	.0033	-.2147	-.6476	.2602	.6464
.082	.0037	-.2106	-.6683	.2808	.6650
.086	.0037	-.1875	-.6188	.2718	.6150
.090	.0041	-.1787	-.6276	.2886	.6250
.094	.0043	-.1876	.6019	-.2889	-.6001
.098	.0050	-.2423	-.6395	.3199	.6383
.102	.0057	-.2674	.6738	-.3507	-.6732
.106	.0065	-.2929	.7174	-.3886	-.7188
.109	.0073	-.2964	.7520	-.4196	-.7487
.113	.0074	-.2860	.7098	-.4119	-.7099
.117	.0080	-.3061	.7149	-.4293	-.7157
.121	.0083	-.3089	.6947	-.4305	-.6948
.125	.0089	-.3523	.7028	-.4494	-.7016
.131	.0103	-.3849	.7405	-.4933	-.7360
.137	.0100	-.3661	.6626	-.4607	-.6584
.142	.0115	-.3723	.6954	-.5056	-.6933
.148	.0125	-.4462	.7003	-.5293	-.6974
.154	.0136	-.4486	.7054	-.5543	-.7030
.160	.0152	.4614	.7363	-.5986	-.7318
.165	.0185	.5068	.8289	-.7018	-.8280
.171	.0211	.6084	.8873	-.7758	-.8845
.177	.0230	.6865	.9060	-.8175	-.9016
.183	.0253	.7128	-.9342	.8715	.9308
.188	.0291	.8109	-1.0073	.9688	1.0030
.194	.0312	.8351	-1.0173	1.0079	1.0125
.200	.0301	.7517	-.9313	.9468	.9238

Table 9 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Experimental Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0301	.7517	-.9313	.9468	.9238
.205	.0320	.8159	-.9432	.9836	.9375
.209	.0364	.8883	-1.0145	1.0916	1.0171
.214	.0401	.9508	-1.0807	1.1773	1.0727
.219	.0437	.9875	-1.1185	1.2559	1.1197
.224	.0467	1.0234	-1.1542	1.3118	1.1449
.228	.0500	-1.0977	-1.1745	1.3770	1.1770
.233	.0526	-1.1797	-1.1970	1.4197	1.1889
.238	.0550	-1.2283	-1.1944	1.4528	1.1925
.242	.0587	-1.3062	1.2264	-1.5206	-1.2239
.247	.0640	-1.3910	1.2951	-1.6281	-1.2854
.252	.0688	-1.4538	1.3361	-1.7174	-1.3305
.257	.0709	-1.4518	1.3199	-1.7356	-1.3199
.261	.0708	1.4494	1.2786	-1.7030	-1.2717
.266	.0717	-1.4612	1.2504	-1.6927	-1.2417
.277	.0929	1.8667	1.4871	-2.1074	-1.4845
.288	.1150	-2.2625	-1.7073	2.5140	1.7062
.298	.1248	-2.4901	-1.7327	2.6311	1.7228
.309	.1258	-2.4507	1.6244	-2.5623	-1.6207
.319	.1571	-2.9235	1.8946	-3.0941	-1.8926
.333	.1939	3.6096	2.1548	-3.6591	-2.1441
.494	.1097	-1.6791	-.5547	1.3949	.5510
.655	.0948	1.2155	.2734	-.9094	-.2710
.816	.0655	-.8970	-.1224	.5046	.1207
.977	.0571	.9142	.0750	-.3675	-.0734
1.138	.0535	-.7880	.0528	-.2954	-.0507
1.299	.0476	-.7628	.0357	-.2304	-.0346
1.460	.0466	-.7166	-.0285	.2004	.0268
1.620	.0463	-.7298	.0229	-.1795	-.0216
1.781	.0472	-.6880	-.0197	.1663	.0182
1.942	.0457	.6907	.0158	-.1479	-.0149
2.103	.0473	-.6967	.0148	-.1414	-.0131
2.264	.0422	-.7041	.0120	-.1171	-.0101
2.425	.0422	-.6960	-.0099	-.1092	-.0088
2.586	.0416	-.6854	-.0089	-.1011	-.0076
2.747	.0452	-.6791	-.0078	-.1033	-.0073
2.908	.0536	-.6770	.0078	-.1157	-.0078
3.069	.0612	-.6767	.0080	-.1253	-.0080
3.230	.0668	-.6762	.0079	-.1300	-.0079
3.391	.0706	-.6751	.0076	-.1308	-.0075
3.552	.0725	-.6733	.0071	-.1282	-.0070
3.713	.0729	-.6715	.0065	-.1235	-.0065
3.873	.0733	-.6698	.0060	-.1189	-.0060
4.034	.0748	-.6686	.0057	-.1165	-.0056
4.195	.0779	-.6680	.0055	-.1166	-.0054
4.356	.0820	-.6678	.0053	-.1182	-.0053
4.517	.0864	-.6680	.0052	-.1201	-.0052
4.678	.0904	-.6686	.0051	-.1214	-.0051
4.839	.0938	-.6694	.0049	-.1218	-.0049
5.000	.0965	-.6702	.0048	-.1213	-.0047

Table 9 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Experimental Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	.0005	.0343	.6408	-.0964	-.6399
.032	.0005	.0469	.6435	-.1063	-.6414
.035	.0007	-.0664	.7013	-.1261	-.6480
.038	.0010	-.0910	.8107	-.1579	-.8068
.041	.0011	-.1068	.8100	-.1695	-.8048
.045	.0011	-.1071	.6707	-.1536	-.6662
.048	.0011	.1048	.5854	-.1422	-.5840
.050	.0013	.0968	.6231	-.1589	-.6200
.055	.0016	.1105	.6672	-.1867	-.6625
.058	.0018	.1201	.6529	-.1924	-.6511
.060	.0019	.1327	.6591	-.2029	-.6561
.063	.0023	.1235	.7059	-.2271	-.7033
.067	.0028	.1363	.7637	-.2597	-.7564
.071	.0029	.1483	.7191	-.2591	-.7136
.075	.0029	-.1708	.6483	-.2461	-.6429
.079	.0030	-.1734	-.6004	.2396	.5952
.082	.0034	-.1762	-.6153	.2571	.6088
.086	.0036	-.1666	-.5925	.2594	.5869
.090	.0038	.1565	-.5806	.2661	.5763
.094	.0041	.1725	.5781	-.2775	-.5762
.098	.0047	.2043	.6011	-.3006	-.5998
.102	.0052	-.2276	-.6173	.3191	.6125
.106	.0058	-.2564	.6491	-.3477	-.6431
.109	.0065	-.2700	.6739	-.3751	-.6693
.113	.0068	-.2707	.6517	-.3775	-.6507
.117	.0074	-.2805	.6625	-.3973	-.6623
.121	.0079	-.2786	.6655	-.4104	-.6623
.125	.0085	-.3003	.6733	-.4287	-.6691
.131	.0095	-.3218	.6823	-.4544	-.6780
.137	.0097	-.3231	.6395	-.4466	-.6382
.142	.0105	-.3289	.6393	-.4647	-.6372
.148	.0119	-.3786	.6695	-.5054	-.6660
.154	.0131	-.3851	.6822	-.5338	-.6770
.160	.0149	.3827	.7200	-.5849	-.7150
.165	.0171	.4589	.7740	-.6504	-.7674
.171	.0193	.5382	.8131	-.7073	-.8064
.177	.0209	.6011	.8248	-.7422	-.8185
.183	.0221	.6384	.8177	-.7608	-.8126
.188	.0249	.6828	-.8666	.8314	.8608
.194	.0266	.7025	-.8720	.8603	.8643
.200	.0280	.6956	.8595	-.8783	-.8569

Table 9 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Experimental Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0280	.6956	.8595	-.8783	-.8569
.205	.0301	.7543	-.8847	-.9244	-.8811
.209	.0336	.8073	-.9428	1.0070	.9383
.214	.0369	.8638	-.9939	1.0824	.9862
.219	.0402	.9009	-1.0321	1.1537	1.0286
.224	.0430	.9387	-1.0670	1.2097	1.0557
.228	.0461	-.9812	-1.0855	1.2694	1.0850
.233	.0486	-1.0553	-1.1097	1.3105	1.0974
.238	.0513	-1.1144	-1.1197	1.3567	1.1136
.242	.0539	-1.1819	-1.1299	1.3970	1.1244
.247	.0575	-1.2429	1.1628	-1.4630	-1.1551
.252	-.0612	-1.2935	1.1934	-1.5271	-1.1831
.257	-.0643	-1.3231	1.2052	-1.5745	-1.1974
.261	-.0668	-1.3463	1.2064	-1.6062	-1.1995
.266	-.0698	-1.3852	1.2227	-1.6479	-1.2088
.277	-.0834	1.6648	1.3414	-1.8918	-1.3326
.288	.0984	1.9222	-1.4673	2.1514	1.4601
.298	.1070	-2.0474	-1.4845	2.2560	1.4772
.309	.1163	-2.2095	-1.5103	2.3686	1.4981
.319	.1351	-2.5413	-1.6437	2.6609	1.6276
.333	.1594	-2.9597	1.7805	-3.0072	-1.7621
.494	.1073	-1.6091	-.5476	1.3652	.5393
.655	-.0892	1.1567	.2593	-.8556	-.2549
.816	.0619	-.8550	-.1158	.4767	.1140
.977	-.0538	.8796	.0734	-.3462	-.0692
1.138	.0538	-.7756	.0553	-.2969	-.0509
1.299	-.0458	-.7532	.0374	-.2218	-.0333
1.460	.0455	-.7191	-.0295	.1958	.0262
1.620	.0447	-.7220	-.0240	.1732	.0209
1.781	.0450	-.6915	-.0204	.1586	.0174
1.942	-.0432	.6846	.0172	-.1397	-.0140
2.103	.0449	-.6940	.0159	-.1342	-.0124
2.264	.0419	-.6993	.0134	-.1163	-.0100
2.425	.0413	-.6938	.0113	-.1071	-.0086
2.586	.0419	-.6855	.0099	-.1018	-.0077
2.747	.0454	-.6799	.0091	-.1039	-.0074
2.908	.0521	-.6775	.0085	-.1127	-.0076
3.069	.0587	-.6766	.0079	-.1201	-.0076
3.230	.0638	-.6758	.0076	-.1241	-.0075
3.391	.0673	-.6747	.0073	-.1248	-.0072
3.552	.0694	-.6732	.0068	-.1229	-.0067
3.713	.0706	-.6716	.0063	-.1195	-.0063
3.873	.0717	-.6701	.0059	-.1163	-.0059
4.034	.0735	-.6691	.0056	-.1145	-.0055
4.195	.0763	-.6684	.0054	-.1143	-.0053
4.356	.0800	-.6682	.0052	-.1153	-.0052
4.517	.0838	-.6684	.0051	-.1165	-.0050
4.678	.0874	-.6688	.0049	-.1174	-.0049
4.839	.0906	-.6694	.0048	-.1176	-.0047
5.000	.0934	-.6702	.0046	-.1173	-.0046

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Table 10

SPECIM

Floor Spectra for HFBR, Balcony Level -7% Damping

2 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- BALCONY LEVEL - 7 PCT DAMP

NUMBER OF DAMPING VALUES = 4

NUMBER OF OUTPUT PERIOD CANUS = 5

NUMBER OF ACCELERATION VALUES = 1499

INTERVAL OF DIGITIZATION = .0100

ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
.020
.050
.070

PERIOD VALUES (SECONUS)

.0294	.0323	.0353	.0382	.0411	.0450	.0475	.0500	.0550	.0577
.0603	.0630	.0670	.0709	.0747	.0786	.0824	.0863	.0901	.0940
.0978	.1017	.1055	.1094	.1132	.1171	.1209	.1250	.1308	.1365
.1423	.1481	.1538	.1596	.1654	.1712	.1769	.1827	.1885	.1942
.2000									

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Table 10 (Continued)

SPECIM

Floor Spectra for HFBR, Balcony Level -7% Damping

1 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- BALCONY LEVEL - 7 PCT DAMP

NUMBER OF DAMPING VALUES = 4
 NUMBER OF OUTPUT PERIOD CARDS = 3
 NUMBER OF ACCELERATION VALUES = 1499
 INTERVAL OF DIGITIZATION = .0100
 ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
 .020
 .050
 .070

PERIOD VALUES (SECONDS)

.2000	.2047	.2094	.2141	.2189	.2236	.2283	.2330	.2377	.2424
.2471	.2519	.2566	.2613	.2660	.2707	.2755	.2802	.2850	.2897
.2945	.2993	.3040	.3088	.3135	.3183	.3230	.3278	.3325	.3373
1.9423	2.1032	2.2642	2.4251	2.5860	2.7470	2.9079	3.0688	3.2298	3.3907
3.5516	3.7126	3.8735	4.0344	4.1953	4.3563	4.5172	4.6781	4.8391	5.0000

Table 10 (Continued)

ACCELERATION RECORD		Floor Spectra for HFBR, Balcony Level -7% Damping									
TIME (SEC)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)
0.0000	-.3956E-02	-.4256E-02	-.5681E-02	-.7008E-02	-.4202E-02	-.1241E-02	-.1799E-02	-.2081E-02	-.6425E-04	.2082E-02	
.1000	-.5142E-03	-.3163E-02	-.4176E-02	-.5443E-02	-.7448E-02	-.9549E-02	-.2300E-02	.5142E-02	.8461E-02	.1227E-01	
.2000	.9917E-02	.7738E-02	.4301E-02	.2336E-03	-.1315E-03	-.1549E-02	.1414E-01	.2912E-01	.3088E-01	.3301E-01	
.3000	.2125E-01	.9927E-02	.2586E-01	.4062E-01	.5896E-01	.7505E-01	.7982E-02	-.6021E-01	-.3174E-01	-.4554E-02	
.4000	-.3539E-01	-.6404E-01	-.6858E-01	-.6946E-01	-.6174E-01	-.5044E-01	-.4358E-01	-.3438E-01	-.4619E-01	-.5785E-01	
.5000	-.1873E-01	-.1005E-00	-.3992E-01	.2018E-01	.2606E-01	.3456E-01	.7427E-01	.1156E+00	.4311E-01	-.3044E-01	
.6000	.7010E-01	.1625E+00	.4220E-01	-.8269E-01	-.1743E-01	.4591E-01	.2358E-01	.6891E-02	.7492E-01	.1483E+00	
.7000	.8168E-01	.1564E-01	-.1000E-01	-.4329E-01	-.9536E-02	.1509E-01	-.2483E-02	-.2034E-01	-.4956E-01	-.6987E-01	
.8000	-.4435E-01	-.9275E-02	-.7798E-01	.1428E+00	-.7212E-01	-.7816E-02	-.2537E-01	-.4811E-01	-.4246E-02	.4034E-01	
.9000	-.1240E-01	-.5793E-01	-.8415E-02	.4510E-01	.4712E-01	.4712E-01	.5560E-01	.5692E-01	.6606E-01	.6883E-01	
1.0000	.5329E-02	-.5852E-01	-.7676E-01	-.9137E-01	-.7557E-01	-.5404E-01	-.7552E-01	-.9088E-01	-.5762E-01	-.2211E-01	
1.1000	.2930E-01	.7907E-01	.1916E+00	.2982E+00	.2767E+00	.2481E+00	.2899E+00	.3205E+00	.2414E+00	.1513E+00	
1.2000	.1096E+00	.5889E-01	.1215E-02	-.5702E-01	-.1141E+00	-.1618E+00	-.2969E+00	-.4166E+00	-.3518E+00	-.2759E+00	
1.3000	-.3155E+00	-.3453E+00	-.3231E-09	-.2933E+00	-.3256E+00	-.3497E+00	-.1787E+00	-.2331E-02	.2982E-01	.6534E-01	
1.4000	.1669E+00	.2630E+00	.3497E+00	.4228E+00	.4246E+00	.4078E+00	.3850E+00	.3438E+00	.2278E+00	.1023E+00	
1.5000	.7547E-01	.4870E-01	.9135E-02	.2127E-01	.7220E-01	.1117E+00	-.1764E+00	-.2348E+00	-.2320E+00	-.2295E+00	
1.6000	-.1861E-01	-.1427E+00	-.1048E-00	-.6083E-01	-.1485E+00	-.2250E+00	-.7288E-01	.8249E-01	.7321E-01	.6114E-01	
1.7000	.8759E-01	.1044E+00	.4117E-01	-.3013E-01	.6886E-01	.1640E+00	-.1369E+00	.1138E+00	.1394E+00	.1684E+00	
1.8000	.1166E+00	.8329E-01	.2863E-01	-.1459E-01	-.5220E-01	-.9808E-01	-.1377E+00	-.1755E+00	-.1866E+00	-.1840E+00	
1.9000	-.1089E+00	-.1704E-01	-.7606E-02	-.1261E+00	-.7412E-01	-.2920E-01	-.3655E-01	-.5601E-01	.8477E-02	.6702E-01	
2.0000	.2519E-01	-.9733E-02	.1191E-01	.4326E-01	.8176E-01	.1218E+00	.1317E+00	.1319E+00	.1202E+00	.9490E-01	
2.1000	.7777E-01	.9321E-01	.6575E-01	.8091E-01	.6321E-02	-.8373E-01	-.5684E-01	-.2435E-01	-.7119E-01	-.1176E+00	
2.2000	-.1662E-01	.7896E-01	.4863E-01	.1616E-01	.3842E-01	.6080E-01	.7435E-01	.8842E-01	.5275E-01	.1596E-01	
2.3000	.2356E-01	.2694E-01	.2139E-01	.1308E-01	-.4443E-01	-.9997E-01	-.1435E+00	-.1821E+00	-.1276E+00	-.6793E-01	
2.4000	-.1387E+00	-.2024E+00	-.1315E+00	-.5731E-01	-.5026E-01	-.4044E-01	-.3718E-01	-.3342E-01	.3554E-01	.1011E+00	
2.5000	.9073E-01	.7702E-01	.9878E-01	.1161E+00	.9210E-01	.6435E-01	.8544E-01	.1036E+00	.9127E-01	.7785E-01	
2.6000	.5940E-01	.4088E-01	.3889E-01	.3658E-01	.1397E-01	-.9360E-02	.2573E-01	.5948E-01	.3358E-01	.8303E-02	
2.7000	-.1277E-01	-.3319E-01	-.5886E-01	-.8448E-01	-.6915E-01	-.5399E-01	-.1388E+00	-.2200E+00	-.2123E+00	-.1986E+00	
2.8000	-.1740E+00	-.1408E+00	-.1291E+00	-.1094E+00	-.4580E-01	.2011E-01	.2720E-01	.3163E-01	.4497E-01	.5140E-01	
2.9000	.1335E+00	.2075E+00	.2542E+00	.2966E+00	.2632E+00	.2268E+00	.1977E+00	.1618E+00	.1323E+00	.9319E-01	
3.0000	.7531E-01	.5054E-01	-.2813E-01	-.1039E-01	-.7837E-01	-.4308E-01	-.1097E+00	-.1647E+00	-.9990E-01	-.3223E-01	
3.1000	-.1044E+00	-.1785E+00	-.2232E+00	-.2707E+00	-.2650E+00	-.2558E+00	-.2222E+00	-.1762E+00	-.1515E+00	-.1118E+00	
3.2000	-.1938E-01	.7930E-01	.2325E+00	.3772E+00	.3795E+00	.3630E+00	.3516E+00	.3181E+00	.3075E+00	.2816E+00	
3.3000	.1744E+00	.6547E-01	.3959E-01	.1984E-01	.2210E-01	.3249E-01	-.1312E+00	-.2883E+00	-.2561E+00	-.2248E+00	
3.4000	-.2239E+00	-.8201E+00	-.2319E-01	-.2326E-01	-.2887E+00	-.2694E+00	-.2328E+00	-.1850E+00	-.1334E+00	-.8137E-01	
3.5000	-.2837E-02	.6795E-01	.8741E-01	.9279E-01	.1273E+00	.1506E+00	.1426E+00	.1328E+00	.1185E+00	.1021E+00	
3.6000	.8132E-01	.5769E-01	.7495E-01	.8977E-01	.1197E+00	.1484E+00	.2147E+00	.2782E+00	.1640E+00	.4567E-01	
3.7000	.2793E-01	.1323E-02	.4578E-01	-.9808E-01	-.1633E+00	-.2231E+00	-.2878E+00	-.3370E+00	-.3028E+00	-.2507E+00	
3.8000	-.1311E+00	-.1081E-02	.3080E-01	.6205E-01	.1423E+00	.2101E+00	.2506E+00	.2751E+00	.2328E+00	.1789E+00	
3.9000	.1533E+00	.1229E+00	.1266E+00	.1314E+00	.8109E-01	.3435E-01	.1271E-01	-.8687E-02	-.1275E-01	-.1908E-01	
4.0000	-.3863E-01	-.9443E-01	-.1277E+00	-.1868E+00	-.2111E+00	-.2876E+00	-.3088E+00	-.2640E+00	-.2117E+00		
4.1000	-.2898E-01	-.8410E+00	-.2016E+00	-.1887E+00	-.1166E+00	-.7288E-01	-.1176E-01	.4956E-01	.9720E-01	.1438E+00	
4.2000	.1945E+00	.8400E+00	.8400E+00	.8400E+00	.8400E+00	.8400E+00	.8400E+00	.8400E+00	.8400E+00	.8400E+00	
4.3000	.8614E+00	.8614E+00	.8614E+00	.8614E+00	.8614E+00	.8614E+00	.8614E+00	.8614E+00	.8614E+00	.8614E+00	
4.4000	-.1744E-01	-.1848E+00	-.8848E+00	-.8848E+00	-.8848E+00	-.8848E+00	-.8848E+00	-.8848E+00	-.8848E+00	-.8848E+00	
4.5000	-.2788E+00	-.8068E+00	-.2317E+00	-.8474E+00	-.2374E+00	-.2184E+00	-.3912E-01	-.2845E-01	-.3679E+00	-.3679E+00	
4.6000	.3808E+00	.3808E+00	.3808E+00	.3808E+00	.3808E+00	.3808E+00	.3808E+00	.3808E+00	.3808E+00	.3808E+00	
4.7000	.1941E+00	.1646E+00	.1140E+00	.7052E-01	-.2467E-01	-.1148E+00	-.9023E-01	-.6863E-01	-.2178E+00	-.3679E+00	
4.8000	-.3482E+00	-.3233E+00	-.2873E+00	-.2350E+00	-.1810E+00	-.1076E+00	-.4666E-01	.2245E-01	.4702E-01	.6303E-01	
4.9000	.8671E-01	.9111E-01	.1264E+00	.1461E+00	.5891E-01	.2715E-01	-.2922E-01	-.1973E-01	-.8210E-01	-.1320E+00	
5.0000	-.1684E-01	.9864E-01	.4793E-01	-.9826E-02	.8811E-02	.1811E-01	-.6881E-01	-.1804E+00	-.1141E-01	.1386E+00	
5.1000	.7718E-01	.3293E-01	.1533E+00	.2741E+00	.2568E+00	.2301E+00	.2919E+00	.1954E+00	.2049E+00	.1973E+00	
5.2000	.1560E+00	.1112E+00	.4363E-01	-.1447E-01	-.5430E-01	-.8241E-01	-.1675E+00	-.2463E+00	-.2317E+00	-.2188E+00	
5.3000	-.2635E+00	-.3065E+00	-.2640E+00	-.2123E+00	-.2754E+00	-.3220E+00	-.2694E+00	-.2049E+00	-.1871E+00	-.1652E+00	
5.4000	-.1594E-01	.1290E+00	.1726E+00	.2107E+00	.2215E+00	.2250E+00	.2982E+00	.3596E+00	.3052E+00	.2397E+00	
5.5000	.2254E+00	.2010E+00	.1574E+00	.1100E+00	.1138E+00	.1191E+00	-.1969E-01	-.1533E+00	-.1380E+00	-.1206E+00	
5.6000	-.2808E+00	-.4352E+00	-.2793E+00	-.1175E+00	-.1692E+00	-.2069E+00	-.1870E+00	-.1556E+00	-.1188E+00	-.8005E-01	
5.7000	.2242E-01	.1190E+00	.1248E+00	.1208E+00	.2001E+00	.2715E+00	.2025E+00	.1320E+00	.1387E+00	.1423E+00	

Table 10 (Continued)

Floor Spectra for HFBR, Balcony Level -7% Damping

5.8000	.9635E-01	.4588E-01	.5472E-01	.5933E-01	.5016E-01	.4117E-01	.3101E-01	.2492E-01	-.8526E-03	-.2301E-01
5.9000	-.5448E-02	.1091E-01	-.6505E-01	-.1431E+00	-.1546E+00	-.1668E+00	-.2125E+00	-.2522E+00	-.2202E+00	-.1772E+00
6.0000	-.1016E+00	-.1522E-01	.3021E-01	.8003E-01	.1019E+00	.1171E+00	.1344E+00	.1370E+00	.1131E+00	.7705E-01
6.1000	.6845E-01	.5762E-01	.8067E-01	.1107E+00	.7552E-01	.4842E-01	.2637E-01	.2889E-02	.5070E-01	.8801E-01
6.2000	.4272E-02	-.8611E-01	-.9179E-01	-.9552E-01	-.1251E+00	-.1427E+00	-.1007E+00	-.4666E-01	-.1212E-01	.2614E-01
6.3000	.5197E-02	-.2137E-01	-.5070E-01	-.9023E-01	-.1072E+00	-.1293E+00	-.9184E-01	-.4845E-01	-.1677E-01	.2922E-01
6.4000	.7723E-01	.1352E+00	.1327E+00	.1257E+00	.1704E+00	.1954E+00	.1748E+00	.1350E+00	.1317E+00	.1224E+00
6.5000	.9256E-01	.7174E-01	.2557E-01	-.8495E-02	.2094E-01	.3122E-01	-.2234E-01	-.2127E-01	-.8161E-01	-.1482E+00
6.6000	-.1280E+00	-.1055E+00	-.2037E+00	-.2878E+00	-.2500E+00	-.1983E+00	-.2640E+00	-.3199E+00	-.1904E+00	-.6054E-01
6.7000	-.3355E-01	-.7922E-02	.5570E-01	.1170E+00	.1106E+00	.1016E+00	.1414E+00	.1755E+00	.1689E+00	.1555E+00
6.8000	.1413E+00	.1213E+00	.1714E+00	.2175E+00	.1824E+00	.1461E+00	.1589E+00	.1679E+00	.1162E+00	.5925E-01
6.9000	.6733E-01	.6987E-01	-.1745E-01	-.1045E+00	-.6337E-01	-.1779E-01	-.2655E-01	-.2718E-01	-.1316E+00	-.2298E+00
7.0000	-.2216E+00	-.2143E+00	-.2834E+00	-.3516E+00	-.3085E+00	-.2588E+00	-.3510E+00	-.4251E+00	-.3039E+00	-.1657E+00
7.1000	-.9497E-01	-.1521E-01	.1240E+00	.2570E+00	.3184E+00	.3632E+00	.5497E+00	.7132E+00	.6298E+00	.5275E+00
7.2000	.4873E+00	.4293E+00	.3518E+00	.2611E+00	.1919E+00	.1170E+00	-.1070E-01	-.1336E+00	-.2218E+00	-.2974E+00
7.3000	-.3775E+00	-.4412E+00	-.5060E+00	-.5552E+00	-.5474E+00	-.5249E+00	-.4997E+00	-.4591E+00	-.4114E+00	-.3495E+00
7.4000	-.2241E+00	-.9104E-01	-.3288E-01	.2448E-01	.1359E+00	.2363E+00	.3192E+00	.3870E+00	.4269E+00	.4528E+00
7.5000	.3977E+00	.3316E+00	.3977E+00	.4526E+00	.3972E+00	.3332E+00	.2746E+00	.2078E+00	.1665E+00	.1183E+00
7.6000	.0604E-02	-.1023E+00	-.1828E+00	-.2582E+00	-.3573E+00	-.4433E+00	-.4298E+00	-.3987E+00	-.4591E+00	-.5003E+00
7.7000	-.3573E+00	-.2025E+00	-.2144E+00	-.2193E+00	-.1302E+00	-.4342E-01	.6549E-02	.5036E-01	.8860E-01	.1208E+00
7.8000	.1831E+00	.2403E+00	.2697E+00	.2951E+00	.3003E+00	.2990E+00	.3358E+00	.3604E+00	.3352E+00	.2969E+00
7.9000	.2122E+00	.1185E+00	.1263E+00	.1306E+00	.8288E-01	.3964E-01	-.8935E-01	-.2108E+00	-.1983E+00	-.1824E+00
8.0000	-.2619E+00	-.3365E+00	-.2563E+00	-.1704E+00	-.2697E+00	-.3562E+00	-.2316E+00	-.9648E-01	-.1998E+00	-.2948E+00
8.1000	-.1349E+00	.2255E-01	.2775E-01	.2964E-01	.4583E-01	.5889E-01	.6132E-01	.6114E-01	.2630E-01	.1061E-01
8.2000	.9995E-01	.2064E+00	.1626E+00	.1184E+00	.1813E+00	.2421E+00	.2177E+00	.1885E+00	.1736E+00	.1495E+00
8.3000	.1454E+00	.1317E+00	.9251E-01	.4997E-01	.2619E-01	.5839E-02	.2687E-01	.5303E-01	.6671E-02	-.3661E-01
8.4000	-.2946E-01	-.2497E-01	-.4228E-01	-.6295E-01	-.7560E-01	-.8767E-01	-.1500E+00	-.2057E+00	-.2264E+00	-.2380E+00
8.5000	-.2666E+00	-.2858E+00	-.2653E+00	-.2383E+00	-.2337E+00	-.2235E+00	-.2097E+00	-.1908E+00	-.7992E-01	.3427E-01
8.6000	.4762E-01	.6363E-01	.1664E+00	.2648E+00	.2829E+00	.2907E+00	.4000E+00	.4922E+00	.4601E+00	.4119E+00
8.7000	.3829E+00	.3404E+00	.2155E+00	.8332E-01	.6246E-01	.3899E-01	-.3642E-01	-.1061E+00	-.1534E+00	-.1896E+00
8.8000	-.3329E+00	-.4624E+00	-.3896E+00	-.3078E+00	-.3993E+00	-.4707E+00	-.4415E+00	-.4021E+00	-.3461E+00	-.2780E+00
8.9000	-.1980E+00	-.1073E+00	.8705E-02	.1267E+00	.1566E+00	.1787E+00	.2674E+00	.3391E+00	.3977E+00	.4389E+00
9.0000	-.4197E+00	.3891E+00	.3736E+00	.3510E+00	.3653E+00	.3728E+00	.2984E+00	.2166E+00	.9979E-01	-.2493E-01
9.1000	-.3720E-01	-.5370E-01	-.1641E+00	-.2663E+00	-.3148E+00	-.3466E+00	-.3516E+00	-.3378E+00	-.3521E+00	-.3528E+00
9.2000	-.3174E+00	-.2777E+00	-.2558E+00	-.2332E+00	-.1414E+00	-.4850E-01	.4370E-01	.1389E+00	.7288E-01	.9306E-02
9.3000	.1138E+00	.2102E+00	.2400E+00	.2574E+00	.2176E+00	.1677E+00	.1632E+00	.1533E+00	.1890E+00	.2245E+00
9.4000	.1919E+00	.1602E+00	.8596E-01	.8790E-02	-.8567E-03	-.1656E-01	-.2964E-01	-.4521E-01	-.1425E+00	-.2339E+00
9.5000	-.2523E+00	-.2596E+00	-.2268E+00	-.1822E+00	-.1198E+00	-.5010E-01	-.7883E-01	-.1060E+00	-.2059E-01	.5904E-01
9.6000	.7083E-01	.7661E-01	.9834E-01	.1160E+00	.3013E-01	-.5560E-01	.2145E-01	.9780E-01	.1101E+00	.1224E+00
9.7000	.1199E+00	.1158E+00	.1478E+00	.1748E+00	.9446E-01	.9140E-02	.5611E-01	.9694E-01	-.1260E-02	-.9873E-01
9.8000	-.8684E-01	-.7000E-01	-.1132E+00	-.1483E+00	-.1424E+00	-.1308E+00	-.6907E-01	-.6720E-02	-.1498E-01	-.2415E-01
9.9000	-.9912E-02	.8733E-02	-.4223E-03	-.4127E-02	-.6516E-02	-.8469E-02	.2883E-01	.6609E-01	.1235E-01	-.4067E-01
10.0000	-.1080E+00	-.1755E+00	-.1539E+00	-.1327E+00	-.1327E+00	-.1279E+00	-.9655E-01	-.5606E-01	-.7723E-02	.4873E-01
10.1000	.1782E+00	.3060E+00	.2606E+00	.2039E+00	.3710E+00	.5155E+00	.3464E+00	.1620E+00	.1601E+00	.1491E+00
10.2000	.2431E-01	-.9772E-01	-.1173E+00	-.1276E+00	-.2528E+00	-.3645E+00	-.3044E+00	-.2338E+00	-.2987E+00	-.3531E+00
10.3000	-.3184E+00	-.2769E+00	-.2438E+00	-.2047E+00	-.1419E+00	-.7399E-01	-.4301E-01	-.9824E-02	.1039E+00	.2131E+00
10.4000	.2289E+00	.2353E+00	.2199E+00	.1918E+00	.1999E+00	.1972E+00	.1153E+00	.3106E-01	.8687E-01	.1451E+00
10.5000	.4637E-01	-.4482E-01	.9264E-01	.2304E+00	.1677E+00	.1008E+00	.7925E-01	.4733E-01	-.4010E-01	-.1358E+00
10.6000	-.1099E+00	-.8394E-01	-.1326E+00	-.1681E+00	-.1444E+00	-.1046E+00	-.1385E+00	-.1626E+00	-.1144E+00	-.6992E-01
10.7000	-.3487E-01	-.9446E-02	-.1600E-01	-.2653E-01	.2282E-01	.7606E-01	.1649E-01	-.3490E-01	.2666E-01	.8829E-01
10.8000	.7534E-01	.5539E-01	.1445E+00	.2232E+00	.2074E+00	.1866E+00	.1884E+00	.1888E+00	.1898E+00	.1887E+00
10.9000	.1166E+00	.4018E-01	-.7381E-01	-.1922E+00	-.1111E+00	-.3132E-01	-.1513E+00	-.2604E+00	-.2684E+00	-.2627E+00
11.0000	-.2681E+00	-.2622E+00	-.2428E+00	-.2179E+00	-.2085E+00	-.1975E+00	-.1371E+00	-.7508E-01	-.7694E-01	-.7407E-01
11.1000	.5712E-01	.1890E+00	.1958E+00	.1990E+00	.2560E+00	.3005E+00	.2940E+00	.2720E+00	.2230E+00	.1625E+00
11.2000	.1540E+00	.1416E+00	.2482E-01	-.8609E-01	-.6676E-01	-.4010E-01	-.6052E-01	-.7505E-01	-.6456E-01	-.5269E-01
11.3000	-.9145E-01	-.1310E+00	-.9746E-01	-.6508E-01	-.6194E-01	-.5637E-01	-.2650E-01	.7440E-02	-.6244E-01	-.1280E+00
11.4000	.3003E-02	.1317E+00	.9184E-01	.4912E-01	.2417E-01	-.4969E-02	-.3137E-02	-.4337E-02	.7508E-03	.6852E-02
11.5000	.3557E-01	.6767E-01	.4350E-01	.2287E-01	.6570E-01	.1067E+00	.5510E-01	-.2266E-02	-.1330E-01	-.3135E-01
11.6000	-.3469E-01	-.3915E-01	-.9407E-01	-.1412E+00	-.9360E-01	-.3640E-01	-.7075E-01	-.9811E-01	.2052E-01	.1359E+00
11.7000	.1354E+00	.1275E+00	.1727E+00	.2089E+00	.1013E+00	-.1120E-01	.1424E-02	.1098E-01	-.6407E-02	-.2160E-01
11.8000	-.3298E-01	-.3837E-01	-.3459E-01	-.2523E-01	-.5060E-01	-.7404E-01	-.6236E-01	-.5378E-01	-.6632E-01	-.8119E-01
11.9000	-.6930E-01	-.5472E-01	-.9041E-01	-.1184E+00	-.1237E+00	-.1228E+00	-.2366E+00	-.3472E+00	-.2421E+00	-.1382E+00
12.0000	-.1572E+00	-.1623E+00	-.1168E-02	.1680E+00	.1758E+00	.1896E+00	.3495E+00	.4990E+00	.4705E+00	.4194E+00

Table 10 (Continued)

Floor Spectra for HFBR, Balcony -7% Damping

12.1000	.4598E+00	.4720E+00	.3834E+00	.2769E+00	.1568E+00	.3456E-01	.3518E-01	.9570E-01	.2006E+00	.2909E+00
12.2000	-.3075E+00	-.3119E+00	-.3267E+00	-.3321E+00	-.3319E+00	-.3228E+00	-.2591E+00	-.1873E+00	-.2100E+00	-.2247E+00
12.3000	-.1811E+00	-.1347E+00	-.1137E+00	-.9427E-01	-.1132E-01	.6731E-01	.3834E-01	.7816E-02	.9290E-01	.1764E+00
12.4000	.1744E+00	.1717E+00	.2342E+00	.2915E+00	.3873E+00	.4731E+00	.4420E+00	.3987E+00	.3917E+00	.3689E+00
12.5000	.2834E+00	.1839E+00	.1070E+00	.2181E-01	-.1583E+00	-.3342E+00	-.3205E+00	-.2922E+00	-.4275E+00	-.5378E+00
12.6000	-.4303E+00	-.3031E+00	-.3798E+00	-.4422E+00	-.2585E+00	-.7412E-01	-.1166E+00	-.1609E+00	-.9394E-01	-.3075E-01
12.7000	.6632E-02	.4238E-01	.1195E+00	.1954E+00	.2343E+00	.2697E+00	.2360E+00	.1943E+00	.1928E+00	.1796E+00
12.8000	.2252E+00	.2609E+00	.1951E+00	.1284E+00	.1099E+00	.9464E-01	.6065E-01	.2870E-01	.2977E-01	.2707E-01
12.9000	.2185E-01	.1037E-01	-.7347E-01	-.1583E+00	-.1617E+00	-.1600E+00	-.2204E+00	-.2692E+00	-.2069E+00	-.1339E+00
13.0000	-.1691E+00	-.1955E+00	-.1362E+00	-.7513E-01	-.1188E-01	.4806E-01	.1767E-01	-.1706E-01	.4567E-01	.1031E+00
13.1000	.1042E+00	.1037E+00	.1151E+00	.1261E+00	.1237E+00	.1193E+00	.1789E+00	.2330E+00	.2024E+00	.1657E+00
13.2000	.9298E-01	.1466E-01	.9319E-02	.4764E-03	-.6223E-01	-.1221E+00	-.8767E-01	-.4689E-01	-.1215E+00	-.1864E+00
13.3000	-.1166E+00	-.4259E-01	-.7585E-01	-.1088E+00	-.7249E-01	-.3935E-01	-.8420E-01	-.1289E+00	-.8158E-01	-.3080E-01
13.4000	-.3860E-01	-.4010E-01	.7078E-02	.5655E-01	.1737E-02	-.5528E-01	.2777E-01	.1030E+00	.9881E-01	.9000E-01
13.5000	.1038E+00	.1172E+00	.1108E+00	.1062E+00	.7855E-01	.5047E-01	.2668E-01	-.1858E-02	.8003E-02	.1259E-01
13.6000	-.1316E-01	-.3842E-01	-.7876E-01	-.1131E+00	-.7617E-01	-.3311E-01	-.3412E-01	-.3140E-01	-.2406E-01	-.1784E-01
13.7000	.1452E-01	.4306E-01	.3560E-01	.2578E-01	.3536E-01	.4378E-01	.2287E-01	.2217E-02	.7404E-02	.1244E-01
13.8000	-.2718E-01	-.6676E-01	-.2648E-01	.1343E-01	-.3137E-01	-.7358E-01	-.3780E-01	.3482E-03	-.8754E-03	.2293E-03
13.9000	.1194E-01	.2345E-01	.3435E-01	.4223E-01	.2400E-01	.2505E-02	.5199E-01	.9855E-01	.5518E-01	.1220E-01
14.0000	.1772E-01	.2352E-01	-.1685E-01	-.5697E-01	-.6034E-01	-.6373E-01	-.7352E-01	-.8111E-01	-.9707E-01	-.1080E+00
14.1000	-.9301E-01	-.7288E-01	-.5925E-01	-.4288E-01	.1259E-01	.6645E-01	.7184E-01	.7363E-01	.5394E-01	.3008E-01
14.2000	.5694E-01	.7984E-01	.7842E-01	.7565E-01	.7762E-01	.7987E-01	.8531E-01	.9067E-01	.7047E-01	.4839E-01
14.3000	.2428E-01	-.3769E-02	-.7821E-02	-.1491E-01	-.3381E-01	-.5085E-01	-.4870E-01	-.4104E-01	-.7023E-01	-.9347E-01
14.4000	-.7451E-01	-.5399E-01	-.6834E-01	-.8409E-01	-.9355E-01	-.1040E+00	-.9642E-01	-.8637E-01	-.7171E-01	-.5137E-01
14.5000	-.1068E-01	.3464E-01	.5902E-01	.8332E-01	.1108E+00	.1320E+00	.1356E+00	.1299E+00	.1179E+00	.9845E-01
14.6000	.1074E+00	.1139E+00	.7596E-01	.4078E-01	.2212E-01	.6288E-02	-.2312E-01	-.5225E-01	-.5378E-01	-.5707E-01
14.7000	-.8461E-01	-.1115E+00	-.1256E+00	-.1348E+00	-.1341E+00	-.1257E+00	-.1324E+00	-.1326E+00	-.9754E-01	-.6049E-01
14.8000	-.3223E-01	-.5264E-02	.1285E-01	.2852E-01	.4715E-01	.6339E-01	.8199E-01	.9852E-01	.1074E+00	.1140E+00
14.9000	.1158E+00	.1146E+00	.1030E+00	.8790E-01	.8987E-01	.8813E-01	.6396E-01	.3767E-01	.2477E-01	

Table 10 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Balcony Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	.0008	.1220	-1.0800	.1627	1.0799
.032	.0016	-.2575	-1.8693	.3097	1.8692
.035	.0016	.2356	-1.6068	.2903	1.6067
.038	-.0062	-.9341	5.1981	-1.0169	-5.1978
.041	-.0070	1.0577	5.0851	-1.0710	-5.0848
.045	.0069	.9373	-4.1718	.9620	4.1715
.048	-.0066	.7925	3.5735	-.8699	-3.5733
.050	.0030	.3414	-1.4734	.3775	1.4734
.055	-.0070	.7474	2.8297	-.7976	-2.8296
.058	.0075	.7081	-2.7513	.8131	2.7512
.060	.0079	-.7643	-2.6691	.8252	2.6689
.063	.0064	-.5464	-1.9740	.6373	1.9738
.067	.0086	.6449	-2.3394	.8032	2.3393
.071	.0149	1.2437	-3.6337	1.3193	3.6334
.075	-.0080	.5962	1.7475	-.6690	-1.7474
.079	-.0174	-1.3039	3.4556	-1.3910	-3.4554
.082	.0138	-.9129	-2.4996	1.0555	2.4994
.086	.0090	-.6458	-1.4867	.6571	1.4867
.090	-.0160	-.9932	2.4181	-1.1165	-2.4179
.094	-.0113	.6648	1.5693	-.7556	-1.5692
.098	-.0097	-.4754	1.2422	-.6226	-1.2421
.102	.0141	.6815	-1.6757	.8729	1.6756
.106	-.0185	-.9204	2.0407	-1.1033	-2.0406
.109	-.0224	1.0625	2.3013	-1.2896	-2.3012
.113	-.0138	.7102	1.3192	-.7653	-1.3191
.117	.0132	.5481	-1.1827	.7094	1.1827
.121	-.0207	.8399	1.7395	-1.0778	-1.7394
.125	-.0231	-.9023	1.8131	-1.1614	-1.8129
.131	.0421	1.8489	-3.0187	2.0230	3.0185
.137	-.0311	-1.3935	2.0482	-1.4332	-2.0481
.142	-.0643	2.7369	3.8943	-2.8400	-3.8941
.148	-.0520	2.1327	2.9059	-2.2051	-2.9057
.154	-.0308	1.0893	1.5939	-1.2566	-1.5938
.160	.0735	2.7154	-3.5351	2.8916	3.5348
.165	-.0390	1.2386	1.7490	-1.4824	-1.7489
.171	-.0773	2.5937	3.2343	-2.8368	-3.2341
.177	.0736	2.4011	-2.8834	2.6143	2.8832
.183	.0917	2.8905	-3.3675	3.1527	3.3673
.188	.1297	-4.0885	-4.4788	4.3256	4.4786
.194	.1007	-3.0595	-3.2730	3.2578	3.2728
.200	.1207	-3.7609	-3.7010	3.7932	3.7007

Table 10 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Balcony Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD**2(G)
.200	.1207	-3.7609	-3.7010	3.7932	3.7007
.205	-.1295	3.9078	3.7884	-3.9744	-3.7882
.209	.1317	3.8703	-3.6812	3.9508	3.6810
.214	-.1991	-5.6724	5.3218	-5.8402	-5.3215
.219	.0945	2.6031	-2.4192	2.7132	2.4190
.224	.1400	3.8025	-3.4348	3.9353	3.4346
.228	.1295	3.3998	-3.0468	3.5644	3.0466
.233	-.1790	-4.4452	4.0431	-4.8277	-4.0429
.238	.1313	3.4137	2.8483	-3.4698	-2.8481
.242	.2232	-5.6413	-4.6567	5.7853	4.6564
.247	-.3252	-8.0643	6.5267	-8.2662	-6.5263
.252	.2953	7.0327	-5.7074	7.3664	5.7071
.257	.1726	4.0915	-3.2137	4.2255	3.2136
.261	.3100	7.3272	-5.5671	7.4544	5.5668
.266	-.3381	-7.8517	5.8587	-7.9862	-5.8583
.277	.2264	-4.8414	-3.6177	5.1354	3.6175
.288	.6781	-14.5809	-10.0578	14.8185	10.0572
.298	.4829	9.9205	-6.6664	10.1805	6.6660
.309	.4946	9.9678	-6.3713	10.0727	6.3709
.319	.7647	15.0629	-9.2137	15.0621	9.2131
.333	.6106	11.5178	-6.7508	11.5203	6.7504
.494	.3042	-4.2816	-1.5288	3.8696	1.5287
.655	.2285	-2.8101	-.6533	2.1924	.6532
.816	.1060	-1.2900	-.1953	.8166	.1953
.977	-.1346	1.5029	.1730	-.8659	-.1730
1.138	-.0777	-1.0983	.0736	-.4293	-.0736
1.299	.0687	-1.1280	-.0500	.3325	.0500
1.460	-.0780	-.9934	.0449	-.3357	-.0449
1.620	.0782	-1.0722	-.0365	.3031	.0365
1.781	-.0899	.9455	.0347	-.3169	-.0347
1.942	-.0659	.9731	.0214	-.2130	-.0214
2.103	-.0871	-.9961	.0241	-.2602	-.0241
2.264	.0630	-1.0097	-.0151	.1750	.0151
2.425	-.0670	-.9833	.0140	-.1737	-.0140
2.586	.0570	-.9587	-.0105	.1386	.0105
2.747	.0594	-.9494	-.0097	.1358	.0096
2.908	-.0818	-.9500	.0119	-.1768	-.0119
3.069	-.0958	-.9525	.0125	-.1961	-.0125
3.230	.1052	-.9531	-.0124	.2047	.0124
3.391	.1119	-.9512	-.0119	.2073	.0119
3.552	-.1133	-.9477	.0110	-.2004	-.0110
3.713	.1098	-.9439	.0098	-.1857	-.0098
3.873	-.1057	-.9408	.0086	-.1714	-.0086
4.034	-.1058	-.9387	.0080	-.1648	-.0080
4.195	.1115	-.9378	.0078	-.1670	-.0078
4.356	-.1206	-.9379	.0078	-.1740	-.0078
4.517	.1300	-.9387	.0078	-.1808	-.0078
4.678	-.1377	-.9400	.0077	-.1850	-.0077
4.839	.1431	-.9416	.0075	-.1858	-.0075
5.000	-.1466	-.9433	.0072	-.1842	-.0072

Table 10 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Balcony Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	-.0006	.0440	.7896	-.1190	-.7896
.032	-.0007	-.0528	.8272	-.1370	-.8268
.035	-.0009	-.0976	.8871	-.1601	-.8864
.038	-.0013	-.1534	1.1027	-.2155	-1.1015
.041	-.0015	-.1788	1.1184	-.2354	-1.1174
.045	-.0018	-.1979	1.0645	-.2452	-1.0634
.048	-.0017	.1740	.9096	-.2208	-.9069
.050	-.0017	.1262	.8205	-.2104	-.8210
.055	-.0023	.1718	.9457	-.2668	-.9466
.058	-.0022	.1675	.8296	-.2448	-.8285
.060	.0029	.2300	-.9667	.2997	.9692
.063	-.0031	-.1831	.9505	-.3063	-.9487
.067	-.0042	-.2298	1.1373	-.3897	-1.1348
.071	-.0040	-.3043	.9851	-.3583	-.9867
.075	-.0040	-.2462	.8699	-.3328	-.8692
.079	-.0044	-.2846	.8687	-.3488	-.8665
.082	-.0048	-.3137	-.8675	.3660	.8666
.086	-.0047	-.2665	.7689	-.3394	-.7678
.090	.0051	-.2404	-.7740	.3568	.7727
.094	-.0064	-.2298	.8823	-.4247	-.8821
.098	.0066	.2777	-.8504	.4257	.8492
.102	-.0072	-.3414	.8557	-.4466	-.8573
.106	-.0078	-.3302	.8616	-.4660	-.8618
.109	-.0096	-.3322	.9907	-.5541	-.9887
.113	-.0098	-.3044	.8397	-.4876	-.8404
.117	-.0097	-.3186	.8697	-.5212	-.8689
.121	-.0100	-.3379	.8384	-.5189	-.8375
.125	-.0121	-.4319	.9473	-.6064	-.9466
.131	.0151	.5463	-1.0855	.7259	1.0832
.137	-.0190	-.6865	1.2492	-.8726	-1.2470
.142	.0216	.9215	1.6782	-1.2207	-1.6738
.148	-.0251	-.9402	1.4046	-1.0644	-1.4026
.154	-.0260	.8642	1.3490	-1.0634	-1.3487
.160	-.0299	.9849	-1.4401	1.1769	1.4387
.165	-.0298	.8947	1.3366	-1.1312	-1.3346
.171	-.0329	1.0403	1.3766	-1.2087	-1.3780
.177	.0428	1.2784	-1.6759	1.5209	1.6774
.183	.0513	-1.4650	-1.8865	1.7656	1.8858
.188	.0630	-1.8249	-2.1753	2.0993	2.1736
.194	.0738	-2.1793	-2.3968	2.3866	2.3976
.200	.0602	-1.7572	-1.8374	1.8913	1.8452

Table 10 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Balcony Level -7% Damping

REH100	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.200	.0602	-1.7572	-1.8374	1.8913	1.8452
.205	.0585	1.5398	-1.7075	1.7969	1.7127
.209	.0645	1.5776	-1.8008	1.9353	1.8031
.214	.0734	1.7474	-1.9685	2.1522	1.9611
.219	.0758	-1.7621	-1.9420	2.1763	1.9403
.224	.0790	-1.8832	-1.9332	2.2193	1.9369
.228	.0847	-1.9925	-1.9889	2.3308	1.9922
.233	-.0950	-2.2839	2.1430	-2.5614	-2.1450
.238	-.0907	-2.1091	1.9621	-2.3962	-1.9669
.242	.1089	-2.5969	-2.2680	2.8232	2.2724
.247	-.1181	-2.6616	2.3678	-3.0033	-2.3712
.252	.1365	2.9964	2.6449	-3.4051	-2.6381
.257	.1270	2.8036	2.3738	-3.1097	-2.3650
.261	.1268	-2.7640	-2.2778	3.0501	2.2777
.266	.1527	-3.4762	-2.6438	-3.6079	-2.6466
.277	.1716	3.5035	2.7488	-3.8927	-2.7421
.288	-.2421	-5.0687	3.5979	-5.2911	-3.5910
.298	-.2739	-5.6476	-3.7729	-5.7756	-3.7817
.309	.2637	-5.1537	-3.3957	5.3700	3.3965
.319	-.3019	-5.6733	3.6416	-5.9460	-3.6370
.333	.3835	-7.1013	-4.2538	7.2360	4.2400
.494	.1594	2.5157	-.8016	2.0276	.8010
.655	.1371	-1.9536	.3929	-1.3152	-.3919
.816	.0979	-1.3299	-.1808	.7543	.1804
.977	-.0960	1.3492	.1237	-.6178	-.1234
1.138	.0757	-1.1124	-.0719	.4179	.0717
1.299	-.0631	-1.0940	.0461	-.3055	-.0459
1.460	-.0673	-.9914	.0391	-.2898	-.0387
1.620	.0678	-1.0454	-.0321	.2628	.0316
1.781	-.0695	-.9539	.0269	-.2450	-.0268
1.942	.0663	.9545	.0216	-.2146	-.0216
2.103	.0744	-.9867	.0206	-.2224	-.0206
2.264	-.0586	-.9988	-.0143	.1627	.0140
2.425	.0620	-.9807	.0129	-.1607	-.0129
2.586	-.0567	-.9614	-.0107	-.1379	-.0104
2.747	.0618	-.9524	.0100	-.1412	-.0100
2.908	.0781	-.9511	.0113	-.1688	-.0113
3.069	-.0906	-.9521	.0118	-.1855	-.0118
3.230	.0993	-.9521	.0117	-.1932	-.0117
3.391	-.1051	-.9503	.0112	-.1947	-.0112
3.552	.1070	-.9474	.0104	-.1893	-.0104
3.713	.1057	-.9443	.0094	-.1789	-.0094
3.873	-.1042	-.9417	.0085	-.1691	-.0085
4.034	.1055	-.9398	.0080	-.1643	-.0079
4.195	.1104	-.9389	.0077	-.1654	-.0077
4.356	.1177	-.9389	.0076	-.1697	-.0076
4.517	.1223	-.9395	.0075	-.1743	-.0075
4.678	.1320	-.9405	.0074	-.1772	-.0074
4.839	.1371	-.9418	.0072	-.1780	-.0072
5.000	.1408	-.9431	.0069	-.1769	-.0069

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Table 10 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Balcony Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	.0006	.0378	.8050	-.1211	-.8037
.032	.0007	.0501	.8042	-.1332	-.8042
.035	.0009	-.0776	.8689	-.1567	-.8673
.038	.0012	-.1086	1.0292	-.2009	-1.0269
.041	.0014	-.1257	1.0304	-.2159	-1.0248
.045	.0014	-.1290	.8606	-.1976	-.8569
.048	.0013	.1224	.7297	-.1767	-.7257
.050	.0016	.1004	.7843	-.2010	-.7846
.055	.0021	.1274	.8512	-.2389	-.8477
.058	.0022	.1293	.8219	-.2430	-.8221
.060	.0024	.1452	.8155	-.2514	-.8132
.063	.0028	.1297	.8791	-.2829	-.8763
.067	.0035	.1524	.9729	-.3324	-.9680
.071	.0037	-.1706	.9052	-.3289	-.9058
.075	.0037	-.1754	.8261	-.3148	-.8224
.079	.0038	-.1858	.7484	-.3006	-.7468
.082	.0039	-.1932	-.7096	.2979	.7054
.086	.0040	-.1898	-.6611	.2909	.6580
.090	.0046	-.1639	.6910	-.3185	-.6898
.094	.0055	-.1731	.7603	-.3655	-.7591
.098	.0060	-.2134	.7723	-.3864	-.7710
.102	.0064	-.2312	.7591	-.3949	-.7580
.106	.0072	-.2482	.8007	-.4311	-.7973
.109	.0082	-.2638	.8393	-.4691	-.8370
.113	.0083	-.2586	.7946	-.4611	-.7948
.117	.0086	-.2703	.7740	-.4618	-.7698
.121	.0095	-.2918	.7975	-.4929	-.7955
.125	.0106	-.3362	.8278	-.5308	-.8286
.131	.0118	-.3825	.8430	-.5656	-.8439
.137	.0160	-.4745	1.0537	-.7377	-1.0542
.142	.0198	-.5641	1.1999	-.8727	-1.1966
.148	.0198	-.6517	1.1086	-.8386	-1.1050
.154	.0202	-.6587	1.0487	-.8258	-1.0473
.160	.0212	-.6293	1.0237	-.8332	-1.0186
.165	.0242	.7097	1.0877	-.9200	-1.0855
.171	.0280	.8623	1.1757	-1.0261	-1.1698
.177	.0323	.9777	-1.2681	1.1460	1.2639
.183	.0397	1.0905	-1.4683	1.3659	1.4588
.188	.0460	-1.2563	-1.5950	1.5348	1.5890
.194	.0495	-1.3508	-1.6173	1.6009	1.6082
.200	.0480	-1.2941	-1.4648	1.5083	1.4715

Table 10 (Continued)

Floor Spectra for HFBR, Balcony Level -7% Damping

DAMPING RATIO = .050

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0480	-1.2941	-1.4648	1.5083	1.4715
.205	.0488	-1.2113	-1.4273	1.4967	1.4266
.209	.0552	1.3367	-1.5498	1.6568	1.5436
.214	.0607	1.4138	-1.6242	1.7808	1.6226
.219	.0653	1.4843	-1.6812	1.8760	1.6726
.224	.0694	-1.5527	-1.7058	1.9514	1.7031
.228	.0736	-1.6593	-1.7379	2.0257	1.7315
.233	.0769	-1.7602	-1.7461	2.0749	1.7377
.238	.0798	-1.8316	-1.7338	2.1104	1.7323
.242	-.0853	-1.9215	1.7849	-2.2112	-1.7797
.247	-.0926	-2.0483	1.8686	-2.3532	-1.8579
.252	-.0986	-2.1153	1.9168	-2.4600	-1.9059
.257	-.1009	-2.1085	1.8761	-2.4702	-1.8786
.261	-.0998	2.0248	1.8050	-2.4006	-1.7927
.266	-.1003	-2.1075	1.7519	-2.3682	-1.7372
.277	-.1293	2.5677	2.0674	-2.9329	-2.0660
.288	.1582	-3.1572	-2.3473	3.4569	2.3462
.298	.1724	-3.4292	-2.3974	3.6349	2.3800
.309	-.1715	-3.3738	2.2163	-3.4930	-2.2093
.319	-.2133	-4.0032	2.5704	-4.2015	-2.5700
.333	-.2623	4.8568	2.9185	-4.9489	-2.8998
.494	.1447	-2.1863	-.7315	1.8409	.7272
.655	-.1234	1.6040	.3562	-1.1842	-.3529
.816	.0846	-1.2564	-.1581	.6514	.1558
.977	-.0751	1.2310	.0988	-.4831	-.0965
1.138	-.0714	-1.0987	.0706	-.3945	-.0677
1.299	-.0624	-1.0652	.0474	-.3019	-.0454
1.460	.0615	-1.0054	-.0376	.2647	.0354
1.620	-.0605	-1.0213	-.0300	-.2347	-.0283
1.781	.0615	-.9675	-.0260	.2170	.0238
1.942	-.0623	-.9537	.0214	-.2016	-.0202
2.103	-.0646	-.9781	.0199	-.1929	-.0179
2.264	-.0571	-.9870	.0162	-.1583	-.0136
2.425	-.0587	-.9765	-.0137	-.1521	-.0122
2.586	-.0584	-.9630	-.0122	-.1419	-.0107
2.747	-.0634	-.9551	-.0107	-.1449	-.0103
2.908	.0743	-.9524	.0108	-.1606	-.0108
3.069	-.0844	-.9518	.0110	-.1727	-.0110
3.230	-.0919	-.9510	.0109	-.1788	-.0108
3.391	-.0970	-.9494	.0104	-.1797	-.0103
3.552	-.0996	-.9471	.0097	-.1762	-.0097
3.713	-.1004	-.9447	.0090	-.1700	-.0089
3.873	-.1012	-.9426	.0083	-.1642	-.0083
4.034	-.1035	-.9411	.0078	-.1612	-.0078
4.195	-.1077	-.9402	.0075	-.1614	-.0075
4.356	-.1134	-.9400	.0074	-.1635	-.0073
4.517	-.1193	-.9403	.0072	-.1659	-.0072
4.678	-.1248	-.9410	.0070	-.1676	-.0070
4.839	-.1295	-.9419	.0068	-.1682	-.0068
5.000	-.1334	-.9430	.0066	-.1676	-.0065

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Table 10 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Balcony Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	.0006	.0353	.8020	-.1206	-.8006
.032	.0007	.0483	.8049	-.1330	-.8031
.035	.0009	-.0683	.8626	-.1551	-.8588
.038	.0012	-.0938	.9745	-.1898	-.9703
.041	.0013	-.1086	.9760	-.2044	-.9703
.045	.0014	-.1091	.8376	-.1923	-.8339
.048	.0014	.1083	.7471	-.1817	-.7463
.050	.0016	.0999	.7841	-.2001	-.7810
.055	.0020	.1145	.8335	-.2337	-.8291
.058	.0022	.1167	.8213	-.2422	-.8195
.060	.0024	.1222	.8243	-.2542	-.8220
.063	.0028	.1138	.8635	-.2782	-.8616
.067	.0033	.1300	.9144	-.3118	-.9079
.071	.0035	.1319	.8727	-.3144	-.8658
.075	.0037	-.1450	.8061	-.3075	-.8031
.079	.0037	-.1619	.7394	-.2967	-.7371
.082	.0037	-.1643	.6725	-.2829	-.6698
.086	.0040	-.1647	.6638	-.2931	-.6632
.090	.0046	-.1465	.6991	-.3226	-.6987
.094	.0053	-.1540	.7426	-.3571	-.7417
.098	.0059	-.1850	.7621	-.3805	-.7591
.102	.0064	-.1953	.7653	-.3979	-.7637
.106	.0071	-.2212	.7887	-.4257	-.7874
.109	.0078	-.2372	.8057	-.4500	-.8030
.113	.0082	-.2422	.7855	-.4535	-.7817
.117	.0084	-.2467	.7567	-.4514	-.7524
.121	.0090	-.2684	.7626	-.4696	-.7579
.125	.0099	-.2983	.7802	-.4991	-.7790
.131	.0116	-.3299	.8317	-.5555	-.8289
.137	.0149	-.4030	.9840	-.6868	-.9815
.142	.0178	-.4791	1.0818	-.7848	-1.0761
.148	.0189	-.5497	1.0641	-.8017	-1.0564
.154	.0198	-.5704	1.0315	-.8100	-1.0274
.160	.0209	-.5541	1.0125	-.8243	-1.0077
.165	.0225	.6567	1.0145	-.8547	-1.0083
.171	.0256	.7740	1.0785	-.9407	-1.0724
.177	.0290	.8681	-1.1442	1.0302	1.1362
.183	.0349	.9408	-1.2887	1.1986	1.2801
.188	.0394	-1.0271	-1.3709	1.3130	1.3595
.194	.0420	-1.0935	-1.3738	1.3582	1.3644
.200	.0421	-1.0839	-1.3054	1.3217	1.2895

Table 10 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Balcony Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0421	-1.0839	-1.3054	1.3217	1.2895
.205	.0459	1.1227	-1.3458	1.4084	1.3424
.209	.0505	1.2158	-1.4307	1.5157	1.4122
.214	.0556	1.2856	-1.4874	1.6319	1.4870
.219	.0597	1.3539	-1.5449	1.7143	1.5284
.224	.0639	1.3961	-1.5749	1.7971	1.5685
.228	.0676	-1.4801	-1.6025	1.8612	1.5908
.233	.0710	-1.5688	-1.6182	1.9155	1.6041
.238	.0744	-1.6562	-1.6179	1.9673	1.6148
.242	.0774	-1.7354	-1.6325	2.0050	1.6137
.247	.0827	-1.8252	1.6701	-2.1021	-1.6596
.252	.0873	-1.8798	1.7039	-2.1779	-1.6873
.257	.0912	-1.9197	1.7081	-2.2323	-1.6977
.261	.0940	-1.9359	1.7002	-2.2616	-1.6889
.266	.0977	-1.9763	1.7132	-2.3087	-1.6935
.277	.1157	-2.3024	1.8628	-2.6255	-1.8494
.288	.1349	-2.6301	-2.0106	2.9475	2.0004
.298	.1463	-2.8519	-2.0376	3.0856	2.0204
.309	.1589	-3.0517	-2.0596	3.2368	2.0473
.319	.1845	-3.4792	-2.2413	3.6331	2.2223
.333	.2158	-4.0081	-2.4163	4.0724	2.3863
.494	.1417	-2.1006	-.7233	1.8029	.7122
.655	.1163	1.5288	.3383	-1.1154	-.3323
.816	.0810	-1.2034	-.1522	.6240	.1492
.977	.0721	1.1871	.0984	-.4636	-.0926
1.138	.0718	-1.0831	.0738	-.3966	-.0680
1.299	.0617	-1.0530	.0503	-.2986	-.0449
1.460	.0601	-1.0086	.0393	.2589	.0346
1.620	.0591	-1.0114	-.0318	.2291	.0276
1.781	.0594	-.9720	-.0271	.2095	.0229
1.942	.0590	-.9590	.0232	-.1908	-.0192
2.103	.0606	-.9746	.0214	-.1809	-.0168
2.264	.0567	-.9813	.0182	-.1572	-.0135
2.425	.0575	-.9738	.0153	-.1490	-.0120
2.586	.0586	-.9631	-.0137	-.1424	-.0107
2.747	.0635	-.9561	.0124	-.1452	-.0103
2.908	.0723	-.9529	.0116	-.1563	-.0105
3.069	.0810	-.9517	.0108	-.1658	-.0105
3.230	.0878	-.9506	.0104	-.1708	-.0103
3.391	.0926	-.9490	.0100	-.1716	-.0099
3.552	.0956	-.9469	.0094	-.1690	-.0093
3.713	.0973	-.9448	.0087	-.1646	-.0087
3.873	.0989	-.9430	.0082	-.1605	-.0081
4.034	.1016	-.9416	.0077	-.1582	-.0077
4.195	.1056	-.9408	.0074	-.1581	-.0074
4.356	.1105	-.9406	.0072	-.1594	-.0071
4.517	.1158	-.9408	.0070	-.1610	-.0070
4.678	.1207	-.9413	.0068	-.1622	-.0068
4.839	.1252	-.9420	.0066	-.1625	-.0066
5.000	.1291	-.9429	.0064	-.1622	-.0063

Table 11 (Continued)

SPECU

Floor Spectra for HFBR, Operational Level -7% Damping

1 FLOOR SPECTRA FOR HFBR- (2-D) MODEL- OPERATIONAL LEVEL - 7 PCT D

NUMBER OF DAMPING VALUES = 4
 NUMBER OF OUTPUT PERIOD CARDS = 3
 NUMBER OF ACCELERATION VALUES = 1499
 INTERVAL OF DIGITIZATION = .0100
 ACCELERATION SCALE FACTOR = 1.00000

INPUT FORMAT = (9F8.2)

DAMPING VALUES (FRACTION OF CRITICAL)

0.000
 .020
 .050
 .070

PERIOD VALUES (SECONDS)

.2000	.2047	.2094	.2141	.2189	.2236	.2283	.2330	.2377	.2424
.2471	.2519	.2566	.2613	.2660	.2770	.2875	.2980	.3085	.3190
.3330	.4939	.6549	.8158	.9767	1.1377	1.2986	1.4595	1.6204	1.7814
1.9423	2.1032	2.2642	2.4251	2.5860	2.7470	2.9079	3.0688	3.2298	3.3907
3.5516	3.7126	3.8735	4.0344	4.1953	4.3563	4.5172	4.6781	4.8391	5.0000

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Table 11 (Continued)

ACCELERATION RECORD

Floor Spectra for HFBR, Operational Level -7% Damping

TIME (SEC)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)	ACCN (G)
0.0000	-.3951E-02	-.4241E-02	-.5630E-02	-.6873E-02	-.3922E-02	-.7687E-03	-.1140E-02	-.1327E-02	.6034E-03	.2443E-02	
.1000	-.6282E-03	-.3793E-02	-.5205E-02	-.6598E-02	-.8378E-02	-.9894E-02	-.1804E-02	.6528E-02	.1052E-01	.1451E-01	
.2000	.1163E-01	.8218E-02	.3065E-02	-.2723E-02	-.4225E-02	-.5705E-02	.1117E-01	.2832E-01	.3259E-01	.3668E-01	
.3000	.2545E-01	.1282E-01	.2584E-01	.3702E-01	.5246E-01	.6731E-01	.9868E-03	.6503E-01	-.3391E-01	-.4181E-02	
.4000	-.3238E-01	-.5803E-01	-.5951E-01	-.5832E-01	-.5060E-01	-.4150E-01	-.3842E-01	-.3345E-01	-.4920E-01	-.6391E-01	
.5000	-.8648E-01	-.1079E+00	-.4430E-01	.2119E-01	.3376E-01	.4795E-01	.8990E-01	.1282E+00	.4736E-01	-.3772E-01	
.6000	.5132E-01	.1360E+00	.1492E-01	-.1029E+00	-.2483E-01	.5303E-01	.4293E-01	.3339E-01	.1019E+00	.1687E+00	
.7000	.8935E-01	.6855E-02	-.3508E-01	-.7984E-01	-.4873E-01	-.1592E-01	-.1558E-01	-.1027E-01	-.1780E-01	-.2453E-01	
.8000	.2152E-02	.2583E-01	-.6308E-01	-.1509E+00	-.9953E-01	-.4591E-01	-.6251E-01	-.7298E-01	-.9516E-02	.5557E-01	
.9000	.1765E-01	-.2301E-01	.2069E-01	.6049E-01	.4578E-01	.3106E-01	.3044E-01	.2966E-01	.4311E-01	.5456E-01	
1.0000	.1552E-02	-.9262E-01	-.6396E-01	-.7528E-01	-.5922E-01	-.3917E-01	-.6272E-01	-.8078E-01	-.5140E-01	-.2131E-01	
1.1000	.2387E-01	.6824E-01	.1776E+00	.2837E+00	.2630E+00	.2349E+00	.2756E+00	.3028E+00	.2197E+00	.1271E+00	
1.2000	.8671E-01	.4228E-01	-.4360E-02	-.4839E-01	-.9109E-01	-.1278E+00	-.2588E+00	-.3824E+00	-.3288E+00	-.2663E+00	
1.3000	-.3168E+00	-.3503E+00	-.3249E+00	-.2873E+00	-.3111E+00	-.3288E+00	-.1545E+00	.2137E-01	.5010E-01	.7946E-01	
1.4000	.1719E+00	.2560E+00	.3290E+00	.3889E+00	.3806E+00	.3591E+00	.3373E+00	.3028E+00	.1987E+00	.8819E-01	
1.5000	.7801E-01	.6668E-01	.3881E-01	.1434E-01	-.3754E-01	-.8503E-01	-.1634E+00	-.2383E+00	-.2503E+00	-.2560E+00	
1.6000	-.2109E+00	-.1555E+00	-.9863E-01	-.3492E-01	-.1086E+00	-.1819E+00	-.3860E-01	.9891E-01	.6896E-01	.3997E-01	
1.7000	.5697E-01	.7205E-01	.1319E-01	-.4990E-01	.5948E-01	.1658E+00	.1491E+00	.1335E+00	.1611E+00	.1849E+00	
1.8000	.1213E+00	.5218E-01	.2137E-02	-.5148E-01	-.9065E-01	-.1274E+00	-.1480E+00	-.1607E+00	-.1472E+00	-.1273E+00	
1.9000	-.4697E-01	.3513E-01	-.4531E-01	-.1238E+00	-.1009E+00	-.7881E-01	-.9640E-01	-.1099E+00	-.2429E-01	.6479E-01	
2.0000	.5399E-01	.4148E-01	.7062E-01	.9290E-01	.1090E+00	.1199E+00	.1022E+00	.8308E-01	.6422E-01	.4438E-01	
2.1000	.4288E-01	.3959E-01	.7402E-01	.1069E+00	.2995E-01	-.4642E-01	-.2741E-01	-.9187E-02	-.7228E-01	-.1322E+00	
2.2000	-.3873E-01	.5661E-01	.3236E-01	.9671E-02	.4176E-01	.7060E-01	.8523E-01	.9534E-01	.5277E-01	.8927E-02	
2.3000	.1159E-01	.1353E-01	.1047E-01	.8174E-02	-.4132E-01	-.8930E-01	-.1281E+00	.1661E+00	-.1141E+00	-.5834E-01	
2.4000	-.1320E+00	-.1970E+00	-.1266E+00	-.5324E-01	-.4769E-01	-.3938E-01	-.3715E-01	-.3430E-01	.3319E-01	.9679E-01	
2.5000	.4503E-01	.7137E-01	.9427E-01	.1125E+00	.8842E-01	.5961E-01	.7979E-01	.9819E-01	.8738E-01	.7591E-01	
2.6000	.5876E-01	.4026E-01	.3699E-01	.3272E-01	.8272E-02	-.1582E-01	.2021E-01	.5674E-01	.3500E-01	.1385E-01	
2.7000	-.4839E-02	-.2587E-01	-.5503E-01	-.8536E-01	-.7358E-01	-.5881E-01	-.1403E+00	-.2154E+00	-.2010E+00	-.1818E+00	
2.8000	-.1542E+00	-.1204E+00	-.1105E+00	-.9492E-01	-.3780E-01	.2001E-01	.1878E-01	.1646E-01	.2593E-01	.3181E-01	
2.9000	.1167E+00	.1965E+00	.2512E+00	.3013E+00	.2725E+00	.2344E+00	.1963E+00	.1467E+00	.1036E+00	.5671E-01	
3.0000	.4052E-01	.2731E-01	-.3293E-01	-.8839E-01	-.4650E-01	-.3093E-02	-.7163E-01	-.1375E+00	-.8927E-01	-.3917E-01	
3.1000	-.1249E+00	-.2051E+00	-.2472E+00	-.2845E+00	-.2640E+00	-.2381E+00	-.1885E+00	-.1302E+00	-.1003E+00	-.6482E-01	
3.2000	.1279E-01	.8847E-01	.2153E+00	.3360E+00	.3212E+00	.2974E+00	.2886E+00	.2658E+00	.2725E+00	.2679E+00	
3.3000	.1827E+00	.9293E-01	.7909E-01	.6192E-01	.5741E-01	.5422E-01	-.1263E+00	-.3003E+00	-.2816E+00	-.2576E+00	
3.4000	-.2539E+00	-.2359E+00	-.2246E+00	-.2004E+00	-.2081E+00	-.2129E+00	-.1834E+00	-.1534E+00	-.1232E+00	-.9075E-01	
3.5000	-.2543E-01	.4052E-01	.6311E-01	.8386E-01	.1207E+00	.1505E+00	.1441E+00	.1318E+00	.1131E+00	.9308E-01	
3.6000	.7096E-01	.4873E-01	.6943E-01	.8876E-01	.1228E+00	.1539E+00	.2197E+00	.2790E+00	.1578E+00	.3073E-01	
3.7000	.4674E-02	-.2720E-01	-.7350E-01	-.1167E+00	-.1647E+00	-.2030E+00	-.2476E+00	-.2839E+00	-.2473E+00	-.2035E+00	
3.8000	-.1002E+00	.9653E-02	.2128E-01	.3513E-01	.1028E+00	.1641E+00	.2051E+00	.2370E+00	.2077E+00	.1698E+00	
3.9000	.1598E+00	.1413E+00	.1516E+00	.1571E+00	.1020E+00	.4578E-01	.1153E-01	-.2316E-01	-.3788E-01	-.4896E-01	
4.0000	-.8365E-01	-.1116E+00	-.1308E+00	-.1451E+00	-.1872E+00	-.2246E+00	-.2535E+00	-.2769E+00	-.2372E+00	-.1914E+00	
4.1000	-.2150E+00	-.2309E+00	-.1950E+00	-.1558E+00	-.1178E+00	-.7733E-01	-.1911E-01	.4207E-01	.9122E-01	.1397E+00	
4.2000	.1953E+00	.2448E+00	.2367E+00	.2189E+00	.1645E+00	.9977E-01	.1535E+00	.2005E+00	.2598E+00	.3168E+00	
4.3000	.2738E+00	.2253E+00	.2142E+00	.1925E+00	.2042E+00	.2105E+00	.8329E-01	-.4166E-01	-.2431E-01	-.6917E-02	
4.4000	-.6604E-01	-.1219E+00	-.1792E+00	-.2327E+00	-.2400E+00	-.2424E+00	-.2953E+00	-.3363E+00	-.3523E+00	-.3565E+00	
4.5000	-.2858E+00	-.2064E+00	-.2220E+00	-.2281E+00	-.2116E+00	-.1917E+00	-.1089E+00	-.2524E-01	.2798E-01	.8236E-01	
4.6000	.2292E+00	.3679E+00	.3503E+00	.3205E+00	.3259E+00	.3158E+00	.2650E+00	.2034E+00	.2082E+00	.2102E+00	
4.7000	.1988E+00	.1868E+00	.1465E+00	.1028E+00	-.3005E-02	-.1110E+00	-.1056E+00	-.9813E-01	-.2511E+00	-.3925E+00	
4.8000	-.3539E+00	-.3052E+00	-.2463E+00	-.1773E+00	-.1166E+00	-.4902E-01	-.6492E-02	.3420E-01	.2624E-01	.1336E-01	
4.9000	.1898E-01	.2075E-01	.6946E-01	.1157E+00	.6184E-01	.7803E-02	.2821E-01	.4492E-01	-.2668E-01	-.9860E-01	
5.0000	-.1123E-01	.7850E-01	.7984E-02	-.5715E-01	-.3554E-01	-.1397E-01	-.8158E-01	-.1489E+00	.6474E-02	.1615E+00	
5.1000	.1158E+00	.7197E-01	.1840E+00	.2876E+00	.2465E+00	.1951E+00	.1671E+00	.1307E+00	.1431E+00	.1509E+00	
5.2000	.1349E+00	.1197E+00	.7842E-01	.3614E-01	-.2601E-02	-.4365E-01	-.1505E+00	-.2523E+00	-.2548E+00	-.2485E+00	
5.3000	-.2876E+00	-.3148E+00	-.2510E+00	-.1792E+00	-.2290E+00	-.2731E+00	-.2285E+00	-.1799E+00	-.1801E+00	-.1733E+00	
5.4000	-.3282E-01	.1104E+00	.2176E+00	.2012E+00	.2155E+00	.2181E+00	.2852E+00	.3389E+00	.2782E+00	.2114E+00	
5.5000	.2016E+00	.1857E+00	.1519E+00	.1134E+00	.1236E+00	.1318E+00	-.7868E-02	-.1460E+00	-.1374E+00	-.1262E+00	
5.6000	-.2891E+00	-.4402E+00	-.2756E+00	-.1020E+00	-.1411E+00	-.1691E+00	-.1461E+00	-.1210E+00	-.1001E+00	-.8293E-01	
5.7000	.1638E-03	.8324E-01	.8769E-01	.9228E-01	.1854E+00	.2707E+00	.2114E+00	.1444E+00	.1477E+00	.1425E+00	

Table 11 (Continued)

Floor Spectra for HFBR, Operational Level -7% Damping

6.0000	.6637E-01	.1355E-01	.4676E-01	.8003E-01	.8326E-01	.8106E-01	.8604E-01	.8505E-01	.6840E-01	.5044E-01
6.1000	.6645E-01	.8088E-01	.1233E+00	.1618E+00	.1218E+00	.7754E-01	.2987E-01	.2133E-01	.4124E-02	.3101E-01
6.2000	.4782E-01	.1196E+00	.9868E-01	.1757E-01	.8497E-01	.9225E-01	.5065E-01	.6630E-02	.1096E-01	.2899E-01
6.3000	.1134E-01	.5277E-01	.8995E-01	.1291E+00	.1373E+00	.1434E+00	.8464E-01	.1891E-01	.3073E-01	.8474E-01
6.4000	.1270E+00	.1652E+00	.1327E+00	.9236E-01	.1690E+00	.1190E+00	.1010E+00	.8161E-01	.1113E+00	.1388E+00
6.5000	.1396E+00	.1352E+00	.8759E-01	.3547E-01	.6054E-02	.4801E-01	.6456E-01	.7588E-01	.1328E+00	.1822E+00
6.6000	.1366E+00	.8772E-01	.1646E+00	.2366E+00	.1974E+00	.1542E+00	.2349E+00	.3080E+00	.1930E+00	.7251E-01
6.7000	.4865E-01	.2079E-01	.4780E-01	.1136E+00	.1087E+00	.9764E-01	.1330E+00	.1625E+00	.1534E+00	.1408E+00
6.8000	.1306E+00	.1165E+00	.1722E+00	.2222E+00	.1882E+00	.1497E+00	.1569E+00	.1580E+00	.9793E-01	.3503E-01
6.9000	.4181E-01	.4873E-01	.2912E-01	.1035E+00	.4964E-01	.6176E-02	.2953E-02	.1976E-02	.1090E+00	.2189E+00
7.0000	.2253E+00	.2308E+00	.3054E+00	.3692E+00	.3109E+00	.2397E+00	.3109E+00	.3702E+00	.2455E+00	.1160E+00
7.1000	.6404E-01	.8275E-02	.1071E+00	.2208E+00	.2702E+00	.3109E+00	.5003E+00	.6715E+00	.5982E+00	.5052E+00
7.2000	.4710E+00	.4142E+00	.3350E+00	.2426E+00	.1759E+00	.1087E+00	.7842E-02	.1195E+00	.1997E+00	.2723E+00
7.3000	.3539E+00	.4220E+00	.4915E+00	.5433E+00	.5342E+00	.5065E+00	.4728E+00	.4228E+00	.3649E+00	.3065E+00
7.4000	.1875E+00	.6694E-01	.2471E-01	.1624E-01	.1132E+00	.2032E+00	.2808E+00	.3490E+00	.3940E+00	.4280E+00
7.5000	.3806E+00	.3197E+00	.3873E+00	.4415E+00	.3842E+00	.3189E+00	.2601E+00	.1928E+00	.1507E+00	.1024E+00
7.6000	.4863E-02	.1099E+00	.1816E+00	.2468E+00	.3360E+00	.4132E+00	.3930E+00	.3585E+00	.4192E+00	.4648E+00
7.7000	.3295E+00	.1845E+00	.2063E+00	.2196E+00	.1371E+00	.5521E-01	.8236E-02	.3539E-01	.7692E-01	.1152E+00
7.8000	.1843E+00	.2464E+00	.2769E+00	.2992E+00	.2972E+00	.2855E+00	.3104E+00	.3246E+00	.2935E+00	.2560E+00
7.9000	.1789E+00	.9751E-01	.1194E+00	.1368E+00	.9987E-01	.6368E-01	.6326E-01	.1886E+00	.1853E+00	.1805E+00
8.0000	.2681E-00	.3443E+00	.2583E+00	.1617E+00	.2493E+00	.3269E+00	.1990E+00	.6762E-01	.1805E+00	.2881E+00
8.1000	.1403E+00	.8803E-02	.1180E-01	.1786E-01	.4212E-01	.6293E-01	.6899E-01	.6699E-01	.2655E-01	.1649E-01
8.2000	.9021E-01	.1965E+00	.1560E+00	.1167E+00	.1831E+00	.2428E+00	.2123E+00	.1733E+00	.1487E+00	.1186E+00
8.3000	.1151E+00	.1087E+00	.8254E-01	.5539E-01	.4526E-01	.3303E-01	.5453E-01	.7378E-01	.1557E-01	.4104E-01
8.4000	.4557E-01	.4868E-01	.6788E-01	.8412E-01	.8674E-01	.8547E-01	.1344E+00	.1799E+00	.1953E+00	.2069E+00
8.5000	.2394E+00	.2650E+00	.2515E+00	.2304E+00	.2299E+00	.2216E+00	.2076E+00	.1872E+00	.7474E-01	.4060E-01
8.6000	.5409E-01	.8868E-01	.1675E+00	.2589E+00	.2679E+00	.2663E+00	.3687E+00	.4583E+00	.4277E+00	.3845E+00
8.7000	.3617E+00	.3249E+00	.2038E+00	.7389E-01	.5487E-01	.3461E-01	.3495E-01	.9630E-01	.1346E+00	.1642E+00
8.8000	.3062E+00	.4396E+00	.3749E+00	.3010E+00	.3917E+00	.4655E+00	.4280E+00	.3782E+00	.3130E+00	.2397E+00
8.9000	.1603E+00	.7614E-01	.2754E-01	.1288E+00	.1403E+00	.1458E+00	.2228E+00	.2899E+00	.3518E+00	.4026E+00
9.0000	.3977E+00	.3816E+00	.3775E+00	.3593E+00	.3710E+00	.3705E+00	.2855E+00	.1941E+00	.7093E-01	.5547E-01
9.1000	.6370E-01	.6979E-01	.1639E+00	.2466E+00	.2769E+00	.2977E+00	.3005E+00	.2938E+00	.3212E+00	.3373E+00
9.2000	.3166E+00	.2876E+00	.2702E+00	.2451E+00	.1447E+00	.4016E-01	.6256E-01	.1632E+00	.9503E-01	.2150E-01
9.3000	.1099E+00	.1884E+00	.2041E+00	.2161E+00	.1814E+00	.1444E+00	.1552E+00	.1579E+00	.2008E+00	.2378E+00
9.4000	.2022E+00	.1639E+00	.8049E-01	.6573E-02	.2399E-01	.4215E-01	.5034E-01	.5409E-01	.1356E+00	.2115E+00
9.5000	.2188E+00	.2218E+00	.1916E+00	.1547E+00	.1025E+00	.4363E-01	.8241E-01	.1181E+00	.3920E-01	.3687E-01
9.6000	.4920E-01	.6013E-01	.9067E-01	.1182E+00	.4036E-01	.4132E-01	.3513E-01	.1073E+00	.1141E+00	.1215E+00
9.7000	.1151E+00	.1075E+00	.1353E+00	.1576E+00	.7316E-01	.1389E-01	.3490E-01	.8155E-01	.6902E-02	.9192E-01
9.8000	.6746E-01	.4132E-01	.8117E-01	.1195E+00	.1225E+00	.1226E+00	.7256E-01	.1911E-01	.3174E-01	.4049E-01
9.9000	.2231E-01	.4267E-02	.2389E-02	.2224E-02	.1791E-02	.1574E-02	.3731E-01	.7528E-01	.2093E-01	.3443E-01
10.0000	.1059E+00	.1785E+00	.1612E+00	.1412E+00	.1370E+00	.1227E+00	.7951E-01	.2951E-01	.2153E-01	.7181E-01
10.1000	.1871E+00	.2961E+00	.2320E+00	.1603E+00	.3192E+00	.4645E+00	.3044E+00	.1362E+00	.1527E+00	.1574E+00
10.2000	.4298E-01	.7383E-01	.9168E-01	.1023E+00	.2297E+00	.3456E+00	.2920E+00	.2278E+00	.2979E+00	.3541E+00
10.3000	.3184E+00	.2741E+00	.2362E+00	.1915E+00	.1224E+00	.4974E-01	.1783E-01	.1068E-01	.1143E+00	.2101E+00
10.4000	.2123E+00	.2078E+00	.1855E+00	.1551E+00	.1655E+00	.1698E+00	.9917E-01	.2863E-01	.9759E-01	.1654E+00
10.5000	.7093E-01	.2190E-01	.1083E+00	.2344E+00	.1580E+00	.7829E-01	.4775E-01	.1211E-01	.7290E-01	.1596E+00
10.6000	.1182E+00	.7205E-01	.9940E-01	.1178E+00	.8663E-01	.5241E-01	.1045E+00	.1550E+00	.1345E+00	.1118E+00
10.7000	.8661E-01	.5632E-01	.4472E-01	.2930E-01	.4585E-01	.1172E+00	.6342E-01	.4668E-02	.4850E-01	.8746E-01
10.8000	.5334E-01	.1945E-01	.1048E+00	.1894E+00	.1861E+00	.1793E+00	.1919E+00	.1967E+00	.1956E+00	.1875E+00
10.9000	.1073E+00	.8470E-01	.9119E-01	.2064E+00	.1172E+00	.2548E-01	.1312E+00	.1211E+00	.2271E+00	.2229E+00
11.0000	.2389E+00	.2489E+00	.2454E+00	.2312E+00	.2253E+00	.2110E+00	.1421E+00	.6883E-01	.5974E-01	.4943E-01
11.1000	.8280E-01	.2084E+00	.2032E+00	.1917E+00	.2342E+00	.2668E+00	.2526E+00	.2286E+00	.1846E+00	.1355E+00
11.2000	.1425E+00	.1461E+00	.4254E-01	.6026E-01	.3915E-01	.1682E-01	.4585E-01	.7060E-01	.6915E-01	.6334E-01
11.3000	.1046E+00	.1434E+00	.1064E+00	.6842E-01	.5816E-01	.4508E-01	.9067E-02	.2767E-01	.4394E-01	.1157E+00
11.4000	.6111E-02	.1252E+00	.7806E-01	.3233E-01	.8329E-02	.1772E-01	.1234E-01	.9847E-02	.1768E-03	.1189E-01
11.5000	.4705E-01	.8386E-01	.6060E-01	.3588E-01	.7010E-01	.9982E-01	.3702E-01	.2832E-01	.4158E-01	.5487E-01
11.6000	.4684E-01	.3554E-01	.7396E-01	.1083E+00	.5534E-01	.1857E-02	.4775E-01	.9114E-01	.1096E-01	.1130E+00
11.7000	.1048E+00	.9614E-01	.1463E+00	.1907E+00	.9176E-01	.1383E-01	.3578E-02	.1663E-01	.2938E-02	.7570E-02
11.8000	.1407E-01	.1668E-01	.1465E-01	.1268E-01	.4992E-01	.8666E-01	.8580E-01	.8212E-01	.9166E-01	.9570E-01
11.9000	.6777E-01	.3624E-01	.5899E-01	.8176E-01	.9065E-01	.1009E+00	.2292E+00	.3531E+00	.2559E+00	.1519E+00
12.0000	.1585E+00	.1533E+00	.2221E-01	.1997E+00	.2052E+00	.2050E+00	.3417E+00	.4650E+00	.4132E+00	.3479E+00
12.1000	.3870E+00	.4104E+00	.3627E+00	.2630E+00	.1689E+00	.6692E-01	.7961E-02	.5197E-01	.1645E+00	.2668E+00
12.2	.2966E+00	.3127E+00	.3352E+00	.3427E+00	.3391E+00	.3223E+00	.2488E+00	.1677E+00	.1836E+00	.1956E+00
12.3	.1541E+00	.1142E+00	.1025E+00	.9251E-01	.1647E-01	.5925E-01	.3109E-01	.3163E-02	.9018E-01	.1733E+00

Table 11 (Continued)

Floor Spectra for HFBR, Operational Level -7% Damping

12.4000	.1684E+00	.1612E+00	.2188E+00	.2718E+00	.3645E+00	.4490E+00	.4189E+00	.3780E+00	.3723E+00	.3487E+00
12.5000	.2617E+00	.1612E+00	.8749E-01	.1044E-01	-.1574E+00	-.3189E+00	-.2915E+00	-.2526E+00	-.3816E+00	-.4909E+00
12.6000	-.3891E+00	-.2736E+00	-.3650E+00	-.4422E+00	-.2694E+00	-.9039E-01	-.1319E+00	-.1698E+00	-.9301E-01	-.1991E-01
12.7000	.2477E-01	.6365E-01	.1395E+00	.2101E+00	.2402E+00	.2637E+00	.2163E+00	.1611E+00	.1492E+00	.1318E+00
12.8000	.1817E+00	.2304E+00	.1841E+00	.1383E+00	.1358E+00	.1270E+00	.8850E-01	.4347E-01	.2801E-01	.1085E-01
12.9000	-.2560E-02	-.1412E-01	-.9060E-01	-.1634E+00	-.1540E+00	-.1419E+00	-.1963E+00	-.2433E+00	-.1826E+00	-.1130E+00
13.0000	-.1528E+00	-.1845E+00	-.1311E+00	-.7642E-01	-.1914E-01	.3658E-01	.4904E-02	-.2808E-01	.3845E-01	.1004E+00
13.1000	.1061E+00	.1093E+00	.1227E+00	.1328E+00	.1258E+00	.1140E+00	.1654E+00	.2132E+00	.1799E+00	.1441E+00
13.2000	.7484E-01	.1026E-02	.6262E-03	.2470E-02	.5795E-01	-.1093E+00	.6655E-01	-.1995E-01	-.9311E-01	-.1620E+00
13.3000	-.1012E+00	-.3977E-01	-.8598E-01	-.1287E+00	-.9611E-01	-.5984E-01	-.9573E-01	-.1281E+00	-.6824E-01	-.7731E-02
13.4000	-.1064E-01	-.1306E-01	.2749E-01	.6588E-01	-.2138E-02	-.7150E-01	.2834E-02	.7508E-01	.7464E-01	.7539E-01
13.5000	.1016E+00	.1263E+00	.1261E+00	.1209E+00	.8658E-01	.4834E-01	.1441E-01	-.2102E-01	-.1246E-01	-.2762E-02
13.6000	-.1804E-01	-.3049E-01	-.5977E-01	-.8834E-01	-.5262E-01	-.1664E-01	-.2764E-01	-.3469E-01	-.3474E-01	-.3264E-01
13.7000	-.1078E-02	.2977E-01	.2718E-01	.2367E-01	.3925E-01	.5168E-01	.3212E-01	.1040E-01	.1293E-01	.1459E-01
13.8000	-.2839E-01	-.7070E-01	-.3179E-01	.8573E-02	-.3381E-01	-.7238E-01	-.3319E-01	.6801E-02	.5254E-02	.4288E-02
13.9000	.1297E-01	.2117E-01	.2904E-01	.3479E-01	.1608E-01	-.3881E-02	.4881E-01	.9927E-01	.5933E-01	.1819E-01
14.0000	.2319E-01	.2601E-01	-.1889E-01	-.6337E-01	-.6904E-01	-.7142E-01	-.7681E-01	-.7767E-01	-.8645E-01	-.9189E-01
14.1000	-.7487E-01	-.5671E-01	-.4845E-01	-.3920E-01	.9316E-02	.5798E-01	.6073E-01	.6223E-01	.4376E-01	.2163E-01
14.2000	.5013E-01	.7477E-01	.7578E-01	.7637E-01	.8192E-01	.8650E-01	.9171E-01	.9376E-01	.6788E-01	.3935E-01
14.3000	.9806E-02	-.2094E-01	-.2368E-01	-.2504E-01	-.3459E-01	-.4088E-01	-.2966E-01	-.1737E-01	-.4785E-01	-.7775E-01
14.4000	-.6878E-01	-.5873E-01	-.8093E-01	-.9982E-01	-.1070E+00	-.1108E+00	-.9404E-01	-.7492E-01	-.5342E-01	-.2997E-01
14.5000	.9456E-02	.4925E-01	.6490E-01	.7873E-01	.9546E-01	.1090E+00	.1081E+00	.1026E+00	.9534E-01	.8448E-01
14.6000	.1041E+00	.1210E+00	.9119E-01	.5964E-01	.3927E-01	.1673E-01	-.2247E-01	-.6140E-01	-.6961E-01	-.7433E-01
14.7000	-.9749E-01	-.1155E+00	-.1188E+00	-.1182E+00	-.1112E+00	-.1013E+00	-.1112E+00	-.1181E+00	-.9117E-01	-.6184E-01
14.8000	-.3902E-01	-.1440E-01	.4241E-02	.2219E-01	.4337E-01	.6140E-01	.8067E-01	.9697E-01	.1051E+00	.1107E+00
14.9000	.1115E+00	.1091E+00	.9637E-01	.8034E-01	.8187E-01	.8044E-01	.5751E-01	.3345E-01	.2332E-01	

Table 11 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	.0007	.1223	-1.0485	.1580	1.0485
.032	.0016	-.2590	-1.8232	.3020	1.8231
.035	.0016	.2359	-1.6150	.2917	1.6149
.038	-.0061	-.9320	5.1591	-1.0093	-5.1588
.041	.0070	1.0577	-5.0972	1.0736	5.0969
.045	.0009	.9368	-4.1583	.9589	4.1580
.048	-.0065	.7934	3.5525	-.8647	-3.5523
.050	.0030	.3423	-1.4599	.3741	1.4598
.055	.0069	.7434	-2.7993	.7890	2.7991
.058	.0072	.6947	-2.6694	.7889	2.6693
.060	.0076	.7398	-2.5547	.7899	2.5545
.063	.0061	-.5260	-1.8876	.6094	1.8875
.067	.0083	-.6201	-2.2564	.7747	2.2562
.071	.0142	1.1780	-3.4712	1.2603	3.4710
.075	-.0076	.5599	1.6779	-.6423	-1.6778
.079	-.0162	-1.2166	3.2160	-1.2946	-3.2158
.082	.0130	.8429	-2.3399	.9881	2.3398
.086	-.0081	-.5677	1.3296	-.5877	-1.3295
.090	.0147	-.8980	-2.2172	1.0237	2.2170
.094	-.0119	-.7055	1.6512	-.7950	-1.6511
.098	-.0109	-.5465	1.3916	-.6974	-1.3915
.102	.0169	.8545	-2.0026	1.0432	2.0025
.106	-.0237	-1.2203	2.6069	-1.4094	-2.6068
.109	.0319	-1.7795	-3.2713	1.8332	3.2711
.113	-.0287	-1.5746	2.7479	-1.5941	-2.7477
.117	-.0273	-1.3380	2.4446	-1.4664	-2.4444
.121	-.0384	-1.7567	3.2203	-1.9952	-3.2202
.125	-.0276	-1.3040	2.1650	-1.3869	-2.1649
.131	-.0373	1.5628	2.6774	-1.7942	-2.6772
.137	.0207	-.8950	-1.3615	.9527	1.3614
.142	.0411	1.7442	-2.4893	1.8154	2.4892
.148	-.0361	-1.4646	2.0201	-1.5330	-2.0200
.154	-.0253	.8352	1.3101	-1.0329	-1.3100
.160	.0571	2.0222	-2.7489	2.2485	2.7487
.165	-.0337	1.0128	1.5104	-1.2801	-1.5103
.171	-.0643	2.1373	2.6924	-2.3615	-2.6922
.177	.0638	1.9924	-2.5004	2.2670	2.5002
.183	.0817	-2.5292	-3.0000	2.8087	2.9998
.188	.1180	-3.6824	-4.0720	3.9327	4.0718
.194	.0919	-2.7662	-2.9880	2.9742	2.9879
.200	.1111	-3.4644	-3.4056	3.4905	3.4054

Table 11 (Continued)

DAMPING RATIO = 0.000

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.1111	-3.4644	-3.4056	3.4905	3.4054
.205	.1196	3.5921	3.5003	-3.6721	-3.5001
.209	.1217	3.5600	-3.4008	3.6499	3.4006
.214	.1851	5.2126	4.9484	-5.4304	-4.9481
.219	.0870	2.4112	-2.2275	2.4983	2.2274
.224	.1302	3.5272	-3.1931	3.6584	3.1929
.228	.1206	3.1658	-2.8372	3.3191	2.8370
.233	.1664	-4.1331	3.7578	-4.4870	-3.7576
.238	.1217	3.1707	2.6414	-3.2178	-2.6413
.242	.2078	-5.2571	-4.3356	5.3864	4.3353
.247	.3030	-7.5099	6.0824	-7.7035	-6.0820
.252	.2757	6.5706	-5.3294	6.8786	5.3291
.257	.1615	3.8153	-3.0079	3.9548	3.0077
.261	.2895	6.8224	-5.1983	6.9605	5.1980
.266	.3156	7.3424	5.4679	-7.4536	-5.4676
.277	.2125	-4.5330	-3.3948	4.8191	3.3946
.288	.6352	13.6403	-9.4223	13.8821	9.4217
.298	.4533	9.3147	-6.2580	9.5568	6.2576
.309	.4651	9.3158	-5.9913	9.4720	5.9910
.319	.7187	14.1677	-8.6595	14.1562	8.6590
.333	.5745	10.8446	-6.3522	10.8401	6.3519
.494	.2879	-4.0397	-1.4468	3.6621	1.4467
.655	.2172	-2.6570	-1.6209	2.0836	.6208
.816	.1002	-1.2259	-1.1846	.7719	.1846
.977	.1277	1.4050	.1641	-.8216	-.1641
1.138	.0739	-1.0348	.0701	-.4084	-.0700
1.299	.0647	-1.0634	-.0470	.3131	.0470
1.460	.0740	-.9311	.0426	-.3185	-.0426
1.620	.0735	-1.0105	-.0343	.2850	.0343
1.781	.0843	-.8824	.0326	-.2973	-.0326
1.942	.0616	.9017	-.0200	.1993	.0200
2.103	.0817	-.9387	-.0226	.2441	.0226
2.264	.0599	-.9514	-.0143	.1661	.0143
2.425	.0626	-.9261	-.0130	.1621	.0130
2.586	.0538	-.9027	-.0099	.1307	.0099
2.747	.0550	-.8939	-.0089	.1257	.0089
2.908	.0763	-.8944	.0111	-.1648	-.0111
3.069	.0895	-.8968	-.0117	.1832	.0117
3.230	.0984	-.8974	-.0116	.1914	.0116
3.391	.1046	-.8954	.0112	-.1938	-.0112
3.552	.1057	-.8920	-.0103	.1869	.0103
3.713	.1021	-.8884	.0091	-.1728	-.0091
3.873	.0980	-.8854	.0080	-.1590	-.0080
4.034	.0981	-.8835	.0074	-.1528	-.0074
4.195	.1036	-.8826	.0072	-.1551	-.0072
4.356	.1123	-.8827	.0073	-.1620	-.0073
4.517	.1212	-.8836	.0073	-.1686	-.0073
4.678	.1285	-.8849	.0072	-.1725	-.0072
4.839	.1334	-.8865	.0070	-.1732	-.0070
5.000	.1364	-.8881	.0067	-.1714	-.0067

Table 11 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	.0005	.0430	.7535	-.1135	-.7534
.032	.0007	.0521	.7910	-.1309	-.7904
.035	.0009	.0965	.8417	-.1522	-.8423
.038	.0013	.1546	1.0603	-.2073	-1.0594
.041	.0015	.1803	1.0580	-.2228	-1.0577
.045	.0017	.1976	1.0582	-.2439	-1.0575
.048	.0016	.1701	.8707	-.2112	-.8675
.050	.0016	.1233	.7825	-.2005	-.7826
.055	.0023	.1654	.9205	-.2596	-.9212
.058	.0022	.1662	.8061	-.2379	-.8051
.060	.0030	.2299	-.9939	.3081	.9965
.063	.0028	-.1726	.8801	-.2837	-.8786
.067	.0040	.2156	1.1026	-.3776	-1.0995
.071	.0039	-.2883	.9598	-.3490	-.9612
.075	.0039	-.2394	.8481	-.3244	-.8474
.079	.0043	.2726	.8465	-.3412	-.8475
.082	.0046	.2771	-.8403	.3538	.8378
.086	.0043	-.2331	.7041	-.3116	-.7050
.090	.0050	-.2449	-.7592	.3502	.7584
.094	.0066	-.2609	.9136	-.4396	-.9130
.098	.0070	.3441	-.8956	.4491	.8961
.102	.0085	.4392	1.0079	-.5258	-1.0094
.106	.0090	-.4194	-.9988	.5389	.9968
.109	-.0117	.4614	1.1969	-.6721	-1.1992
.113	-.0108	.4318	1.0375	-.6001	-1.0343
.117	.0133	.5398	-1.1940	.7147	1.1914
.121	.0108	-.4838	-.9057	.5620	.9071
.125	-.0109	-.5040	.8535	-.5476	-.8548
.131	-.0152	-.5901	1.0878	-.7295	-1.0885
.137	.0137	-.5167	.9025	-.6306	-.9012
.142	.0203	.5887	1.2313	-.8970	-1.2299
.148	.0187	-.7135	1.0458	-.7917	-1.0432
.154	-.0207	.6643	1.0763	-.8465	-1.0736
.160	.0231	.7535	-1.1117	.9103	1.1128
.165	.0267	.7879	1.2007	-1.0159	-1.1986
.171	-.0298	.9111	1.2447	-1.0924	-1.2454
.177	.0389	1.1472	-1.5268	1.3832	1.5255
.183	.0464	1.3131	-1.7054	1.5951	1.7037
.188	.0575	-1.6408	-1.9862	1.9163	1.9840
.194	.0670	-1.9594	-2.1780	2.1677	2.1777
.200	.0548	-1.5954	-1.6724	1.7201	1.6782

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Table 11 (Continued)

DAMPING RATIO = .020

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0548	-1.5954	-1.6724	1.7201	1.6782
.205	.0539	1.4142	-1.5729	1.6547	1.5772
.209	.0596	1.4471	-1.6647	1.7883	1.6661
.214	.0679	1.6069	-1.8218	1.9911	1.8142
.219	.0704	-1.6574	-1.8049	2.0218	1.8025
.224	.0737	-1.7778	-1.8040	2.0701	1.8067
.228	.0790	-1.8804	-1.8570	2.1755	1.8594
.233	.0886	-2.1525	1.9991	-2.3900	-2.0015
.238	.0846	-1.9695	1.8298	-2.2352	-1.8348
.242	.1017	-2.4285	-2.1173	2.6350	2.1208
.247	.1103	-2.5035	2.2100	-2.8037	-2.2136
.252	.1274	-2.7970	2.4683	-3.1784	-2.4624
.257	.1186	2.6216	2.2168	-2.9044	-2.2088
.261	.1190	-2.5761	-2.1360	2.8609	2.1365
.266	.1430	-3.2438	-2.4789	3.3779	2.4778
.277	.1607	3.2846	2.5753	-3.6451	-2.5676
.288	.2269	-4.7376	3.3689	4.9590	3.3656
.298	.2568	-5.3178	3.5390	-5.4143	-3.5452
.309	.2474	-4.8463	-3.1854	5.0380	3.1865
.319	.2845	-5.3240	3.4319	-5.6038	-3.4277
.333	.3611	-6.6863	-4.0043	6.8126	3.9919
.494	.1507	2.3626	-7.7581	1.9172	.7574
.655	.1299	-1.8477	.3724	-1.2460	-.3712
.816	.0925	-1.2531	-.1711	.7127	.1705
.977	.0909	1.2587	.1170	-.5846	-.1168
1.138	.0716	-1.0484	-.0680	.3955	.0678
1.299	.0597	-1.0311	.0436	-.2886	-.0434
1.460	.0637	-.9336	.0370	-.2744	-.0367
1.620	.0636	-.9851	-.0301	.2467	.0297
1.781	.0650	-.8982	-.0253	-.2291	-.0251
1.942	.0620	-.8864	.0202	-.2007	-.0202
2.103	.0697	-.9297	.0193	-.2082	-.0193
2.264	.0557	-.9411	-.0136	.1544	.0133
2.425	.0578	-.9237	.0121	-.1497	-.0120
2.586	.0526	-.9053	-.0101	-.1278	-.0096
2.747	.0572	-.8967	.0093	-.1309	-.0093
2.908	.0728	-.8955	.0106	-.1572	-.0105
3.069	.0846	-.8964	.0110	-.1732	-.0110
3.230	.0928	-.8964	.0109	-.1805	-.0109
3.391	.0981	-.8947	.0105	-.1818	-.0105
3.552	.0998	-.8919	.0097	-.1765	-.0097
3.713	.0984	-.8888	.0088	-.1665	-.0087
3.873	.0968	-.8863	.0079	-.1570	-.0079
4.034	.0979	-.8846	.0074	-.1525	-.0074
4.195	.1026	-.8837	.0072	-.1537	-.0071
4.356	.1095	-.8837	.0071	-.1580	-.0071
4.517	.1168	-.8843	.0070	-.1624	-.0070
4.678	.1230	-.8854	.0069	-.1651	-.0069
4.839	.1276	-.8866	.0067	-.1657	-.0067
5.000	.1310	-.8880	.0064	-.1646	-.0064

Table 11 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD(FT)	VELOCITY SV(FT/SEC)	ACCELERATION SA(G)	PSEUDO VELOCITY SD*W(FT/SEC)	PSEUDO ACCELERATION SD*W**2(G)
.029	-.0005	.0368	.7674	-.1154	-.7656
.032	-.0007	.0487	.7672	-.1271	-.7675
.035	-.0008	-.0766	.8283	-.1496	-.8279
.038	-.0012	-.1082	.9940	-.1939	-.9911
.041	-.0014	-.1250	.9991	-.2092	-.9930
.045	-.0014	-.1287	.8362	-.1923	-.8338
.048	-.0013	.1184	.6826	-.1660	-.6817
.050	-.0015	.0957	.7524	-.1926	-.7517
.055	-.0020	.1214	.8232	-.2314	-.8210
.058	-.0022	.1260	.7976	-.2355	-.7968
.060	-.0023	.1485	.7877	-.2435	-.7875
.063	-.0027	.1327	.8488	-.2732	-.8463
.067	-.0034	.1496	.9440	-.3220	-.9379
.071	-.0036	-.1605	.8815	-.3207	-.8832
.075	-.0037	-.1714	.8075	-.3079	-.8043
.079	-.0037	-.1770	.7349	-.2953	-.7336
.082	-.0038	-.1836	.6879	-.2907	-.6884
.086	-.0040	-.1630	.6534	-.2888	-.6533
.090	-.0047	-.1552	.7072	-.3257	-.7052
.094	-.0056	-.1993	.7803	-.3749	-.7787
.098	-.0061	-.2502	.7811	-.3913	-.7807
.102	-.0065	-.2739	.7800	-.4043	-.7761
.106	-.0077	-.3112	.8495	-.4572	-.8456
.109	-.0089	-.3128	.9088	-.5092	-.9085
.113	-.0090	.3126	.8599	-.4976	-.8578
.117	-.0092	-.3266	.8232	-.4916	-.8195
.121	-.0097	-.3127	.8187	-.5059	-.8166
.125	-.0105	-.3516	.8265	-.5263	-.8215
.131	-.0120	-.3895	.8665	-.5786	-.8633
.137	-.0121	-.3883	.7993	-.5584	-.7981
.142	-.0153	-.4324	.9301	-.6763	-.9273
.148	-.0166	-.5088	.9268	-.7025	-.9257
.154	-.0176	-.5168	.9158	-.7194	-.9124
.160	-.0189	.5088	.9119	-.7458	-.9117
.165	-.0224	.6314	1.0031	-.8494	-1.0022
.171	-.0255	.7501	1.0692	-.9343	-1.0652
.177	-.0300	.8415	-1.1789	1.0671	1.1768
.183	.0365	1.0103	-1.3482	1.2550	1.3404
.188	.0421	1.1348	-1.4575	1.4020	1.4515
.194	.0451	-1.2106	-1.4727	1.4585	1.4653
.200	.0437	-1.1663	-1.3357	1.3734	1.3399

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Table 11 (Continued)

DAMPING RATIO = .050

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0437	-1.1663	-1.3357	1.3734	1.3399
.205	.0451	-1.1042	-1.3162	1.3849	1.3201
.209	.0511	1.2270	-1.4372	1.5341	1.4293
.214	.0565	1.2990	-1.5071	1.6573	1.5101
.219	.0608	1.3658	-1.5673	1.7466	1.5572
.224	.0649	-1.4734	-1.5912	1.8246	1.5924
.228	.0688	-1.5725	-1.6273	1.8948	1.6195
.233	.0722	-1.6669	-1.6358	1.9469	1.6304
.238	.0750	-1.7287	-1.6288	1.9811	1.6261
.242	.0797	-1.8134	1.6660	-2.0651	-1.6622
.247	.0864	-1.9240	1.7453	-2.1963	-1.7340
.252	.0921	-1.9879	1.7896	-2.2978	-1.7802
.257	.0942	-1.9733	1.7524	-2.3077	-1.7550
.261	.0934	1.9023	1.6875	-2.2448	-1.6764
.266	.0938	-1.9551	1.6392	-2.2163	-1.6258
.277	.1211	2.4183	1.9369	-2.7476	-1.9354
.288	.1485	-2.2467	-2.2020	3.2450	2.2024
.298	.1616	-3.2373	-2.2467	3.4067	2.2306
.309	.1618	-3.1797	2.0900	-3.2948	-2.0840
.319	.2011	-3.7678	2.4244	-3.9612	-2.4230
.333	.2470	4.5723	2.7467	-4.6604	-2.7308
.494	.1368	-2.0809	-6.915	1.7402	.6875
.655	.1169	1.5156	.3373	-1.1215	-.3342
.816	.0799	-1.1827	-.1496	.6157	.1473
.977	.0709	1.1461	.0934	-.4563	-.0912
1.138	.0677	-1.0354	.0670	-.3738	-.0641
1.299	.0589	-1.0036	.0449	-.2852	-.0428
1.460	.0583	-.9469	-.0357	.2510	.0336
1.620	.0576	-.9622	.0285	-.2233	-.0269
1.781	.0583	-.9111	-.0245	.2056	.0225
1.942	.0582	-.8981	.0203	-.1883	-.0189
2.103	.0603	-.9215	.0189	-.1802	-.0167
2.264	.0538	-.9299	.0154	-.1492	-.0129
2.425	.0546	-.9198	-.0128	-.1416	-.0114
2.586	.0542	-.9069	-.0115	-.1317	-.0099
2.747	.0588	-.8993	-.0101	-.1346	-.0096
2.908	.0692	-.8967	.0101	-.1495	-.0100
3.069	.0787	-.8961	.0103	-.1611	-.0102
3.230	.0857	-.8954	.0101	-.1668	-.0101
3.391	.0905	-.8938	.0097	-.1677	-.0096
3.552	.0928	-.8916	.0091	-.1642	-.0090
3.713	.0935	-.8893	.0084	-.1582	-.0083
3.873	.0941	-.8872	.0077	-.1526	-.0077
4.034	.0962	-.8858	.0073	-.1498	-.0072
4.195	.1002	-.8850	.0070	-.1500	-.0070
4.356	.1055	-.8848	.0068	-.1521	-.0068
4.517	.1111	-.8852	.0067	-.1545	-.0067
4.678	.1162	-.8859	.0065	-.1560	-.0065
4.839	.1205	-.8868	.0063	-.1565	-.0063
5.000	.1240	-.8879	.0061	-.1558	-.0061

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Table 11 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.029	-.0005	.0343	.7644	-.1149	-.7623
.032	-.0007	.0470	.7671	-.1269	-.7661
.035	-.0008	-.0672	.8237	-.1483	-.8208
.038	-.0011	-.0933	.9393	-.1828	-.9341
.041	-.0013	-.1079	.9446	-.1975	-.9378
.045	-.0013	-.1088	.8107	-.1864	-.8082
.048	-.0013	.1043	.7186	-.1748	-.7180
.050	-.0015	.0953	.7522	-.1924	-.7508
.055	-.0020	.1086	.8053	-.2259	-.8016
.058	-.0022	.1143	.7935	-.2344	-.7932
.060	-.0024	.1261	.7960	-.2459	-.7952
.063	-.0027	.1181	.8339	-.2690	-.8331
.067	-.0032	.1277	.8875	-.3021	-.8798
.071	-.0035	.1302	.8505	-.3067	-.8448
.075	-.0036	-.1418	.7892	-.3008	-.7856
.079	-.0037	-.1437	.7285	-.2923	-.7261
.082	-.0037	-.1554	.6724	-.2826	-.6693
.086	-.0041	-.1467	.6727	-.2964	-.6706
.090	-.0047	.1461	.7111	-.3277	-.7097
.094	-.0054	-.1776	.7545	-.3628	-.7535
.098	-.0060	-.2127	.7705	-.3847	-.7675
.102	-.0065	-.2443	.7797	-.4041	-.7756
.106	-.0074	-.2755	.8129	-.4396	-.8130
.109	-.0081	-.2860	.8340	-.4656	-.8309
.113	-.0082	-.2907	.7914	-.4573	-.7882
.117	-.0085	-.2990	.7694	-.4574	-.7625
.121	-.0093	-.3004	.7799	-.4816	-.7772
.125	-.0101	-.3045	.7936	-.5053	-.7887
.131	-.0112	-.3402	.8084	-.5377	-.8023
.137	-.0117	-.3442	.7745	-.5376	-.7682
.142	-.0142	-.3829	.8626	-.6281	-.8612
.148	-.0159	-.4364	.8925	-.6756	-.8902
.154	-.0173	-.4517	.8989	-.7046	-.8937
.160	-.0187	.4876	.9029	-.7357	-.8994
.165	-.0208	.5776	.9402	-.7910	-.9333
.171	-.0234	.6711	.9854	-.8580	-.9782
.177	-.0271	.7479	-1.0684	.9621	1.0611
.183	.0321	.8694	-1.1878	1.1048	1.1800
.188	.0361	.9481	-1.2553	1.2024	1.2449
.194	.0383	-.9763	-1.2535	1.2387	1.2444
.200	.0384	-.9784	-1.1890	1.2066	1.1772

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Table 11 (Continued)

DAMPING RATIO = .070

Floor Spectra for HFBR, Operational Level -7% Damping

PERIOD	DISPLACEMENT SD (FT)	VELOCITY SV (FT/SEC)	ACCELERATION SA (G)	PSEUDO VELOCITY SD*W (FT/SEC)	PSEUDO ACCELERATION SD*W**2 (G)
.200	.0384	-.9784	-1.1890	1.2066	1.1772
.205	.0425	1.0288	-1.2507	1.3053	1.2442
.209	.0471	1.1166	-1.3296	1.4130	1.3165
.214	.0518	1.1818	-1.3876	1.5212	1.3861
.219	.0557	1.2465	-1.4434	1.5983	1.4250
.224	.0599	-1.3117	-1.4717	1.6829	1.4688
.228	.0633	-1.4065	-1.5035	1.7432	1.4900
.233	.0667	-1.4893	-1.5185	1.7999	1.5073
.238	.0699	-1.5654	-1.5222	1.8488	1.5176
.242	.0727	-1.6399	-1.5362	1.8849	1.5171
.247	.0772	-1.7160	1.5599	-1.9625	-1.5495
.252	.0816	-1.7680	1.5911	-2.0348	-1.5765
.257	.0852	-1.7968	1.5962	-2.0859	-1.5864
.261	.0879	-1.8133	1.5896	-2.1148	-1.5793
.266	.0915	-1.8524	1.6029	-2.1603	-1.5847
.277	.1085	-2.1517	1.7455	-2.4601	-1.7329
.288	.1266	2.4656	-1.8862	2.7677	1.8784
.298	.1374	-2.6666	-1.9111	2.8966	1.8967
.309	.1492	-2.8634	-1.9340	3.0385	1.9219
.319	.1732	-3.2757	-2.1050	3.4118	2.0869
.333	.2029	-3.7896	-2.2710	-3.8285	-2.2433
.494	.1340	-1.9945	-.6836	1.7041	.6732
.655	.1101	1.4440	.3205	-1.0562	-.3147
.816	.0768	-1.1267	-.1442	.5915	.1415
.977	.0683	1.1042	.0933	-.4394	-.0878
1.138	.0680	-1.0205	.0700	-.3757	-.0644
1.299	.0584	-.9920	.0477	-.2827	-.0425
1.460	.0570	-.9500	.0373	.2455	.0328
1.620	.0560	-.9527	-.0300	.2171	.0261
1.781	.0563	-.9154	-.0256	.1985	.0217
1.942	.0551	-.9032	.0220	-.1782	-.0179
2.103	.0571	-.9181	.0204	-.1707	-.0158
2.264	.0534	-.9244	.0172	-.1483	-.0128
2.425	.0535	-.9172	.0145	-.1387	-.0112
2.586	.0545	-.9070	.0129	-.1324	-.0100
2.747	.0590	-.9002	.0118	-.1349	-.0096
2.908	.0674	-.8972	.0110	-.1455	-.0098
3.069	.0755	-.8960	.0102	-.1546	-.0098
3.230	.0819	-.8950	.0097	-.1593	-.0096
3.391	.0863	-.8934	.0093	-.1600	-.0092
3.552	.0890	-.8914	.0087	-.1575	-.0087
3.713	.0905	-.8894	.0081	-.1532	-.0081
3.873	.0920	-.8877	.0076	-.1492	-.0075
4.034	.0945	-.8864	.0072	-.1471	-.0071
4.195	.0982	-.8856	.0069	-.1470	-.0068
4.356	.1028	-.8854	.0067	-.1483	-.0066
4.517	.1077	-.8856	.0065	-.1498	-.0065
4.678	.1123	-.8862	.0064	-.1509	-.0063
4.839	.1164	-.8869	.0062	-.1512	-.0061
5.000	.1200	-.8878	.0059	-.1508	-.0059