GPU Nuclear

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August 22, 1994
5000-94-0035
C321-94-2126

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Oyster Ceek Nuclear Generating Station (OCNGS)
Operating License No. DPR-16
Docket No. 50-219
Response To Additional Information
Concerning In-Structure Response Spectra

By letter dated December 23, 1993, GPU Nuclear Corporation provided a report prepared by EQE Engineering Consultants entitled "Design Criteria for Soil Structure Interaction Analysis of the Reactor/Containment Building at GPU Nuclear/Oyster Creek Nuclear Generating Station" for your review. The NRC staff determined that additional information is required in order for the staff to complete its review. Your letter dated March 17, 1994 requested this additional information.

The attached information provides GPUN's response to your request. We believe that this response provides you the information necessary to complete your review. As stated in our letter dated December 23, 1993, GPUN intends to use the resulting spectra to resolve Supplement 1 to Generic Letter 87-02, and in conjunction with damping values specified in Regulatory Guide 1.61 and ASME Code Case N411 for all future designs, analyses and evaluations.

If you have any questions concerning this submittal, please contact Mr. Michael Laggart, Manager, Corporate Nuclear Licensing.

Sincerely,

RW Keaten

R. W. Keaten
Vice President & Director
Technical Functions

c: Administrator Region I
NRC Oyster Creek Project Manager
Senior Resident Inspector

Disk located in Central Files

A025 1/1

GPU NUCLEAR RESPONSES TO ADDITIONAL INFORMATION REQUESTED BY NRC LETTER DATED MARCH 17, 1994 REGARDING IN-STRUCTURE RESPONSE SPECTRA

NRC QUESTION #1

Provide the three sets of spectra (corresponding to the three high-strain soil profiles) developed at the foundation level together with the enveloping spectra and 60% of the site specific response spectra (SSRS). Also, provide modified synthetic time-histories (if any) developed to ensure that the 60% criterion is satisified.

GPU NUCLEAR RESPONSE

1. The deconvolved spectra for the two horizontal time histories developed at the foundation level for the three high strain soil profiles and the time histories to be used in the final analyses are shown in Figures 1s1-1 and 1s1-2. The envelope of the three spectra for each of the horizontal directions are shown in Figures 1-1 and 1-2. These figures show the comparison of both horizontal components to 60% of the surface spectrum. The spectra from these time histories meet the 60% requirement at all frequencies. These time histories are included in the diskette as part of the response to Question 4.

'RSPLT INTEL386 VERS 1.2P COMPILED 08/04/93 09:30:31 EXECUTED 05/25/94 08:29:29 rctr1.plt

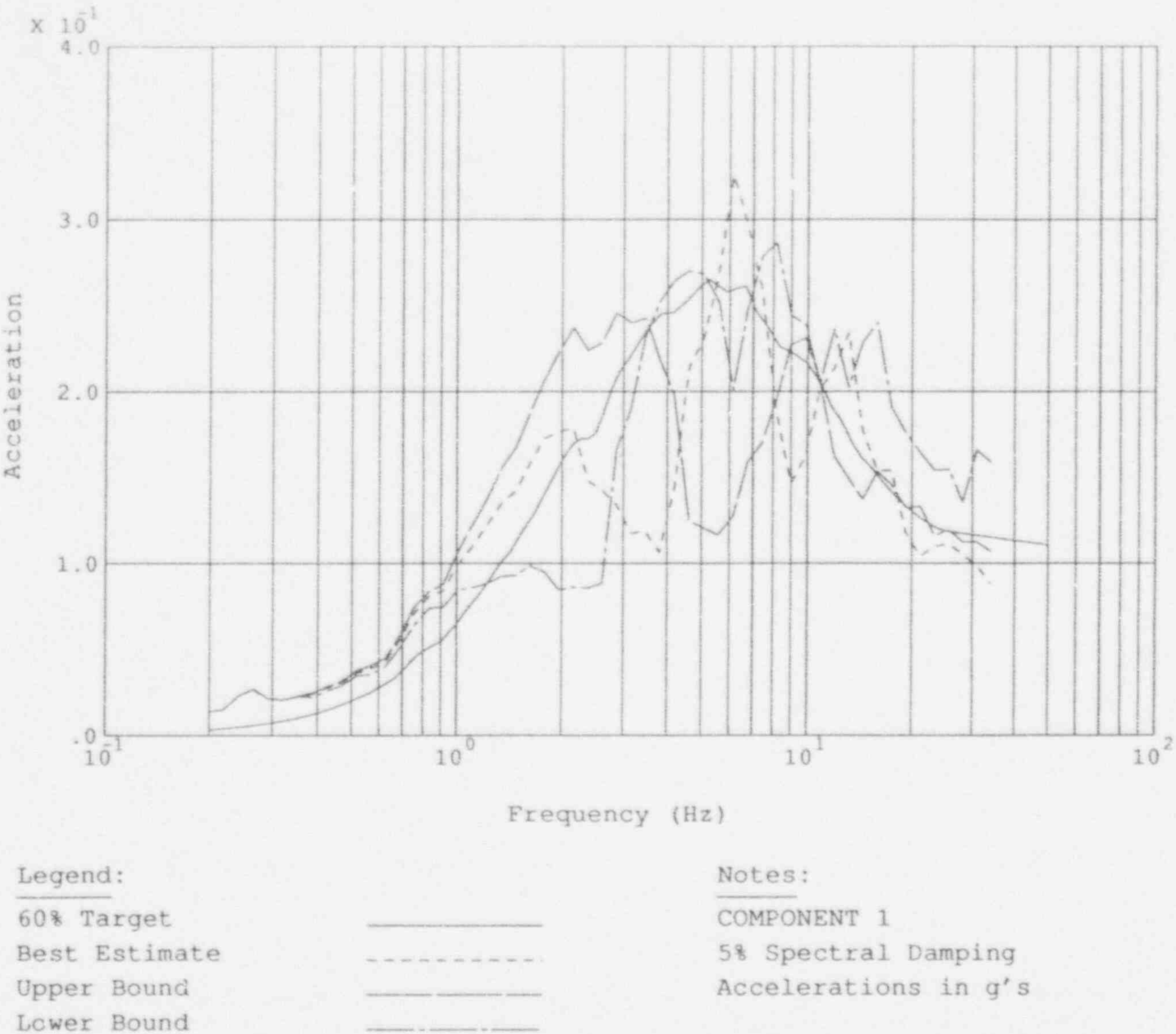


Figure 1s1-1: Deconvolved Motion, 3 Soil Conditions vs. 60% of Ground Surface Target, OCNGS Reactor Building

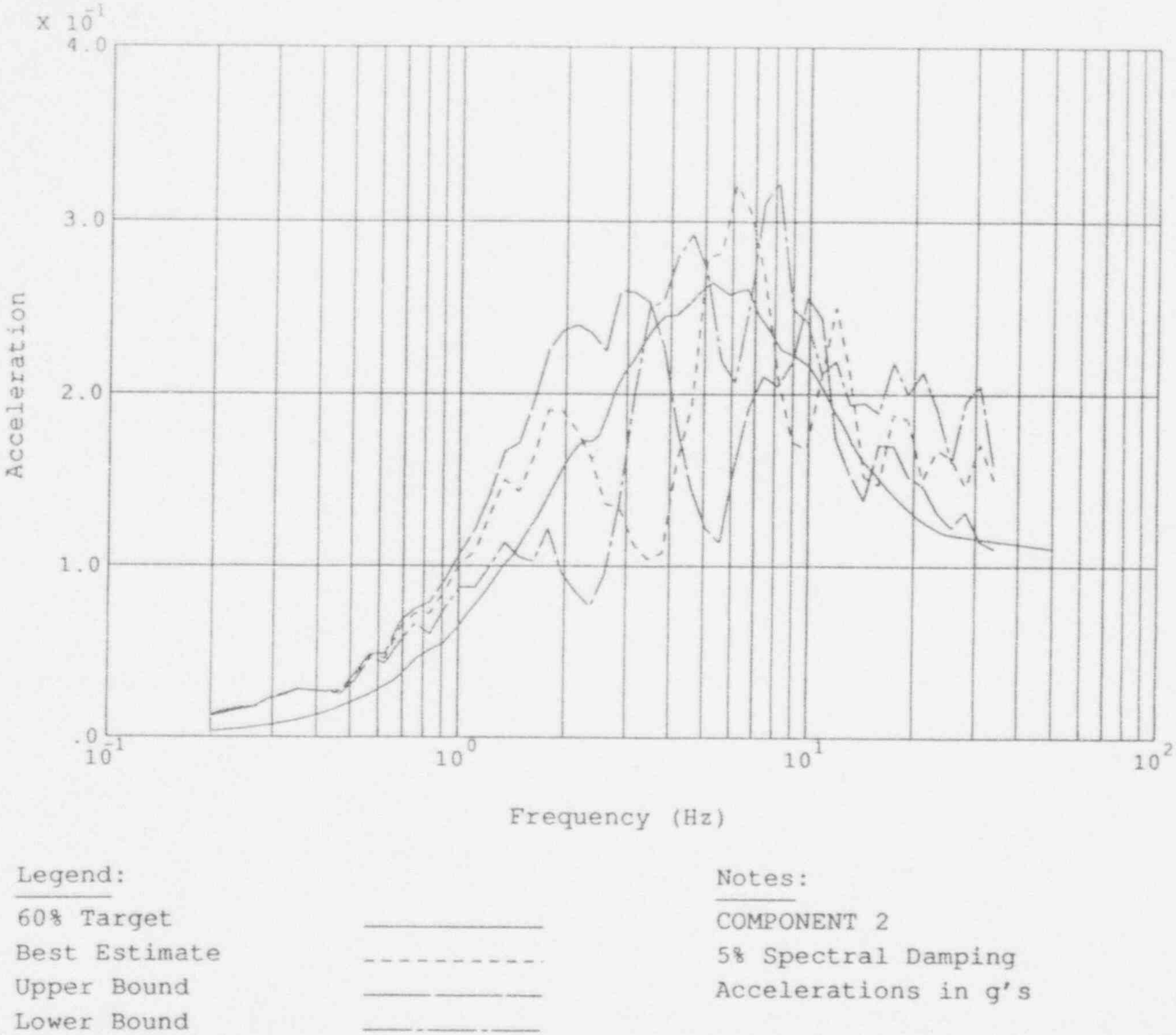
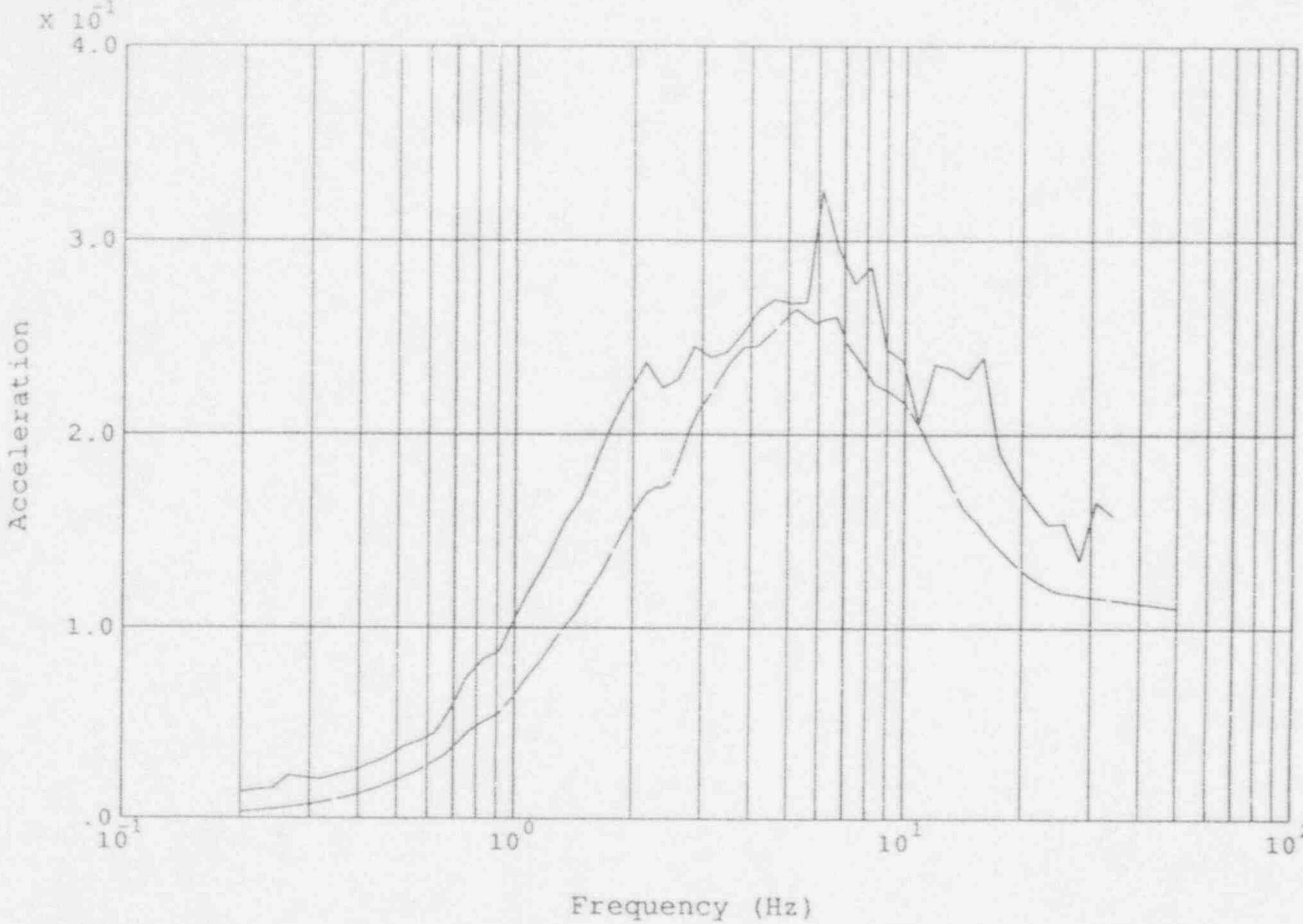


Figure 1s1-2: Deconvolved Motion, 3 Soil Conditions vs. 60% of Ground Surface Target, OCNGS Reactor Building

RSPLT INTEL386 VERS 1.2P COMPILED 08/04/93 09:30:31 EXECUTED 04/19/94 16:07:57 comp1.plt



Legend:

Horiz. Component 1 ____________

60% of Freefield ____________

Notes:

Accelerations in g's

5% Spectral Damping

Figure 1-' Envelope of Deconvolved Motions, OCNGS Reactor Building

NRC QUESTION #2

Structural Modelling:

2.a At OCNGS, tne spent fuel pool (SFP) load is distributed between the reactor building, the shield wall and the columns. Provide information related to the distribution of SFP mass and its eccentricity in the model shown in Fig. 4-1.

GPU NUCEAR RESPONSE

2.a A three-dimensional, lumped-mass dynamic stick model of the OCNGS Reactor building was used in the SSI Analysis. The model includes separate sticks for the reactor building, drywell vessel, biological shield wall and reactor pressure vessel. The mass and stiffness of the walls of the SFP and the mass of water, fuel, and equipment in the SFP were included in the model of the reactor building.

The center of mass was calculated using the center of gravity of the individual masses for all floors in the reactor building. This includes the walls, water, fuel, and equipment associated with the SFP. In all cases, differences between center of mass and center of rigidity at a particular floor were explicitly included in the model. The model shown in Figure 4-1 explicitly accounts for the appropriate distribution and eccentricity of the SFP mass.

NRC QUESTION #2.b

2.b Provide a sample calculation which demonstrates the resonsibility of the spring constants shown in Table 6 of Appendix A.

GPU NUCLEAR RESPONSE

2.b A three-dimensional lumped-mass model of the OCNGS Reactor Building was developed by URS Blume in 1987. This model included spring constants for the springs listed in Table 6 of Appendix A of the EQE report. GPUN reviewed this model to determine its appropriateness for use in the present EQE Soil Structure Interaction Analysis and noticed some anomalies. Therefore, GPUN obtained the services of Harstead Engineering Associates to perform a detailed review of the URS Blume model. The results of this review were subsequently independently verified by GPUN.

Attached are pages 121 through 130 of the calculation prepared by G. Harstead to review the model developed by URS Blume. Also attached are pages 5 through 14 of the verification of the G. Harstead calculation prepared by GPUN. These attachments describe how the values for the spring constants shown in Table 6 of Appendix A were developed.

GPU Nuclear Calculation Sheet

Subject	Calc No.	Rev. No.	Sheet No.
REVIEW - 3D COUPLED MODEL	V-1302-153-081	0	121 of 200

Originator	Date	Reviewed by	Date
G.A. HARSTEAD	1/15/91		

INTERFACE STIFFNESS

1. STAR TRUSS - DRYWELL VESSEL & BIOLOGICAL SHIELD EL 82'-2"

   CONCERNS:

   1. ERROR IN AREA OF LEGS
   2. QUESTION ON LOCAL RADIAL STIFFNESS OF DRYWELL VESSEL

2. LUGS - CONCRETE DRYWELL SHIELD & DRY WELL VESSEL EL 82'-2"

   CONCERN:

   1. LOCAL ROTATION OF DRYWELL MAY NOT BE RESTRAINED BY BENDING STIFFNESS OF LEGS OF STAR TRUSS

3. UPPER TIER - BIOLOGICAL SHIELD & DRYWELL VESSEL, EL 44.25'

   CONCERN:

   1. DETAILS OF DRYWELL VESSEL SUPPORT INDICATES RADIAL RESTRAINT IS ELIMINATED DUE TO HINGED HANGER

4. LOWER TIER - BIOLOGICAL & DRYWELL VESSEL, EL 22'-6"

   CONCERN:

   1. DETAILS OF DRYWELL VESSEL SUPPORT INDICATES RADIAL RESTRAINT IS ELIMINATED DUE TO LUBRITE PL'S AND SLOTTED HOLES. TANGENTIAL RESTRAINT MINIMIZED BY LUBRITE PL'S AND OVER SIZE HOLES AND MINIMAL BRACING

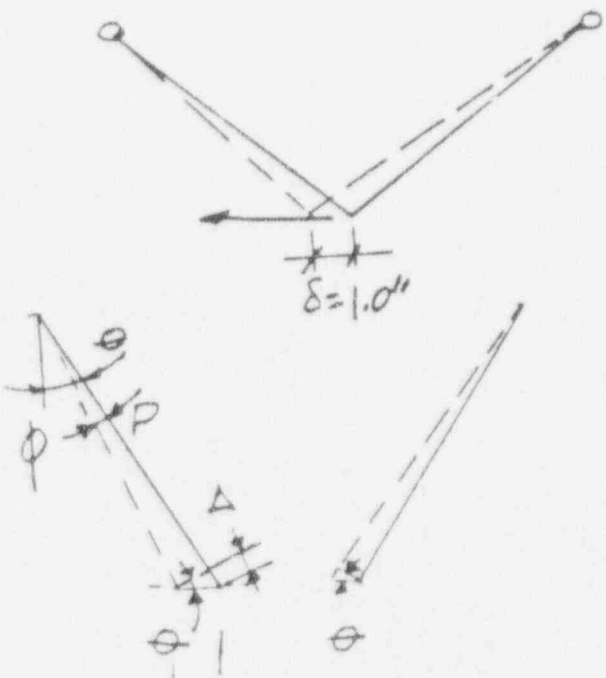
5. RPV STABILIZER - NO CALCS. AVAILABLE

INTERFACE STIFFNESS

STARTRUSS — REF. 66136-CA-01 Sht 8.13 - 8.18

BETWEEN DRYWELL & CONCRETE BIOLOGICAL SHIELD

STAR TRUSS LEGS



10" DBL EXTRA STRONG
A = 16.1 IN²
L = 5.598
REF: 66136-CA-01 SHT 8.16

HOWEVER DOUBLE EXTRA STRONG
A = 30.63 □"
I = 367.8 IN⁴

$$\Delta = \frac{P\ell}{AE} \qquad \sin\theta = \frac{\Delta}{\delta}$$

$$\frac{F}{2} = P\sin\theta$$

$$\delta = \frac{\Delta}{\sin\theta} = \frac{P\ell}{AE\sin\theta} \quad ; \quad F = 2\sin\theta P$$

$$\frac{F}{\delta} = \frac{2\sin^2\theta\, AEP}{P\ell} = \frac{2\sin^2\theta\, AE}{\ell}$$

GPU Nuclear Calculation Sheet

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REVIEW-3D COUPLED MODEL	V-1302-153-081	0	123 of 200

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G.A. HARSTEAD	1/15/91		

INTERFACE STIFFNESS

STAIR TRUSS

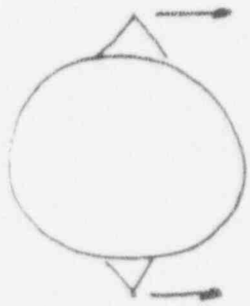
$\theta = 36.291°$

$$K = \frac{2(30.63)(29)(10^3)}{5.598(12)} \sin^2\theta$$

$$= 26446 \sin^2(36.291)$$

$$= 9265 \text{ K/IN}$$

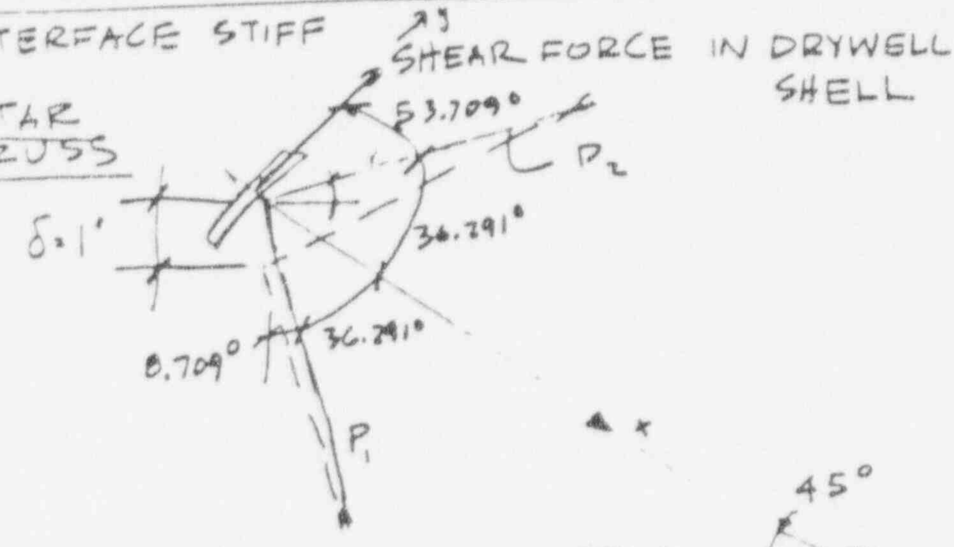
IF WE ONLY ASSUME 2 SETS 180° APART:

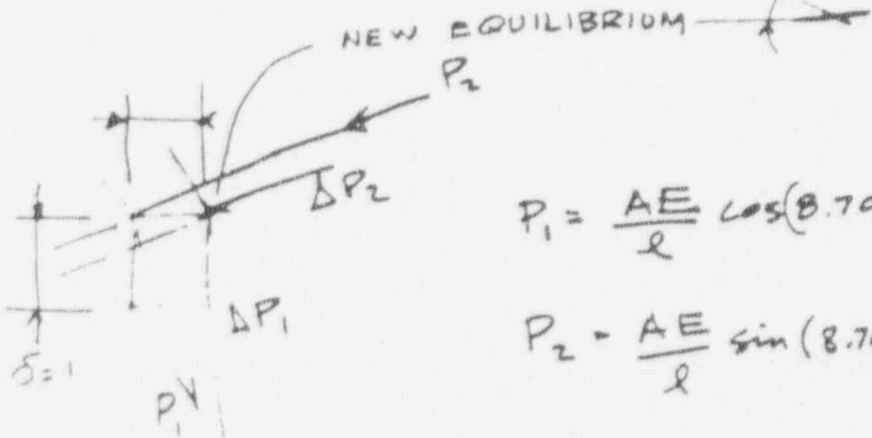


$K = 2(9265) = 18530$ K/IN

BUT LEGS AT 45° WILL PROVIDE RESTRAINT ?

INTERFACE STIFF





$P_1 = \frac{AE}{\ell} \cos(8.709) = 130706^k$

$P_2 = \frac{AE}{\ell} \sin(8.709) \quad 2002.2^k$

$\Sigma F_x = 0 = (P_1 - P_2) \cos 36.291 + (\Delta P_1 - \Delta P_2) \cos 36.29 = 0$

$\therefore \quad P_1 - P_2 = -(\Delta P_1 - \Delta P_2)$

$\Delta P_1 = \frac{AE}{\ell} \sin(8.709) \qquad \Delta P_2 = \frac{AE}{\ell} \cos 8.709$

$\frac{\Delta P_1}{\Delta P_2} = \frac{\sin 8.709}{\cos 8.709} = .15318$

INTERFACE STIFFNESS

STAR TRUSS

$$P_1 - P_2 = -(.15318\Delta P_2 - \Delta P_2)$$

$$\Delta P_2 = \frac{P_1 - P_2}{.8468} = \frac{13070.6 - 2002.2}{.8468}$$

$$= 13{,}070.6^K$$

$$\Delta P_1 = .15318(13070.6) = 2002.2$$

THIS INDICATES THAT WITHOUT RADIAL RESTRAINT PROVIDED BY DRYWELL, THE INTERFACE STIFFNESS CANNOT BE DEVELOPED BY TRUSS MEMBERS NOT ORIENTED SO THAT COMPONENTS OF FORCES IN LEGS WILL CANCEL OUT NORMAL TO SHELL

STIFFNESS OF STAR TRUSS

$$K = 18530^{K}/_{IN} = 222360\ ^{K}/_{FT}$$

THIS IS ABOUT 1/3 THAT CALCULATED BY URS/BLUME REF 66136-CA-01 SHT 8.17

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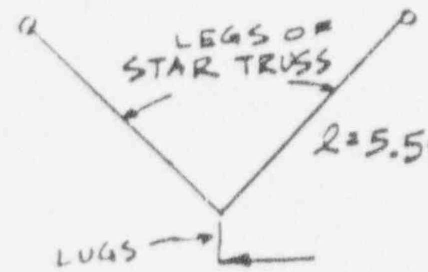
REVIEW- 3D COUPLED MODEL	V-1302-153-081	0	126 of 200
Originator: G. A. HARSTEAD	Date: 7/24/91	Reviewed by:	Date:

INTERFACE STIFFNESS

LUGS

LUGS - REF. 66136-CA-01 SHT 8.2 - 8.12



M = Pa

NOTE:
IN ORDER FOR LUG STIFFNESS TO BE BASED UPON CANTILEVER, RESTRAINT IS NEEDED. NEGLECTING DRYWELL SHELL EVALUATE STAR TRUSS LEGS.

$$\theta = \frac{2}{3}\left(\frac{1}{2}\right)\frac{M}{EI}\ell$$

$$\frac{M}{\theta} = \frac{3EI}{\ell} = \frac{3(29)(10^3)(367.8)(2)}{5.598(12)} = (476339)\,2 \text{ IN-K/rad}$$

2 legs

$P = \frac{M}{a}$ $\qquad \delta = \theta a$ $\qquad a = 4''$

$$\frac{P}{\delta} = \frac{M/a}{\theta a} = \frac{M}{\theta a^2} = \frac{2(476339)}{(4)^2} = 59{,}422 \text{ K/IN}$$

DUE TO BENDING OF LEGS OF STAR TRUSS THE STIFFNESS OF LUGS IS REDUCED

$K_{LUGS} = 122{,}900$ K/IN $\qquad$ 66136-CA-01 SHT 8.7

$$K_{EQUIV} = \frac{1}{\frac{1}{59{,}422} - \frac{1}{122{,}900}} = 40053.3 \text{ K/IN}$$

1.683×10^{-5} $\qquad 8.137 \times 10^{-6}$

$K_{2LUGS} = 80106.6$ K/IN

N 0018 (10-8

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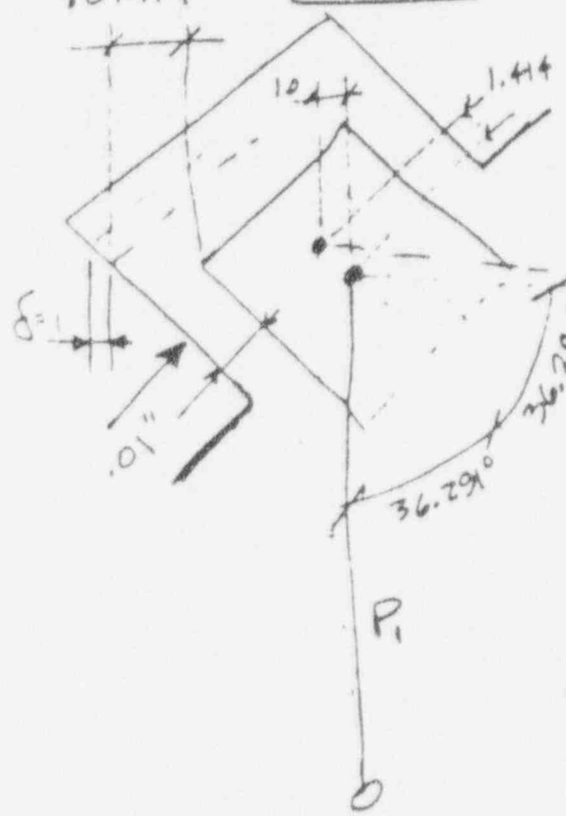
INTERFACE STIFFNESS



LUGS @ 45° FROM DIRECTION OF MOTION

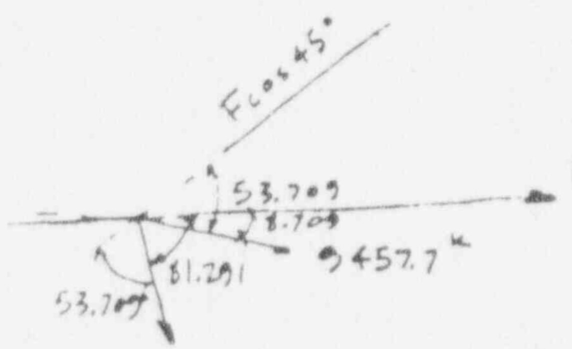
LUGS RESTRAIN TANGENTIALLY

STAR TRUSS LEGS RESTRAIN RADIALLY

$$P_2 = P_1 = \frac{1.414(1)}{\cos 8.709°} \frac{AE}{l}$$

$$= \frac{(.707)(2)}{\cos 8.709°} \frac{(30.63)(29)(10^3)}{5.598(12)}$$

$$= 2(9457.7)^K$$



$F = 2(9457.7)(\cos 81.291 + \cos 8.709) = 24425\ ^K/_{IN}$

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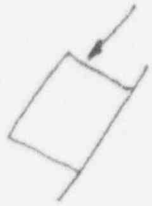
INTERFACE STIFFNESS

LUGS

$F\cos 45° = 17268$



$F = 24425$

CANTILEVER OF LUGS

$K = 122900$ K/IN

$$\delta = \frac{17268}{K} = .14''$$

$$\delta \cos 45° = .1''$$

$$K = \frac{24425}{1.0 + .1} = 22204.5 \text{ K/IN}$$

CORRECT FOR MOMENT

$$K_{EQUIV} = \frac{1}{\frac{1}{22204.5} + \frac{1}{59422}} = 16164$$

4 LUGS @ 45°

$K = 4(16164) = 64656$ K/IN

INTERFACE STIFFNESS

LUGS

δ	K	F
0 - .01"	0	
.01 - .01414	80106	331.6
.01414 →	144763	

URS/BLUME COMPOSITE $F = 967.6^K$

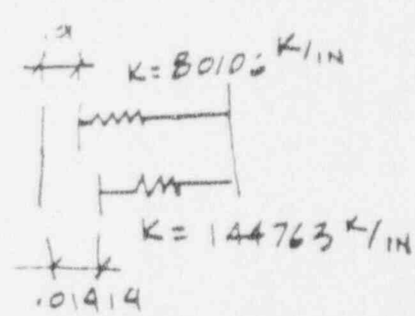
REF: 66136-CA-01
SHT 8.7

$$\delta_{(ABOVE\ .1414)} = \frac{967.6 - 331.6}{144763} = .00439$$

$$\delta_{TOTAL} = .01414 + .00439 = .01853$$

$$K_{COMPOSITE} = \frac{967.6}{.01853} = 52208.5\ ^K/_{IN} = 626502\ ^K/_{FT}$$

BETTER TO USE GAP ELEMENTS

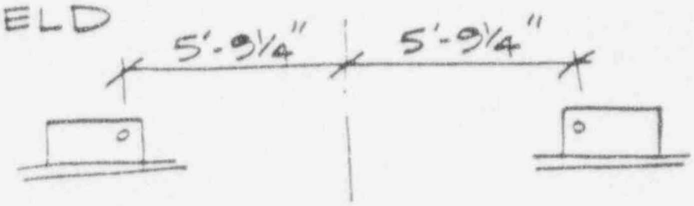


INTERFACE STIFFNESS

RPV STABILIZER – <u>NO URS/BLUME CALC.</u>

PL's WELDED TO TOP OF BIOLOGICAL SHIELD

REF: B&R DWG 4204-1



3¼"Φ ROD – GE DWG 112C2523

ASSUME AREA IS CONSTANT

ROOT DIAM = 2.925 — AISC Steel Construction 6th Ed. P. 4-91

$$A = \frac{\pi d^2}{4} = \frac{\pi (2.925)^2}{4} = 6.7 \square''$$

$$K = \frac{AE}{\ell} = \frac{6.7(29)(10^3)}{11.54(12)} = \frac{16837}{12}^{K} = 1403 ^{K}/_{in}$$

$$= 16837 ^{K}/_{FT}$$

$$K_{2\,STAB} = 33674 < 48000 ^{K}/_{FT}$$ ← say OK

WHILE THE ABOVE ROUGH CHECK IS ~ ¾ OF URS/BLUME VALUE, THE BLUME VALUE IS REASONABLE IF A MORE PRECISE ANALYSIS WERE PERFORMED CONSIDERING CLEVISES, SPRINGS, 10"Φ PIPE IN THE WHOLE ASSEMBLY

(B) NODAL COORDINATION

1) ONLY MINOR CHANGES ARE SUGGESTED BY G.H. TO THE Rx BLDG STICK AT THE X & Z COORDINATES. THESE DIFFERENCES SHOULD NOT HAVE SIGNIFICANT EFFECT TO THE DYNAMIC PROPERTIES OF THE COMBINED STICK MODEL. THEREFORE, THE USE OF GH'S NODAL COORDINATION IS ACCEPTABLE.

(C) SPRING CONSTANTS

THERE ARE FIVE PLACES WHERE THE COMBINED MODEL HAS SPRINGS IN THE X AND Z DIRECTIONS. THEY ARE: UPPER & LOWER TIES (PLATFORMS), Rx VESSEL STABILIZER, DRYWELL STAR TRUSS AND DRYWELL LUGS. G.H. REVISED THE SPRING CONSTANTS FROM BLUME'S VALUES AT ALL LOCATIONS EXCEPT Rx. VESSEL STABILIZER. THE DISCUSSION AND EVALUATION OF GH'S REVISION TO THESE VALUES ARE AS FOLLOWS.

1) THE UPPER TIER PLATFORM @ EL. 46'

THE UPPER TIER PLATFORM IS SUPPORTED BY HANGERS AT THE EXTERIOR END AND BY POSTS AT THE INTERIOR END. BECAUSE THE SUPPORTS ARE HANGERS AND ACTING AS A HINGE AND THE

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CONNECTIONS WERE DESIGNED TO PREVENT RADIAL RESTRAINT BY MEANS OF SLOTTED HOLES. GH DETERMINED THAT THE HORIZONTAL RESTRAINT PROVIDED FROM THIS PLATFORM IS MINIMAL. NO CREDIT WAS GIVEN BY GH. TO THE TANGENTIAL RESTRAINT BECAUSE THE PLATFORM IS MORE FLEXIBLE THAN ASSUMED BY BLUME. THE FLEXIBILITY AT THE END OF HANGERS WERE ASSUMED TO BE FIXED BY BLUME. HOWEVER, THIS IN REALITY IS NOT THE CASE. THE END SUPPORT IS VERY FLEXIBLE AT CONSIDERING THAT THE SHELL OF THE DRYWELL COULD BE BENT OR EVEN BUCKLED. THE JOINTS BETWEEN THE RADIAL BEAMS AND SMALL WIDE FLANGE & CHANNEL SECTION OF TANGENTIAL BEAMS MAY BE LOOSE DUE TO THERMAL CYCLES. THIS CAN ALSO GREATLY REDUCE THE SPRING CONSTANT OF THE PLATFORM. ALTHOUGH BLUME CALCULATED AND DETERMINED A SPRING CONSTANT OF 441 KIPS PER FOOT FOR THIS PLATFORM, THE EFFECTIVE VALUE IS NEGLIGIBLE WHEN THE ABOVE FACTS ARE CONSIDERED IN THE ANALYSIS.

<u>THEREFORE, GH'S DETERMINATION OF NO RIGIDITY PROVIDED BY THE UPPER TIE PLATFORM IS A REASONABLE ASSUMPTION.</u>

2) THE LOWER TIER PLATFORM @ EL. 23'

THE LOWER TIER IS SUPPORTED ON THE DRYWELL SHELL BY BRACKET. THE CONNECTIONS ARE NOT ONLY SLOTTED BUT ALSO INSTALLED WITH LUBRITE BEARING PADS TO ALLOW RADIAL MOVEMENT. WITH REGARD TO TANGENTIAL RESTRAINT, THIS PLATFORM IS STRENGENED BY MEANS OF CROSS BRACINGS. THIS PLATFORM UNLIKE THE UPPER TIER SHOULD PROVIDE SOME DEGREE OF RIGIDITY IN TERMS OF SPRING CONSTANT. HOWEVER THE LOWER TIER IS ONLY 13 FEET ABOVE THE COMMON FOUNDATION OF THE DRYWELL AND RX VESSEL PEDESTAL (EL 10'-3"). INCLUSION OF TANGENTIAL STIFFNESS WILL HAVE A NEGLIGIBLE EFFECT UPON SEISMIC RESPONSE IN ANY EVENT.

THEREFORE, GH'S DECISION TO IGNORE THE RIGIDITY OF THE LOWER TIER PLATFORM IS JUSTIFIABLE.

3) STAR TRUSS @ EL. 82'-9"

URS/BLUME CALCULATED THE SPRING CONSTANT FOR THE STAR TRUSS BETWEEN DRYWELL AND BIO-SHIELD WALL BASED ON THE RIGID PLANE CONFIGURATION OF THE STRUCTURES. (i.e THE BIO-SHIELD WALL & DRYWELL REMAIN CIRCLE AT ALL TIME DURING SEISMIC EVENT) THIS ASSUMPTION MAY BE TRUE FOR THE BIO-SHIELD WALL BUT NOT FOR THE DRYWELL BECAUSE THE BIO-SHIELD WALL IS MORE RIGID IN THE X-Z PLANE THAN THE DRYWELL. GH DETERMINED THAT THE LOCAL RADIAL DISPLACEMENTS OF THE DRYWELL AT EL. 82'-9" WOULD GREATLY REDUCE THE RADIAL STIFFNESS OF THE STAR TRUSS. SINCE COMPUTATION OF THIS AFFECT WOULD REQUIRE AN EXTREMELY SOPHISTICATED ANALYSIS, TO CONSERVATIVELY DETERMINE THE SPRING CONSTANT OF THE STAR TRUSS GH. ONLY CONSIDERED THE TANGENTIAL RIGIDITY OF THE STAR TRUSS. THIS IS APPROPRIATE BECAUSE THE TANGENTIAL RIGIDITY OF THE DRYWELL IS SIGNIFICANTLY GREATER THAN THE RADIAL RIGIDITY.

IN REALITY, THE SPRING CONSTANT OF THE STAR TRUSS IS IN BETWEEN BLUME'S VALUE (690,081 KIPS/FT) AND GH'S VALUE (222,360 KIPS/FT). CONSIDERING THAT THE USE OF A LOWER SPRING CONSTANT WILL TEND TO LOWER THE CALCULATED NATURAL FREQUENCY OF

DRYWELL, GH's APPROACH IS CONSERVATIVE.

THEREFORE, GH's APPROACH TO EVALUATE THE RIGIDITY OF THE STAR TRUSS IS CONSERVATIVE.

4) THE LUGS CONNECTING THE DRYWELL & CONCRETE STRUCTURE @ EL 82'-9"

THE 8 LUGS STICKING INTO THE CONCRETE POCKET HAVE A 0.01 INCH GAP TO THE RX BLDG CONCRETE. BLUME USED A BI-LINEAR APPROACH TO EVALUATE THE CANTILEVER RIGIDITY OF THE LUGS. GH. ADOPTED BLUME'S APPROACH IN ADDITION TO CONSIDERING THE BENDING EFFECT OF THE STAR TRUSS MEMBERS DUE TO BENDING MOMENT FROM THE LUGS. IN REALITY, BOTH THE BLUME & GH VALUES ARE CONSERVATIVE IN THIS CASE. THE 0.01 INCH GAP BY NOW MUST BE CLOSED UP DUE TO THE INTRUSION OF WATER AND FOREIGN PARTICLES AND THE BUILD-UP OF RUST. ONCE AGAIN, UNDER-ESTIMATING THE SPRING CONSTANT IS CONSERVATIVE FOR CALCULATING THE DRYWELL RESPONSE. THEREFORE, THE USE OF GH's VALUE (626,000 KIP/FT) FOR LUG SPRING IS CONSERVATIVE AND ACCEPTABLE.

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5) Rx VESSEL STABILIZERS @ EL. 82'-9"

URS/BLUME PROVIDE NO SUPPORT FOR USING THE 48,000 KIPS/FT SPRING VALUE IN THE CALCULATION.
GH. ASSUMED THE STABILIZER AS A SIMPLE ROD AND CALCULATED 33.678 KIPS/FT OF SPRING CONSTANT FOR 2 STABILIZERS. GH DETERMINED THAT THIS RESULT CONFIRMED BLUME'S VALUE OF 48,000 KIPS/FT.
THE FOLLOWING CALCULATION IS TO VERIFY THE ADEQUACY OF THE SPRING CONSTANT BY COMPUTING THE COMBINED EFFECT OF STABILIZER FROM THE RODS & DISC SPRINGS.

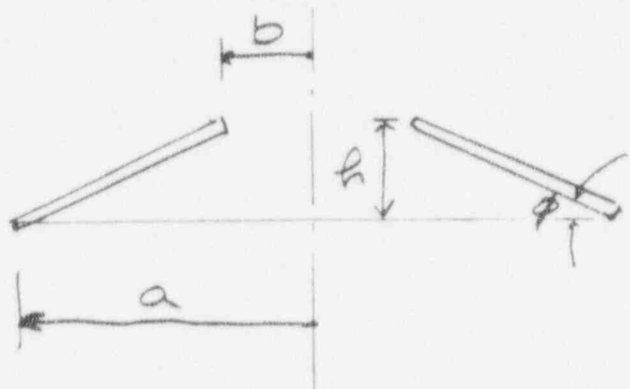
5-1) DISCRIPTIONS

REF. DRAWINGS: 1) GE. 112C-2523
2) GE. 153F-765
3) GE. 129B-2146

THE REACTOR STABILIZER CONSISTS OF 8 ROD & DISC. SPRING ASSEMBLIES. EACH ASSEMBLY WAS PRE-TENSIONED TO 106 KIPS. DURING THE SEISMIC EVENT, AT LEAST 4 OUT OF 8 ASSEMBLIES ARE WORKING TO SUPPORT THE REACTOR VESSEL.

THIS SECTION OF THIS VERIFICATION IS TO DETERMINE IF THE USE OF 48,000 KIPS/FT BY BLUME AND ACCEPTED BY GH. IS REASONABLE.

5-2) SPRING CONSTANT FOR DISC. SPRINGS



8 DISC. SPRINGS PER SET OF STABILIZER ASSEMBLY
(REF. DWG. GE 112C-2523)

SINCE THERE IS NO INFORMATION AVAILABLE FOR 'h', WE ASSUME THE ϕ ANGLE IS 20° BY MEASURING A SMALL SAMPLE DISC SPRING.

$h = 1.937 \tan 20° = 0.705''$

$t = 0.551''$ $a = 3.937$ IN, $b = 2$ IN, $a-b = 1.937$

REF = 'FORMULAS FOR STRESS AND STRAIN' by ROARK

$\frac{a}{b} = 1.969 \sim 2$, $M = 0.7$

$$P = \frac{E\delta}{(1-\nu^2) M a^2}\left[(h-\delta)\left(h-\frac{\delta}{2}\right)t + t^3\right]$$

$E = 29 \times 10^6$ PSI $\nu = 0.3$

5-3) SPRING CONSTANT FOR RODS & OTHER ELEMENTS

Page 126 of V 1302-153-081

CONSIDERS THE OTHER ELEMENTS OF THE STABILIZER

AS A UNIFORM 3½" ⌀ ROD. THIS IS CONSIDERED APPROPRIATE.

$$K_{2\ RODS} = 33674 \ ^{KIPS}/_{FT}$$

5-4) TOTAL SPRING CONSTANT OF STABILIZER

4 RODS & 4 DISC. SPRINGS

$$\frac{1}{K} = \frac{1}{2 \times 33,674} + \frac{1}{4 \times 61632}$$

$$= .0000148 + .0000041$$

$$= .0000189$$

$$\therefore K = 53,000 \ ^{KIPS}/_{FT} \sim 48,000 \ ^{KIPS}/_{FT}$$

5-5) CONCLUSION

53,000 KIPS/FT IS VERY CLOSE TO 48,000 KIPS/FT THAT URS/BLUME USED.

THEREFORE, USE OF 48,000 KIPS/FT FOR Rx STABILIZER SPRING CONSTANT IS REASONABLE.

GPU Nuclear — **Calculation Sheet** — V-1302-153-082

Subject	Calc No.	Rev. No.	Sheet No.
VERIFICATION OF REVIEW OF 3D SEISMIC MODEL		0	13 of 17
Originator / **Date**	**Reviewed by**		**Date**

$\delta = 0.1''$ $\quad P = \frac{29 \times 10^6}{.91 \times 0.7 \times (3.937)^2} \times 0.1 \left[0.605 \times 0.655 \times 0.551 + 0.1673 \right]$

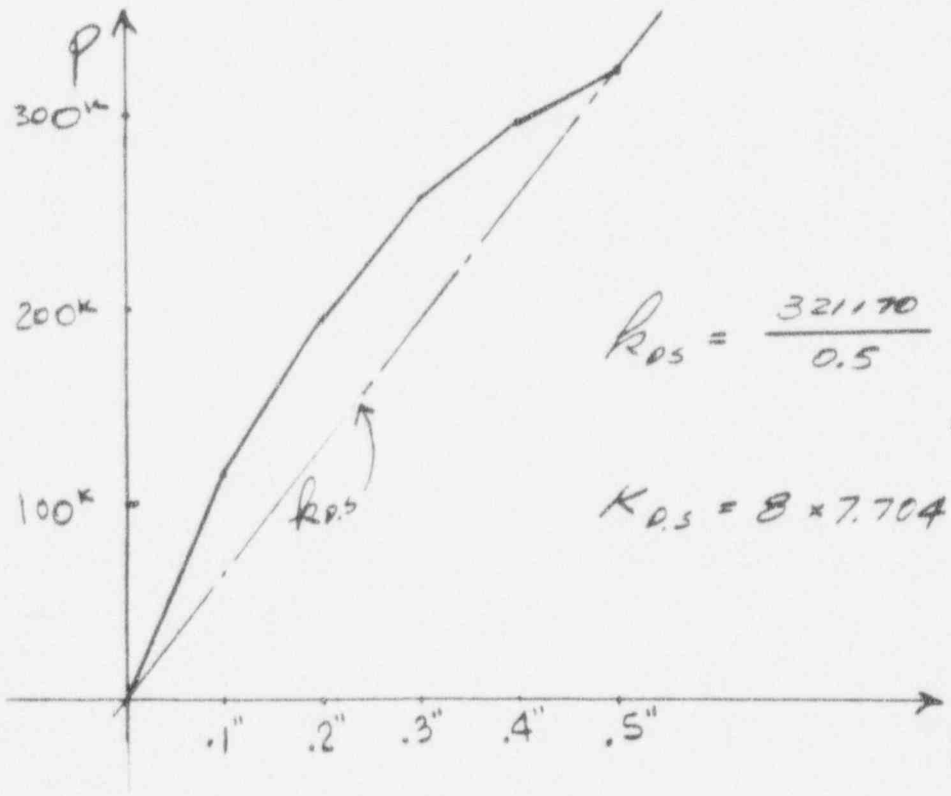
$= 2{,}937{,}161 \times .0386 = 113{,}371^{\#}$

$\delta = 0.2''$ $\quad P = 2937{,}161 \times .06713 = 197{,}168^{\#}$

$\delta = 0.3''$ $\quad P = 2{,}937{,}161 \times .08735 = 256{,}547^{\#}$

$\delta = 0.4''$ $\quad P = 2{,}937{,}161 \times .1009 = 296{,}263^{\#}$

$\delta = 0.5''$ $\quad P = 293716 \times .1093 = 321{,}170^{\#}$

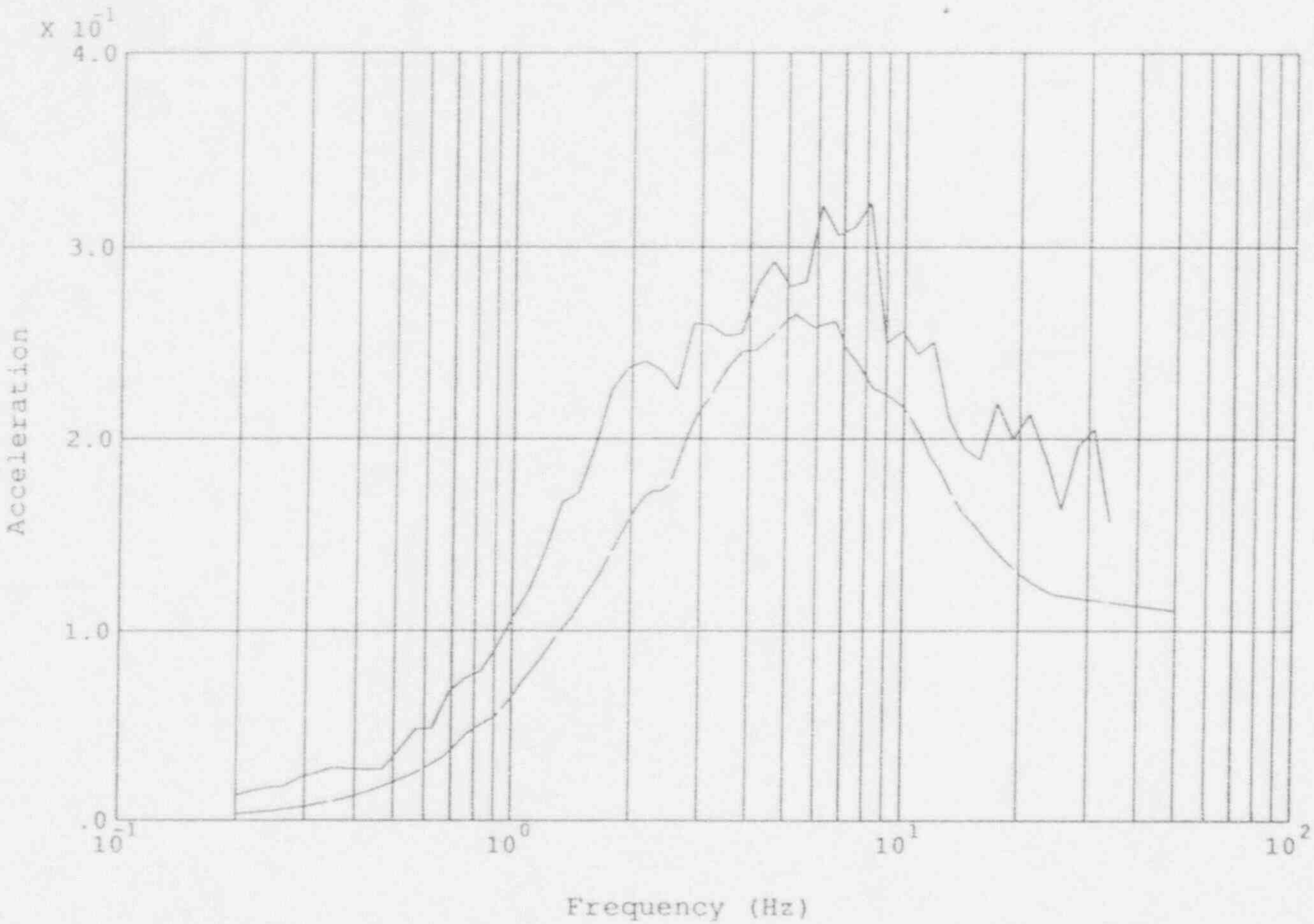


$k_{0.5} = \frac{321170}{0.5} = 642^{K/IN}$

$= 7.704^{K/FT}$

$K_{0.5} = 8 \times 7.704 = 61{,}632^{K/FT}$

RSPLT INTEL386 VERS 1.2P COMPILED 08/04/93 09:30:31 EXECUTED 04/19/94 16:08:26 comp2.plt



Legend:

Horiz. Component 2 ————————

60% of Freefield — — — — —

Notes:

Accelerations in g's

5% Spectral Damping

Figure 1-2: Envelope of Deconvolved Motions, OCNGS Reactor Building

NRC QUESTION #2.c

2.c A number of floor slabs and walls at OCNGS have been identified as vertically flexible. Provide information related to the plans for developing vertical floor response spectra for these floors.

GPU NUCLEAR RESPONSE

2.c The Oyster Creek Reactor Building is a rectangular structure with relatively uniformly spaced column lines in each direction. The column lines divide each floor into floor slabs which are nearly square. All floor slabs are supported by beams or walls on all four sides and there is a column or a wall at every corner. The smallest slab is 20.75' x 22.0' and the largest is 21.5' x 23.25'. All slabs are at least 12 inches thick. Analyses of the floor slabs of the OCNGS Reactor Building were performed in order to determine the potential for amplification of the vertical in-structure spectra due to vertical vibrations of the slabs. All the floor slabs were reviewed, and four were selected for analysis. The first three are considered typical and the fourth is bounding, that is, it has the lowest frequency of any slab in the reactor building.

Finite element models of these four slabs were generated. Boundary beams were explicitly modeled. Columns were modeled as fixed vertical supports and external walls as fixed boundaries. The surrounding slabs were not modeled since they do not significantly affect the fundamental frequency of the slab. Also, the actual width of the floor beams was conservatively neglected. The beam widths effectively reduce slab lengths by approximately 20%, therefore neglecting these widths results in an underestimation of actual frequency. Modal analyses were performed to determine the fundamental frequencies of the slabs. Figures 2s1-1 through 2s1-4 show finite element models of the selected slabs. The slabs and the results of the analyses are described below.

The first slab selected is at elevation 95'-3" between column lines RA, RB, R4, and R5. Its plan dimensions are 23.25' by 20.75' and its thickness is 26". At line RA, the slab is connected to a wall and is supported by beams at the other lines and by columns at the corners. The modal analysis of this slab predicts a fundamental vertical frequency of 43.5 Hz.

The second slab selected is at elevation 51'-3" between column lines RD, RE, R6, and R7. Its plan dimensions are 22.0' by 21.5' and its thickness is 12". At line R7, the slab is connected to a wall and is supported by beams at the other lines and by columns at the corners. The modal analysis of this slab predicts a fundamental vertical frequency of 25.5 Hz.

GPUN RESPONSE #2.c (CONT'D)

The third slab selected is at elevation 95'-3" between column lines RB, RC, R2, and R3. Its plan dimensions are 23.25' by 21.5' and it thickness is 16". This slab is supported by beams at all boundary lines and by columns at the corners. The modal analysis of this slab predicts a fundamental vertical frequency of 24.4 Hz.

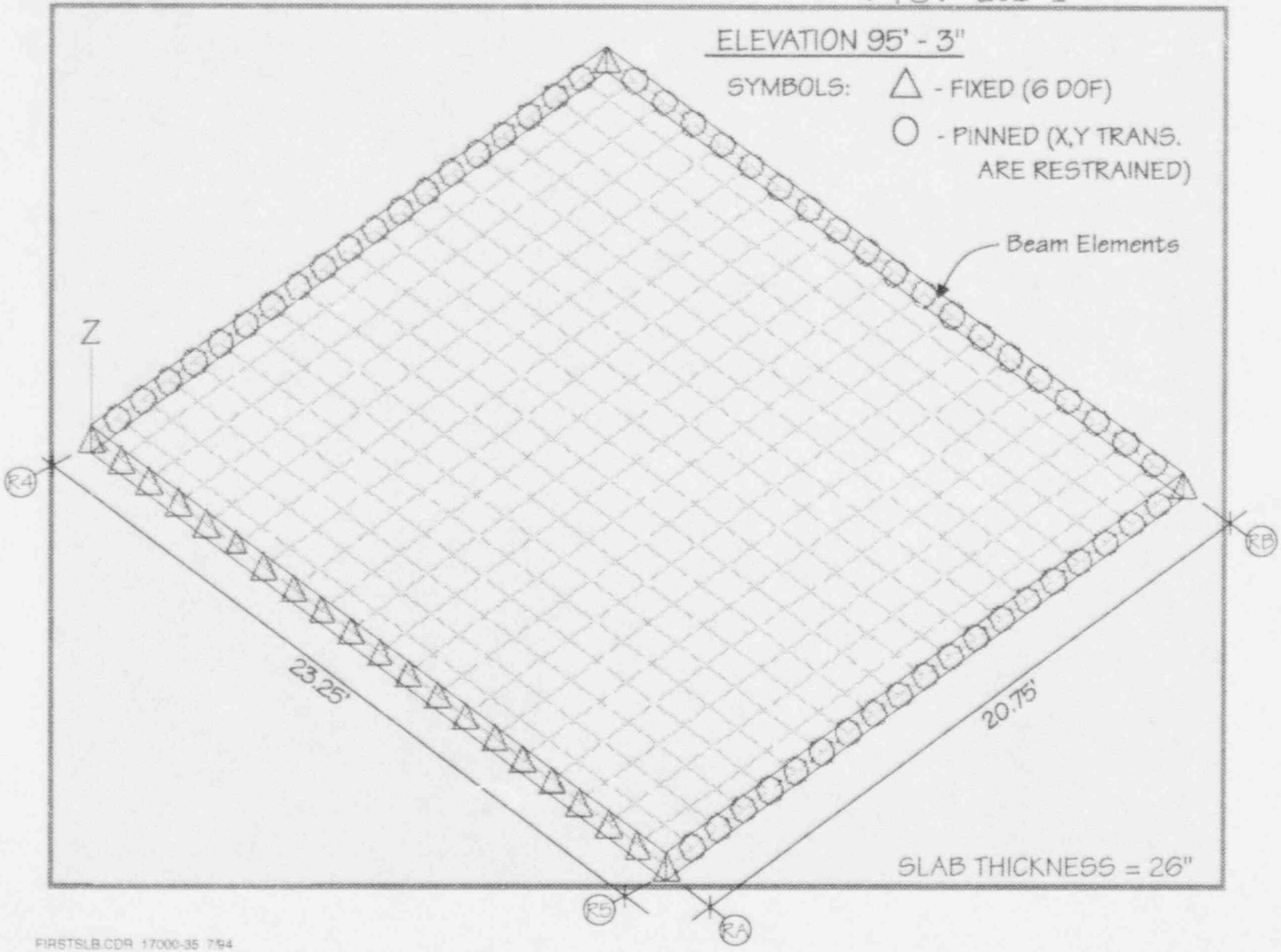
The fourth slab selected is at elevation 75'-3" between column lines RB, RC, R3 and R4. Its plan dimensions are 23.25' by 21.5' and its thickness is 12". This slab is supported by beams at all boundary lines and by columns at the corners. The modal analysis of this slab predicts a fundamental frequency of 22.4 Hz.

The lowest fundamental vertical frequency of any slab in the reactor building is 22.4 Hz. The dominant vertical frequencies of the soil-structure system range from 5 Hz to 10 Hz depending on the floor elevation. The lower frequency (5 Hz) is more dominant in the lower elevations and the higher frequency (10 Hz) is more dominant in the upper elevations. The ratios of slab fundamental frequency to structure vertical frequency range from 2.2 to more than four, thus no vertical floor amplification will occur.

Also, the mode shapes for the fundamental modes of the floors are in a "Checkerboard" pattern, ie, adjacent slab modal displacements have opposing signs. Therefore, given the relatively uniform mass distribution of the floor, the mass participation factors for these modes are low. Thus, the in-structure response spectra will be generated without including this effect.

"FIRST" SLAB

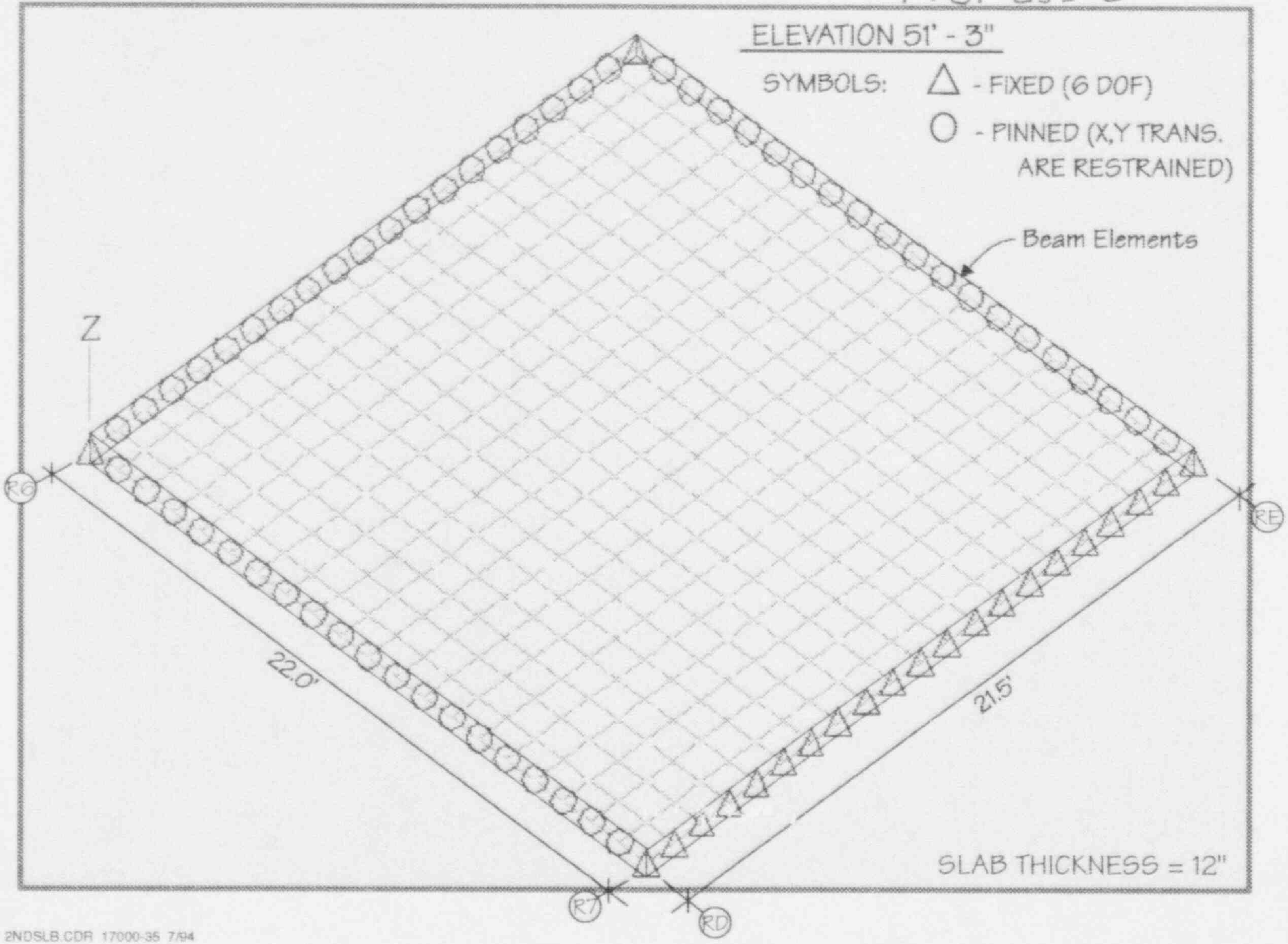
FIG. 2s1-1



FIRSTSLB.CDR 17000-35 7/94

"SECOND" SLAB

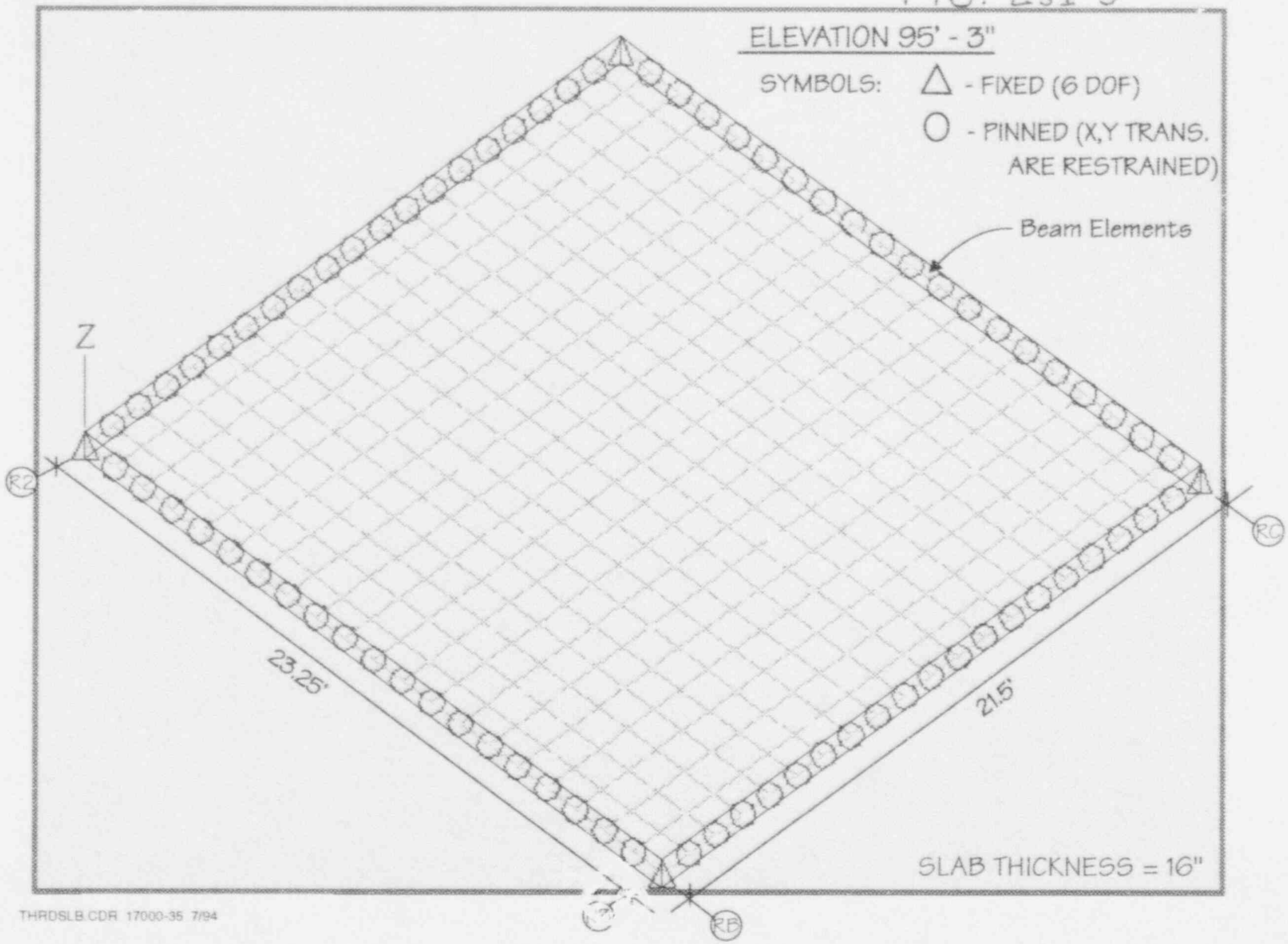
FIG. 2s1-2



2NDSLB.CDR 17000-35 7/94

"THIRD" SLAB

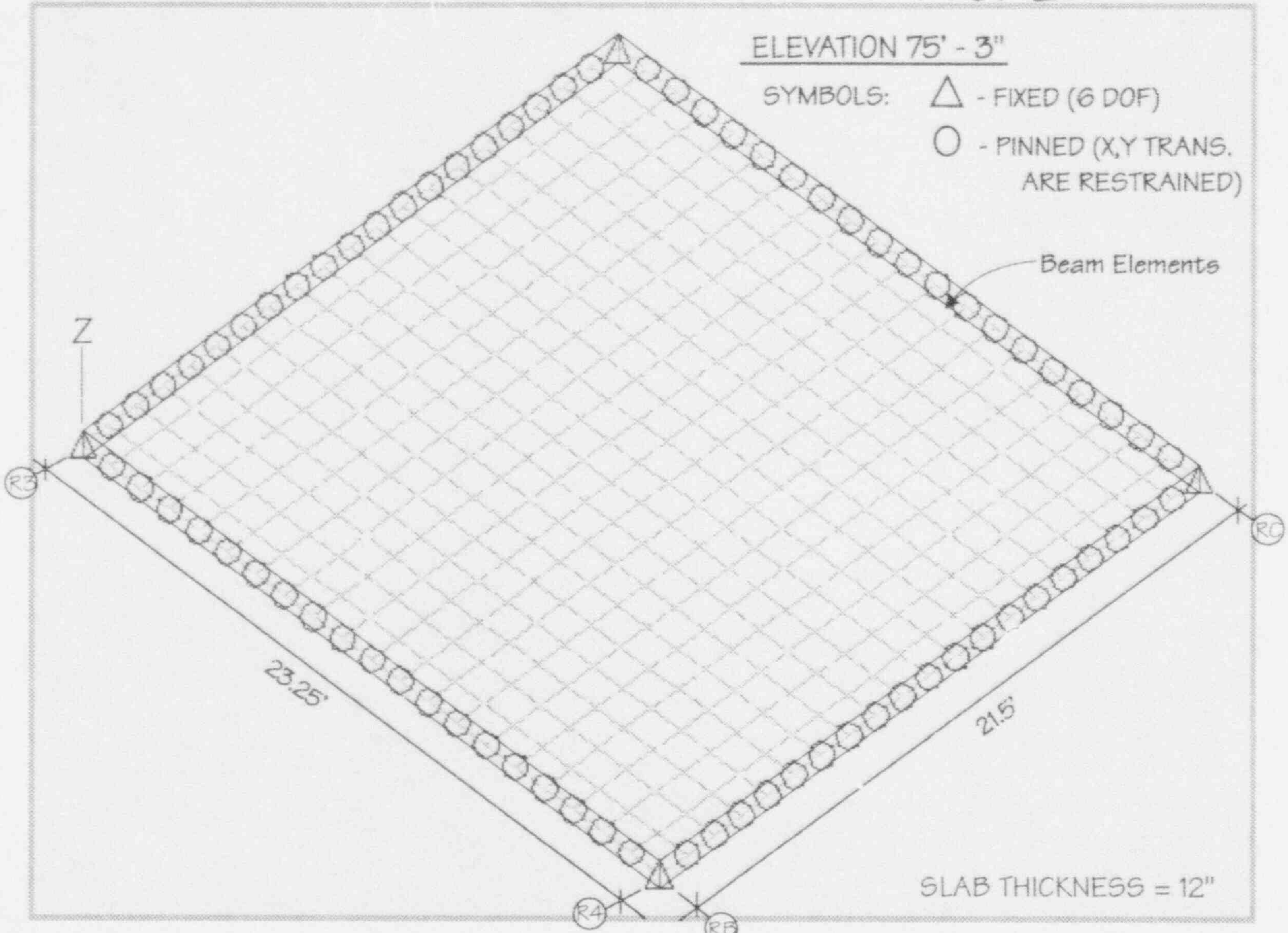
FIG. 2s1-3



THRDSLB.CDR 17000-35 7/94

"FOURTH" SLAB

FIG. 2s1-4



FTHSLB.CDR 17000-35 7/94

NRC QUESTION #3

3. The staff recognizes the timing when the soil structure interation (SSI)-sensitivity studies where performed (section 5) and the final SSRS were approved and agrees with the licensee (and its consultant) that the use of the earlier SSRS will not significantly affect the results of the sensitivity studies. However, the staff believes that the 2-D model utilized for the sensitivity studies should have been modified to get better correspondence in the results of 2-D and 3-D (figures 5-2, 5-3, 5-4). Provide justification for not modifying the 2-D model, particularly, when comparing rigid vs. flexible foundation responses.

GPU NUCLEAR RESPONSE

3. Sensitivity studies were conducted using the 2-D soil structure model to reduce the amount of effort. Specifically, studies for soil layer discretization, foundation rigidity and soil structure bonding were performed using the 2-D model (Ref. the EQE Report, June 1993, sections 5.1.1, 5.1.2 and 5.1.3). These studies were executed by determining the change in response due to a change in the parameters being investigated. This information was then used in the development of the 3-D soil structure model. Hence, the 2-D model needs to replicate the 3-D model only to the extent that change in response to change in input of the 2-D model would also occur in the 3-D model.

   Figure 5-2 of the EQE Report shows the benchmark comparison of response spectra between the 2-D and 3-D models at three locations; elevation 51'-3" and 119'-3" in the Reactor Building and elevation 87'-5" in the Drywell. There are three elements that determine the quality of the ability of the 2-D model to replicate the 3-D model; spectral shape, spectral amplitude and the zero period acceleration (ZPA). The spectral shapes between the 2-D and 3-D models are the same, i.e., they exhibit the same slopes of spectral amplitudes as a function of frequency for all frequencies. Spectral amplitudes are nearly coincident except at the spectral peaks. The largest deviation predicted by the 2-D model is 15%, at Node 7 as shown in Table 3s-1. The ZPAs for the two models coincide. These correlations between the 2-D and 3-D models are very good and more than sufficient to assure that the 2-D model provides correct information about the 3-D model behavior.

   Further, the results from the 2-D studies were used conservatively when applying them to the 3-D model. The analyses presented in Figure 5-3 of the EQE Report indicates that soil discretization at 7.0 Hz is sufficient. The 3-D soil discretization is at 12.5 Hz. Figure 5-5 in the EQE Report indicates that there is <u>no</u> change in response between the rigid and flexible foundation models. In the soil bonding study, Figure 5-7, only the extreme fully unbonded case shows any deviation from the other cases, and it is bounded by other considerations given in section 5.1.3.

GPUN RESPONSE #3 (CONT'D)

Therefore, the correlation between the 2-D and 3-D models taken together with the results of the 2-D studies and their application to the 3-D model leads to the conclusion that a better correlation in spectral peaks between the 2-D and 3-D models is not necessary.

Table 3s-1: Peak Spectral Values

Node	2-D Model	3-D Model	Ratio, 2D/3D
4	0.32	0.36	0.89
7	0.50	0.59	0.85
58	0.42	0.47	0.90

NRC QUESTION #4

4. Provide diskettes containing the following input-output information:
   a. A set of final (modified) synthetic time-histories utilized in the development of in-structure response spectra (IRS), together with their response spectra and power spectral densities (PSDs) at the ground surface.

   b. Soil and Structural model of the Reactor Building (RB) together with their parameters utilized in developing the IRS.

   c. Horizontal and vertical spectra at El. 95 ft (±) in the RB and at 50 ft (±) in the Drywell (when available).

GPU NUCLEAR REPONSE

4. The information included in the diskette enclosed with this letter is described below:

   a. The time histories to be used in the final analyses. Their response spectra at 5% damping and their PSD functions at the ground surface. Figures 4-1 and 4-2 show the spectra and Figures 4-3 to 4-5 show the PSD functions.

   b. Reactor Building model in EQE computer code MODSAP format. Table of high strain soil properties (best estimate) used in the development of impedance and scattering functions.

   c. Spectra at elevations 95 ft. in the RB and 50 ft. in the Drywell were not generated for the study, and thus, are not available. They will be transmitted to the NRC after the final in-structure spectra are generated.

   Hard copies of all files on the diskette are also enclosed.

RSPLT INTEL386 VERS 1.2P COMPILED 08/04/93 09:30:31 EXECUTED 04/19/94 16:06:45 fig4-5.plt

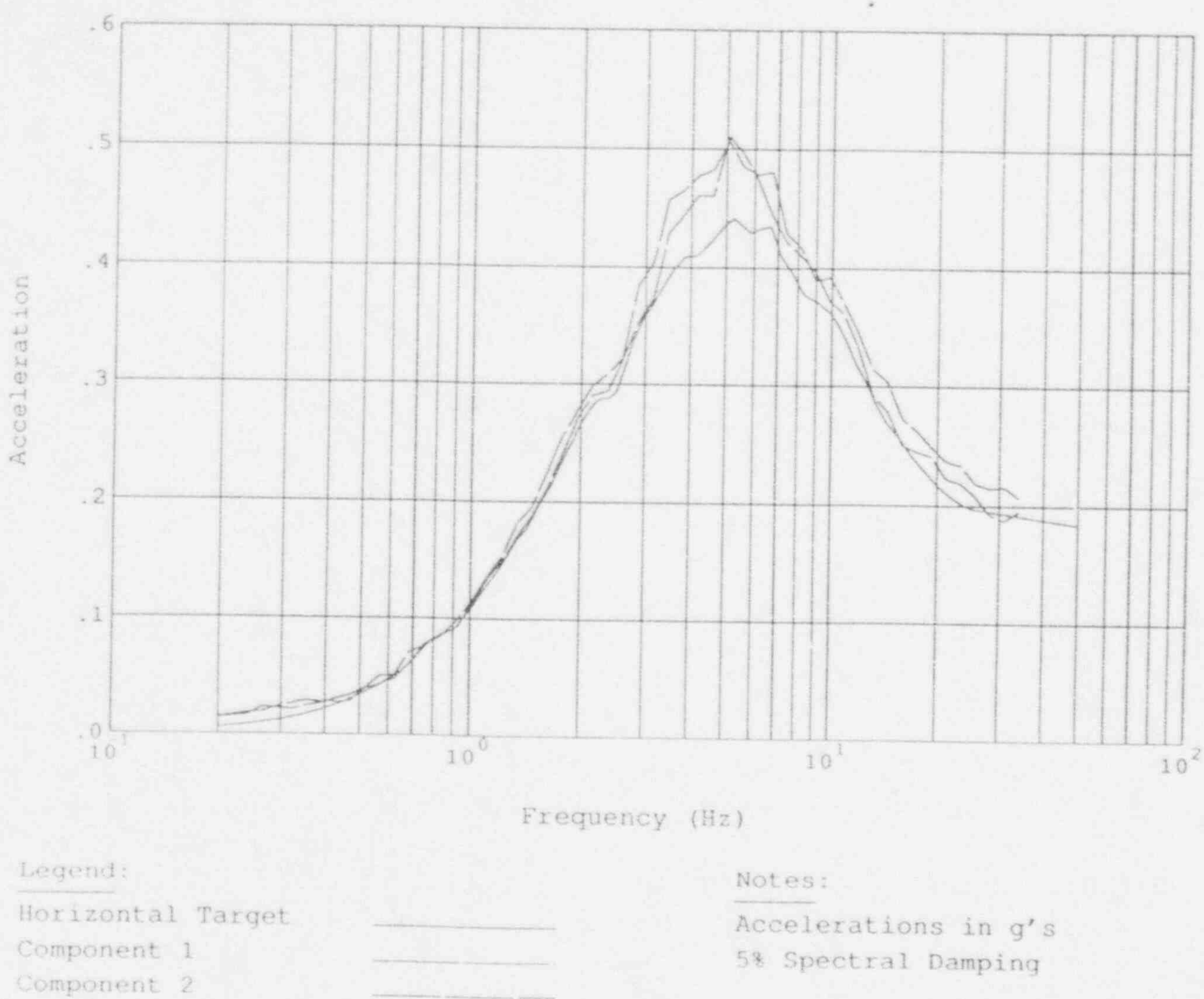
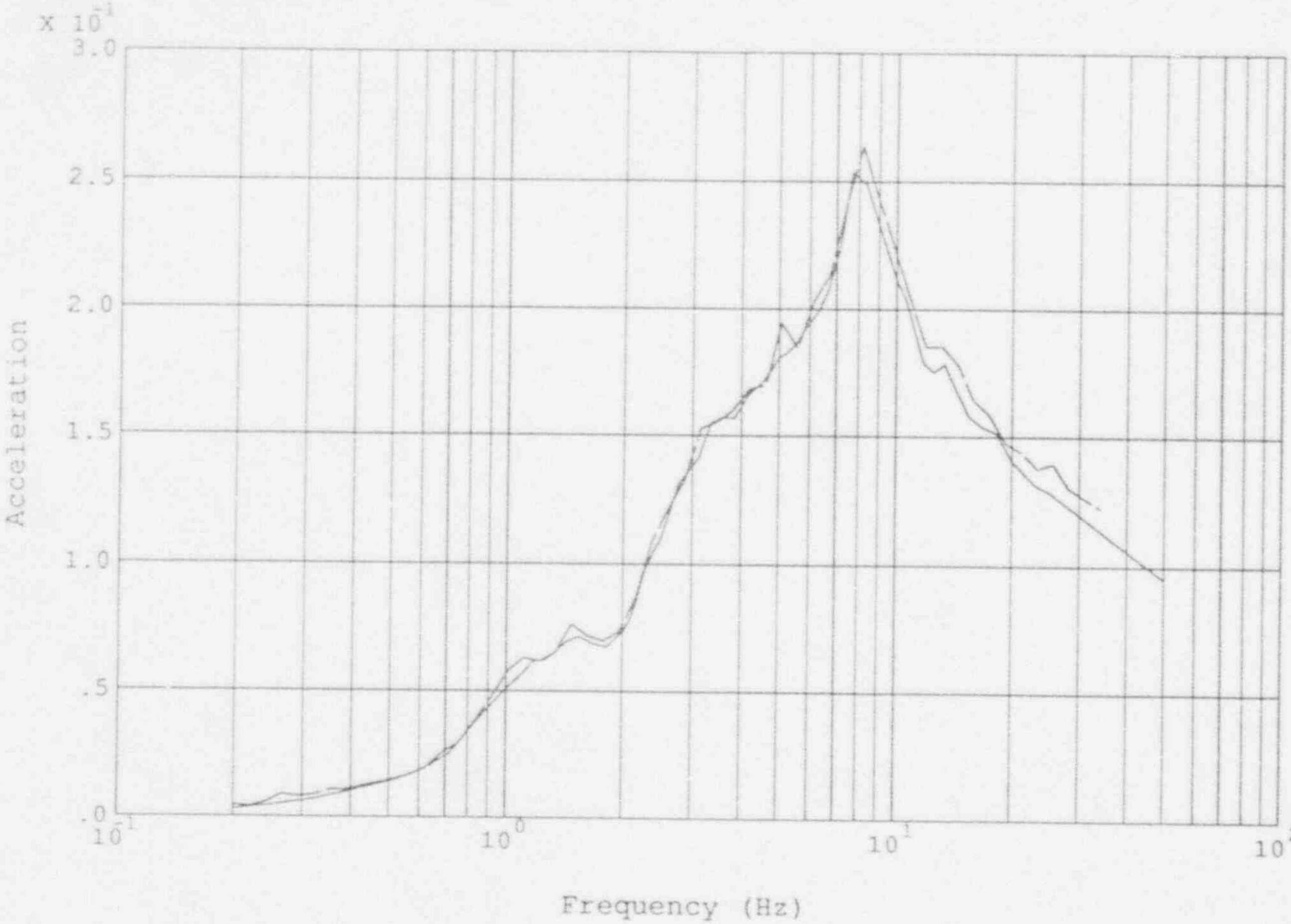


Figure 4-1: OCNGS Final Freefield Ground Surface Time Histories Reactor Building, Horizontal Components



Legend:

Vertical Target ____________

Component 3 ____________

Notes:

Accelerations in g's

5% Spectral Damping

Figure 4-2: OCNGS Final Freefield Ground Surface Time Histories Reactor Building, Vertical Component

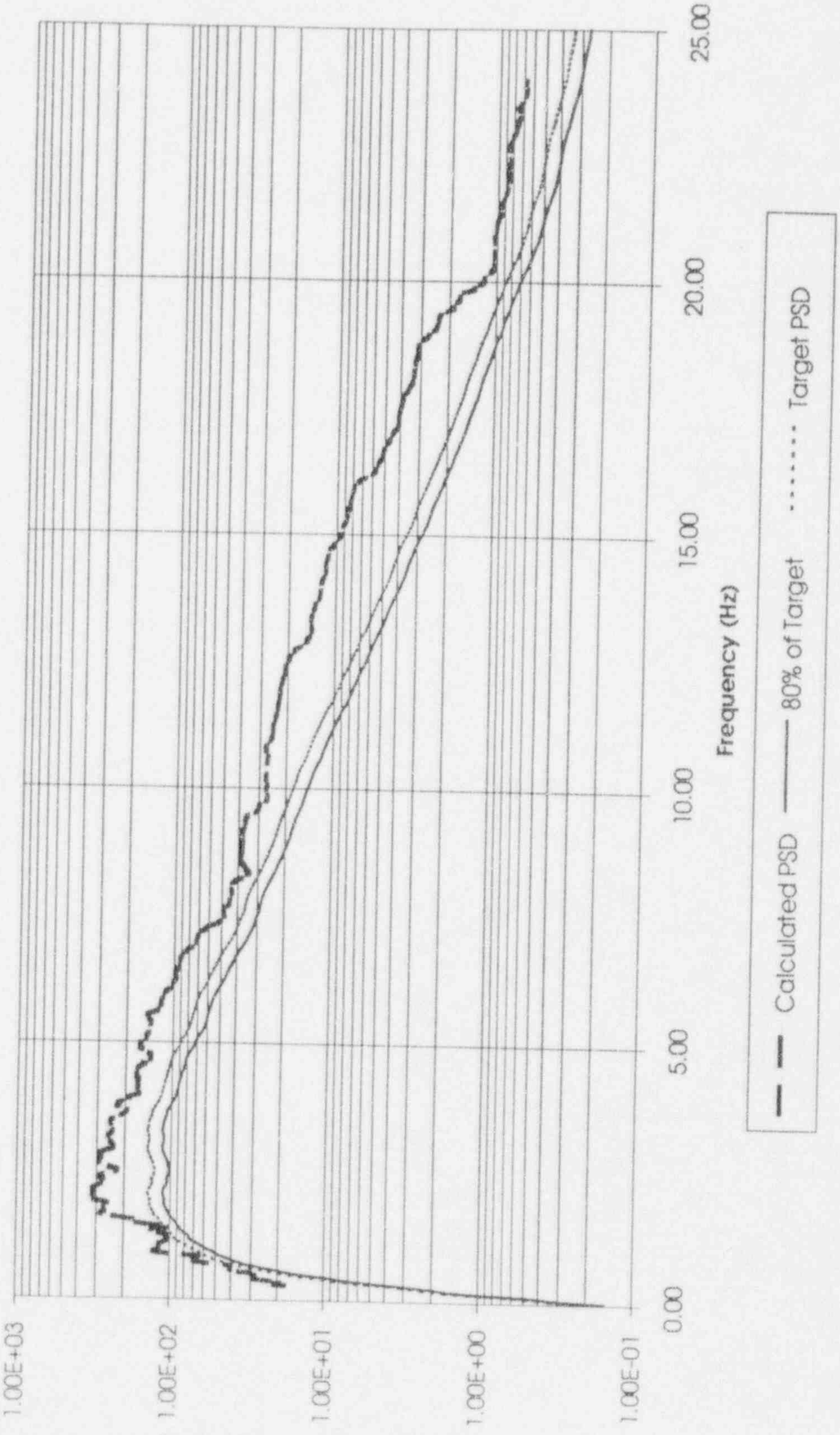


Figure 4-3: PSD Function of Final Horizontal Freefield Ground Surface Component 1, OCNGS Reactor Building

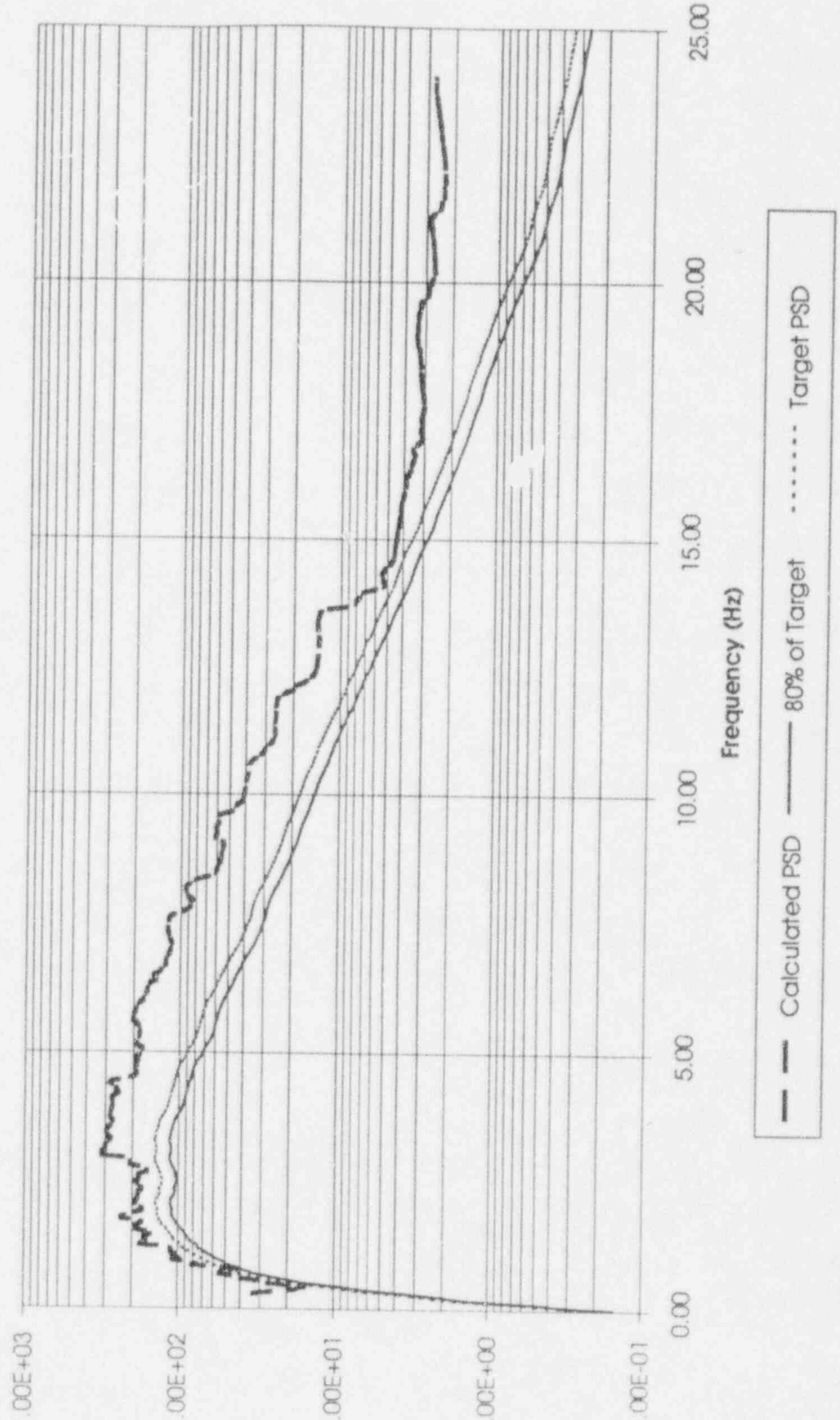


Figure 4-4: PSD Function of Final Horizontal Freefield Ground Surface Component 2, OCNGS Reactor Building

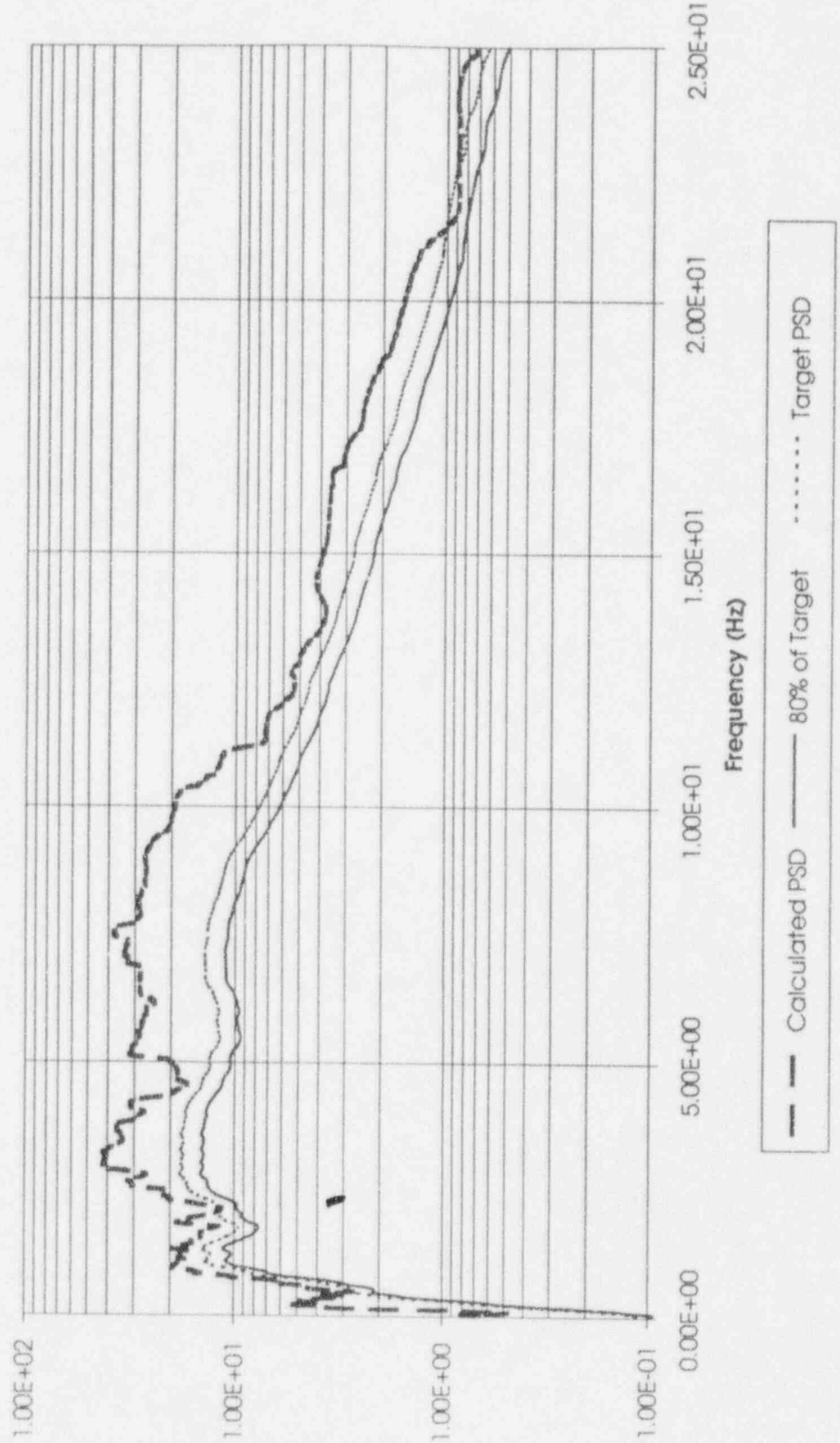


Figure 4-5: PSD Function of Final Vertical Freefield Ground Surface Component, OCNGS Reactor Building

MSAPI 1/5	MSAPI 2/5	MSAPI 3/5	MSAPI 4/5
MSAPI 5/5	MSAPI /	MSAPI /	MSAPI /
SOLIPFT 1/1			
FINALTH 1/9	FINALTH 2/9	FINALTH 3/9	FINALTH 4/9
FINALTH 5/9	FINALTH 6/9	FINALTH 7/9	FINALTH 8/9
FINALTH 9/9	FINALTH /	FINALTH /	FINALTH /
PSD.HOR 1/16	PSD.HOR 2/16	PSD.HOR 3/16	PSD.HOR 4/16
PSD.HOR 5/16	PSD.HOR 6/16	PSD.HOR 7/16	PSD.HOR 8/16
PSD.HOR 9/16	PSD.HOR 10/16	PSD.HOR 11/16	PSD.HOR 12/16
PSD.HOR 13/16	PSD.HOR 14/16	PSD.HOR 15/16	PSD.HOR 16/16
PSD.VER 1/16	PSD.VER 2/16	PSD.VER 3/16	PSD.VER 4/16
PSD.VER 5/16	PSD.VER 6/16	PSD.VER 7/16	PSD.VER 8/16
PSD.VER 9/16	PSD.VER 10/16	PSD.VER 11/16	PSD.VER 12/16
PSD.VER 13/16	PSD.VER 14/16	PSD.VER 15/16	PSD.VER 16/16
FINALTH.SPC 1/1			

\MSAPI	MODSAP Model of Reactor Building
\SOILPPT	High Strain Best estimate soil properties used in study
\FINALTH	Final Reactor Building Time Histories (3 components)
\PSD.HOR	Horizontal PSD functions, for final time histories
\PSD.VER	Vertical Smoothed PSD function for final time histories
\FINALTH.SPC	Response spectra of final time histories for reactor bldg

\MSAPI	MODSAP Model of Reactor Building
\SOILPPT	High Strain Best estimate soil properties used in study
\FINAL\FINALTH	Final Reactor Building Time Histories (3 components)
\FINAL\PSD.HOR	Horizontal PSD functions, for final time histories
\FINAL\PSD.VER	Vertical Smoothed PSD function for final time histories
\FINAL\FINALTH.SPC	Response spectra of final time histories for reactor bldg

```
3-D SSE Model (Vert=Z). OCNGS Reactor Building. Project 50069.01/03
   68    2    0   50    1    0    0  150    0      0    2
    1    1    1    1    1    1    1     0.000      0.000    -19.000
    2                                    0.000      0.000      0.000
    3                                   -1.170      2.950     23.500
    4                                   -4.470     -1.730     51.250
    5                                    3.560     -5.960     75.250
    6                                    7.140     -6.240     95.250
    7                                    7.950     -8.350    119.250
    8                                    0.000    -15.500    138.000
    9                                    0.000    -15.500    156.750
   10    1    1    1    1    1    1   -10.000      0.000    -19.000
   11                                    0.000      0.000     10.250
   12                                   -8.350     -3.600     82.750
   13    3    3    3    3    3    3     0.000      0.000     23.500
   14    4    4    4    4    4    4    -2.500     -3.400     51.250
   15    5    5    5    5    5    5    -7.500    -10.700     75.250
   16    6    6    6    6    6    6    -8.350     -3.600     95.250
   17    7    7    7    7    7    7     1.700     -7.700    119.250
   18    1    1    1    1    1    1    -1.000      0.000     21.583
   19    1    1    1    1    1    1     0.000      1.000     21.583
   20    1    1    1    1    1    1   -10.000      0.000     10.250
   21    1    1    1    1    1    1   -10.000      0.000     38.417
   22    1    1    1    1    1    1   -10.000      0.000     10.250
   23    3    3    3    3    3    3    -2.500     -3.400     23.500
   24    4    4    4    4    4    4    -7.500    -10.700     51.250
   25    5    5    5    5    5    5    -8.350     -3.600     75.250
   26    6    6    6    6    6    6     1.700     -7.700     95.250
   27    7    7    7    7    7    7     0.000    -15.500    119.250
   28                                    0.000      0.000     14.917
   29                                    0.000      0.000     21.583
   30                                    0.000      0.000     24.333
   31                                    0.000      0.000     29.417
   32                                    0.000      0.000     38.417
   33                                    0.000      0.000     49.417
   34                                    0.000      0.000     71.417
   35                                    0.000      0.000     82.750
   36    1    1    1    1    1    1    -1.000      0.000     82.750
   37    1    1    1    1    1    1     0.000      1.000     82.750
   38                                    0.000      0.000     93.417
   39                                    0.000      0.000     44.250
   40    1    1    1    1    1    1    -1.000      0.000     44.250
   41    1    1    1    1    1    1     0.000      1.000     44.250
   42                                    0.000      0.000     47.500
   43                                    0.000      0.000     56.000
   44                                    0.000      0.000     70.000
   45                                    0.000      0.000     76.000
   46                                    0.000      0.000     82.167
   47    1    1    1    1    1    1    -1.000      0.000     82.167
   48    1    1    1    1    1    1     0.000      1.000     82.167
   49                                    0.000      0.000     22.500
   50                                    0.000      0.000     37.250
   51                                    0.000      0.000     42.000
   52                                    0.000      0.000     47.833
   53                                    0.000      0.000     49.250
   54                                    0.000      0.000     58.250
   55                                    0.000      0.000     65.474
   56                                    0.000      0.000     71.523
   57                                    0.000      0.000     82.750
   58                                    0.000      0.000     87.417
   59                                    0.000      0.000     94.750
   60                                    0.000      0.000    107.750
   61    1    1    1    1    1    1    -1.000      0.000     82.750
   62    1    1    1    1    1    1     0.000      1.000     82.750
   63    1    1    1    1    1    1   -10.000     -3.400     23.500
   64    1    1    1    1    1    1   -10.000    -10.700     51.250
```

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66	1	1	1	1	1	1	-10.000	-15.500	119.250
67	1	1	1	1	1	1	-10.000	-3.600	75.250
68	1	1	1	1	1	1	-10.000	-3.600	75.250

2	37	24	0	7

1	.5521e+06	.166	0.0	0.0	0.07
2	.4782e+06	.166	0.0	0.0	0.07
3	.4176e+07	.250	0.0	0.0	0.04
4	.3740e+07	.265	0.0	0.0	0.04
5	.4060e+07	.265	0.0	0.0	0.04
6	.4320e+06	.166	0.0	0.0	0.07
7	.4176e+07	.250	0.0	0.0	0.07

1	5364.00	3440.67	3440.67	12.4e+06	9.17e+06	9.17e+06
2	5447.00	3809.09	3809.09	10.2e+06	7.48e+06	7.48e+06
3	2124.00	1011.91	1011.91	4.88e+06	2.58e+06	3.50e+06
4	2368.00	1133.01	1133.01	4.54e+06	2.46e+06	3.72e+06
5	2597.00	1329.07	1329.07	4.30e+06	2.31e+06	4.51e+06
6	2060.00	1114.12	1114.12	3.49e+06	2.04e+06	3.12e+06
7	10.58	1.30	1.30	1.011e+04	.783e+04	.110e+04
8	6.06	1.40	1.40	1.011e+04	.413e+04	.090e+04
9	4245.00	1669.94	1669.94	10.8e+06	8.02e+06	8.02e+06
10	37.90	18.95	18.95	.3212e+04	.1606e+04	.1606e+04
11	6.66	3.33	3.33	.4780e+03	.2390e+03	.2390e+03
12	276.00	138.00	138.00	.3456e+05	.1728e+05	.1728e+05
13	29.90	14.95	14.95	.4006e+04	.2003e+04	.2003e+04
14	21.90	10.95	10.95	.2932e+04	.1466e+04	.1466e+04
15	21.00	10.50	10.50	.2814e+04	.1407e+04	.1407e+04
16	22.50	11.25	11.25	.3018e+04	.1509e+04	.1509e+04
17	9.34	4.67	4.67	.2220e+04	.1110e+04	.1110e+04
18	5.52	2.76	2.76	.1500e+04	.7500e+03	.7500e+03
19	5.52	2.76	2.76	.1500e+04	.7500e+03	.7500e+03
20	24.68	12.34	12.34	.8218e+04	.4109e+04	.4109e+04
21	10.64	5.32	5.32	.9342e+04	.4671e+04	.4671e+04
22	13.88	6.94	6.94	.1645e+05	.8224e+04	.8224e+04
23	13.68	6.84	6.84	.1578e+05	.7892e+04	.7892e+04
24	16.37	8.19	8.19	.1357e+05	.6787e+04	.6787e+04

0.0
0.0
0.0

1	1	2	10	1	1
2	2	11	10	1	2
3	23	14	63	2	3
4	24	15	64	2	4
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6	26	17	65	2	6
7	27	8	66	7	7
8	8	9	66	7	8
9	11	13	10	1	9
10	12	16	68	2	5
11	11	28	20	6	12
12	28	29	20	6	12
13	29	30	20	6	12
14	30	31	20	6	12
15	31	32	20	6	12
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17	33	34	20	4	10
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20	32	39	21	3	16
21	39	42	21	3	16
22	42	43	21	3	15
23	43	44	21	3	13
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25	45	46	21	3	13
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27	49	50	22	3	23

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   29   51   52   22    3   22
   30   52   53   22    3   21
   31   53   54   22    3   21
   32   54   55   22    3   21
   33   55   56   22    3   20
   34   56   57   22    3   18
   35   57   58   22    3   18
   36   58   59   22    3   18
   37   59   60   22    3   17
    9    5    3    1
    1   29   49      0.07
10.
0.0       10.0
0.0
0.0
0.0
0.0
-10.
0.0       -10.0
0.0
0.0
0.0
0.0
10.
0.0       10.0
0.0
0.0
0.0
0.0
    2   39   52      0.07
10.
0.0       10.0
0.0
0.0
0.0
0.0
-10.
0.0       -10.0
0.0
0.0
0.0
0.0
10.
0.0       10.0
0.0
0.0
0.0
0.0
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48000.
0.0       48000.
0.0
0.0
0.0
0.0
-48000.
0.0       -48000.
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0.0
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48000.
0.0       48000.
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0.0
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0.0
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1	1660.000	1660.000	1660.000	2640000.	2640000.	5220000.
2	607.000	607.000	607.000	800000.	800000.	1590000.
3	715.000	715.000	715.000	1020000.	990000.	1920000.
4	527.000	527.000	527.000	560000.	750000.	1480000.
5	543.000	543.000	543.000	490000.	750000.	1210000.
6	474.000	474.000	474.000	440000.	750000.	1114000.
7	270.000	270.000	270.000	280000.	380000.	670000.
8	25.850	25.850	25.850	10460.	17000.	27700.
9	16.340	16.340	16.340	17000.	28000.	45000.
30	43.760	43.760	43.760	2740.	2740.	5480.
33	38.390	38.390	38.390	1378.	1378.	2755.
34	36.490	36.490	36.490	1546.	1546.	3093.
38	21.340	21.340	21.340	904.	904.	1808.
42	13.350	13.350	13.350	895.	895.	1791.
43	11.490	11.490	11.490	770.	770.	1540.
44	9.940	9.940	9.940	665.	665.	1331.
45	8.110	8.110	8.110	543.	543.	1087.
49	11.985	11.985	11.985	3457.	3457.	6914.
50	5.716	5.716	5.716	1693.	1693.	3387.
52	5.047	5.047	5.047	1107.	1107.	2216.
55	4.182	4.182	4.182	696.	696.	1393.
56	1.840	1.840	1.840	306.	306.	613.
57	1.197	1.197	1.197	163.	163.	325.
59	2.451	2.451	2.451	333.	333.	666.
60	1.771	1.771	1.771	211.	211.	421.

0	0	0	0.0	0.0

Layer Number	Layer Thickness (ft)	Shear Modulus (ksf)	Damping Ratio (%)	Poissons Ratio	Unit Weight (kcf)	Soil Type
1	7.50	1085	0.038	0.39	0.120	Sand
2	7.50	1210	0.049	0.39	0.120	Sand
3	8.00	1717	0.045	0.49	0.115	Clay
4	8.00	2097	0.044	0.49	0.115	Clay
5	9.00	2662	0.041	0.49	0.125	Sand
6	9.00	2989	0.041	0.48	0.125	Sand
7	3.00	4386	0.035	0.48	0.125	Sand
8	6.50	5248	0.033	0.47	0.125	Sand
9	6.50	4122	0.038	0.48	0.125	Sand
10	10.00	3951	0.040	0.48	0.125	Sand
11	2.00	5007	0.037	0.47	0.125	Sand
12	5.00	6474	0.034	0.47	0.125	Sand
13	7.50	6847	0.034	0.46	0.125	Sand
14	7.50	6236	0.036	0.47	0.125	Sand
15	8.00	4931	0.043	0.48	0.125	Clay
Halfspace	-	9326	0.020	0.46	0.125	Sand

Freefield Time Histories, For OCNGS Reactor Building
50069-C-?0?Rev 0Time History 60% Rule, RB
OCNGS Reactor Building Final Freefield Ground Surface Time H
3 1504 0.010 1
Freefield Horizontal Component 1, OCNGS Reactor Building

.028378	.038864	.021756	.011985	.020124	.025903		
.021862	.021803	.030237	.031355	.024318	.016420		
.005729	.016942	.024461	.029454	.025065	.015246		
.046302	.067725	.071923	.050170	.030771	.032767		
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-.034406	-.032402	-.03[illegible]5	-.042606	-.056618	-.075412	-.079471	-.061178
-.040356	-.031438	-.[illegible]3	-.020560	-.011722	.000145	.013688	.025145
.027077	.012333	-.00[illegible]85	.001524	.018645	.021960	.011889	-.004408
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-.014785	-.007766	.000782	.003118	.010036	.021923	.028971	.026793
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.005294	.019073	.030015	.023731	.004251	-.016005	-.035215	-.051906
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-.004482	.012358	.030562	.036868	.044261	.058444	.068067	.065421
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.089587	.085913	.069753	.030528	-.011634	-.040360	-.056145	-.054742
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-.011192	-.019141	-.023414	-.021891	-.014183	-.003396	.008015	.018877
.027066	.032314	.035321	.034377	.029353	.022792	.015975	.010747
.009166	.010176	.013884	.021646	.030194	.036677	.042866	.048563
.051900	.052466	.047621	.036754	.026184	.019483	.013069	.004283
-.006206	-.016018	-.021757	-.023254	-.023478	-.023129	-.020303	-.013859
-.006331	-.002321	-.000946	.001829	.003266	.000412	-.001626	.000367
.004164	.008673	.010920	.008542	.007958	.013639	.019300	.019936
.016681	.010961	.005219	.001202	-.003123	-.008051	-.011367	-.013906
-.018125	-.024123	-.028747	-.027750	-.021859	-.016782	-.016244	-.020376
-.025638	-.025459	-.018496	-.009501	-.000873	.005690	.007446	.007053
.008708	.012013	.016078	.019001	.017483	.013268	.009674	.006892
.005919	.005587	.002923	.000969	.001528	.001654	.004527	.011967
.018407	.025394	.034383	.037084	.035228	.035583	.031776	.025079
.025207	.025192	.020904	.021472	.023958	.028706	.044706	.055494
.052969	.064511	.078076	.049668	.004830	-.004925	.002938	-.000238

Freefield Horizontal Component 2, OCNGS Reactor Building

.007271	.013184	.016134	.018477	.020822	.022771	.025069	.027402
.029326	.031053	.031545	.030425	.028661	.025238	.019178	.012578
.006733	.000804	-.004747	-.009007	-.012556	-.015953	-.019309	-.022565
-.025016	-.026353	-.026894	-.026424	-.024963	-.022981	-.019994	-.015684

-.011065	-.006791	-.002782	.000747	.003709	.006192	.007925	.008670
.008352	.007195	.006053	.005284	.004391	.003472	.002756	.001503
-.000612	-.002869	-.004814	-.006280	-.006921	-.006569	-.005199	-.002890
.000078	.003396	.006475	.008630	.010001	.010968	.011263	.010840
.009972	.008452	.006325	.004258	.002569	.001373	.001036	.001697
.003280	.005683	.008712	.012483	.017015	.021422	.024842	.027227
.028550	.028649	.027507	.024963	.021197	.017073	.013285	.010202
.008375	.008205	.009586	.011872	.014325	.017268	.021633	.026788
.030846	.032975	.033542	.032755	.030333	.026048	.020390	.014420
.008839	.004025	.000650	-.000397	.001611	.006517	.012886	.019541
.026521	.033128	.037127	.037138	.034065	.029636	.024641	.018957
.012865	.007044	.001315	-.004884	-.011356	-.017995	-.025265	-.033220
-.041572	-.049925	-.057062	-.061547	-.063056	-.061798	-.057615	-.050796
-.042768	-.034569	-.025127	-.013427	-.002063	.004867	.006831	.006107
.003756	.000002	-.003499	-.004465	-.001788	.004297	.012249	.019130
.022332	.022142	.020745	.018904	.016361	.013976	.012464	.011525
.011373	.011396	.008897	.003580	-.000801	-.003408	-.009202	-.020482
-.031243	-.035149	-.034586	-.035940	-.039304	-.038919	-.031866	-.021817
-.014519	-.010880	-.006152	.001855	.007209	.004100	-.002950	-.004344
.000852	.003948	.000322	-.004292	-.004962	-.005526	-.009593	-.012830
-.009699	-.000903	.008573	.015076	.020132	.028529	.040537	.050303
.055673	.062423	.072341	.075100	.061232	.036100	.011452	-.008544
-.023587	-.029893	-.025078	-.011983	.005222	.021703	.031769	.034219
.032102	.023963	.004944	-.019821	-.034995	-.034982	-.032022	-.035551
-.036226	-.021633	.003239	.022538	.029008	.028106	.026773	.024154
.013420	-.007799	-.028766	-.033534	-.022059	-.012147	-.012128	-.009562
.001229	.003993	-.011703	-.031236	-.039564	-.044205	-.057693	-.074722
-.083035	-.080779	-.068764	-.045604	-.020270	-.002263	.019283	.050627
.066424	.052283	.037546	.040810	.038321	.021727	.013991	.010956
-.008628	-.026785	-.026943	-.041850	-.081210	-.098350	-.087740	-.096431
-.113341	-.087693	-.044248	-.039271	-.052523	-.042838	-.029044	-.029922
-.021897	-.000630	.012913	.026976	.052328	.061592	.046731	.048661
.079844	.102872	.109394	.126265	.144059	.131439	.101359	.086111
.078803	.054358	.011541	-.035885	-.075822	-.099153	-.108744	-.113181
-.101663	-.059717	-.009692	.010208	-.001555	-.021266	-.041621	-.067116
-.095222	-.117504	-.117886	-.086257	-.046769	-.029272	-.015668	.025539
.073790	.089304	.075186	.055694	.038325	.027870	.028340	.023884
.004933	-.005882	.003005	.006076	-.005346	-.004207	.011511	.009611
-.014669	-.037481	-.057321	-.083173	-.096020	-.076516	-.041057	-.011218
.016459	.042733	.050741	.039772	.028512	.016275	-.008940	-.031124
-.028668	-.016552	-.019058	-.029514	-.032183	-.031405	-.035293	-.039157
-.039836	-.042677	-.043911	-.029226	.000928	.028603	.045210	.056749
.066576	.074205	.080948	.085299	.083754	.076936	.068155	.059654
.052277	.049065	.054752	.062503	.055297	.033568	.015884	.006365
-.005610	-.018175	-.018751	-.005402	.009488	.016877	.023576	.031982
.025210	-.000900	-.024258	-.030223	-.017934	.007496	.021484	.007634
-.019689	-.065711	-.139641	-.181257	-.139741	-.070556	-.030335	-.000246
.025557	.031350	.037292	.046848	.029986	-.003707	-.027010	-.044132
-.052052	-.051130	-.079664	-.136689	-.154274	-.108840	-.049880	-.011286
.012013	.030136	.052199	.077394	.088724	.080850	.069653	.064227
.060165	.062019	.083632	.120499	.144709	.136493	.100862	.051241
.001796	-.031340	-.047205	-.063652	-.087751	-.105076	-.105854	-.097997
-.090180	-.079387	-.059119	-.031412	-.006810	.006724	.013781	.025818
.042094	.047807	.040375	.038282	.048634	.048241	.014543	-.041913
-.087827	-.098383	-.072521	-.026545	.020003	.054688	.074280	.077885
.061629	.027198	-.010987	-.040227	-.063563	-.085581	-.095263	-.080418
-.051385	-.031710	-.028455	-.028291	-.018264	.005690	.041039	.074510
.090661	.092710	.094047	.090818	.070037	.038529	.017635	.017839
.036442	.065054	.086699	.085519	.066614	.043024	.008485	-.042036
-.079607	-.076345	-.055421	-.056462	-.072018	-.065138	-.030056	.002479
.006391	-.013368	-.026272	-.009051	.019677	.020530	-.005218	-.020922
-.025885	-.055129	-.103247	-.124713	-.110729	-.092324	-.078621	-.057978
-.038691	-.035149	-.038321	-.034153	-.026439	-.026262	-.039920	-.065420
-.085297	-.078598	-.048859	-.015326	.021090	.066653	.099554	.092402
.061597	.048074	.055382	.050439	.024054	.008752	.026624	.054132
.056832	.032668	.000804	-.031464	-.069386	-.109472	-.133373	-.123367

-.081284	-.029526	.009753	.030056	.029446	.001617	-.042790	-.065576
-.042277	.000853	.021654	.016693	.011213	.014948	.019364	.023731
.036677	.057468	.072063	.068244	.049695	.033048	.028911	.028938
.019661	.005797	.005872	.024907	.047424	.060245	.066562	.070053
.057591	.013619	-.050769	-.103293	-.128816	-.138752	-.138800	-.118866
-.080976	-.044077	-.015189	.014376	.043198	.058197	.057053	.048769
.038283	.029257	.029039	.035386	.036386	.033078	.037698	.044901
.034864	.009686	-.001608	.019807	.060370	.092091	.099309	.086993
.070705	.057138	.034208	-.009284	-.056410	-.075478	-.061787	-.040848
-.027843	-.012352	.011889	.030833	.032715	.023840	.012994	-.001291
-.020220	-.035983	-.040086	-.032309	-.018779	-.005237	.005640	.009044
-.004107	-.032326	-.051919	-.040497	-.009665	.009386	.011080	.018069
.036330	.039112	.007442	-.038718	-.065397	-.064268	-.053050	-.044316
-.027847	.010580	.059998	.088259	.078096	.045828	.018101	.001882
-.013323	-.032293	-.047003	-.052073	-.054859	-.064876	-.078753	-.079761
-.052912	-.001623	.052326	.087098	.095460	.081782	.054216	.023041
-.001728	-.014149	-.010296	.009415	.027646	.018106	-.016723	-.039414
-.031065	-.020582	-.035000	-.056171	-.056168	-.042236	-.037579	-.042447
-.036419	-.004853	.046282	.093593	.116822	.120187	.120337	.114059
.083303	.033587	-.002907	-.008292	.001093	.000100	-.016443	-.033958
-.039788	-.040460	-.052580	-.076346	-.089322	-.072892	-.035421	-.001233
.015810	.018610	.012906	.000146	-.013967	-.015019	.004897	.030246
.036354	.025516	.028697	.059084	.086272	.076384	.039305	.013644
.017320	.033727	.038356	.021200	-.011150	-.041842	-.058167	-.066668
-.082613	-.102082	-.103517	-.080326	-.050322	-.028354	-.010568	.009702
.029772	.046240	.060747	.074658	.088203	.101948	.111668	.110310
.100794	.094491	.092208	.080801	.054181	.025105	.008269	-.000782
-.019388	-.049941	-.070289	-.062565	-.041752	-.036181	-.044775	-.038742
-.006795	.026121	.030362	.004179	-.028255	-.042249	-.037499	-.036866
-.053477	-.070898	-.071061	-.062603	-.057938	-.043013	.000324	.057988
.098744	.113978	.117605	.114467	.089703	.030495	-.049156	-.109757
-.120080	-.090164	-.058023	-.043157	-.031175	-.006551	.021663	.036838
.040434	.046327	.058906	.071650	.082949	.096281	.103056	.084376
.040550	.002808	-.000492	.021362	.035668	.026787	.009231	.005818
.021477	.038388	.038446	.028583	.029494	.037464	.022415	-.025134
-.072983	-.090232	-.084039	-.075014	-.065134	-.051354	-.044433	-.053577
-.071604	-.086864	-.093676	-.089212	-.075833	-.062269	-.049934	-.029496
-.001877	.014572	.009054	-.006419	-.014316	-.008754	.007177	.027338
.044643	.054049	.052151	.036032	.008224	-.023269	-.053895	-.080844
-.093001	-.081089	-.058116	-.047960	-.051324	-.043664	-.010169	.035540
.072026	.094103	.108406	.113627	.097120	.054807	.006206	-.021063
-.019994	-.007656	-.001075	-.001083	-.002298	-.006863	-.019254	-.034673
-.043447	-.044308	-.044908	-.050151	-.054800	-.047975	-.025196	.004798
.029381	.046118	.059934	.070452	.072685	.065766	.052016	.035584
.028573	.043168	.069916	.082519	.072126	.057767	.056452	.059722
.044279	-.002629	-.065302	-.104906	-.094175	-.047066	-.000456	.028164
.047150	.064128	.076301	.082394	.083790	.077526	.062134	.042636
.020853	-.006549	-.035787	-.058515	-.077489	-.100719	-.122246	-.127622
-.114333	-.092642	-.073069	-.059743	-.046326	-.022725	.000466	-.008185
-.054995	-.100141	-.107890	-.088579	-.066493	-.039690	.002787	.052522
.092018	.114438	.122451	.119730	.106089	.077306	.036350	.000965
-.014850	-.018638	-.021228	-.016630	-.001094	.009218	.004785	.005801
.032410	.068859	.082431	.067495	.048701	.044744	.048417	.045389
.037489	.037311	.045508	.045280	.025073	-.000339	-.005434	.009617
.018275	.010805	.011182	.031763	.041066	.009540	-.038309	-.056883
-.042892	-.026149	-.018595	-.012583	-.010271	-.016740	-.018982	-.002472
.023174	.035717	.027101	.008708	-.001645	.000608	-.005062	-.040397
-.089732	-.114942	-.109312	-.096418	-.080414	-.047916	-.012126	-.000352
-.005143	.002243	.022215	.034646	.039075	.049685	.067325	.080572
.075825	.039673	-.023149	-.078820	-.098770	-.090911	-.075031	-.055468
-.037256	-.030969	-.025069	.004142	.046133	.067326	.070464	.088840
.120969	.127304	.094310	.050905	.019837	-.004398	-.030577	-.057599
-.081999	-.096513	-.091945	-.073055	-.054866	-.038115	-.012470	.017498
.038920	.055035	.070620	.069727	.044077	.020231	.020660	.026940
.018017	.009075	.016853	.025374	.017675	.001649	-.018477	-.053282
-.094150	-.109540	-.085525	-.037751	.012936	.049110	.057081	.042693

.026240	.010129	-.016934	-.041558	-.035216	-.002908	.023071	.033193
.039411	.036406	.012569	-.012916	-.010438	.012604	.023884	.015583
.008664	.016735	.033113	.047869	.058571	.068654	.083110	.097977
.095584	.064014	.015314	-.031537	-.074207	-.114315	-.136262	-.123555
-.085925	-.047454	-.016012	.015694	.046705	.065046	.065535	.056857
.050387	.047648	.039147	.015862	-.017143	-.042510	-.049965	-.049164
-.054709	-.061542	-.050517	-.021641	-.002120	-.010284	-.030857	-.041241
-.043646	-.052350	-.064494	-.064268	-.048390	-.031460	-.027827	-.035335
-.037607	-.023698	-.003365	.007379	.013284	.033237	.065646	.083952
.073065	.049740	.038704	.044488	.054636	.059164	.058021	.053507
.041856	.015579	-.025120	-.066464	-.090998	-.092782	-.079338	-.059598
-.035489	-.008231	.012645	.015387	.001136	-.015367	-.021845	-.017357
-.004179	.018643	.048767	.075668	.088356	.084114	.067228	.043257
.016132	-.011446	-.035552	-.051413	-.059580	-.066860	-.074492	-.071380
-.048010	-.012262	.017678	.032847	.037006	.032826	.016881	-.007409
-.023525	-.018750	-.000997	.011501	.013258	.013737	.018255	.018895
.008357	-.006453	-.011581	-.002811	.010087	.015803	.014738	.015740
.020634	.020379	.009423	-.005642	-.016470	-.023106	-.029477	-.036943
-.045665	-.055624	-.064430	-.068434	-.064487	-.048565	-.019186	.015355
.041745	.055051	.058492	.052572	.036545	.017889	.007833	.008759
.014532	.020116	.023727	.023063	.015884	.003554	-.008304	-.012884
-.008107	-.000108	.003280	.001912	-.000527	-.007524	-.025903	-.050871
-.067036	-.067334	-.060304	-.055008	-.049214	-.037940	-.024311	-.015232
-.012217	-.011059	-.006481	.004477	.020208	.035551	.046635	.052517
.051615	.041526	.023788	.004139	-.012867	-.025901	-.034989	-.040990
-.044035	-.040948	-.029687	-.015659	-.005628	.002130	.012327	.021505
.022442	.015669	.008370	.006247	.011915	.025299	.041129	.051556
.053195	.046882	.032860	.012895	-.006433	-.019269	-.025734	-.027661
-.024563	-.017259	-.010156	-.007068	-.008026	-.010494	-.010840	-.006062
.002736	.010266	.012790	.011185	.006521	-.002941	-.017308	-.031595
-.040309	-.043003	-.042475	-.039647	-.033305	-.023790	-.013955	-.006353
-.000994	.004093	.010471	.017325	.021771	.020893	.013312	-.000292
-.017139	-.033004	-.043846	-.047761	-.045511	-.038769	-.028642	-.016736
-.005784	.002414	.008061	.011625	.013217	.014095	.016197	.019095
.019474	.015281	.008705	.003262	-.000134	-.002322	-.003804	-.005423
-.008248	-.011516	-.013386	-.013972	-.014810	-.015788	-.015252	-.012470
-.008079	-.003091	.001204	.004055	.007032	.012907	.021875	.031029
.037770	.041107	.039776	.032528	.020932	.008941	-.000545	-.006401
-.007949	-.005996	-.003487	-.002222	-.001139	.000102	-.000905	-.005440
-.010787	-.013497	-.013426	-.012679	-.012553	-.013658	-.017211	-.023724
-.031231	-.036456	-.037296	-.033777	-.027129	-.018140	-.006876	.005470
.015862	.021789	.023323	.021877	.018166	.012457	.005720	-.000772
-.006325	-.010479	-.012470	-.011598	-.007677	-.001364	.005762	.012379
.018504	.024361	.029245	.032564	.034601	.035730	.036371	.037566
.039974	.042369	.042435	.039338	.034551	.029911	.025942	.022471
.019786	.018591	.019075	.020183	.020377	.019421	.018426	.017746
.016186	.012797	.008316	.004178	.000770	-.002413	-.005171	-.006519
-.006174	-.004862	-.003299	-.001914	-.001136	-.001301	-.002452	-.004291
-.006098	-.007002	-.006680	-.005530	-.004002	-.002201	-.000721	-.000880
-.002983	-.005747	-.008451	-.011456	-.013905	-.014000	-.012152	-.010722
-.010556	-.010633	-.010379	-.009820	-.008596	-.006740	-.004929	-.003038
-.000535	.001630	.002007	.001096	.000482	.000466	.000420	.000246

Vertical Component

.010400	.009300	.007500	.006600	.006800	.005900	.007500	.007200
.006500	.006000	.005100	.003400	.001600	.000400	-.001000	-.001800
-.003100	-.004700	-.005500	-.005600	-.004900	-.003500	-.002100	-.001500
-.001500	-.001000	.000000	.000000	-.001500	-.003900	-.006100	-.007800
-.008100	-.006800	-.003800	-.001000	.000800	.003700	.007000	.007800
.006300	.004100	-.000300	-.004300	-.007800	-.009200	-.010500	-.011800
-.010300	-.007900	-.008000	-.009600	-.008200	-.008600	-.008400	-.005600
-.001000	.001300	.004200	.006800	.008300	.007700	.007100	.008300
.006800	.002500	.002900	.006400	.010500	.015200	.017200	.017400
.018300	.018400	.019600	.022800	.012500	.007700	.009900	.009700
.002400	.002100	-.001800	-.008000	-.006900	-.001800	-.001100	-.004400
-.005500	-.006900	-.009700	-.008200	-.004200	-.009400	-.016700	-.015500
-.017300	-.010900	-.001600	.001900	.007000	.007300	.007900	.010500

.020500	.018300	.019000	.016600	.019000	.011300	.006900	-.007400
-.017500	-.023900	-.019800	-.015100	-.014100	-.011600	-.000900	.001600
.011600	.020100	.014800	.003400	.004400	-.008000	-.014800	-.008900
-.011400	-.021000	-.020600	-.024100	-.027100	-.014800	-.006700	-.004900
-.007800	-.006300	-.003600	.006900	.011600	.010100	.005300	.001700
.004200	.004200	-.003300	-.003900	-.013300	-.014400	-.011100	.001400
.008800	.018100	.008500	.019300	.016500	.022500	.016700	.006500
-.012900	-.006900	-.016700	-.021300	-.007300	-.006000	-.015900	-.009400
.002800	.004800	.026300	.024900	.012900	.012200	.013800	-.002500
-.009300	-.010400	-.012700	-.009700	.000500	.009200	.019400	.022000
.019700	.020800	.023900	.022200	.011700	-.006900	-.006200	-.007800
-.004100	-.006600	-.018000	-.027500	-.017600	-.032300	-.036200	-.017000
-.009300	-.006900	.012200	.020900	.021300	.024700	.019600	-.001400
-.009200	-.016900	-.030500	-.041200	-.027300	-.009400	-.005400	-.000100
.010600	.013000	.012400	.016300	.002500	-.006100	-.003200	-.012400
-.010800	.000200	.002600	-.012200	-.003800	-.014200	-.022300	-.014800
-.001300	-.021300	-.009600	-.001400	-.007400	-.024900	.003700	.008400
.004600	-.009700	-.008600	-.017200	-.005200	.006100	.010700	.005700
.004900	.014100	.005800	-.001400	-.005300	.011800	.022700	.018700
.011200	.009100	-.007700	-.010100	-.003500	.005600	.013100	.002300
.011800	.009200	.005800	.020200	.028200	.021100	.017000	.010500
.000500	-.019800	-.020000	.004700	-.009000	-.021500	-.023200	-.039600
-.062100	-.057100	-.053400	-.040700	-.007900	.026200	.042000	.052300
.038100	.012000	.011900	.002500	-.022300	-.019000	-.027000	-.024500
.005600	.037800	.028800	.034700	.051200	.053100	.024800	.013200
.007800	.002600	.015200	.017500	.009100	-.000100	-.022500	-.030600
-.025100	-.039700	-.024900	-.001200	-.010100	-.024200	-.027300	-.007300
.017200	.029700	.024600	.006800	-.021800	-.015700	-.016100	-.024000
-.016800	-.002900	.011600	.012800	.003300	-.004700	.019500	.027500
.029200	.036100	.043300	.040100	.034600	.027700	.006100	-.025800
-.034400	-.034800	-.033900	-.015000	.014500	.034700	.050500	.033100
.000000	-.006700	-.014700	-.022700	-.024100	-.036700	-.053100	-.028100
.013800	.047000	.048300	.044100	.055400	.031000	.003200	.014900
.033100	.029800	.051300	.050400	.012400	.007600	.004000	-.013400
-.023600	-.040000	-.045600	-.043200	-.033000	-.006900	.013400	.010100
.021100	.014100	-.008700	.001100	-.009500	-.013900	.016500	.002600
-.032100	-.024200	-.007300	.003700	.024700	.029400	.019100	.021500
.015200	.017700	.001900	-.005100	-.003100	.018000	.002800	.007800
.007000	-.026900	-.054000	-.037100	-.026700	-.033100	.003200	.008400
-.005900	-.020400	-.007200	-.026400	-.006900	-.014600	-.032400	-.055600
-.047200	-.043700	-.019400	-.014900	-.023100	-.010700	.007200	.005600
.017900	.024700	.017100	.004800	.004600	-.010100	-.008400	-.010600
-.003500	.006900	-.003200	.007700	.034100	.031600	.029700	.041300
.040800	.043700	.022600	.009100	-.008700	-.023200	-.021400	-.011300
-.028400	-.019800	-.016600	-.047300	-.057600	-.040300	-.015600	.013700
.042100	.022700	.022400	.012200	-.021200	-.013800	.021100	.007500
.019200	.029000	.012500	.009400	.014300	.007100	-.012000	-.013200
-.013900	-.033100	-.029700	.003600	.001900	.026500	.027400	.025500
.017000	.021700	.008700	-.003900	.003000	-.010300	-.022700	-.011000
-.004600	-.007400	.016400	.008900	.019000	.024200	.008400	-.013300
-.024400	-.029600	.005200	.007900	.007600	-.001300	.008700	-.016000
-.003200	-.016100	-.030400	-.022000	.000900	-.018200	-.017500	-.010100
-.000100	.004100	.019100	.027500	.023500	-.011700	-.016400	-.016100
.000700	.012900	.050300	.061400	.050000	.066200	.064000	.030500
.008200	.010300	-.041700	-.049500	-.062800	-.059300	-.050400	-.050000
-.054000	-.016100	-.007200	-.034300	-.024600	-.016600	-.048700	-.036700
-.011000	.011700	.015800	.037400	.037100	.048700	.031000	.020100
.004000	-.012600	-.031500	.000700	.009500	-.023400	.003300	.037100
.017600	.007800	.008300	-.012800	-.028600	-.028400	-.026600	-.020800
-.003600	.000800	.019800	.027400	.035300	.002800	.023300	.003500
-.010300	-.018200	.009100	-.034000	-.010600	.010600	.024800	.025700
.053700	.058800	.045100	.022400	.004700	-.007700	-.019600	-.005400
.021500	.016300	-.012400	-.019300	-.025500	-.049600	-.039500	-.038200
-.021500	-.024000	-.013800	-.011000	.012000	.025600	.033200	.012000
-.006900	-.028900	-.021900	-.003900	-.013100	-.005800	.017700	.007000
-.027000	-.008800	.020500	.006900	.022200	.024700	.002000	-.006600

.008700	-.011400	-.026600	-.021700	.019500	.022100	.009300	.008800
.014600	-.013400	-.001000	-.004000	-.014100	-.005900	.006500	-.009400
-.002700	-.002900	.026400	.040000	.015600	-.004100	.004100	.000000
-.004400	.000300	-.026800	-.025100	-.011700	.015000	-.007200	-.003200
-.004500	.034000	.043400	.046300	.030100	.006300	-.018300	-.009400
-.024800	-.031900	-.035200	-.033900	-.002600	.040600	.045500	.049300
.046500	.001700	-.038100	-.043200	-.047800	-.029800	-.007200	-.008200
-.019000	.006600	.010400	.024300	-.001200	-.021500	-.042800	-.021600
-.011300	.008900	.008200	.015800	.010800	-.004100	-.006800	-.003000
-.016600	-.007100	.007600	-.004300	.002000	.023900	.015000	.030000
.044600	.038800	.040500	.028000	-.004000	.010800	.005100	-.004700
.008500	.001000	-.030100	-.026900	-.005600	-.003300	.000000	.000800
-.001500	-.003300	.015900	.036200	.028400	.008300	.011700	.025500
.012500	.018400	.007800	-.023000	-.040300	-.033800	-.042400	-.032500
-.035300	-.050100	-.046400	-.033400	-.018200	-.000200	.019700	.005000
-.018500	-.030800	-.019500	-.013400	-.025300	.017600	.054800	.077600
.098400	.089100	.017800	.009600	-.004700	-.022300	-.019000	-.015500
-.057100	-.047500	-.027600	-.024900	.006600	.023600	-.014600	-.023600
-.009000	-.006300	-.003900	-.004000	.009700	.014700	-.009000	-.000600
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-.000300	-.010500	-.009200	-.006000	-.028400	-.049100	-.040500	-.016300
-.026300	-.015100	-.012600	-.011900	-.026200	-.044900	-.024600	-.014500
-.043700	-.018300	.024100	.015000	.013600	.033400	.012000	.001500
.025100	.031500	-.010400	-.019700	.001400	-.011500	-.009400	.011800
.034500	.049800	.067100	.049900	.041600	.027000	.024200	.001600
-.004800	-.026300	-.044200	-.039100	-.018400	-.026200	-.009100	.011700
.016400	.000300	.005000	.027100	.011300	.030700	.041600	.032100
.004400	.003400	-.032300	-.016600	.003400	.004000	.018900	.033700
.032300	.044600	.048600	.026900	-.005900	-.021300	-.031500	-.049000
-.053000	-.039500	-.045900	-.027600	-.003200	-.009300	-.009000	.016100
.001900	-.007000	.011500	-.001800	-.013900	-.000100	.017900	.001000
.007600	.015800	.005600	-.003200	.011000	-.016400	-.046500	-.031600
-.033500	-.030000	-.001600	.026400	.035800	.048100	.036500	.032600
.016700	-.006200	-.011700	-.009300	-.008200	.005200	.003800	-.003000
.028800	.042400	.040400	.027000	.020900	-.023700	-.025800	-.037700
-.041900	-.046500	-.025600	-.042800	-.034800	-.016800	.002400	-.006500
.018700	.011800	-.001600	.018000	.037400	.008200	.003400	.009900
-.009000	-.001000	.000400	-.020000	-.033300	-.034600	-.027200	-.011300
-.003800	.015800	.023600	.024600	.022100	.007500	-.022000	-.018600
-.029200	-.005600	.013800	.013500	.009700	.035500	-.003800	-.025800
-.008100	-.004300	-.008000	-.003600	-.024700	-.011800	.025000	.064400
.064400	.022400	-.025200	-.017500	.000300	.006000	.018300	-.000100
-.004600	-.001000	.031000	.021700	.017700	.016200	.036300	.034400
.010300	-.010300	-.020800	-.059500	-.051300	-.029300	-.021400	-.007500
.030300	.012600	.010300	-.025900	.007500	.018000	.032600	.006300
.019100	.022300	.028600	.020600	.040600	.019000	.006400	.002100
-.007000	-.017700	.001500	.019400	.023200	-.011700	-.018200	-.028800
-.044300	-.056700	-.042600	-.014300	-.030400	-.007300	.006400	-.020200
-.037700	-.025900	-.040800	-.020400	-.008700	-.024400	.012300	.041600
.066700	.082600	.080500	.027500	.026500	.023700	.004800	-.006100
-.002900	-.020100	-.030700	-.005000	.011700	.010100	-.017900	-.003900
.010100	.013300	.018000	.005300	-.025200	-.038800	-.042200	-.038600
-.004500	.030300	.051800	.041700	.006100	-.020700	-.026900	-.040100
-.042600	-.017700	-.027200	-.013400	-.005600	.004300	.030400	.067100
.028500	.020400	.009900	-.008400	-.036600	-.009500	-.001800	.009500
-.004900	-.016000	-.046700	-.049100	-.046200	-.031600	-.045600	-.027400
-.001000	.027900	.034500	.051000	.071700	.066700	.029400	.012600
.003700	-.015200	.004300	.023300	.029100	.033800	.029800	.007800
.005500	.003300	-.021100	-.009800	.006600	.008100	.000300	.027600
.005200	.000100	.020400	.017700	-.034700	-.015000	-.000500	.016600
.024900	.002100	-.010800	.006000	.013700	.021000	.028400	.016100
-.004300	-.000800	-.000600	-.020300	-.007800	-.003700	-.024000	-.036200
-.022300	.002600	.015900	.023800	.031300	.035500	-.001600	.002000
.017500	.012900	-.011400	-.025500	-.062800	-.063800	-.030800	-.031400
-.017800	.005300	.006900	.024700	.040000	.029500	.023100	.014000
-.043000	-.055500	-.041700	-.028200	-.018600	.006900	.003900	.004200

-.004900	-.016500	-.033200	-.040400	-.042200	-.028100	-.013300	-.000400
.022700	.048700	.044200	.054100	.068200	.053600	.023500	.025100
.004000	-.016800	-.026900	-.014200	-.036200	-.003000	.029300	.038400
.048700	.052200	.028800	.034000	.022100	-.012800	-.018000	-.023100
-.027100	-.010000	.001800	.003400	.006800	.010300	-.003500	-.016900
-.025000	-.005400	.009300	.023900	.014200	.015800	.008100	.003100
-.004500	-.001000	-.030600	-.060200	-.051000	-.044200	-.048600	-.007700
.007100	-.006800	.010100	.019400	-.004800	-.005500	-.006200	-.020800
-.014200	-.001500	.002000	.003300	-.007400	-.009700	.010000	.016700
.011700	-.011200	-.032300	-.030200	-.011500	-.006900	.008000	.007200
-.007800	-.014400	-.033500	-.039400	-.027600	-.023000	-.038800	-.039300
-.017000	.004200	.012300	.024600	.021300	.024000	.014700	.019200
-.009000	-.026600	-.024100	.010300	.000200	.035000	.047700	.024500
.008100	.030600	.030100	.025100	.022600	.004900	-.014000	-.024100
-.023200	-.012500	-.010200	-.016000	-.000600	.004700	.023200	.025300
.019000	.022900	.020000	.004900	.016900	.010600	-.002700	.025500
.041800	.024200	.016700	.038400	.023600	-.006700	-.019800	-.030200
-.016300	-.000900	.011300	-.001000	-.033100	-.045500	-.027100	-.034600
-.048500	-.049500	-.040500	-.003700	.005800	.002900	.003100	-.001100
-.003100	.015300	.034200	.010300	.011500	.016900	.009700	-.005300
.002200	-.009400	-.006200	-.021000	-.010800	.019000	.030500	.022500
.033200	.000500	-.037400	-.029800	-.016400	-.017000	-.041300	-.037700
-.021600	-.010600	.003600	.019700	-.008000	-.021100	-.020600	-.019000
-.032000	-.021800	-.016400	-.009800	-.005700	.013200	.029100	.039900
.024800	.012000	.006100	-.009400	-.011000	-.001700	-.016700	-.022300
-.012600	-.011200	-.006900	-.005500	-.012100	-.018600	-.023700	-.024700
-.013800	-.015300	-.010200	.005500	.027500	.031900	.039700	.027700
.013200	.003800	.004500	-.010700	-.005100	-.006100	.004200	.010600
.019400	.020400	.033300	.023000	.003200	-.015100	-.016000	-.017300
-.008900	-.004400	-.002100	-.006800	.010000	.016800	.018400	.022900
.020700	.004600	.004400	.007700	.007200	.015100	.027200	.028300
.027000	.021200	.008500	-.001800	.000100	-.001500	-.012800	-.009200
-.003900	-.002700	-.000800	.007800	.002000	.007200	.002700	-.004600
-.013200	-.014500	-.014000	-.009200	-.007600	-.004100	.002700	.001200
-.001000	-.001800	-.006000	-.009000	-.009700	-.006900	-.004800	-.003600
-.003400	-.000500	.002200	.001600	-.001500	-.005500	-.009300	-.011800
-.009100	-.004400	-.003100	-.001000	.001500	.003700	.001000	.005300
.006800	.008100	.007700	.011600	.009800	.006800	.005900	.006300
.005300	.005800	.007600	.005500	.004500	.005700	.005600	.008200
.011000	.013400	.013400	.013700	.010200	.010100	.008900	.008200
.004900	.004500	.004200	.005200	.007000	.010000	.010000	.010100
.012000	.013300	.013400	.015200	.016000	.015000	.015900	.014200
.010700	.005800	.000300	-.004500				

Frequency	Smooth PSD Component 1	Component 2
.3000E+00	.1784E+02	.3289E+02
.3232E+00	.2107E+02	.3002E+02
.3463E+00	.2067E+02	.2527E+02
.3695E+00	.1822E+02	.2264E+02
.3927E+00	.2256E+02	.1763E+02
.4158E+00	.2831E+02	.1697E+02
.4390E+00	.2757E+02	.1542E+02
.4622E+00	.2590E+02	.1700E+02
.4853E+00	.2812E+02	.2156E+02
.5085E+00	.2918E+02	.2747E+02
.5317E+00	.3018E+02	.2786E+02
.5548E+00	.3788E+02	.2948E+02
.5780E+00	.4177E+02	.3184E+02
.6012E+00	.4016E+02	.3713E+02
.6243E+00	.4066E+02	.4264E+02
.6475E+00	.4015E+02	.4191E+02
.6707E+00	.3979E+02	.4902E+02
.6938E+00	.4571E+02	.5444E+02
.7170E+00	.5857E+02	.5241E+02
.7402E+00	.6770E+02	.4690E+02
.7633E+00	.6921E+02	.4159E+02
.7865E+00	.7263E+02	.4216E+02
.8097E+00	.7334E+02	.5227E+02
.8328E+00	.6977E+02	.6731E+02
.8560E+00	.6355E+02	.8076E+02
.8792E+00	.9111E+02	.7662E+02
.9023E+00	.1190E+03	.8206E+02
.9255E+00	.1284E+03	.9460E+02
.9487E+00	.1245E+03	.1040E+03
.9718E+00	.1251E+03	.1078E+03
.9950E+00	.1160E+03	.9898E+02
.1018E+01	.1177E+03	.9783E+02
.1041E+01	.1185E+03	.9548E+02
.1065E+01	.1184E+03	.9847E+02
.1088E+01	.1162E+03	.1092E+03
.1111E+01	.1112E+03	.1110E+03
.1134E+01	.1056E+03	.1113E+03
.1157E+01	.1051E+03	.1111E+03
.1180E+01	.1068E+03	.1121E+03
.1204E+01	.1085E+03	.1208E+03
.1227E+01	.1024E+03	.1684E+03
.1250E+01	.1034E+03	.1775E+03
.1273E+01	.1113E+03	.1703E+03
.1296E+01	.1275E+03	.1608E+03
.1319E+01	.1371E+03	.1606E+03
.1343E+01	.1332E+03	.1612E+03
.1366E+01	.1191E+03	.1670E+03
.1389E+01	.1034E+03	.1670E+03
.1412E+01	.1037E+03	.1592E+03
.1435E+01	.1173E+03	.1509E+03
.1458E+01	.1481E+03	.1441E+03
.1482E+01	.1659E+03	.1525E+03
.1505E+01	.1752E+03	.1679E+03
.1528E+01	.1758E+03	.1825E+03
.1551E+01	.1755E+03	.1934E+03
.1574E+01	.2002E+03	.1898E+03
.1597E+01	.2329E+03	.1889E+03
.1621E+01	.2628E+03	.1854E+03
.1644E+01	.2779E+03	.1791E+03
.1667E+01	.2804E+03	.1738E+03
.1690E+01	.2654E+03	.1742E+03
.1713E+01	.2660E+03	.1914E+03
.1736E+01	.2694E+03	.2158E+03
.1760E+01	.2750E+03	.2319E+03

.1783E+01	.2753E+03	.2344E+03
.1806E+01	.2592E+03	.2257E+03
.1829E+01	.2554E+03	.2228E+03
.1852E+01	.2557E+03	.2059E+03
.1875E+01	.2656E+03	.1864E+03
.1899E+01	.2853E+03	.1772E+03
.1922E+01	.3101E+03	.1716E+03
.1945E+01	.3115E+03	.1733E+03
.1968E+01	.3040E+03	.1810E+03
.1991E+01	.3051E+03	.1886E+03
.2014E+01	.3176E+03	.1936E+03
.2038E+01	.3127E+03	.1940E+03
.2061E+01	.3136E+03	.1914E+03
.2084E+01	.3149E+03	.1890E+03
.2107E+01	.3168E+03	.1874E+03
.2130E+01	.3175E+03	.1875E+03
.2153E+01	.3091E+03	.1852E+03
.2177E+01	.3018E+03	.1874E+03
.2200E+01	.2909E+03	.1891E+03
.2223E+01	.2782E+03	.1878E+03
.2246E+01	.2665E+03	.1820E+03
.2269E+01	.2604E+03	.1832E+03
.2292E+01	.2603E+03	.1779E+03
.2316E+01	.2689E+03	.1739E+03
.2339E+01	.2793E+03	.1748E+03
.2362E+01	.2833E+03	.1807E+03
.2385E+01	.2882E+03	.1840E+03
.2408E+01	.2753E+03	.1838E+03
.2431E+01	.2545E+03	.1854E+03
.2455E+01	.2343E+03	.1873E+03
.2478E+01	.2229E+03	.1885E+03
.2501E+01	.2207E+03	.1819E+03
.2524E+01	.2315E+03	.1814E+03
.2547E+01	.2485E+03	.1797E+03
.2570E+01	.2558E+03	.1764E+03
.2594E+01	.2559E+03	.1705E+03
.2617E+01	.2746E+03	.1820E+03
.2640E+01	.2877E+03	.1699E+03
.2663E+01	.2889E+03	.1607E+03
.2686E+01	.2876E+03	.1593E+03
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.2733E+01	.2804E+03	.1667E+03
.2756E+01	.2830E+03	.1791E+03
.2779E+01	.2864E+03	.1934E+03
.2802E+01	.2898E+03	.2042E+03
.2825E+01	.2873E+03	.2069E+03
.2848E+01	.2782E+03	.2054E+03
.2872E+01	.2651E+03	.2138E+03
.2895E+01	.2497E+03	.2175E+03
.2918E+01	.2381E+03	.2174E+03
.2941E+01	.2352E+03	.2293E+03
.2964E+01	.2359E+03	.2984E+03
.2987E+01	.2396E+03	.3197E+03
.3011E+01	.2426E+03	.3218E+03
.3034E+01	.2472E+03	.3168E+03
.3057E+01	.2546E+03	.3123E+03
.3080E+01	.2565E+03	.3017E+03
.3103E+01	.2563E+03	.2994E+03
.3126E+01	.2564E+03	.2981E+03
.3150E+01	.2551E+03	.2972E+03
.3173E+01	.2526E+03	.2961E+03
.3196E+01	.2451E+03	.2859E+03
.3219E+01	.2423E+03	.2844E+03
.3242E+01	.2399E+03	.2821E+03
.3265E+01	.2386E+03	.2795E+03
.3289E+01	.2386E+03	.2778E+03

.3312E+01	.2368E+03	.2751E+03
.3335E+01	.2407E+03	.2814E+03
.3358E+01	.2443E+03	.2885E+03
.3381E+01	.2475E+03	.2938E+03
.3404E+01	.2495E+03	.2964E+03
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.3451E+01	.2436E+03	.2944E+03
.3474E+01	.2394E+03	.2923E+03
.3497E+01	.2331E+03	.2892E+03
.3520E+01	.2256E+03	.2840E+03
.3543E+01	.2190E+03	.2765E+03
.3567E+01	.2112E+03	.2706E+03
.3590E+01	.2042E+03	.2665E+03
.3613E+01	.1994E+03	.2656E+03
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.3659E+01	.1942E+03	.2696E+03
.3682E+01	.1998E+03	.2749E+03
.3706E+01	.2099E+03	.2770E+03
.3729E+01	.2199E+03	.2765E+03
.3752E+01	.2253E+03	.2759E+03
.3775E+01	.2233E+03	.2712E+03
.3798E+01	.2210E+03	.2728E+03
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.3960E+01	.1710E+03	.2696E+03
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.4123E+01	.1663E+03	.2649E+03
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.4563E+01	.1507E+03	.1909E+03
.4586E+01	.1547E+03	.1892E+03
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.4679E+01	.1395E+03	.1912E+03
.4702E+01	.1382E+03	.1885E+03
.4725E+01	.1380E+03	.1898E+03
.4748E+01	.1380E+03	.1906E+03
.4771E+01	.1404E+03	.1908E+03
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.4818E+01	.1491E+03	.1869E+03

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.5119E+01	.1488E+03	.1862E+03
.5142E+01	.1479E+03	.1889E+03
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.5235E+01	.1441E+03	.1879E+03
.5258E+01	.1442E+03	.1877E+03
.5281E+01	.1415E+03	.1839E+03
.5304E+01	.1414E+03	.1835E+03
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.5582E+01	.1360E+03	.1964E+03
.5605E+01	.1289E+03	.2014E+03
.5628E+01	.1267E+03	.2009E+03
.5652E+01	.1229E+03	.2009E+03
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.5698E+01	.1226E+03	.1993E+03
.5721E+01	.1220E+03	.1987E+03
.5744E+01	.1200E+03	.1959E+03
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.5953E+01	.1165E+03	.1771E+03
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.6069E+01	.1054E+03	.1688E+03
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.6184E+01	.1007E+03	.1630E+03
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.6300E+01	.9608E+02	.1564E+03
.6323E+01	.9847E+02	.1536E+03
.6347E+01	.9884E+02	.1473E+03

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.6416E+01	.9575E+02	.1502E+03
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.6694E+01	.8922E+02	.1236E+03
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.6764E+01	.8472E+02	.1230E+03
.6787E+01	.8329E+02	.1210E+03
.6810E+01	.8259E+02	.1207E+03
.6833E+01	.8170E+02	.1202E+03
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.7088E+01	.7052E+02	.1138E+03
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.7598E+01	.4856E+02	.1166E+03
.7621E+01	.4860E+02	.1146E+03
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.7783E+01	.4508E+02	.8819E+02
.7806E+01	.4483E+02	.8695E+02
.7829E+01	.4433E+02	.8571E+02
.7852E+01	.4395E+02	.8490E+02
.7876E+01	.4377E+02	.8457E+02

.7899E+01	.4375E+02	.8457E+02
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.7945E+01	.4340E+02	.8580E+02
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.7991E+01	.4365E+02	.8908E+02
.8015E+01	.4379E+02	.9046E+02
.8038E+01	.4388E+02	.9122E+02
.8061E+01	.4332E+02	.9050E+02
.8084E+01	.4340E+02	.9119E+02
.8107E+01	.4342E+02	.9237E+02
.8130E+01	.4303E+02	.9336E+02
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.8246E+01	.3662E+02	.8616E+02
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.1059E+02	.2658E+02	.3774E+02
.1061E+02	.2636E+02	.3735E+02
.1063E+02	.2630E+02	.3686E+02
.1066E+02	.2627E+02	.3613E+02
.1068E+02	.2641E+02	.3523E+02
.1070E+02	.2676E+02	.3427E+02
.1073E+02	.2731E+02	.3395E+02
.1075E+02	.2758E+02	.3305E+02
.1077E+02	.2761E+02	.3219E+02
.1079E+02	.2748E+02	.3133E+02
.1082E+02	.2723E+02	.3068E+02
.1084E+02	.2704E+02	.3043E+02
.1086E+02	.2659E+02	.3022E+02
.1089E+02	.2614E+02	.3020E+02
.1091E+02	.2587E+02	.2983E+02
.1093E+02	.2561E+02	.2896E+02

.1096E+02	.2553E+02	.2868E+02
.1098E+02	.2518E+02	.2780E+02
.1100E+02	.2490E+02	.2730E+02
.1103E+02	.2483E+02	.2710E+02
.1105E+02	.2479E+02	.2690E+02
.1107E+02	.2460E+02	.2671E+02
.1110E+02	.2450E+02	.2639E+02
.1112E+02	.2452E+02	.2613E+02
.1114E+02	.2462E+02	.2602E+02
.1117E+02	.2468E+02	.2600E+02
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.1121E+02	.2467E+02	.2600E+02
.1123E+02	.2466E+02	.2609E+02
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.1128E+02	.2428E+02	.2624E+02
.1130E+02	.2420E+02	.2605E+02
.1133E+02	.2400E+02	.2606E+02
.1135E+02	.2389E+02	.2607E+02
.1137E+02	.2382E+02	.2609E+02
.1140E+02	.2376E+02	.2612E+02
.1142E+02	.2364E+02	.2593E+02
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.1420E+02	.1189E+02	.5316E+01
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.1967E+02	.1731E+01	.3106E+01
.1969E+02	.1730E+01	.3048E+01
.1971E+02	.1726E+01	.2990E+01
.1974E+02	.1705E+01	.2941E+01
.1976E+02	.1698E+01	.2926E+01
.1978E+02	.1639E+01	.2892E+01
.1981E+02	.1543E+01	.2878E+01
.1983E+02	.1454E+01	.2877E+01
.1985E+02	.1397E+01	.2870E+01
.1988E+02	.1390E+01	.2854E+01
.1990E+02	.1349E+01	.2832E+01
.1992E+02	.1315E+01	.2806E+01
.1995E+02	.1279E+01	.2790E+01
.1997E+02	.1242E+01	.2785E+01
.1999E+02	.1236E+01	.2770E+01
.2002E+02	.1214E+01	.2772E+01
.2004E+02	.1205E+01	.2762E+01
.2006E+02	.1205E+01	.2741E+01
.2008E+02	.1206E+01	.2713E+01
.2011E+02	.1206E+01	.2713E+01

.2013E+02	.1192E+01	.2684E+01
.2015E+02	.1159E+01	.2660E+01
.2018E+02	.1120E+01	.2644E+01
.2020E+02	.1084E+01	.2640E+01
.2022E+02	.1084E+01	.2640E+01
.2025E+02	.1055E+01	.2643E+01
.2027E+02	.1044E+01	.2651E+01
.2029E+02	.1044E+01	.2658E+01
.2032E+02	.1046E+01	.2662E+01
.2034E+02	.1046E+01	.2662E+01
.2036E+02	.1047E+01	.2664E+01
.2039E+02	.1049E+01	.2664E+01
.2041E+02	.1047E+01	.2663E+01
.2043E+02	.1040E+01	.2663E+01
.2046E+02	.1040E+01	.2663E+01
.2048E+02	.1032E+01	.2665E+01
.2050E+02	.1026E+01	.2667E+01
.2052E+02	.1028E+01	.2671E+01
.2055E+02	.1031E+01	.2675E+01
.2057E+02	.1031E+01	.2675E+01
.2059E+02	.1034E+01	.2680E+01
.2062E+02	.1036E+01	.2685E+01
.2064E+02	.1038E+01	.2691E+01
.2066E+02	.1038E+01	.2697E+01
.2069E+02	.1038E+01	.2697E+01
.2071E+02	.1038E+01	.2703E+01
.2073E+02	.1036E+01	.2709E+01
.2076E+02	.1036E+01	.2715E+01
.2078E+02	.1038E+01	.2721E+01
.2080E+02	.1038E+01	.2721E+01
.2083E+02	.1039E+01	.2729E+01
.2085E+02	.1041E+01	.2737E+01
.2087E+02	.1044E+01	.2744E+01
.2090E+02	.1043E+01	.2749E+01
.2092E+02	.1043E+01	.2749E+01
.2094E+02	.1039E+01	.2754E+01
.2097E+02	.1031E+01	.2758E+01
.2099E+02	.1021E+01	.2761E+01
.2101E+02	.1015E+01	.2765E+01
.2103E+02	.1015E+01	.2765E+01
.2106E+02	.1015E+01	.2771E+01
.2108E+02	.1014E+01	.2780E+01
.2110E+02	.1013E+01	.2788E+01
.2113E+02	.1012E+01	.2795E+01
.2115E+02	.1012E+01	.2795E+01
.2117E+02	.1011E+01	.2801E+01
.2120E+02	.1006E+01	.2808E+01
.2122E+02	.9955E+00	.2816E+01
.2124E+02	.9863E+00	.2819E+01
.2127E+02	.9863E+00	.2819E+01
.2129E+02	.9803E+00	.2807E+01
.2131E+02	.9688E+00	.2777E+01
.2134E+02	.9533E+00	.2726E+01
.2136E+02	.9456E+00	.2661E+01
.2138E+02	.9456E+00	.2661E+01
.2141E+02	.9465E+00	.2591E+01
.2143E+02	.9487E+00	.2527E+01
.2145E+02	.9502E+00	.2478E+01
.2147E+02	.9511E+00	.2449E+01
.2150E+02	.9511E+00	.2449E+01
.2152E+02	.9503E+00	.2437E+01
.2154E+02	.9460E+00	.2432E+01
.2157E+02	.9373E+00	.2421E+01
.2159E+02	.9260E+00	.2396E+01
.2161E+02	.9260E+00	.2396E+01
.2164E+02	.9147E+00	.2361E+01

.2166E+02	.9054E+00	.2332E+01
.2168E+02	.9001E+00	.2321E+01
.2171E+02	.8966E+00	.2324E+01
.2173E+02	.8966E+00	.2324E+01
.2175E+02	.8904E+00	.2330E+01
.2178E+02	.8820E+00	.2332E+01
.2180E+02	.8741E+00	.2334E+01
.2182E+02	.8682E+00	.2338E+01
.2185E+02	.8682E+00	.2338E+01
.2187E+02	.8667E+00	.2341E+01
.2189E+02	.8695E+00	.2335E+01
.2191E+02	.8709E+00	.2321E+01
.2194E+02	.8671E+00	.2305E+01
.2196E+02	.8671E+00	.2305E+01
.2198E+02	.8604E+00	.2295E+01
.2201E+02	.8535E+00	.2295E+01
.2203E+02	.8480E+00	.2301E+01
.2205E+02	.8449E+00	.2306E+01
.2208E+02	.8449E+00	.2306E+01
.2210E+02	.8442E+00	.2308E+01
.2212E+02	.8437E+00	.2306E+01
.2215E+02	.8430E+00	.2303E+01
.2217E+02	.8430E+00	.2304E+01
.2219E+02	.8430E+00	.2304E+01
.2222E+02	.8438E+00	.2309E+01
.2224E+02	.8454E+00	.2318E+01
.2226E+02	.8484E+00	.2326E+01
.2229E+02	.8502E+00	.2331E+01
.2231E+02	.8502E+00	.2331E+01
.2233E+02	.8469E+00	.2333E+01
.2236E+02	.8382E+00	.2335E+01
.2238E+02	.8303E+00	.2337E+01
.2240E+02	.8291E+00	.2342E+01
.2242E+02	.8291E+00	.2342E+01
.2245E+02	.8322E+00	.2349E+01
.2247E+02	.8342E+00	.2357E+01
.2249E+02	.8352E+00	.2366E+01
.2252E+02	.8351E+00	.2373E+01
.2254E+02	.8351E+00	.2373E+01
.2256E+02	.8336E+00	.2379E+01
.2259E+02	.8341E+00	.2386E+01
.2261E+02	.8357E+00	.2395E+01
.2263E+02	.8358E+00	.2404E+01
.2266E+02	.8358E+00	.2404E+01
.2268E+02	.8365E+00	.2413E+01
.2270E+02	.8383E+00	.2421E+01
.2273E+02	.8382E+00	.2428E+01
.2275E+02	.8350E+00	.2435E+01
.2277E+02	.8350E+00	.2435E+01
.2280E+02	.8255E+00	.2442E+01
.2282E+02	.8116E+00	.2448E+01
.2284E+02	.8057E+00	.2454E+01
.2286E+02	.8083E+00	.2460E+01
.2289E+02	.8083E+00	.2460E+01
.2291E+02	.8056E+00	.2465E+01
.2293E+02	.7953E+00	.2471E+01
.2296E+02	.7839E+00	.2476E+01
.2298E+02	.7728E+00	.2482E+01
.2300E+02	.7728E+00	.2482E+01
.2303E+02	.7647E+00	.2489E+01
.2305E+02	.7625E+00	.2496E+01
.2307E+02	.7600E+00	.2503E+01
.2310E+02	.7527E+00	.2511E+01
.2312E+02	.7527E+00	.2511E+01
.2314E+02	.7461E+00	.2519E+01
.2317E+02	.7449E+00	.2526E+01

.2319E+02	.7452E+00	.2533E+01
.2321E+02	.7428E+00	.2540E+01
.2324E+02	.7428E+00	.2540E+01
.2326E+02	.7395E+00	.2549E+01
.2328E+02	.7377E+00	.2559E+01
.2330E+02	.7363E+00	.2568E+01
.2333E+02	.7355E+00	.2577E+01
.2335E+02	.7355E+00	.2577E+01
.2337E+02	.7377E+00	.2586E+01
.2340E+02	.7406E+00	.2593E+01
.2342E+02	.7411E+00	.2600E+01
.2344E+02	.7417E+00	.2608E+01
.2347E+02	.7417E+00	.2608E+01
.2349E+02	.7419E+00	.2617E+01
.2351E+02	.7341E+00	.2626E+01
.2354E+02	.7192E+00	.2635E+01
.2356E+02	.7066E+00	.2642E+01
.2358E+02	.7066E+00	.2642E+01
.2361E+02	.6989E+00	.2650E+01
.2363E+02	.6924E+00	.2661E+01
.2365E+02	.6867E+00	.2673E+01
.2368E+02	.6796E+00	.2682E+01
.2370E+02	.6796E+00	.2682E+01
.2372E+02	.6722E+00	.2689E+01
.2375E+02	.6699E+00	.2694E+01
.2377E+02	.6694E+00	.2700E+01
.2379E+02	.6659E+00	.2705E+01
.2381E+02	.6659E+00	.2705E+01
.2384E+02	.6646E+00	.2705E+01
.2386E+02	.6672E+00	.2701E+01
.2388E+02	.6691E+00	.2694E+01
.2391E+02	.6716E+00	.2688E+01
.2393E+02	.6716E+00	.2688E+01
.2395E+02	.6733E+00	.2687E+01
.2398E+02	.6707E+00	.2693E+01
.2400E+02	.6684E+00	.2706E+01

FINAL
PSD 3D.

PSD Function for Component 3 (Vertical)

Frequency	Smooth PSD
.2441E-01	.6586E+00
.4880E-01	.8087E+00
.7319E-01	.5273E+00
.9758E-01	.4777E+00
.1220E+00	.9086E+00
.1464E+00	.2309E+01
.1708E+00	.3783E+01
.1951E+00	.3859E+01
.2195E+00	.5195E+01
.2439E+00	.4984E+01
.2683E+00	.4042E+01
.2927E+00	.4790E+01
.3171E+00	.4701E+01
.3415E+00	.4154E+01
.3659E+00	.3280E+01
.3903E+00	.2843E+01
.4147E+00	.3024E+01
.4390E+00	.3763E+01
.4634E+00	.3228E+01
.4878E+00	.2676E+01
.5122E+00	.3360E+01
.5366E+00	.4368E+01
.5610E+00	.4511E+01
.5854E+00	.4359E+01
.6098E+00	.4842E+01
.6342E+00	.5934E+01
.6586E+00	.6554E+01
.6829E+00	.6282E+01
.7073E+00	.6767E+01
.7317E+00	.8493E+01
.7561E+00	.1033E+02
.7805E+00	.1056E+02
.8049E+00	.1285E+02
.8293E+00	.1514E+02
.8537E+00	.1512E+02
.8781E+00	.1584E+02
.9025E+00	.1903E+02
.9268E+00	.1933E+02
.9512E+00	.1926E+02
.9756E+00	.1903E+02
.1000E+01	.1870E+02
.1024E+01	.1855E+02
.1049E+01	.1698E+02
.1073E+01	.1718E+02
.1098E+01	.1709E+02
.1122E+01	.1753E+02
.1146E+01	.1829E+02
.1171E+01	.1776E+02
.1195E+01	.1797E+02
.1220E+01	.1850E+02
.1244E+01	.1750E+02
.1268E+01	.1654E+02
.1293E+01	.1832E+02
.1317E+01	.1936E+02
.1341E+01	.1942E+02
.1366E+01	.1765E+02
.1390E+01	.1638E+02
.1415E+01	.1578E+02
.1439E+01	.1584E+02
.1463E+01	.1580E+02
.1488E+01	.1546E+02
.1512E+01	.1525E+02
.1537E+01	.1438E+02
.1561E+01	.1433E+02

.1585E+01	.1437E+02
.1610E+01	.1429E+02
.1634E+01	.1433E+02
.1659E+01	.1379E+02
.1683E+01	.1381E+02
.1707E+01	.1341E+02
.1732E+01	.1242E+02
.1756E+01	.1178E+02
.1781E+01	.1451E+02
.1805E+01	.1736E+02
.1829E+01	.1860E+02
.1854E+01	.1823E+02
.1878E+01	.1751E+02
.1902E+01	.1665E+02
.1927E+01	.1591E+02
.1951E+01	.1491E+02
.1976E+01	.1380E+02
.2000E+01	.1304E+02
.2024E+01	.1244E+02
.2049E+01	.1204E+02
.2073E+01	.1184E+02
.2098E+01	.1165E+02
.2122E+01	.1145E+02
.2146E+01	.1181E+02
.2171E+01	.1304E+02
.2195E+01	.1442E+02
.2220E+01	.1566E+02
.2244E+01	.1715E+02
.2268E+01	.1974E+02
.2293E+01	.2026E+02
.2317E+01	.2015E+02
.2341E+01	.2053E+02
.2366E+01	.2142E+02
.2390E+01	.2138E+02
.2415E+01	.2149E+02
.2439E+01	.2152E+02
.2463E+01	.2142E+02
.2488E+01	.2154E+02
.2512E+01	.2524E+02
.2537E+01	.2881E+02
.2561E+01	.3058E+02
.2585E+01	.3047E+02
.2610E+01	.3049E+02
.2634E+01	.3110E+02
.2659E+01	.3178E+02
.2683E+01	.3139E+02
.2707E+01	.2962E+02
.2732E+01	.2756E+02
.2756E+01	.2657E+02
.2781E+01	.2605E+02
.2805E+01	.2694E+02
.2829E+01	.2914E+02
.2854E+01	.3321E+02
.2878E+01	.3937E+02
.2902E+01	.3992E+02
.2927E+01	.4007E+02
.2951E+01	.4079E+02
.2976E+01	.4176E+02
.3000E+01	.4146E+02
.3024E+01	.4147E+02
.3049E+01	.4143E+02
.3073E+01	.4145E+02
.3098E+01	.4145E+02
.3122E+01	.4035E+02
.3146E+01	.4078E+02
.3171E+01	.4122E+02

.3195E+01	.4161E+02
.3220E+01	.4179E+02
.3244E+01	.4043E+02
.3268E+01	.3990E+02
.3293E+01	.3891E+02
.3317E+01	.3786E+02
.3341E+01	.3700E+02
.3366E+01	.3583E+02
.3390E+01	.3504E+02
.3415E+01	.3414E+02
.3439E+01	.3371E+02
.3463E+01	.3415E+02
.3488E+01	.3396E+02
.3512E+01	.3425E+02
.3537E+01	.3445E+02
.3561E+01	.3448E+02
.3585E+01	.3471E+02
.3610E+01	.3510E+02
.3634E+01	.3561E+02
.3659E+01	.3601E+02
.3683E+01	.3611E+02
.3707E+01	.3604E+02
.3732E+01	.3531E+02
.3756E+01	.3564E+02
.3781E+01	.3517E+02
.3805E+01	.3321E+02
.3829E+01	.3072E+02
.3854E+01	.3001E+02
.3878E+01	.2891E+02
.3902E+01	.2885E+02
.3927E+01	.2876E+02
.3951E+01	.2818E+02
.3976E+01	.2737E+02
.4000E+01	.2675E+02
.4024E+01	.2693E+02
.4049E+01	.2835E+02
.4073E+01	.3028E+02
.4098E+01	.3078E+02
.4122E+01	.3082E+02
.4146E+01	.3110E+02
.4171E+01	.3126E+02
.4195E+01	.3093E+02
.4220E+01	.3028E+02
.4244E+01	.2968E+02
.4268E+01	.2829E+02
.4293E+01	.2557E+02
.4317E+01	.2234E+02
.4341E+01	.2173E+02
.4366E+01	.1984E+02
.4390E+01	.1944E+02
.4415E+01	.1934E+02
.4439E+01	.1885E+02
.4463E+01	.1836E+02
.4488E+01	.1768E+02
.4512E+01	.1711E+02
.4537E+01	.1681E+02
.4561E+01	.1673E+02
.4585E+01	.1684E+02
.4610E+01	.1755E+02
.4634E+01	.1821E+02
.4659E+01	.1856E+02
.4683E+01	.1859E+02
.4707E+01	.1840E+02
.4732E+01	.1841E+02
.4756E+01	.1841E+02
.4781E+01	.1847E+02

.4805E+01	.1853E+02
.4829E+01	.1858E+02
.4854E+01	.1867E+02
.4878E+01	.1882E+02
.4902E+01	.1904E+02
.4927E+01	.1940E+02
.4951E+01	.1926E+02
.4976E+01	.1948E+02
.5000E+01	.1993E+02
.5024E+01	.2027E+02
.5049E+01	.2069E+02
.5073E+01	.2481E+02
.5098E+01	.2846E+02
.5122E+01	.3089E+02
.5146E+01	.3141E+02
.5171E+01	.3101E+02
.5195E+01	.3121E+02
.5220E+01	.3103E+02
.5244E+01	.3077E+02
.5268E+01	.3068E+02
.5293E+01	.3059E+02
.5317E+01	.3014E+02
.5341E+01	.2984E+02
.5366E+01	.2949E+02
.5390E+01	.2922E+02
.5415E+01	.2885E+02
.5439E+01	.2843E+02
.5463E+01	.2842E+02
.5488E+01	.2839E+02
.5512E+01	.2816E+02
.5537E+01	.2808E+02
.5561E+01	.2824E+02
.5585E+01	.2856E+02
.5610E+01	.2866E+02
.5634E+01	.2853E+02
.5659E+01	.2820E+02
.5683E+01	.2777E+02
.5707E+01	.2758E+02
.5732E+01	.2753E+02
.5756E+01	.2759E+02
.5781E+01	.2762E+02
.5805E+01	.2712E+02
.5829E+01	.2702E+02
.5854E+01	.2690E+02
.5878E+01	.2680E+02
.5902E+01	.2675E+02
.5927E+01	.2621E+02
.5951E+01	.2619E+02
.5976E+01	.2619E+02
.6000E+01	.2623E+02
.6024E+01	.2624E+02
.6049E+01	.2617E+02
.6073E+01	.2619E+02
.6098E+01	.2560E+02
.6122E+01	.2459E+02
.6146E+01	.2398E+02
.6171E+01	.2407E+02
.6195E+01	.2436E+02
.6220E+01	.2483E+02
.6244E+01	.2523E+02
.6268E+01	.2580E+02
.6293E+01	.2712E+02
.6317E+01	.2779E+02
.6341E+01	.2810E+02
.6366E+01	.2815E+02
.6390E+01	.2824E+02

.6415E+01	.2818E+02
.6439E+01	.2817E+02
.6463E+01	.2816E+02
.6488E+01	.2819E+02
.6512E+01	.2820E+02
.6537E+01	.2786E+02
.6561E+01	.2809E+02
.6585E+01	.2826E+02
.6610E+01	.2830E+02
.6634E+01	.2831E+02
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.2000E+02	.1594E+01
.2002E+02	.1592E+01
.2005E+02	.1587E+01
.2007E+02	.1577E+01
.2010E+02	.1575E+01
.2012E+02	.1575E+01
.2015E+02	.1572E+01
.2017E+02	.1564E+01
.2020E+02	.1555E+01
.2022E+02	.1547E+01
.2024E+02	.1540E+01
.2027E+02	.1534E+01
.2029E+02	.1528E+01
.2032E+02	.1520E+01
.2034E+02	.1514E+01
.2037E+02	.1511E+01
.2039E+02	.1509E+01
.2041E+02	.1507E+01
.2044E+02	.1498E+01
.2046E+02	.1492E+01
.2049E+02	.1487E+01
.2051E+02	.1486E+01
.2054E+02	.1483E+01
.2056E+02	.1474E+01
.2059E+02	.1465E+01
.2061E+02	.1455E+01
.2063E+02	.1445E+01
.2066E+02	.1436E+01
.2068E+02	.1427E+01
.2071E+02	.1421E+01
.2073E+02	.1415E+01
.2076E+02	.1403E+01
.2078E+02	.1393E+01
.2080E+02	.1385E+01
.2083E+02	.1378E+01
.2085E+02	.1370E+01
.2088E+02	.1359E+01

.2090E+02	.1358E+01
.2093E+02	.1358E+01
.2095E+02	.1357E+01
.2098E+02	.1342E+01
.2100E+02	.1322E+01
.2102E+02	.1303E+01
.2105E+02	.1303E+01
.2107E+02	.1278E+01
.2110E+02	.1254E+01
.2112E+02	.1239E+01
.2115E+02	.1225E+01
.2117E+02	.1225E+01
.2120E+02	.1200E+01
.2122E+02	.1172E+01
.2124E+02	.1147E+01
.2127E+02	.1120E+01
.2129E+02	.1120E+01
.2132E+02	.1096E+01
.2134E+02	.1080E+01
.2137E+02	.1060E+01
.2139E+02	.1032E+01
.2141E+02	.1032E+01
.2144E+02	.1012E+01
.2146E+02	.1004E+01
.2149E+02	.9894E+00
.2151E+02	.9681E+00
.2154E+02	.9681E+00
.2156E+02	.9550E+00
.2159E+02	.9492E+00
.2161E+02	.9397E+00
.2163E+02	.9258E+00
.2166E+02	.9258E+00
.2168E+02	.9137E+00
.2171E+02	.9053E+00
.2173E+02	.8991E+00
.2176E+02	.8933E+00
.2178E+02	.8933E+00
.2180E+02	.8883E+00
.2183E+02	.8847E+00
.2185E+02	.8827E+00
.2188E+02	.8812E+00
.2190E+02	.8812E+00
.2193E+02	.8796E+00
.2195E+02	.8781E+00
.2198E+02	.8772E+00
.2200E+02	.8772E+00
.2202E+02	.8772E+00
.2205E+02	.8771E+00
.2207E+02	.8767E+00
.2210E+02	.8763E+00
.2212E+02	.8764E+00
.2215E+02	.8764E+00
.2217E+02	.8768E+00
.2220E+02	.8768E+00
.2222E+02	.8760E+00
.2224E+02	.8749E+00
.2227E+02	.8749E+00
.2229E+02	.8753E+00
.2232E+02	.8774E+00
.2234E+02	.8785E+00
.2237E+02	.8778E+00
.2239E+02	.8778E+00
.2241E+02	.8776E+00
.2244E+02	.8784E+00
.2246E+02	.8785E+00
.2249E+02	.8789E+00

.2251E+02	.8789E+00
.2254E+02	.8810E+00
.2256E+02	.8837E+00
.2259E+02	.8847E+00
.2261E+02	.8844E+00
.2263E+02	.8844E+00
.2266E+02	.8849E+00
.2268E+02	.8865E+00
.2271E+02	.8876E+00
.2273E+02	.8869E+00
.2276E+02	.8869E+00
.2278E+02	.8849E+00
.2280E+02	.8825E+00
.2283E+02	.8811E+00
.2285E+02	.8822E+00
.2288E+02	.8822E+00
.2290E+02	.8849E+00
.2293E+02	.8856E+00
.2295E+02	.8827E+00
.2298E+02	.8785E+00
.2300E+02	.8785E+00
.2302E+02	.8758E+00
.2305E+02	.8743E+00
.2307E+02	.8729E+00
.2310E+02	.8722E+00
.2312E+02	.8722E+00
.2315E+02	.8727E+00
.2317E+02	.8735E+00
.2320E+02	.8731E+00
.2322E+02	.8717E+00
.2324E+02	.8717E+00
.2327E+02	.8704E+00
.2329E+02	.8698E+00
.2332E+02	.8698E+00
.2334E+02	.8697E+00
.2337E+02	.8697E+00
.2339E+02	.8692E+00
.2341E+02	.8687E+00
.2344E+02	.8692E+00
.2346E+02	.8706E+00
.2349E+02	.8706E+00
.2351E+02	.8715E+00
.2354E+02	.8720E+00
.2356E+02	.8733E+00
.2359E+02	.8749E+00
.2361E+02	.8749E+00
.2363E+02	.8753E+00
.2366E+02	.8760E+00
.2368E+02	.8783E+00
.2371E+02	.8807E+00
.2373E+02	.8807E+00
.2376E+02	.8819E+00
.2378E+02	.8837E+00
.2380E+02	.8871E+00
.2383E+02	.8891E+00
.2385E+02	.8891E+00
.2388E+02	.8884E+00
.2390E+02	.8883E+00
.2393E+02	.8913E+00
.2395E+02	.8933E+00
.2398E+02	.8933E+00
.2400E+02	.8899E+00
.2402E+02	.8859E+00
.2405E+02	.8873E+00
.2407E+02	.8903E+00
.2410E+02	.8903E+00

.2412E+02	.8888E+00
.2415E+02	.8850E+00
.2417E+02	.8826E+00
.2420E+02	.8797E+00
.2422E+02	.8797E+00
.2424E+02	.8761E+00
.2427E+02	.8751E+00
.2429E+02	.8765E+00
.2432E+02	.8762E+00
.2434E+02	.8762E+00
.2437E+02	.8730E+00
.2439E+02	.8683E+00
.2441E+02	.8623E+00
.2444E+02	.8549E+00
.2446E+02	.8549E+00
.2449E+02	.8485E+00
.2451E+02	.8458E+00
.2454E+02	.8462E+00
.2456E+02	.8463E+00
.2459E+02	.8463E+00
.2461E+02	.8437E+00
.2463E+02	.8370E+00
.2466E+02	.8245E+00
.2468E+02	.8066E+00
.2471E+02	.8066E+00
.2473E+02	.7901E+00
.2476E+02	.7834E+00
.2478E+02	.7813E+00
.2480E+02	.7683E+00
.2483E+02	.7683E+00
.2485E+02	.7441E+00
.2488E+02	.7284E+00
.2490E+02	.729[illegible]+00
.2493E+02	.7288E+00
.2495E+02	.7288E+00
.2498E+02	.7111E+00
.2500E+02	.6894E+00

Frequency	Component 1	Component 2	Component 3
0.200	.13754E-01	.13566E-01	.45348E-02
0.220	.14823E-01	.16121E-01	.41304E-02
0.242	.15856E-01	.17827E-01	.57051E-02
0.266	.22648E-01	.18423E-01	.90037E-02
0.293	.21645E-01	.22821E-01	.82982E-02
0.322	.20630E-01	.25608E-01	.89459E-02
0.354	.23627E-01	.28258E-01	.10997E-01
0.389	.25849E-01	.27062E-01	.10897E-01
0.428	.29765E-01	.27246E-01	.12579E-01
0.471	.33246E-01	.27968E-01	.13946E-01
0.518	.38999E-01	.39224E-01	.15404E-01
0.569	.41852E-01	.49403E-01	.17049E-01
0.626	.47316E-01	.50205E-01	.20146E-01
0.689	.60551E-01	.71046E-01	.25810E-01
0.757	.77734E-01	.76119E-01	.29520E-01
0.833	.85914E-01	.84240E-01	.38265E-01
0.916	.90852E-01	.97767E-01	.47258E-01
1.007	.11293E+00	.11469E+00	.57535E-01
1.108	.13325E+00	.13531E+00	.62756E-01
1.218	.14982E+00	.15368E+00	.61608E-01
1.340	.17119E+00	.18227E+00	.65252E-01
1.474	.18871E+00	.19580E+00	.75870E-01
1.621	.21136E+00	.22477E+00	.71552E-01
1.783	.23[illegible]69E+00	.25508E+00	.69490E-01
1.960	.2712[illegible]E+00	.277[illegible]5E+00	.73208E-01
2.156	.29061E+00	[illegible]16E+00	.85847E-01
2.371	.29404E+00	.30838E+00	.10819E+00
2.608	.32100E+00	.32238E+00	.12086E+00
2.868	.35208E+00	.38397E+00	.13231E+00
3.154	.37250E+00	.40376E+00	.15266E+00
3.469	.42931E+00	.45718E+00	.15526E+00
3.815	.44414E+00	.46474E+00	.15987E+00
4.195	.46086E+00	.47745E+00	.16816E+00
4.614	.46016E+00	.48234E+00	.16966E+00
5.074	.51062E+00	.50663E+00	.19439E+00
5.581	.49622E+00	.48519E+00	.18448E+00
6.138	.47409E+00	.47840E+00	.20333E+00
6.750	.44412E+00	.48069E+00	.21343E+00
7.423	.42195E+00	.42913E+00	.24071E+00
8.164	.41048E+00	.41730E+0C	.26366E+00
8.979	.39680E+00	.38943E+00	.24314E+00
9.875	.37152E+00	.39230E+00	.22388E+00
10.860	.36038E+00	.36969E+00	.20404E+00
11.943	.33129E+00	.34393E+00	.18521E+00
13.135	.29241E+00	.31408E+00	.18533E+00
14.446	.27800E+00	.30326E+00	.17800E+00
15.887	.25035E+00	.27260E+00	.16396E+00
17.472	.24465E+00	.26244E+00	.15808E+00
19.215	.24083E+00	.24891E+00	.14759E+00
21.133	.22212E+00	.23665E+00	.14408E+00
23.241	.21846E+00	.23354E+00	.13769E+00
25.560	.20824E+00	.21840E+00	.13952E+00
28.111	.19300E+00	.21450E+00	.13021E+00
30.915	.18785E+00	.21559E+00	.12614E+00
34.000	.19528E+00	.20679E+00	.12247E+00