# APPENDIX B

## SITE RESPONSE ANALYSIS REPORT

**Robert Pyke, Consulting Engineer**

January 15, 2005

Rutherford & Chekene
427 Thirteenth Street
Oakland, CA 94612

Attention: Gyimah Kasali

Re: Stanford Linear Accelerator Center
LINAC Coherent Light Source Tunnel Project
Seismic Design

Dear Gyimah,

At your request I have addressed the seismic issues contained in the SLAC Geotechnical Investigation and Report Needs List prepared by Jacobs Engineering on 2/4/2004.

1. For design in accordance with the 2001 California Building Code the following parameters should be used:
   (a) Soil Profile Type Sc
   (b) Near Source Factors Na=1.5, Nv=2.0
   (c) Seismic Source Type A

The building code does not specifically cover below ground structures but it would be conservative to use the same parameters in conjunction with a UBC type spectrum.

2. Site specific spectra are provided in the Specification for Seismic Design of Buildings, Structures, Equipment and Systems at the Stanford Linear Accelerator Center dated December 4, 2000. The digital values that correspond to the curves for 5 percent damping that are shown in Figures 1 and 2 of that report, extrapolated out to a period of 10 seconds, are attached to this report. The 5 percent damped horizontal response spectrum is generally similar to the CBC spectrum constructed using the parameters recommended above. The SLAC spectra are said to be applicable to structures including tunnels but the ground response analyses that are described subsequently in this report suggest that they may be conservative at most periods for the design of below ground structures. However, more detailed two dimensional soil-cavity interaction studies would be required to confirm this finding if it is proposed to take advantage of the reduced motions below the free surface.

3. Tunneling and buried structure parameters:
   (a) In view of the proximity of the site to the San Andreas fault it can be assumed that horizontal motions will result primarily from vertically propagating shear waves and that vertical motions will result primarily from vertically propagating P-waves.

**1076 Carol Lane, Suite 136, Lafayette, CA 94549**
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(b) Values are for SLAC design earthquake:

(i) Shear wave velocity: 1850 ft/sec
(ii) P-wave velocity: 4000 ft/sec
(iii) Rayleigh wave velocity: similar to shear wave but not applicable at this site
(iv) Peak displacement: 0.04 ft horizontal, 0.006 ft vertical
(v) Modulus of elasticity: 64,000,000 psf
(vi) Poisson's ratio: 0 to 0.1 - use 0.075 for design
(vii) Racking deformation: 0.004 ft per 10 feet
(viii) Peak acceleration: 0.6g horizontal and vertical
(xi) Peak velocity: 2.6 ft/sec horizontal, 1.3 ft/sec vertical

In order to estimate the peak acceleration, velocity and displacement and the racking at the tunnel depth one-dimensional nonlinear site response analyses were conducted at each of the four locations marked on the cross-section in Figure 1.

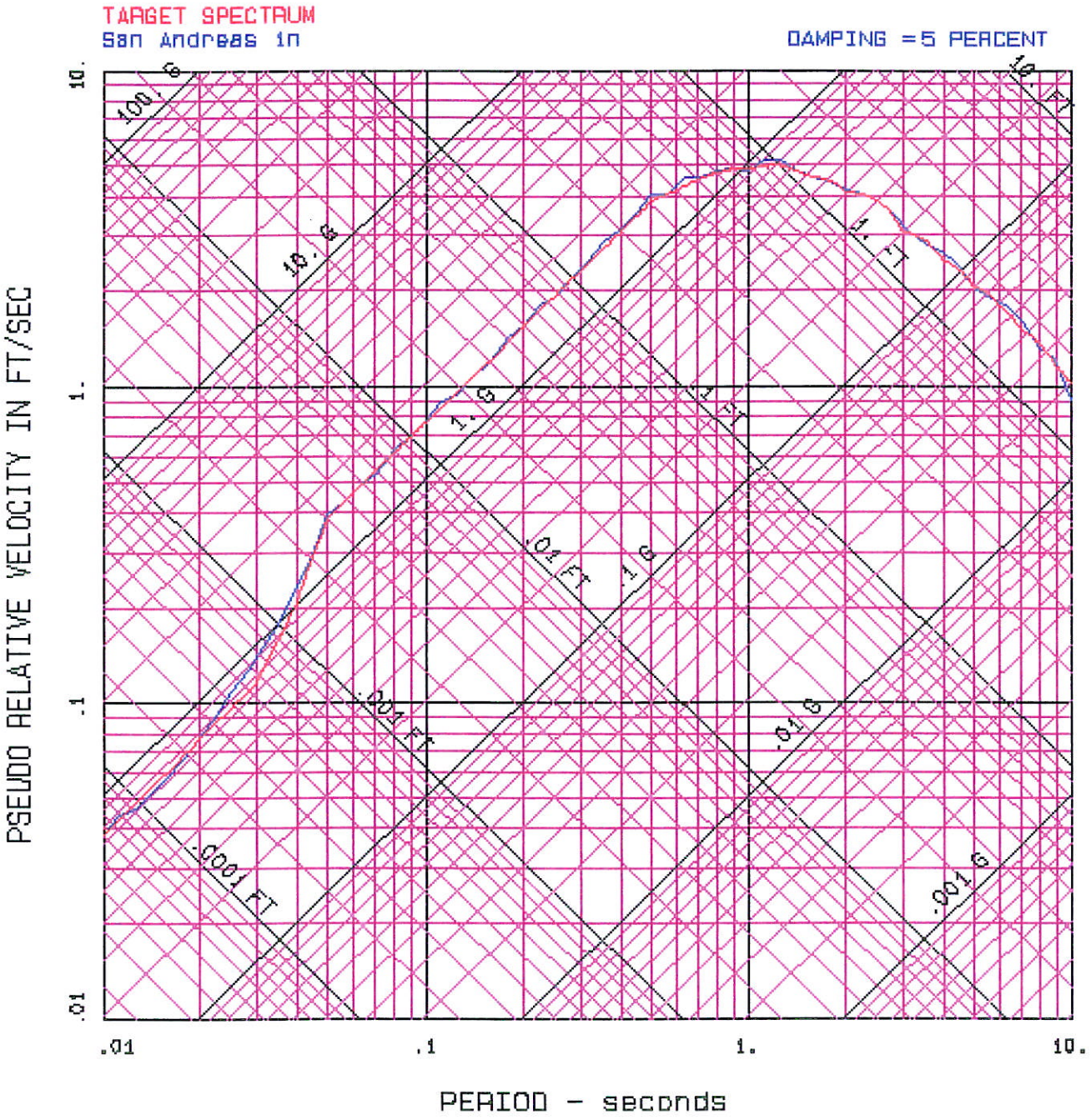
A suite of three three-component acceleration histories was used as the input to these analyses. The three sets of acceleration histories were originally developed by Dr Norman Abrahamson to represent motions generated by a large event on the San Andreas fault for the design of the new East Bay Bridge. These motions were fitted to the SLAC spectra using a frequency domain fitting procedure that is included in the program TINKER (TAGAsoft, 1999). In order to fit the acceleration histories to the broad banded design spectra the zero period accelerations were assumed to be 0.75g in both the horizontal and vertical directions as shown in Figure 2. A copy of the modified acceleration histories has been forwarded to you by e-mail and plots that show the fit to the target spectra and the acceleration, velocity and displacement histories are attached.

Four soil profiles for analysis were constructed for both horizontal and vertical motions using the geometry shown in Figure 1 and the shear and compression wave velocity measurements made in your site investigation. The site response analyses were conducted using the program TESS (TAGAsoft, 1999). TESS is generally similar in purpose to the well-known program SHAKE but uses nonlinear soil properties instead of "equivalent linear" properties and provides more meaningful values of the computed displacements. The assumed profiles and summaries of the results that were obtained are shown in the attached computer outputs.

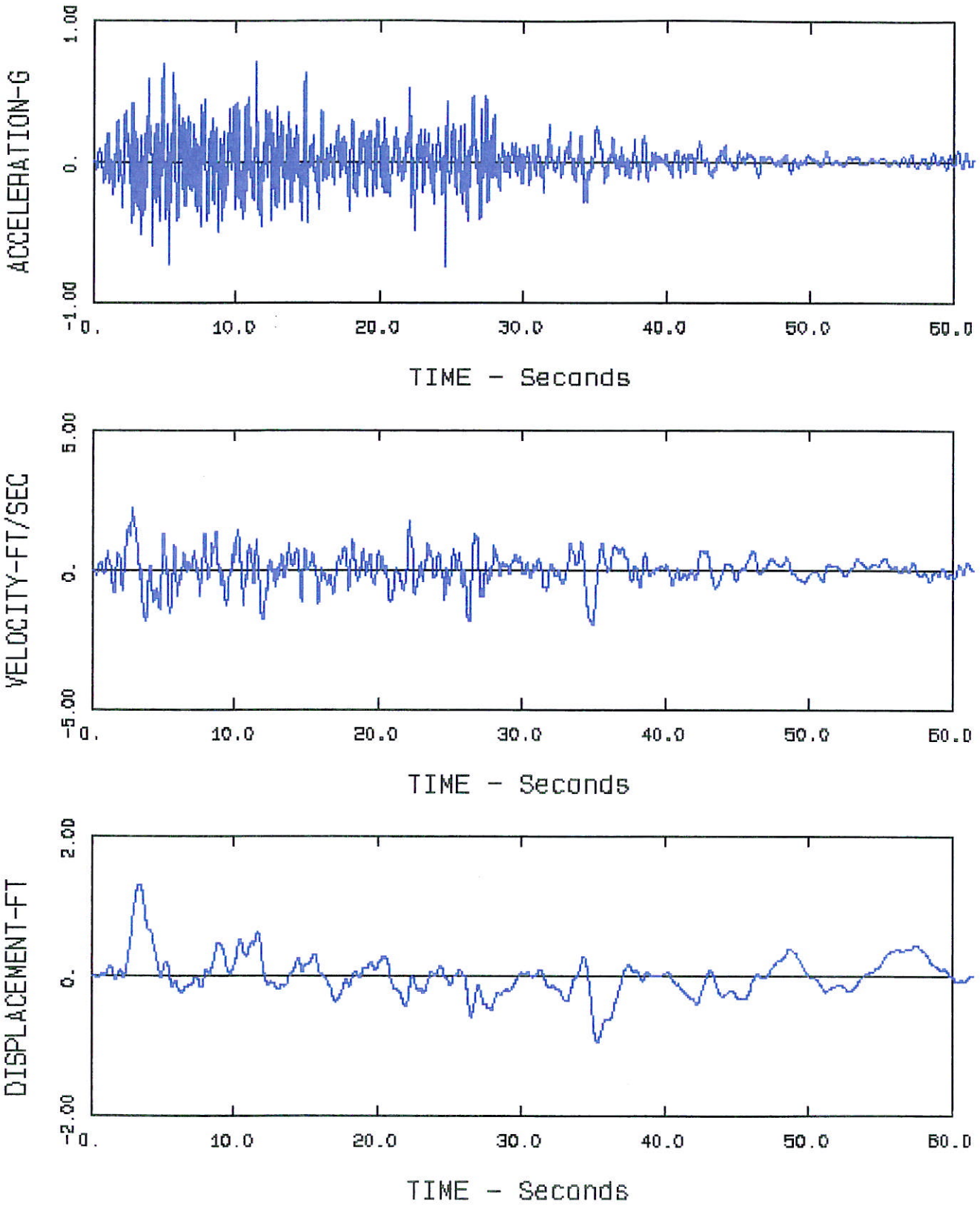
The values for the peak acceleration, velocity and displacement did not vary greatly from one profile to another and from one set of motions to another and the values reported above are conservative average values for all four profiles. The value reported above for racking of 0.004 ft per 10 feet is an upper bound for all four profiles and applies most directly to Profile 4. Less conservative values of 0.003 ft and 0.002 ft per 10 feet can be used for Profiles 1 and 3 and 2, if desired.

Sincerely,

Robert Pyke, Ph.D., G.E.




San Andreas Motion No. 1n
Fitted to SLAC Spectrum

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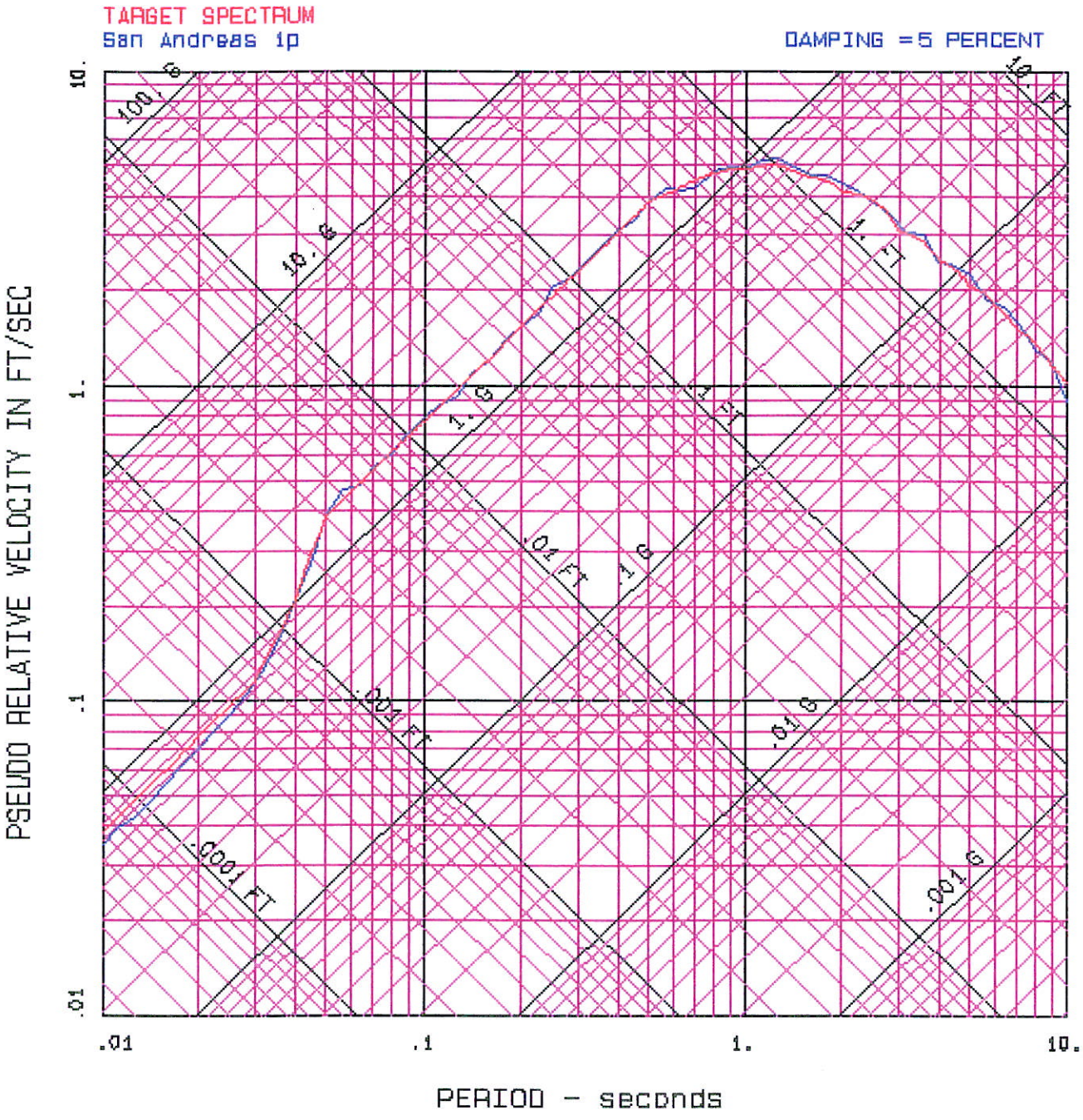
Fitted to SLAC Spectrum




San Andreas Motion No. 1p
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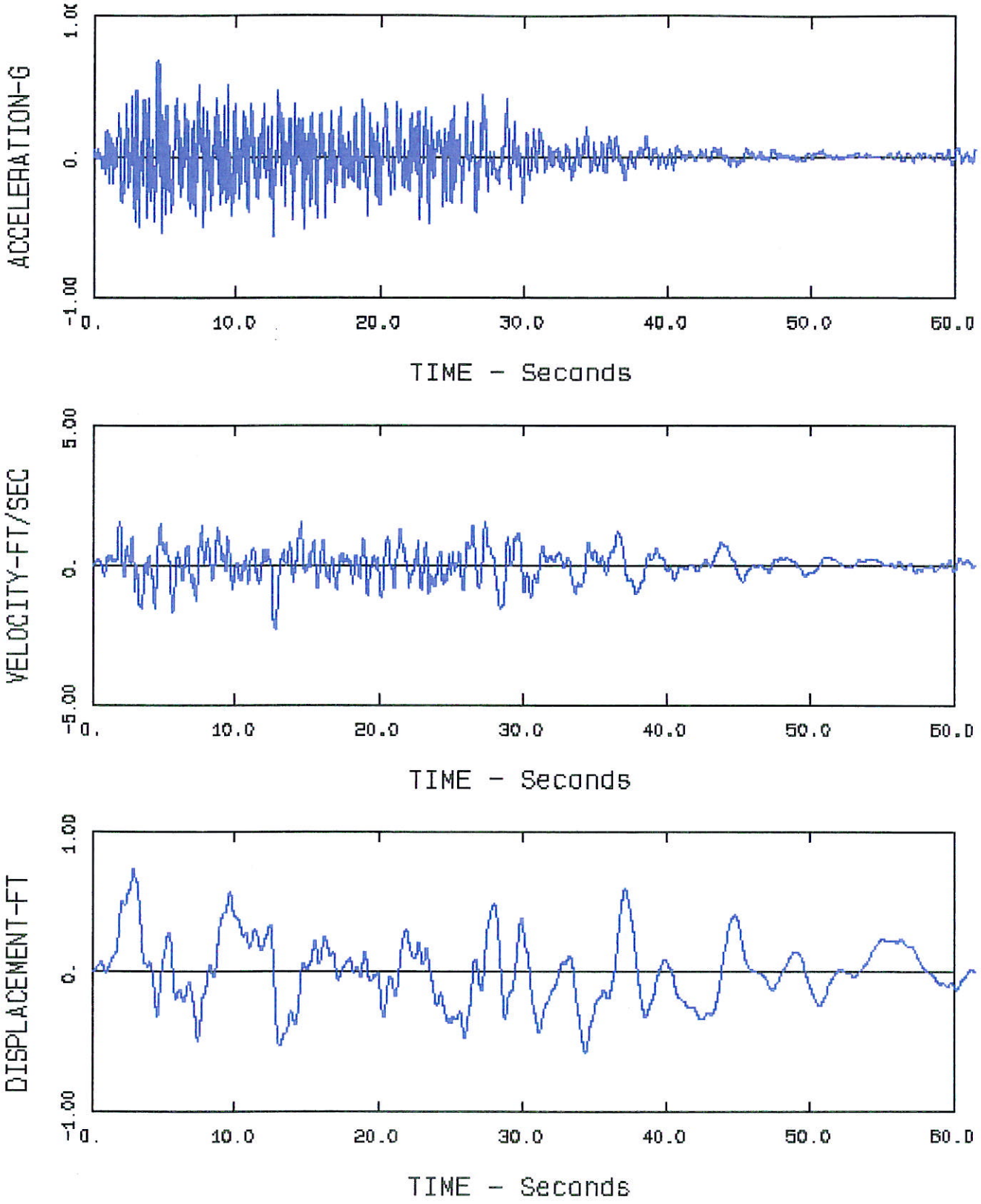
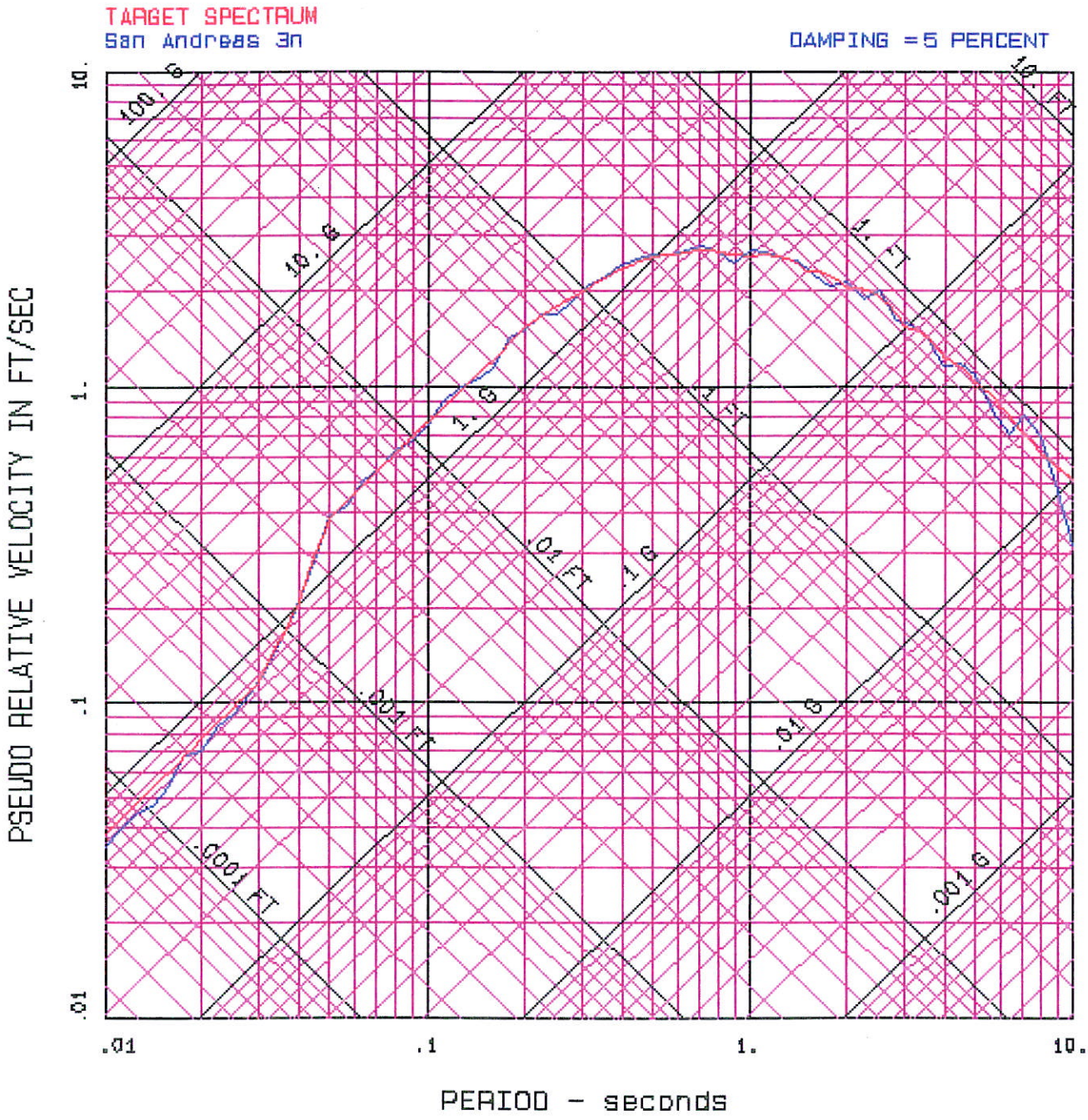



San Andreas Motion No. 1p
Fitted to SLAC Spectrum




San Andreas Motion No. 1v
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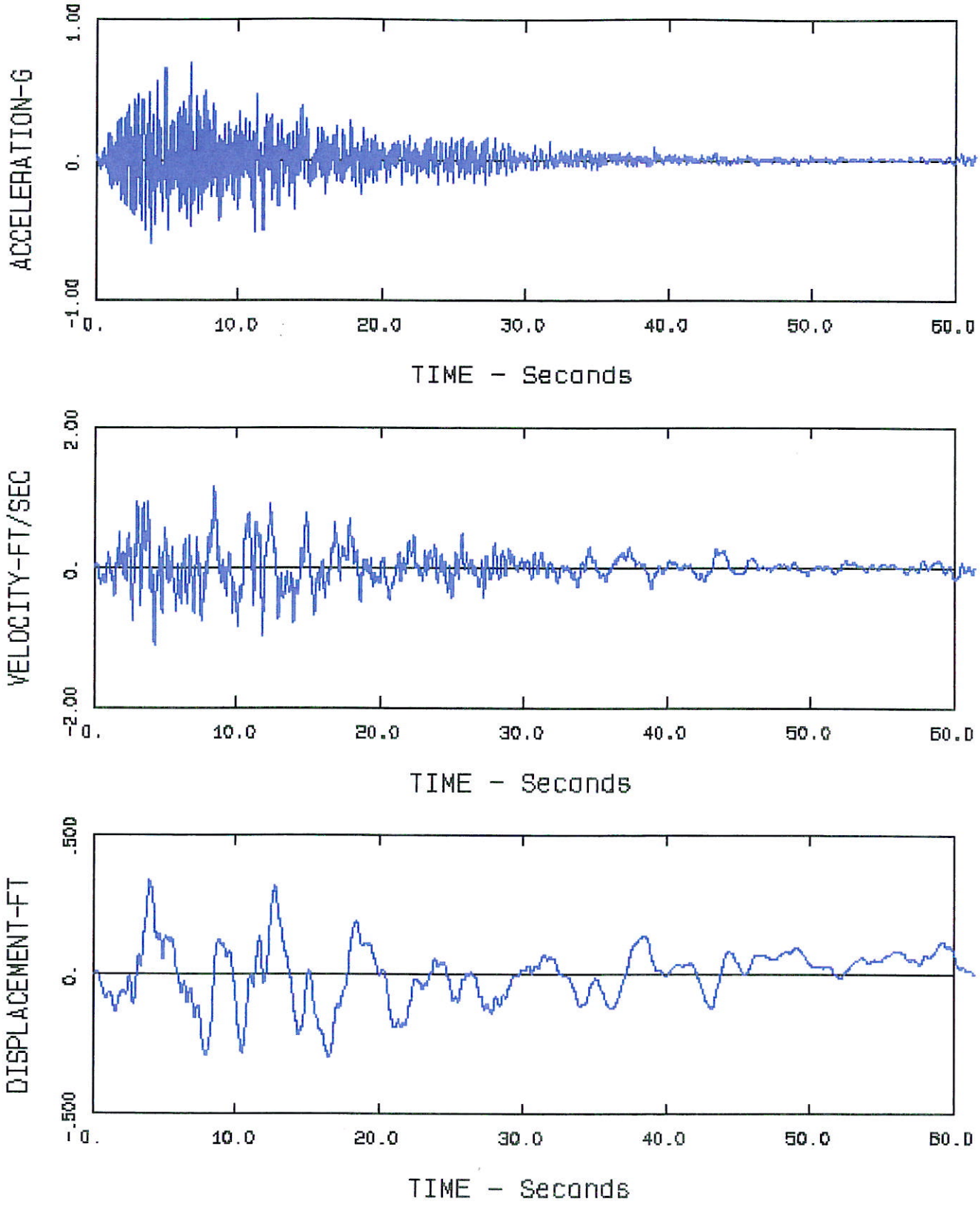
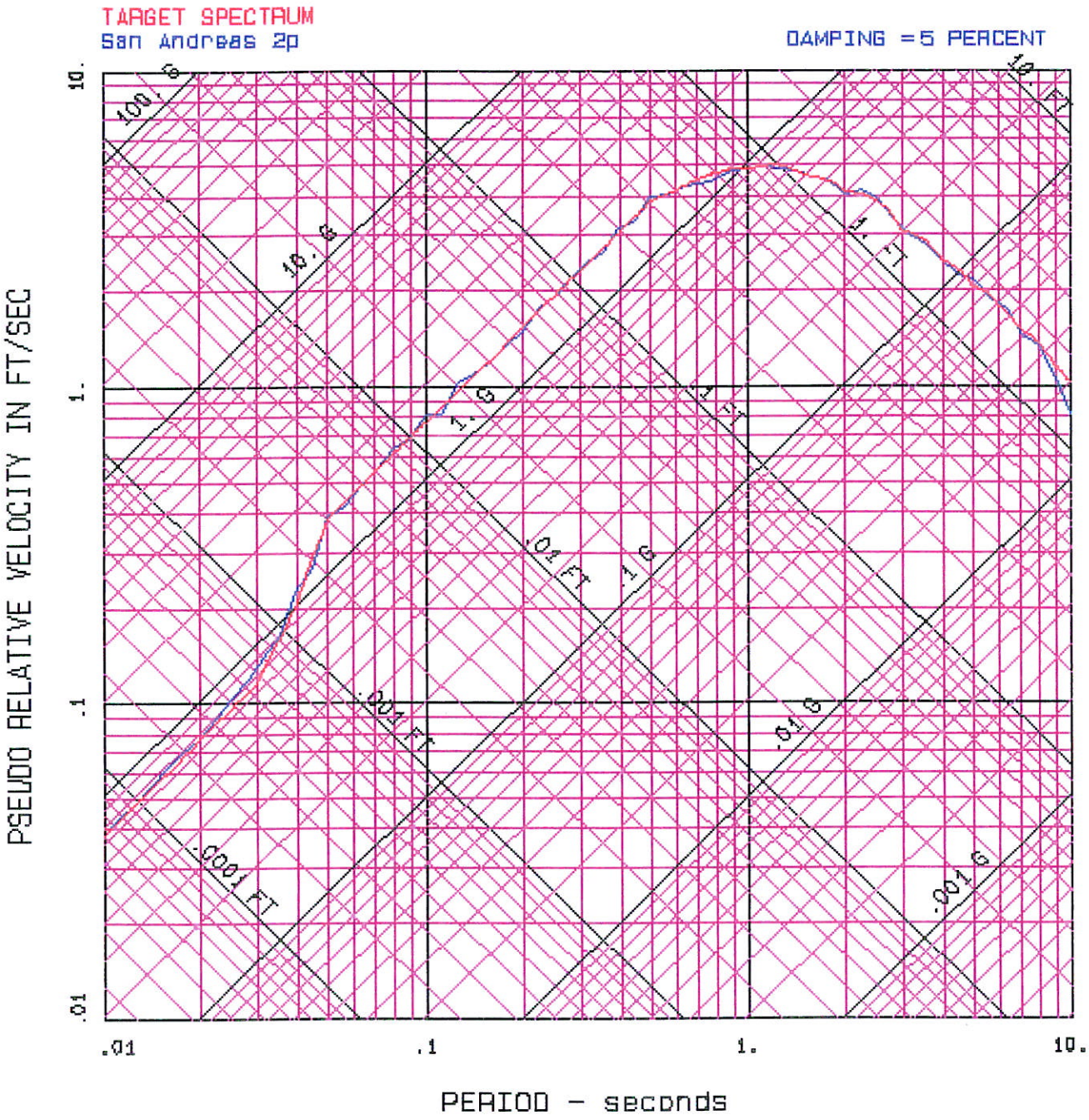



San Andreas Motion No. 1v
Fitted to SLAC Spectrum

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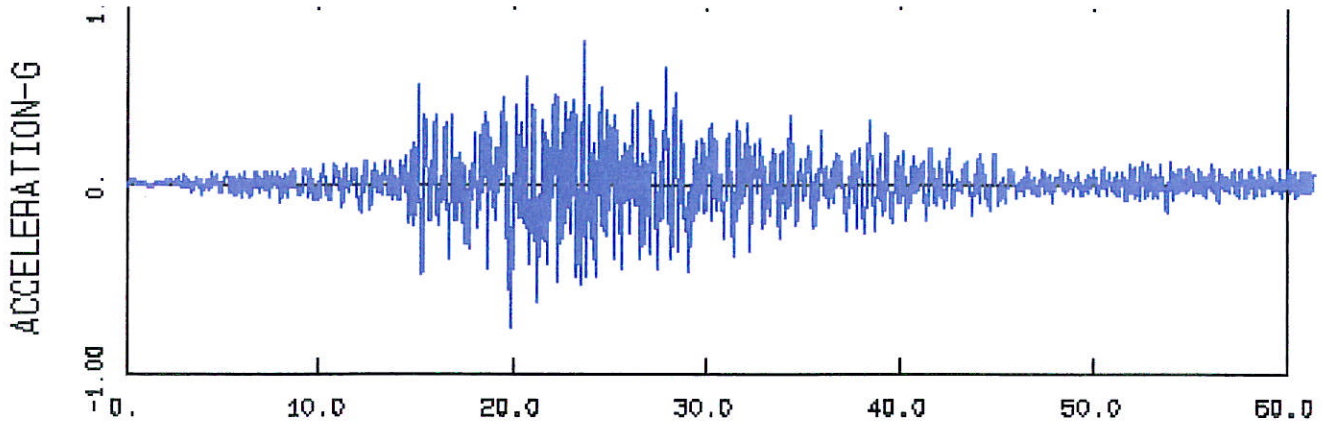


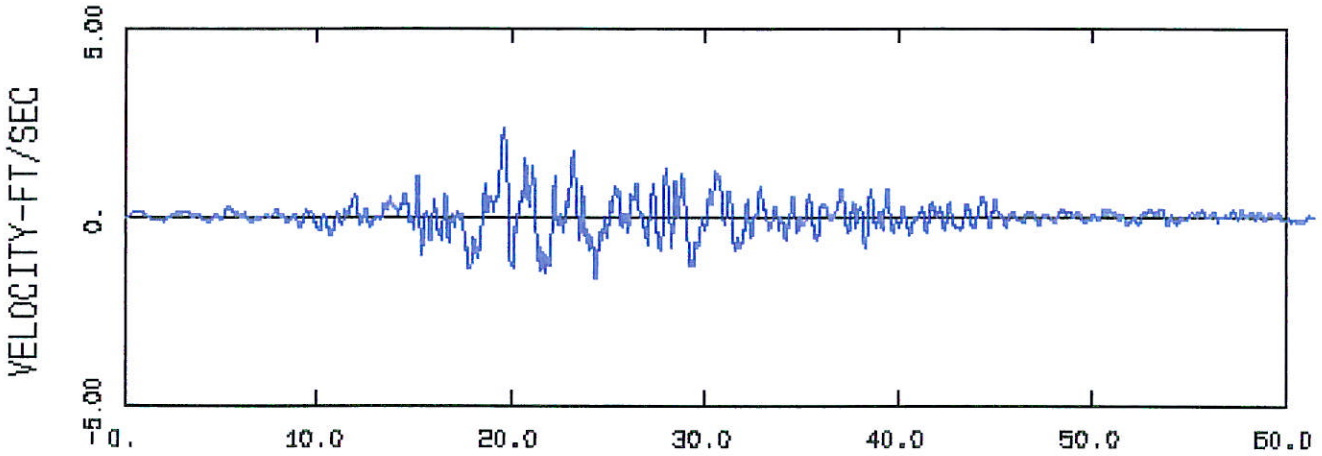


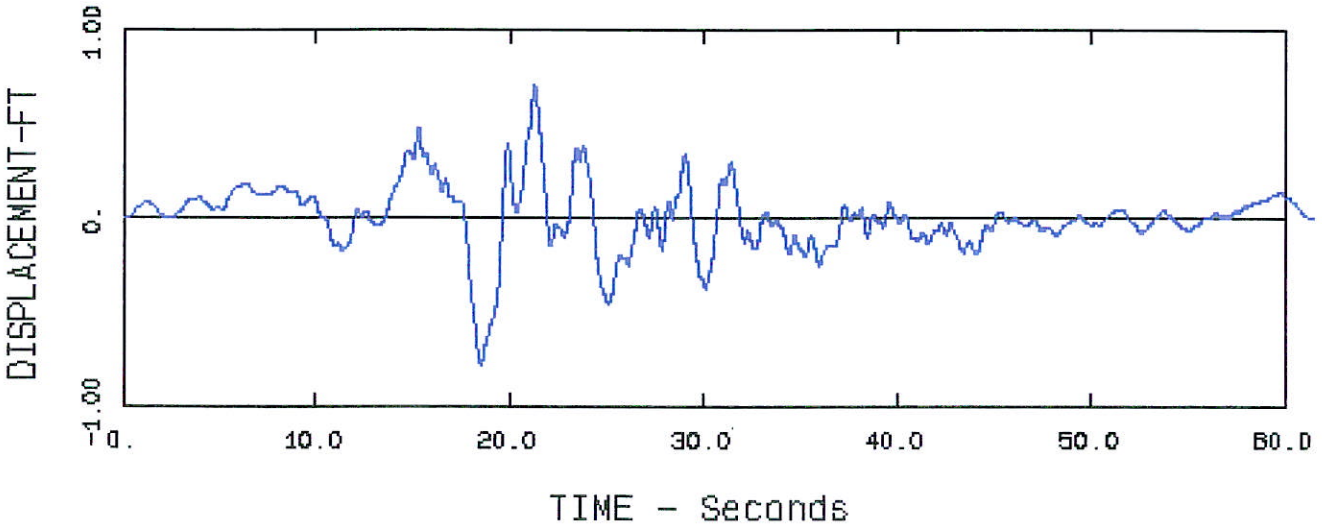


San Andreas Motion No. 2p
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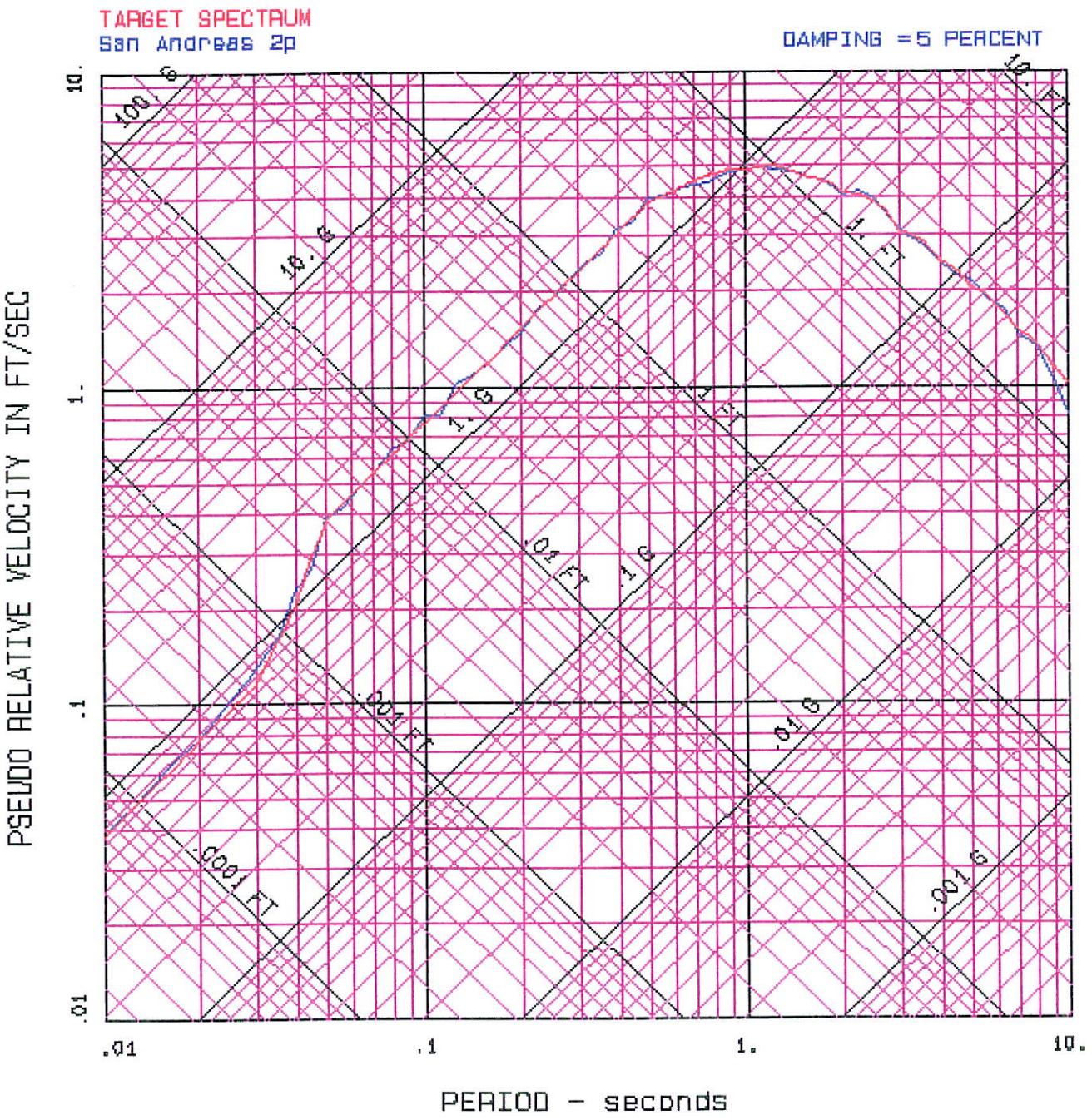


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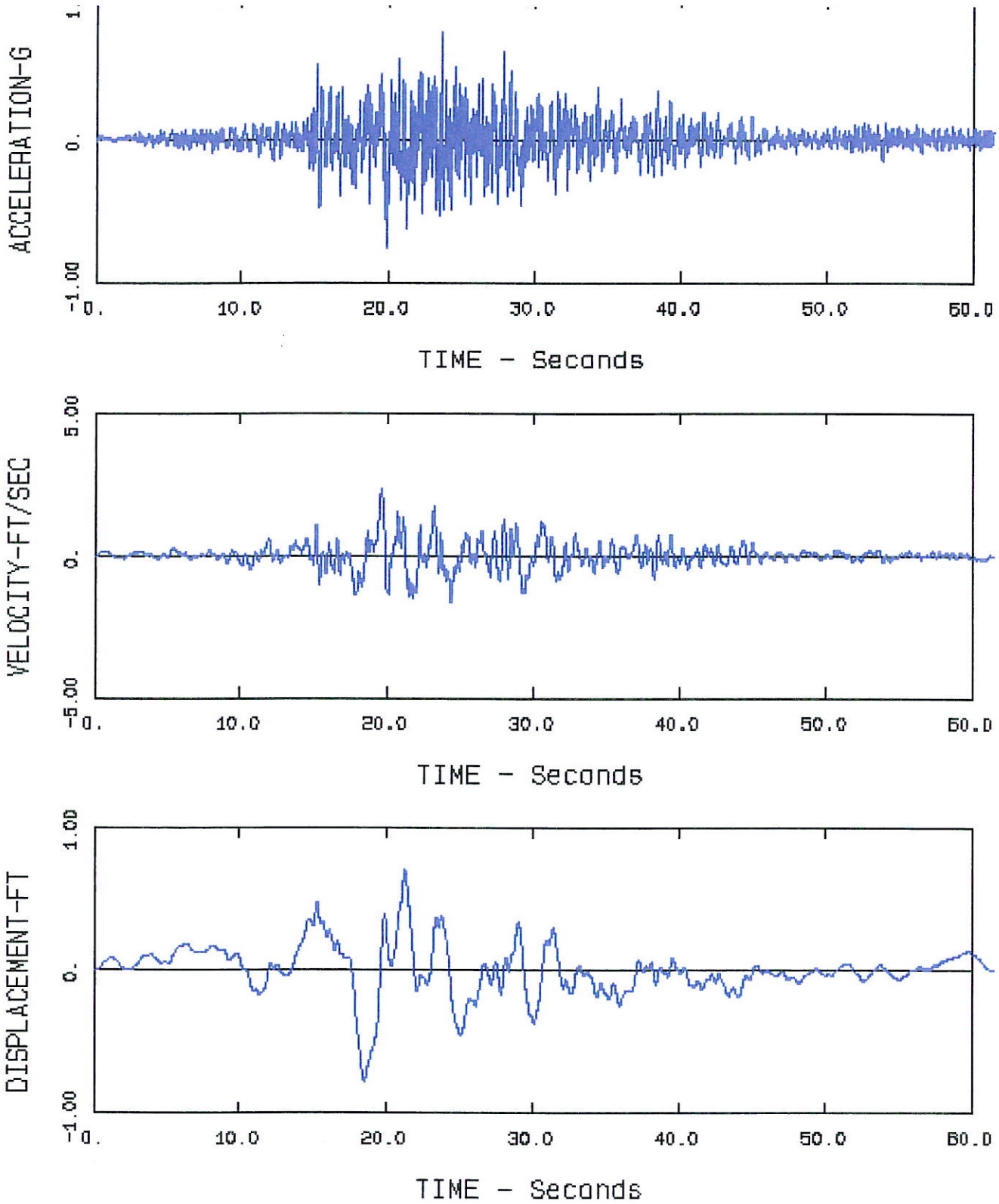


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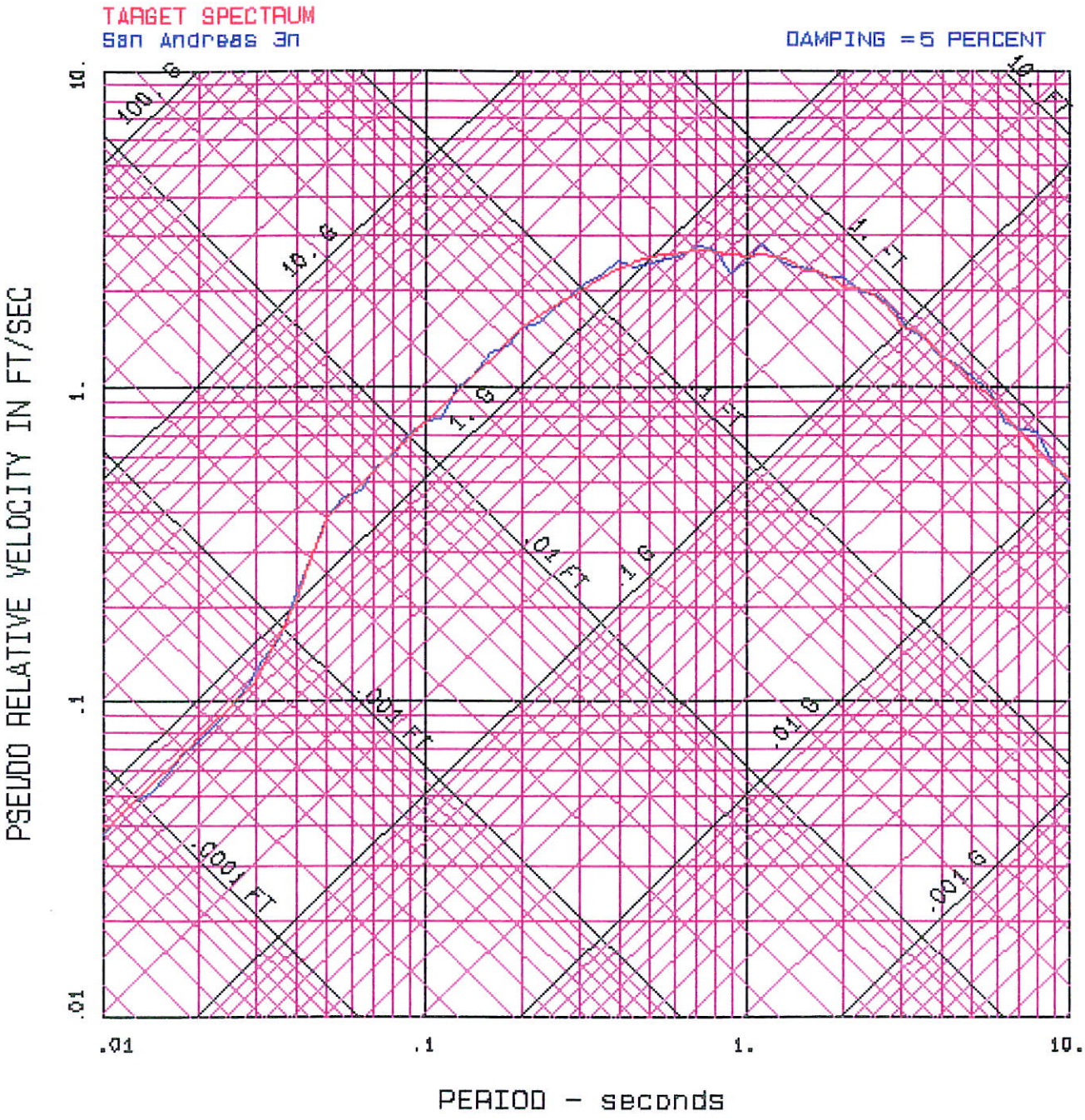


San Andreas Motion No. 2v
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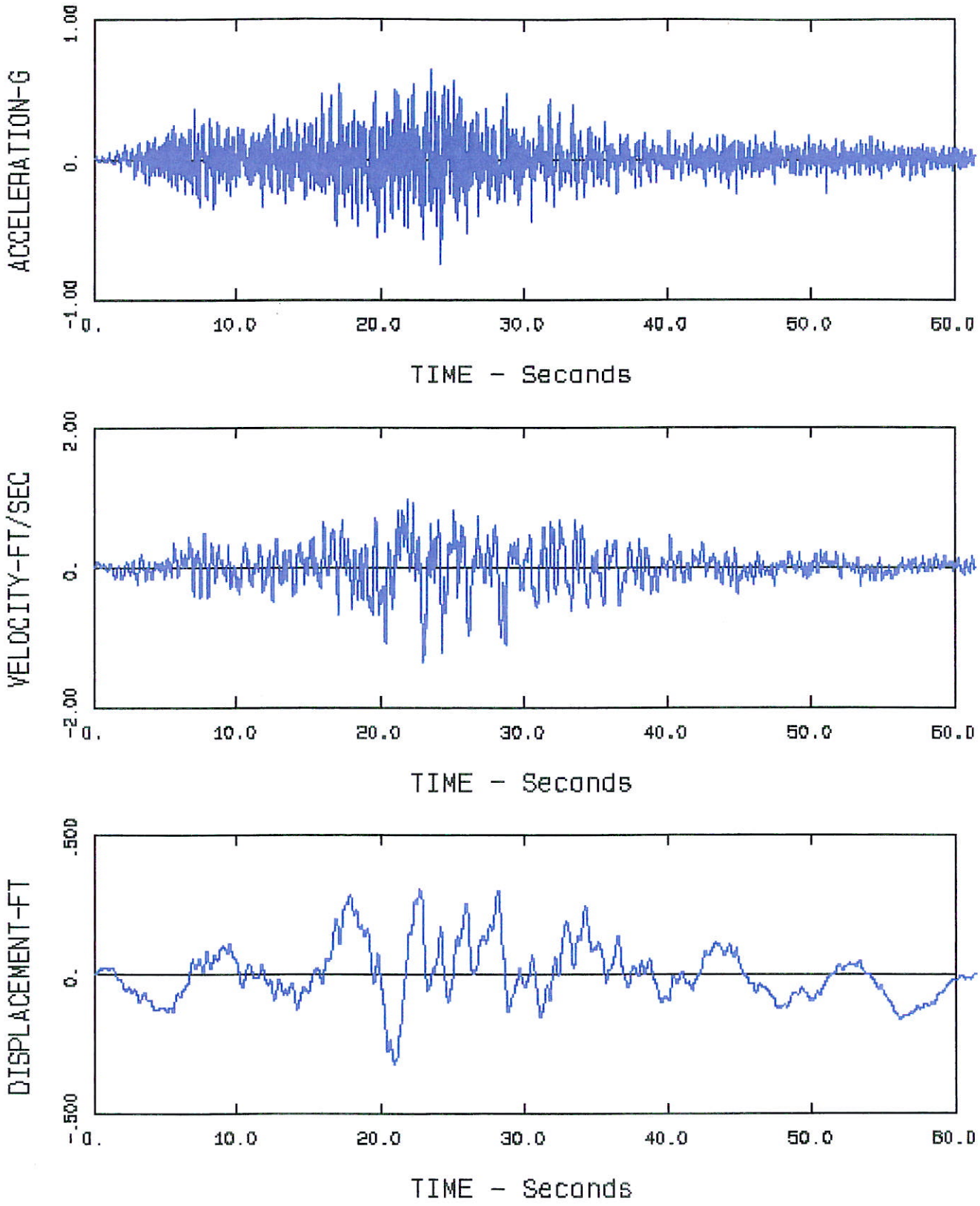


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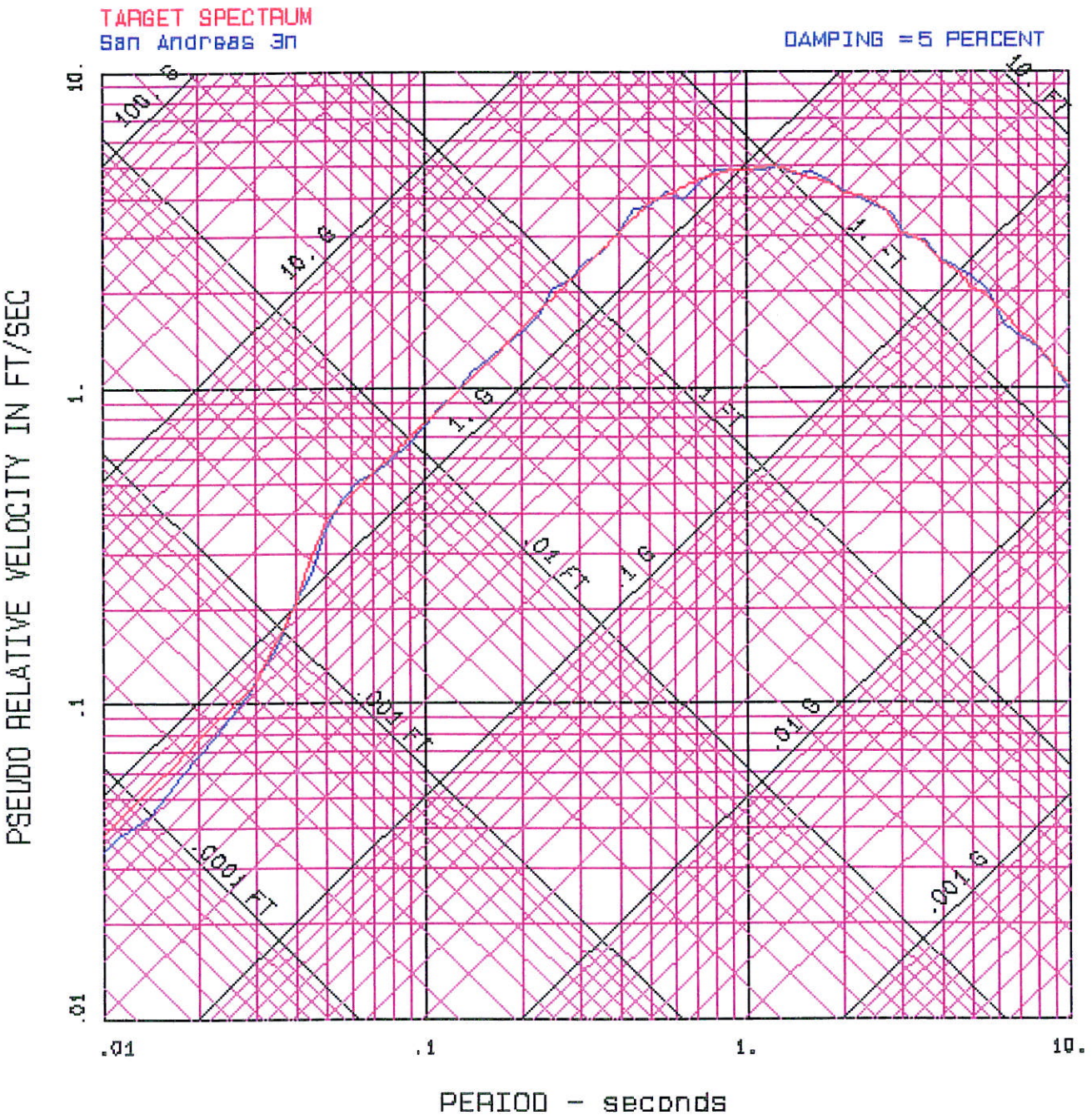


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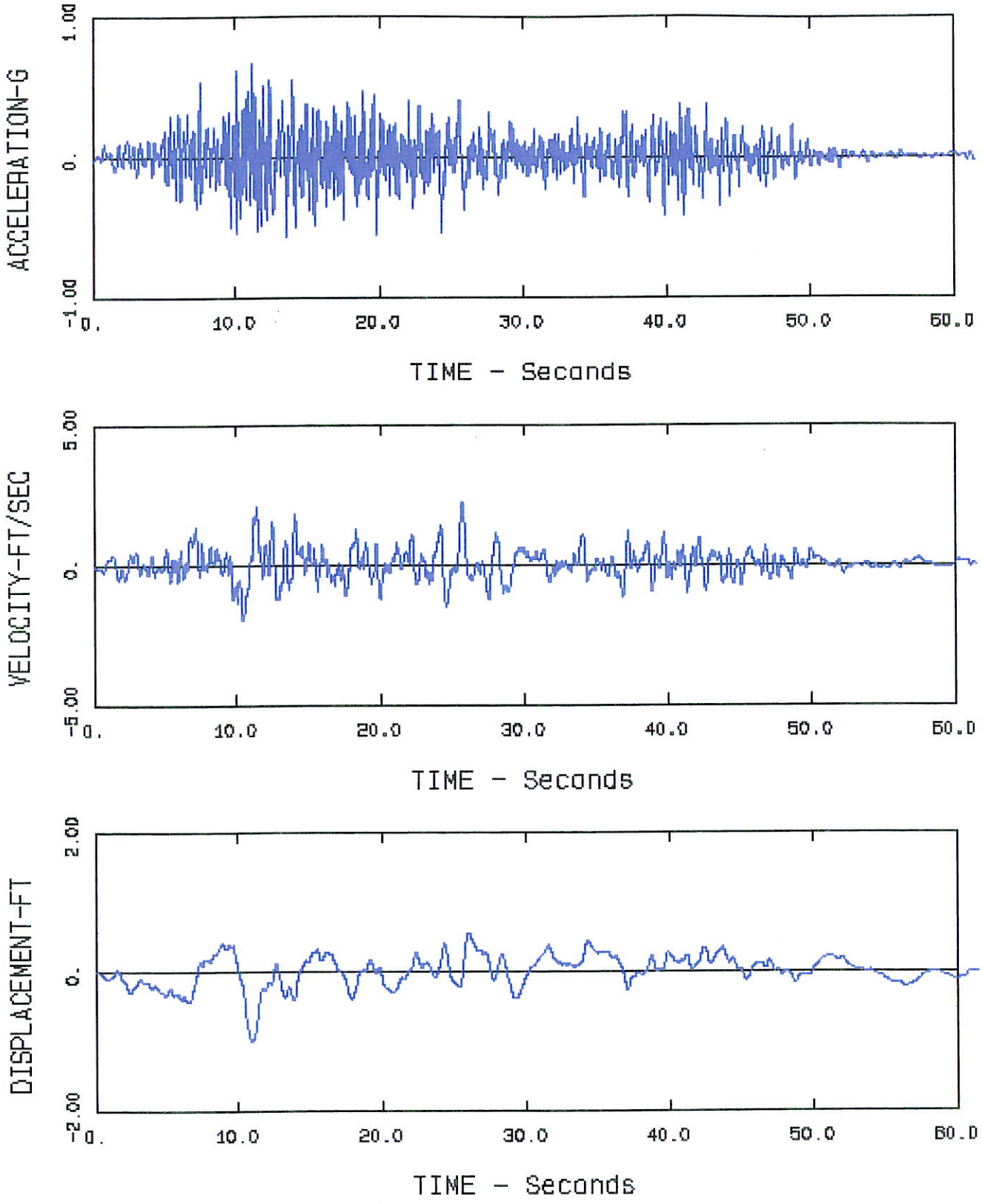


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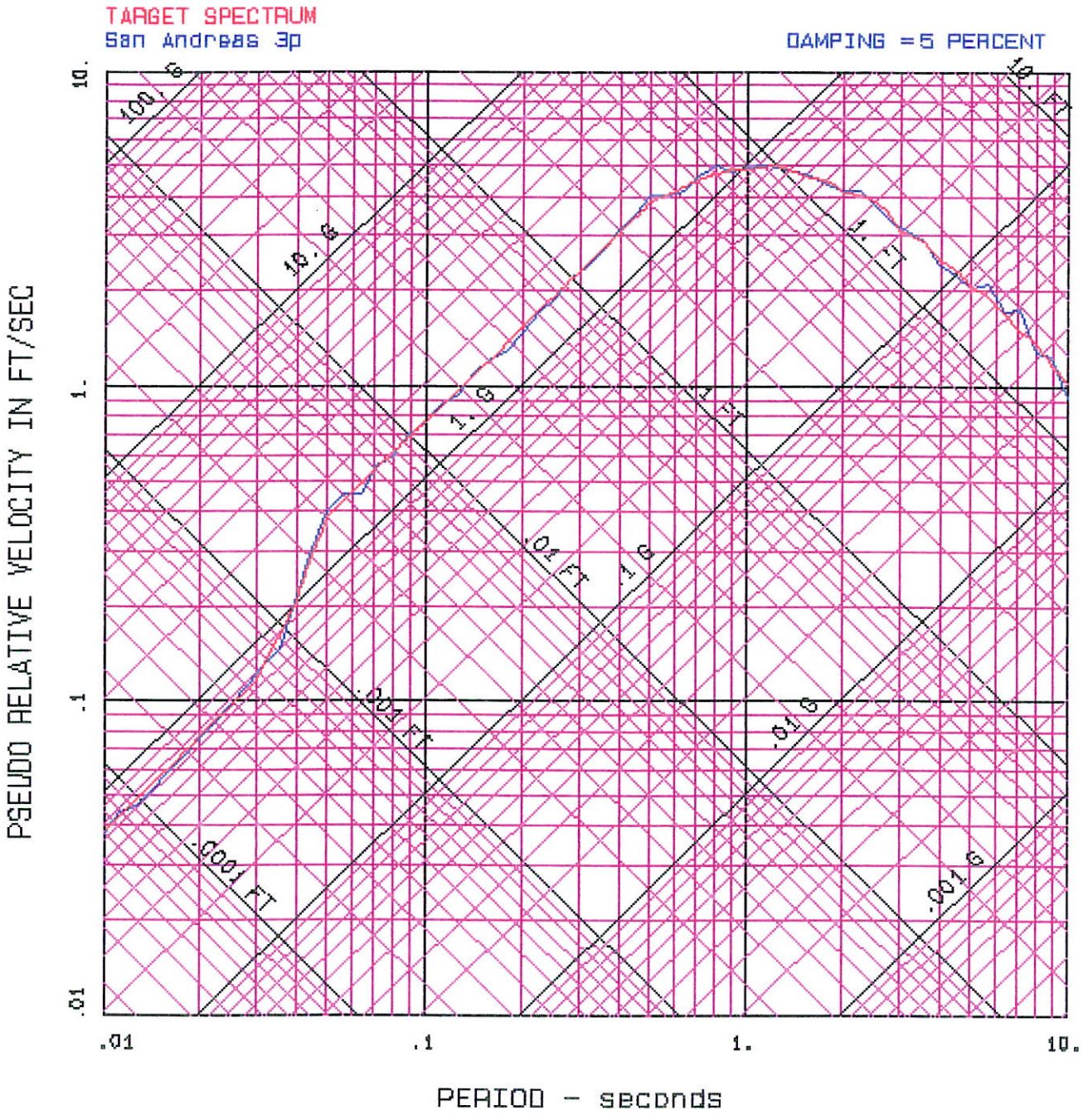
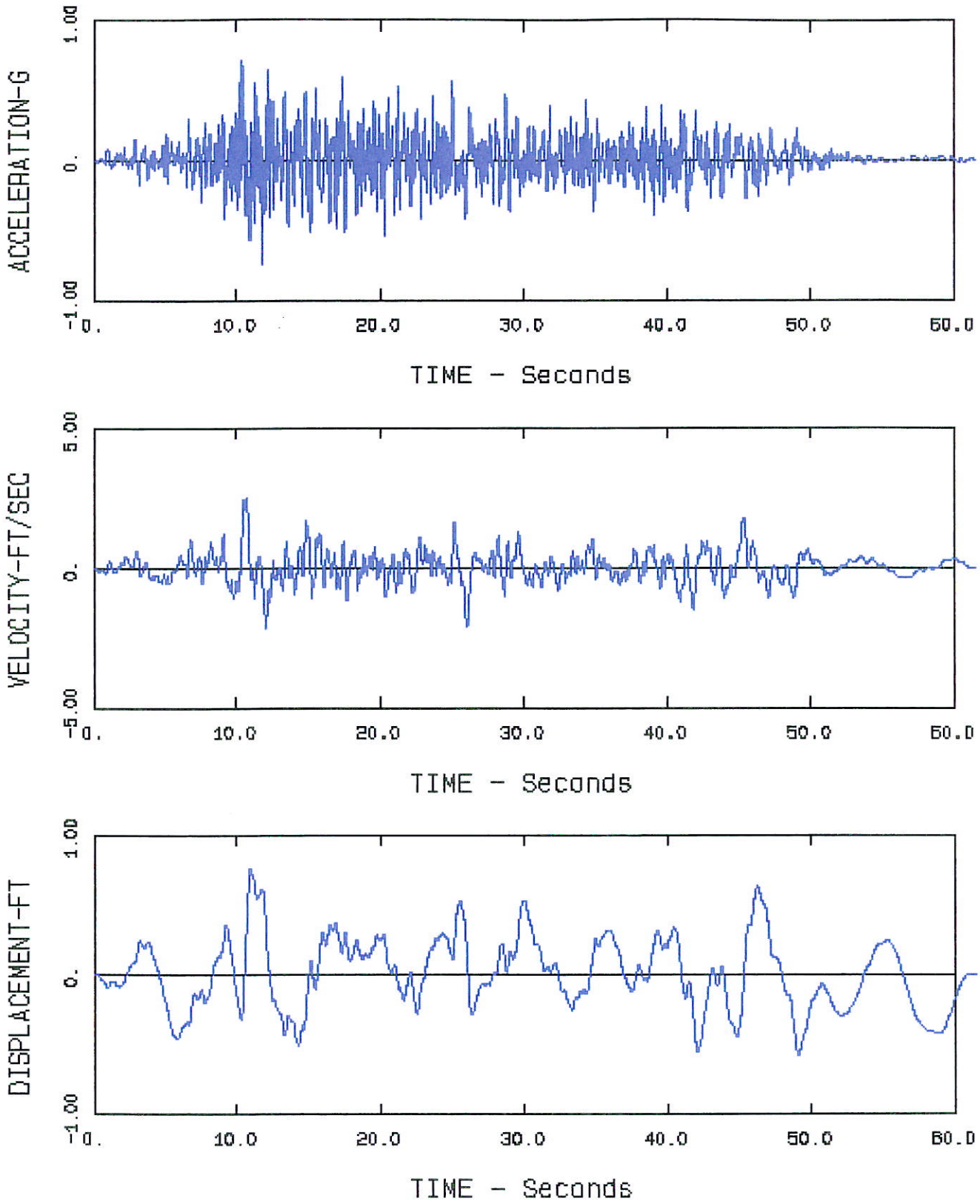



San Andreas Motion No. 3p
Fitted to SLAC Spectrum




San Andreas Motion No. 3p
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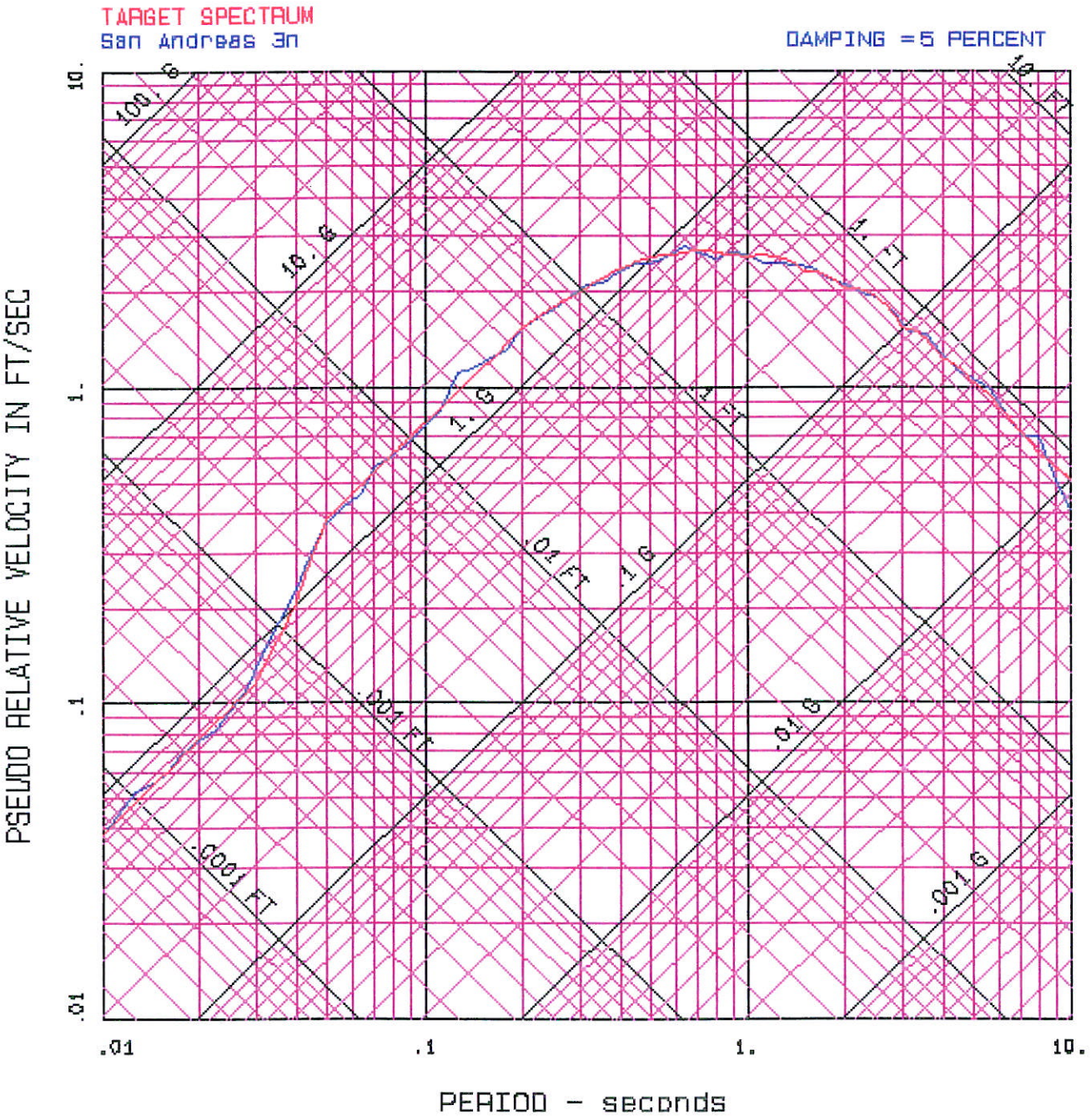


San Andreas Motion No. 3v
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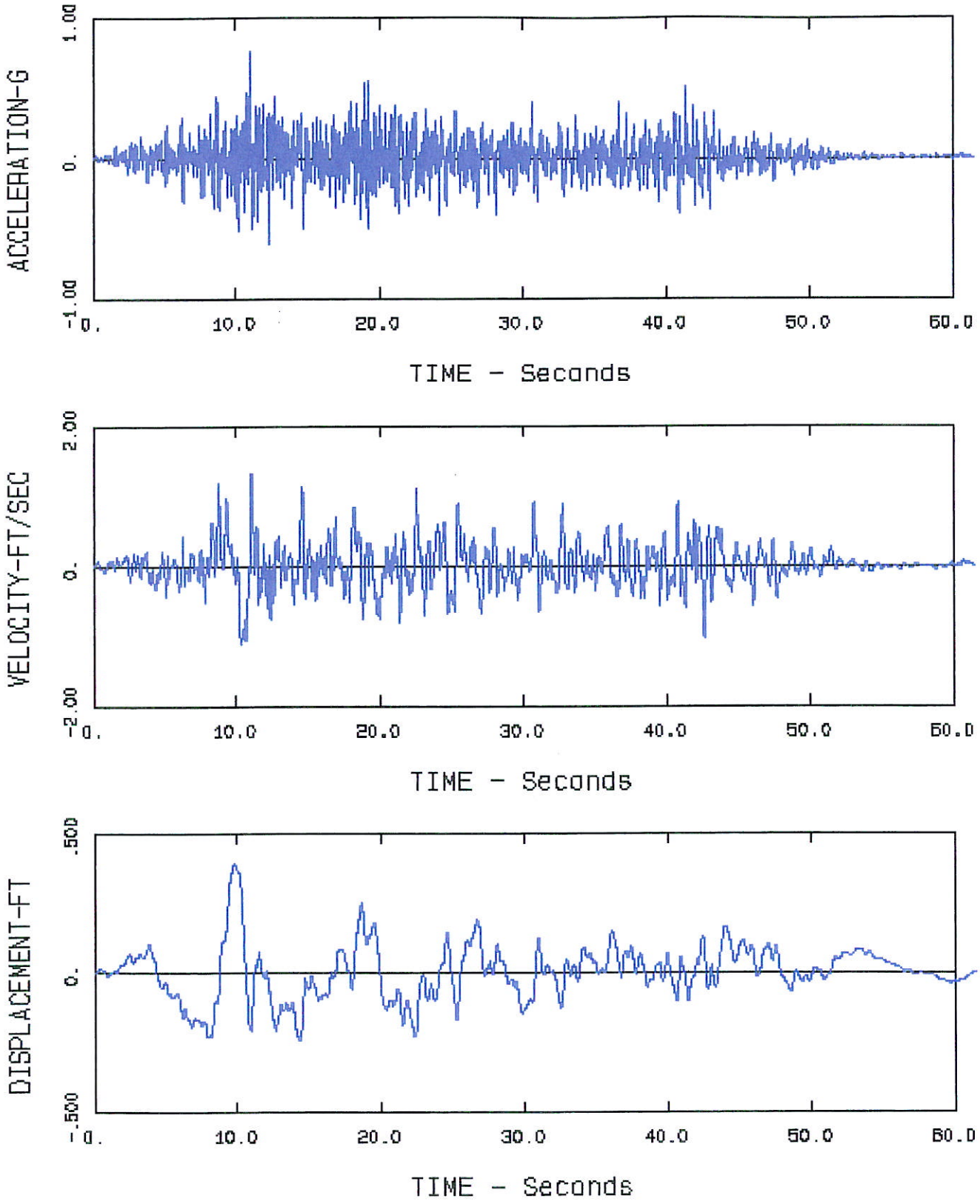


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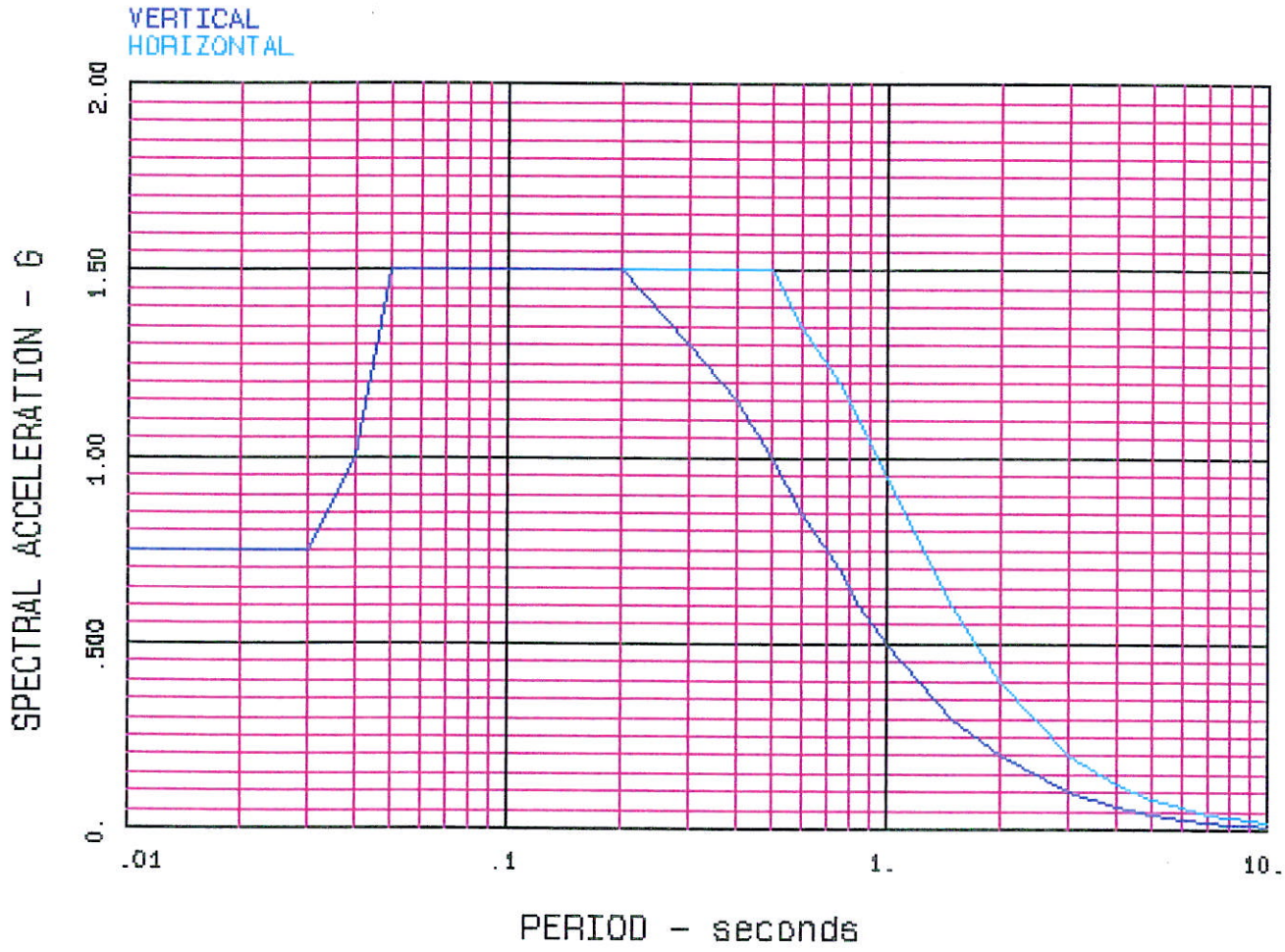


Fig. 2
Target Response Spectra

**SLAC Response Spectra**
**From Report Dated**
**December 4, 2000**

HORIZONTAL

| PERIOD IN SECONDS | AMPLITUDE - g |
|---|---|
| .010 | 1.5 |
| .020 | 1.5 |
| .030 | 1.5 |
| .040 | 1.5 |
| .050 | 1.5 |
| .060 | 1.5 |
| .075 | 1.5 |
| .090 | 1.5 |
| .100 | 1.5 |
| .150 | 1.5 |
| .200 | 1.5 |
| .300 | 1.5 |
| .400 | 1.5 |
| .500 | 1.5 |
| .600 | 1.35 |
| .750 | 1.2 |
| .850 | 1.1 |
| 1.000 | 0.95 |
| 1.500 | 0.6 |
| 2.000 | .4 |
| 3.000 | .2 |
| 4.000 | .12 |
| 5.000 | .08 |
| 6. | .058 |
| 7. | .042 |
| 8. | .033 |
| 9. | .025 |
| 10. | .02 |

VERTICAL

| PERIOD IN SECONDS | AMPLITUDE - g |
|---|---|
| .010 | 0.75 |
| .020 | 0.75 |
| .030 | 0.75 |
| .040 | 1.0 |
| .050 | 1.5 |
| .060 | 1.5 |
| .075 | 1.5 |
| .090 | 1.5 |
| .100 | 1.5 |
| .150 | 1.5 |
| .200 | 1.5 |
| .300 | 1.3 |
| .400 | 1.15 |
| .500 | 1.0 |
| .600 | .85 |
| .750 | .7 |
| .850 | .6 |
| 1.000 | .5 |
| 1.500 | .3 |
| 2.000 | .2 |
| 3.000 | .1 |
| 4.000 | .06 |
| 5.000 | .04 |
| 6. | .028 |
| 7. | .02 |
| 8. | .015 |
| 9. | .012 |
| 10. | .01 |

```
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TIME: 16:46:32
INPUT/OUTPUT FILE NAME: sr1-1n
INPUT MOTION READ FROM: 1N.OTH

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SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE         VG         VT     GMRP       TSTR       FSTR

   1          .02        .02        .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1n
WITH A PEAK ACCELERATION OF .75 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .683 | 2.222 | .036 | -.002 | .434 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .656 | 2.219 | .036 | -.002 | 1.267 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .606 | 2.214 | .035 | -.002 | 2.016 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .558 | 2.216 | .034 | -.002 | 2.703 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .554 | 2.209 | .032 | -.002 | 3.306 | .025 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .574 | 2.192 | .030 | -.002 | 3.844 | .030 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .515 | 2.145 | .026 | -.002 | 4.380 | .035 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .477 | 2.088 | .022 | -.001 | 4.894 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .510 | 2.026 | .018 | -.001 | 5.357 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .579 | 1.997 | .014 | -.001 | 5.796 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .602 | 1.964 | .009 | .000 | 6.292 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .606 | 1.960 | .005 | .000 | 6.458 | .046 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .567 | 1.959 | | | | | | | | | | |

**********
NORMAL TERMINATION
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************************************************
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DATE:  1:16:2005
TIME: 16:46:48
INPUT/OUTPUT FILE NAME: sr1-1p
INPUT MOTION READ FROM: 1p.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT    GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER      MTYPE   LAYER   UNIT WT   OCR    KO    SIGV      VS       GMAX    SHEAR     REFERENCE    INITIAL    TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1p
WITH A PEAK ACCELERATION OF .68 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .687 | 2.307 | .036 | .000 | .436 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .670 | 2.302 | .036 | .000 | 1.273 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .647 | 2.297 | .035 | .000 | 2.085 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .613 | 2.291 | .033 | .000 | 2.820 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .613 | 2.285 | .031 | .000 | 3.501 | .027 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .612 | 2.277 | .028 | .000 | 4.185 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .590 | 2.267 | .025 | .000 | 4.876 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .538 | 2.253 | .021 | .000 | 5.554 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .500 | 2.240 | .017 | .000 | 6.152 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .484 | 2.222 | .014 | .000 | 6.662 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .520 | 2.205 | .010 | .000 | 7.183 | .049 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .509 | 2.178 | .005 | .000 | 7.386 | .050 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .522 | 2.157 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

```
**************************************************
**************************************************

 TESS - Version 6.3L
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 Microsoft FORTRAN POWERSTATION v.1.0
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**************************************************
**************************************************

DATE:  1:16:2005
TIME: 16:47: 3
INPUT/OUTPUT FILE NAME: sr1-1v
INPUT MOTION READ FROM: 1v.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1v
WITH A PEAK ACCELERATION OF .69 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .625 | 1.146 | .008 | -.001 | .397 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .640 | 1.144 | .008 | -.001 | 1.168 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .609 | 1.140 | .008 | .000 | 1.901 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .576 | 1.135 | .007 | .000 | 2.604 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .559 | 1.128 | .007 | .000 | 3.281 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .560 | 1.123 | .006 | .000 | 3.969 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .542 | 1.119 | .006 | .000 | 4.554 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .531 | 1.118 | .005 | .000 | 5.168 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .550 | 1.116 | .004 | .000 | 5.806 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .538 | 1.111 | .003 | .000 | 6.260 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .495 | 1.105 | .002 | .000 | 6.811 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .466 | 1.098 | .001 | .000 | 7.384 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .464 | 1.087 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:47:34
INPUT/OUTPUT FILE NAME: sr1-2n
INPUT MOTION READ FROM: 2N.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

   1         .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2n
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .734 | 2.867 | .036 | .005 | .466 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .710 | 2.863 | .036 | .005 | 1.368 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .647 | 2.866 | .035 | .005 | 2.169 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .560 | 2.866 | .034 | .005 | 2.794 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .550 | 2.859 | .032 | .005 | 3.231 | .025 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .611 | 2.840 | .030 | .005 | 3.625 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .710 | 2.801 | .027 | .005 | 4.212 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .657 | 2.742 | .024 | .005 | 4.771 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .626 | 2.664 | .019 | .004 | 5.329 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .630 | 2.591 | .015 | .003 | 5.940 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .590 | 2.518 | .011 | .002 | 6.372 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .646 | 2.453 | .005 | .001 | 6.910 | .049 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .492 | 2.407 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:47:49
INPUT/OUTPUT FILE NAME: sr1-2p
INPUT MOTION READ FROM: 2p.OTH

**************************************
SLAC LINAC Profile SR1
**************************************
Site response using TESS 01-14-05 rmp
**************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2p
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .735 | 2.343 | .040 | .002 | .467 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .732 | 2.338 | .040 | .002 | 1.384 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .664 | 2.330 | .039 | .002 | 2.227 | .017 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .621 | 2.319 | .037 | .002 | 2.979 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .626 | 2.298 | .035 | .002 | 3.662 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .596 | 2.265 | .032 | .002 | 4.309 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .582 | 2.221 | .029 | .002 | 4.957 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .582 | 2.229 | .025 | .002 | 5.575 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .619 | 2.224 | .020 | .002 | 6.153 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .609 | 2.212 | .016 | .001 | 6.700 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .565 | 2.188 | .011 | .001 | 7.188 | .049 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .498 | 2.152 | .006 | .000 | 7.610 | .052 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .490 | 2.114 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:48: 4
INPUT/OUTPUT FILE NAME: sr1-2v
INPUT MOTION READ FROM: 2v.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

   1         .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2v
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .651 | 1.349 | .007 | .000 | .413 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .636 | 1.347 | .007 | .000 | 1.212 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .630 | 1.342 | .007 | .000 | 2.009 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .590 | 1.336 | .007 | .000 | 2.759 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .542 | 1.330 | .006 | .000 | 3.421 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .511 | 1.324 | .006 | .000 | 4.023 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .492 | 1.319 | .005 | .000 | 4.565 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .507 | 1.316 | .005 | .000 | 5.056 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .522 | 1.315 | .004 | .000 | 5.491 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .524 | 1.320 | .003 | .000 | 5.846 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .555 | 1.323 | .002 | .000 | 6.170 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .580 | 1.327 | .001 | .000 | 6.650 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .599 | 1.330 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

```
************************************************
************************************************

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 Compiled by rmp on 01/15/05 using the
 Microsoft FORTRAN POWERSTATION v.1.0
 For educational use only!

************************************************
************************************************

DATE:  1:16:2005
TIME: 16:48:35
INPUT/OUTPUT FILE NAME: sr1-3n
INPUT MOTION READ FROM: 3N.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

   1         .02        .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3n
WITH A PEAK ACCELERATION OF .66 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .607 | 2.194 | .039 | .013 | .386 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .585 | 2.192 | .039 | .013 | 1.128 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .551 | 2.185 | .038 | .013 | 1.808 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .553 | 2.176 | .037 | .012 | 2.434 | .018 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .527 | 2.162 | .035 | .012 | 3.053 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .485 | 2.144 | .033 | .012 | 3.637 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .508 | 2.124 | .030 | .011 | 4.166 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .495 | 2.101 | .026 | .010 | 4.583 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .505 | 2.080 | .022 | .008 | 5.000 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .527 | 2.063 | .017 | .006 | 5.451 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .496 | 2.045 | .012 | .004 | 6.016 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .497 | 2.024 | .006 | .002 | 6.349 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .525 | 2.001 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

```
************************************************
************************************************

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 Microsoft FORTRAN POWERSTATION v.1.0
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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:47:49
INPUT/OUTPUT FILE NAME: sr1-2p
INPUT MOTION READ FROM: 2p.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

  1          .02       .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2p
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .735 | 2.343 | .040 | .002 | .467 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .732 | 2.338 | .040 | .002 | 1.384 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .664 | 2.330 | .039 | .002 | 2.227 | .017 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .621 | 2.319 | .037 | .002 | 2.979 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .626 | 2.298 | .035 | .002 | 3.662 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .596 | 2.265 | .032 | .002 | 4.309 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .582 | 2.221 | .029 | .002 | 4.957 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .582 | 2.229 | .025 | .002 | 5.575 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .619 | 2.224 | .020 | .002 | 6.153 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .609 | 2.212 | .016 | .001 | 6.700 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .565 | 2.188 | .011 | .001 | 7.188 | .049 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .498 | 2.152 | .006 | .000 | 7.610 | .052 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .490 | 2.114 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:49: 5
INPUT/OUTPUT FILE NAME: sr1-3v
INPUT MOTION READ FROM: 3v.OTH

****************************************
SLAC LINAC Profile SR1
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

  1          .02        .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3v
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .668 | 1.305 | .008 | .000 | .424 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .647 | 1.304 | .008 | .000 | 1.232 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .638 | 1.302 | .008 | .000 | 2.029 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .630 | 1.298 | .007 | .000 | 2.788 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .682 | 1.299 | .007 | .000 | 3.575 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .633 | 1.301 | .006 | .000 | 4.131 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .554 | 1.300 | .006 | .000 | 4.724 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .543 | 1.299 | .005 | .000 | 5.266 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .588 | 1.296 | .004 | .000 | 5.775 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .630 | 1.290 | .003 | .000 | 6.253 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .553 | 1.281 | .002 | .000 | 6.795 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .521 | 1.270 | .001 | .000 | 7.204 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .514 | 1.257 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

```
************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:24:38
INPUT/OUTPUT FILE NAME: sr2-1n
INPUT MOTION READ FROM: 1N.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE         VG         VT     GMRP       TSTR       FSTR

   1          .02        .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER        MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1n
WITH A PEAK ACCELERATION OF .75 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .778 | 2.222 | .023 | -.001 | .494 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .706 | 2.217 | .022 | -.001 | 1.295 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .617 | 2.203 | .022 | -.001 | 2.059 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .582 | 2.212 | .020 | -.001 | 2.723 | .020 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .572 | 2.208 | .018 | -.001 | 3.320 | .025 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .574 | 2.188 | .015 | -.001 | 3.913 | .031 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .562 | 2.152 | .012 | -.001 | 4.423 | .035 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .597 | 2.093 | .008 | .000 | 4.929 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .589 | 2.035 | .004 | .000 | 5.374 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .582 | 1.993 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 15 SECS
**********

```
************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:24:53
INPUT/OUTPUT FILE NAME: sr2-1p
INPUT MOTION READ FROM: 1p.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT    GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1p
WITH A PEAK ACCELERATION OF .68 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .702 | 2.300 | .023 | -.001 | .446 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .684 | 2.300 | .023 | -.001 | 1.300 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .635 | 2.295 | .022 | -.001 | 2.098 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .625 | 2.289 | .021 | -.001 | 2.823 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .627 | 2.282 | .018 | -.001 | 3.523 | .027 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .616 | 2.274 | .016 | -.001 | 4.236 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .591 | 2.265 | .012 | .000 | 4.877 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .567 | 2.252 | .008 | .000 | 5.532 | .044 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .510 | 2.238 | .004 | .000 | 6.122 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .441 | 2.224 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 14 SECS
**********

```
************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:25: 7
INPUT/OUTPUT FILE NAME: sr2-1v
INPUT MOTION READ FROM: 1v.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

   1         .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1v
WITH A PEAK ACCELERATION OF .69 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .645 | 1.146 | .005 | .000 | .410 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .620 | 1.144 | .005 | .000 | 1.185 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .601 | 1.140 | .004 | .000 | 1.937 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .581 | 1.134 | .004 | .000 | 2.652 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .575 | 1.127 | .004 | .000 | 3.330 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .537 | 1.122 | .003 | .000 | 3.977 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .537 | 1.120 | .003 | .000 | 4.587 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .541 | 1.119 | .002 | .000 | 5.173 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .541 | 1.117 | .001 | .000 | 5.747 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .533 | 1.113 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 28 SECS
**********

```
************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:25:35
INPUT/OUTPUT FILE NAME: sr2-2n
INPUT MOTION READ FROM: 2N.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

  1          .02       .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER   UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2n
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .737 | 2.875 | .020 | .001 | .468 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .704 | 2.871 | .020 | .001 | 1.351 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .631 | 2.862 | .019 | .001 | 2.153 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .547 | 2.863 | .018 | .001 | 2.802 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .583 | 2.858 | .016 | .001 | 3.256 | .025 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .607 | 2.839 | .014 | .002 | 3.717 | .029 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .595 | 2.800 | .011 | .001 | 4.183 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .682 | 2.739 | .008 | .001 | 4.790 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .667 | 2.661 | .004 | .001 | 5.285 | .035 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .632 | 2.587 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 14 SECS
**********

```
************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:25:49
INPUT/OUTPUT FILE NAME: sr2-2p
INPUT MOTION READ FROM: 2p.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2p
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .726 | 2.349 | .025 | .002 | .461 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .711 | 2.342 | .024 | .002 | 1.361 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .665 | 2.333 | .023 | .001 | 2.202 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .628 | 2.320 | .022 | .001 | 2.969 | .022 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .616 | 2.299 | .019 | .001 | 3.648 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .591 | 2.267 | .017 | .001 | 4.295 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .585 | 2.223 | .013 | .001 | 4.961 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .574 | 2.229 | .009 | .001 | 5.571 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .611 | 2.227 | .004 | .001 | 6.159 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .623 | 2.214 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 14 SECS
**********

S
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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 16:26: 3
INPUT/OUTPUT FILE NAME: sr2-2v
INPUT MOTION READ FROM: 2v.OTH

**************************************
SLAC LINAC Profile SR4
**************************************
Site response using TESS 01-14-05 rmp
**************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2v
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .652 | 1.348 | .005 | .000 | .414 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .641 | 1.344 | .004 | .000 | 1.208 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .635 | 1.339 | .004 | .000 | 2.013 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .596 | 1.335 | .004 | .000 | 2.770 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .615 | 1.328 | .004 | .000 | 3.431 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .584 | 1.323 | .003 | .000 | 4.024 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .561 | 1.319 | .002 | .000 | 4.570 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .492 | 1.316 | .002 | .000 | 5.089 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .525 | 1.321 | .001 | .000 | 5.533 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .535 | 1.321 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 28 SECS
**********

S
**********
**********

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**********
**********

DATE: 1:16:2005
TIME: 16:26:31
INPUT/OUTPUT FILE NAME: sr2-3n
INPUT MOTION READ FROM: 3N.OTH

**********
SLAC LINAC Profile SR4
**********
Site response using TESS 01-14-05 rmp
**********

REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!

UNITS ARE KIPS, FEET AND SECONDS

**********
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF 4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
**********

**********
INPUT DATA
**********

MATERIAL PROPERTY PARAMETERS

| MTYPE | VG | VT | GMRP | TSTR | FSTR |
|---|---|---|---|---|---|
| 1 | .02 | .02 | .00 | .00 | .00 |

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF .002 SECONDS

| LAYER | MTYPE | LAYER | UNIT WT | OCR | KO | SIGV | VS | GMAX | SHEAR | REFERENCE | INITIAL | TRAVEL TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3n
WITH A PEAK ACCELERATION OF .66 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .638 | 2.198 | .022 | .005 | .405 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .622 | 2.195 | .021 | .005 | 1.195 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .609 | 2.190 | .021 | .005 | 1.898 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .583 | 2.179 | .019 | .005 | 2.520 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .551 | 2.163 | .018 | .005 | 3.120 | .024 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .516 | 2.145 | .015 | .004 | 3.711 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .473 | 2.123 | .012 | .004 | 4.218 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .488 | 2.100 | .008 | .003 | 4.642 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .508 | 2.080 | .004 | .001 | 5.036 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .475 | 2.063 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 15 SECS
**********

S
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 ************************************************
 ************************************************

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  For educational use only!

 ************************************************
 ************************************************

 DATE:  1:16:2005
 TIME: 16:26:46
 INPUT/OUTPUT FILE NAME: sr2-3p
 INPUT MOTION READ FROM: 3p.OTH

 ***************************************
 SLAC LINAC Profile SR4
 ***************************************
 Site response using TESS 01-14-05 rmp
 ***************************************


 REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
 IS NOT INCLUDED!


 UNITS ARE KIPS, FEET AND SECONDS


 ************************************************************
 THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
 IN ORDER TO MEET THE COURANT STABILITY CRITERION
 ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
 ************************************************************



 **************
   INPUT DATA
 **************

 MATERIAL PROPERTY PARAMETERS

  MTYPE        VG         VT     GMRP       TSTR       FSTR

    1         .02        .02       .00        .00        .00

 LAYER DATA

 DEPTH TO WATER TABLE = 160.00
 TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

  LAYER       MTYPE    LAYER   UNIT WT   OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3p
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .681 | 2.490 | .021 | .000 | .433 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .657 | 2.481 | .020 | .000 | 1.264 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .584 | 2.462 | .020 | .000 | 1.992 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .537 | 2.445 | .019 | .000 | 2.588 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .535 | 2.432 | .017 | .000 | 3.118 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .532 | 2.424 | .014 | -.001 | 3.641 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .564 | 2.408 | .012 | .000 | 4.281 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .586 | 2.382 | .008 | .000 | 4.895 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .539 | 2.381 | .004 | .000 | 5.459 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .508 | 2.392 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 14 SECS
**********

S
**********
**********

TESS - Version 6.3L
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Microsoft FORTRAN POWERSTATION v.1.0
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**********
**********

DATE: 1:16:2005
TIME: 16:27: 0
INPUT/OUTPUT FILE NAME: sr2-3v
INPUT MOTION READ FROM: 3v.OTH

**********
SLAC LINAC Profile SR4
**********
Site response using TESS 01-14-05 rmp
**********

REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!

UNITS ARE KIPS, FEET AND SECONDS

**********
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF 8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
**********

**********
INPUT DATA
**********

MATERIAL PROPERTY PARAMETERS

| MTYPE | VG | VT | GMRP | TSTR | FSTR |
|---|---|---|---|---|---|
| 1 | .02 | .02 | .00 | .00 | .00 |

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF .001 SECONDS

| LAYER | MTYPE | LAYER | UNIT WT | OCR | KO | SIGV | VS | GMAX | SHEAR | REFERENCE | INITIAL | TRAVEL TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3v
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .651 | 1.308 | .005 | .000 | .413 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .639 | 1.306 | .005 | .000 | 1.224 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .624 | 1.304 | .004 | .000 | 2.000 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .628 | 1.299 | .004 | .000 | 2.746 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .671 | 1.299 | .004 | .000 | 3.524 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .624 | 1.301 | .003 | .000 | 4.093 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .548 | 1.302 | .002 | .000 | 4.690 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .552 | 1.304 | .002 | .000 | 5.298 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .568 | 1.300 | .001 | .000 | 5.747 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| BASE | 90.00 | .528 | 1.294 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

**********
ELAPSED TIME = 0 MINS 28 SECS
**********

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************************************************
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 Microsoft FORTRAN POWERSTATION v.1.0
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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:38:48
INPUT/OUTPUT FILE NAME: sr3-1n
INPUT MOTION READ FROM: 1N.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

   1         .02        .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 2 | 1 | 10.00 | .125 | 1.88 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 3 | 1 | 10.00 | .127 | 3.13 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.41 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.68 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.95 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.22 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.49 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.76 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1n
WITH A PEAK ACCELERATION OF .75 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .869 | 2.279 | .040 | .001 | .543 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .738 | 2.255 | .038 | .001 | 1.424 | .067 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .590 | 2.241 | .034 | -.001 | 2.037 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .582 | 2.226 | .033 | -.001 | 2.677 | .020 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .532 | 2.204 | .031 | .000 | 3.232 | .024 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .543 | 2.183 | .029 | .000 | 3.765 | .030 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .591 | 2.154 | .025 | .000 | 4.306 | .034 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .599 | 2.104 | .022 | .000 | 4.859 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .556 | 2.045 | .018 | .000 | 5.460 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .544 | 1.986 | .014 | .000 | 5.800 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .538 | 1.956 | .010 | -.001 | 6.251 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .520 | 1.975 | .005 | .000 | 6.524 | .046 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .517 | 1.974 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:39: 3
INPUT/OUTPUT FILE NAME: sr3-1p
INPUT MOTION READ FROM: 1p.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

  1          .02        .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 2 | 1 | 10.00 | .125 | 1.88 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 3 | 1 | 10.00 | .127 | 3.13 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.41 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.68 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.95 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.22 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.49 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.76 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1p
WITH A PEAK ACCELERATION OF .68 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .776 | 2.336 | .046 | -.002 | .485 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .689 | 2.321 | .044 | -.002 | 1.324 | .063 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .684 | 2.312 | .036 | -.002 | 2.132 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .672 | 2.306 | .035 | -.002 | 2.950 | .022 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .619 | 2.300 | .032 | -.002 | 3.737 | .029 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .564 | 2.289 | .029 | -.002 | 4.453 | .035 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .560 | 2.271 | .026 | -.002 | 5.076 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .568 | 2.251 | .022 | -.002 | 5.712 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .524 | 2.225 | .018 | -.002 | 6.061 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .496 | 2.197 | .013 | -.001 | 6.472 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .507 | 2.184 | .009 | -.001 | 6.870 | .046 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .504 | 2.185 | .005 | -.001 | 7.220 | .049 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .472 | 2.183 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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 Microsoft FORTRAN POWERSTATION v.1.0
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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:39:18
INPUT/OUTPUT FILE NAME: sr3-1v
INPUT MOTION READ FROM: 1v.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE         VG         VT     GMRP       TSTR       FSTR

  1           .02        .02        .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER        MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 2000.00 | 15527.95 | 31.056 | .200 | .000 | .250 |
| 2 | 1 | 10.00 | .125 | 1.88 | 2000.00 | 15527.95 | 31.056 | .200 | .000 | .250 |
| 3 | 1 | 10.00 | .127 | 3.13 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.41 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.68 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.95 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.22 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.49 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.76 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1v
WITH A PEAK ACCELERATION OF .69 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .723 | 1.167 | .008 | .000 | .452 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .675 | 1.160 | .008 | .000 | 1.293 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .583 | 1.140 | .007 | .000 | 1.981 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .556 | 1.134 | .007 | .000 | 2.613 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .551 | 1.127 | .007 | .000 | 3.272 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .594 | 1.123 | .006 | .000 | 3.942 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .632 | 1.121 | .006 | .000 | 4.512 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .563 | 1.119 | .005 | .000 | 5.085 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .538 | 1.116 | .004 | .000 | 5.681 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .513 | 1.111 | .003 | .000 | 6.314 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .484 | 1.105 | .002 | .000 | 6.916 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .469 | 1.097 | .001 | .000 | 7.476 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .459 | 1.085 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:39:47
INPUT/OUTPUT FILE NAME: sr3-2n
INPUT MOTION READ FROM: 2N.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

   1         .02        .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 2 | 1 | 10.00 | .125 | 1.88 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 3 | 1 | 10.00 | .127 | 3.13 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.41 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.68 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.95 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.22 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.49 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.76 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2n
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .916 | 3.079 | .037 | .000 | .573 | .022 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .771 | 3.020 | .035 | .001 | 1.508 | .075 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .564 | 2.910 | .034 | .003 | 1.910 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .592 | 2.889 | .033 | .004 | 2.316 | .018 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .581 | 2.852 | .031 | .004 | 2.989 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .605 | 2.803 | .029 | .004 | 3.670 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .582 | 2.753 | .026 | .004 | 4.331 | .034 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .563 | 2.688 | .023 | .003 | 4.944 | .039 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .580 | 2.617 | .018 | .003 | 5.501 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .571 | 2.565 | .015 | .002 | 6.003 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .542 | 2.512 | .010 | .002 | 6.447 | .044 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .550 | 2.477 | .005 | .001 | 6.806 | .048 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .579 | 2.448 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

 TESS - Version 6.3L
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 Microsoft FORTRAN POWERSTATION v.1.0
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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:40: 2
INPUT/OUTPUT FILE NAME: sr3-2p
INPUT MOTION READ FROM: 2p.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

   1         .02        .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 2 | 1 | 10.00 | .125 | 1.88 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 3 | 1 | 10.00 | .127 | 3.13 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.41 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.68 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.95 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.22 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.49 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.76 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2p
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .890 | 2.429 | .045 | .002 | .556 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .756 | 2.392 | .043 | .002 | 1.482 | .073 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .639 | 2.312 | .037 | .001 | 2.146 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .618 | 2.290 | .036 | .001 | 2.802 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .625 | 2.266 | .034 | .001 | 3.439 | .026 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .649 | 2.244 | .031 | .001 | 4.103 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .636 | 2.229 | .028 | .002 | 4.760 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .579 | 2.220 | .024 | .002 | 5.396 | .042 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .556 | 2.205 | .020 | .001 | 6.028 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .546 | 2.185 | .016 | .001 | 6.635 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .512 | 2.165 | .011 | .000 | 7.267 | .049 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .562 | 2.142 | .006 | .000 | 7.850 | .053 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .562 | 2.113 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

 TESS - Version 6.3L
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 Microsoft FORTRAN POWERSTATION v.1.0
 For educational use only!

************************************************
************************************************

DATE:  1:16:2005
TIME: 13:40:17
INPUT/OUTPUT FILE NAME: sr3-2v
INPUT MOTION READ FROM: 2v.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

  1          .02        .02        .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 2000.00 | 15527.95 | 31.056 | .200 | .000 | .250 |
| 2 | 1 | 10.00 | .125 | 1.88 | 2000.00 | 15527.95 | 31.056 | .200 | .000 | .250 |
| 3 | 1 | 10.00 | .127 | 3.13 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.41 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.68 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.95 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.22 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.49 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.76 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2v
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .749 | 1.386 | .008 | -.001 | .468 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .702 | 1.372 | .008 | -.001 | 1.335 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .585 | 1.346 | .007 | .000 | 2.060 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .558 | 1.341 | .007 | .000 | 2.728 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .538 | 1.334 | .006 | .000 | 3.349 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .530 | 1.328 | .006 | .000 | 3.937 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .510 | 1.324 | .005 | .000 | 4.477 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .502 | 1.321 | .005 | .000 | 4.969 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .503 | 1.320 | .004 | .000 | 5.417 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .551 | 1.324 | .003 | .000 | 5.823 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .557 | 1.328 | .002 | .000 | 6.179 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .579 | 1.332 | .001 | .000 | 6.637 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .582 | 1.336 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:40:47
INPUT/OUTPUT FILE NAME: sr3-3n
INPUT MOTION READ FROM: 3N.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

   1         .02       .02      .00       .00       .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 2 | 1 | 10.00 | .125 | 1.88 | 850.00 | 2804.74 | 5.609 | .200 | .000 | .212 |
| 3 | 1 | 10.00 | .127 | 3.13 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.41 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.68 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.95 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.22 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.49 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.76 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3n
WITH A PEAK ACCELERATION OF .66 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .809 | 2.244 | .041 | .010 | .506 | .020 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .701 | 2.221 | .040 | .010 | 1.336 | .066 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .542 | 2.170 | .038 | .012 | 1.885 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .564 | 2.158 | .036 | .011 | 2.492 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .558 | 2.149 | .034 | .011 | 3.076 | .024 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .554 | 2.141 | .032 | .011 | 3.660 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .569 | 2.130 | .029 | .010 | 4.196 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .532 | 2.116 | .025 | .009 | 4.612 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .512 | 2.098 | .021 | .007 | 5.009 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .472 | 2.080 | .016 | .005 | 5.407 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .606 | 2.059 | .011 | .004 | 5.804 | .039 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .618 | 2.035 | .006 | .002 | 6.167 | .042 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .422 | 2.007 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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************************************************
************************************************

DATE:  1:16:2005
TIME: 13:41: 2
INPUT/OUTPUT FILE NAME: sr3-3p
INPUT MOTION READ FROM: 3p.OTH

****************************************
SLAC LINAC Profile SR3
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

  1          .02        .02        .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER        MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 850.00 | 2804.74 | 5.609 | .200 | .000 | | .212 |
| 2 | 1 | 10.00 | .125 | 1.88 | 850.00 | 2804.74 | 5.609 | .200 | .000 | | .212 |
| 3 | 1 | 10.00 | .127 | 3.13 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 4 | 1 | 10.00 | .127 | 4.41 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 5 | 1 | 10.00 | .127 | 5.68 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 6 | 1 | 10.00 | .127 | 6.95 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 7 | 1 | 10.00 | .127 | 8.22 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 8 | 1 | 10.00 | .127 | 9.49 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | | .462 |
| 9 | 1 | 10.00 | .127 | 10.76 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3p
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .892 | 2.556 | .041 | .000 | .558 | .022 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .709 | 2.525 | .039 | .000 | 1.436 | .063 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .618 | 2.486 | .033 | .000 | 1.800 | .013 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .607 | 2.468 | .031 | .000 | 2.471 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .563 | 2.445 | .030 | .000 | 3.139 | .024 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .514 | 2.432 | .027 | .000 | 3.752 | .029 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .481 | 2.412 | .024 | .000 | 4.276 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .529 | 2.377 | .021 | .000 | 4.732 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .559 | 2.383 | .017 | .000 | 5.200 | .034 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .559 | 2.405 | .014 | .000 | 5.685 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .516 | 2.419 | .009 | .000 | 6.199 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .541 | 2.431 | .005 | .000 | 6.735 | .046 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .539 | 2.428 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

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 Microsoft FORTRAN POWERSTATION v.1.0
 For educational use only!

************************************************
************************************************

DATE:  1:16:2005
TIME: 13:41:17
INPUT/OUTPUT FILE NAME: sr3-3v
INPUT MOTION READ FROM: 3v.OTH

**************************************
SLAC LINAC Profile SR3
**************************************
Site response using TESS 01-14-05 rmp
**************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .125 | .63 | 2000.00 | 15527.95 | 31.056 | .200 | .000 | .250 |
| 2 | 1 | 10.00 | .125 | 1.88 | 2000.00 | 15527.95 | 31.056 | .200 | .000 | .250 |
| 3 | 1 | 10.00 | .127 | 3.13 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.41 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.68 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.95 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.22 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.49 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.76 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.03 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.30 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.57 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3v
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .754 | 1.325 | .009 | .000 | .471 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .707 | 1.318 | .009 | .000 | 1.351 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .609 | 1.305 | .008 | .000 | 2.069 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .614 | 1.302 | .007 | .000 | 2.770 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .631 | 1.302 | .007 | .000 | 3.491 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .665 | 1.303 | .006 | .000 | 4.092 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .704 | 1.304 | .006 | .000 | 4.775 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .675 | 1.303 | .005 | .000 | 5.265 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .667 | 1.299 | .004 | .000 | 5.848 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .646 | 1.293 | .003 | .000 | 6.203 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .581 | 1.283 | .002 | .000 | 6.653 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .523 | 1.271 | .001 | .000 | 7.111 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| BASE | 120.00 | .481 | 1.256 | | | | | | | | | | |

**********
NORMAL TERMINATION
**********

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************************************************
************************************************

DATE:  1:15:2005
TIME: 18: 3:25
INPUT/OUTPUT FILE NAME: sr4-1n
INPUT MOTION READ FROM: 1N.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1n
WITH A PEAK ACCELERATION OF .75 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .700 | 2.236 | .056 | -.003 | .445 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .647 | 2.229 | .056 | -.003 | 1.266 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .602 | 2.215 | .055 | -.003 | 1.999 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .562 | 2.216 | .054 | -.003 | 2.662 | .020 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .531 | 2.208 | .052 | -.003 | 3.278 | .025 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .517 | 2.189 | .049 | -.002 | 3.873 | .030 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .530 | 2.149 | .046 | -.003 | 4.287 | .034 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .510 | 2.091 | .043 | -.002 | 4.873 | .039 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .507 | 2.039 | .040 | -.002 | 5.247 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .607 | 1.997 | .036 | -.002 | 5.632 | .039 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .563 | 1.965 | .033 | -.003 | 6.048 | .042 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .561 | 1.961 | .029 | -.003 | 6.359 | .044 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .576 | 1.956 | .025 | -.003 | 6.804 | .048 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .625 | 1.952 | .020 | -.003 | 7.312 | .053 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .492 | 1.944 | .014 | -.003 | 7.824 | .057 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .491 | 1.925 | .007 | -.001 | 8.274 | .060 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .430 | 1.920 | | | | | | | | | | |

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************************************************
************************************************

DATE:  1:15:2005
TIME: 18: 3:41
INPUT/OUTPUT FILE NAME: sr4-1p
INPUT MOTION READ FROM: 1p.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG         VT     GMRP       TSTR       FSTR

   1         .02        .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1p
WITH A PEAK ACCELERATION OF .68 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .682 | 2.298 | .055 | -.003 | .433 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .671 | 2.298 | .055 | -.003 | 1.282 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .645 | 2.295 | .054 | -.003 | 2.059 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .602 | 2.290 | .053 | -.003 | 2.812 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .616 | 2.284 | .051 | -.003 | 3.520 | .027 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .611 | 2.277 | .048 | -.003 | 4.196 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .575 | 2.269 | .045 | -.003 | 4.859 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .531 | 2.257 | .041 | -.003 | 5.512 | .044 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .482 | 2.239 | .037 | -.003 | 6.095 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .503 | 2.224 | .034 | -.002 | 6.598 | .044 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .449 | 2.205 | .030 | -.002 | 7.005 | .048 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .462 | 2.180 | .026 | -.002 | 7.487 | .050 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .552 | 2.162 | .021 | -.002 | 7.568 | .052 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .603 | 2.166 | .016 | -.002 | 7.750 | .052 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .580 | 2.164 | .011 | -.002 | 7.882 | .054 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .633 | 2.156 | .006 | -.001 | 8.013 | .055 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .597 | 2.146 | | | | | | | | | | |

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************************************************
************************************************

DATE:  1:15:2005
TIME: 18: 3:57
INPUT/OUTPUT FILE NAME: sr4-1v
INPUT MOTION READ FROM: 1V.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA1v
WITH A PEAK ACCELERATION OF .69 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .629 | 1.150 | .013 | -.001 | .400 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .614 | 1.147 | .013 | -.001 | 1.169 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .590 | 1.142 | .013 | -.001 | 1.912 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .585 | 1.136 | .013 | -.001 | 2.637 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .568 | 1.129 | .012 | -.001 | 3.294 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .534 | 1.124 | .012 | -.001 | 3.955 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .530 | 1.121 | .011 | -.001 | 4.539 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .531 | 1.119 | .010 | -.001 | 5.146 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .522 | 1.116 | .010 | -.001 | 5.664 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .511 | 1.111 | .009 | -.001 | 6.195 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .489 | 1.105 | .008 | -.001 | 6.744 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .479 | 1.097 | .007 | -.001 | 7.266 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .554 | 1.086 | .006 | -.001 | 7.752 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .477 | 1.071 | .004 | .000 | 8.208 | .013 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .514 | 1.055 | .003 | .000 | 8.516 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .579 | 1.037 | .001 | .000 | 8.835 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .457 | 1.018 | | | | | | | | | | |

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************************************************
************************************************

DATE:  1:15:2005
TIME: 18: 4:29
INPUT/OUTPUT FILE NAME: sr4-2n
INPUT MOTION READ FROM: 2n.OTH

**************************************
SLAC LINAC Profile SR4
**************************************
Site response using TESS 01-14-05 rmp
**************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


*********************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
*********************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2n
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .718 | 2.871 | .057 | .011 | .456 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .677 | 2.866 | .057 | .011 | 1.316 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .614 | 2.865 | .056 | .011 | 2.089 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .555 | 2.863 | .055 | .011 | 2.721 | .021 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .546 | 2.854 | .054 | .011 | 3.169 | .024 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .589 | 2.835 | .052 | .012 | 3.554 | .027 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .585 | 2.798 | .049 | .012 | 4.147 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .608 | 2.740 | .046 | .011 | 4.667 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .626 | 2.662 | .041 | .010 | 5.266 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .613 | 2.591 | .037 | .009 | 5.845 | .040 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .698 | 2.517 | .033 | .008 | 6.449 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .611 | 2.451 | .029 | .007 | 7.014 | .048 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .656 | 2.408 | .024 | .006 | 7.523 | .053 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .578 | 2.403 | .018 | .004 | 8.040 | .057 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .573 | 2.406 | .013 | .003 | 8.472 | .060 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .609 | 2.401 | .007 | .001 | 9.015 | .065 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .572 | 2.384 | | | | | | | | | | |

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DATE:  1:15:2005
TIME: 18: 9:39
INPUT/OUTPUT FILE NAME: sr4-2p
INPUT MOTION READ FROM: 2p.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2p
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .713 | 2.336 | .065 | .007 | .453 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .710 | 2.331 | .064 | .007 | 1.348 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .658 | 2.324 | .063 | .007 | 2.176 | .016 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .627 | 2.312 | .062 | .007 | 2.949 | .022 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .613 | 2.293 | .059 | .007 | 3.635 | .028 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .608 | 2.264 | .057 | .007 | 4.294 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .540 | 2.222 | .053 | .007 | 4.948 | .038 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .579 | 2.221 | .049 | .007 | 5.545 | .044 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .604 | 2.218 | .045 | .006 | 6.121 | .041 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .611 | 2.210 | .041 | .005 | 6.648 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .560 | 2.189 | .036 | .005 | 7.127 | .048 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .509 | 2.157 | .031 | .003 | 7.565 | .051 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .517 | 2.118 | .026 | .004 | 7.987 | .054 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .493 | 2.088 | .020 | .003 | 8.502 | .058 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .503 | 2.063 | .014 | .002 | 9.094 | .063 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .540 | 2.035 | .007 | .001 | 9.573 | .067 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .543 | 2.008 | | | | | | | | | | |

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************************************************
************************************************

DATE:  1:15:2005
TIME: 18: 5: 1
INPUT/OUTPUT FILE NAME: sr4-2v
INPUT MOTION READ FROM: 2v.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA2v
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .644 | 1.349 | .012 | .000 | .409 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .632 | 1.346 | .012 | .000 | 1.207 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .623 | 1.343 | .011 | .000 | 1.996 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .582 | 1.337 | .011 | .000 | 2.736 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .536 | 1.331 | .011 | .000 | 3.401 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .520 | 1.325 | .010 | .000 | 4.004 | .006 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .506 | 1.320 | .010 | .000 | 4.547 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .486 | 1.316 | .009 | .000 | 5.031 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .545 | 1.314 | .008 | .000 | 5.453 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .530 | 1.316 | .008 | .000 | 5.825 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .572 | 1.320 | .007 | .000 | 6.158 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .577 | 1.323 | .006 | .000 | 6.514 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .605 | 1.328 | .005 | .000 | 6.792 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .703 | 1.330 | .004 | .000 | 7.129 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .670 | 1.330 | .003 | .000 | 7.624 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .666 | 1.325 | .001 | .000 | 8.320 | .013 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .592 | 1.318 | | | | | | | | | | |

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DATE:  1:15:2005
TIME: 18: 5:33
INPUT/OUTPUT FILE NAME: sr4-3n
INPUT MOTION READ FROM: 3n.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3n
WITH A PEAK ACCELERATION OF .66 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .623 | 2.197 | .067 | .025 | .395 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .597 | 2.195 | .067 | .025 | 1.152 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .558 | 2.189 | .066 | .025 | 1.855 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .540 | 2.179 | .065 | .025 | 2.476 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .502 | 2.165 | .064 | .024 | 3.062 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .490 | 2.147 | .062 | .024 | 3.615 | .027 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .510 | 2.125 | .059 | .023 | 4.103 | .032 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .513 | 2.103 | .056 | .022 | 4.536 | .035 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .527 | 2.081 | .051 | .020 | 4.933 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .572 | 2.065 | .046 | .019 | 5.353 | .036 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .627 | 2.047 | .041 | .017 | 5.816 | .039 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .549 | 2.025 | .035 | .014 | 6.255 | .043 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .549 | 2.001 | .029 | .012 | 6.687 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .479 | 1.973 | .022 | .009 | 7.001 | .048 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .477 | 1.942 | .015 | .006 | 7.365 | .051 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .457 | 1.908 | .007 | .003 | 7.636 | .053 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .496 | 1.871 | | | | | | | | | | |

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DATE:  1:15:2005
TIME: 18: 5:49
INPUT/OUTPUT FILE NAME: sr4-3p
INPUT MOTION READ FROM: 3p.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
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REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  4
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************



**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP       TSTR       FSTR

   1         .02       .02       .00        .00        .00

LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .002 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV       VS        GMAX     SHEAR      REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 2 | 1 | 10.00 | .127 | 1.90 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 3 | 1 | 10.00 | .127 | 3.17 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 4 | 1 | 10.00 | .127 | 4.45 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 5 | 1 | 10.00 | .127 | 5.72 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 6 | 1 | 10.00 | .127 | 6.99 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 7 | 1 | 10.00 | .127 | 8.26 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 8 | 1 | 10.00 | .127 | 9.53 | 1850.00 | 13498.68 | 67.493 | .500 | .000 | .462 |
| 9 | 1 | 10.00 | .127 | 10.80 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 2000.00 | 15776.40 | 78.882 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 2000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3p
WITH A PEAK ACCELERATION OF .74 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .669 | 2.481 | .056 | -.002 | .425 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .643 | 2.473 | .056 | -.002 | 1.242 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .576 | 2.457 | .055 | -.002 | 1.954 | .015 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .531 | 2.439 | .054 | -.002 | 2.561 | .019 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .529 | 2.429 | .052 | -.002 | 3.098 | .023 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .513 | 2.419 | .050 | -.002 | 3.586 | .027 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .569 | 2.400 | .047 | -.002 | 4.212 | .033 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .564 | 2.379 | .044 | -.002 | 4.808 | .037 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .557 | 2.380 | .040 | -.002 | 5.347 | .035 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .535 | 2.392 | .036 | -.002 | 5.842 | .039 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .579 | 2.397 | .032 | -.002 | 6.261 | .042 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .522 | 2.406 | .028 | -.003 | 6.624 | .045 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .485 | 2.425 | .023 | -.002 | 6.961 | .047 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .513 | 2.441 | .018 | -.002 | 7.430 | .051 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .534 | 2.443 | .012 | -.001 | 7.851 | .054 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .576 | 2.446 | .006 | .000 | 8.310 | .057 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .583 | 2.440 | | | | | | | | | | |

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DATE:  1:15:2005
TIME: 18: 6: 6
INPUT/OUTPUT FILE NAME: sr4-3v
INPUT MOTION READ FROM: 3v.OTH

****************************************
SLAC LINAC Profile SR4
****************************************
Site response using TESS 01-14-05 rmp
****************************************


REDISTRIBUTION AND DISSIPATION OF PORE PRESSURES
IS NOT INCLUDED!


UNITS ARE KIPS, FEET AND SECONDS


************************************************************
THE TIMESTEP HAS BEEN REDUCED BY A FACTOR OF  8
IN ORDER TO MEET THE COURANT STABILITY CRITERION
ALTERNATELY YOU MAY INCREASE THE LAYER THICKNESS(ES)
************************************************************




**************
  INPUT DATA
**************

MATERIAL PROPERTY PARAMETERS

 MTYPE        VG        VT     GMRP      TSTR      FSTR

  1          .02       .02       .00       .00       .00


LAYER DATA

DEPTH TO WATER TABLE = 160.00
TRAVEL TIMES ARE RELATIVE TO A TIMESTEP OF  .001 SECONDS

 LAYER       MTYPE    LAYER    UNIT WT    OCR     KO     SIGV      VS       GMAX     SHEAR     REFERENCE     INITIAL     TRAVEL TIME
```

| NO. | | THICKNESS | | | | | STRENGTH | STRAIN | SHEAR STRESS | RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 10.00 | .127 | .63 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 2 | 1 | 10.00 | .127 | 1.90 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 3 | 1 | 10.00 | .127 | 3.17 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 4 | 1 | 10.00 | .127 | 4.45 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 5 | 1 | 10.00 | .127 | 5.72 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 6 | 1 | 10.00 | .127 | 6.99 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 7 | 1 | 10.00 | .127 | 8.26 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 8 | 1 | 10.00 | .127 | 9.53 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 9 | 1 | 10.00 | .127 | 10.80 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 10 | 1 | 10.00 | .127 | 12.07 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 11 | 1 | 10.00 | .127 | 13.34 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 12 | 1 | 10.00 | .127 | 14.61 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 13 | 1 | 10.00 | .127 | 15.88 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 14 | 1 | 10.00 | .127 | 17.15 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 15 | 1 | 10.00 | .127 | 18.42 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |
| 16 | 1 | 10.00 | .127 | 19.69 | 4000.00 | 63105.59 | 315.528 | .500 | .000 | .500 |

SHEAR WAVE VELOCITY IN BASE = 4000.
UNIT WEIGHT OF BASE = .127

**********
OUTPUT FOR SA3v
WITH A PEAK ACCELERATION OF .76 G
**********

**********
MAXIMUM RESPONSE VALUES AT TOP OF OR IN EACH LAYER
**********

| LAYER NO. | DEPTH TO TOP | AMAX | VMAX | DMAX | DFINAL | TAUMAX | CYCLIC GAMMAX | FINAL DELTA | FINAL DETAG | FINAL DETAU | UMAX | UFINAL | DEPTH TO MIDLAYER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .655 | 1.301 | .013 | .000 | .416 | .001 | 1.000 | 1.000 | 1.000 | .000 | .000 | 5.00 |
| 2 | 10.00 | .644 | 1.299 | .013 | .000 | 1.232 | .002 | 1.000 | 1.000 | 1.000 | .000 | .000 | 15.00 |
| 3 | 20.00 | .631 | 1.297 | .013 | .000 | 2.020 | .003 | 1.000 | 1.000 | 1.000 | .000 | .000 | 25.00 |
| 4 | 30.00 | .594 | 1.295 | .012 | .000 | 2.775 | .004 | 1.000 | 1.000 | 1.000 | .000 | .000 | 35.00 |
| 5 | 40.00 | .581 | 1.298 | .012 | .000 | 3.473 | .005 | 1.000 | 1.000 | 1.000 | .000 | .000 | 45.00 |
| 6 | 50.00 | .566 | 1.300 | .011 | .000 | 4.122 | .007 | 1.000 | 1.000 | 1.000 | .000 | .000 | 55.00 |
| 7 | 60.00 | .571 | 1.299 | .011 | .000 | 4.724 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 65.00 |
| 8 | 70.00 | .607 | 1.297 | .010 | .000 | 5.270 | .008 | 1.000 | 1.000 | 1.000 | .000 | .000 | 75.00 |
| 9 | 80.00 | .619 | 1.293 | .009 | .000 | 5.944 | .009 | 1.000 | 1.000 | 1.000 | .000 | .000 | 85.00 |
| 10 | 90.00 | .595 | 1.288 | .008 | .000 | 6.288 | .010 | 1.000 | 1.000 | 1.000 | .000 | .000 | 95.00 |
| 11 | 100.00 | .650 | 1.280 | .007 | .000 | 6.851 | .011 | 1.000 | 1.000 | 1.000 | .000 | .000 | 105.00 |
| 12 | 110.00 | .596 | 1.270 | .006 | .000 | 7.227 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 115.00 |
| 13 | 120.00 | .701 | 1.256 | .005 | .000 | 7.656 | .012 | 1.000 | 1.000 | 1.000 | .000 | .000 | 125.00 |
| 14 | 130.00 | .703 | 1.239 | .004 | .000 | 8.127 | .013 | 1.000 | 1.000 | 1.000 | .000 | .000 | 135.00 |
| 15 | 140.00 | .518 | 1.218 | .003 | .000 | 8.607 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 145.00 |
| 16 | 150.00 | .528 | 1.193 | .001 | .000 | 8.954 | .014 | 1.000 | 1.000 | 1.000 | .000 | .000 | 155.00 |
| BASE | 160.00 | .426 | 1.169 | | | | | | | | | | |