

## SOFTWARE RELEASE NOTICE

1. SRN Number: <i>MGFE-SRN-200 / GLGP-SRN-<sup>NOT</sup>452</i>		
2. Project Title: <i>Skull Valley PFSF Seismic Review &amp; SDSKTL related activities for VM</i>		Project No. <i>20-1405-047</i> <i>20-1402-471</i>
3. SRN Title: <i>EZ-FRISK™ Version 4.4 RC 9/30/99</i>		
4. Originator/Requestor: <i>Rui Chen</i>		Date: <i>8/6/99</i>
5. Summary of Actions		
<input checked="" type="checkbox"/> Release of new software		
<input type="checkbox"/> Release of modified software:		
<input type="checkbox"/> Enhancements made		
<input type="checkbox"/> Corrections made		
<input type="checkbox"/> Change of access software		
<input type="checkbox"/> Software Retirement		
6. Persons Authorized Access		
Name	Read Only/Read-Write	Addition/Change/Delete
<i>Rui Chen</i>	<i>RO</i>	<i>A</i>
<i>John A. Stamatakis</i>	<i>RO</i>	<i>A</i>
7. Element Manager Approval: <i>[Signature]</i>		Date: <i>8/10/99</i>
8. Remarks: <i>Purchased commercial code</i>		

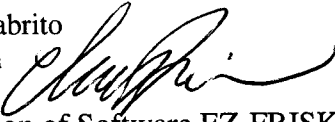
# SOFTWARE SUMMARY FORM

01. Summary Date: 8/6/99		02. Summary prepared by (Name and phone) Rui Chen (210) 522-5152		03. Summary Action:  New	
04. Software Date: 1997		05. Short Title: EZ-FRISK Version <del>4.4</del> 4.4 9/50/99			
06. Software Title: EZ-FRISK				07. Internal Software ID: NONE FOUND	
08. Software Type:  <input type="checkbox"/> Automated Data System <input checked="" type="checkbox"/> Computer Program <input type="checkbox"/> Subroutine/Module		09. Processing Mode:  <input type="checkbox"/> Interactive <input type="checkbox"/> Batch <input checked="" type="checkbox"/> Combination		10. Application Area  a. General: <input checked="" type="checkbox"/> Scientific/Engineering <input type="checkbox"/> Auxiliary Analyses <input type="checkbox"/> Total System PA <input type="checkbox"/> Subsystem PA <input type="checkbox"/> Other  b. Specific:	
11. Submitting Organization and Address:  CNWRA/SwRI 6220 Culebra Road San Antonio, TX 78228			12. Technical Contact(s) and Phone:  Rui Chen (CNWRA) (210) 522-5152		
13. Software Application:  Probabilistic and deterministic seismic hazard analyses.					
14. Computer Platform  PC		15. Computer Operating System:  M.S. Windows <sup>SM</sup>		16. Programming Language(s):  None (executable)	
17. Number of Source Program Statements:  N/A		18. Computer Memory Requirements:  8 MB		19. Tape Drives:  N/A	
20. Disk Units:  3 MB		21. Graphics:  Windows 95		22. Other Operational Requirements  A hardware key. A VGA monitor (a SVGA is recommended)	
23. Software Availability: <input checked="" type="checkbox"/> Available <input type="checkbox"/> Limited <input type="checkbox"/> In-House ONLY			24. Documentation Availability: <input checked="" type="checkbox"/> Available <input type="checkbox"/> Preliminary <input type="checkbox"/> In-House ONLY		
25. Software Developer: (N/A) Risk Engineering Date: 1996					

# CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

## MEMORANDUM

August 6, 1999

TO: Bruce Mabrito  
FROM: Rui Chen   
SUBJECT: Installation of Software EZ-FRISK Version 4.4

The software EZ-FRISK is a commercial computer program marketed by Risk Engineering, Inc. Only the executable is distributed. EZ-FRISK Version 4.4 was built to operate within the MS Windows (3.1 or later) framework. It requires a PC compatible 386 or later processor with at least 4 MB of memory (8 MB recommended). A VGA monitor is required (a SVGA monitor is recommended). The software comes with a hardware key that needs to be installed to the printer port.

I installed and ran EZ-FRISK Version 4.4 on Windows NT system (computer TYANA). The installation process was short and smooth. I did a test run on TYANA using the example input file that came with Version 4.4. The results from this test run were consistent with the results obtained by Risk Engineering, Inc. To demonstrate the consistency, following items are attached:

1. A copy of EZ-FRISK User's Manual
2. Input file for the test case. The input is usually accomplished through an interactive mode by filling up the input menus. The various necessary input menus are described in the EZ-FRISK Users' Manual
3. Total hazards calculated by Risk Engineering, Inc. in text as well as graphics format
4. Total hazards calculated by CNWRA in text as well as graphics format.

It is to be noted that the attached EZ-FRISK User's Manual is for Version 3.0. The example file in the User's Manual is different from the example file shipped with Version 4.4. The total hazard results calculated by Risk Engineering, Inc. were obtained from Tom Stone of Risk Engineering, Inc. based on my request to support this software verification effort.

Example

FREQUENCY: 100

Column 1: Ground Motion Amplitude  
 Column 2: Boore-Joyner-Fumal (1993) Rock-Random  
 Column 3: Campbell (1993) Rock

1.	2.	3.
0.010	7.634e-001	1.237e-001
0.020	4.262e-001	5.942e-002
0.050	9.984e-002	1.738e-002
0.090	2.932e-002	5.935e-003
0.100	2.302e-002	4.783e-003
0.200	3.739e-003	1.079e-003
0.300	1.066e-003	4.832e-004
0.400	4.064e-004	2.870e-004
0.500	1.839e-004	1.926e-004
0.700	5.021e-005	1.020e-004
1.000	1.045e-005	4.707e-005
2.000	2.230e-007	5.959e-006
3.000	1.301e-008	1.065e-006

FREQUENCY: 10

Column 1: Ground Motion Amplitude  
 Column 2: Boore-Joyner-Fumal (1993) Rock-Random  
 Column 3: Campbell (1993) Rock

1.	2.	3.
0.010	7.526e-001	1.766e-001
0.020	4.411e-001	9.831e-002
0.050	1.340e-001	3.741e-002
0.090	4.855e-002	1.690e-002
0.100	3.967e-002	1.436e-002
0.200	8.911e-003	4.192e-003
0.300	3.239e-003	1.851e-003
0.400	1.514e-003	1.029e-003
0.500	8.265e-004	6.622e-004
0.700	3.179e-004	3.532e-004
1.000	1.017e-004	1.859e-004
2.000	5.324e-006	4.686e-005
3.000	5.033e-007	1.691e-005

FREQUENCY: 5

Column 1: Ground Motion Amplitude  
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 Column 3: Campbell (1993) Rock

1.	2.	3.
0.010	8.760e-001	1.851e-001
0.020	6.492e-001	1.037e-001
0.050	2.508e-001	3.960e-002
0.090	1.031e-001	1.819e-002
0.100	8.610e-002	1.555e-002

# Example

0.200	2.245e-002	4.769e-003
0.300	8.898e-003	2.164e-003
0.400	4.308e-003	1.212e-003
0.500	2.370e-003	7.760e-004
0.700	9.189e-004	4.057e-004
1.000	3.137e-004	2.096e-004
2.000	2.439e-005	5.415e-005
3.000	3.362e-006	2.092e-005

FREQUENCY: 1

Column 1: Ground Motion Amplitude

Column 2: Boore-Joyner-Fumal (1993) Rock-Random

Column 3: Campbell (1993) Rock

1.	2.	3.
0.010	3.649e-001	8.684e-002
0.020	1.613e-001	4.028e-002
0.050	4.185e-002	1.155e-002
0.090	1.530e-002	4.300e-003
0.100	1.260e-002	3.547e-003
0.200	2.943e-003	9.382e-004
0.300	1.032e-003	4.290e-004
0.400	4.518e-004	2.487e-004
0.500	2.310e-004	1.631e-004
0.700	8.232e-005	8.495e-005
1.000	2.695e-005	4.046e-005
2.000	2.298e-006	7.233e-006
3.000	3.894e-007	2.075e-006

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0.300	3.239e-003	1.851e-003
0.400	1.514e-003	1.029e-003
0.500	8.265e-004	6.622e-004
0.700	3.179e-004	3.532e-004
1.000	1.017e-004	1.859e-004
2.000	5.324e-006	4.686e-005
3.000	5.033e-007	1.691e-005

FREQUENCY: 5

Column 1: Ground Motion Amplitude

Column 2: Boore-Joyner-Fumal (1993) Rock-Random

Column 3: Campbell (1993) Rock

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0.100	8.610e-002	1.555e-002

Example

0.200	2.245e-002	4.769e-003
0.300	8.898e-003	2.164e-003
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0.500	2.370e-003	7.760e-004
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1.000	3.137e-004	2.096e-004
2.000	2.439e-005	5.415e-005
3.000	3.362e-006	2.092e-005

FREQUENCY: 1

Column 1: Ground Motion Amplitude

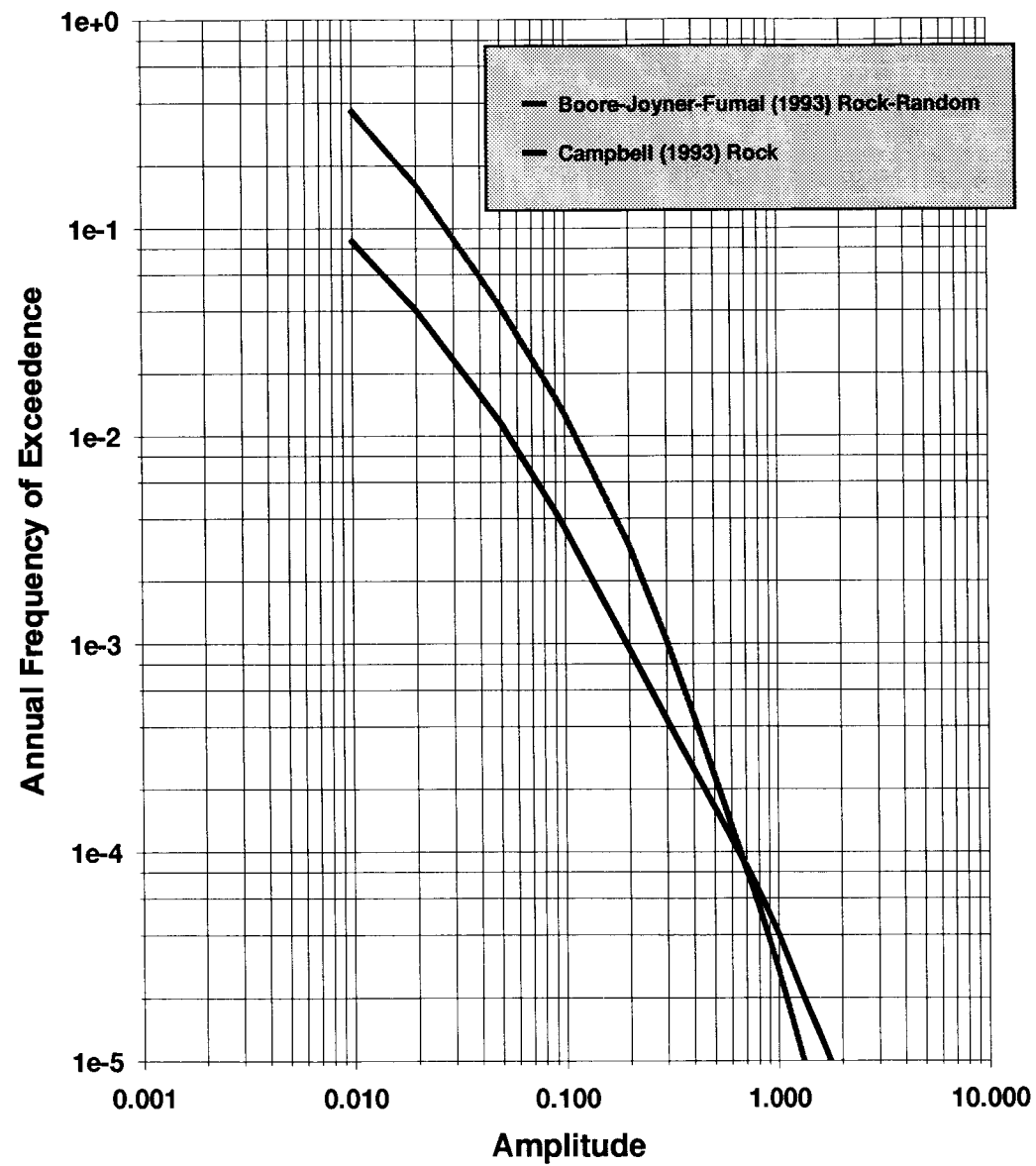
Column 2: Boore-Joyner-Fumal (1993) Rock-Random

Column 3: Campbell (1993) Rock

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0.050	4.185e-002	1.155e-002
0.090	1.530e-002	4.300e-003
0.100	1.260e-002	3.547e-003
0.200	2.943e-003	9.382e-004
0.300	1.032e-003	4.290e-004
0.400	4.518e-004	2.487e-004
0.500	2.310e-004	1.631e-004
0.700	8.232e-005	8.495e-005
1.000	2.695e-005	4.046e-005
2.000	2.298e-006	7.233e-006
3.000	3.894e-007	2.075e-006

## Total Hazard

Frequency = 1.00





## Total Hazard

Frequency = 100.00

