

2003 JAN 31 PM 2: 20

OFFICE OF THE SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

**Risk Reduction Ratio, Mean Return Period of Design Basis Earthquake (DBE) Ground Motions, and Target Performance Goal**

**Definitions:**

$R_R$  Risk Reduction Ratio

$P_H$  Seismic Hazard Exceedance Probability  
(also referred to as "MAPE," the Mean Annual Probability of Exceedance of the DBE ground motions; the inverse of MAPE [or of  $P_H$ ] is the Mean Return Period, MRP)

$P_F$  Target Seismic Performance Goal (annual probability of exceeding acceptable behavior limits)

$$R_R = P_H / P_F$$

(DOE-STD-1020-2002 at C-5)

For  $P_F = 1 \times 10^{-4}$  (DOE-STD-1020, for PC-3):

MRP of DBE Ground Motions	$P_H$ (MAPE) 1/MRP	$P_F$	$R_R$
10,000 yr	$1 \times 10^{-4}$	$1 \times 10^{-4}$	1
5,000 yr	$2 \times 10^{-4}$	$1 \times 10^{-4}$	2
3,333 yr	$3 \times 10^{-4}$	$1 \times 10^{-4}$	3
2,500 yr	$4 \times 10^{-4}$	$1 \times 10^{-4}$	4
2,000 yr	$5 \times 10^{-4}$	$1 \times 10^{-4}$	5

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Docket No. \_\_\_\_\_

Order E&L No. 208

In the matter of \_\_\_\_\_

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Intervenor

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DATE

060502

Witness

Arbasz

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