PEER Research Concerning Risk Management, Decisions, and Policy

The societal benefits of the performance-based approach are *not* just wiser decisions about seismic objectives and design, but the design and construction of *safer facilities* and of more *resilient infrastructure*

Risk Management

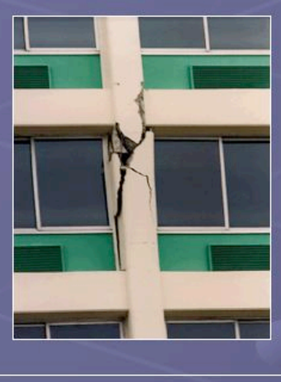
Evaluating options for managing risk & PEER development of loss models

Decisions

How organizations think about desired performance & decision considerations for PBEE

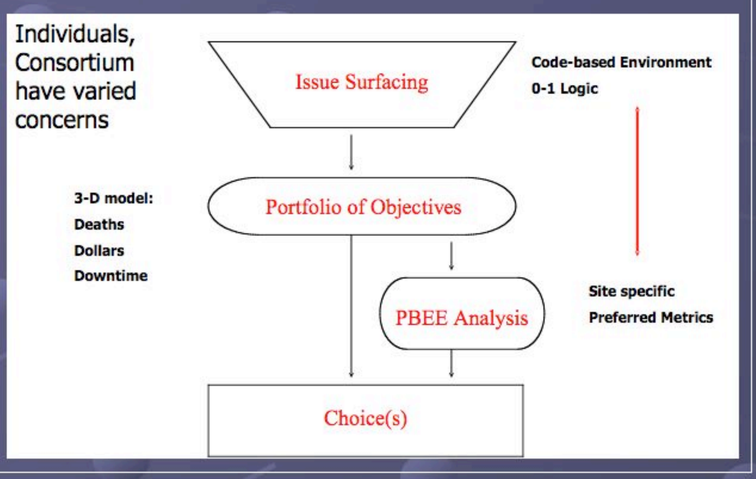
Results from the Van Nuys Testbed

	Expected NPV (Structural)	Downtime	Deaths
Do nothing	$0	16 days	0.13
Moderate retrofit	$142,178	7.6 days	0.06
Extensive retrofit	-$61,319	3.2 days	0.02



DEATHS
DOLLARS
DOWNTIME

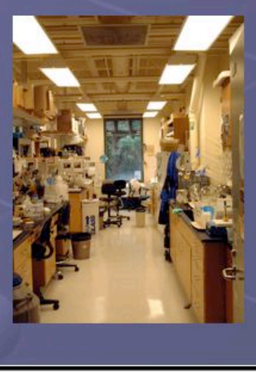
How Decision Makers Confront Risk



Policy

Societal and regulatory implications & PEER research on PBEE adoption and implementation

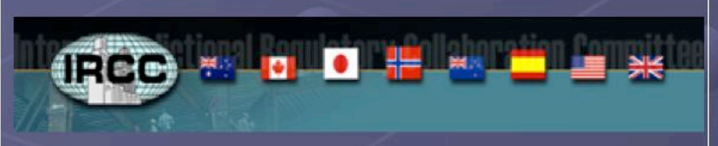
Results from the UC Berkeley Testbed

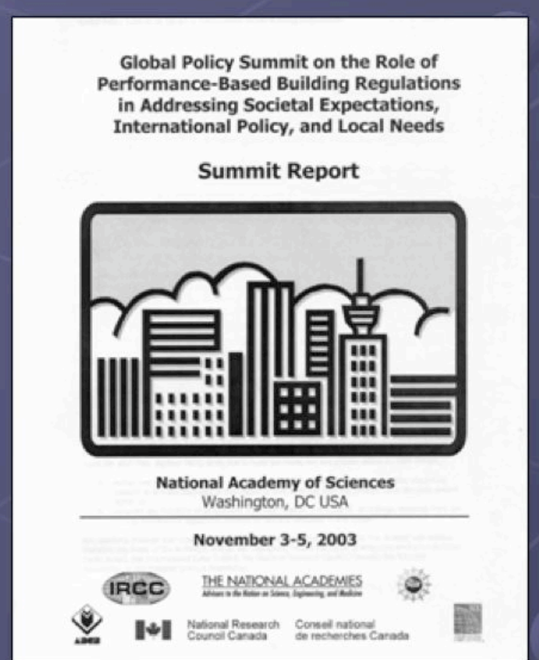


		Hazard level					
		S_a = 0.71g		S_a = 1.62g		S_a = 2.74g	
		50%/50 yr (0.0139 yr^{-1})		10/50 (0.0021 yr^{-1})		2/50 (0.0004 yr^{-1})	
Lab	Floor	Safety	Operability	Safety	Operability	Safety	Operability
S	1	0.14	< 0.01	0.62	0.06	0.96	0.50
M	3	0.50	0.18	1.00	0.72	1.00	0.98
L	4	0.58	0.44	0.94	0.82	1.00	0.98
XL	4	0.72		0.96		1.00	
XO	5		0.36		0.78		1.00

Note: Each column shows a different hazard level; Cell entries are probabilities of failure; X0 is the overall probability for all lab types; S, M, L, XL are different lab types

Lab building contents failure probabilities at three hazard levels demonstrate the impact of content losses on downtime




Global Policy Summit on the Role of Performance-Based Building Regulations in Addressing Societal Expectations, International Policy, and Local Needs

Summit Report

National Academy of Sciences
Washington, DC USA

November 3-5, 2003

IRCC THE NATIONAL ACADEMIES

National Research Council Canada Conseil national de recherches Canada

PEER regulatory policy research contributions to international forums

Tri-Center collaboration in applying lessons from social science research

Promoting Seismic Safety

Guidance for Advocates

FEMA 474 / September 2005

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