

Title: Few Lessons from Bam Earthquake for Aseismic Design of Industrial Equipment and Structures and Seismic Re-Evaluation of Existing Systems

Paper Abstract:

Focus of the paper is the is the strong earthquake activity in the Iranian Bam area.

I evaluated the failed industrial equipment in Bam after earthquake. This paper describes

few lessons from performed evaluation.

The failed equipment in substation closed to bam power plant deeply investigated and fundamentals

of earthquake excitation theory revised.

The results of performed evaluation in bam and a/m new theory are described in this paper.

The new revised theory to be applied in aseismic design of industrial equipment and structures and

re-evaluation of existing systems.

It is evident that seismic re-evaluation is a relatively mature process that has been developing for some time, with most countries adopting similar practices, often

based on principles which have been developed in the US nuclear industry.

Seismic

re-evaluation of individual plants is typically carried out at intervals of approximately ten

years. Major re-evaluations typically take 2 to 3 years to perform at a cost of approximately \$US 1 million for software alone, although the majority of re-

evaluation are carried

out in less time and at lower cost.

The majority of countries are satisfied with the seismic re-evaluations that have been carried out to date, although there are a number of recommendations

for

improvements based on the experience gained so far.

It is recommended that some areas of the seismic re-evaluation process are considered in the future for the mutual benefit of the countries. These include

a

better understanding of the benefits and disadvantages of the various methods employed

in the re-evaluation process, the definition of the scope of plant to be selected for the

re-evaluation process, definition of criteria for re-evaluation, and the role and scope

of the peer review process and also included are the strengthening of plant, the incorporation of operational and research data/experience into the re-evaluation

process

and the identification of areas of new research that could provide benefits and improvements for the re-evaluations process.