

A Short Note for Dr. Shibata's Review in 1975

Dr. Heki Shibata, Professor Emeritus of the University of Tokyo, who authored this paper, is a pioneer in earthquake engineering in Japan and the leading expert in mechanical engineering and seismic design of involving pressure vessels and piping equipment of nuclear power plants and high-pressure gas plants.

In this paper, he classifies and analyzes mode failures and failure mechanisms in a variety of equipment based on his experience in surveying the damage to industrial facilities caused by the 1964 Niigata Earthquake and the 1971 San Fernando Earthquake.

He proposes introducing the "factor of importance" based on potential of danger in seismic design, developing basic seismic design calculating the maximum response of a structure using seismic coefficients including those defined using this factor of importance.

This idea has been effectively implemented as the basis for seismic design of structures and equipment to this day, and its historical value has been proven.

He points out the importance of the reliability of seismic design and the safe design of instrumentation and control in seismic design. Dr. Shibata emphasizes the importance of learning the lessons presented by the damage experienced in earthquakes, the 1995 Kobe Earthquake – yet another example of his invaluable foresight.

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