



# Reliability Supervision Techniques of Rock Detriment in Nuclear Power Plant Structures

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## Abstract

During recent decades, numerous related research works, concerning about the characteristics of explosive load, wave propagation and blast-induced damage, have been conducted by many researchers. It was the characteristics of explosive load using numerical simulation. Pointed out that the blast-induced impulse increases with the diameter and height of the charge, while decreases with the ratio of the height of the charger. Similarly, it was pointed out that the peak pressure will change in proportion to the total charge weight, and the decoupling of charge will reduce the peak value of shock wave significantly. Base on the test result, it was set up the relationship between variation of the vibration acceleration, velocity, displacement in different directions with the distance and weight of the charge. Through numerical simulation method, suggested that the peak particle velocity adjacent to the charge decreased very fast, while dropped much slower in the far field from the charging area. It was presented a damage model to describe the relationship among degradation of rock stiffness, rock strength and tensile cracks growth under caused by blasting.

*Keywords:* Supervision techniques; shock wave; rock stiffness; rock strength

