

Experimental Study on Dynamic Collision of Nuclear Graphite Bricks

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Summary

Nuclear graphite is a fine high-temperature structural material, so it has been widely used to manufacture graphite bricks of the reflectors in high temperature gas-cooled reactors (HTGRs). Since graphite bricks are stacked together and interconnected by keys and keyways, the collision between graphite bricks will happen when the seismic load or other load is applied. In order to study the collision behavior, a collision test system was built. The velocities of two graphite bricks were measured by a high-speed image capturing technology, and the coefficient of restitution and contact time was obtained by the velocity-time curve. The experimental results show that the coefficient of restitution was increased with the rise of the collision velocity, but the contact time was decreased with the rise of the collision velocity.

