Mechanical Property and Modeling of Silicone Foam under Complex Environments including Gamma Radiation

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ABSTRACT

During the service of nuclear equipment, silicone foam is under the load of long-term radiation and the state of complex stress. Hence, the evolution of chemical and mechanical properties of the silicone foam is crucial for the performance prediction and health assessment of the nuclear equipment. The investigation of the chemical and mechanical properties of silicon foam under complex environment containing Gamma radiation are carried out to reveal the key chemical-mechanical properties of coupling mechanism of silicone foam under Gamma radiation environment. The evaluation method of the silicon foam under the complex service environments containing Gamma radiation is expected to be established, which provides a theoretical basis for predicting the performance of high confidence and health assessment of nuclear equipment.

References