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An Overview of Pebble-Bed Reactors

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Pebble bed reactors (PBR) are a type of Generation IV nuclear reactor that offers remarkable advantages over traditional reactors in size, safety, and cost of construction. This makes PBRs a very attractive alternative to the more complex reactor designs currently operating while also offering a possible solution to increasing energy demands. There are currently a number of national and international companies in the nuclear industry working on the development and testing of PBRs. Even though several of the PBR designs are new, some designs resemble the original designs with modern technologies and materials. In this research study, a historical approach has been taken to address the initial PBR development, current designs, and future of the PBR technology. This study also focuses on various fuel types, coolants, and moderators utilized in PBRs. This project's outcome will be part of the ongoing research into new reactor designs at Kennesaw State University.