INTERNATIONAL NUCLEAR ENERGY RESEARCH INITIATIVE

Nuclear-Assisted Hydrogen Storage and Safety Issues

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Project Abstract

The objectives of this project are to identify and assess the key issues associated with demonstrating the technical and economic viability of generating nuclear hydrogen, and with defining the analytical and experimental work needed to achieve maturity of the nuclear hydrogen process. These assessments usually involve engineering design studies and rule-of-thumb cost analyses. The researchers will work with thermochemical cycles previously identified as having a reasonable basis for technical and economic viability. The three main tasks are to:

- Perform analytical research on the safety aspects of hydrogen production, storage, and transport
- Compare the efficiency, complexity, reliability/availability, and economy of different hydrogen production and distribution systems
- Conduct comparative analysis of Gen IV reactor types for hydrogen generation focusing on the engineering linkage between the hydrogen production plant and the nuclear heat source