**U.S. DEPARTMENT OF ENERGY**
**INTERNATIONAL NUCLEAR ENERGY RESEARCH INITIATIVE**
**DOE/Canada**

## ABSTRACT

### Supercritical Water Cooled Reactor Stability Analysis

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Supercritical Water Cooled Reactor (SCWR) design and analysis activities are in progress in the U.S. and Canada within the framework of the Generation IV Nuclear Energy Systems Initiative. One of the important SCWR technology gaps is the power-flow stability related to thermal-hydraulic and thermalnuclear coupled instabilities. The objective of the proposed project is to improve our understanding of potential instability problems at supercritical conditions and to provide SCWR stability analysis tools and appropriate ranges of important design parameters that ensure system stability.