**Development and Deployment of Web-Based Interactive Thermal-Hydraulics Educational Modules for the Nuclear Engineering Minor Program**

## Executive Summary

The project objective is to enhance the *Nuclear Reactor Thermal-Hydraulics* course offerings, in the Nuclear Engineering (NE) minor at the University of Texas at Arlington (UTA), through the development and usage of web-based instructional and simulation modules.

The project goal is to augment the *Nuclear Reactor Thermal Hydraulics* course by developing and incorporating web-based simulations. Such simulation tools will allow for better student comprehension of a mathematically intensive subject matter through animations and virtual labs. Similar activities have proven to be extremely successful in other engineering areas, but are seldom found in NE, especially in a thermal-hydraulics course. Lessons and instructional modules created will be published and shared with the nuclear community. Additionally, this will help in the future expansion of the NE undergraduate minor to a graduate certificate program in NE for working professional engineers, continuing education short courses in specific topics for nuclear personnel, and seminars/demonstrations suitable for the general public in north Texas.

The project will greatly benefit the students of the Nuclear Engineering minor program at UTA, and from other academic institutions, by:

- Providing the student a mechanism to carry out “what if” queries which bring to life concepts often buried in mathematical equations;

- Allowing the student more control over his/her learning time by making these modules accessible through the web;

- Encouraging students to learn in a way that has been shown to be more engaging than learning from textbooks and lectures alone.

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