

Course Modules on Management of Aging Power Plant Components and Systems for Enhancement of Nuclear Engineering Program

Executive Summary

The objective of this proposal is to enhance the current graduate program in nuclear engineering at the University of Idaho by developing a core course on “Management of Aging Plant (Components and Systems)” under the technical area of Materials and Mechanical Engineering. This course will be offered by the Chemical and Materials Engineering Department to graduate and senior-level undergraduate students of the University of Idaho in different campuses (i.e., Moscow, Idaho Falls, and Boise), and to others for continuation of professional education through the Engineering Outreach Program of the University of Idaho.

The proposed course will have four modules:

- 1) Understanding of Aging Mechanisms
- 2) Inspection, Monitoring, and Diagnostics Technique
- 3) Damage Prediction and Mitigation of Aging Effects
- 4) Prevention from Damage and Future Measure

These can be taught as stand-alone modules for the Engineering Outreach program conducted by the University of Idaho as professional development courses. The proposed course will have both lecture and laboratory components. The scope of the proposed curriculum development will be accomplished in one year. This course will be offered in collaboration with the Center for Advanced Energy Studies (CAES) located in Idaho Falls. The course instruction will be conducted via the state-of-the-art multimedia facilities and Blackboard Vista platform available at the University of Idaho. The course will be evaluated on its effectiveness and impact using course evaluation methodologies administered through the University of Idaho.

The sustainability of this program will come from the commitment of the University of Idaho to strengthen the Nuclear Engineering curriculum in collaboration with CAES and other universities in the Western region, and a very active Engineering Outreach program conducted by the University of Idaho.

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