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PNNL-SA-159758

On-Line Lead/Water heat Exchanger Sensor/System Feasibility

CRADA 462

February 2021

Bill Glass

Hydromine Energy, Inc.

U.S. DEPARTMENT OF ENERGY

Prepared for the U.S. Department of Energy
under Contract DE-AC05-76RL01830

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Richland, Washington 99354

Abstract

The purpose of this project is to develop and demonstrate the feasibility of a high-temperature sensor for on-line structural health monitoring (OLSHM) of the novel heat exchanger tubes in the Hydromine lead cooled reactor. The high temperature sensor takes advantage of the Hydromine heat exchanger tube design that has a relatively cool inlet temperature (~ 350 oC) and the tube ends are in an Argon gas blanket rather than being submerged in a corrosive fluid and the tube ends are conveniently accessible from the periphery of the heat exchanger shell.

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