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Zircaloy Oxide Growth

August 2022

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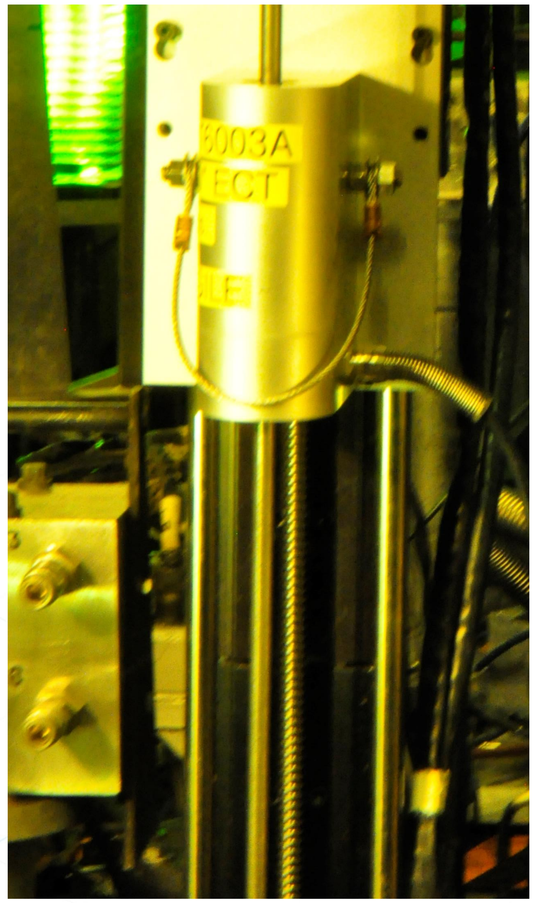
Purpose

The goal of the research is to create a standard for growing an oxide layer on zircaloy nuclear fuel cladding to aid in qualifying new eddy current probes
5 different thickness of oxide will be grown on the samples ranging from 10 – 250 micrometers (um).



Background

The Hot Fuel Examination Facility (HFEF) at the Material and Fuels Complex (MFC) currently has an eddy current probe in the hot cell. It is used to check for defects in samples. 2 additional probes have been purchased to accommodate for different sized samples.

Work Done

Research into past work on oxide growth work was performed. A testing regime was developed optimizing soak time in the oven with controlled oxide growth. A procedure for the standard is being written.

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