



U.S. DEPARTMENT OF
ENERGY

Nuclear Energy

MS-FC-1: Maintaining and Building Upon the Halden Legacy

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Development**

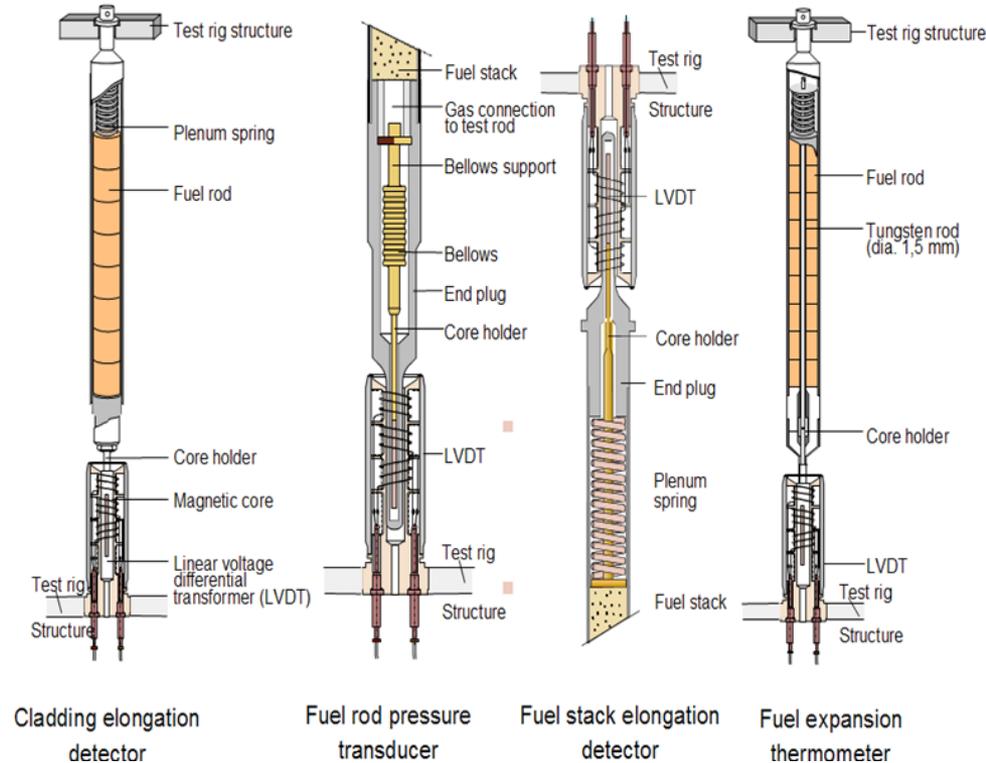
DOE-NEUP FY2018 Webinar

August 9, 2018



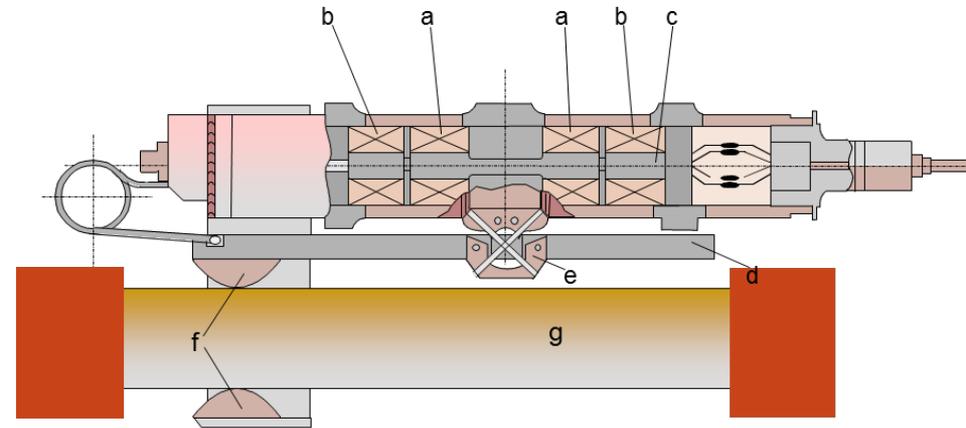
MS-FC-1: MAINTAINING AND BUILDING UPON THE HALDEN LEGACY (IN SITU DIAGNOSTICS)

- FEDERAL POC – KEN KELLAR & TECHNICAL POC – COLBY JENSEN
- ELIGIBLE TO LEAD: UNIVERSITIES ONLY
- UP TO 3 YEARS AND \$400,000





- With the loss of access to the Halden reactor, the nuclear research community is at risk of losing the extensive in situ diagnostic capabilities practiced at Halden.
- Interested in efforts that utilize and improve upon Halden in situ diagnostics.

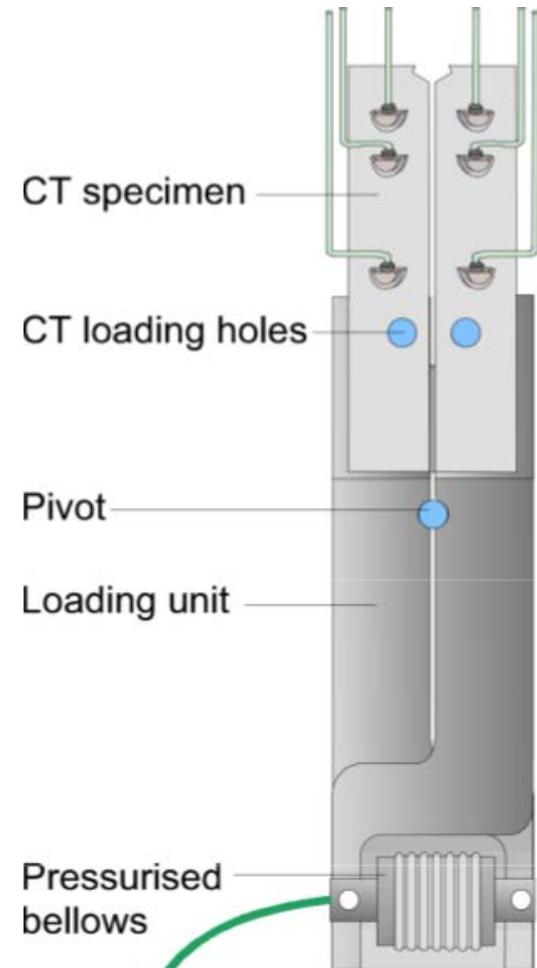


a: Primary coil d: Ferritic armature
b: Secondary coil e: Cross spring suspension
c: Ferritic bobbin f: Feelers
g: Fuel rod



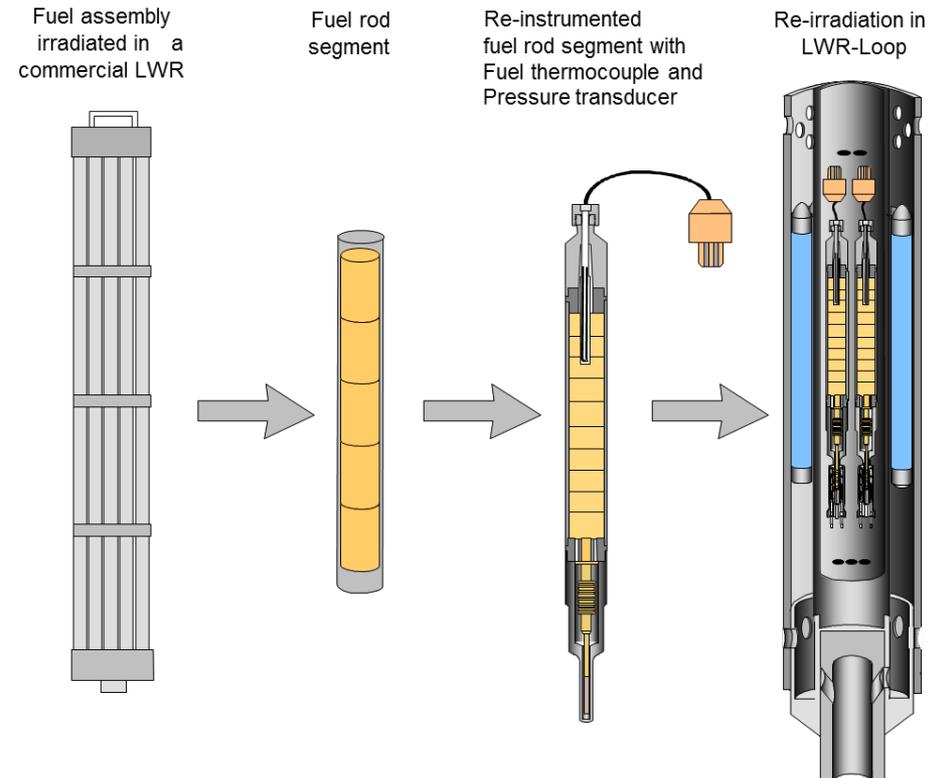
Diagnostic Interest: Real-time, non-intrusive, small

- **Real-time in-core diagnostic instrumentation of interest include, but are not limited to:**
 - creep, crack propagation, swelling, corrosion/crud build up, temperature, pressure, flux, two-flow phase, and fission product transport. Research that enables in-core application and associated logistics is also encouraged such as focuses on miniaturization, non-contact/non-intrusive as well as innovative data transmission techniques, such as wireless methods is also encouraged.





- **Emphasis in awarding R&D grants will be placed on diagnostics that can most directly benefit ongoing modelling and computer simulation development and future U.S. irradiation experiments, and that measure phenomena that are difficult to assess during irradiation or post-irradiation examinations, e.g., crack propagation rates and non-linear phenomena.**





Nuclear Energy

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