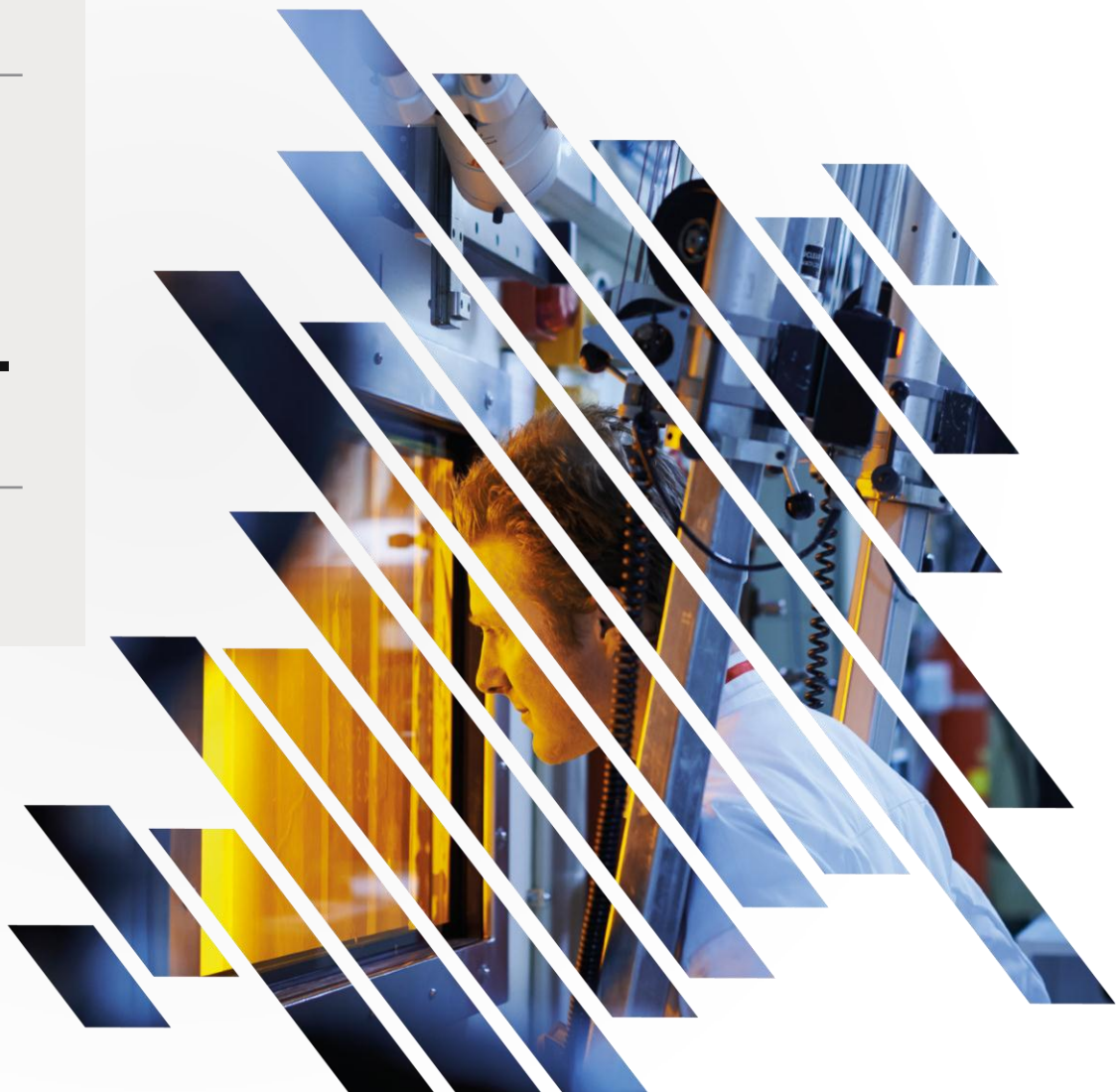




NRG R&D PROGRAM ATF DEVELOPMENT

EGATFL-04, 17-18 September 2015



DUTCH R&D PROGRAM

Government funded R&D is carried out by NRG in the general areas:

1. **Safe Reactor Operation**
2. Radiation Protection
3. Decommissioning
4. Nuclear Technology for the Future

‘Accident Tolerant Fuel and Cladding’ has been added as a topic on this agenda in 2015

NRG is looking to:

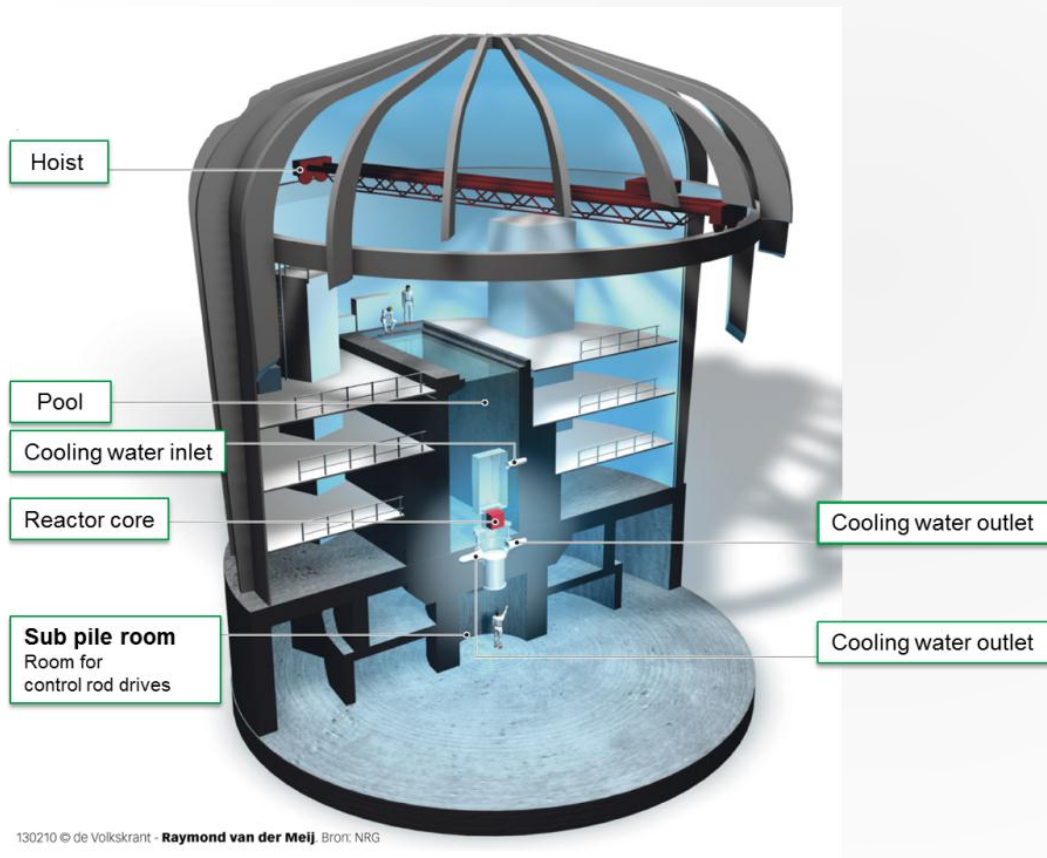
- collaborate on an irradiation project in EU-H2020 context
- integrate work with the broader community



FULL NUCLEAR INFRASTRUCTURE

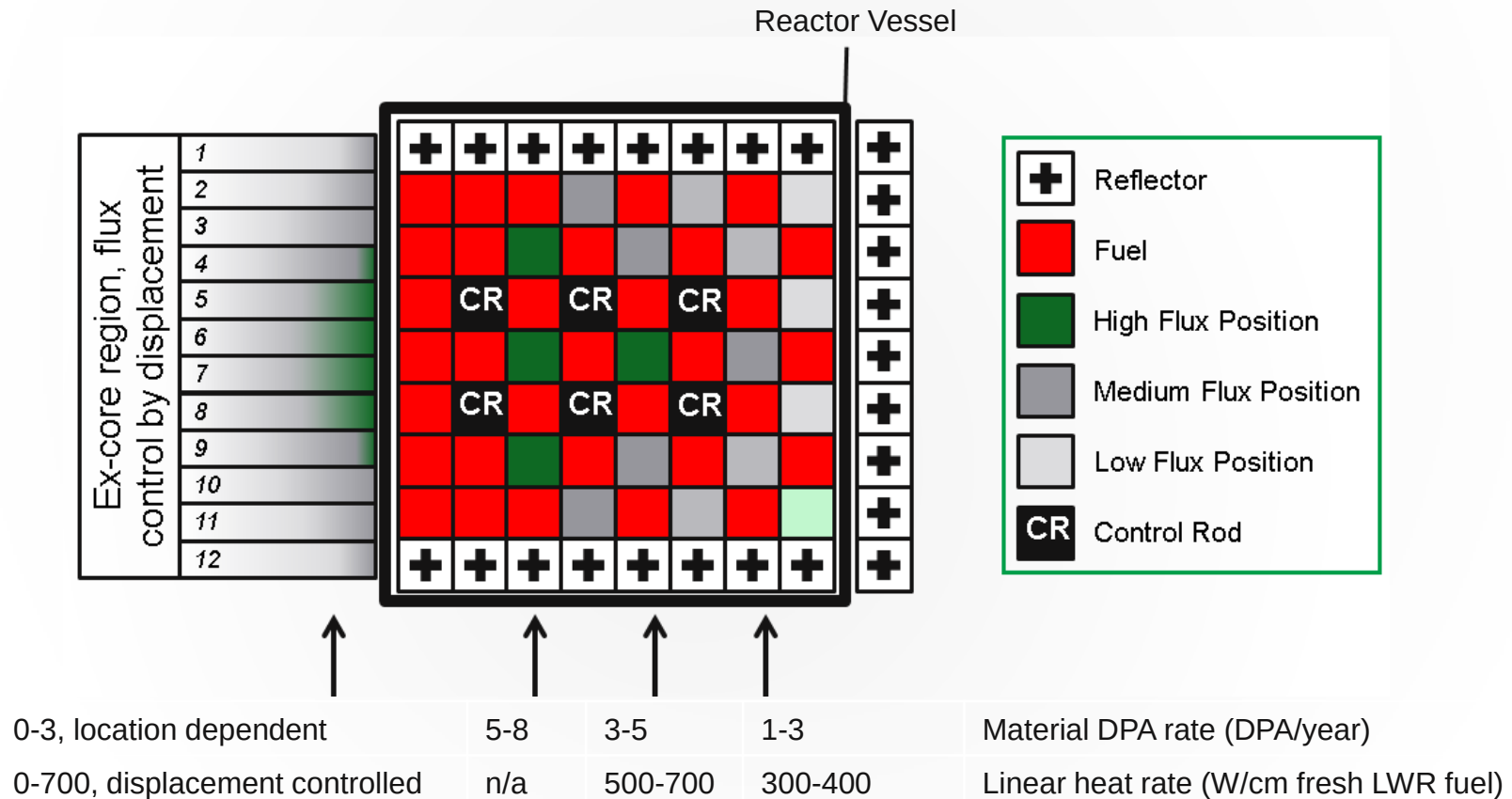


THE HIGH FLUX REACTOR (HFR)



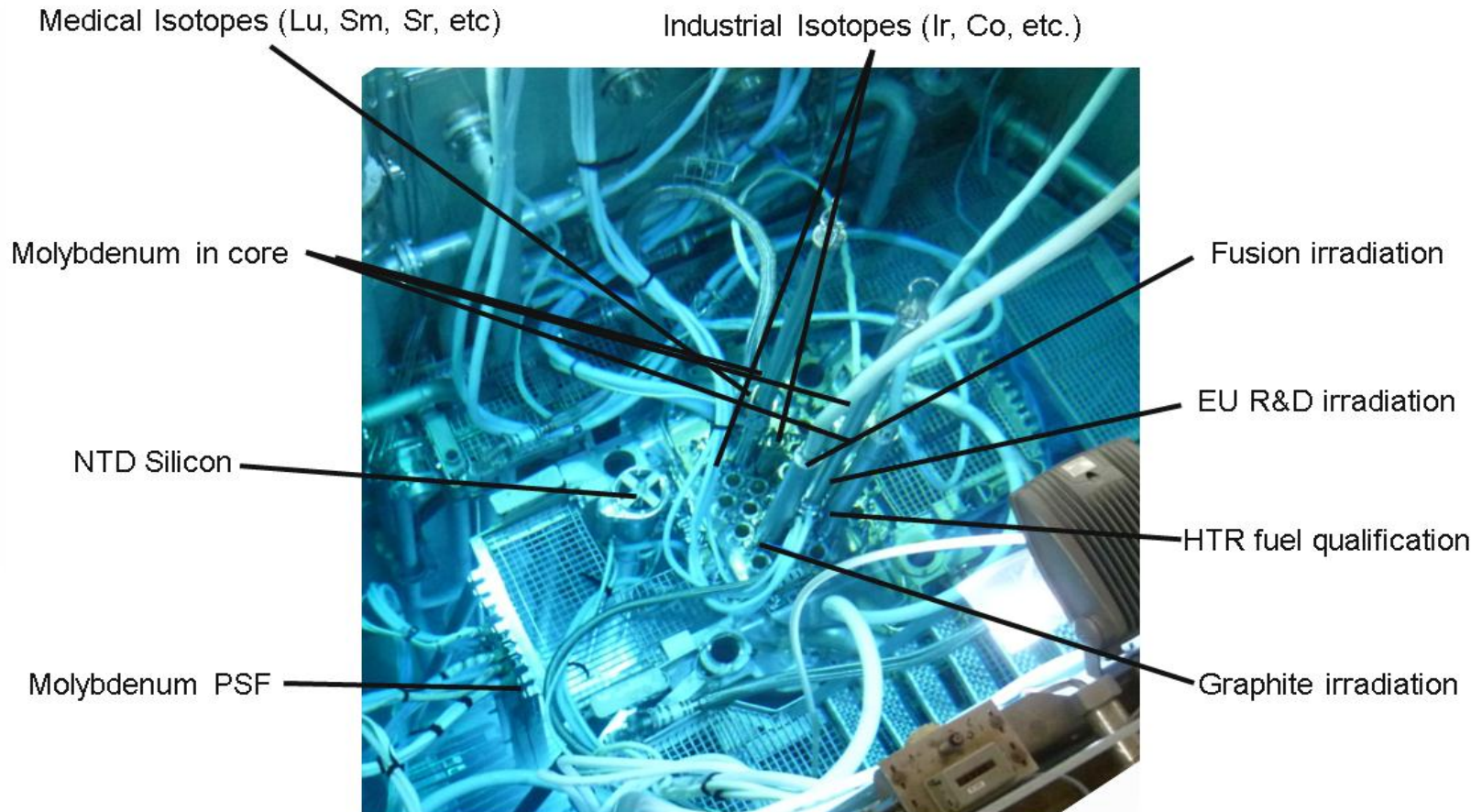
- High flux
- 45 MW thermal power
- Stable and constant flux profile in each irradiation position
- Main Applications:
 - Isotope production
 - Nuclear energy irradiation services
 - R&D
- 31 operation days per irradiation cycle, 9 cycles a year

THE HIGH FLUX REACTOR (HFR)

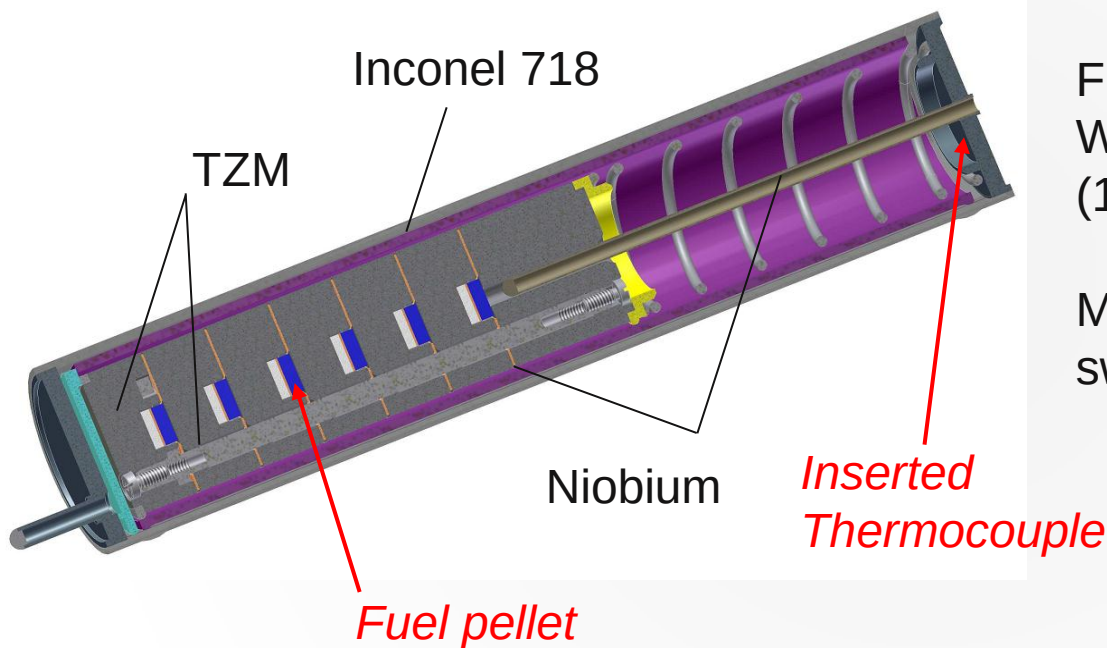


The stable and constant flux profile in each irradiation position is a unique HFR feature

SNAPSHOT HFR – DECEMBER 2014

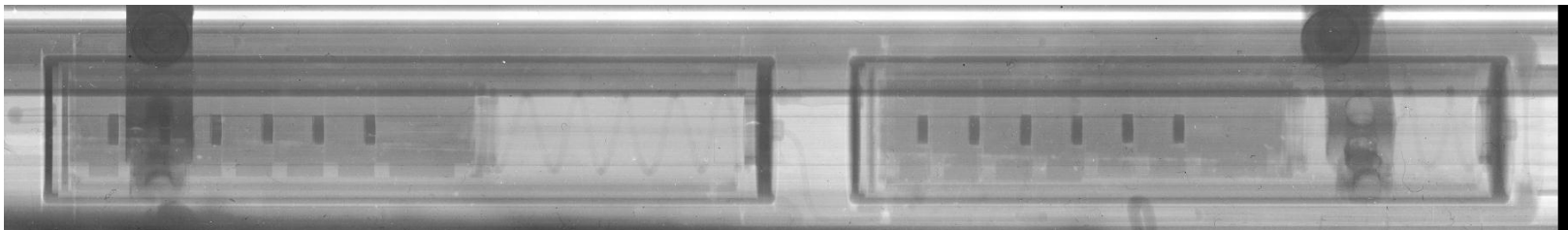
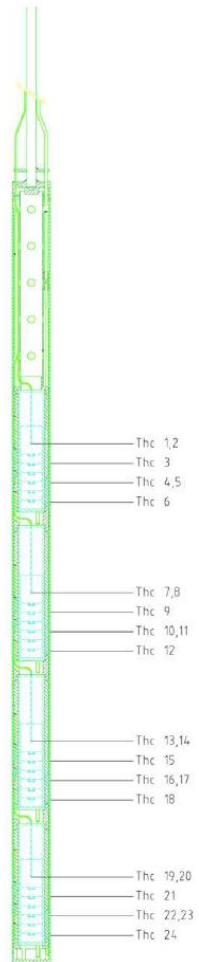


SEPARATE EFFECTS TESTS



Fuel disk irradiation at
Well-determined T
(1000-1400 °C)

Measurement of free
swelling and gas release



CREEP TESTING

Module irradiation with PI material displacement measurements

- Successfully developed for graphite creep
- Executed in graphite program of EDFE (ACCENT program)
- Currently third irradiation campaign is ongoing
- Results from first two capsules more than doubled the existing graphite creep data base
- Results of ACCENT are of unparalleled quality and valuable to EDFE's AGR safety cases

