



AIDA

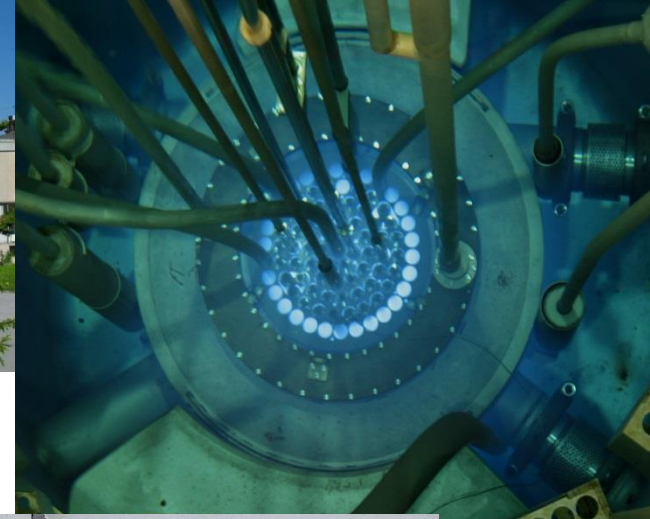
Transport System for Large objects at Ljubljana JSI TRIGA Reactor (part of WP15.5)

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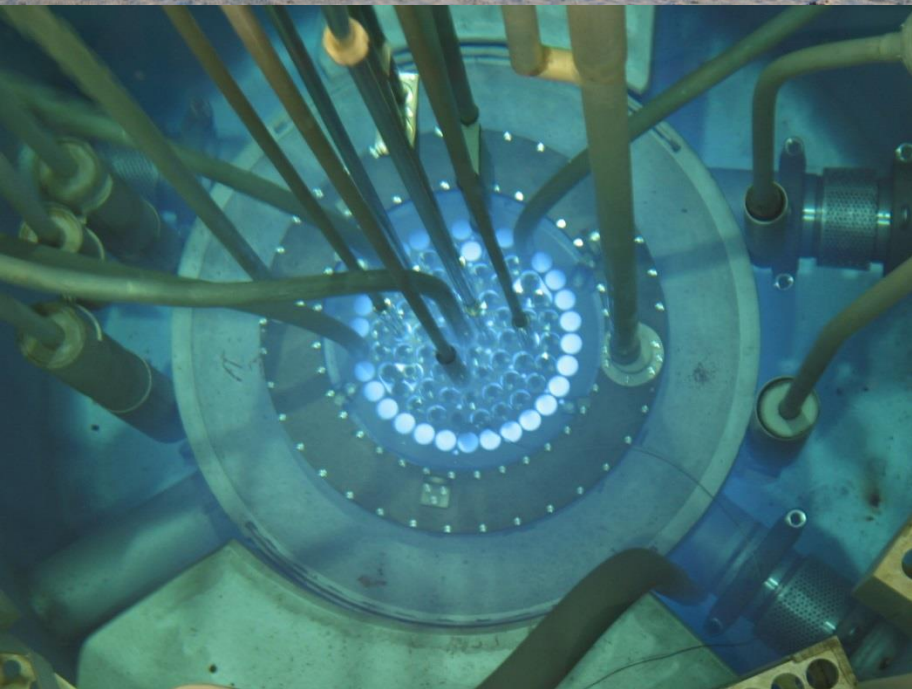
AIDA2 Kick-Off Meeting, CERN, June 4, 2015

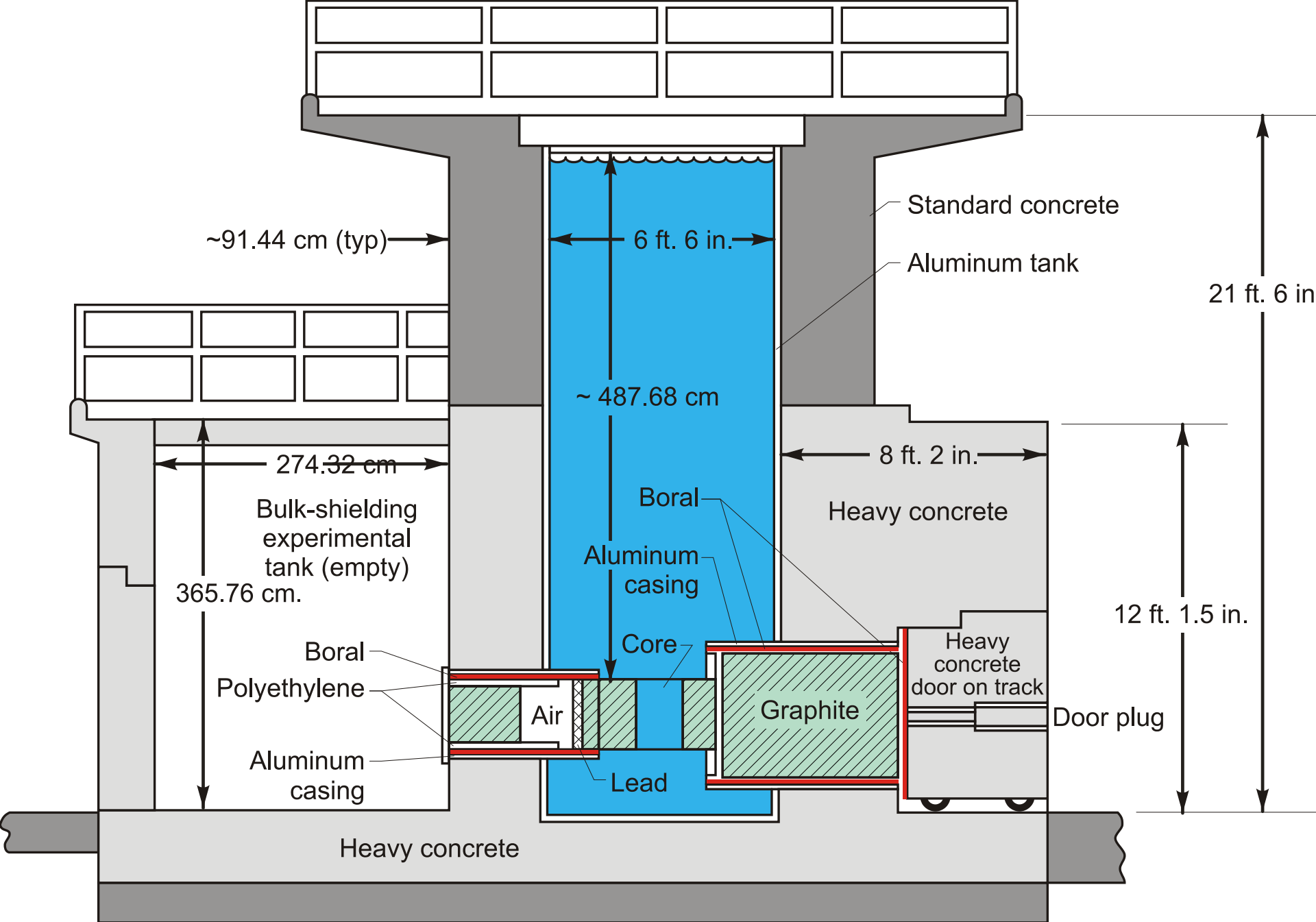
TRIGA Mark II Reactor Ljubljana

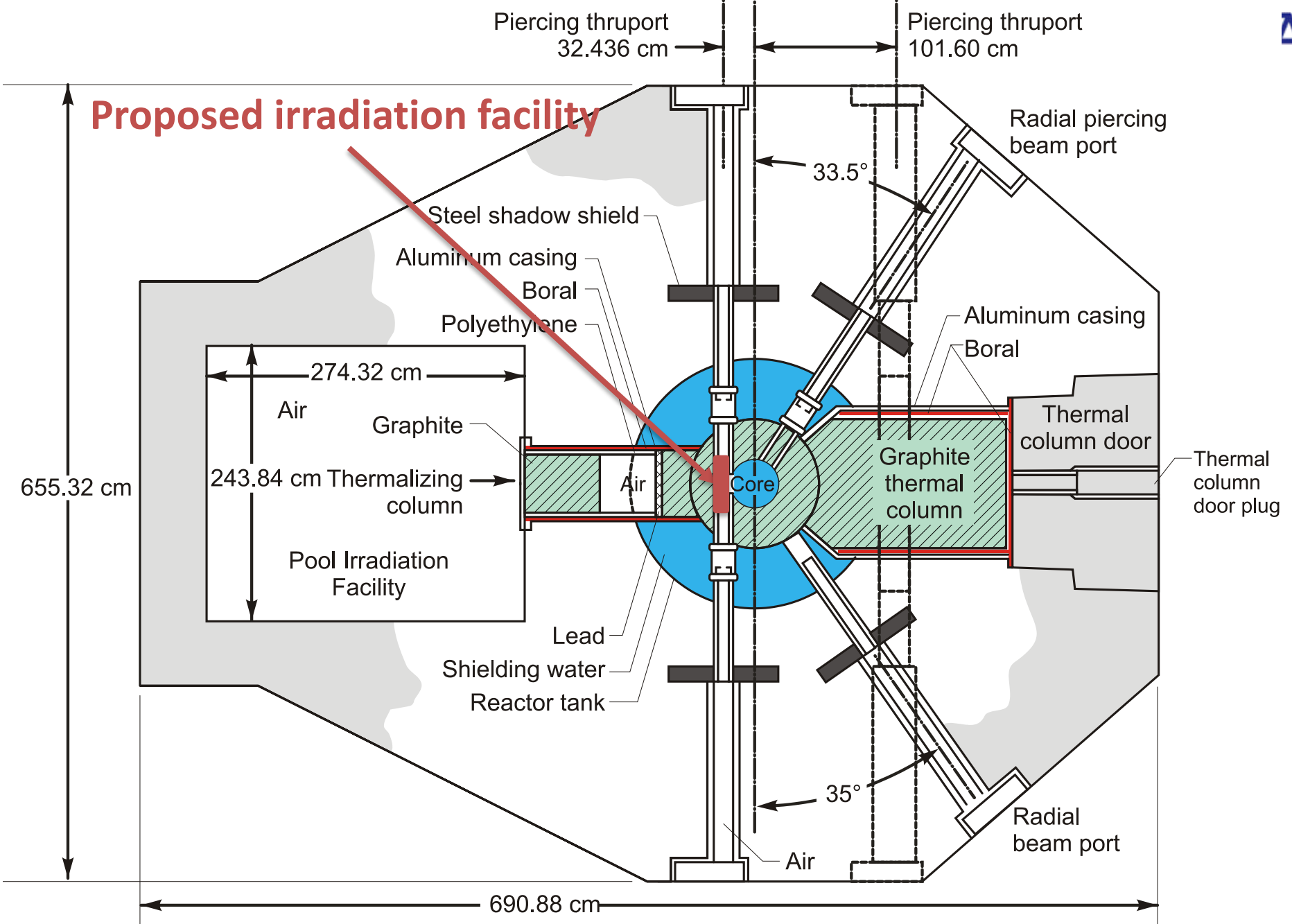


- 1st criticality:
 - 31st May, 1966
- P_{\max}
 - 250 kW (steady state)
 - 1 GW (pulse)
- Fuel
 - UZrH (12 wt. % U)
 - $E = 20\%$

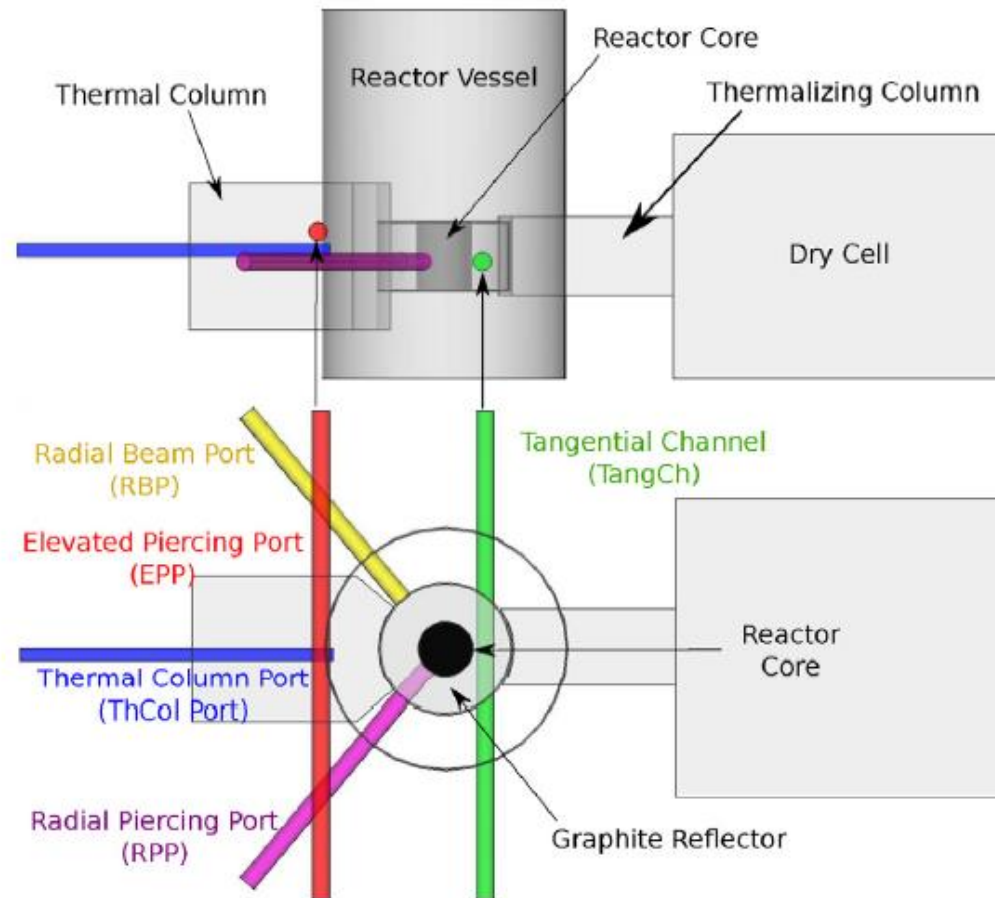








TRIGA Irradiation Channels



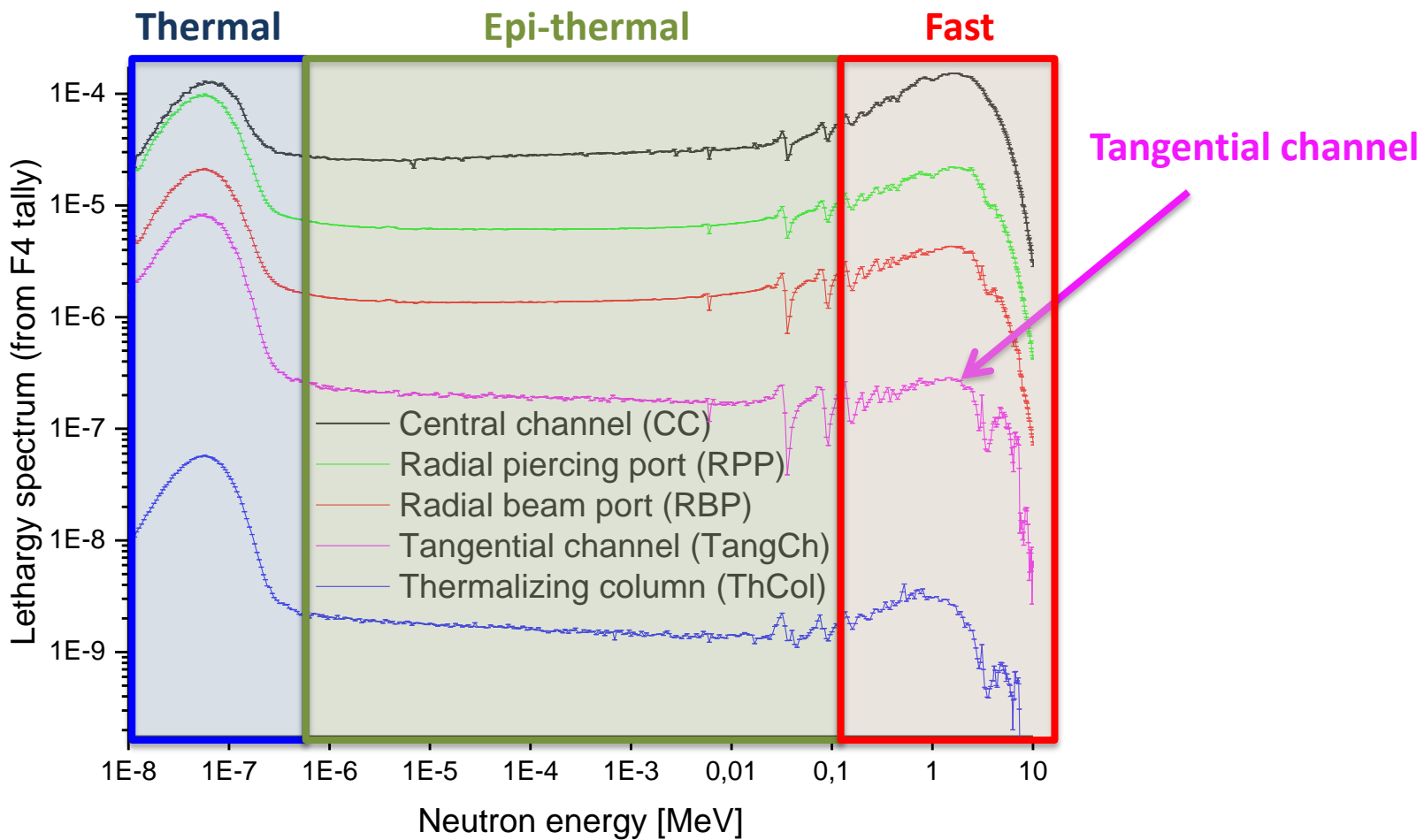
Goal

- Develop and install a large sample irradiation ($2R < 15$ cm) facility in the tangential channel of the JSI TRIGA reactor

Tangential Channel Characteristics

- Inner diameter: 15 cm
- Neutron flux characterisation:
 - L. Snoj et al., Appl. Rad. Isot. 70 (2012) 483–488
- Neutron flux: $1.3e12$ n/cm²s
 - Thermal ($E < 0.625$ eV): 58 %
 - Epithermal (0.625 eV $< E < 100$ keV): 25 %
 - Fast ($E > 100$ keV): 17 % -> $2.2 E11$ n/cm²s
 - $1e15$ n_{eq}/cm² in 1 ½ hours

Neutron Spectra



Activities

- Calculations to support development of the irradiation facility
- Experimental and computational characterisation of the facility
- Design and installation of the facility
 - need for strong neutron + gamma shields

Milestone, Deliverable, Budget

- MS15.9: Design of a transport system for neutron irradiations of large samples:
 - *The design of a transport system for large objects of a diameter of up to 12cm into the Ljubljana reactor irradiation position including the possibility for electrical and cooling connections to the samples has been documented.*
 - Milestone for M12 (Report to StCom)
- D15.9: JSI TRIGA Reactor Transport system:
 - *The transport system for large objects of a diameter of up to 12cm into the reactor irradiation position including the possibility for electrical and cooling connections to the samples has been installed and commissioned. (Task 15.5)*
 - Deliverable for M18
- Budgeted with 25 k€ EC contribution, additional cost covered by internal funds