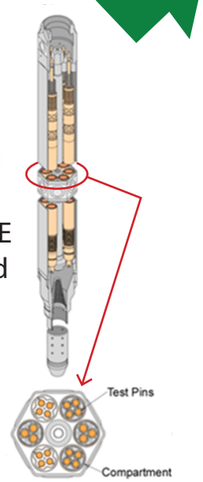
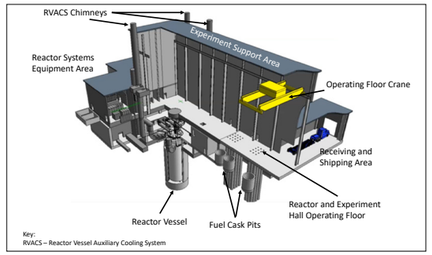
The VTR Alternative
Test Sample Irradiation and Examination

The fuel fabrication facility would fabricate the driver fuel assemblies and temporarily store the fabricated driver fuel assemblies. When ready or needed, the assemblies would be transferred to the VTR facility.

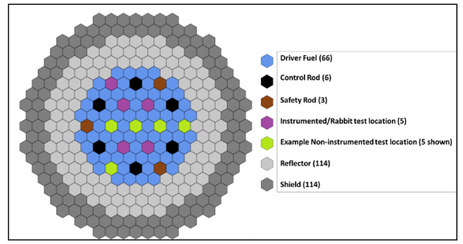
Material and fuels test specimens could be manufactured at multiple sources: DOE sites, universities, and commercial entities.





At the VTR facility, fuel would be temporarily stored, then prepared for insertion into the core.

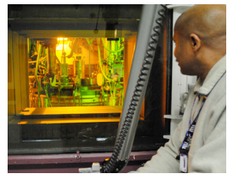
Final assembly of the test specimens into a test assembly and inspection of the test assembly would be done at the VTR facility.



Fuel assemblies would be loaded into the VTR core during a refueling outage at the end of a test cycle. The initial core would require 66 driver fuel assemblies. Up to 15 driver fuel assemblies would be replaced 3 times a year.

Test assemblies would be inserted into or removed from the VTR core during refueling and could reside in the core for one to several test cycles. The VTR would have one test location that allows insertion and/or removal of a test article while the reactor is operating.

After removal from the VTR core (and possible temporary storage in the VTR facility), test assemblies would be transferred to a post-irradiation examination hot cell facility. The assembly would be cleaned and the test specimen removed. Initial post-irradiation examination would be performed in this facility.



Test samples could be divided into smaller samples and transferred to other post-irradiation examination facilities for specialized examination.