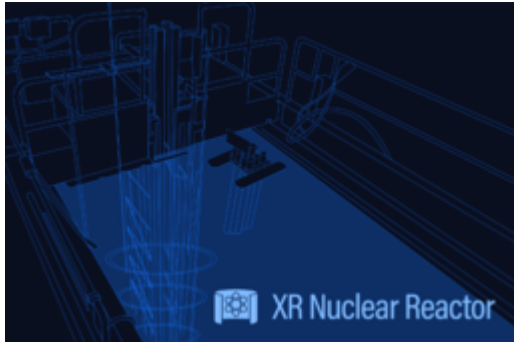




# The Virtual Ford Nuclear Reactor

TECHNOLOGY NUMBER: 2023-279



## OVERVIEW

Virtual reality replica of decommissioned Ford Nuclear Reactor

- The Virtual Ford Nuclear Reactor is a virtual reality (VR) replica of the decommissioned Ford
- Available to license for internal non-commercial, education, or research purposes at no charge

## BACKGROUND

Four experiments are included:

1. Neutron activation and axial flux profile measurement
2. Temperature and Void Reactivity coefficient measurement
3. Xenon Transient and
4. Shutdown Power and Control Rod Calibration

The VR simulations are built in and run on Unreal Engine from Epic Games, Inc. Additionally, a system dynamics model was created incorporating the point kinetics equations with feedback heat transfer in the core heat transfer in the pool, and heat transfer in the heat exchanger and secondary side. This model was built in Matlab's Simulink and is exported as a Functional Mock-up Unit (FMU) that runs real time and is integrated with Unreal Engine using the UnrealEngine-FMUPlugin.Interactive - conduct pre-programmed reactor physics experiments.

## ADDITIONAL DETAILS

### INTELLECTUAL PROPERTY:

Copyright protected software.

### LICENSING:

### Technology ID

2023-279

### Category

Software

Engineering & Physical Sciences

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