

Challenges in Acquiring Research Reactor Simulators – Lessons Learned

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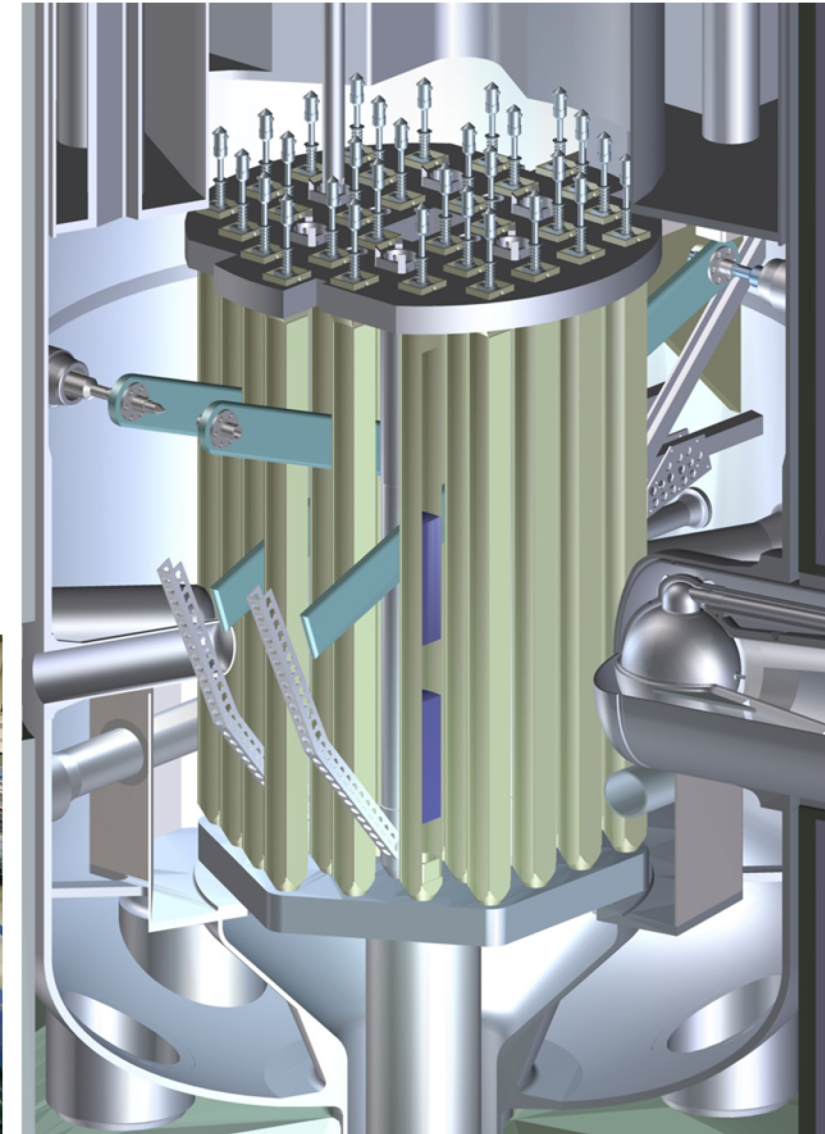
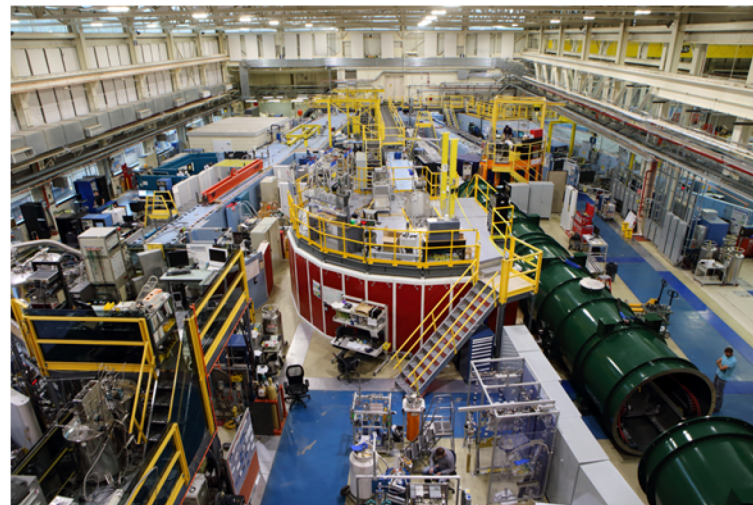
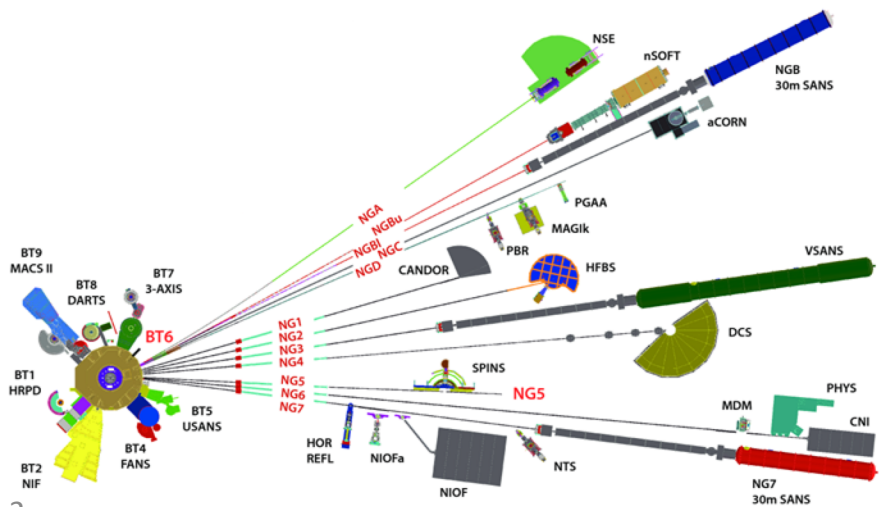
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Introduction: NCNR & NBSR

- NBSR successfully operating since 1967.
- Recently recovered (partially) from the Feb. 3rd, 2021 incident.
- 20 MW heavy water-moderated test reactor.
- Fueled with MTR plate-type highly enriched uranium.
- Currently undergoing low-power testing & facility upgrades.



Background/Bases for Need



Operators conducting their training and license examination using the NBSR Console since 1967.



Frequent down time of reactor due to training and examination.



New systems or modifications installed directly on to the console.

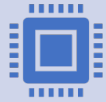


Creation of a training environment for operators.



Ability to license operators while reactor is in recovery.

Requirements



Design, build, installation and testing of a reactor simulator that is 1-1 with the NBSR console.



Built in accordance with the ANSI/ANS 3.5-2009 standard as applicable to the NBSR.

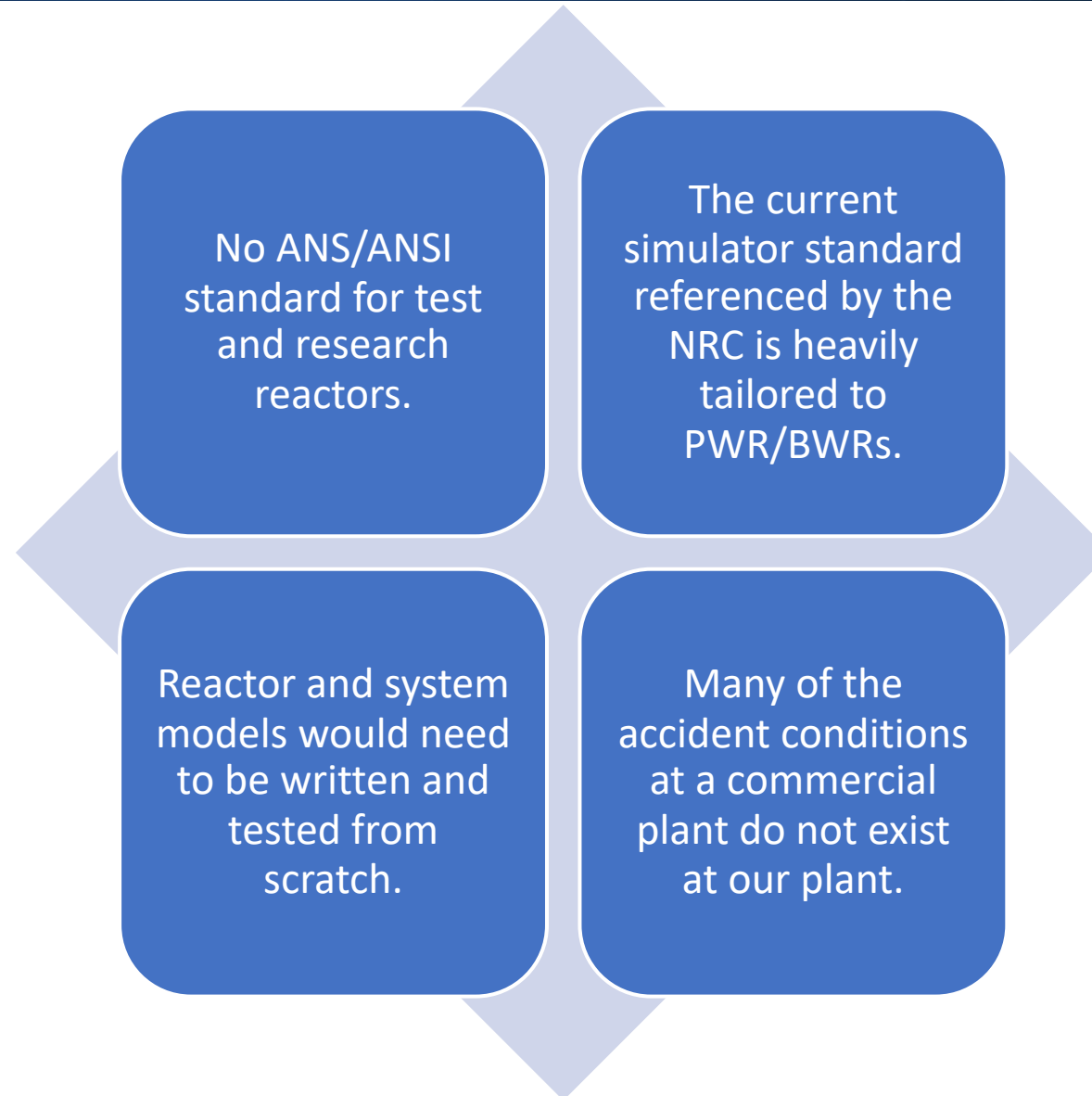


Re-construction of two rooms within the NCNR, Simulator Room and Instructor Station in accordance with NUREG-1021.



Training of NCNR personal on simulator use.

Requirement Challenges



Administrative Challenges



Lack of space for a full scope simulator.



Need of a maintenance contract with a company to supplement lack of staff to run and maintain the simulator.



Extended amount of time needed for contractors to provide a cost estimate.



Extended contract execution time needed by contractor.



High overall project cost due to uniqueness of the project.

Lessons Learned



It's hard out there for TRTR!



Greater project management resources are needed.



More time needs to be allocated for market research and requirement development.



A higher budget allocation is needed for “Built from Scratch” projects.

Future Improvements



Creation of the Project Management Office (PMO)



Dedicated project schedulers, CORs, and Engineers.



Work to provide upper management with thorough market research, budgetary estimates, resource allocation.



Reduce administrative/project management tasks on engineering staff.

Questions??

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