

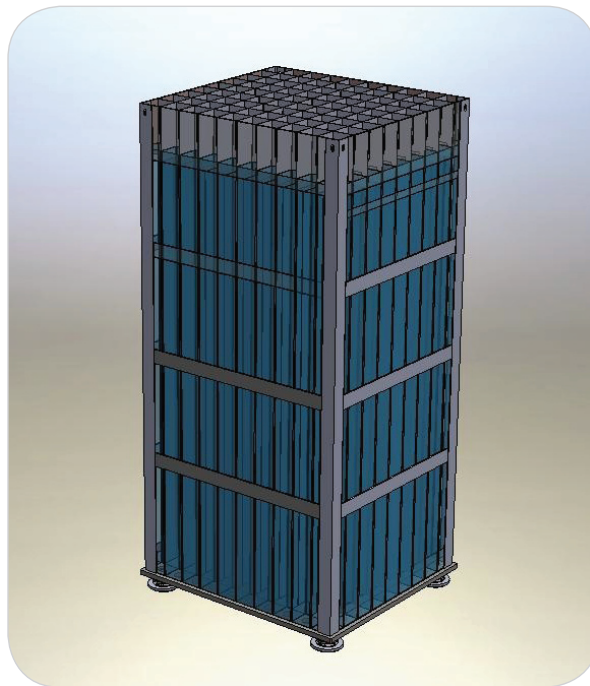
NuStor™—The Next Generation in Racks

Dry & Wet Fuel Storage

Economical – Versatile – Advanced

Transnuclear, Inc., the US leader in dry spent fuel storage, has leveraged its industry leading design, licensing, and fabrication expertise to offer the next generation in wet and dry fuel storage racks—NuStor™. Leapfrogging current 1980s technology, NuStor™ racks are qualified for use at new US EPR™ reactors and have the versatility to support spent fuel pool re-racks and the international market.

NuStor™ racks are designed to be the most economical and versatile racks available, based on ease of fabrication, simplicity of installation and the availability of materials. And with Transnuclear’s history of supplying satisfied clients with quality fuel-related products for over 40 years, you can rest assured NuStor™ will meet your needs.



NuStor Rack Module

Features

Light weight, full length fuel tubes

Full length, single strip poison material with design life of at least 60 years

Larger tube entry opening

Top and bottom egg crates and bands with minimal welding

Adjustable supports design

Multiple fabricators for rack modules and poison material

Top up-lifting approach

Backed by AREVA

Benefits

Essentially no distortion, ease of handling

Qualified poison material for assured performance

Ease of fuel handling, enhanced safety

Reduced cost, ease of production

Prevention of pool liner damage, enhanced safety

Reduced cost and assured delivery

Easier to install, minimized drop risk , reduced risk for pool liner damage

Financial assurance, resource pool of experts

NuStor™

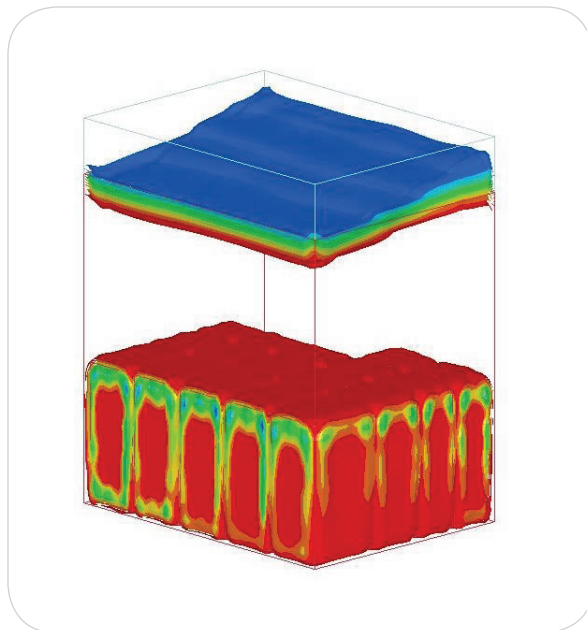
Technical Qualifications

Structural/Seismic

Using state-of-the-art computer codes and analysis techniques, Transnuclear has prepared the most comprehensive rack models in the industry. While these models address individual fuel assemblies and their associated interaction with the rack, the key for a successful qualification of the design is a full pool model. Our model assures that all hydrodynamic loading is accurately accounted and includes:

- 1,000,000 structural and fluid degrees of freedom
- Explicit finite element models of all of the racks with the inclusion of all material and geometric non-linearity
- A complete fluid element modeling of the entire pool volume of water

Using this technology, NuStor™ racks have been qualified for the most severe (bounding spectra) seismic conditions for any fuel pool. The generation of time histories to support this seismic qualification meets or exceeds all regulatory requirements, making NuStor™ the most advanced rack design today.



State-Of-The-Art Whole Pool Seismic Model

Criticality

The criticality analysis for NuStor™ racks is also state-of-the-art and includes:

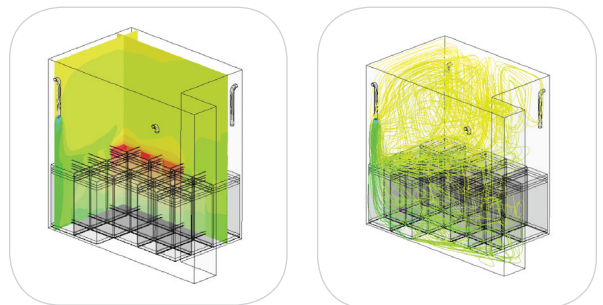
- The latest international AREVA fission product experimental data which backs up the burn-up credit analysis for the most versatile and dense racks
- The use of qualified poison material for criticality protection assurance
- Use of the same readily available poison material used with the Transnuclear dry storage canisters

Thermal Hydraulic

The thermal hydraulic analysis models encompass the complete pool with racks installed, including details such as the rack feet and use of the latest computational fluid dynamics computer codes. The rack qualification includes:

- Fully and partially loaded racks including offload of a full core
- Over 2,000,000 mesh elements representing components in pool and rack modules
- A 50% MOX fuel configuration to provide for future storage

The analysis demonstrates the NuStor™ rack's outstanding thermal characteristics, which meet or exceed all regulatory and operational requirements.



Most Comprehensive Whole Pool Thermal Hydraulics Model

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