

Specialty Fuel Handling Tools

Innovation to Enhance Performance and Efficiency

Challenge

As nuclear plants focus on safe and efficient fuel operations, fuel handling and storage must be carefully managed to ensure successful operation. The right tools are crucial to this success. Fuel loading challenges, such as dimensional distortion during core reload, can result in fuel assembly damage and outage critical path delays.

Solution

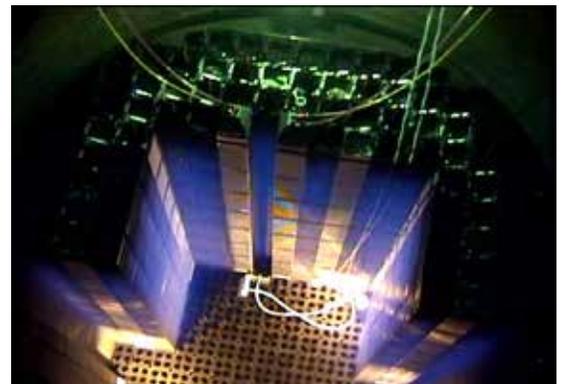
Framatome provides innovative tooling solutions to maintain safety standards and reduce lost time attributed to fuel handling challenges.

Efficient Fuel Handling Methods

Our Fuel Services design engineers develop and employ a variety of core loading improvement tools, which facilitate loading fuel assemblies back into the core. These tools can accommodate assembly distortion.

Fuel assembly control component distortion can also create challenges during the insertion of a component into a fuel assembly. Our team developed control component tools to facilitate handling and storage. These tools are compatible with multiple types of regular and auxiliary component handling tools and fuel handling masts. Both core loading and control component tools reduce the probability of fuel assembly/component damage, minimizing outage critical path delays.

Numerous plants have multiple fuel assemblies with potential for top nozzle separation during handling. Our exclusive top nozzle separation tool enables safe handling and storage of nuclear fuel assemblies subject to this condition. This multi-section tool, custom designed for easy shipment, assembly and storage, interfaces with existing spent fuel pool handling equipment and storage racks.



Fuel Assembly Incore Alignment Guides

Customer benefits

- Increased safety with decreased probability of a fuel handling event
- Customized design to meet your particular needs
- Avoid critical path delays
- Designed for nuclear materials and equipment compatibility

Your performance
is **our** everyday **commitment**

Spent fuel management is a continuous challenge to maintain required fuel storage within the spent fuel pool. Depending on the cask storage cell designs supplied by several cask vendors, cask loading to support ISFSI challenges fuel handling equipment interface. Customized manual operated fuel handling tools are available to meet these challenges that are targeted to work with existing building cranes or fuel manipulator service hoists.

Safe Storage and Remote Handling of Fuel Components Enhance Efficiency

Our Fuel Services team also offers a variety of field-proven storage containers, plus encapsulation devices, to safely store individual fuel rods, fragments and miscellaneous material. These storage containers can be loaded underwater and tamper-sealed using specialized tooling. Canisters meet fuel handling load limits and are sized to the dimensions of your fuel assemblies.

Plus, specialized trolley-mounted inspection rigs allow simultaneous multiple-face inspection of fuel assemblies and easy operator positioning. The good news? They do not interfere with site fuel handling equipment. Limited manipulation of the fuel assembly enhances safety and saves time by reducing the number of times the fuel assembly is grappled, lifted, rotated, and lowered.

Customized Tools for Your Plant-Specific Needs

Framatome offers standard ready-to-deploy tooling designs, as well as innovative customized designs to safely and efficiently solve your specific fuel handling challenges. Upon request, on-site services can be provided to install and operate the tooling, as applicable.



Rod Storage Capsule (Cap Installed)



Control Rod Changeout Tools



Fuel Assembly Rotating Support (Lazy Susan)



Manual Fuel Handling Tools

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