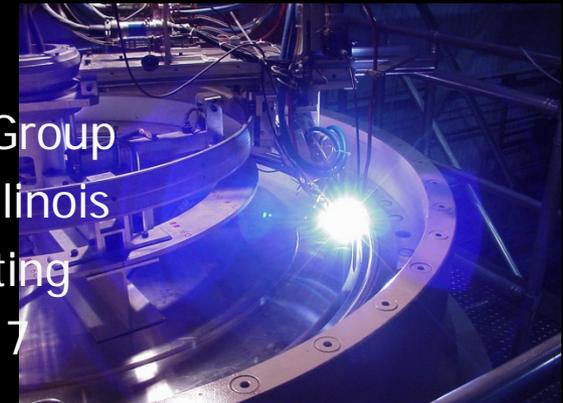


# HI-STORM 100S General Loading Operations at US NPPs



Mike Hale

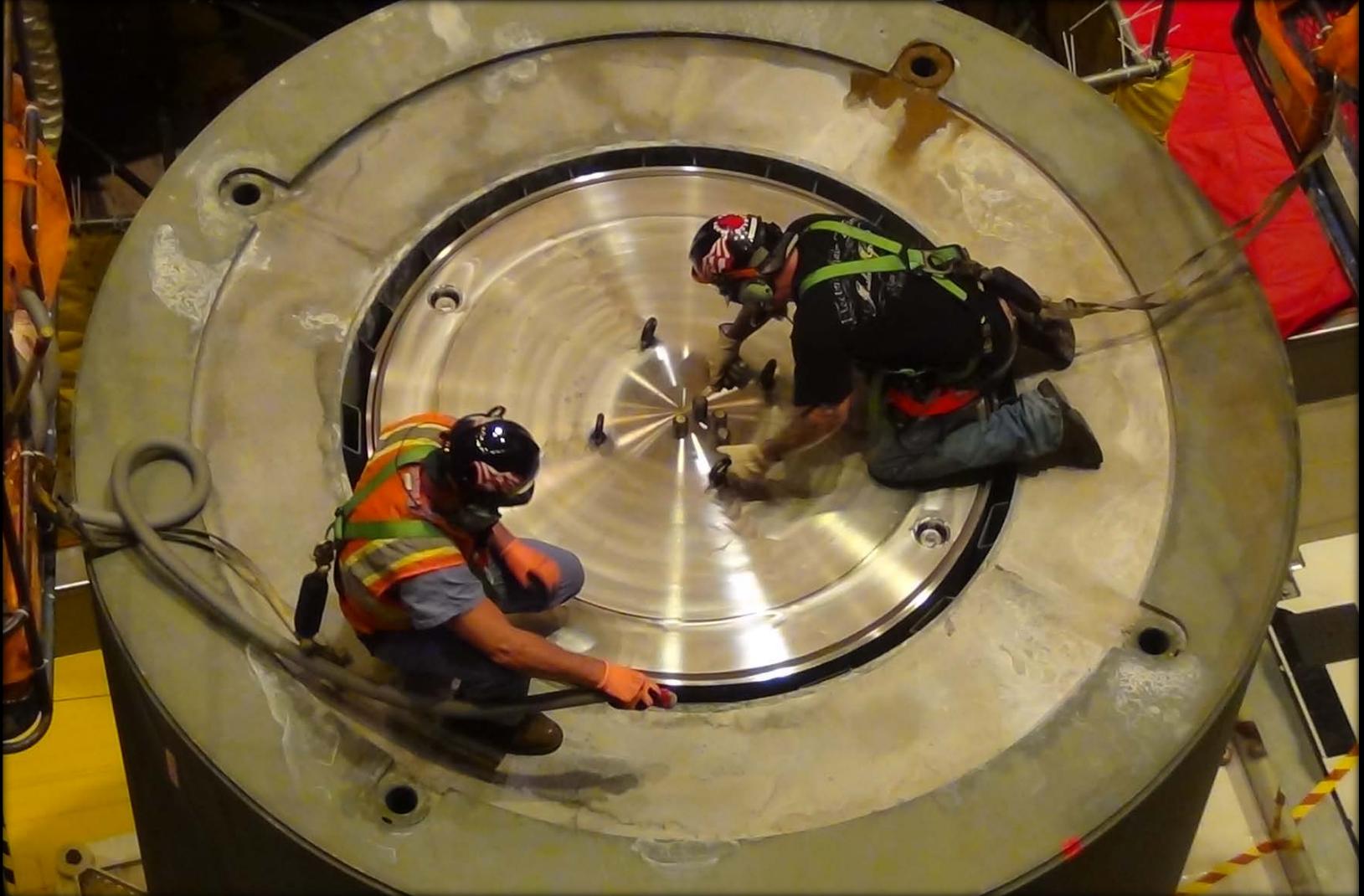
Chair Decommissioning Expert Group  
NATC Sr Analyst, University of Illinois  
Joint Plant Life Extension Meeting  
OECD NEA November 8, 2017



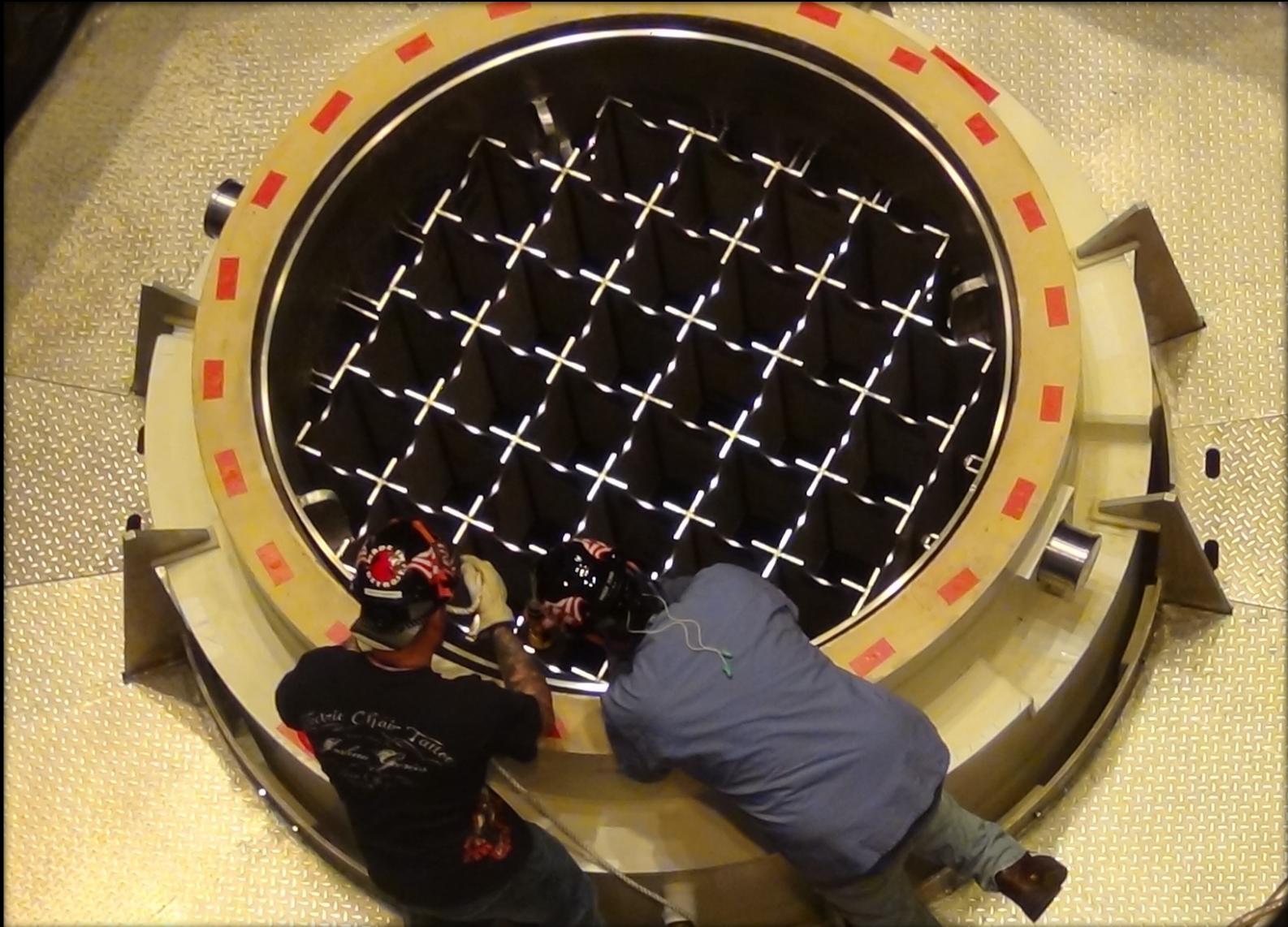
# Objective of NATC ISOE Dry Cask Global Dose Project

- To standardize RWP (REP) tasks and sub-tasks to facilitate ISOE benchmarking dry cask ALARA information exchange
- To identify and share good ALARA Practices for dry cask campaign worker dose reduction e.g., time lapse video
- To promote ISOE member incentive to achieve the lowest possible dose per cask processing/storage

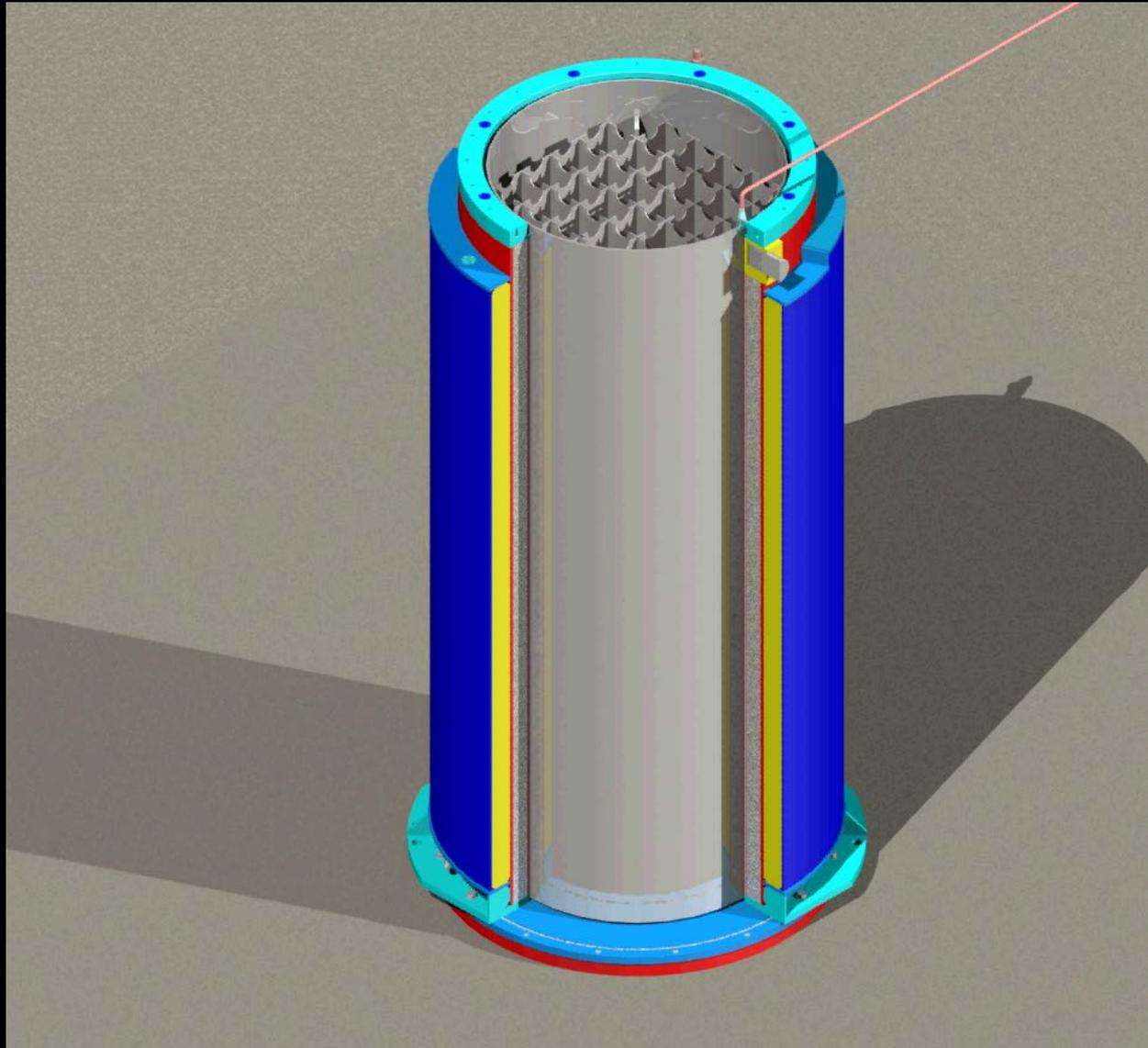
# Empty MPC Placement Inside HI-TRAC



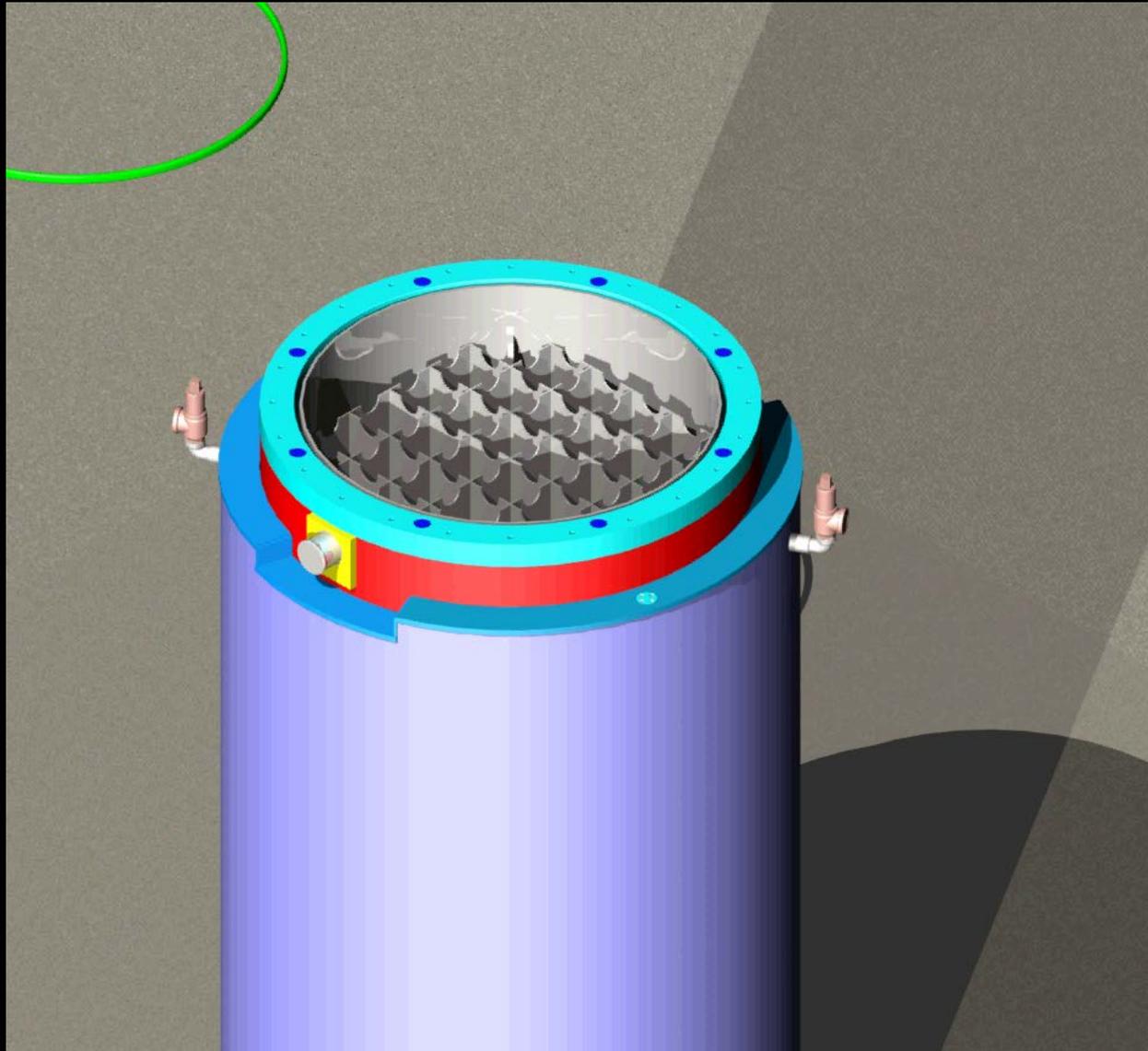
# Prepare HI-TRAC/MPC for Loading Fuel



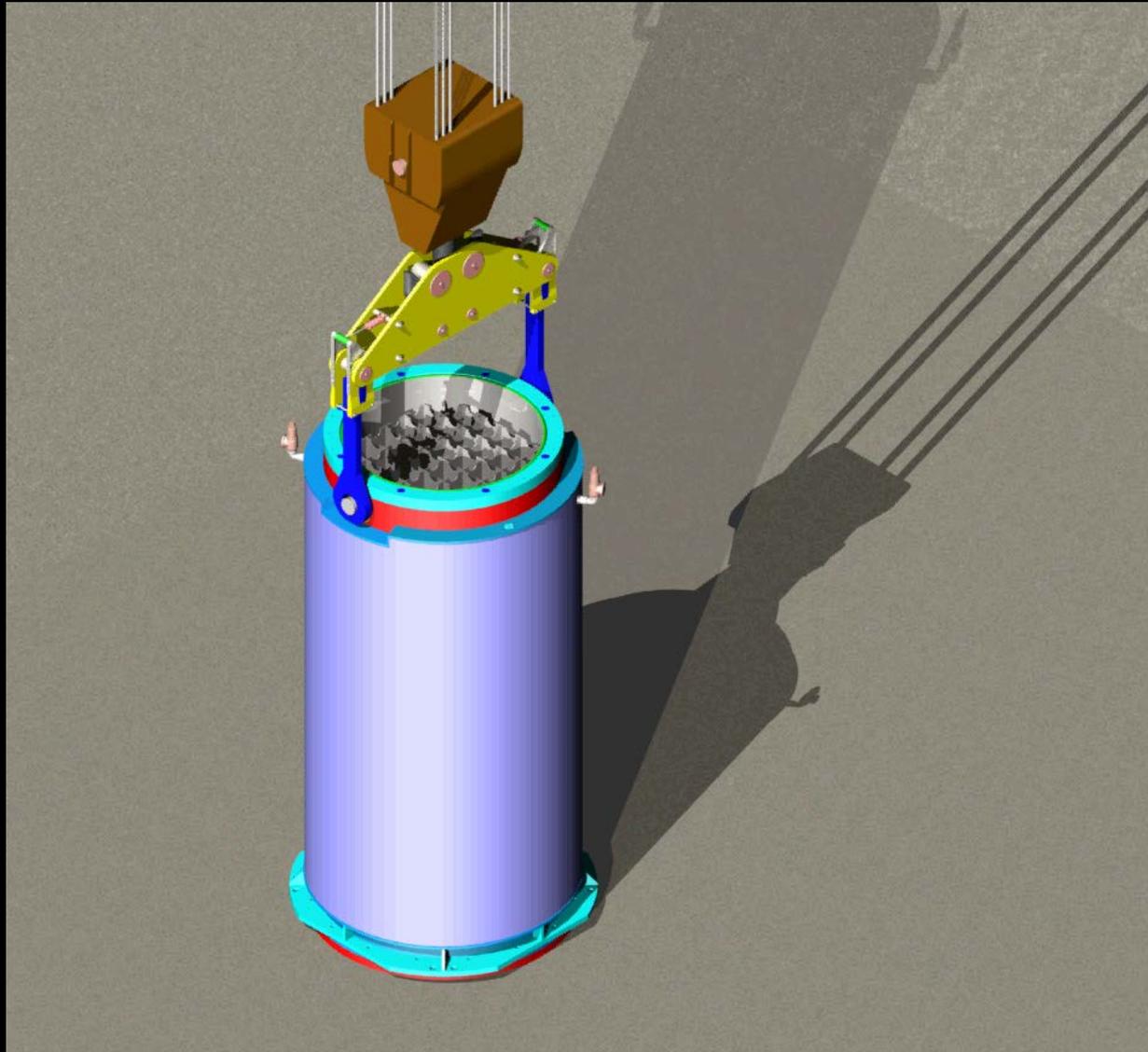
# Annulus Filling with Demineralized Water



# Annulus Seal Installation



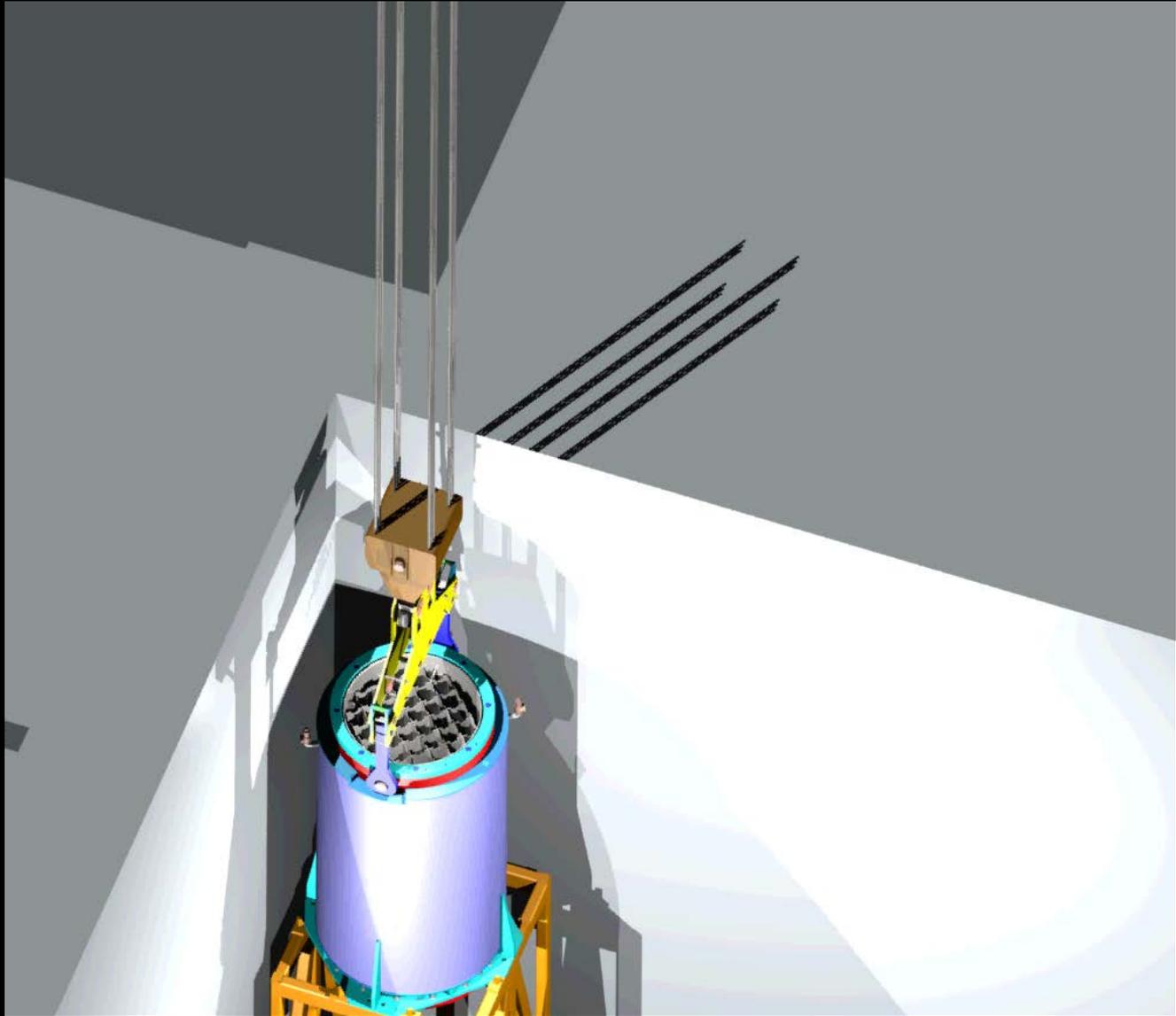
# HI-TRAC Raised to Spent Fuel Pool Floor



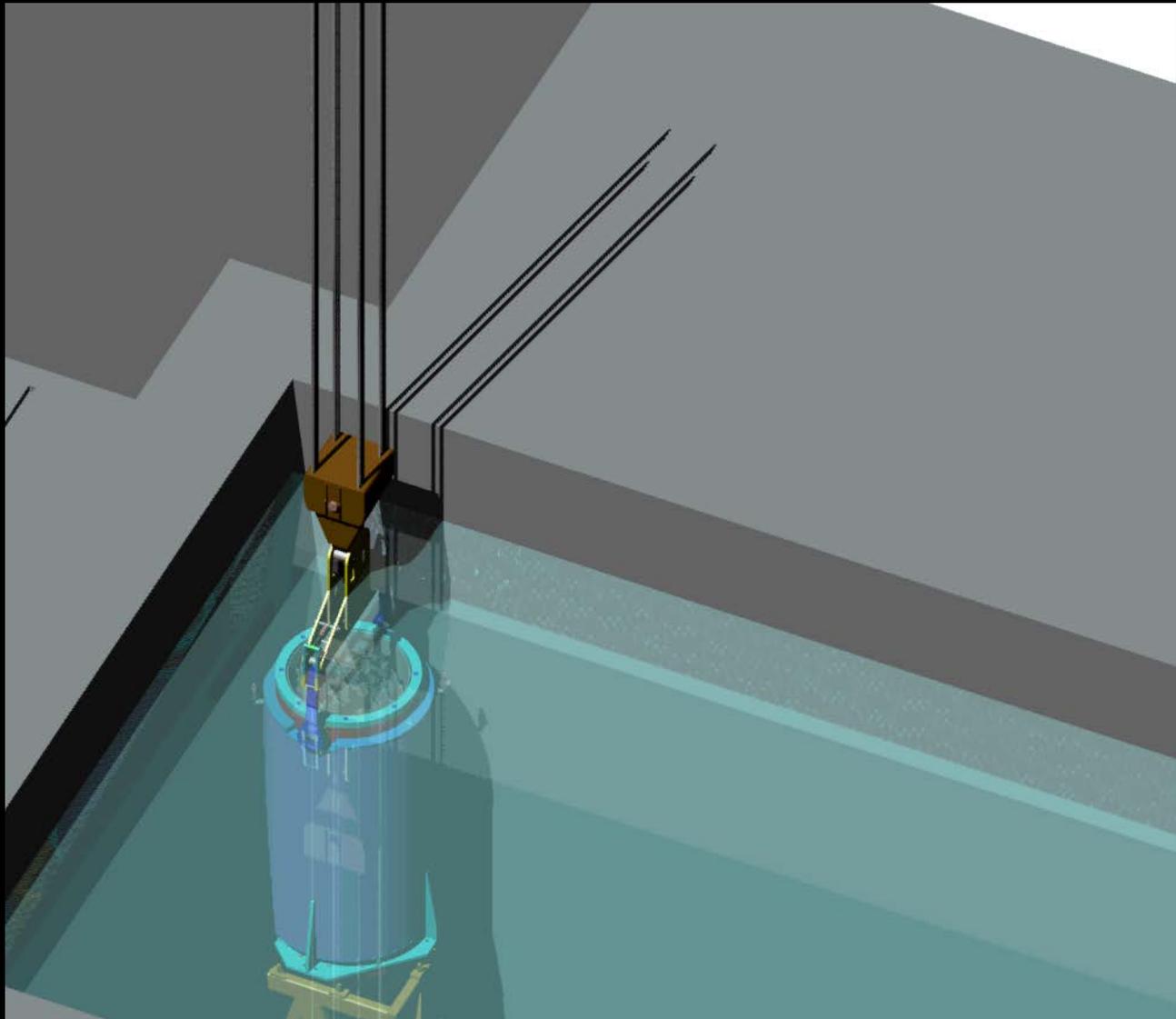
# HI-TRAC Placed into the Spent Fuel Pool



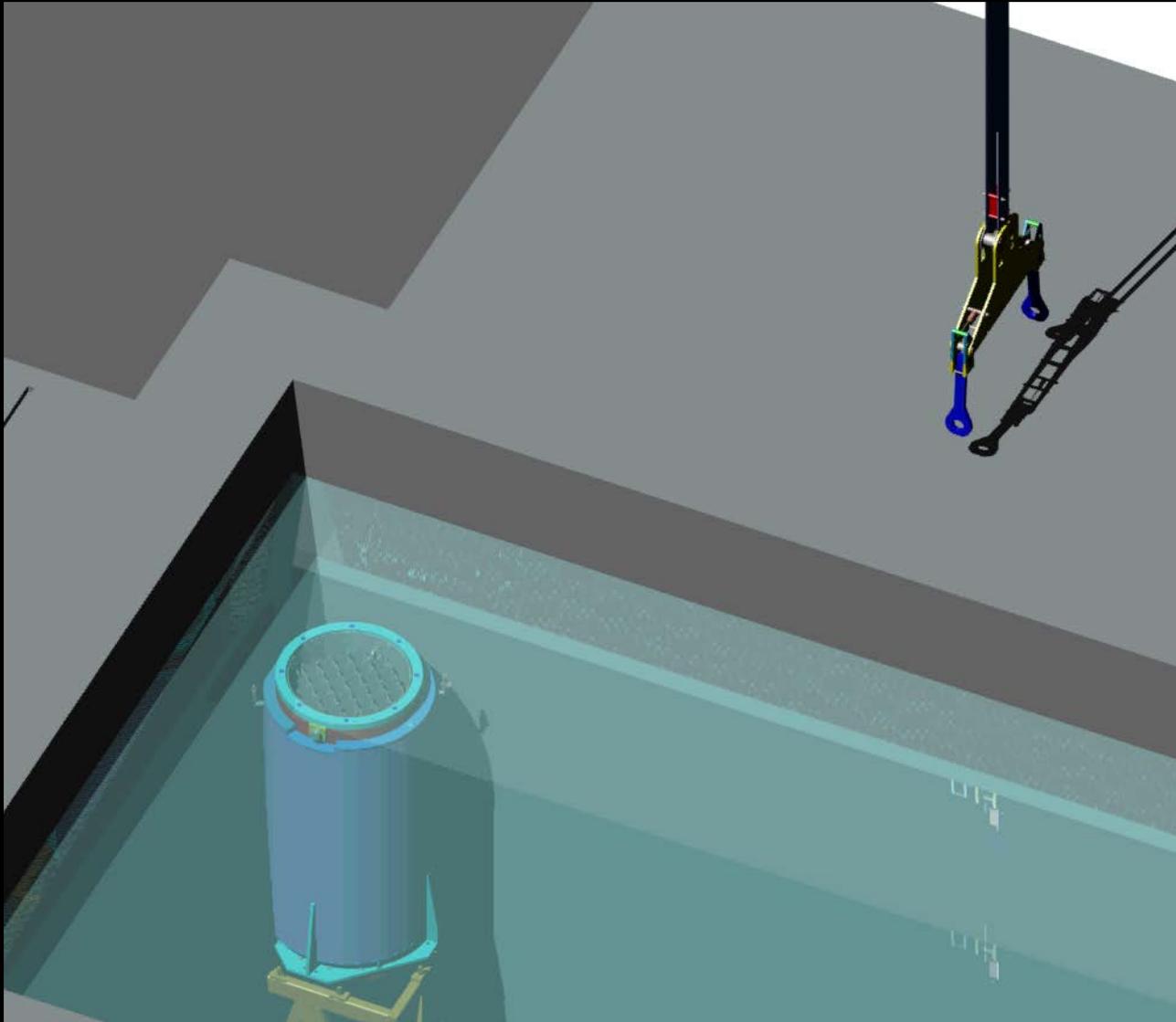
# HI-TRAC Lowered to the Spent Fuel Pool Floor



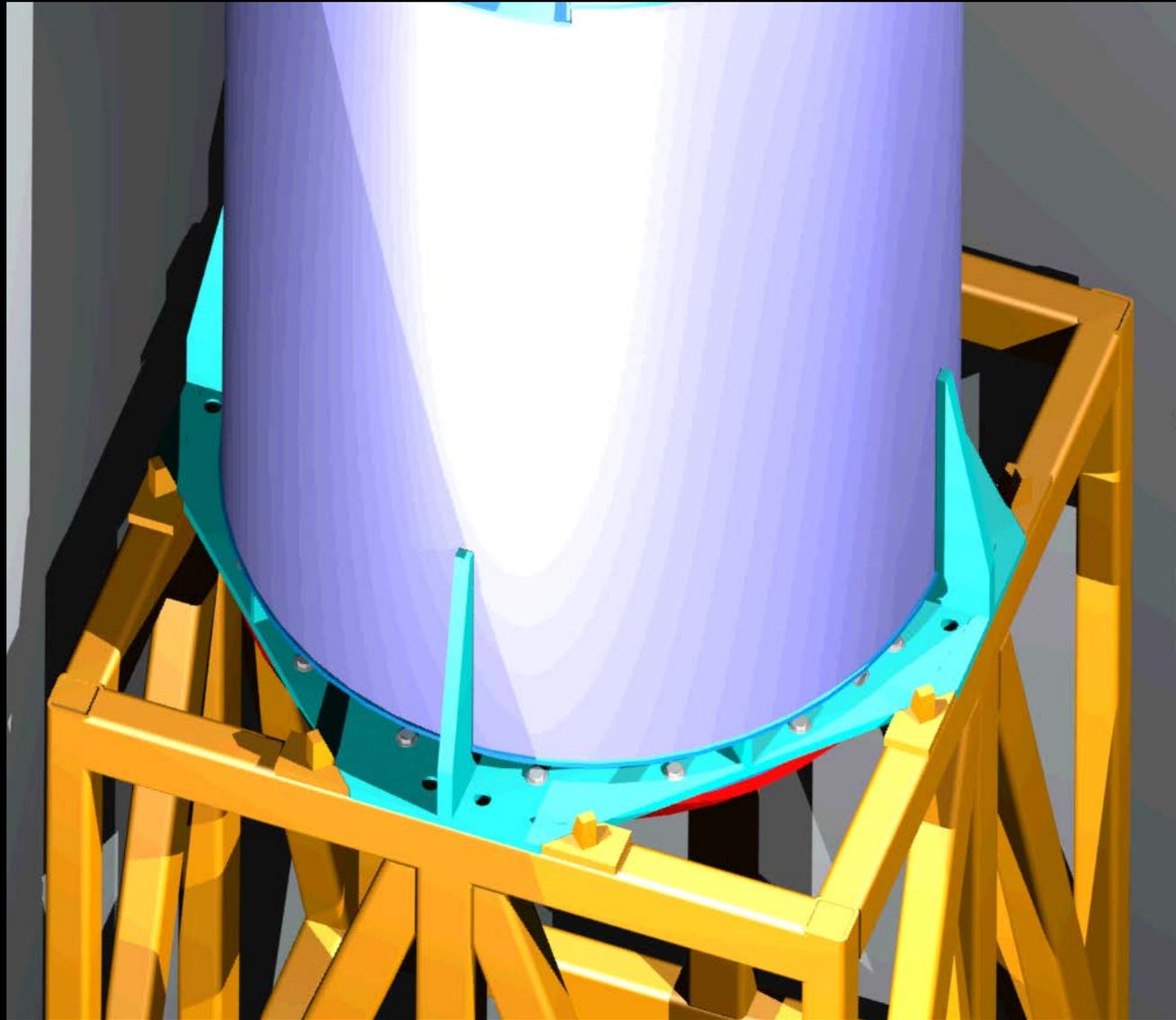
# Lift Yoke Removal From the Spent Fuel Pool



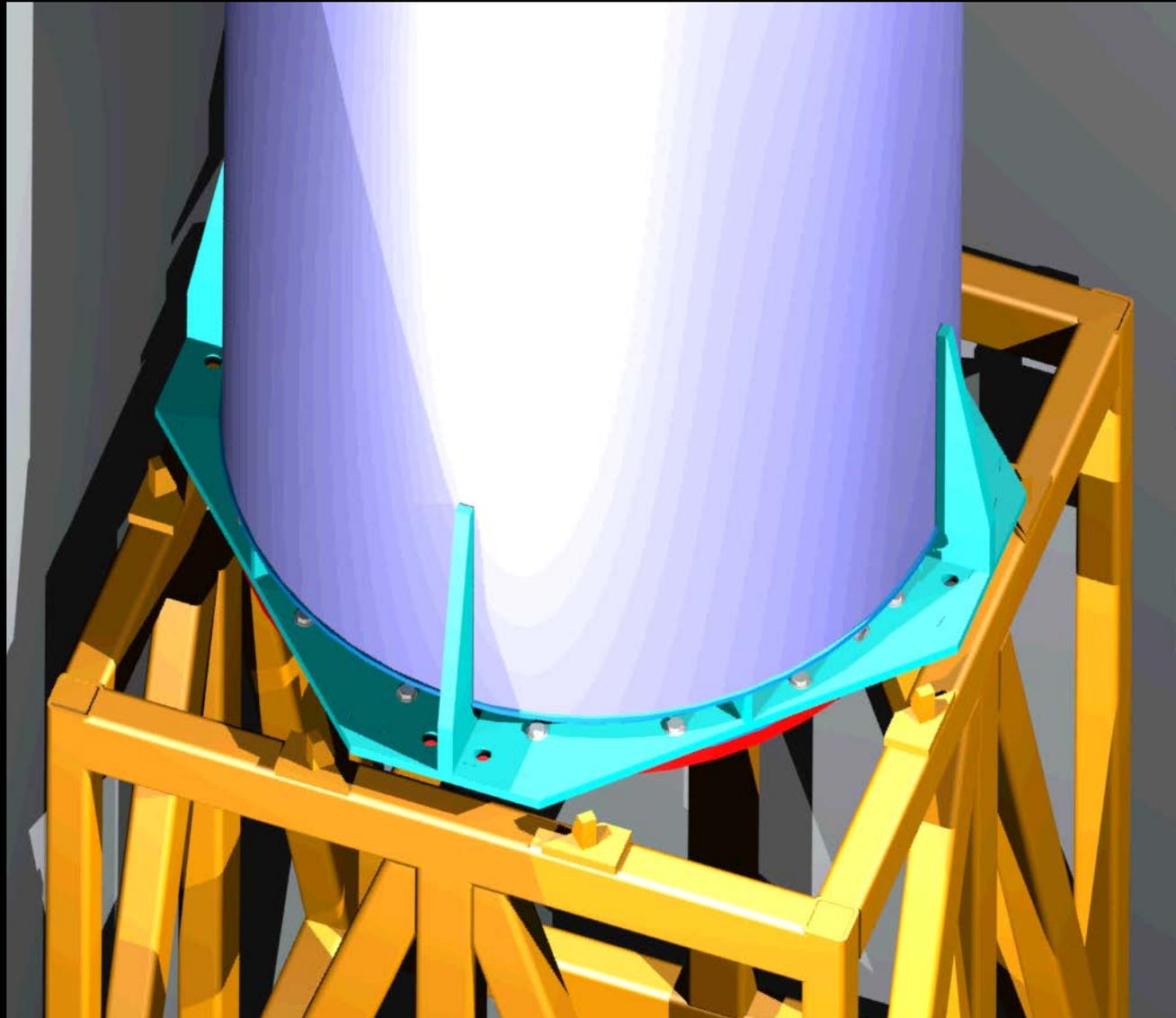
## Add the Lift Yoke Extension



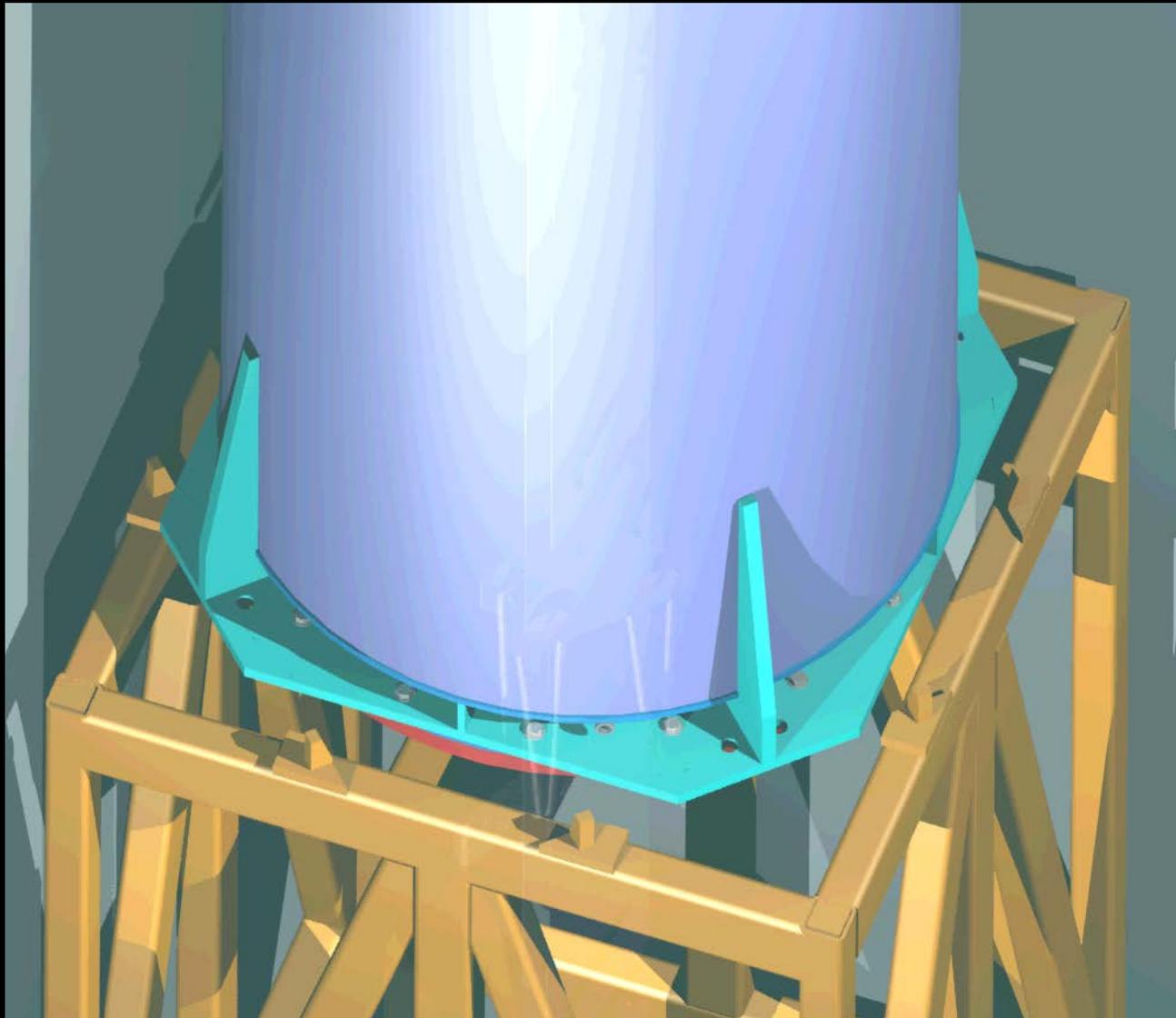
# HI-TRAC and Cask Stand Operations



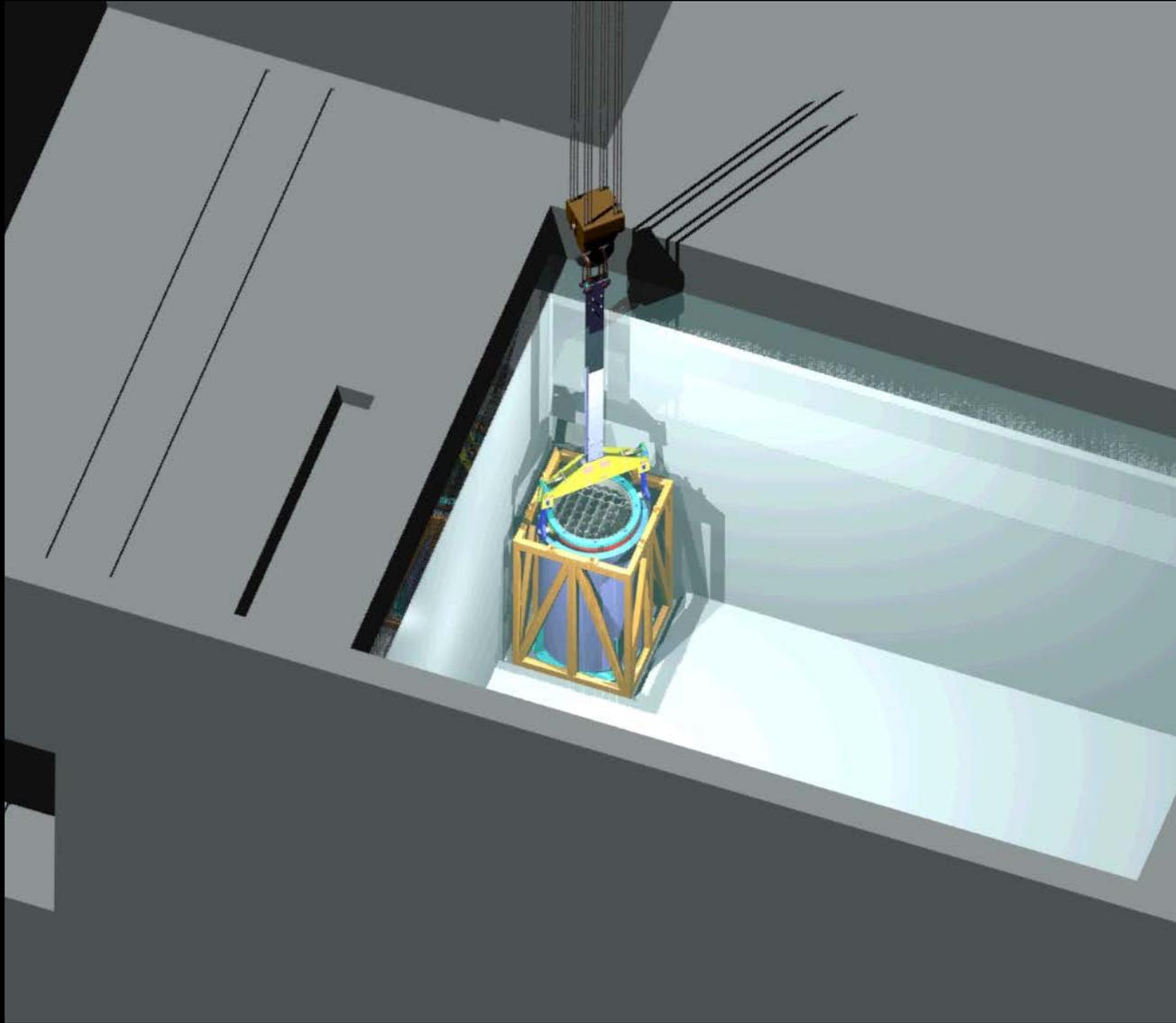
# HI-TRAC and Cask Stand Operations



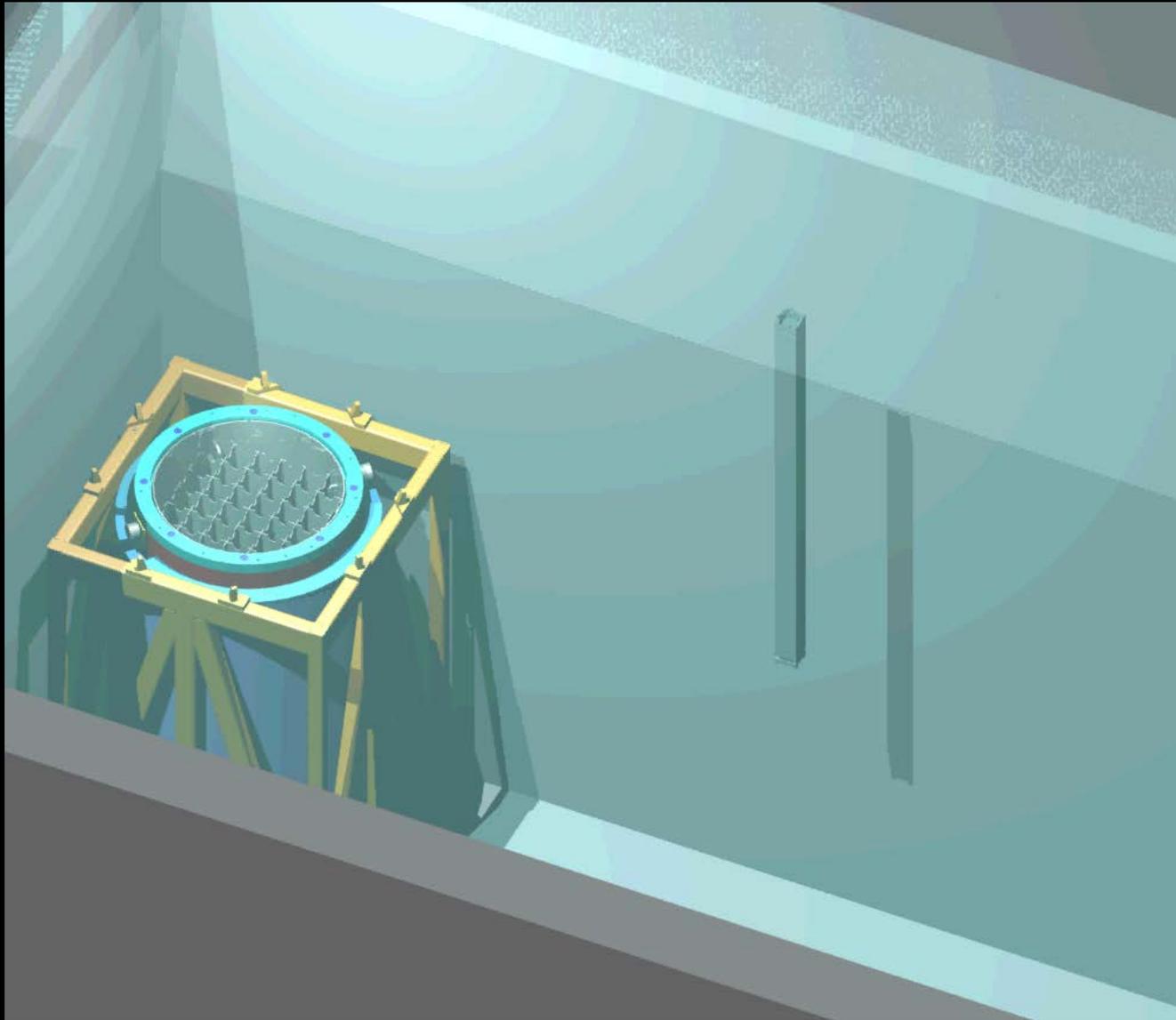
# HI-TRAC and Cask Stand Operations



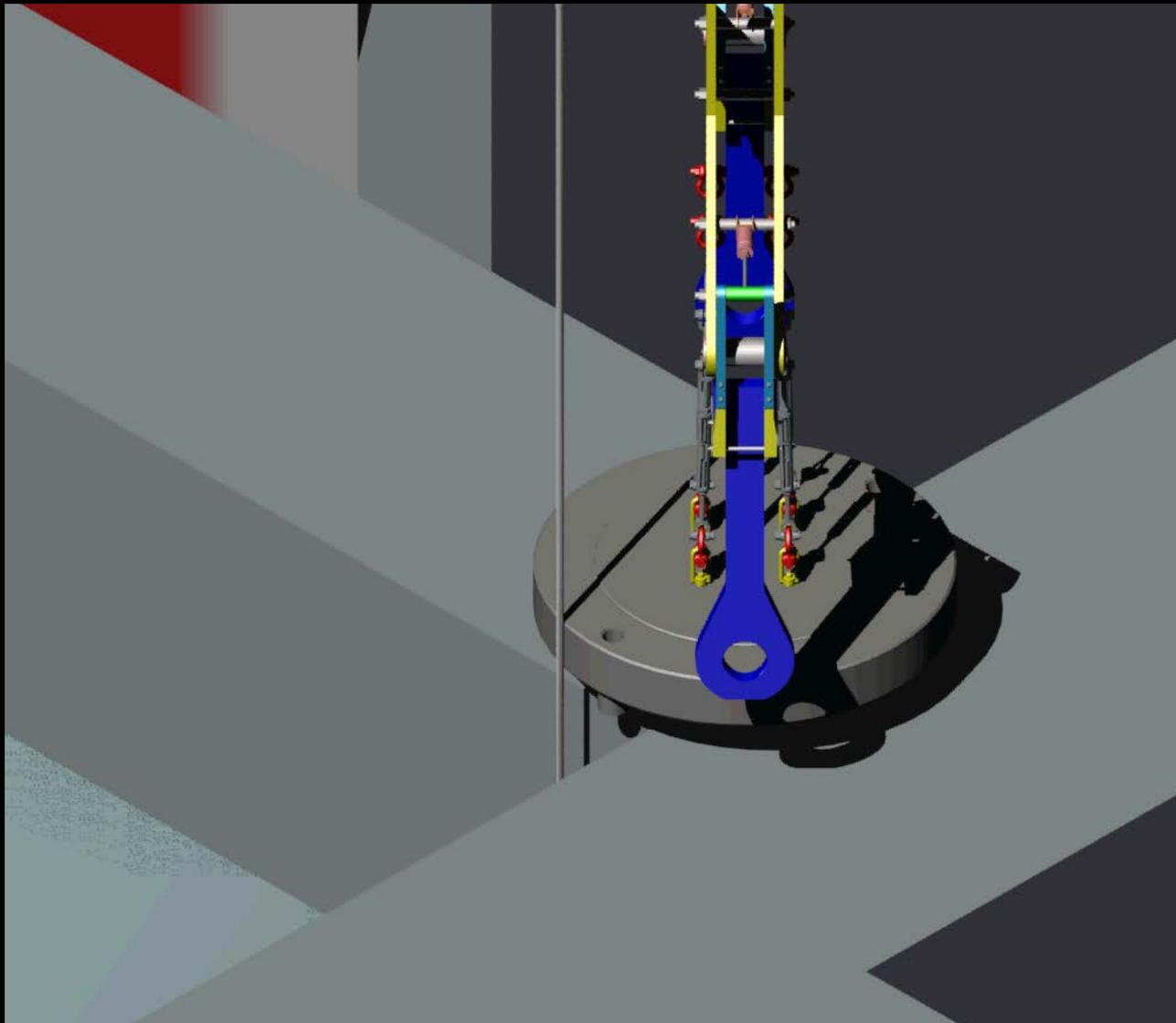
# Lift Yoke Extension Removal



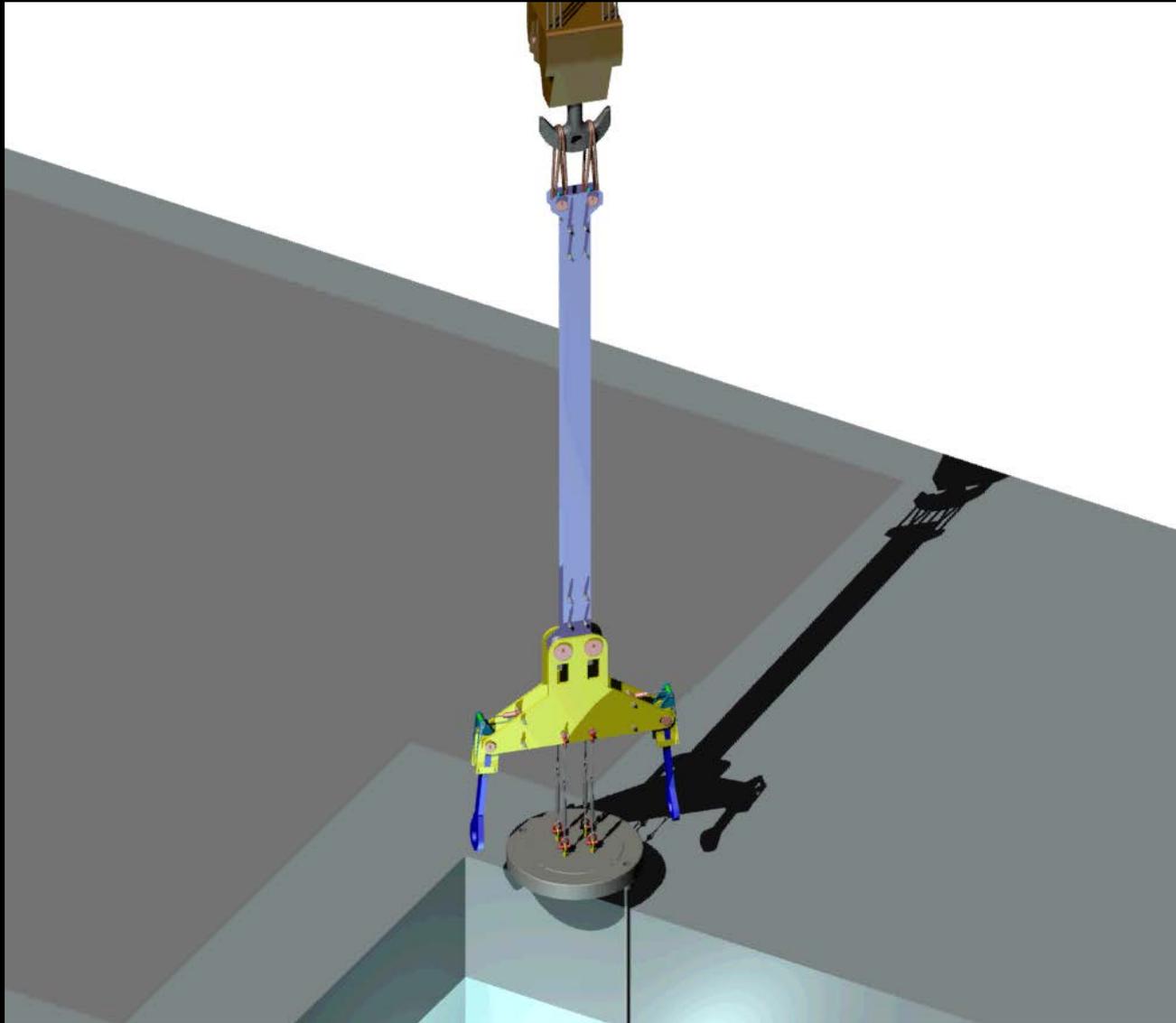
# Fuel Loading in the MPC



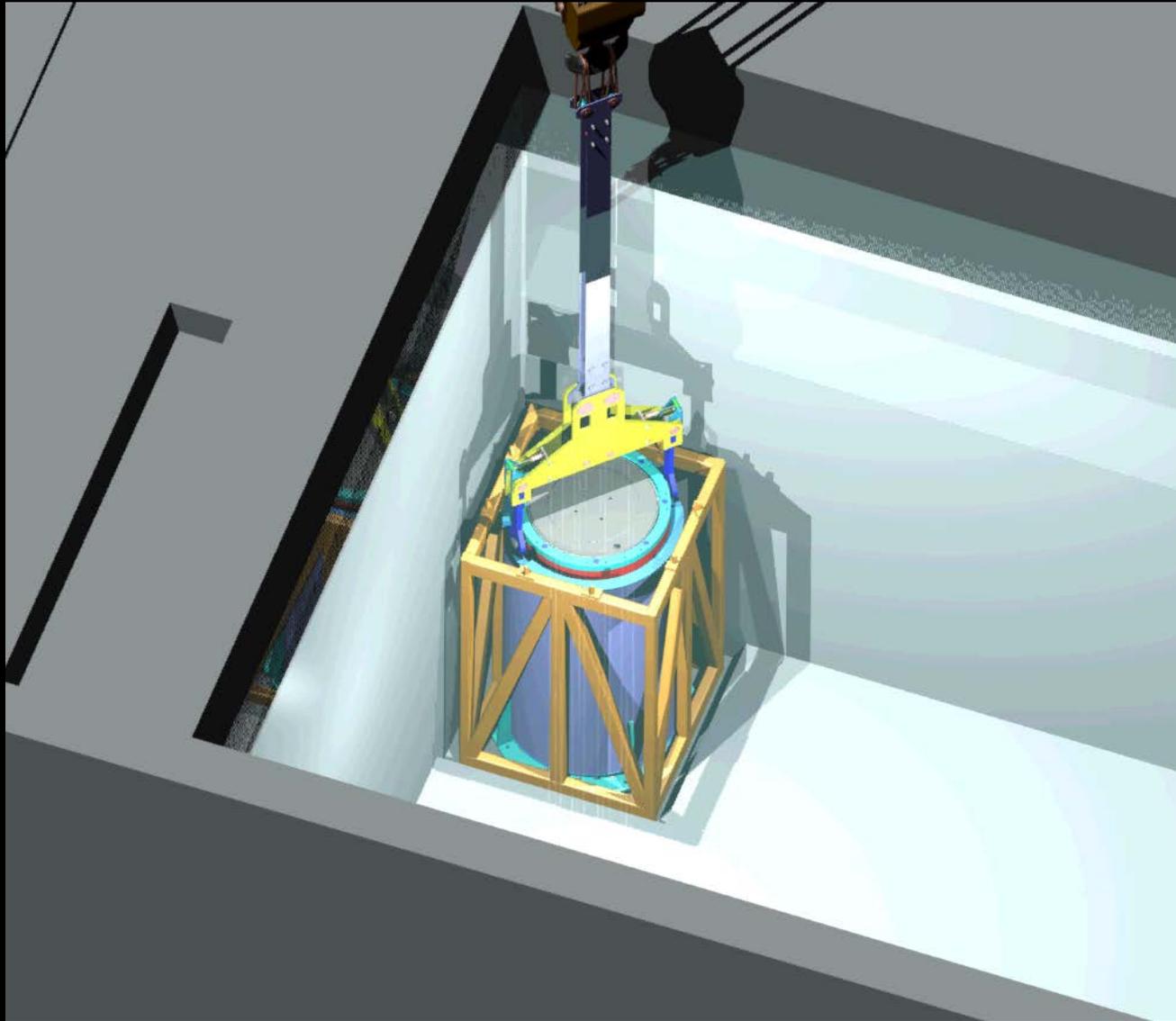
# MPC Drain Line Installation



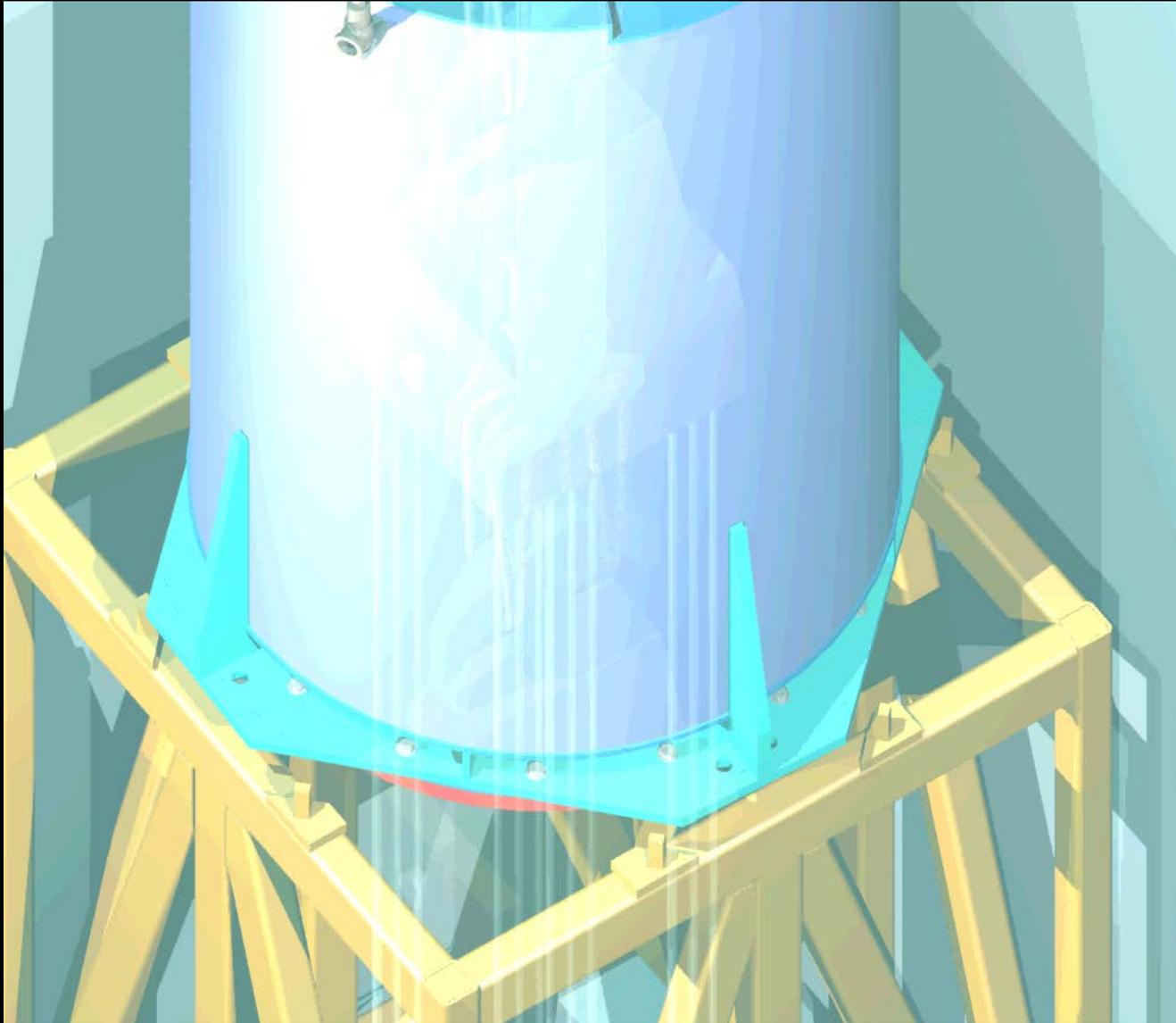
# Underwater MPC Lid Installation



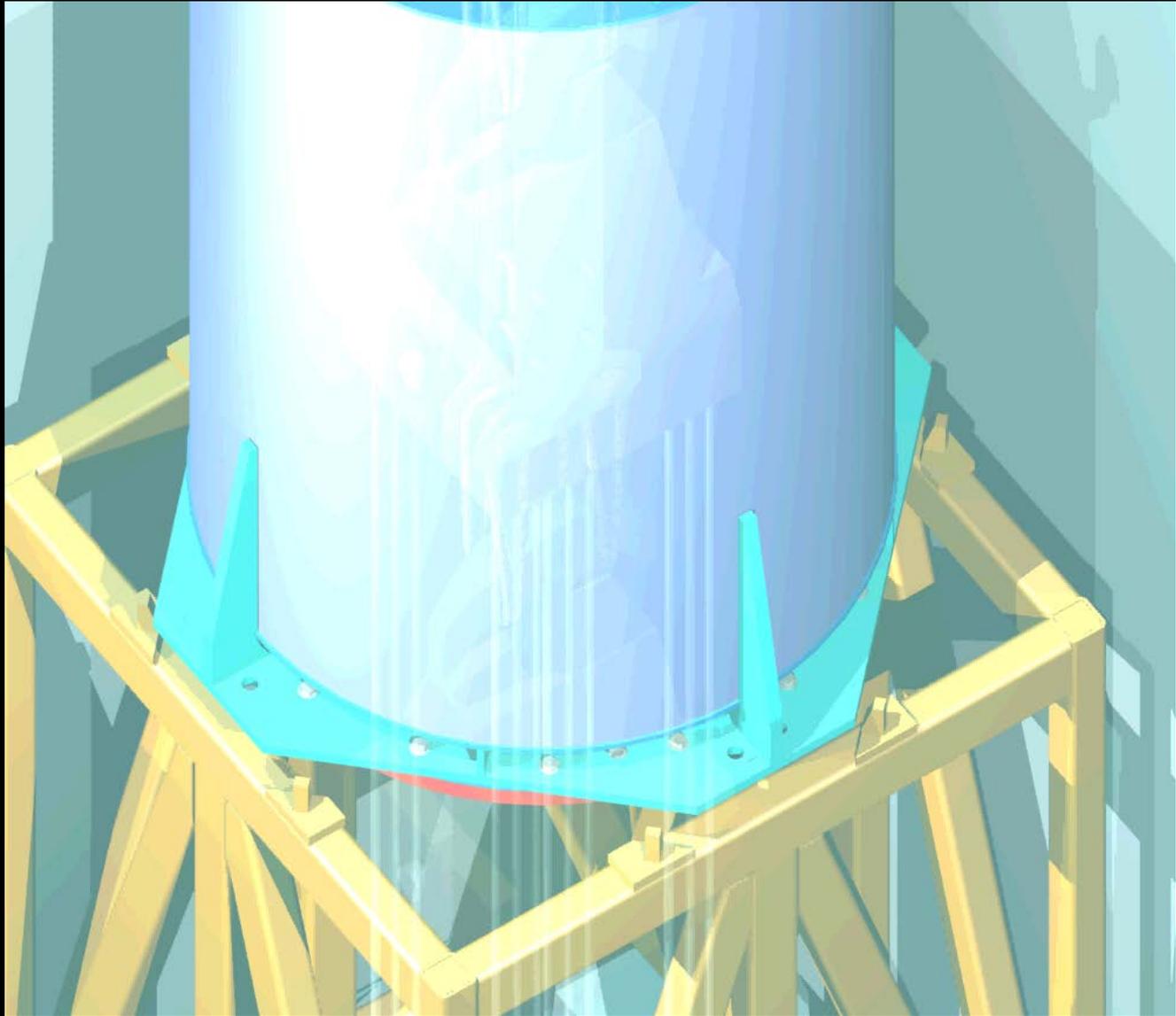
# HI-TRAC Raised from the Cask Loading Area



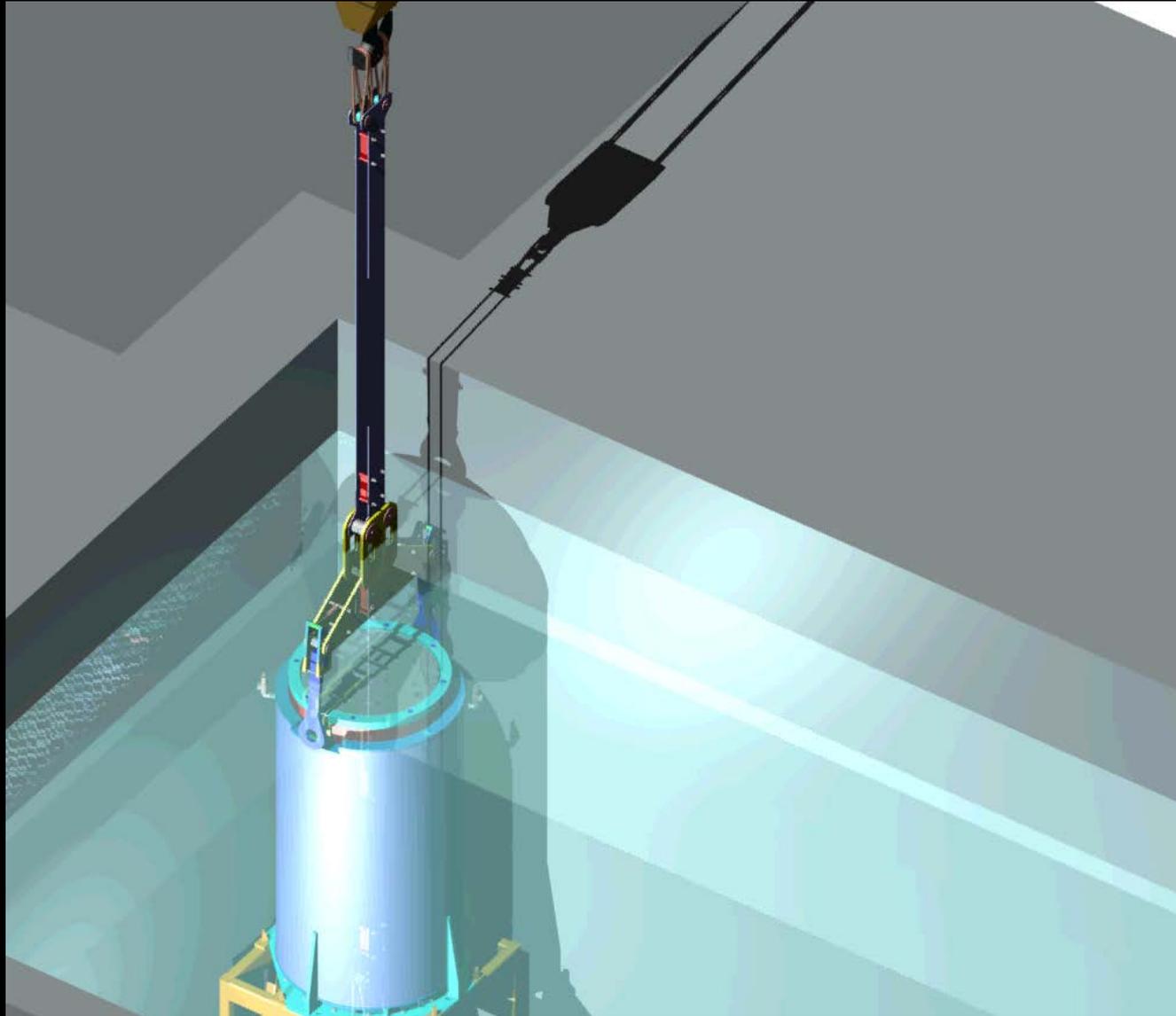
# HI-TRAC and Cask Stand Operations



# HI-TRAC Placed Back on the Cask Stand



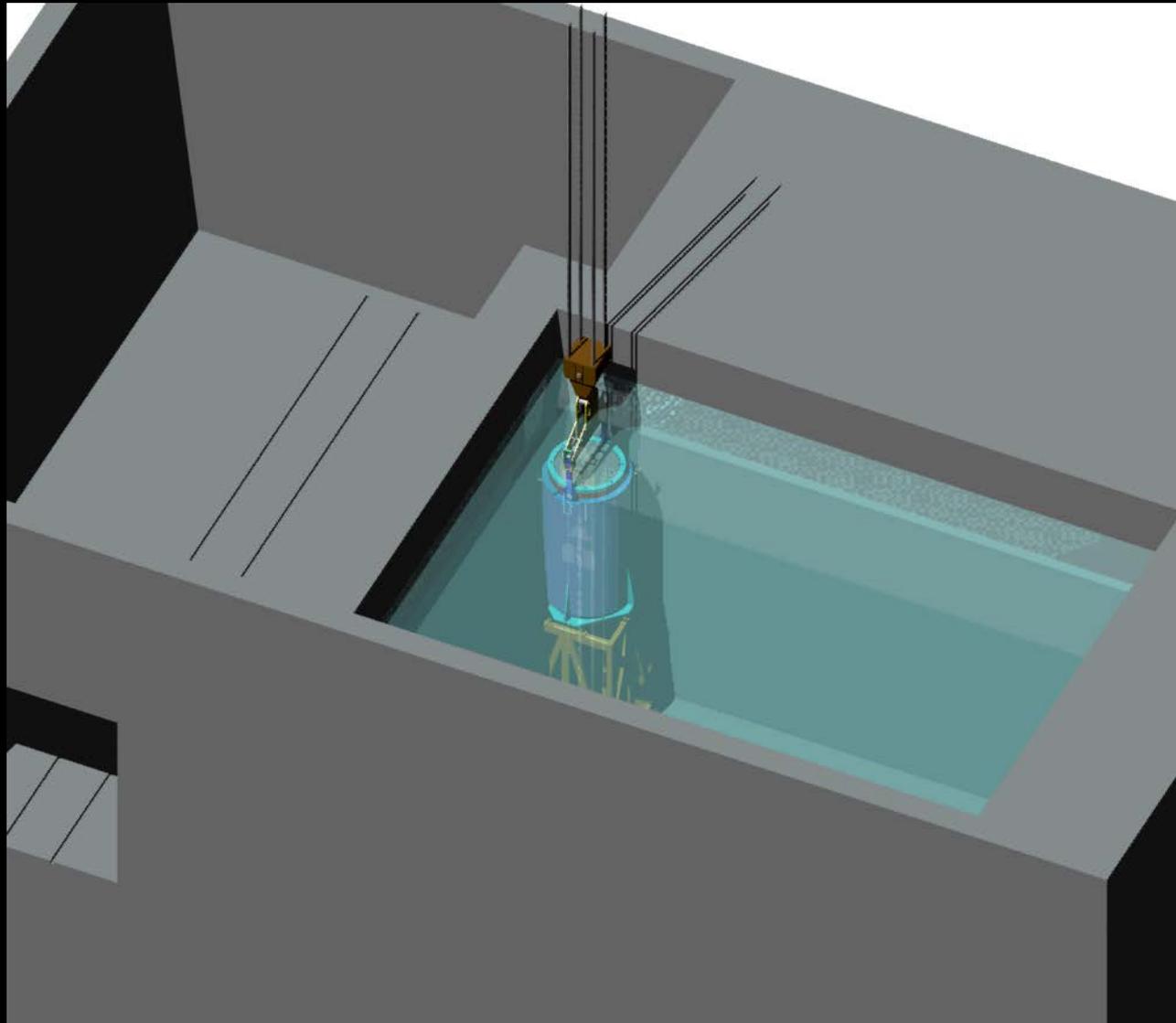
## Removal of the Lift Yoke Extension



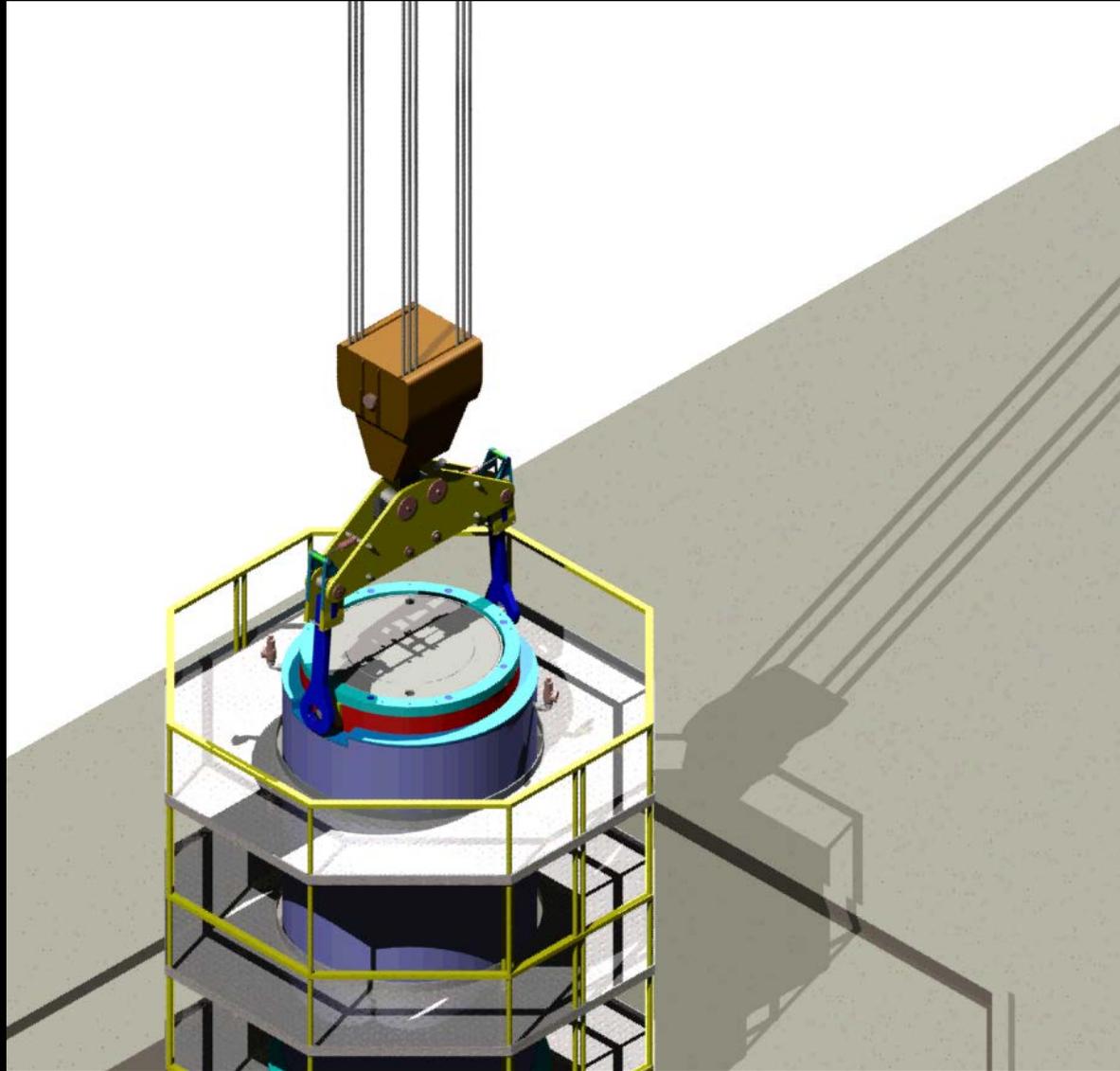
# Reinstallation of the Lift Yoke



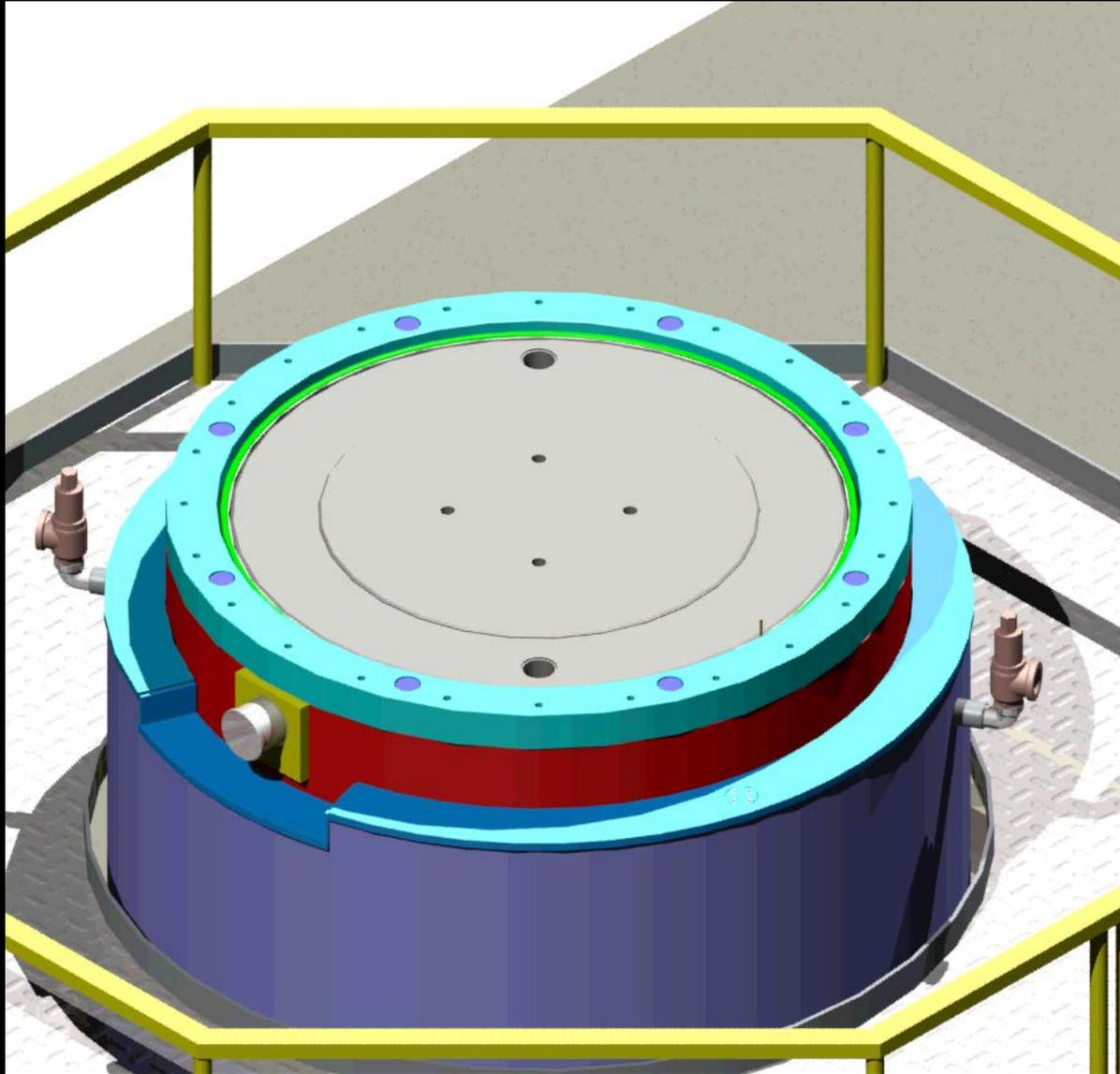
## HI-TRAC Movement to the Cask Loading Area



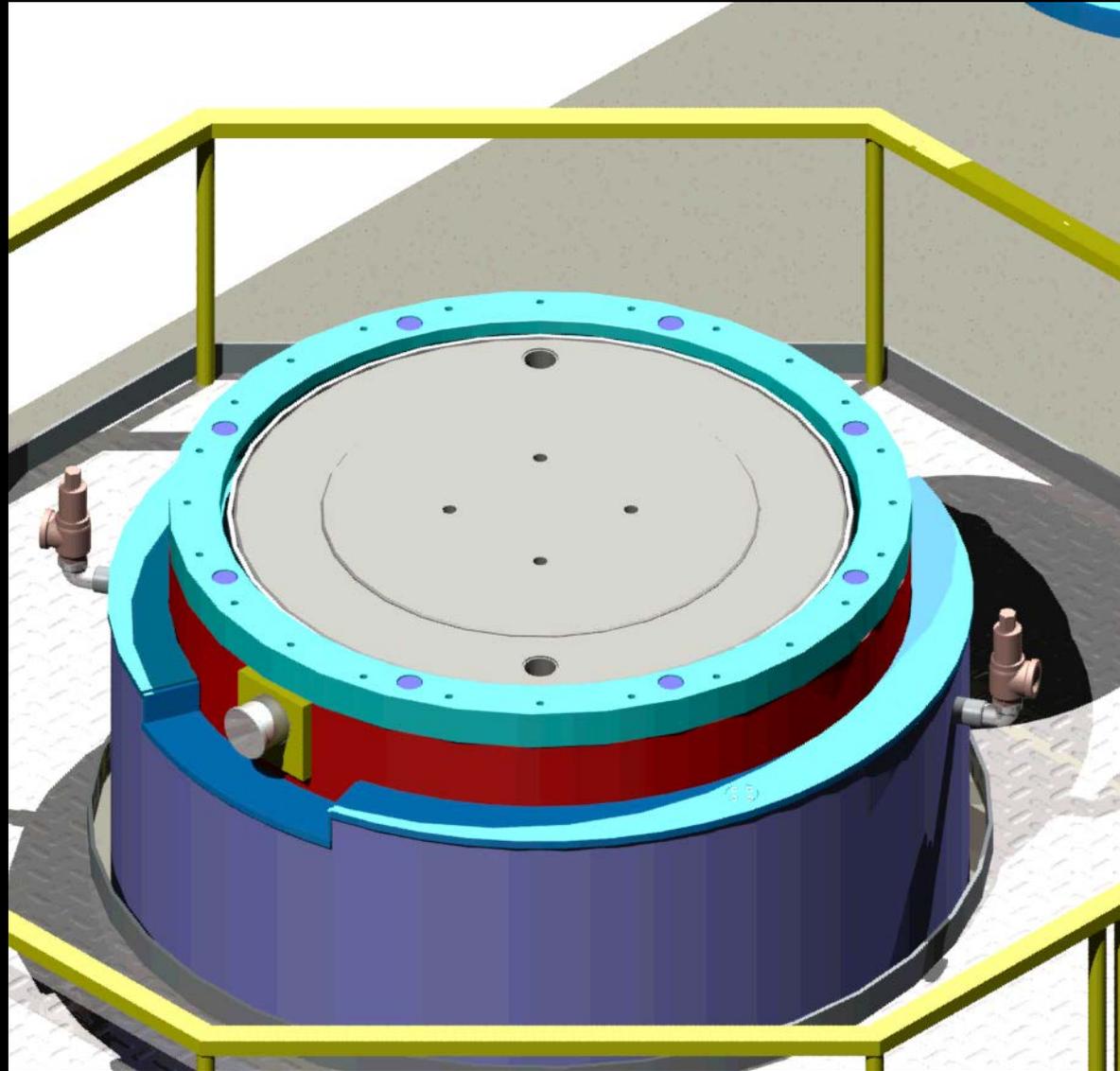
# Lift Yoke Removal



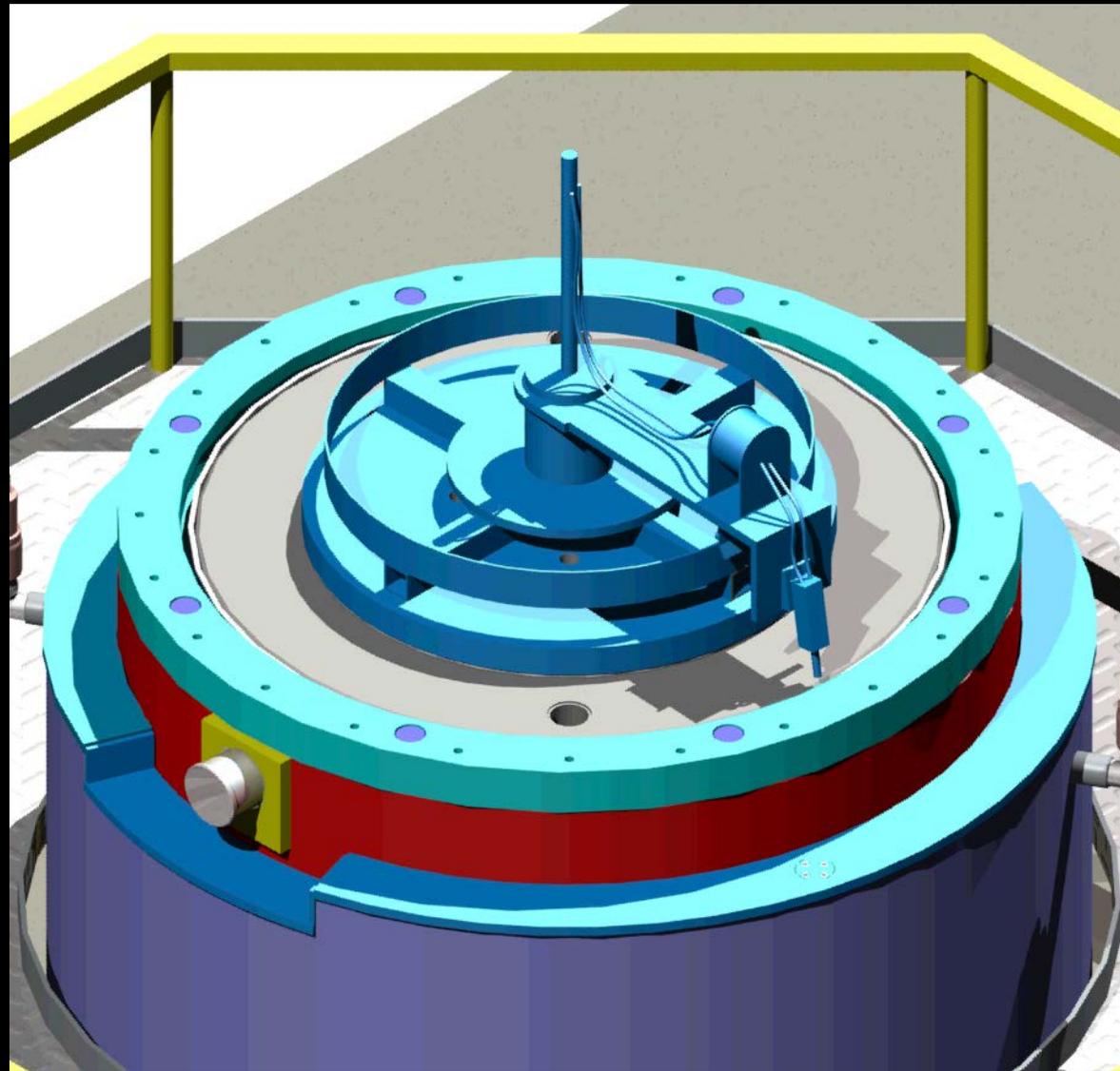
# Annulus Seal Removal



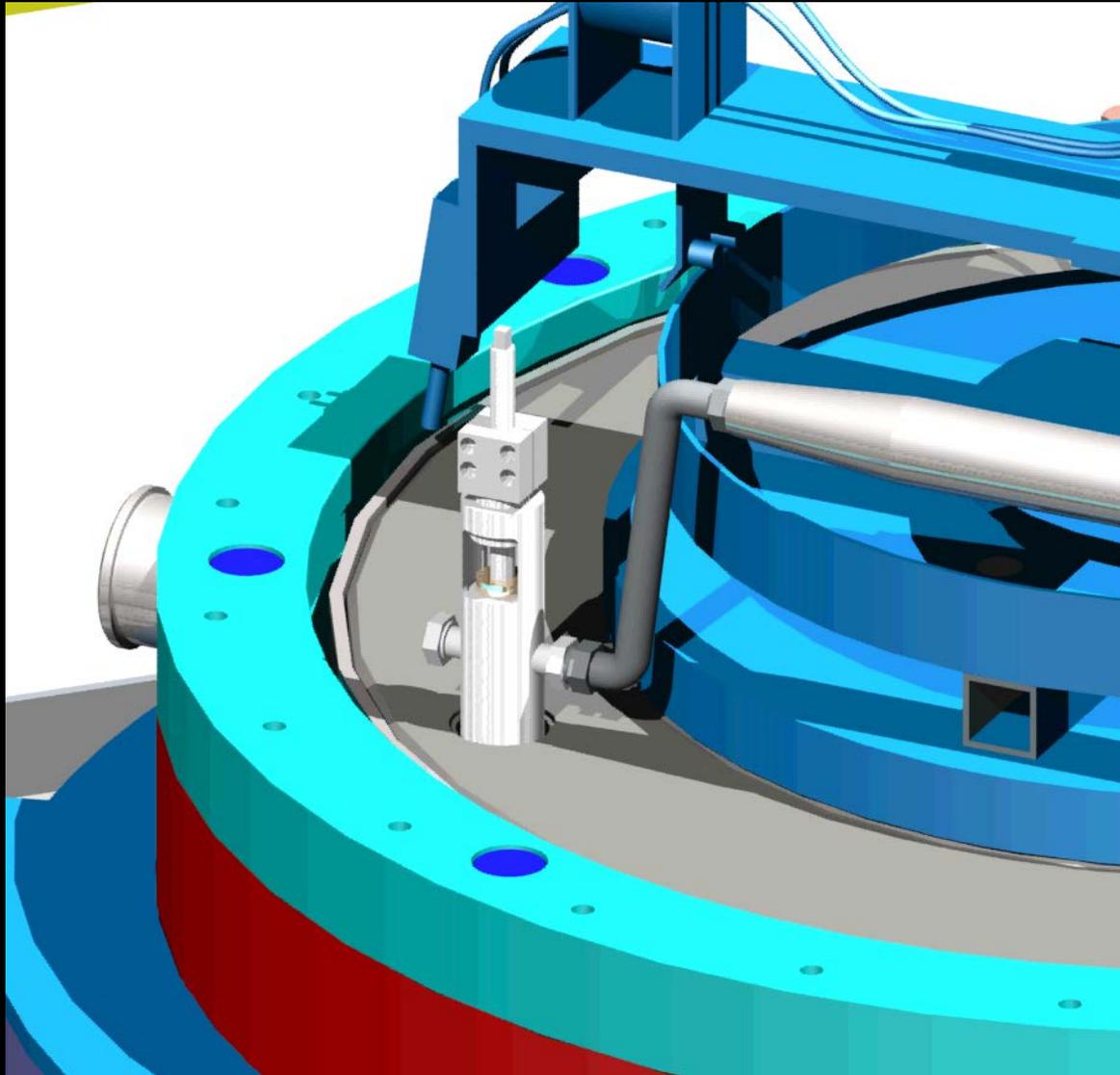
# Install Automated Welding System



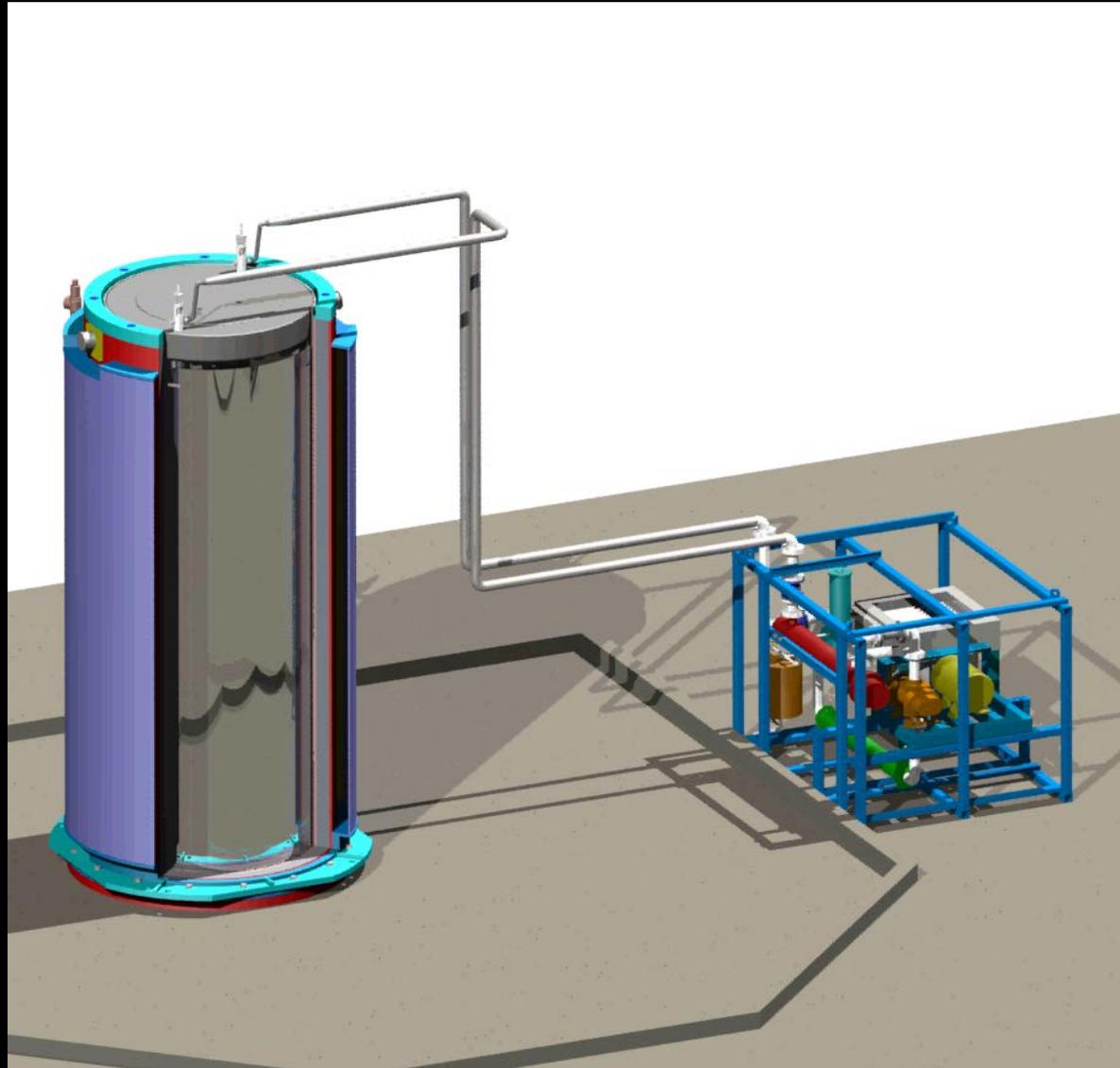
# Weld the MPC Lid



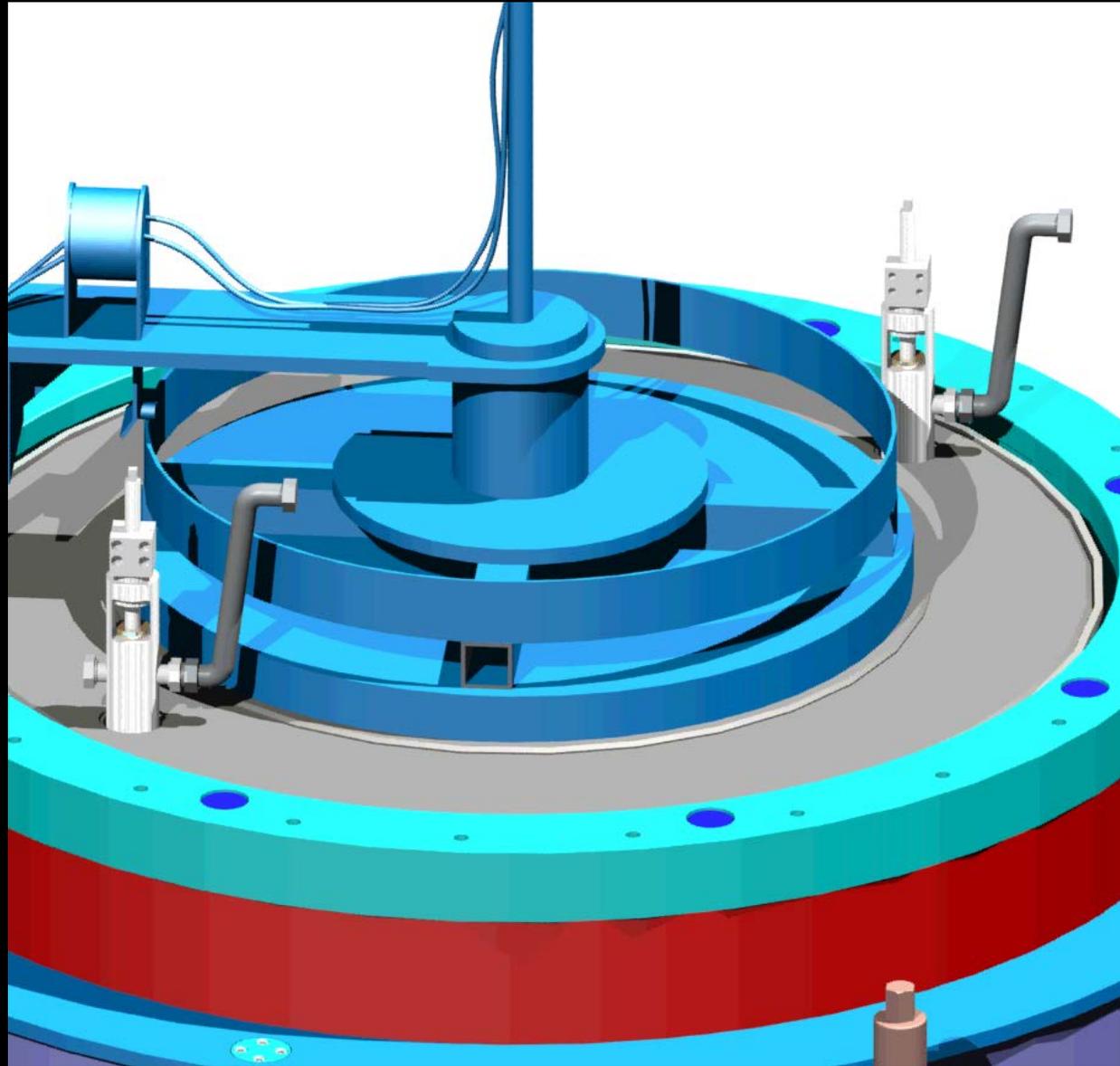
# Force Helium Dehydrator Attached to the MPC



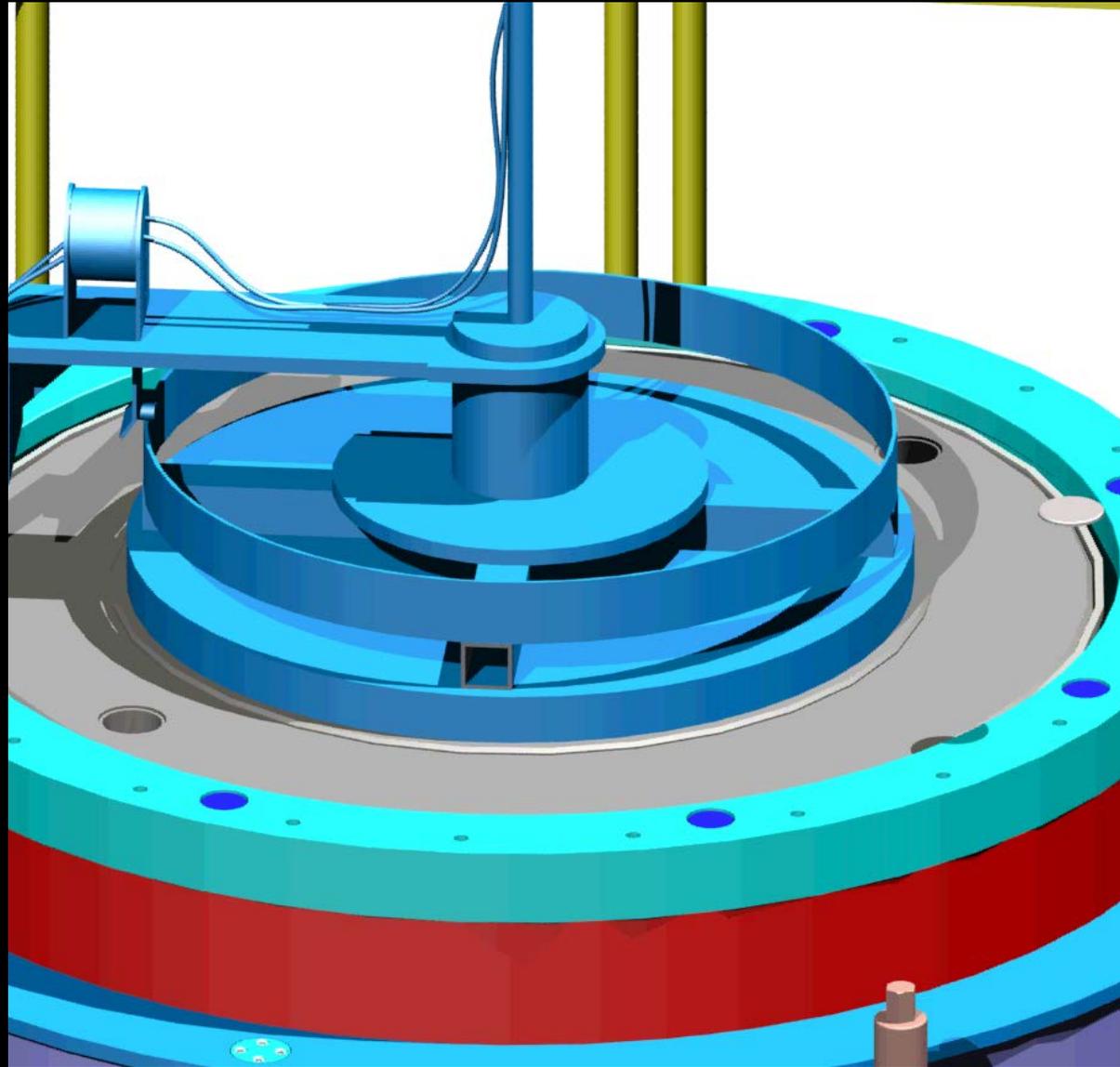
# MPC Draining, Drying and Backfill



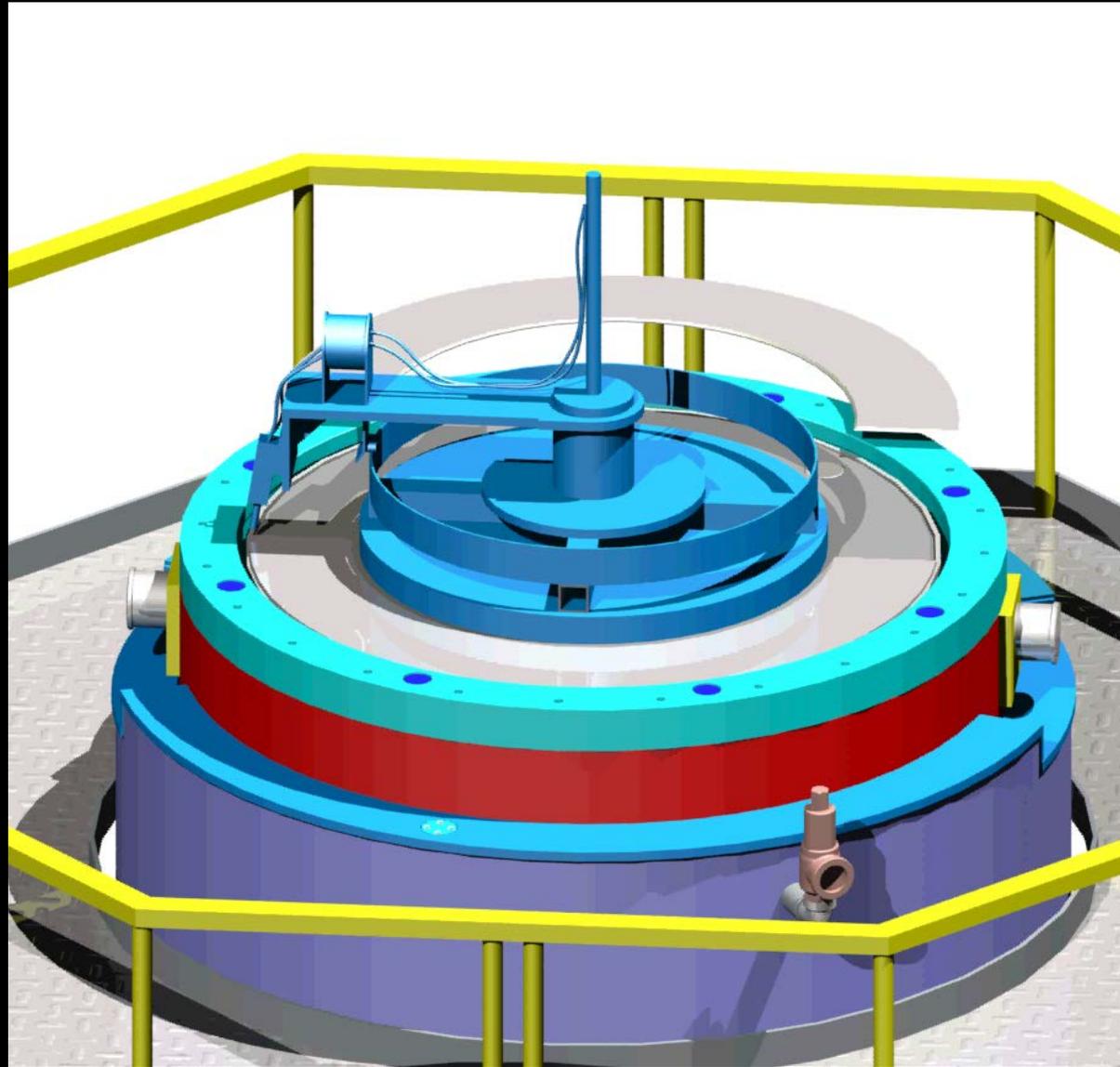
RVOAs Removed



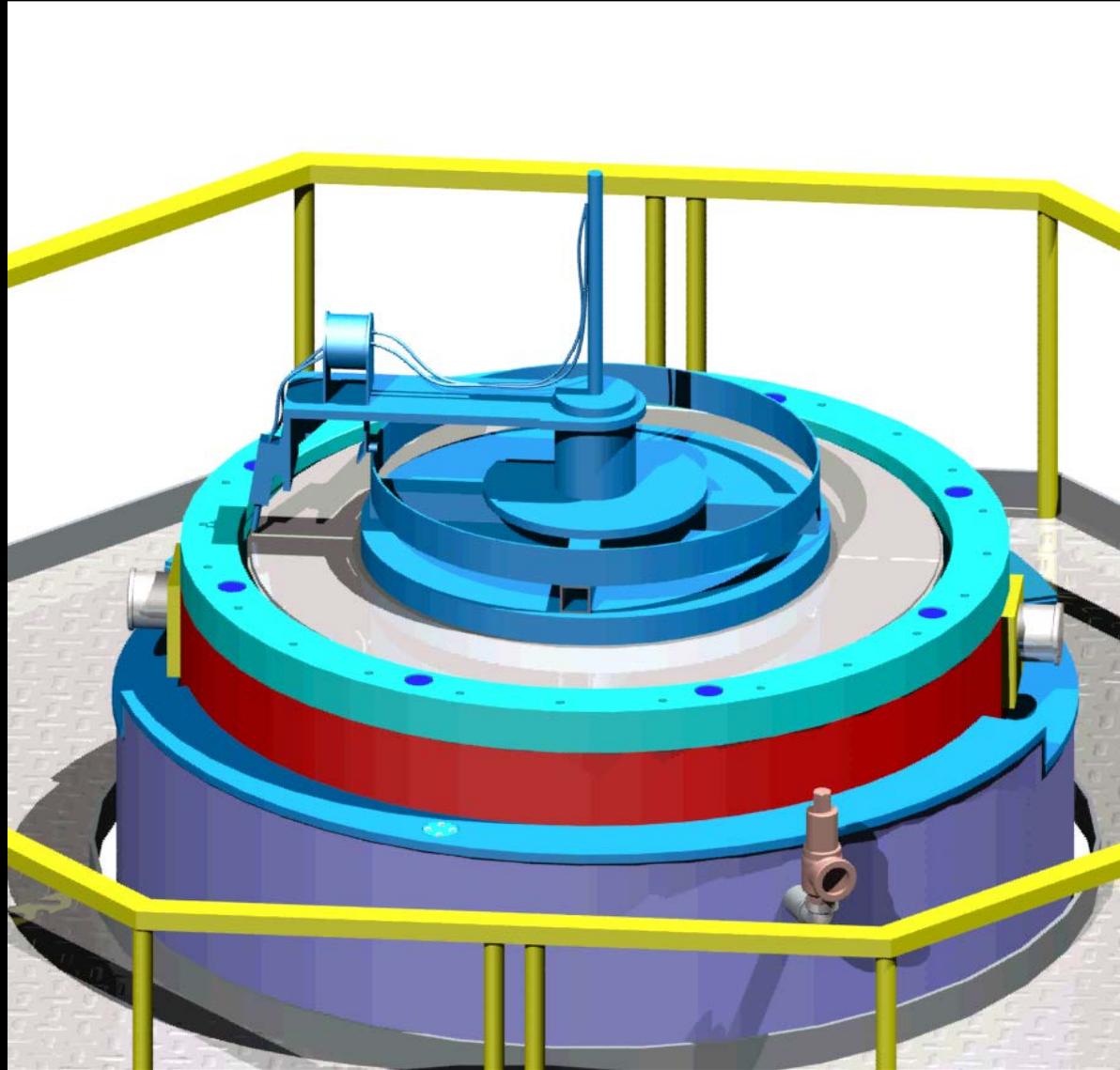
# Vent And Drain Port Covers Installed



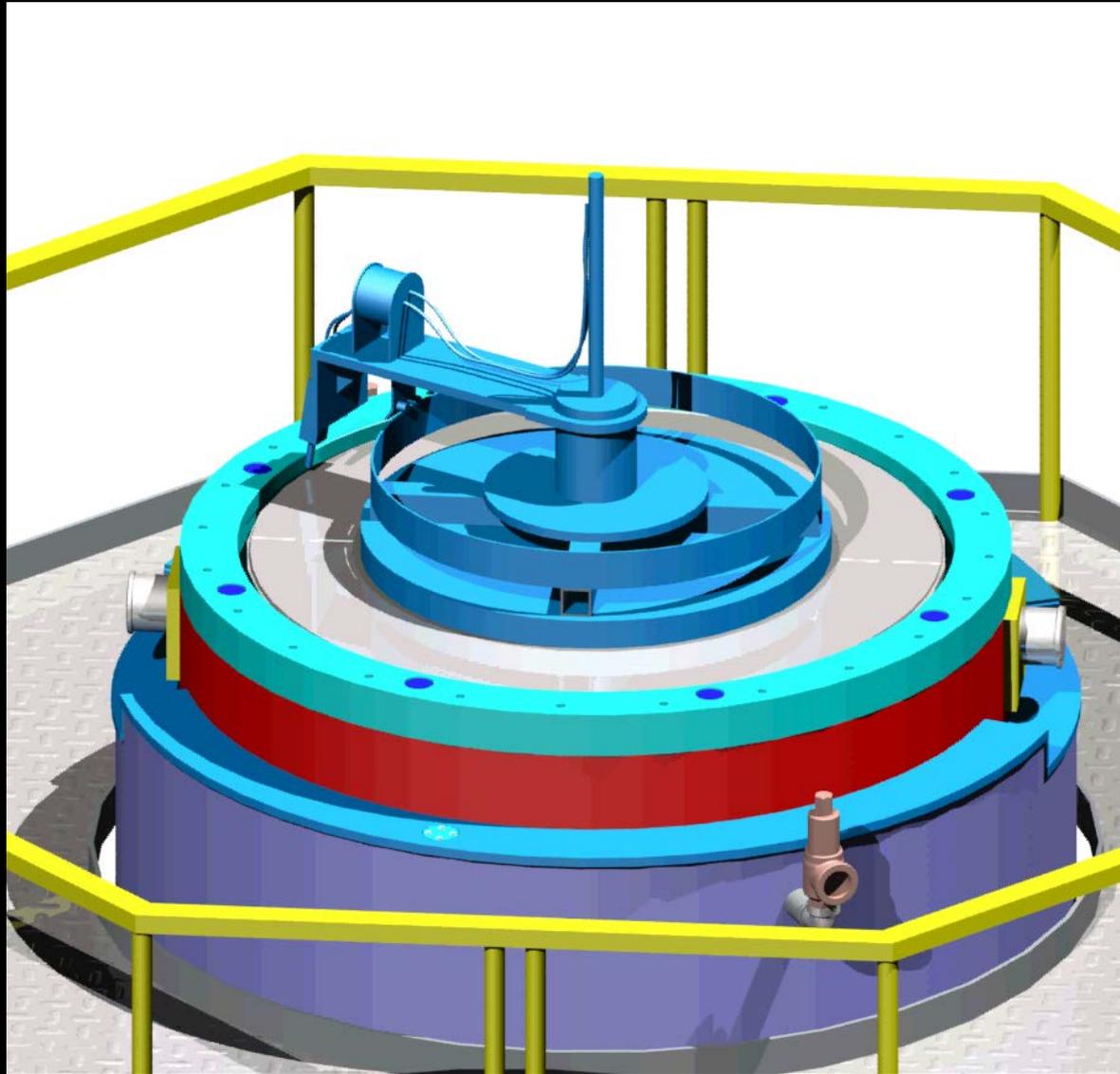
# Closure Ring Installed



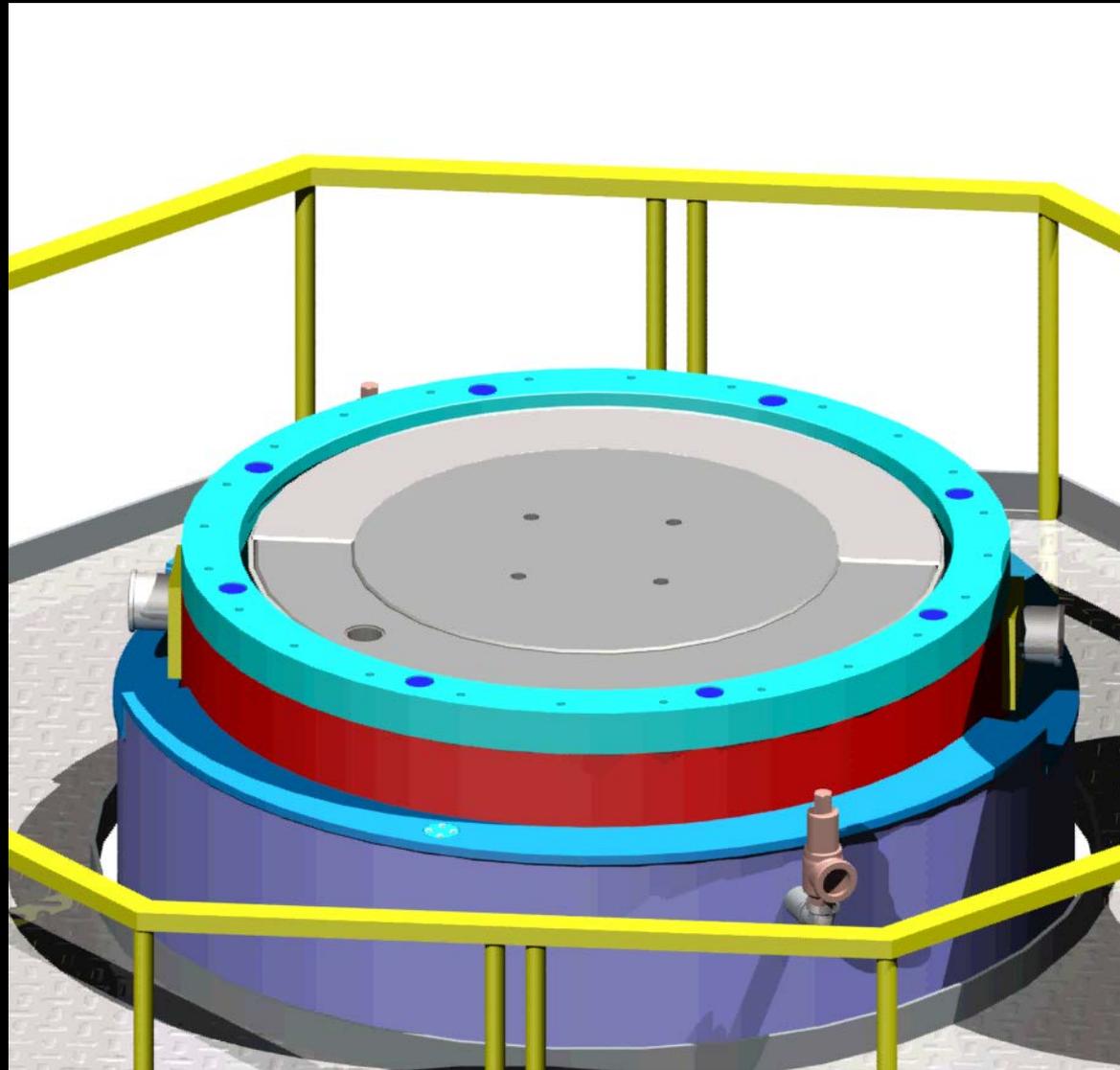
# Closure Ring Welding



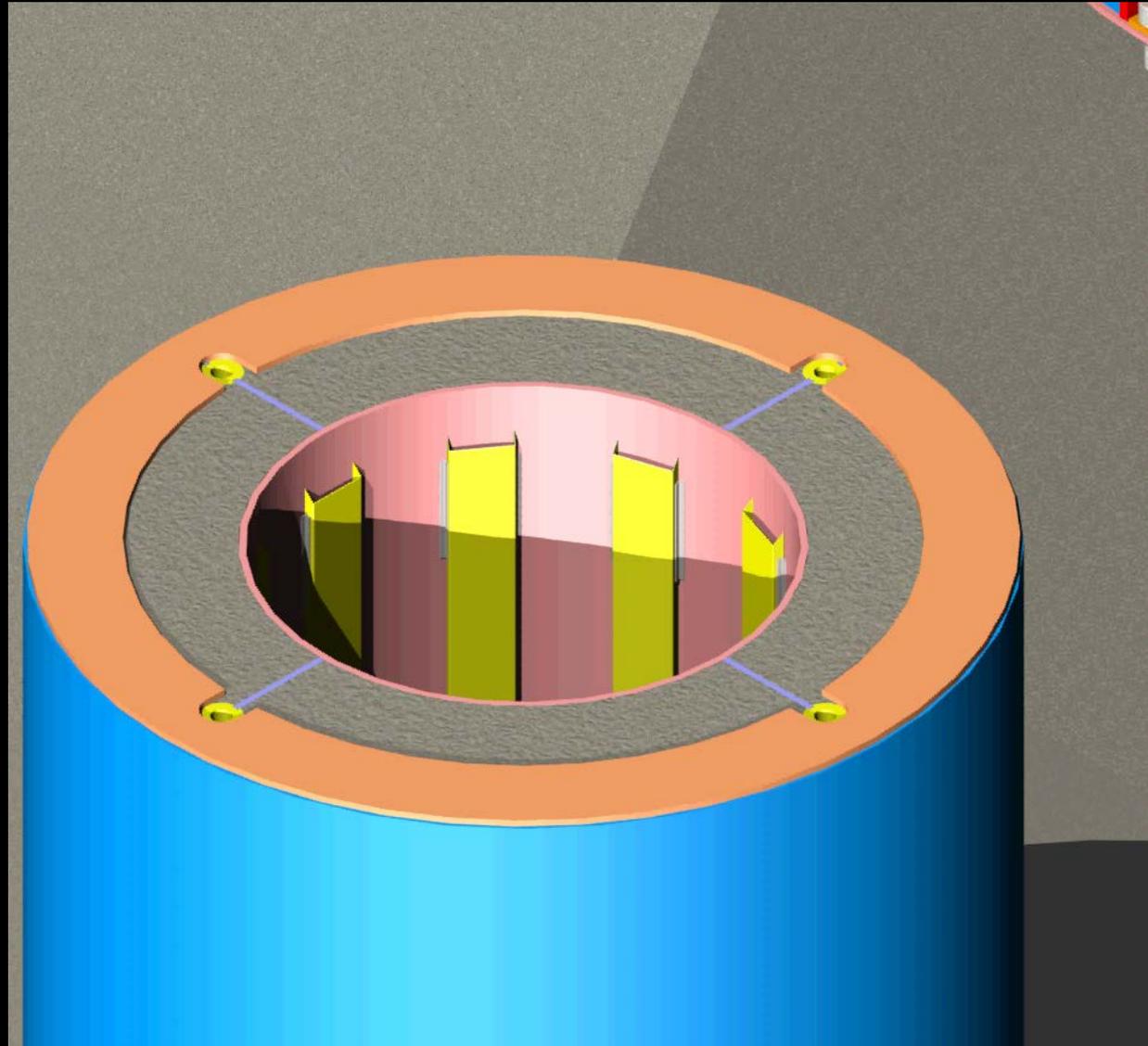
# Automated Welding System Removal



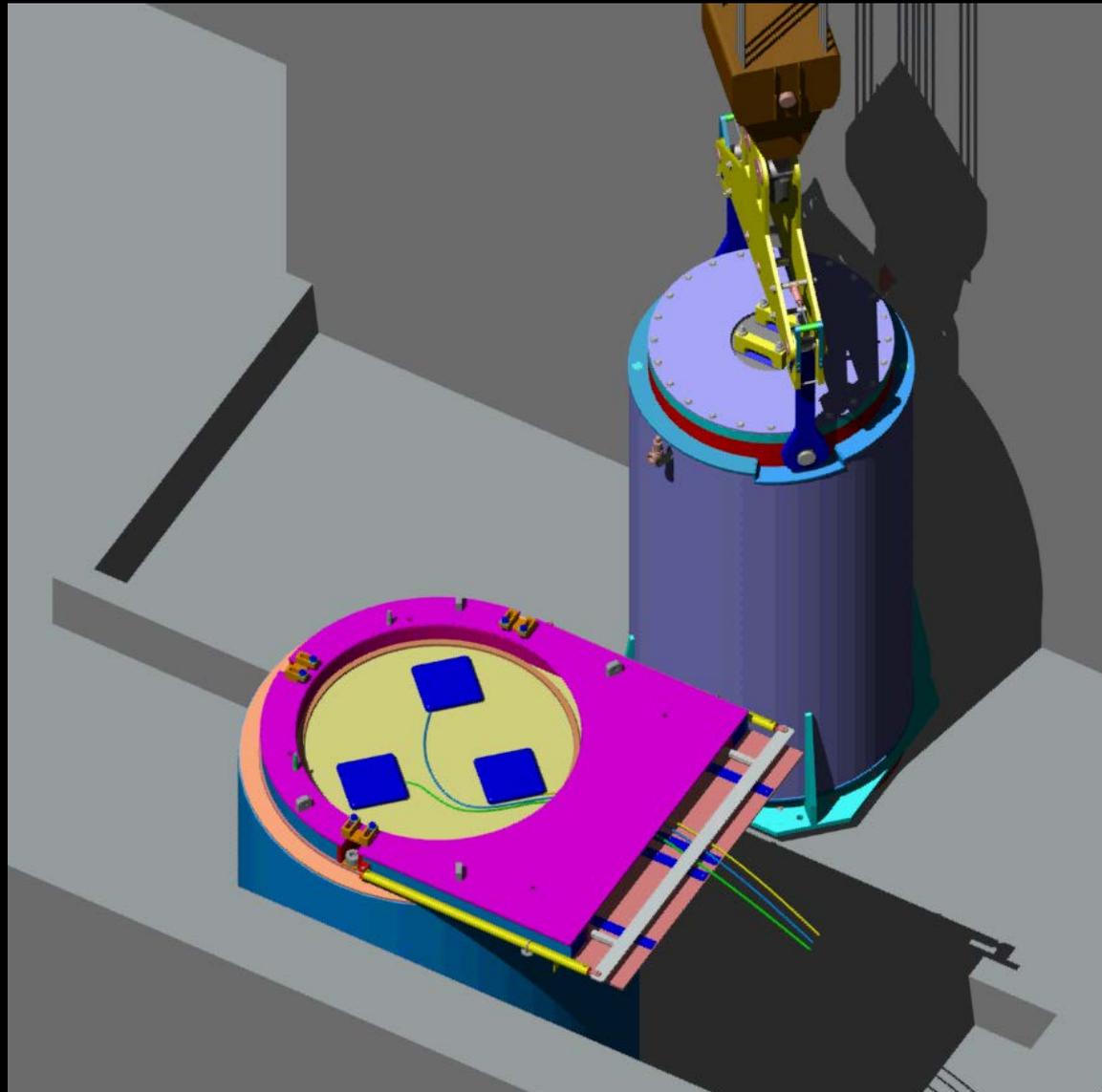
# HI-TRAC Lid and Lift Cleat Installation



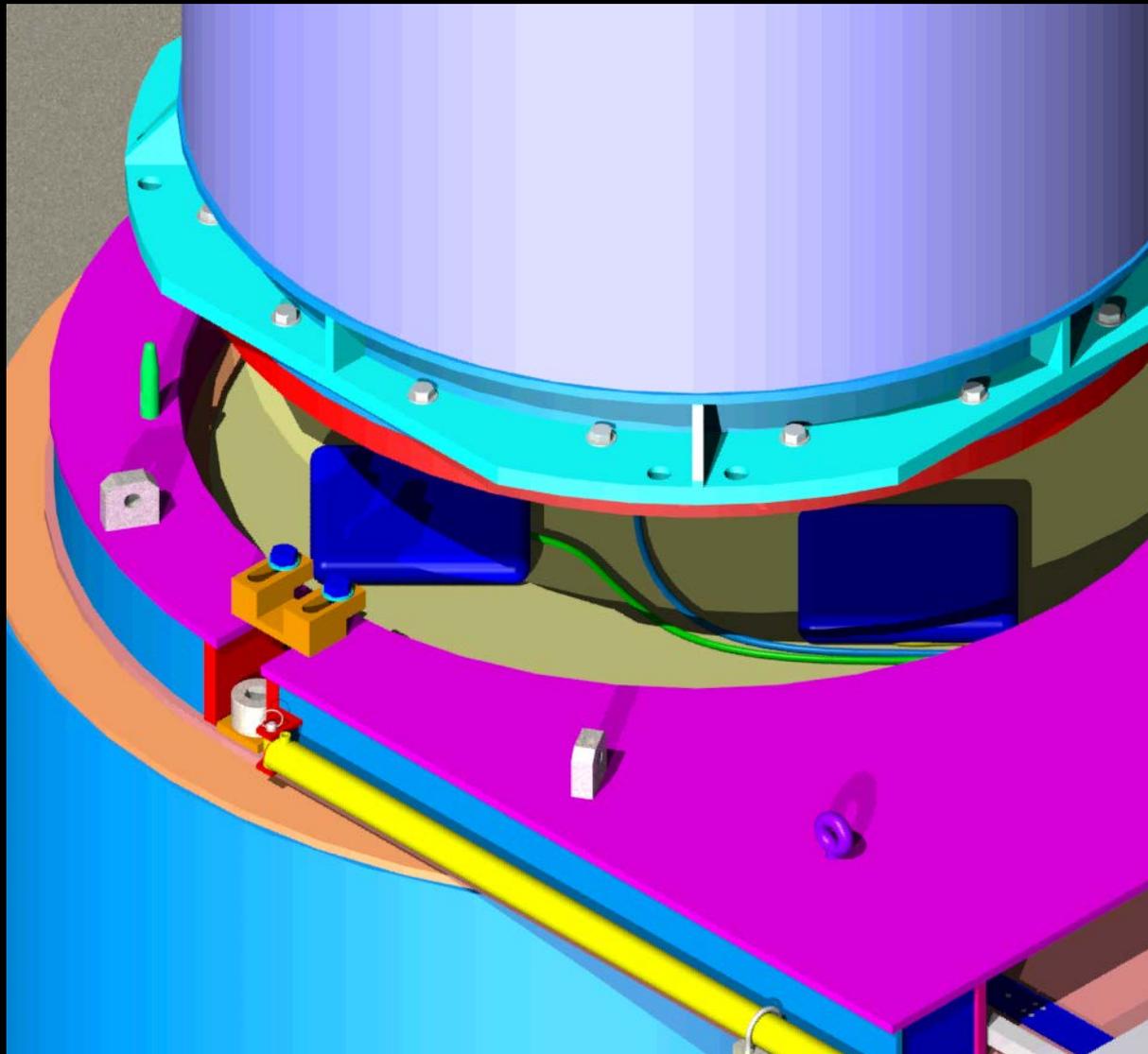
# Mating Device Installation on HI-STORM



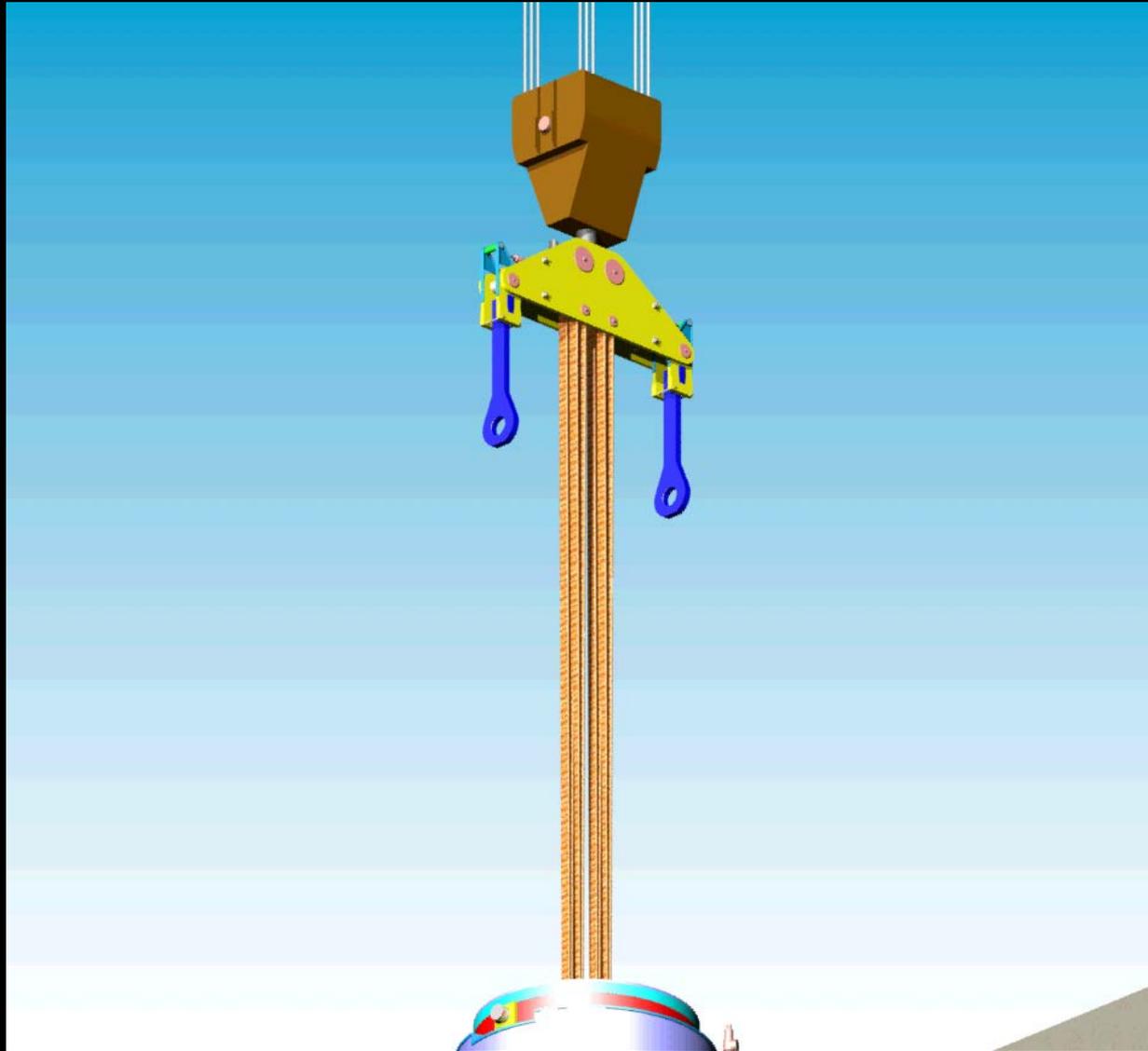
# HI-TRAC Moved to the Transfer Location



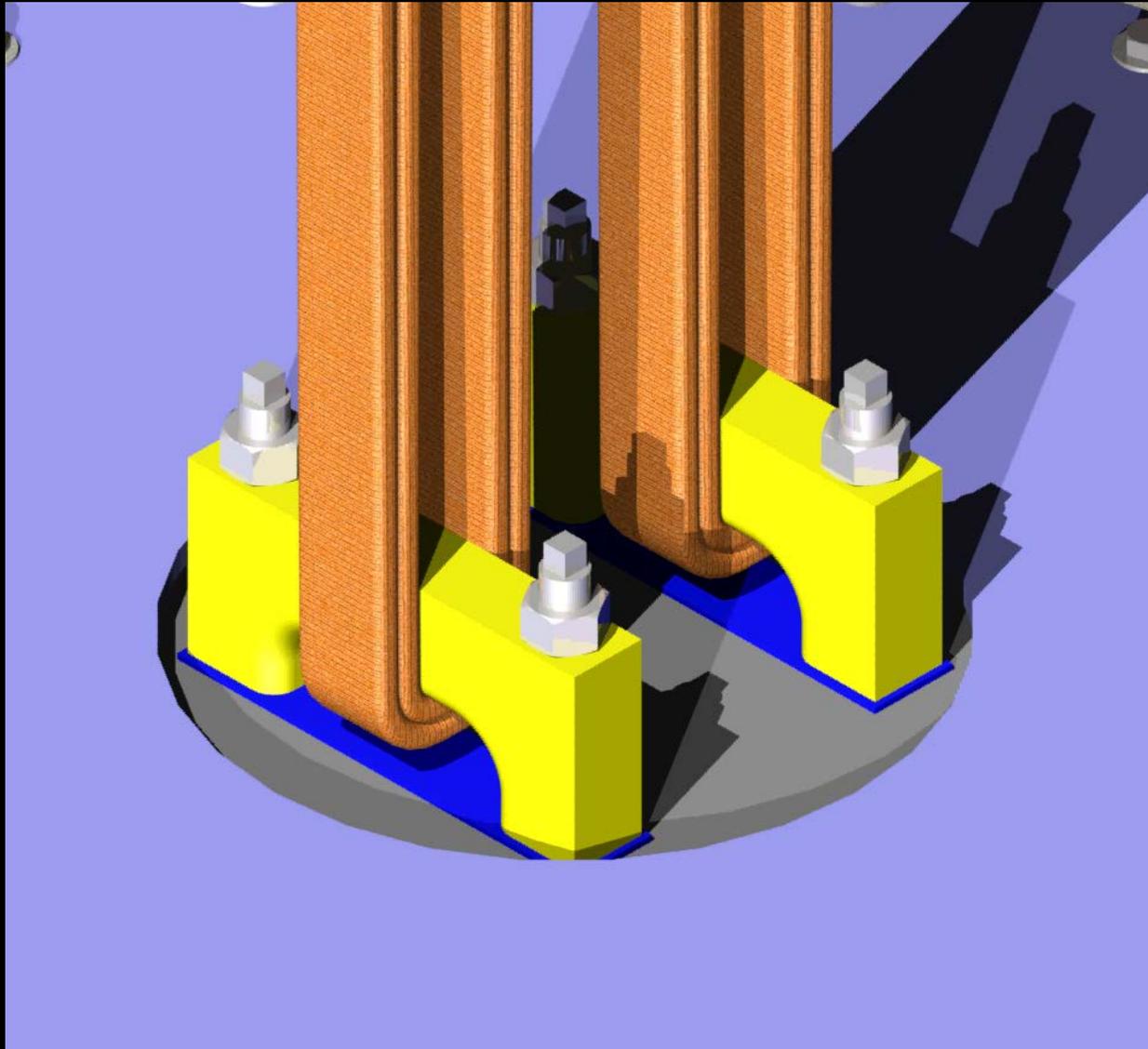
# HI-TRAC Mated with HI-STORM



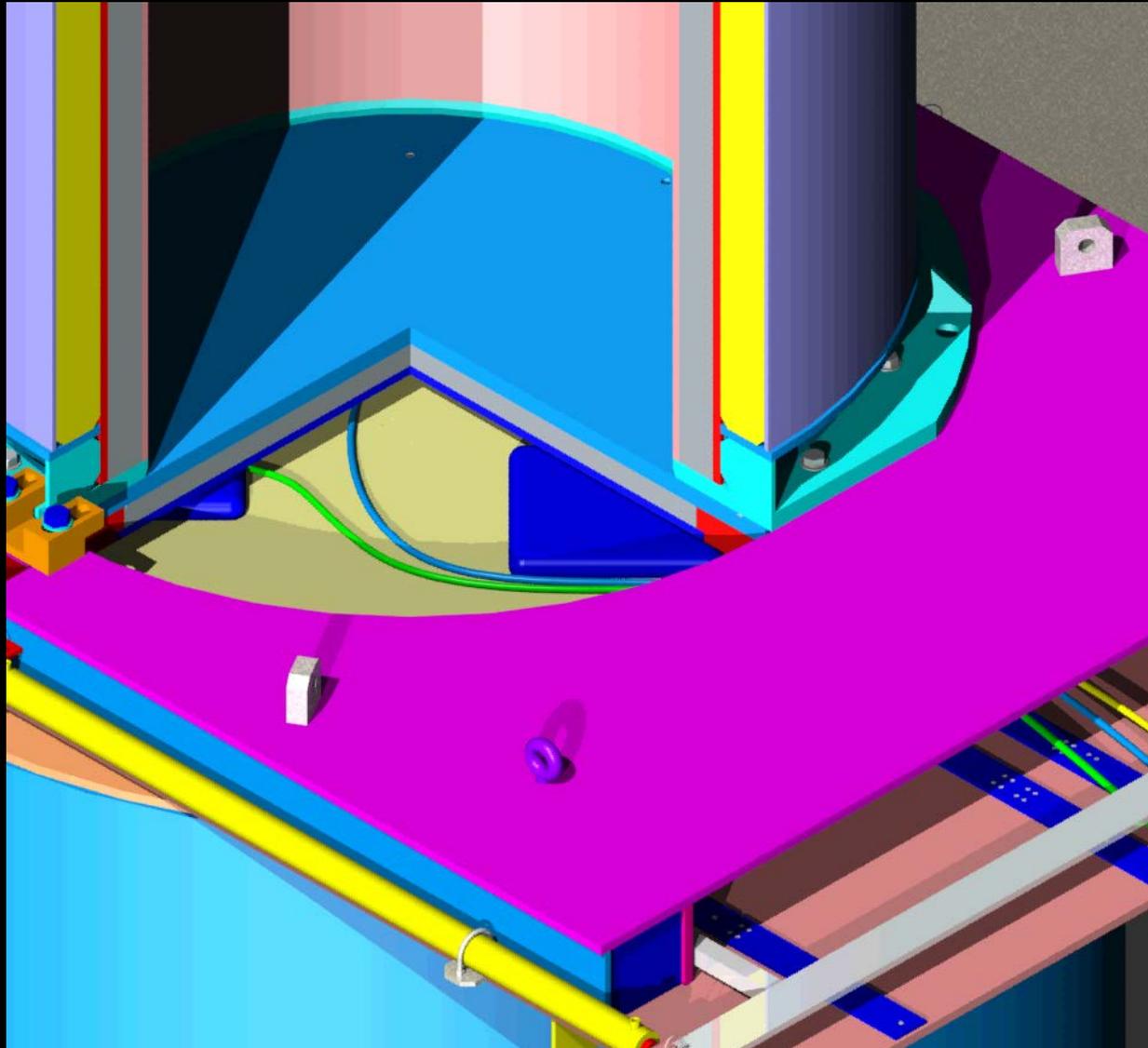
# Downloader Slings Tensioned



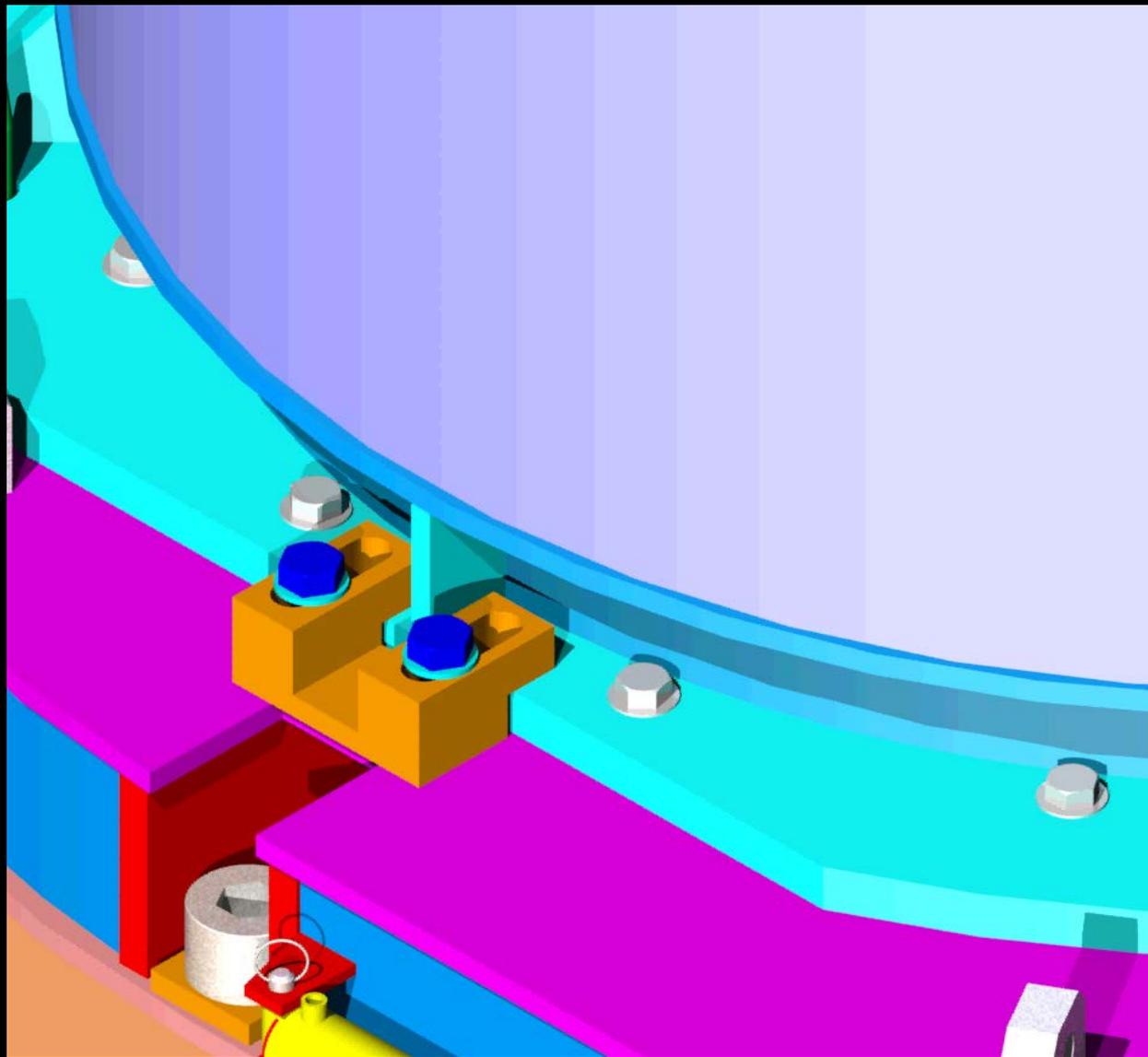
# MPC Raised Slightly



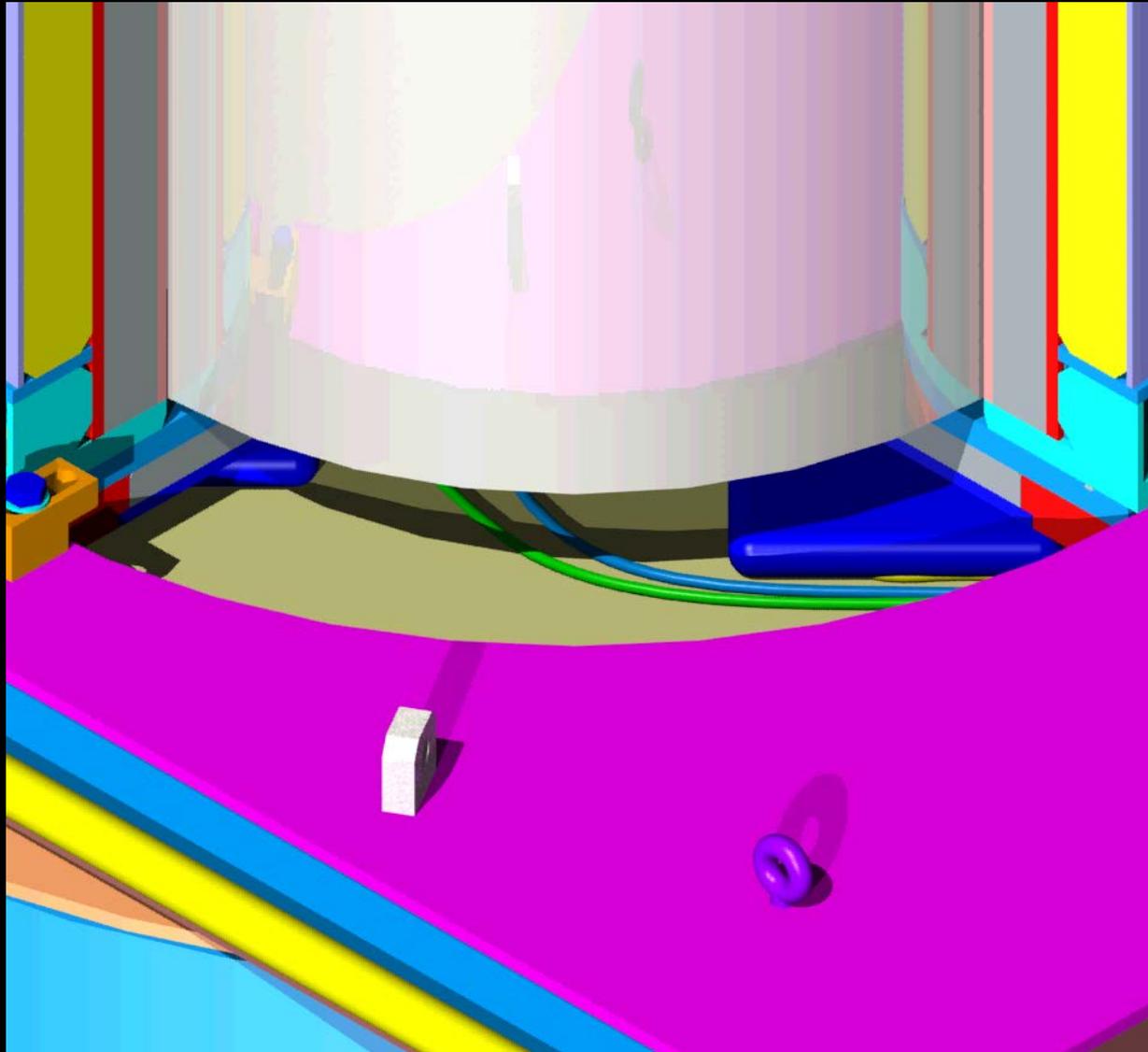
# Lift Bags Inflated



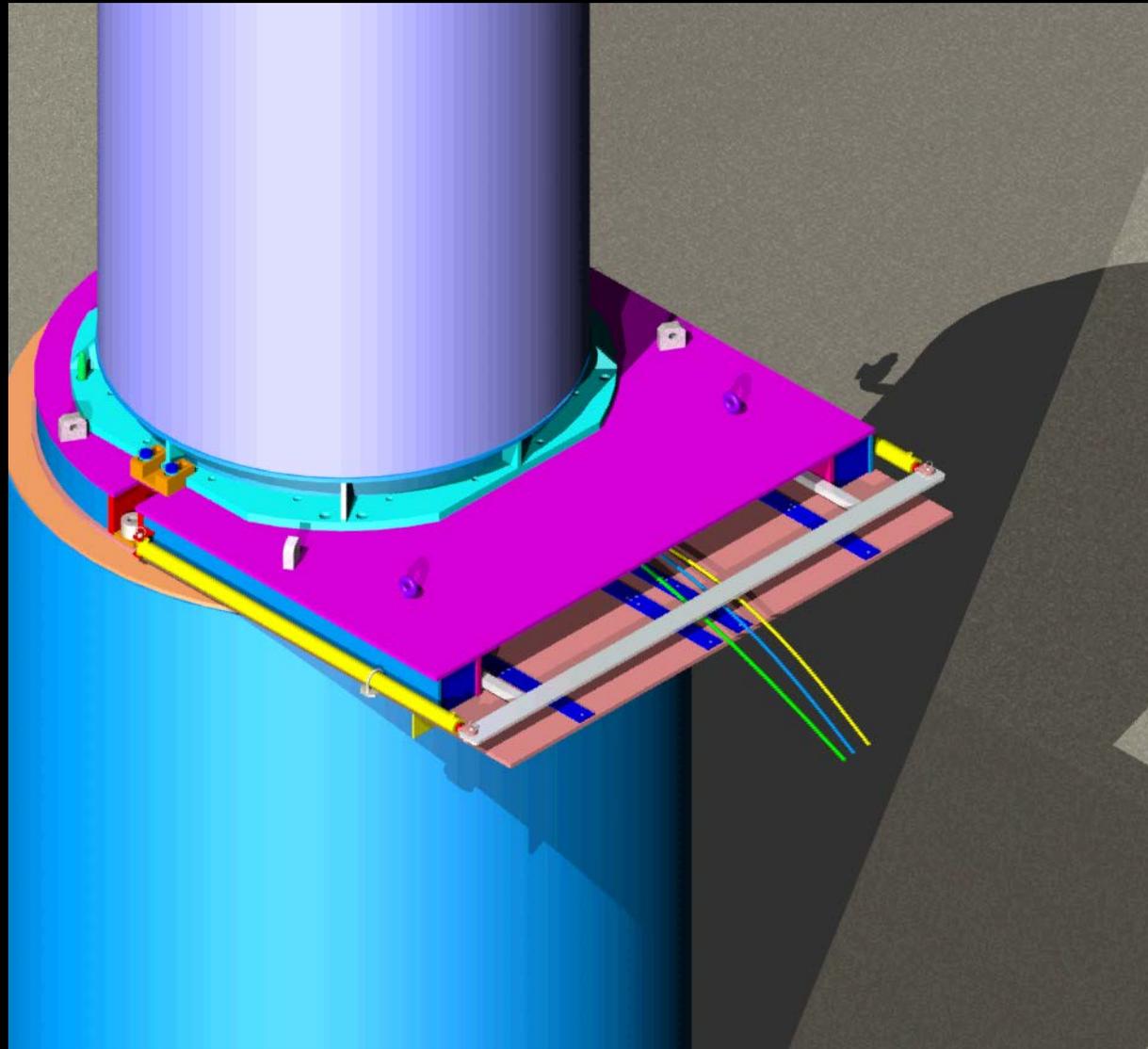
# Pool Lid Bolt Removal



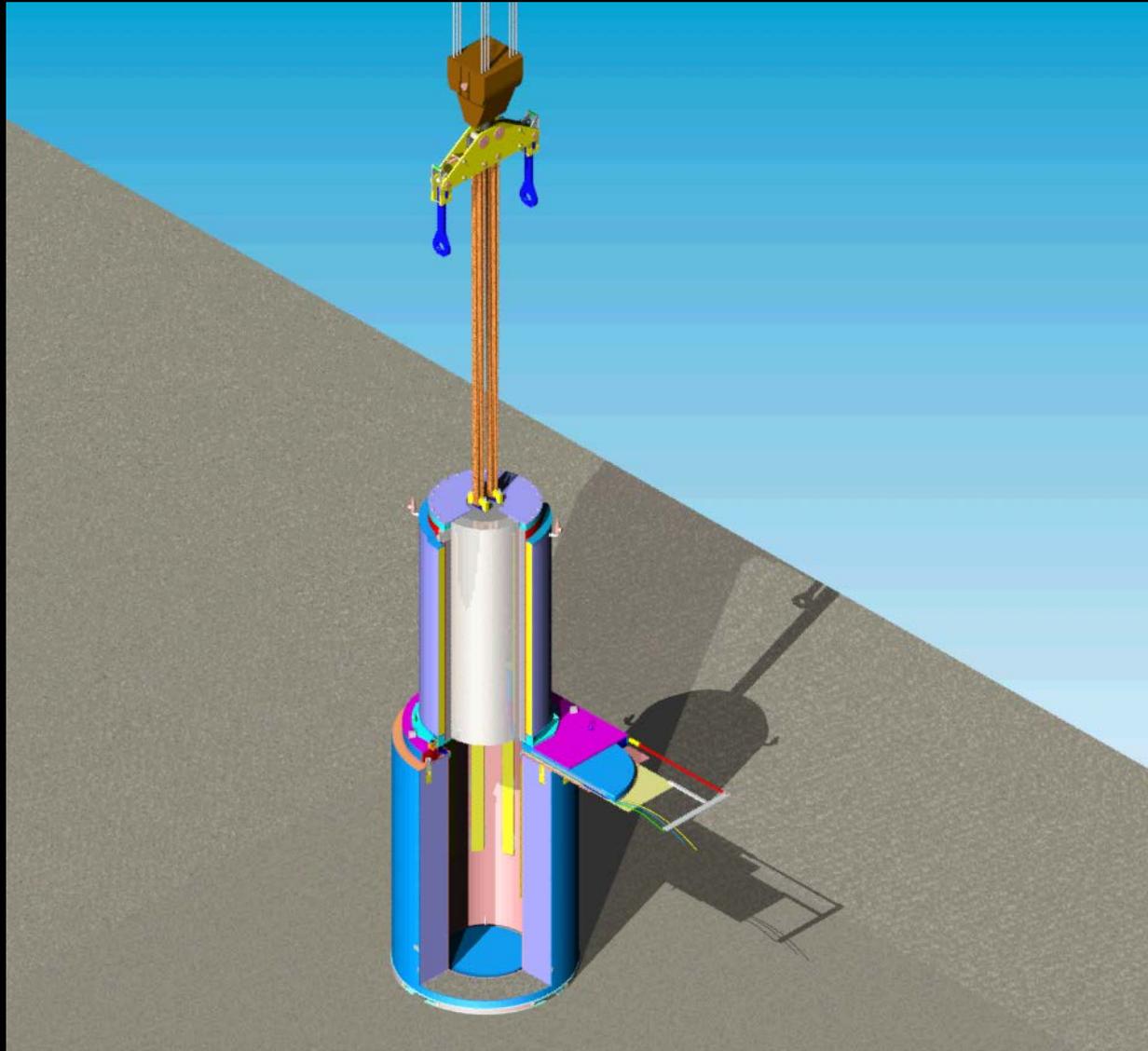
# Pool Lid Lowering



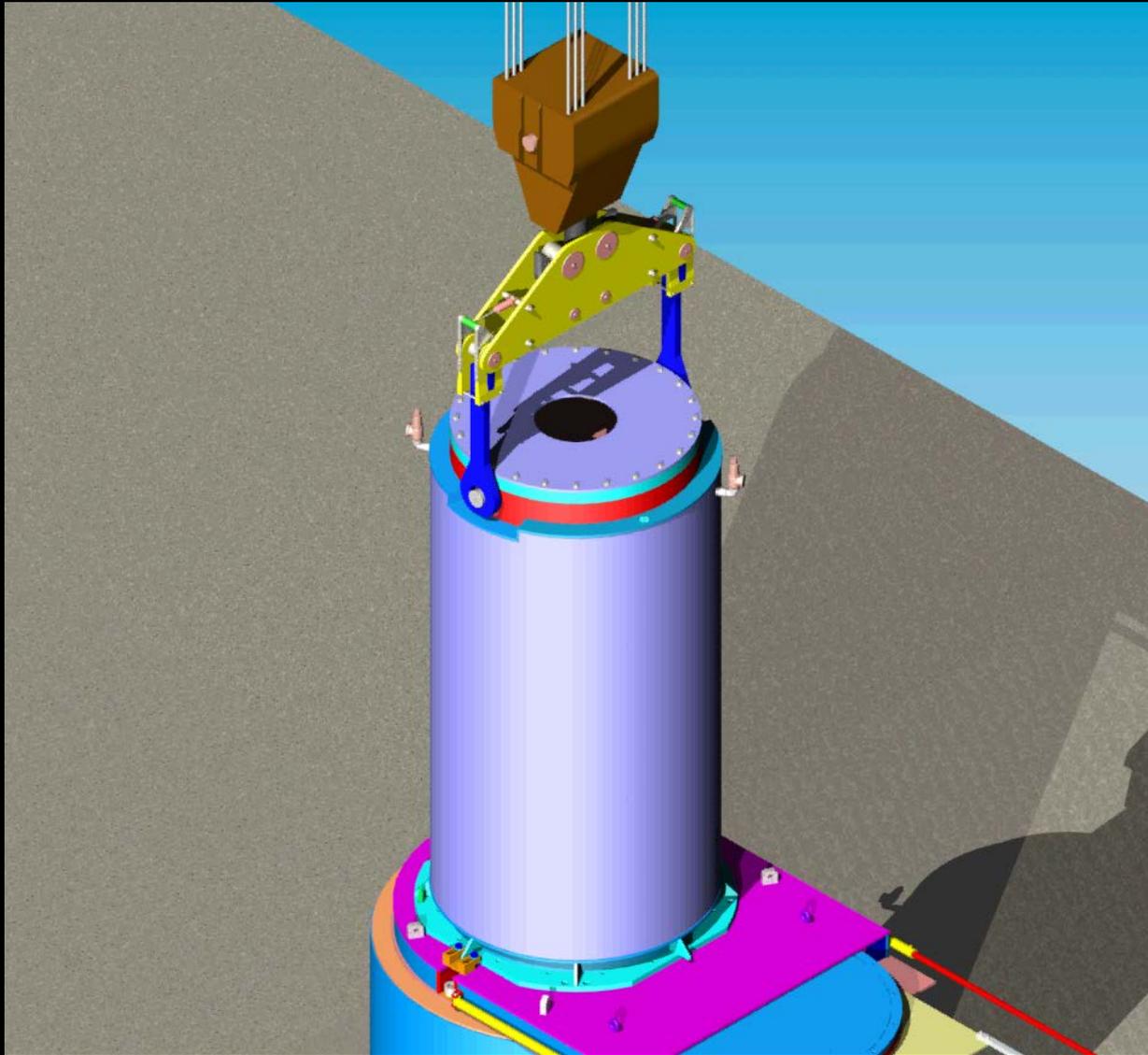
# Mating Device Opened



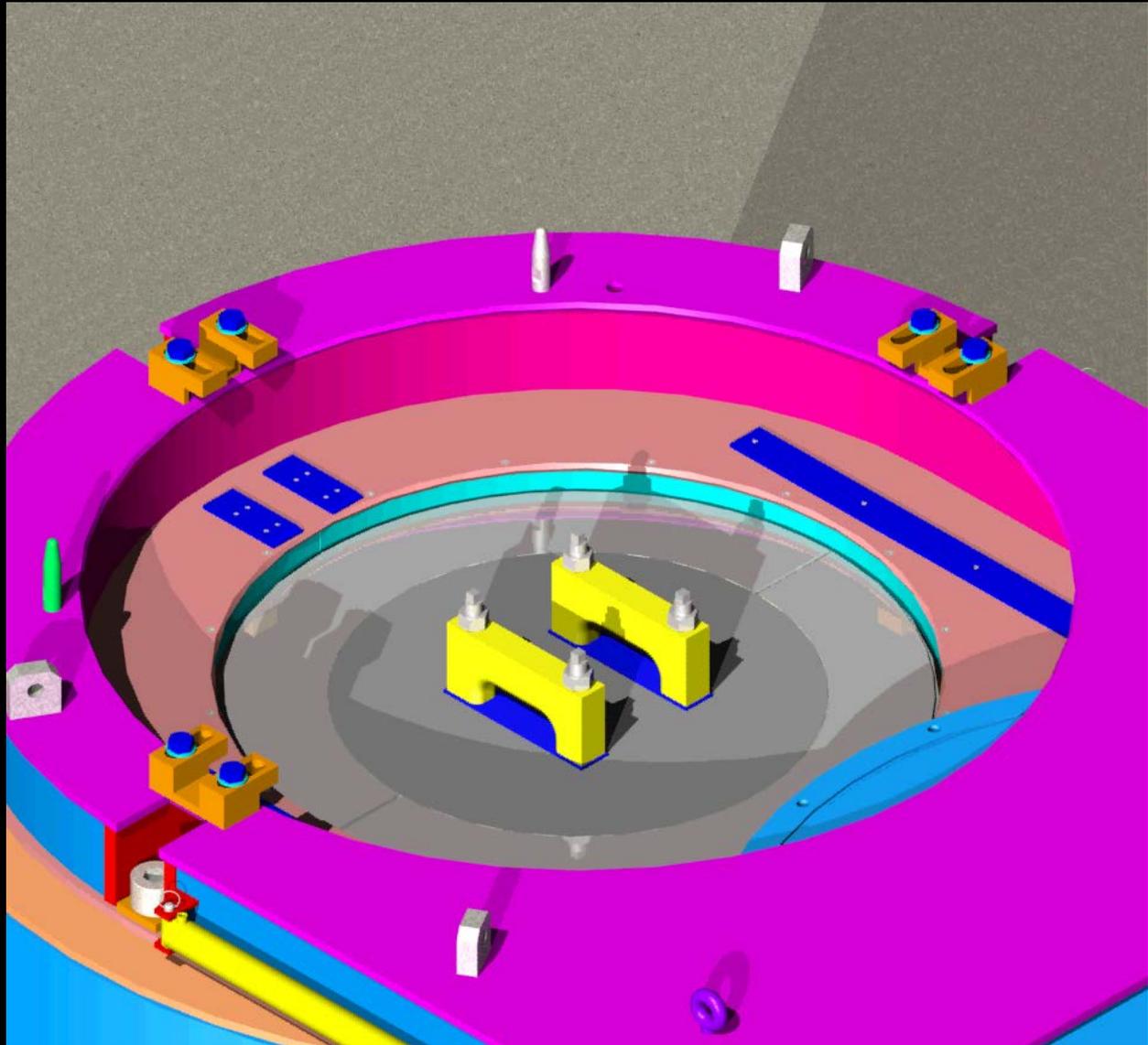
# MPC Lowered Into HI-STORM



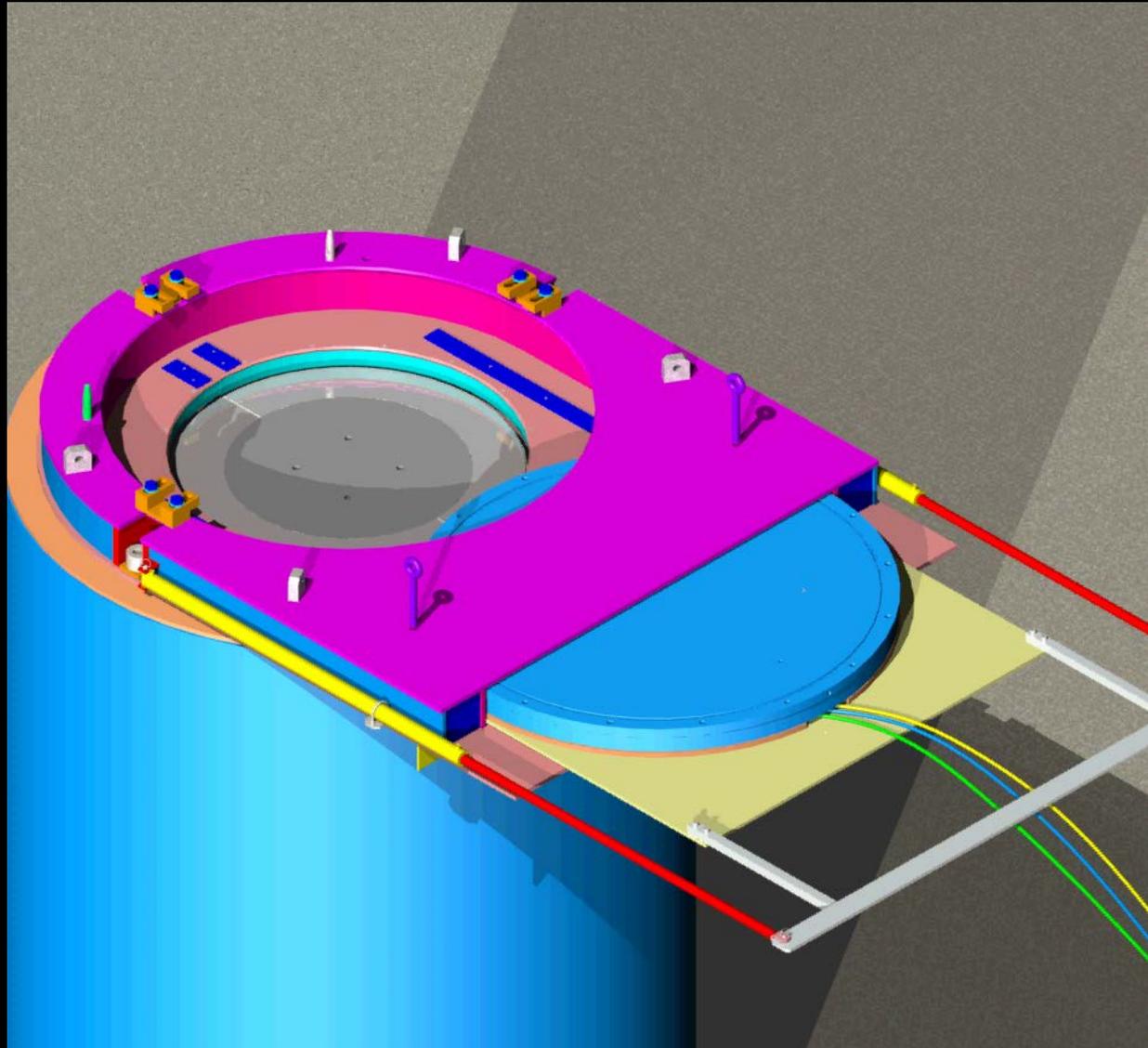
# HI-TRAC Removal from the Mating Device



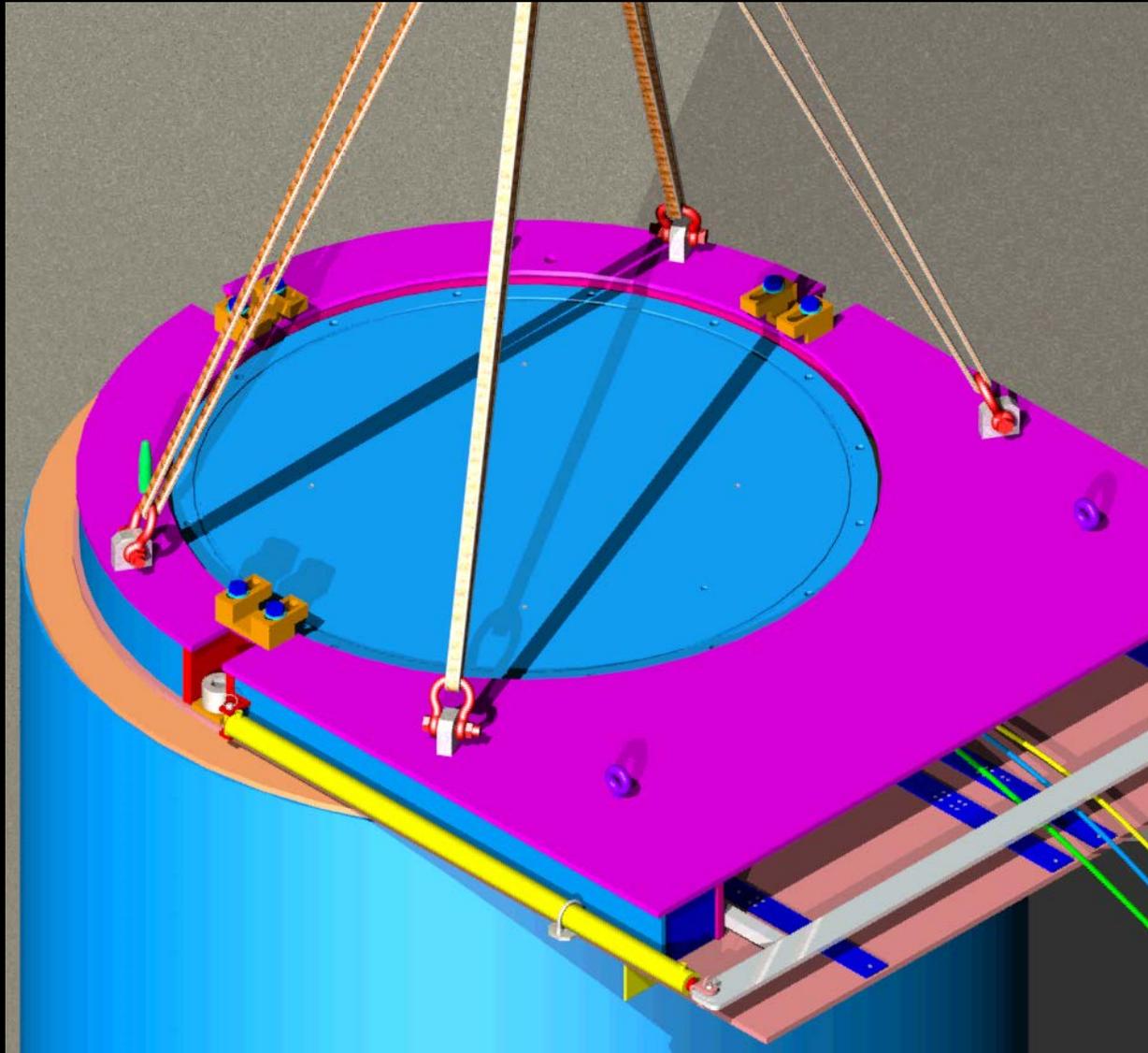
# Lift Cleat Removal



# Mating Device Closure



# Mating Device Removal from HI-STORM



# HI-STORM Moves To The ISFSI



**Placing the HI-STORM  
at ISFSI**

# HI-STORM Moves To The ISFSI



# Questions