

Hall C ERR Cryogenic Target

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JLab Target Group

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Status

- Complete

- Tank refurbishment (compliant with 6151)
- Tank support structure repair/painting

- In Process

- New loops, cells, targets*
- New alignment system*
- Upgraded gas panel and piping
 - New swap panel
- Upgraded controls
 - Software*
 - Heaters (higher voltage, lower current)*
 - Temp controls (6 per loop)*
 - Aux heater controls (all power supplies are in Hall)*

* Same as Hall A cryotarget

Pressure Safety

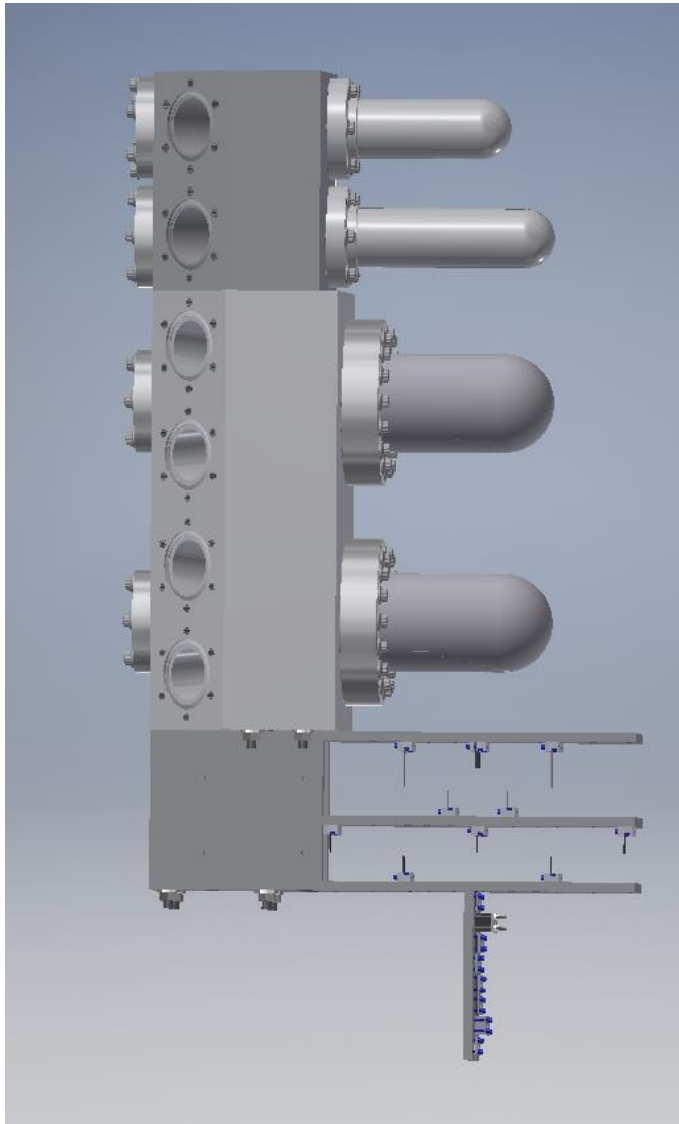
- Hall A and C Cryotargets nearly identical
- Alteration of existing system
 - Minor changes to gas panel
 - Replacement of swap panel
 - Refurbishment of vessels
 - New piping to pivot
 - New overpressure protection
- All work performed in compliance with ESH&Q 6151 and applicable Codes
 - ASME B31.3, ASME PCC-2 (Piping)
 - ASME BPVC VIII D1, NB-23 (Vessels)

Documentation

- Pressure system documentation
 - Stored in compliance with JLAB policies on DocuShare (PS-TGT-XX-0226)
 - Alteration of existing system
 - Includes calculations, drawings, fabrication documents (welding/materials)
- Operations Manuals
 - Target operators manual
 - Hall C Operations manual
 - Target procedures

Configuration

- Top loop 4 and 10 cm cells
 - Fluid H₂/D₂
- Bottom two loops 10 cm cells
 - Fluid H₂/D₂
- Only two loops can be filled at a time.
 - Filled with H₂ or D₂
 - D₂ tank can be filled with H₂ to give 2nd H₂ loop
- D₂ has not been purchased and will not be until next fiscal year
 - Purification of D₂ system will be required (Tank purification takes time)

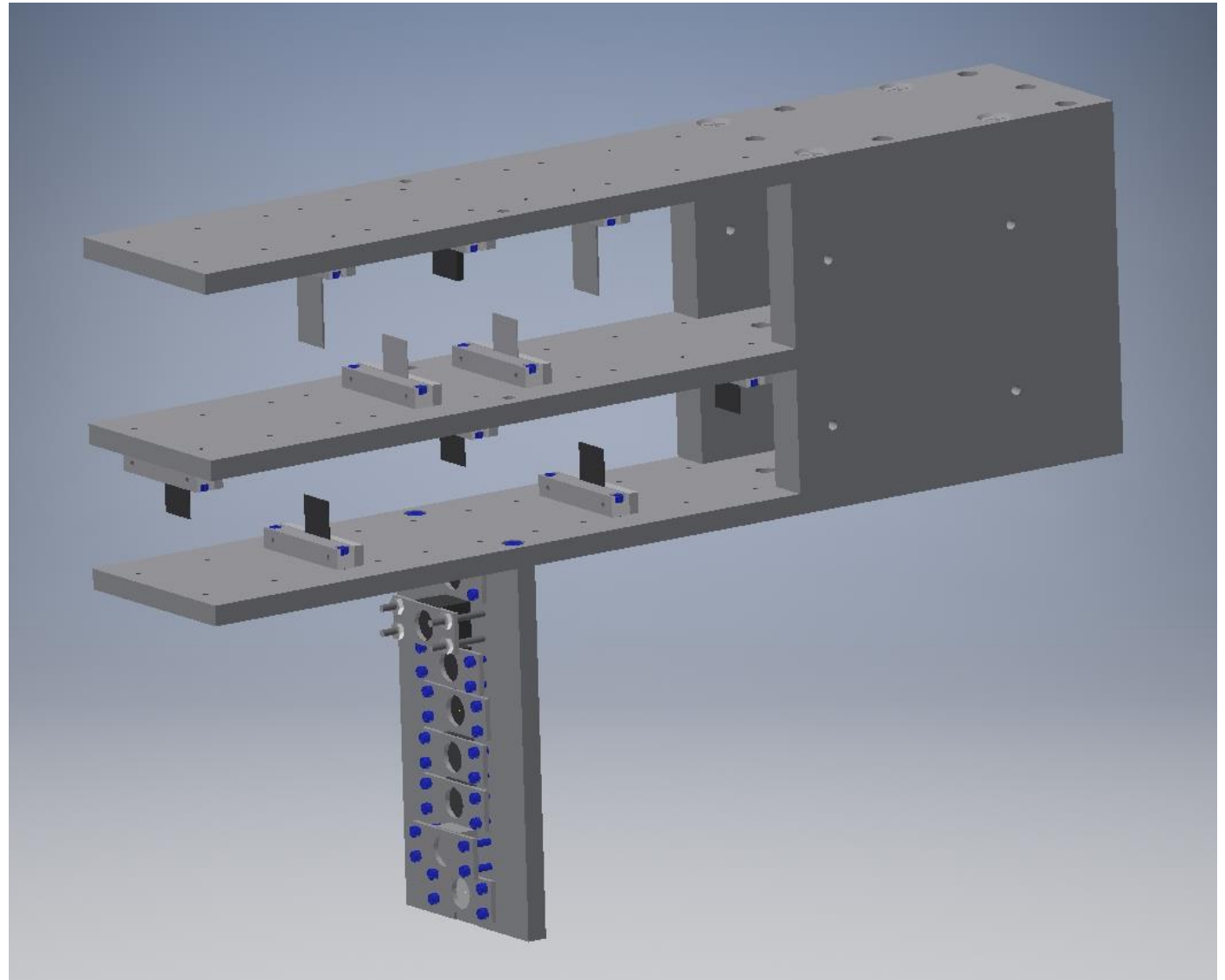


Target Configuration

- Loop 1
 - 4 cm 1.6" CF cell
 - 10 cm 1.6 CF cell
- Loop 2
 - 10 cm 2.6" Cell
- Loop 3
 - 10 cm 2.6" Cell
- Solid Targets
 - 10 cm dummy with C in center (Match rad length of 10 cm LH2)
 - 4 cm dummy (rad length of 4 cm LH2)
 - Optics 1 and 2
 - C hole
 - C targets 6%, 1.5%, and 0.5%
 - 1.2% 10B4C and 11B4C
 - 2% Be
 - BeO

Dummy and Optics Targets

- Targets can be positioned quickly
- Positions for
 - 0
 - +/- 2
 - +/- 3.75
 - +/- 5
 - +/- 7.5
 - +/- 10 cm
- Current Optics Config:
 - 0 and +/- 10 cm
 - +/- 5 cm



Responsibilities

- Target Group
 - Installation, testing, and maintenance of Target System
 - Future modifications to piping, loops, cells, etc.
 - Maintenance and modifications to controls, hardware and software
 - Ensure compliance with Lab's EHS&Q program
- Hall C/Users
 - Installation and maintenance of vacuum chamber
 - Training/documentation
 - Normal operation
 - "On Call" Experts: JP Chen, Greg Smith, & Silviu Covrig-Dusa
- ENG
 - J. Alston: Welding/Mechanical examinations
- EHS&Q
 - M Martin: Welding inspections
- CRYO (ESR)
 - Cool down/warm up support

Schedule

