It’s all about Cryogenius!
Cryogenic Engineering for Superconducting Magnets at DEMACO

Rossi Mendez
Sales Engineer - HHS

MT25
25th International Conference on Magnet Technology

RAI - Amsterdam
August 27 - September 1, 2017
Cryogenics and accelerators around the world ...
Cryogenics project from research to industry ...
Project Phase – Engineering

INPUT
- Technical Specification
- P&IDs
- Management Specifications
- Drawings

OUTPUT
- Project Management Plan
- Quality Assurance Plan
- Preliminary:
  - Models
  - Structural analysis
  - Seismic analysis
  - Heat leak analysis
  - Cryogenic valves
  - Instruments

- Final:
  - Models
  - Structural analysis
  - Seismic analysis
  - Heat leak analysis
  - Cryogenic valves
  - Instruments

- WPS documents
- WPQ documents
- PQR documents
- Procedures:
  - Leak check
  - Pressure test
  - Inspection and examination

August 17 | MT-25 Amsterdam | Demaco, It’s all about Cryogenius!
Project Phase – Manufacturing

**INPUT**

- MANF.

**OUTPUT**

- FAT
  - Dimensional check
  - NDE
  - Vacuum retention test
  - Pressure test
  - Helium leak test
  - Cold shock test
  - Valve/actuator test
  - Instrumentation test

- DELI
  - Material test reports
  - Instruments calibration data
  - Final report:
    - Pressure test
    - Leak test
    - Calibration
  - Compliance certificates

August 17

MT-25 Amsterdam

Demaco, It’s all about Cryogenius! 8
**Project Phase – Installation**

**INPUT**
- Quality Plan
- ITP documents
- Installation procedures
- Installation drawings
- Assembly procedure
- Test procedures
- Manufacturer instructions

**OUTPUT**
- Progress reports
- Individual qualifications
- Manufacturing Dossier including:
  - Acceptance certificates
  - Quality plan and ITPs
  - Welding documentation
  - NDT documentation
  - Test reports
  - As built drawings
  - Installation, operation and maintenance documentation

August 17
MT-25 Amsterdam
Demaco, It’s all about Cryogenius!
Cryogenic Projects...

Cryogenics of European XFEL Accelerator Module Test Facility

Cryogenics of European XFEL Feed Caps/End Caps/Transfer Lines

LCLS II SLAC Feed Caps/Transfer Lines
Thank you for your attention!