

LArFCS Cryogenic System progress

Yichen, Sergey

5/11/21

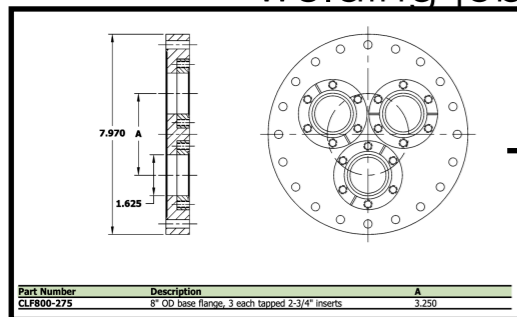


LArFCS Cryogenic Operation

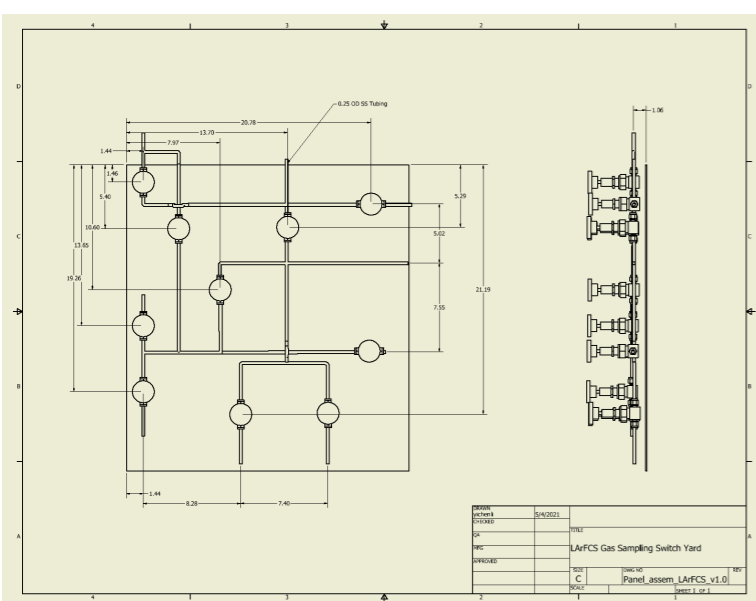
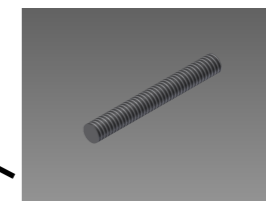
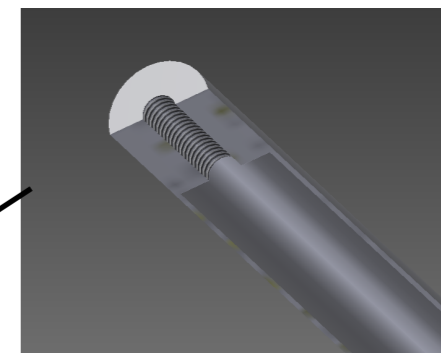
► LArFCS Cryogenic Operation

- New parts manufacturing

- Scheduled a meeting with KHV on Friday Morning for production of new parts
- Gas sampling switch panel: Drawing sent to KHV
- Interface flange for PrM: HV, readout, fiber, 2 x 2.75" Conflat on 1x 8" Conflat
 - Catalog flange available
 - Some modifications for fiber feedthru
- Supporting rods for inner apparatus: Consulted with Jason with rigid tubings, needs some welding jobs



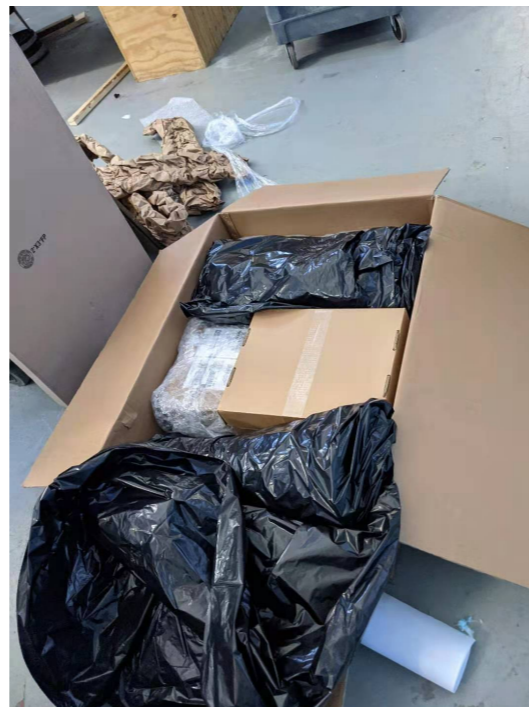
2



LArFCS Purity Monitor

► PrM Implementation in LArFCS system

- Shipment to UCI
 - Shipment received at UCI today
 - Fabrication is going to start soon, waiting for an time estimation
 - Additional parts for HV/readout feedthru will be sent over later



6000-Gallon LN2 Tank Move

► The moving finished on last Thursday

- Started at ~8:30a, Finished at ~4pm
- Level gauge and filling hose removed for the moving
- The miss-matched mount rod problem was resolved by enlarging the hole on the stand
- Professional photos available at <https://bnl.canto.com/s/QH4PP?viewIndex=0>



6000-Gallon LN2 Tank

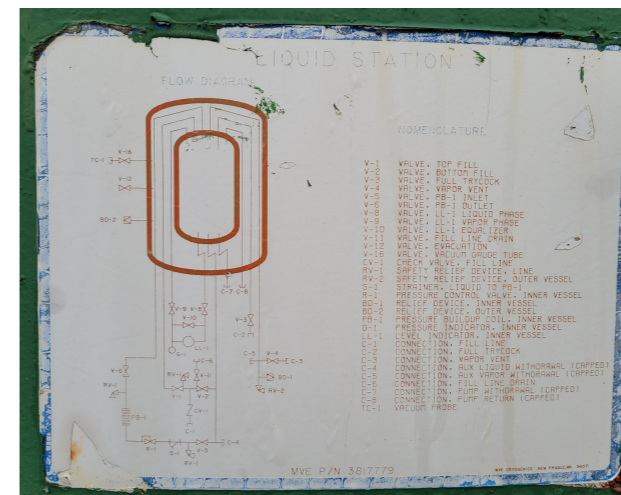
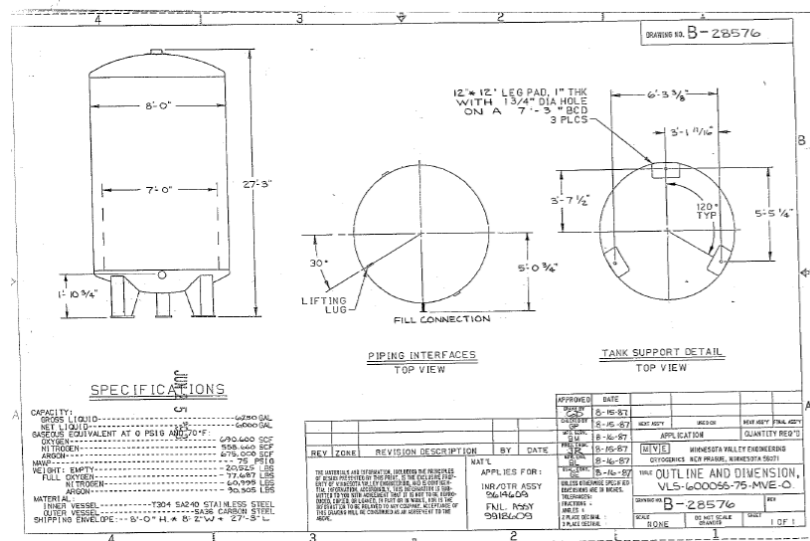
List of work needed to bring the tank back into operation

Documentations:

- All documents collected from F&O: Manual+drawings
- P&ID figure missing in the manual, only photo taken on the dewar F&O will get on from the vendor

Operating procedures

- Detailed procedures included in the manual
- Need to go over with safety



MVE, Inc.

TECHNICAL MANUAL

6000 GALLON VERTICAL LIQUID STATION

MODEL VLS-6000SC-75-CA

MVE PART NUMBER 10667626

SALES ORDER NUMBER	MVE SERIAL NUMBER	NATIONAL BOARD NUMBER	PURCHASE ORDER NUMBER

Manufactured for:
 CRYO ASSOCIATES
 12115A PARKLAWN DRIVE
 ROCKVILLE, MD 20852
 U.S.A.

DECEMBER 1994
 MANUAL # 10603390

TABLE OF CONTENTS

SECTION 1 - SPECIFICATIONS

- 1-1. LIQUID STORAGE VESSEL 1-1
- 1-2. CONSTRUCTION DATA 1-1
- 1-3. FIELD CONNECTION - PIPE NOZZLE SIZES 1-1
- Figure 1-1. SCHEMATIC FLOW DIAGRAM 1-2
- Figure 1-2. OUTLINE & DIMENSION DRAWING 1-3

SECTION 2 - SAFETY INFORMATION

- 2-1. SAFETY SUMMARY 2-1
- 2-2. SAFETY BULLETIN 2-3

SECTION 3 - INSPECTION

- 3-1. DESCRIPTION 3-1
- 3-2. RECEIVING CHECKPOINTS 3-1
- 3-3. VACUUM CHECK PROCEDURE 3-2

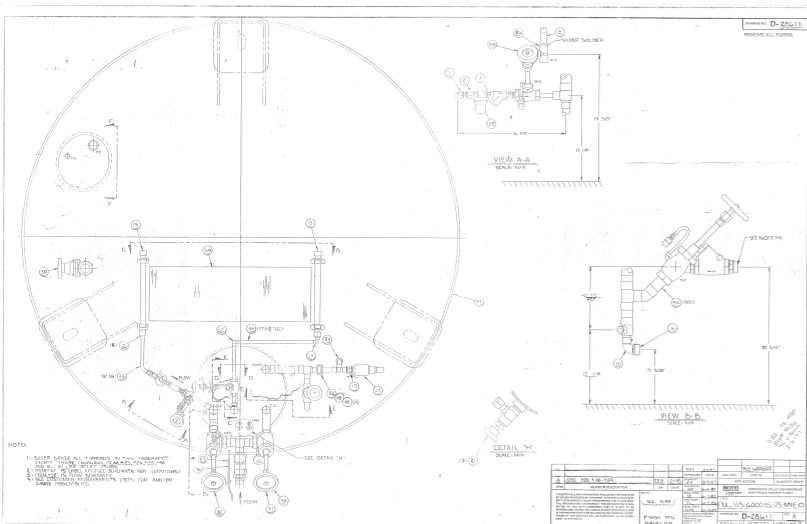
SECTION 4 - OPERATION

- 4-1. PREPARING THE STATION FOR OPERATION 4-1
- 4-2. INITIAL FILL 4-1
- 4-3. TANK PURGING PROCEDURE 4-2
- 4-4. INITIAL (WARM TANK) FILLING PROCEDURE 4-4
- 4-5. REFILLING 4-5
- 4-6. LIQUID WITHDRAWAL 4-7

SECTION 5 - MAJOR COMPONENTS

- Table 5-1. PARTS LISTING 5-2
- Figure 5-1. FINAL ASSEMBLY DRAWING 5-3

SECTION 6 - VENDOR LITERATURE



6000-Gallon LN2 Tank

► List of work needed to bring the tank back into operation

- Instrumentations for operation
 - Burst disks and radiators are on order
 - Digital level gauge for refilling: Need to contact Airgas
 - Contract with Airgas for filling: Need to figure out with NPP procurement
 - Filling hose replacement
- Inspection of the dewar
 - Need to check the integrity of the dewar
 - Vacuum of the insulation: need to check vacuum gauge read
 - Re-evacuate the dewar insulation if needed: Bill McKeon from Magnet Division can help also can get help from lab vacuum group.
 - Re-evacuate the LN2 volume: Depends on the burst disk replacement procedures
- Will arrange a meeting with Mike Gaffney and Achim to sort out the details

