

OPERATING PROCEDURE

BLDG 79--LIQUID OXYGEN TANK CGT-01-79 OPERATIONS

APPLICATION

Filling and draining, raising and lowering the pressure of the Building 79 liquid oxygen tank, CGT-001-79.

SPECIAL INSTRUCTIONS

- **CAUTION:** Cryogenic liquids have a normal boiling point below -320.4°F (-195.8°C), which will rapidly freeze human tissue.
- **CAUTION:** Keep all combustible materials, especially oil or grease, away from oxygen. Do not permit smoking or open flame in area where oxygen is stored or used.
- **CAUTION:** Do not permit organic material or flammable substances of any kind to come in contact with liquid oxygen. When organic materials are exposed to liquid oxygen, they will burn violently if ignited, even several minutes after contact with the liquid.
- **CAUTION:** Any clothing that has been in contact with liquid oxygen should be removed immediately and aired away from sources of ignition for at least an hour. Protective clothing/equipment must be worn at all times when working on liquid oxygen tanks.
- **Special Equipment:** Safety glasses, face shield, insulated glove. In case of emergency, dial x7911

WORK STEPS A: Emergency Shutdown

1. Close gas phase isolation valve V-9 and gas phase supply valve V-11 to Bldg 77.

WORK STEPS B: Transferring Liquid Oxygen

NOTE: Make sure the pressure of the tank supplying liquid oxygen is higher than the tank receiving liquid oxygen.

1. Connect transfer hose to fill line connection C-1, and leave 1/4 turn loose.
2. OPEN fill line drain valve if equipped.
3. Slowly open supply tank transfer valve half way to prevent thermal shock to the line. Allow line to chill.
4. CLOSE fill line drain valve and transfer valve, then tighten fill line connection C-1.
5. Open transfer valve and receiving tank fill valve.
6. Slowly open receiving tank blowdown valve to ensure that tank maintains operating pressure.
7. When transfer is complete:
 - a. Close supply tank transfer valve.
 - b. Close receiving tank fill valve and blowdown valve.
 - c. Open receiving tank fill line drain valve.
 - d. Disconnect transfer line and install cap to C-1.
 - e. Close fill line drain valve.

WORK STEPS C: Lowering Tank Pressure

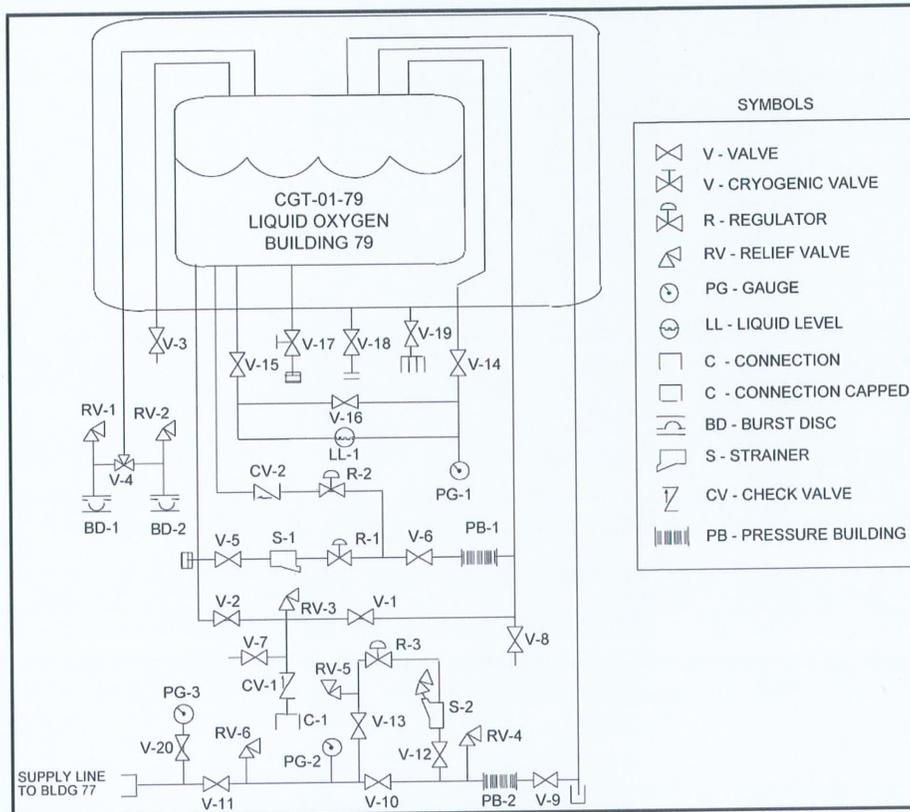
1. Slowly open blowdown valve V-8 to lower and maintain tank operating pressure.
2. When tank reaches operating pressure, close blowdown valve V-8.

WORK STEPS D: Pressurizing Tank

1. Ensure that pressure building PB-1 supply valve V-5 is open.
2. Ensure that pressure building PB-1 isolation valve V-6 is open. Maintain 150 psig.

WORK STEPS E: Draining Tank Pressure

1. Close pressure building supply valve V-5.
2. Slowly open tank blowdown valve V-8.
3. When tank reaches operating pressure, close V-8 and open V-5.



V-1 Tank Top Fill	V-14 Gas Phase Gauge Isolation	RV-1 Tank Safety Relief
V-2 Tank Bottom Fill	V-15 Liquid Phase Gauge Isolation	RV-2 Tank Safety Relief
V-3 Full Trycock	V-16 Equalization	RV-3 Fill Line Safety Relief
V-4 Tank Safeties Diverter 3-Way	V-17 Liquid Evacuation Withdrawal	RV-4 Gas Phase Supply Safety Relief
V-5 PB-1 Supply	V-18 High Vacuum Evacuation Isolation	RV-5 Gas Phase Supply Safety Relief
V-6 PB-1 Isolation	V-19 Vacuum Probe Isolation	RV-6 Gas Phase Supply Safety Relief
V-7 Tank Fill Line Drain	V-20 PG-3 Isolation	PB-1 Tank Vaporizer
V-8 Tank Pressure Blowdown	R-1 Tank Pressure Regulator	PB-2 Gas Phase Vaporizer to Bldg Supply
V-9 PB-2 Gas Phase Isolation	R-2 Pressure Regulator	BD-1 Tank Burst Disc
V-10 Bypass	R-3 Gas Phase Regulator	BD-2 Tank Burst Disc
V-11 Gas Phase Supply to Bldg 77 V-12 Gas Phase Valve	S-1 Liquid Phase Strainer	PG-1, PG-2, PG-3 Pressure Gauges
V-13 Gas Phase Valve	S-2 Gas Phase Strainer	
	C-1 Tank Fill Connection	

Building 79 Liquid Oxygen Tank

RESPONSIBILITIES AND CONTROLS

Rev. No.	SME/Title	REV/Title	Approved/Title	Date	Effective Date
2	<i>Michael Botello</i> Michael Botello Plant Maint Tech Lead	<i>Larry Begley</i> Larry Begley Maintenance Supervisor	<i>Ken Fletcher</i> Ken Fletcher Operations Department Head	6/11/09	6/11/09