Personnel responsible:

1. Material Handler

Safety:

1. **Before approaching the Tank Car or Truck containing Sulfuric Acid put on the following Personal Protective Equipment: Safety Goggles, Face Shield, Rain Suit, and Rubber Gloves**
2. **The warning sign (blue) must be in place during unloading.**
3. **Giles lock must be on track derail before hooking up cars.**

Summary:

This section provides specific directions for unloading Sulfuric Acid, a hazardous chemical. Employees are carefully trained prior to proceeding with any unloading tasks.

Procedure:

Prepare for Unloading and Refilling

Storage Tanks

1. Make sure that the storage tank(s) can accommodate the contents of the rail car.
2. Ensure that there is no pressure on the tank to be filled.
3. Open the dump valve to the storage tank to be filled.
4. If swapping tanks is necessary, refer to the acid tank procedure.
5. Inspect all ports on the storage tanks to make sure they are secure.

Rail Car

1. Obtain an "Acid History Log" from the documentation center.
    a. Fill out all appropriate information following the Acid History Log Procedure
2. Make sure hand brake on Rail car is engaged
3. Assure the derail and caution signs are in place.
4. Assure derail lock is in place
5. Make sure wheels are Blocked or Chocked.
6.

Obtain an Acid Sample

1. Obtain the special dipstick used for sampling an acid car, and a sample bottle
2. Put on safety equipment before going up on the car.
3. Check the hatch to make sure the Load Seal is intact. If it is not, inform the Safety or Plant Manager. Do not unload the car until told to do so. The acid may have been tampered with.
4. Check the safety vent (rupture disk) to insure the cap is intact.
5. Carefully depressurize the car by slowly removing the air inlet plug and opening the air valve.
6. Remove the sample bottle cap, put it aside, and screw the bottle firmly into the perforated bottle cap attached to the stick.
7. Remove the dump cap and lowering the bottle and stick through and down into the acid, thus filling the bottle.
8. Retract the bottle carefully.
9. Replace cap and rinse acid residue from out side of sample bottle
10. Label sample properly and place in Acid Cabinet as a retained sample

Prepare the Car for Unloading

1. Check the unloading hose and fittings for damage or wear.
2. Remove the plug from the discharge hose.
3. Check the gaskets on the quick-coupling on the discharge hose. Replace if necessary.
4. Check bolts on load hole and tighten if necessary.
5. Connect the Discharge pipe to the discharge port of the Acid car.
6. Connect the unloading hose to the discharge port on the tank.
7. Coat the threads of the air inlet pipe with Teflon paste or tape.
8. Connect the air supply hose to the tank car air inlet port

Transfer Acid to the Storage Tank

1. Check the acid transfer line at the storage tanks to assure that the acid will go to the proper storage tank.
2. Open the valve on the air supply line to pressurize the car. (20 psi).
3. When acid is moving through the line (you can tell by the weight), start the acid offloading pump.
4. Do not run the pump if no acid is in the line. Running the pump dry will destroy it.

WARNING:

Never pressurize the car to more than 30 psi –
(20 psi is preferred to unload with the pump)

Attend the Unloading

Continuously check the acid transfer line for leaks.

If a leak occurs – **immediately do the following.**

1. Close the valve on the air supply line before the regulator
2. Open the air bleed off
3. Wait for the leak to subside as the pump pulls a vacuum
4. Close the rail car acid valve
5. Stop the acid unloading pump
6. Carefully open the vent valve on the top of the rail car and slowly depressurize the car.
7. Notify the Safety and/or Plant Manager
8. Neutralize the spill(s) with lime.
9. If only a small spill, large quantities of water may be used, but only at the direction of the Safety or Plant Manager.
10. After the leak has been repaired check the entire system, as above, before resuming the unloading.

Complete the Unloading

The acid pump will stop and rushing air in the acid line indicates that the acid is out of the car.

1. An auditable alarm will sound 15 minutes after the acid car is empty
   (air remains on during this 15 minutes to ensure acid line is clear)
2. Close the air supply valve
3. Close the acid outlet valve on the tank.
4. Depressurize the tank car by opening the vent valve on the top of the tank.
5. Disconnect the air supply hose.
6. Disconnect the acid line and carefully lower to the ground

Extreme care should be taken when handling Acid Hose.
Major safety issues can come from damage

7. Replace the plugs in the acid unloading hose and the air supply hose.
8. Go inside and turn off the acid unloading pump disconnect.

Prepare the Acid Rail Car for Release to the Railroad

1. Inspect the hatch cover gasket for damage and replace it if necessary.
2. Replace the educator pipe cap and tighten it with the chain in place.
3. Replace the air inlet plug and tighten it with the chain in place.
4. Confirm that the rupture disk assembly is intact.
5. Add a return seal on hatch cover and note seal number on Acid History Log
6. Store all hoses and couplings on the storage racks, clear of the siding and rail cars.
7. Check the general condition of the rail car, (ladders. Hand rails, platforms, etc.), and report any problems to the appropriate personnel.
8. Remove the wheel chocks and the warning sign.
9. Sign off on Acid History Log and notify the appropriate personnel that the car is ready for release.

ACID UNLOADING TEST

Name:_____ Date:_____
Trainer:_____

1) What is the most acid that can be in a storage tank and still safely hold another railcar?
   a. 14000 gallons
   b. 5000 gallons
   c. 25000 gallons
   d. 19000 gallons

2) Before connecting a railcar, make sure the wheels are:
   a. Locked and loaded
   b. Blocked or chocked
   c. Rocking and rolling
   d. Smooth and silky

3) Safety equipment is not required when obtaining a sample. T F

4) The maximum pressure to ever pressurize a railcar for any reason is:
   a. 10 psi
   b. 30 psi
   c. 15 psi
   d. 20 psi

5) You can neutralize acid spills with _____ .

6) The most important thing to make sure of before removing the dump cap is that the car is:
   a. Black
   b. Pressurized
   c. Hooked up
   d. Depressurized

7) When should you check you lines?
   a. Before Unloading
   b. After Unloading
   c. Both before and after Unloading
   d. What lines?

8) After the acid has unloaded and the alarm sounded, close the _____ valve and then depressurize the car.

9) Unloading Acid with a pump takes about _____ hours.

10) The acid tank graph on the Monitoring System can be used to ensure acid is unloading properly. T F

TRAINING DOCUMENTATION

	EMPLOYEE	TITLE	SIGNATURE	DATE
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Certified Trainer_____ Date_____ Address _____

Revision Number	Revision Date	Revision Author	Revision Description
00	02/06/2006	PO	New Document
01	11/30/2006	PO	Added Safety
02	03/27/2007	JB	Added (5) Eyewash Station Check and (5) discharge pipe connection
03	09/11/2007	PO	Added acid unloading pump and updated for acid tank pump
04	09/29/2008	JB	Added: 1) Acid History Log 2)Checking hand break on car before loading 3) Cut off air when alarm sounds 4) Putting seals on car before releasing as empty