# STANDARD JOB PROCEDURE

**AREA**: Chlorine **PREPARER:** W. MEAUT

**DATE:** 3/17/97

**TITLE:** Cl2 Unloading **REVIEWER**: W. MEAUT

(Purging, Connecting, Etc.) **TECHNICAL:** N/A

**SAFETY:** N/A

**SJP NO:** 3.12.04 **APPROVER:** K. CHURCHILL

**NO OF FIGURES:** Forms 9219, 9220, and 9251

**DATE REVIEWER REVISER TECHNICAL SAFETY APPROVER**

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## Purpose:

The purpose of this SJP is to systematically lead technicians through the connecting, padding, unloading, purging and disconnecting of Cl2 railcars, so that is done to its safest potential.

**Safety, health, environment:**

Anytime (technician present or not) a railcar is connected, and the railcar angle valves are open the angle valve dome closers must be on the angle valve, connected to the air supply and armed. If dome closers are not available, the car cannot be unloaded.

This procedure is used in the DeLisle ISO 14001 Environmental Management System to achieve compliance with regulatory requirements.  **R33**

An air mask must be worn anytime a chlorine car is being connected or disconnected.

* When removing caps from stabbers
* While the plugs are pulled from the car angle valves
* When newly connected Cl2 cars are inspected
* When connecting a Cl2 car
* When disconnecting a Cl2 car
* When opening the angle valves on a Cl2 rail car
* Whenever there is an unusual situation with potential for loss of containment of Cl2

It is critical that the Cl2 Unloading system work as designed. Any work necessary to resolve a mechanical issue that may result in the possibility of releasing Cl2 to the atmosphere or exposing personnel to fumes should be considered a safety issue and a Safety A work order issued to immediately address it.

Ammonia lecture bottles. See SJP 3.04.02 for proper use.

* The purpose of leak detection gas is to locate slight Cl2 leaks. Ammonia reacts with Cl2 vapor forming a white cloud of ammonia salts. Advanced reaction between ammonia and dense Chlorine gas can result in ignition of the ammonia. Ammonia should not be exposed to concentrations of Chlorine which is light to moderate green in color.
* A full face negative pressure respirator (Ultra Twin), with appropriate cartridges, is (the minimum protective) required whenever the cylinder valve is opened.
* Never direct the discharge towards another person or oneself. It also reacts rapidly with moisture on and in the skin resulting in chemical burns.
* Do not discharge with the nozzle pointing downward. Hold the nozzle level or with the nozzle slightly higher than the opposite end of the bottle. This helps avoid liquid discharge.

In addition to the hazards and precautions identified in SJP 3.02.01 the following applies – Use Teflon coated bolts to ease movement and reduce corrosion.

The use of proper body position when removing liquid or pad air stabbers on Cl2 rail cars with a pipe wrench must be used, to prevent hand, wrist or ankle injuries.

* The pipe wrench must be square, and the jaws of the wrench should have a firm grip prior to trying to remove or install anunloading stabber.
* O2 bottles are available for emergency use, following Cl2 exposure. If O2 is used, report the exposure immediately to supervision. The exposed employee should seek immediate medical attention. The O2 bottle should immediately be refilled to capacity and a clean, new mask installed.

This procedure requires work near the moving ramp which is a do not touch machine safety exception. Use the ramp in complete conformance to these requirements:

* **Machine Energy Level:** Intermittent movement of hydraulic ramp
* **Potential Hazard:** Severe crush or amputation from pinch points
* **Safeguards Required:**
  + - Do not operate hand valve with personnel on gangway or vehicle
    - Never access the gangway or top of vehicle with hand valve in the up/stored position.
    - If the ramp will not rise with the hand valve in the up/stored position, discontinue use and contact maintenance immediately.
* **Handheld tools required for the DNTE**: Not applicable

**Quality:**

N/A

**Equipment Description:**

The equipment is described in SJP 3.04.01 and 3.13.01.

**Operating Instructions:**

**CONNECTING A Cl2 CAR:**

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|  | STEPS |  | DETAILS AND INFORMATION |
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| 1. | Inspect the railcar before spotting for unloading. | a. | Fill out the full tank car inspection sheet (Reaction form #9251 Chlorine railcar inspection)  **R34** |
| 2. | Obtain Form #9219 | a. | The check sheet is to be reviewed prior to connecting the first car. Make sure complacency does not become a factor and ensure every step is followed on every car. Complete a connecting a Rail Car unloading checksheet (**record all car numbers on the one sheet**) R30 |
| 4. | Obtain equipment.  ***SAFETY NOTE*:**  Personal PPE and 5-min Combo Unit | a. | The equipment recommended to connect a chlorine car includes pipe wrench, liquid & paste Krytox and ammonia lecture bottle. |
| 5. | Notify and obtain safety standby person. | a. | A safety standby person is required to be present before performing work on breaking union connections, removing angle valve plugs, removing flex hose plugs, when newly connected Cl2 cars are checked out with Cl2 vapor and when opening car angle valves. Anytime an air mask is being worn |
|  |  | b. | The standby person will be positioned at ground level at a safe distance, such that a potential fume release from the work area will not affect their ability to take necessary action. |
|  |  | c. | The standby person will have a 30 minutes MSA air pack ready (need not be strapped on) but at arm’s reach and in view of person(s) working on the Cl2 equipment. |
|  |  | d. | The standby person has two duties. The primary duty is to inform others (by radio/phone) that there is an emergency. The second duty is to wear an MSA pressure demand 401 air mask and start rescue procedure when backup arrives |
| 6. | Test safety shower. | a. | Test the safety shower and eye wash station prior to connecting cars at each car-spot. Log on check sheet. (Daily Safety Shower/Eyewash check sheet acceptable if  made prior to connecting car.) |

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| 7. | Lower walk-way. | a. | Lower the walkway using the air operated valve then leave the valve in the neutral position. The walkway handrail should fit the car handrail, leaving no dangerous gaps. There should minimal elevation change between the ramp and the car platform. To ensure the elevation matches the ramp the support chains may be adjusted up or down. Be sure the hand brake is set, and the northeast wheel is chocked on track 4 and southeast wheel is chocked on track 5. |
| 8. | Open dome lid. | a. | Break the seal on the dome latch pin, remove the pin, and swing the lid back. Watch for pinch points. If the seal is broken or missing, note that on the railcar inspection sheet and notify your supervisor. |
| 9. | Check valves. | a. | Check all valves on spot to be connected for closure. |
| 10. | Check that liquids Cl2 and Pad air flex hoses are venting to the Cl2 Vent Scrubber. | a. | Verify N2 and Cl2 pressure gauges are operational. The flex hoses should be depressurized and vented to Cl2 Scrubber System prior to removing the stabber caps.  Should the lines indicate pressure, the source must be identified and addressed before breaking and proceeding with connecting the railcar. |
| 11. | Employ combo air mask. | a. | A combo air mask must be worn by the person performing work while connecting the chlorine car, from removing the plugs to connecting the Hi-Lo couplings and pressure checking the lines. When newly connected Cl2 cars are checked out with Cl2 and when opening car angle valves. |
|  |  | b. | Connect the combo air mask and test it. Position the airline hose such that it does not block or will not interfere with escape or rescue. |
| 12. | Check angle valves. | a. | Using an approved valve persuader, check to see that all angle valves are closed securely. |
| 13. | Loosen pad N2 plug. | a. | Loosen the plug in the vapor angle valve, which is located nearest, the car-spot perpendicular to the length of the car. DO NOT REMOVE THE PLUG COMPLETELY. |
|  |  | b. | Check for Cl2, using the ammonia bottle. Tighten plug if Cl2 is present. NOTIFY YOUR SUPERVISOR IF Cl2 IS PRESENT. |
| 14. | Loosen one liquid plug. | a. | Loosen either liquid angle valve plug, which are parallel to the length of the car, but do not remove the plug. |
|  | **NOTE:** Always place ammonia bottle with neck facing up so it will not freeze. | b. | Check for Cl2, using ammonia bottle. This should be done as you are removing the plug and not after the plug is removed. For example, place ammonia bottle that is open slightly near plug that is to be removed and slowly remove plug. Tighten the plug if Cl2 is detected and contact your supervisor. |
| 15. | Loosen other liquids plug. | a. | Repeat step 13A and 13B for the other liquids angle valve plug. |
| 16. | Remove all plugs and check with NH3. | a. | If no CL2 is present, remove the plugs from the two liquids angle valves and the pad N2 angle valve. If the plugs are not secured with a chain, locate the plugs such that they will not misplaced. |
| 17. | Remove Cl2 and N2 stabber caps  The caps should remain secured to the handrail with 3/16” galvanized safety chain and ¼” galvanized shackles. | a. | Verify with the pressure gauge that the flex hoses have been depressurized.  Ensure that the bleed valves to the Cl2 vent scrubber are open. |
|  | If the cap is hard to remove it may be an indicator of pressure on the hose. Check the pressure gauge. | b. | The hose should remain in the hanger and secured while removing the Hi-Lo seal plug |
|  |  | c. | Stand to the side of the stabber before removing the plugs to remove you from the line of fire. |
|  | Remove the Hi-Lo seal plugs from the Cl2 and N2 unloading stabbers. | d. | Loosen the plug and check with the ammonia bottle. If clear remove the plug. |
|  |  | e. | Repeat 16d for the other two plugs. |
|  |  |  | Verify that there is no leakage by checking with ammonia near the end of the hose. |

**NOTE:** It is extremely important to connect the pad N2 piping from the car-spot to the proper vapor angle valve and the liquid piping from the car-spot to the proper liquids angle valve. If the lines were cross-connected by mistake, a severe accident could result.

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| 18. | Install pad N2 and liquid Cl2 stabbers. DO NOT USE FEET TO TIGHTEN THE STABBER it will damage the threads and decrease the life of the stabber.  The car spots use the threaded couplings for the car connections. The stabbers should be tightened by applying the pipe wrench to the pipe coupling on the stabber. | a. | Pad N2 stabbers are straight 1” pipe threaded on the end that screws into the pad N2 angle valve. The opposite end is fitted with a female threaded union. The stabbers are one inch pipe threaded on one end with the opposite end fitted with a male threaded union for connection to the liquid and pad N2 lines.  Coat stabber threads with paste Krytox. Do not use any grease or anti-seize on threads. Then insert the pad N2 stabber and liquid Cl2 stabbers into angle valves. Tighten stabbers carefully by hand until hand-tight. Tighten the stabber securely using the proper wrench only. Do not use foot to tighten stabber. |
|  |  | b. | Inspect stabber. There must be a minimum number of workable threads on the stabber so that 2 threads are showing after the stabber is installed. If not, replace with a new stabber. If threads are still not showing, contact your supervisor. The car may have to be returned. |

SAFETY NOTE: Proper body position is very important when installing liquid and air stabbers, see safety section for detail on body position.

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| 19. | Connect Cl2 unloading hoses and pad Nitrogen hose. | a. | Inspect the O-ring for damage, ensure that there is no debris on the O-ring or seat, clean and replace if necessary. Lightly coat the O-ring with liquid Krytox. Do not apply Krytox or any type of lubricant to the threads on the union.  Thread the female side connected to the hoses to the male side on the stabber and tighten hand tight.  DO NOT USE A WRENCH.  It is important that the coupling not be twisted while connecting as this may decrease the life of the O-ring  See attached illustration on page 13 |
| 20. | Check connections. | a. | All couplings should be clean and tight. |
| 21. | Pressure checks hoses and connections for leaks with N2 only. | a. | Close N2 and Cl2 bleed valves to the Cl2 Vent Scrubber. Open pad and purge N2 M/V’s to pad up flex hoses. No leaks present bleed N2 and Cl2 hose down to Vent Scrubber. At this time PPE can be relaxed. |

**NOTE:** When the pressure test has failed on the hoses and sections must be removed for change out, the technician must wear PPE assuming the potential for residual material in the hose and communicate accordingly the importance of this change. The hoses must be bled down prior to removal.

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| 21. | Close dome. | a. | Shut the dome lid but do not latch, watch for pinch points while lowering the heavy dome lid. |
| 22. | Housekeeping. | a. | Clean up the platform and returning to storage all equipment. |

**PADDING AND UNLOADING A Cl2 CAR:**

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|  | STEPS |  | DETAILS AND INFORMATION |
| 1. | Notify and obtain safety standby person. | a. | Refer to Steps # 5 under connecting a Cl2 car section. |
| 2. | Employ combo air mask. | a. | Refer to Step # 11 under connecting a Cl2 car section. |
| 3. | Check couplings. | a. | Visually check all piping to properly insure it was connected. All connections should be tight. |
|  |  | b. | Check to ensure that all pad N2, liquid, and bleed-off valves are closed completely. |

**NOTE:** All newly connected or repaired Cl2 piping or equipment will be pressure tested using Nitrogen and leak test with Cl2 vapor (never Cl2 liquid). The vapor presents a smaller risk and is much easier to dispose of should a leak be detected.

When opening angle valves on a car, open the valve all the way and then back off ¼ of a turn. This will prevent the valve from getting locked up and allow the dome closer to work better.

Do not loosen packing before opening the valves.

If packing needs to be tightened to stop a leak, note it on checksheet 9046 and specify A-end or B-end of the car.

If there is a leak in a valve, supervisor, raw materials and suppliers should be notified ASAP. If the leak can be stopped by putting the plug in this is the preferred way, if a cap is needed put it on. Red Tag the car and move it to the side until supplier or DOT addresses problem. Stop the leak by replacing the plug or capping the valve. Then unload car, if it can be done safely.

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| 4. | Test liquid and pad N2. | a. | Have a control room technician grant a “permit” to open the automatic chlorine valve at the car spot being tested. |
|  | **NOTE:** When checking for Cl2 leaks use ammonia bottles and always verify the leak and the source it is coming from. Once the leak is identified appropriate action must be taken to correct the problem. | b. | Open the M/V to the Cl2 header being used as the purge header until the pressure increases to that of the purge tank. Then close M/V to the purge header.  Check all connections for Cl2 leaks using ammonia lecture bottle. See SJP 3.04.02.  Then open the purge N2 M/V to the Cl2 liquid hoses momentarily to pressurize the line. Close the N2 valve.  Check all connections for Cl2 leaks using ammonia lecture bottle. |
|  |  | c. | If leak is detected, proceed to section of leaks step # 8. |
| 5. | Padding and unloading car. | a. | If the Cl2 headers are in use and Cl2 is being transferred, the car can be padded and unloaded in a routine manner. |
|  |  | b. | With all liquid and N2 angle valves closed, open the Pad N2 Manual valve. |
|  |  | c. | Open the pad N2 angle valve until the valve is fully open and then close back ¼ of at turn. and allow the car to “pad up” to approximately 150 psi pressure. Check for CL2 leaks using an ammonia bottle. |
|  | **NOTE:** When checking for Cl2 leaks use ammonia bottles and always verify the leak and the source it is coming from. Once the leak is identified appropriate action must be taken to correct the problem. | d. | Slowly open one liquid angle valve until the valve is fully open, then close back ¼ of a turn. Check for Cl2 leaks using an ammonia bottle. |
|  |  | e. | Slowly open the other liquid angle valve until the valve is fully open, then close back ¼ of a turn. Check for Cl2 leaks using an ammonia bottle. |

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|  | **Never close the overhead N2 supply valve to the carspots while unloading.** | g. | When no leaks are detected combo air mask can be removed. Standard personnel PPE and acid goggles must be worn when operating Cl2 valves. Open the manual valve to the selected unloading header VERY Slowly. Be certain that the valve to the purge header is closed. Open valve to selected unloading header wide open. Verify N2 purge manual valve is closed. |
|  | **SAFETY NOTE:**  All Cl2 manual valves during unloading should be wide open. Manual valves could restrict flow and if line failure occurred the excess flow valves on the railcars may not set and stop a Cl2 release. | h. | Contact Control Room Technician if excess flow valves rattle or seat, storage tank pressure is too low, and tank car pressure is too high. After increasing storage tank pressure, unseat ball checks and slowly open valves to the unloading header again, until fully open. Storage tank pressure must be maintained at the right pressure so that Cl2 cars will unload at maximum rate without seating the ball checks. |
| 6. | Check Cl2 flow. | a. | By feeling the liquids hoses, you can verify that Cl2 is being transferred by the reduced temperature of the hose and the slight vibration. |
|  | CONNECTING/DISCONNECTING EMERGENCY  Cl2 DOME SHUTOFF VALVES  NOTE: THIS PROCEDURE IS DONE AS SOON AS THE CAR IS PUT ONLINE OR PADDED UP. | | |
|  | Place the three automatic air operated valves on top of each angle valve with studs in valve handle holes and attached to the dome. | | |
|  | Connect each flex hose to the three air operated valves. | | |
|  | Connect the main air hose to the manifold sending pressure to all automatic valves. | | |
|  | Check position of electronic eye for contact with car. (Light will blink when the eye is in contact). | | |
|  | Set the north or south track “armed” switch to the “ON” position.  Note: Whenever either side is tripped, both sides must be reset, even if one car has never moved or tripped**.** | | |
|  | The emergency dome shutoff system is now ready to operate. | | |
|  | After the car is unloaded activate the nitrogen side of the dome closer. | | |
|  | After the car is purged & the lines are cleared by purging back into the car with N2, Activate the chlorine side of the dome closer. | | |
| 8. | If leak is detected. | a. | Close 3” manual valve and automatic valve on the unloading header to storage. |
|  |  | b. | Purge the liquid Cl2 section with pad N2 back into the car for 2 min. Then close the remaining 2 liquid angle valves on top of the car by activating the dome closures. Make sure all valves are closed. Bleed the lines down slowly to the Cl2 vent scrubber. |
| 9. | Repair leak. | a. | If the leak can be repaired tightening a union, do so immediately. |
|  |  | b. | If a hose or stabber is leaking, replace the piece and notify your supervisor. |
|  |  | c. | When the leak is repaired, repeat step #18(Connecting Cl2 hoses & pad N2 hoses). |

**PURGING A Cl2 CAR:**

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| 1. | Complete unloading car. | a. | Cars must be completely unloaded before being prepared for shipment back to the vendor. As the car goes empty, the liquid level above the internal dip tubes gradually decreases until the N2 blows through. This will cause the storage tank pressure to increase (or slow down if multiple cars are being unloaded). The excess flow valve on the car angle valves may lift which would result in a slight pressure decrease. The Control Room Technician will notify you when a car goes empty. |
| 2. | Close valve to unloading header. | a. | Close the 3” M/V to the header used as the liquid unloading header. Be certain the valve is closed completely. |
| 3. | Open purge header valve.  **SAFETY NOTE:**  All Cl2 manual valves during purge must be wide open in case of line failure so the excess flow valves on the railcar will seat and stop Cl2 flow. Throttling manual valves is NOT permitted. Control Room Operator will see an increase in the purge tank at the beginning of the purge. When the purge is complete, purge tank pressure will return to original pressure. Purge tank weight should not increase. | a. | Open the M/V to the line selected as the purge header. Open this valve slowly to avoid lifting the excess flow valve. The purge header will remain open to the storage tank selected as the purge tank. See SJP 3.07.01. for start-up of Cl2 Storage Tank.  The N2 pressure in the car will help evaporate the Cl2 heel as it bleeds down through the dip tubes. Allow the car to bleed down until the pressure has equalized with the purge tank. Check with Control Room Technician to see that purge is complete. |
| 4. | Close pad N2 angle valve. | a. | After car is verified to be empty. Activate dome closer to close pad N2 angle valve on car. Use the persuader to be certain the valve is closed completely. After angle valve is fully closed, close N2 supply manual valve. |
| 5. | Stop purge. | a. | Close the 3” manual valve to the purge header. |
|  |  | b. | Open the N2 purge valve at the unloading spot. |
|  |  | c. | Ensure both liquid Cl2 angle valves are open. |
|  |  | d. | Let N2 blow for about 3 or 4 minutes into car. Activate dome closer to close 2 liquids angles valves. Use persuader to close them completely. |
| 6. | Bleed-off pressure. | a. | Open the downstream pad N2 line bleed valve and then open the upstream valves until fully open to the Cl2 vent scrubber. |
|  |  | b. | Open the liquid line downstream bleed valve. Open the upstream valve until fully open to the Cl2 vent scrubbed. |
|  |  | c. | Allow pad and purge N2 to sweep the bleed lines to the vent scrubber for 3-4 minutes then close N2. The Cl2 bleed valves should remain open and the N2 bleed valve should be closed |

**DISCONNECTING A Cl2 CAR:**

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|  | STEPS | |  | DETAILS AND INFORMATION |
| 1. | Obtain form #9220 | | a. | The check sheet is to be reviewed prior to disconnecting the first car. Make sure complacency does not become a factor and ensure every step is followed on every car. Complete a disconnecting a Cl2 Railcar Checksheet (**record all car numbers on the one sheet**)  . |
| 2. | Gather equipment.  **SAFETY NOTE:** Personal PPE and 5-min Combo Unit | | a. | The recommended equipment for this job is a pipe wrench, flex hose plugs, comb air mask and line and ammonia bottle. |
| 3. | Employ combo air mask. | | a. | Connect the combo air mask and test it. Position the airline hose such that does not block or will not interfere with escape or rescue. A combo air mask must be worn by the person performing work while disconnecting the chlorine car, from disconnecting the Hi-Lo couplings to installing the angle valve plugs and sealing the dome. |
| 4. | Notify and obtain safety standby | | a. | Refer to Step 5 of the CONNECTING A Cl2 CAR section. |
| 5. | Check valves. | | a. | Check for closure of all four angle valves on car dome and all manual and automatic valves on car spot. |
| 6. | | Break threaded couplings. |  | **NOTE:**  No partially connected railcar should ever be left unattended at any time. |
|  | | **NOTE:** When checking for Cl2 leaks use ammonia bottles and always verify the leak and the source it is coming from. Once the leak is identified appropriate action must be taken to correct the problem. | a. | Disconnect both liquid chlorine hosesand the pad N2 line on the car dome end by loosening threaded unions Check with ammonia for Cl2 leaks. If there is a Cl2 leak, tighten all unions. Repeat purge (Step 5d) If this does not stop the leak, a valve is probably leaking. Write a Safety “A” Priority Work Order and report to supervisor and hang DO NOT operate tag on Carspot stating that there is a leaking valve on Carspot. |
|  | |  | b. | Remove debris from the O-ring and seat. |
| 7. | | Hang the hoses. | a. | Hang the hoses on the ramp using the brackets on the east and west sides for the Cl2 hoses and the bracket on the front side for the N2 hose. Secure in bracket. |
| 8. | |  | b. | Install the Hi-Lo seal plugs into the hose ends hand tight. |
| **SAFETY NOTE:** Proper Body Position is very important when removing liquids and pad air stabbers, see safety section for detail on body position. **R34** | | | | |
| 8. | | Remove the stabbers. | a. | Unscrew the stabbers from the angle valves. |
|  | |  | b. | Inspect stabber threads. |
|  | |  |  | Verify that the Cl2 bleed valves are open to the scrubber and the N2 bleed valve is closed. |
| 9. | | Replace plugs. | a. | Verify angle valve has fully sealed by checking with ammonia. If chlorine leakage is detected, attempt to further close the valve. |
|  | |  | b | Clean the plug and valve threads of any rust or residual thread dope |
|  | |  | c. | Apply fresh coating of paste Krytox on plug threads and carefully install into the angle valves, starting by hand. |
|  | |  | d. | Tighten all four plugs securely using a 24” pipe wrench. Remember, there is usually up to 500 pounds of Cl2 heel remaining in each car at about 60 psi and the car must travel in the public rail system. It is important that these plugs be replaced tightly to insure a good seal. |
|  | |  | e. | Chemours and releasing Technician are responsible for car shipment until it reaches its next destination. |
| 10. | | Close dome cover. | a. | Swing the dome cover down and insert the latch pin and install the supplied cable seal. Be sure the cover is secure.  At this time the PPE can be relaxed. |
|  | |  | b. | Watch for pinch points. |
|  | |  | c. | If cable seal is not supplied. Replace with a Chemours replacement seal and write the seal number on the paperwork. |
| 11. | | Raise the ramp | a. | Using the air operated valve raise the ramp and the leave the valve in the up/stored position. |
| 12. | | Housekeeping. | a. | Store all tools from Step 1 in the Cl2 storage box. |
| 13. | | Prepare car for release. | a. | See SJP 3.10.01 for inspection. |

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Installation, Operation, Maintenance Instructions for Chlorine Service

Operation

* Check to insure the Viton A® O-ring is seated properly in the male end of the coupling
* Thread the hose end onto male end
* NO TOOLS are needed for this operation – HAND TIGHT ONLY

Diagram 5

Hilo Seal Coupling connecting Hose to Stabber pipe.

### **REVISION DETAIL SHEET**

**DATE** **REVISION #**

8/26/17 R34

6/12/17 R33

**REVISION SUMMARY:**

R34 Revised to reflect us of the area railcar inspection check sheet and revised directions to plug the hose ends

R33 Added statement about complying with ISO 14001

**DELETED REVISIONS OLDER THAN THREE YEARS:**

R29, R30, R31, R32