

# STANDARD OPERATING PROCEDURE

CPF

SOP No: 011-CPF

SOP Title: Crane Loading/Offloading

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## 1. PURPOSE

- This procedure is a guideline on the proper way to safely offload and load equipment from a truck/vessel and/or set equipment on a landing zone. Employees at BBGCI will use this as a guide to help them perform their duty in a safe and productive manner.
- BBGCI will be in compliance with all government regulations as well as regulations set forth by our clients.

## 2. INTRODUCTION

- BBGCI understands that all jobs are different. This SOP is set in place as a guideline to help employees understand the proper procedure to follow when undergoing a crane operation of loading and offloading equipment for facility construction.

## 3. SCOPE

- This procedure has been set in place for BBGCI crane operators, spotters and riggers who will be assisting in loading and offloading of equipment for facility construction.

## 4. DEFINITIONS

- Qualified Rigger- A BBGCI employee who has a certificate in good standing with API RP 2D requirements and has extensive knowledge, training and experience.
- Line of Fire- The path of a moving object that can potentially injure or the potential path of an object that may move
- Buffer Zone- The area where operation occurs that is deemed not safe for unauthorized personnel or equipment.
- Landing Zone- The area where the load will be set.
- Critical Lift- means a lift that (1) exceeds 75 percent of the rated capacity of the crane or derrick, (2) requires the use of more than one crane or derrick, or (3) is considered a non-routine lift.
- Crane Operator- BBGCI employee who has a certificate in good standing with company requirements and has extensive knowledge, training and experience.
- NCCCO – National Commission for the Certification Crane Operators, a nationally recognized crane operator certification.
- PIC- Person in Charge
- VRU- (Vapor Recovery Unit) A large vessel designed to recover Vapor. It is used in the chemical process industry to remove and recover vapors from storage tanks.
- Heater Treater – Vessels which are used in the oil/gas industry to help facilitate oil/water separation by speeding up emulsions separation through applying heat.
- Separator- a large vessel designed to separate production fluids into their constituent components of oil, gas, and water.
- Flair- A device in Oil and Gas industry facility to burn off excess or unwanted gas.
- Storage Tank- Large vessel used to store produced oil and/or waters

## 5. RESPONSIBILITIES

### Qualified Crane Operator (NCCCO Certified)

*(Equipment includes: Crane)*

*NOTE: The Crane Operator is the PIC once the loading/off-loading process begins. It is their responsibility to stop the operation if proper procedure is not being followed or if he/she believes there is a safer more efficient way to perform the operation.*

- Obtain proper permits and fill out JSEA and other lifting forms (Crit. lift ect... and any other forms required by client)
- Participate in the tailgate meeting and JSEA and review 12 questions to safe lift.
- Ensure that all supporting employees know that he/she is the lead in the operation.
- Fully understand the scope of work and all the hazards involved in his/her job duty.
- Ensure all employees involved fully understand the sequence of loading/unloading equipment and that all employees understand the hazards associated with it.
- Perform a documented Crane inspection and document any non-conformities before use. Depending on the severity of the non-conformity will result in the use or tag out of the equipment.
- Ensure he/she has an accredited crane operator certification that is in good standing.
- Ensure the crane is the right piece of equipment for the job at hand.
- Ensure that all rigging is in good condition and marked with proper labels and tags and that rigging certification paperwork (in required) is on hand and in good standing.
- Establish good communication with riggers and supporting personnel (spotters) at all times.
- Ensure barricades are in place with proper labelling if applicable (Crit. lifts ect...)
- Ensure persons not involved in the load out are out of the buffer zone and a safe distance away from all operations.
- Commence work and maintain safe operations.

### Qualified Spotter

- Attend/ participate in tailgate meeting and JSEA.
- Establish good communication with all supporting personnel involved in the lift including the customers.
- Guide trucks to desired location so the loading/off-loading process can begin.

- Keep unauthorized personnel away from the work area and buffer zone at all times.
- Monitor for any unexpected hazards that could potentially endanger employees.
- Be aware of traffic and pedestrians and make sure the equipment operator knows when equipment or a vehicle is approaching.

NOTE: If client requires, spotter will be equipped with a highly visible reflective vest.

#### Qualified Rigger

- Attend/ participate in tailgate meeting and JSEA.
- Fully understand the scope of work and all the hazards involved in his/her job duty.
- Establish good communication with all supporting personnel and ensure all parties understand the communication method.
- Ensure all unauthorized personnel away from the buffer zone at all times.
- Ensure he/she is a certified rigger prior to beginning operations.
- Ensure the proper rigging equipment is being used for the job.
- Inspect the rigging equipment for deformities prior to operations.
- Ensure the rigging equipment is in date with a legible tag and if applicable has appropriate certification paperwork available onsite for review.(Eg. Pull Test certification)
- Ensure taglines are the proper length and are being used properly.

## **6. SPECIFIC PROCEDURE**

#### Loading/ Offloading Equipment

*(Personnel Involved: Crane Operator, Qualified Riggers, Spotters and Support Personnel)*

1. JSEA and tailgate meeting will be conducted with all involved employees prior to any operations.
2. Spotter will assist truck in getting in the proper location and secure before loading/offloading operations begin.
3. The qualified NCCCO Crane Operator will perform a documented inspection on the crane being used for the lift.
4. The qualified rigger will begin to pick out and inspect the rigging equipment that was discussed in the JSEA and tailgate meeting.
5. Once the buffer zone is free of any unauthorized personnel and the landing zone is also clear, the qualified rigger will coordinate with the crane operator to hook up the load.

6. The qualified rigger will then attach a tagline to the load and assist the crane operator with loading/offloading operations using hand signals or other approved communications methods.

#### Setting VRU

*(Personnel Involved: Crane Operator, Spotter, Qualified Rigger, and Support Personnel)*

1. Before work can commence, properly complete all JSEA's and work permits. Conduct safety tailgate meetings, equipment inspections, and also fill out any Client required forms or questionnaires.
2. Verify equipment placement location is within specification and also that landing area is level and free of debris.
3. Ensure equipment inspections will be completed by qualified personnel
4. Establish the scope of work, and ensure everyone knows their specific job duty.
5. Establish safe work area for crane taking into consideration swing radius and capacity as well as safe distances from any existing equipment.
6. Position truck and trailer in safe location for VRU to be offloaded. When truck is in position driver will be outside of cab at safe distance before lift can commence.
7. Using proper lifting devices, qualified rigger will begin to rig up to the VRU.
8. Spotter will maintain safe buffer zone and inform operator when it is safe to begin work.
9. Tag lines will be used to make sure load is stable and to make sure personnel are not in line of fire.
10. When VRU is lifted and clear of trailer. Driver will be directed to return to cab and move truck from lift zone following spotter directions.
11. VRU will be lowered closer to ground, and moved into place. When VRU is close to position and lowered within 6" of ground support personnel will position VRU while making sure all body parts are not in line of fire.
12. Spotter will make sure all personnel are out of line of fire before directing operator to lower VRU into place.
13. Lifting devices will be removed and stored properly.
14. Crane will be rigged down and removed from work area.

#### Setting Heater Treaters

*(Personnel Involved: Crane Operator, Spotter, Qualified Rigger, and Support Personnel)*

1. Before work can commence, properly complete all JSEA's and work permits. Conduct safety tailgate meetings, equipment inspections, and also fill out any Client required forms or questionnaires.

2. Verify equipment placement location is within specification and also that landing area is level and free of debris.
3. Ensure equipment inspections will be completed by qualified personnel
4. Establish the scope of work, and ensure everyone knows their specific job duty.
5. Establish safe work area for crane taking into consideration swing radius and capacity as well as safe distances from any existing equipment.
6. Position truck and trailer in safe location for Heater Treater to be offloaded. When truck is in position driver will be outside of cab at safe distance before lift can commence.
7. Using proper lifting devices, qualified rigger will begin to rig up to the Heater Treater.
8. Spotter will maintain safe buffer zone and inform operator when it is safe to begin work.
9. Tag lines will be used to make sure load is stable and to make sure personnel are not in line of fire.
10. When Heater Treater is lifted and clear of trailer. Driver will be directed to return to cab and move truck from lift zone following spotter directions.
11. Heater Treater will be lowered closer to ground, and moved into place. When the Heater Treater is close to position and lowered within 6" of ground support personnel will position Heater Treater while making sure all body parts are not in line of fire.
12. Spotter will make sure all personnel are out of line of fire before directing operator to lower Heater Treater into place.
13. Lifting devices will be removed and stored properly.
14. Crane will be rigged down and removed from work area.

#### Setting Separator

*(Personnel Involved: Crane Operator, Spotter, Qualified Rigger, and Support Personnel)*

1. Before work can commence, properly complete all JSEA's and work permits. Conduct safety tailgate meetings, equipment inspections, and also fill out any Client required forms or questionnaires.
2. Verify equipment placement location is within specification and also that landing area is level and free of debris.
3. Ensure equipment inspections will be completed by qualified personnel
4. Establish the scope of work, and ensure everyone knows their specific job duty.
5. Establish safe work area for crane taking into consideration swing radius and capacity as well as safe distances from any existing equipment.

6. Position truck and trailer in safe location for separator to be offloaded. When truck is in position driver will be outside of cab at safe distance before lift can commence.
7. Using proper lifting devices, qualified rigger will begin to rig up to the separator.
8. Spotter will maintain safe buffer zone and inform operator when it is safe to begin work.
9. Tag lines will be used to make sure load is stable and to make sure personnel are not in line of fire.
10. When separator is lifted and clear of trailer. Driver will be directed to return to cab and move truck from lift zone following spotter directions.
11. Separator will be lowered closer to ground, and moved into place. When separator is close to position and lowered within 6" of ground support personnel will position separator while making sure all body parts are not in line of fire.
12. Spotter will make sure all personnel are out of line of fire before directing operator to lower separator into place.
13. Lifting devices will be removed and stored properly.
14. Crane will be rigged down and removed from work area.

#### Setting Flair

*(Personnel Involved: Crane Operator, Spotter, Qualified Rigger, and Support Personnel)*

1. Before work can commence, properly complete all JSEA's and work permits. Conduct safety tailgate meetings, equipment inspections, and also fill out any Client required forms or questionnaires.
2. Preassemble the flair per manufacturer's specifications.
3. Verify equipment placement location is within specification and also that landing area is level and free of debris.
4. Ensure equipment inspections will be completed by qualified personnel
5. Establish the scope of work, and ensure everyone knows their specific job duty.
6. Establish safe work area for crane taking into consideration swing radius and capacity as well as safe distances from any existing equipment.
7. Verify weight of load to be lifted.
8. Position truck and trailer in safe location for flair to be offloaded. When truck is in position driver will be outside of cab at safe distance before lift can commence.
9. Using proper lifting devices, qualified rigger will begin to rig up to the flair.
10. Spotter will maintain safe buffer zone and inform operator when it is safe to begin work.
11. Tag lines will be used to make sure load is stable and to make sure personnel are not in line of fire.

12. When flair is lifted and clear of trailer. Driver will be directed to return to cab and move truck from lift zone following spotter directions.
13. The flair will be lowered closer to ground, and moved into place. When the flair is close to position and lowered within 6" of ground support personnel will position flair while making sure all body parts are not in line of fire.
14. Spotter will make sure all personnel are out of line of fire before directing operator to lower the flair into place.
15. Set the flair on base and tighten anchor bolts. Run guy wires and install igniters per client and manufacturer's specifications
16. Lifting devices will be removed and stored properly.
17. Crane will be rigged down and removed from work area.

#### Setting Storage Tanks

*(Personnel Involved: Crane Operator, Spotter, Qualified Rigger, and Support Personnel)*

1. Before work can commence, properly complete all JSEA's and work permits. Conduct safety tailgate meetings, equipment inspections, and also fill out any Client required forms or questionnaires.
2. Verify equipment placement location is within specification and also that landing area is level and free of debris.
3. Ensure equipment inspections will be completed by qualified personnel
4. Establish the scope of work, and ensure everyone knows their specific job duty.
5. Establish safe work area for crane taking into consideration swing radius and capacity as well as safe distances from any existing equipment.
6. Position truck and trailer in safe location for storage tank to be offloaded. When truck is in position driver will be outside of cab at safe distance before lift can commence.
7. Using proper lifting devices, qualified rigger will begin to rig up to the storage tank.
8. Spotter will maintain safe buffer zone and inform operator when it is safe to begin work.
9. Tag lines will be used to make sure load is stable and to make sure personnel are not in line of fire.
10. When the storage tank is lifted and clear of trailer. Driver will be directed to return to cab and move truck from lift zone following spotter directions.

**Note:** Use client approved procedure for offloading storage tanks from trailer and standing up the storage tank prior to being lifted and set in containment. Ex. Use of two cranes or use of the semi tractor's knuckle-boom for up-righting tank may be used if client approved technique.

11. The upright tank will be lowered closer to ground in landing area within containment, and moved into place. When storage tank is close to position and lowered within 6" of ground support personnel will position separator while making sure all body parts are not in line of fire.



12. Spotter will make sure all personnel are out of line of fire before directing operator to lower the storage tank into place.
13. Lifting devices will be removed and stored properly.
14. Crane will be rigged down and removed from work area.

#### Setting M/EEE Building and Generators

*(Personnel Involved: Crane Operator, Spotter, Qualified Rigger, and Support Personnel)*

1. Before work can commence, properly complete all JSEA's and work permits. Conduct safety tailgate meetings, equipment inspections, and also fill out any Client required forms or questionnaires.
2. Verify equipment placement location is within specification and also that landing area is level and free of debris.
3. Ensure equipment inspections will be completed by qualified personnel
4. Establish the scope of work, and ensure everyone knows their specific job duty.
5. Establish safe work area for crane taking into consideration swing radius and capacity as well as safe distances from any existing equipment.
6. Position truck and trailer in safe location for separator to be offloaded. When truck is in position driver will be outside of cab at safe distance before lift can commence.
7. Using proper lifting devices, qualified rigger will begin to rig up to the M/EEE Building and generators.
8. Spotter will maintain safe buffer zone and inform operator when it is safe to begin work.
9. Tag lines will be used to make sure load is stable and to make sure personnel are not in line of fire.
10. When M/EEE Building and generators are lifted and clear of trailer. Driver will be directed to return to cab and move truck from lift zone following spotter directions.
11. M/EEE Building and generators will be lowered closer to ground, and moved into place. When building is close to position and lowered within 6" of ground support personnel will position building while making sure all body parts are not in line of fire.
12. Spotter will make sure all personnel are out of line of fire before directing operator to lower building into place.
13. Lifting devices will be removed and stored properly.
14. Crane will be rigged down and removed from work area.

## **7. JOB RELATED HAZARDS**

- ***Slips, trips, and falls while:***

- Not inspecting equipment
- Climbing on/off equipment and trailer
- Uneven surfaces/rocks

- ***Pinch Points/ Line of Fire***

- Rolling trucks
- Miscommunication between operator/signaller and adjacent work crews
- Rigging equipment with bad hand placement
- Getting caught between load
- Not aware of Load Limits and failed rigging
- Improper rigging techniques
- Loose objects falling from heights
- Walking under suspended loads
- Walking in unauthorized buffer zones
- Overhead structures/power lines
- Severe injury from bad body placement while load is in air
- Congested work area

- ***Chemical Burns***

- Load not being secure

- ***Fatigue***

- Heat related illness

## **8. REQUIRED PPE**

- Hard hat
- Safety Glasses
- Gloves
- Steel Toe Boots
- Reflective Vest
- Fire Resistant Clothing (FRC's)
- Personal Gas Monitors

## **9. FORMS/TEMPLATES TO BE USED**

- JSEA

- Sling Inspection Forms
- Equipment Inspection Forms
- Permit Required Forms (if required)
- 12 Questions

## **10. INTERNAL AND EXTERNAL REFERENCES**

### **10.1 Internal References**

### **10.2 External References**