

# Developed Safe Work Practices and Performed Rescue Planning Operations for Vertical Column Work as part of the Turnaround activities in an offshore platform in Angola

Maximized efficiencies through continuous learning and improvement in the management of long term turnaround programs on offshore facilities

## Challenge

To rescue a crew member from inside a vertical column, if injured or incapacitated using only the 18" man way as retrieval access.

## Solution

Designed and performed demonstrations of a safe rescue procedure prior to the turnaround.

## Results

Safe work practices and rescue operation skills updated through trial runs and practiced rescue operations on the offshore platform.

A 60-day turnaround for an offshore facility gave United Safety and its customer an opportunity to improve emergency rescue operations skills. The turnaround required the opening, cleaning, inspection and repair of a vertical Deethanizer Column over 60 feet high and only three (3) feet in diameter. At the top of the column is an 18" diameter man-way, the only entry and exit point on the column which sits on the corner of the offshore platform, 52 feet above sea level. A Needs Assessment was done to identify the Scope of Work. This resulted in a challenge to come up with a plan on how to rescue a crew member from inside the column, if injured or incapacitated.

## KEY CUSTOMER BENEFITS

### Designed a safe rescue procedure prior to turnaround and updated the Confined Space Entry Plan.

Initially, the rescue crew were challenged to retrieve an injured person using only the 18" man way as the retrieval system needed to hang vertically and centered in the column. The original rescue procedure required the removal of more trays which would cause more work and potential risk to the injured crew.

After evaluating alternative scenarios and field testing, the rescue crews were able to develop a rescue method using only the 18" man way as a retrieval access without the aid of mountings inside the pipe. The rescue method was practiced several times allowing key personnel from the Construction, HSE and Turnaround teams to witness the rescue. This procedure is now included in the Confined Space Entry plan of the customer.

### Provided learning opportunities for crew members to upgrade their emergency rescue operation skills.

To verify if the work could be performed safely with a valid rescue procedure, the team fabricated a mock-up column to simulate one ring section of the column. The value of the mock-up for this unusual challenge became quite clear as good ideas on paper did not always work in reality. The mock-up section was fabricated onshore from a section of 36" pipe with 18" man ways and tray support rings.



Angola



This mock-up provided many benefits:

- Trial installation of one of the trays as would be performed in the field;
- Familiarity with the installation procedure by allowing trial runs;
- Verification of tray parts during pre-fitting and ensuring that dimensions of all necessary components are well-accounted;
- Allowed the crew to practice the rescue procedure over and over to gain mastery and to be prepared for an actual event.

#### **United Safety proves commitment to superior safety performance and the dedication to practice rescue skills for continuous improvement**

With practice, the rescue procedure was proven effective at retrieving a person through the 18" man way in the event of an emergency. United Safety proved that with support from the customer's facility engineers, the team could perform the job as required. The practice reduced time from the original schedule, and demonstrated that, if required, an injured person could be rescued in a safe and efficient manner.

Emergency response technicians took turns practicing the rescue procedure on the mock-up to ensure that all personnel can perform a safe and timely rescue at any time. The technique was nicknamed the "superman" rescue due to the arms forward position in which the injured worker would be extracted from the confined space.

#### **Proactive involvement of third party safety provider forged a strong relationship among the Construction, HSE and Turnaround teams.**

As a practice, United Safety rescue managers participate in weekly turnaround planning meetings. They volunteer their expertise and resources in solving complex problems faced by the customer. To accomplish this task, they met several times with different members of the rescue team to develop a suitable rescue procedure. Incorporating ideas from team members, a suitable rescue technique slowly evolved and was refined through the support and cooperation of the stakeholders.

