Section II: Schedule of Requirements

eSourcing reference: RFQ/2018/5586

**Technical Assessment Assignment**

**FSO “SAFER”**

Raes Issa Area - Al Saleef Directorate

Hodeida Governorate, Yemen

**-Terms of Reference-**

**Background**

* FSO SAFER is an old floating facility (ship) in all respect. The vessel was built in Japan in 1976 as an oil carrier for the benefit of Exxon Company under the title of “Esso Japan”. Upon its purchase by the Yemeni government in 1986, it was converted in Ulsan, Korea to a Floating Storage and Offloading unit (FSO) for receiving, storage and exporting crude oil. Since 1987 until this date (more than 30 years), the FSO has been anchored at the same position offshore Ras Issa, without being subject to any dry-docking or repair in a shipyard.
* Due to the current conflict in Yemen, the maintenance work on FSO SAFER has been halted completely, especially after the diesel fuel ran out. Given the numerous obstacles and challenges facing the SAFER Company, all staff members onboard had to be evacuated, and all maintenance work stopped, with the exception of keeping a few persons only for monitoring and undertaking the most critical and necessary tasks onboard.
* As a consequence thereof, the classification society American Bureau of Shipping (ABS) has withdrawn all certificates (some were valid until January 2018). The ABS inspectors due for the actual surveys onboard were not accredited access, this caused by the security situation in the area. As a result thereof, the FSO has lost the necessary documentation of condition and security required by the insurance companies to ensure adherence to the international standards of maintenance and safety.
* Prior to the current conflict, continuous maintenance works were undertaken on FSO SAFER to maintain its minimum status as a floating storage unit with internationally compliant specifications and certification. The FSO used to have access to two tugboats, to assist during approach, mooring and departure of export tankers, and undertake regular inspection and maintenance of the floating oil export hose at the stern, as well as a helicopter being used for transport of marine staff and transit of personnel between the FSO and the export tankers.
* FSO SAFER has been using diesel-fueled boilers to provide steam for cargo pumps and electric power generating sets, and to produce inert gas for the cargo tanks.
* FSO SAFER is currently partly loaded with approximately 1,148,000 barrels of crude oil. Due to lack of topping up the cargo tanks with inert gas, the cargo area, tank deck and near surroundings are considered subjected to hydrocarbon gases, and to danger for explosion/fire.
* Since the conflict broke out in 2015, the maintenance works have been halted and the two tugboats and the helicopter have been withdrawn. Following the run out of diesel fuel and lack of refueling, the boilers have stopped producing the protecting inert gas. The more than two years of negligence of general maintenance has further caused deterioration of the vessel and associated machinery, as well as the floating oil export hose, putting FSO SAFER in an environmental and economic risk that could seriously affect the neighboring countries at the Red Sea coast. .
* Specifications of FSO SAFER:
* Owner: SAFER company
* Location: Ras Issa area - Directorate of Saleef - Hodeida Governorate, Yemen
* Permanently moored through an omni-directional turret, equipped for tandem stern off-loading
* Length oa: 400 m (362 m excl. turret)
* Beam mld: 70 m
* Depth mld: 28.1 m
* Deadweight: 406,000 t
* Number of cargo tanks: 74 (not verified/ confirmed) Storage capacity of oil: 3,000,000 barrels.

Figure 1 Photos of SAFER Oil Flouting Tanker



**Purpose:**

The United Nations Office for Project Services (UNOPS ) is seeking to hire an international specialized company to undertake a technical assessment to analyse and present options, consequences and methodologies, and subsequently supervise works necessary, in order to safely pressurize the tanks with inert gas, and to bring the facility to a stage ready to safely extract the crude oil and empty the tanks of the FSO SAFER.

The work may be split in

1. Assessment of necessary engineering, maintenance and re-commissioning of the FSO’s equipment, including proposals for necessary potential modifications and provision of new equipment in order to plan, prepare and execute necessary operations and works for safely pressurizing the tanks with inert gas, and other works deemed imminent for the safety of people and the environment.
2. Assessment of necessary engineering, maintenance and re-commissioning of the FSO’s equipment, including proposals for necessary potential modifications and provision of new equipment, this in order to plan, prepare and execute necessary operations to make the FSO ready to safely transfer the crude oil stored on-board in safe and environment friendly manner.
3. Plan and supervise, in a technical capacity, works and operations defined under a) and b). This should include process descriptions taking into account health, safety and environmental concerns relevant and appropriate for operational context and on site capacities.

UNOPS intends to subsequently call for proposals for an international company/ operator to assist in executing the works on site

**Actions needed**

As a consequence of the situation, UNOPS is seeking to hire an international specialized company to undertake a condition assessment and present proposals for necessary actions needed for safely pressurize the tanks with inert gas to mitigate the risk of explosion, analyse and present methodologies and options for safely extracting the oil and emptying the tanks

This might include site inspections of FSO SAFER in order to assess its existing situation and condition, to survey and examine the status of its main and critical operating systems for hull and machinery with the purpose of understanding how to safely re-insert the inert gas, and at later stages how to extract the crude oil from the floating tanker.

**Objective**

The objective of this call for proposal service is to carry out an assessment with relevant legal, environmental, and health and safety aspects that will provide a sound basis for option(s) and action plan(s) for the crude oil extraction from the FSO SAFER at later stages, and to examine the potential environmental and economic impacts associated with each option.

The assessment should include necessary analysis work and undergo specific activities as follows:

1. Assess the existing situation and condition of the FSO SAFER floating by desk review or updated site information. Provide sound basis option(s) and action plan(s) for safely pressurizing the tanks with inert gas to mitigate the risk of explosion
2. Provide sound basis option(s) and action plan(s) for safe extraction of the crude oil; and
3. Present scope of work likely needed, including material estimates to conduct 2) above.
4. Provide clear procedures to be followed for the operations deemed likely to be necessary (at later stages) for safe extraction of the oil; and
5. Clearly incorporate health, safety and environmental concerns and mitigated actions in the above procedures
6. Quantify estimated associated costs of maintenance/modifications and operations necessary for each option and action plan.

**Scope of Work**

The scope of this request for proposal will include, but not be limited to, the following:

1. Legal and institutional assessment of FSO SAFER initially operating as an off-shore Floating Storage and Offloading vessel, including any legal and/ or financial implications for third parties vis-à-vis the relevant national legislations, laws and regulations;
2. Assessment of existing technical status and condition of FSO SAFER with emphasis of:
3. Condition of hull, especially integration of cargo and ballast tanks, turret mooring chain in splash zone, and sea chests (some of these assessments may require diver intervention)
4. Condition of machinery and equipment needed for provision of steam to pumps and generators, and exhaust for inert gas system, such as boilers with associated systems, sea water/fresh water cooling systems, inert gas system (scrubber, waterlock, P/V valves, etc.).
5. Condition of cargo pumps, ballast pumps, and el-generating sets
6. Condition of deck machinery, such as deck cranes and other hose handling gear, stern mooring hawser with associated handling gear
7. Condition of cargo and fuel oil piping with associated valves, including the stern offloading pipe on deck with handling gear for hose.
8. Condition of the metering system
9. Condition of floating hose for transfer of oil

The complications connected to site access versus the imminent need for actions to protect people and the environment need to be detailed in order to guide the sequencing and prioritization of assessment versus actions suggested under 2)

1. Technical Assessment of equipment needed to offload crude oil
2. Options’ Analysis and Comparison and preferred option(s) for offloading of crude oil
3. Suggested procedures to be followed for the maintenance work, and/or technical solutions, deemed likely to be necessary at later stage for safe extraction of the oil only; and
4. Environmental, Health and Safety Assessment and Draft Management Plans
5. Economic and Financial Analysis
6. Conclusion and Key Findings of overall assessment
7. Proposed Time-Bound Action Plan(s) for preferred option(s)
8. Recommendations for Future Considerations of the FSO

**Access to site**

Access to site will be facilitated by UNOPS, given that security conditions are acceptable and access deemed crucial. However, access can be provided to personnel very familiar with the tanker, and updated information and photo documentation can be provided on request.

**Deliverables/ Outputs**

Due to the situation at site, the progress plan, time line and deliverables is expected to be agreed with UNOPS project team on an ongoing basis. However, it’s expected that the company as a minimum shall prepare and submit the following deliverables to

|  |  |  |
| --- | --- | --- |
|  | **Deliverable** | **Target time** |
| 1 | Technical and Environmental Reports and Assessments | 30th August 2018 |
| 2 | Draft Final Report \* | 6th September 2018 |
| 3 | Final Report\* | 13th September 2018 |

\*The draft and final report should include, but not limited, to the contents stated in Scope of Work section.

**Proposal’s Minimum Requirements**

Technical Proposal:

* + - Experience of company
    - Experience of Team
    - Team and responsibilities of each member
    - Profile of each team member
    - List of similar projects and name of client for each project
    - Work plan, assessment approach and methodology
    - Accessibility of team members and stated time bound capacity plan

Due to the situation at site, this project will be expected to move as expediently as possible, only time delays acceptable are those originating from access to, and situation at, site.

**Expected qualifications of selected company**

* + - Extensive experience in field of oil/ crude transport and marine engineering and safety
    - Expertise in off shore oil terminals and/ or storage facilities/ tanker ships and off shore marine operations.
    - Experience and understanding of health and safety aspects as well as in marine and terrestrial environmental mitigation methods
    - Proven records of successfully undertaking similar projects