



Exploration & Production

GENERAL SPECIFICATION

Seismic Acquisition

GS EP GPA 203

Seismic HSE for Shallow Water and Transition Zone Activities

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Owner: EXPLO/TE

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1. Scope

1.1 Purpose

The purpose of this Shallow Water and Transition Zone Activities specification is to define the main Company HSE standards to be adhered by the Contractors.

These standards, based on IAGC and OGP ones ([OGP Report N°432](#)), concern the HSE minimum expectations and the specific requirements for each operation aspect.

1.2 Applicability

The following document is part of the Company Referential. It lays down the Company HSE requirements for seismic acquisition operations in shallow water and transition zone areas.

It is a contractual document in seismic operations and specifies the general standards of HSE exhibit (exhibit A).

Thus this specification is considered by Company as an applicable standard and shall be respected.

1.3 Safety regulations

When working in, and/or around Oil and Gas Field Installations whether belonging to Company or not, Contractor(s) is required to fully comply with all the Safety and Environment Instructions given by the Oil Field Authority, the Standing Instruction Manuals for Marine and Land Operations (if any) and all the related documents and procedures available with the Oil Field Authority Representative and/or with Company Representative.

In this particular situation, Contractor(s) shall observe the following requirements:

- Minimum Safety distances to all installations as defined in the Company's oil and gas safety manual and/or specific requirements such as in situ determination derived from particular methodology ("peak particle velocity").
- Safety inspection and briefing to be conducted before entering or approaching any oil and gas field installations.
- Permanent co-ordination with the Company's oil and gas field Logistics and/or Safety departments regarding the operations in progress (e.g. with regard to diving operations, rig moves...).
- Special care and supervision when working close to oil and gas field constructions and pipes.
- The implementation of any equipment on oil or gas field installations shall be considered as an operation in hazardous areas and shall be ruled under the Permit to Work system in force on site.
- Operations that involve cutting, welding or burning etc., within the perimeter of any field installations shall not be carried out without obtaining the necessary Permit to Work.
- Personnel H2S training, dedicated alarms (detectors), protective equipment (masks) and specific procedures when H2S risk is identified.
- Any other specific training when required.



2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the Contract.

Standards

Reference	Title
EN 396 – 150N Lifejacket	European CE standard covers 150N Lifejackets, providing a minimum of 15kg of buoyancy

Professional Documents

Reference	Title
OGP Report N°432	Managing HSE in a geophysical contract
OGP Report N°343	Managing Health for field operations in oil & gas activities
JNCC Guidelines	Guidelines for Minimising the risk of Disturbance and Injury to Marine Mammals from seismic surveys.

Regulations

Reference	Title
Not applicable	



Codes

Reference	Title
ISPS	International Ship and Port Security
SOLAS 74/78	International Convention for the Safety of Life at Sea
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships
Load Lines 1966	International Convention on Load Lines, 1966
COLREG	Convention on the International Regulations for Preventing Collisions at Sea, 1972
ISM Code	International Safety Management
FSS Code	Fire Safe Systems
OSV Code	Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels
2009 MODU Code	Code for the Construction and Equipment of Mobile Offshore Drilling Units

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP GPA 201	Seismic HSE for Marine Activities
GS EP GPA 202	Seismic HSE for Land Activities
GS EP LSO 202	Personnel transfer between watercrafts and between watercrafts and offshore structures



3. General

Vessel age minimum requirements :

Vessel type	Maximum age	Remark
Vessel converted to seismic purpose but built originally for other task ----- Chase boat – Support boat – Supply boat	20 years	Maximum age cannot exceed 20 years Vessels OVPQ (Offshore Vessel Particular Questionnaire) input in the OVID (Offshore Vessel Information Database) of OCIMF (Oil Companies International Marine Forum)
Vessel built for seismic purpose (including source vessel)	None	Hull less than 20 years old since built : to be inspected by Total Logistic Department (or specialist approved by Total Logistic Department) less than 24 months before mobilization ----- Hull more than 20 years old since built : to be inspected by Total Logistic Department (or specialist approved by Total Logistic Department) less than 12 months before mobilization and full history of vessel to be attached to Contractor's tender

For all vessels engaged in seismic operations, acceptance from Company will depend on an OVID inspection further input in the OVID (Offshore Vessel Information Database) of OCIMF (Oil Companies International Marine Forum).

As stipulate in **GS EP LSO 202**, transfer of personnel using basket shall be avoided as much as possible.

In case of Emergency, onshore and offshore procedures have to be applied accordingly, in addition the Project Emergency Procedure should define a crisis management system which allows having an overview of all the project activities.

4. Personal Protective Equipment

Please refer to the **GS EP GPA 201** for Marine Activities and the **GS EP GPA 202** for Land Activities, between this two area a specific safety assessment followed by a dedicated toolbox talk has to be held prior the operation.

When river(s), lake(s), swamp areas, etc. are present on the survey area, all field personnel shall be swim tested. Specific PPEs (Life jackets) shall be worn at all time when working on or near these obstacles. River crossing procedures shall be enforced.



A full complete set of PPE shall be provided to each visitor of the crew. This includes but not limited to: 100% cotton overall, helmet, goggles, ear protections, gloves and safety shoes.

Visitor means: Company Representatives, Auditors, Company Personnel from affiliate, and Company Personnel from Head Quarters and all Officials and any other person staying in the crew and visiting the operations.

5. Night working procedure

Working at night is not allowed for SW/TZ operations. In case of emergency requires boat movements, a permit to work based on the crew MOPO shall be set up. Any night activity is subject to Company representative on site approval.

6. Offshore Activities

6.1 Small boat operation

Please refer to paragraph 5 of [GS EP GPA 201](#) for Marine Activities.

6.1.1 Transfer of personnel

For the offshore part of the operation, please refer to paragraph 6 of the [GS EP GPA 201](#) for Marine Activities. From offshore to shore the same procedures for onshore operation shall be kept. Particular attention needs to be kept regarding the quality of the jetty or the ground prior transferring people.

6.1.2 Airguns and High Pressure Air Systems

Please refer to paragraph 7 of the [GS EP GPA 201](#) for Marine Activities.

6.1.3 Back-deck Marine Operations

Please refer to paragraph 8 of the [GS EP GPA 201](#) for Marine Activities.

6.1.4 In-Water repairs and maintenance

Please refer to paragraph 9 of the [GS EP GPA 201](#) for Marine Activities.

6.1.5 Closed approach and multi-vessel operations

Please refer to paragraph 10 of the [GS EP GPA 201](#) for Marine Activities.

6.1.6 Diving operation

Please refer to paragraph 18 of the [GS EP GPA 201](#) for Marine Activities.

7. Environment

7.1 General

As stipulate in the [GS EP GPA 201](#) and [GS EP GPA 202](#) ; in Shallow water and transition zone Company Environmental Standards and Concerns are of the utmost importance. Contractor(s) shall strictly abide to the Local Environmental Laws and Regulations, the IAGC and OGP recommendations and the Contract requirements.



Where required by the local Law and Regulations and/or by the local Environmental Authorities an "Environmental and Societal Baseline Study" (ESBS) and/or an "Environmental and Societal Impact Assessment" (ESIA) shall be conducted by Company before the start of operations. Copies of the ESIA are provided to Contractor(s) who is required to strictly observe the recommendations.

It is strongly recommended that the Contractor performs tests on seismic impact to fish and local fauna on the survey area or provide any evidence of similar studies in same type of environment. This could help the implementation of the ESIA recommendations.

With regard to marine wildlife, Company as a member of OGP/IAGC abides by the principle of precaution toward conservation of all marine mammals, including seals, whales, dolphins and porpoises. Therefore, in areas world-wide where these animals can be found, Company requests that Contractor applies mitigation measures during the seismic survey based on the procedures defined in the [JNCC Guidelines](#).

Please refer to paragraph 14 of the [GS EP GPA 201](#) for Marine Activities.

Please refer to paragraph 6 of the [GS EP GPA 202](#) for Land Activities.

7.2 Societal

In addition to the two paragraphs above, for shallow water and transition zone the societal approach requires particular attention:

- Contractor shall pay due regard to the neighboring Communities. He shall act responsibly demonstrating commitment to the health and safety of the neighboring Communities and shall take into consideration the socio-economic impacts of its activities.
- Contractor shall preserve the local living conditions, the existing economic activities, the cultural heritage and the accesses to natural resources. Contractor shall adopt a constructive attitude based on open dialogue with the stakeholders.
- Contractor shall protect the existing community infrastructures and services. In case of these are affected during operations, Contractor shall repair and/or reinstall them (roads, irrigation canals, agricultural lands, accesses to resources and energy...).
- Contractor shall maximize the opportunities for employment, training and capacity building to the benefit of the neighboring communities and shall develop an employment, recruitment and training procedure, in accordance with the Contract.
- Contractor shall develop a local supplier and procurement procedure, transparent, public, respecting national legislation. Contractor should contact local provider before the start of operation to maximize opportunities for local suppliers.

8. Journey Management System

Please refer to the paragraph 8 of the [GS EP GPA 202](#) for Land Activities.

9. Transport (Air-Land-Water)

Please refer to the paragraph 7 concerning land transport and paragraph 8 of the [GS EP GPA 202](#) for Land Activities, in addition, refer to the paragraph 11 of the [GS EP GPA 201](#) for Marine Activities.



10. Occupational Health and Medical Care

Please refer to paragraph 4 of the **GS EP GPA 202** for Land Activities.

Particular hazards in some areas (Malaria...) have to be defined and mitigation measures implemented as stated in the HRA (Health Risk Assessment).

11. Security

Please refer to paragraph 5 of the **GS EP GPA 202** for Land Activities.

Vessels have to comply with **ISPS** rules when submitted. An overall threat assessment in line with the project security plan built by the Contractor and validated by the Company Security Manager of the area has to include all parts of the project both for the offshore and onshore activities.

12. Living and Workshop area

12.1 Camps and field workshop

Please refer to the paragraph 9 of the **GS EP GPA 202** for Land Activities.

12.2 Houseboats

Houseboats have to be suitable located on sites considering access, internal movement, general safety and environmental aspects.

12.2.1 Accommodations

Please find below the minimum standards for the accommodation:

- Living quarters shall have high standards of sanitation and hygiene and sufficient for accommodate all personnel.
- Sufficient toilets, showers and washing facilities shall be provided for all personnel and shall be hygienically maintained.
- Recreation areas with recreational facilities like library, TV, video, radio cassette, sports shall be provided. Recreational activities shall be organized.
- All working areas and accommodations shall be provided with adequate lighting.
- Adequate catering shall be provided with a high level of hygiene concerning:
 - Food preparation and food storage areas
 - Eating area
 - Provision of meals
 - Provision of potable drinking water
- Smoking policy shall be restricted to the dedicated area. Alcohol is forbidden on worksite.
- House boats shall be gathered in camps alongside the river shore. The camp location shall be decided jointly by Party Chief and RSES on site.
- One mess/kitchen boat shall be assigned to each boat village/camp. The mess/kitchen boat shall be located on the river side (and not on the land side) of the village/camp.



- The mess/kitchen boat is the only place where cooking is allowed. Nevertheless, two rice cookers at maximum can be installed on house boat outside the mess/kitchen boat.
- POB shall be accommodated per dormitory. Two separate exits shall be made available per barrack room. Emergency exits shall be capable of being opened without the means of a key from the inside at all times. Bunks / beds shall be arranged, either longitudinally or transverse.
- A space of a minimum of one (1.0) meter wide shall be available down the centre of the barrack room as a thoroughfare if possible. In the event this width cannot be adhered, the crew HSE Advisor will assess the emergency escape route on board and refuse the boat if he considered unsafe. Bunks / Beds shall be provided with a suitably comfortable mattress and pillow. Each person accommodated aboard shall be provided with a proper space for the storage of personal belongings.
- The barrack room shall be provided with sufficient lighting in an enclosed housing; naked light bulbs are not allowed.
- Transversal/longitudinal inside compartments shall be separated by waterproof walls and closed by watertight covers.
- Valid barge certificate shall be available.
- Established tonnage capacity clearly marked.
- Barge properly grounded, securely anchored and moored.
- Barge shall arrive on operation site fully equipped and checked.
- Adequate hand rails all around the barge.
- Solid walkway tied or hooked on both ends, with handrails on both sides allowing safe access to barge.
- All floors covered with anti slippery material.
- Adequate electric lighting and a backup Generator.
- Electrical networks to standard and protected by ELCB.
- Generator Barge at the end of the string of barges.
- Two large capacity pumps available for capsize situation.
- Cement shall be available to fill in damaged compartment.
- Functioning bilge alarm system inside certain containers has to be set up.
- Building made of fire resistant material and paint.
- Maximum 1 person per 3 m², maximum double bunks, and cabins provided with lockers.
- Cabins should have adequate ventilation/cooling/heating/lighting.
- Windows screens to be installed.
- At least one shower and one toilet for every group of 15 persons should be installed.
- Recreation area, sport and fitness room should be installed.



- Black waters stored in septic tank and Black and Grey waters treated before being thrown back.
- Effluents analysed regularly to comply with local standards.
- First aid kits available - access to doctor within 1 hour.

12.2.2 Lifesaving appliances

Appropriate life saving and floatation devices provided (life rings & buoys). Life jacket accessible at all times.

Life jackets should meet at least [EN 396-150N](#) standard (capable of righting (face-up) an unconscious person in the water) and shall be provided for every person to be accommodated onboard. Clear instructions for their use shall be posted in the barrack room and recreation areas. Life jackets shall be stored at each berth in a suitable rack or container and clearly marked on the general arrangement plan. Additional number of lifejackets (at least 25% of the total POB) shall be stored in a suitable container in the recreation area.

A clearly defined muster area shall be established, preferably onshore directly adjacent to the vessel's gangway. Ladder for a man overboard to climb back on board and sufficient boats have to be made available for emergency evacuation.

Emergency plans are to be provided in the recreation area and barrack room giving clear instructions regarding the location of the muster point, alarm signals and action to be taken in the event of an emergency.

Smoke detectors shall be fitted throughout the vessel and in particular in the barrack room that complies with the manufacturers coverage limitations.

A portable carbon dioxide (CO₂) or dry powder fire extinguisher (not smaller than 9 kg or larger than 13.5 kg) shall be available at each exit.

Fire extinguisher operating instructions, in local language, shall be available either on the device or posted close to its storage point.

The houseboat shall be provided with a general alarm signal system that is clearly audible in all areas of the houseboat and a sprinkler or hose reel fire system, smoke detectors in each cabin (If no sprinkler system).

All houseboats shall be fitted with a rope from "bow" to "aft" to prevent falling into water. This rope on either side of the boat shall be absent at the place where boat to boat transfer is to be done (avoiding to bend under the rope when passing from one boat to another).

When possible, due to boat shapes, adequate gangway of a minimum width of sixty centimetres (60 cm) with hand rails shall be set between boats. They have to be regularly inspected.

A vessel general arrangement plan shall be provided in both the barrack room and the recreation area clearly identifying escape routes and the location of emergency equipment.

Marine channel shall be available 24h a day on each house boats.

A dedicated advanced first aider (OGP profile, refer to [OGP Report N°343](#)) shall be mobilized and full time present on each village of house boats and he shall also act as a HSE correspondent. In that role; he is responsible on hygiene, safety and environment preservation aspects. He shall perform the new arrivals briefed on procedures.



He shall attend the specifics training and a specific Job ticket has to be defined by the RSES, prior his mobilisation.

12.2.3 House Boats Village Lay out

House boats villages' layout is supposed to allow an easy access from the floatable jetty to the boats and to the general muster point in case of evacuation. In case of emergency, some people have to go from the outer house boat to the muster point. The main route is to be determined through exercises to optimize the reaction time and minimize the possible tripping hazard.

The villages should be identified at their creation and should be composed of the same house boats during the whole survey. To facilitate the evacuation, the house boats shall be disposed in the optimal sequence (respecting the kitchen/mess position on the outside) to have a straight way out. Once found optimal, this sequence is to be respected after each move.

The minimum distance between the house boat villages and any oil/gas facilities/asset has to be fixed prior to mobilisation.

Each village shall have a designated Muster point located on shore. The total number of person accommodated on the village shall be able to gather at the Muster Point location. Effective personal check-up system (Gate pass) or a Tcard system could be implemented through the Journey Management procedure.

Where practical, toilets shall be installed onshore without incorporating showering facilities. All toilets and showers shall be provided with privacy screens and to be kept clean, in hygienic condition and with all appliances functioning.

Laundry services shall be provided (from main barges).

Sufficient potable water storage capacity shall be available onboard to provide a minimum of two days reserve for all services onboard.

Solid waste management system defined for the seismic campaign, shall apply onboard of the house boats. In order to limit the cooking, a catering service is requested, cooking shall be limited to mess facilities or house boats dedicated to this function.

Barges have to be in conformity with:

Regulations, codes, norms and standards	Barges	Accommodation barge
SOLAS 74/78	Shall be applied but cannot be certified	X Depending on flag state
MARPOL 73/78	Shall be applied but cannot be certified	X
Load lines 1966	X	X
COLREG		X
Regulations applied by the classification society	X	X
ISM Code	X	X
FSS Code	X	
OSV Code	X	
2009 MODU Code		X Depending on flag state



13. Onshore Activities

13.1 Shot Hole Drilling

Please refer to paragraph 12 of the **GS EP GPA 202** for Land Activities.

In addition to the paragraph regarding the abandoned shot hole, a dedicated team made up of experienced and competent personnel equipped with one flat boat, GPS, maps and tracking system have to ensure the decommissioning of miss-fired points. This kind of operation has to be risk assessed and validated by the RSES. Special procedures to fulfill this task have to be established and checked.

Environmental concerns: creation of artesian wells or loss of shallow water from aquifers or surface shall be prevented by appropriate precautions (refer to ESIA and local regulation). In addition: mud pits and open holes shall be back filled.

13.1.1 Air boat / Jack-up drilling

Vessel shall be fitted with surrounding railing.

Vessel shall be equipped with extinguisher and no smoking signs.

Jack-up shall be equipped of four anchoring points for stability.

Water pump shall be away from workers and stable.

Water pump shall be checked before ignition.

Drilling stems shall be on racks when not in use.

13.2 Explosives

Please refer to paragraph 13 of the **GS EP GPA 202** for Land Activities.

When pre-loading shot points in offshore environment, the shot hole loader catamaran shall be tidy and deck free of any object/rubbish.

Whistle shall be used to inform drilling ended and request loading operation.

Explosive shall be loaded with an anti-floating device (anchor).

After loading, detonator wires shall be short-circuited and attached to a buoy.

13.3 Survey and Line operations

Please refer to paragraph 11 of the **GS EP GPA 202** for Land Activities.

13.4 Recording operations

Please refer to paragraph 15 of the **GS EP GPA 202** for Land Activities.

In addition to the paragraph, cable less recording system could be a full or partial alternative to conventional cable recording in obstructed land areas. The use of diesel engine, no smoking on site, needs to follow "safety distance" issued by the RSES from all surfaces installation are recommended. The weight of the unit has to be evaluated followed by specific procedure to avoid too much manual handling. In case of mobilisation of innovative shallow water sources (marine vibrators, cableless...) special procedures shall be set up prior use and specific risk assessment has to be done prior the operation.



14. Cranes and lifting devices

Please refer to paragraph 16 of the [GS EP GPA 202](#) for Land Activities.