



Exploration & Production

GENERAL SPECIFICATION

Logistics and Operational Support

GS EP LSO 410

Manned underwater operations

03	09/2009	Updated with implementation of OGP code of practice
02	08/2007	Simplified and updated to cover the use of divers for surface, in-water operations
01	11/2005	Addition of EP root to GS identification
00	05/2004	Revision & issue as LSO document (previously GS STR 461)
Rev.	Date	Notes



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1. Scope

Diving operations, ROV in support of diving operations or surface swimming operations which are not in full compliance with the minimum standards described in this Company General Specification shall not be allowed to take place within DGEP affiliates and projects.

Contractors providing services for the Company shall strictly comply with this General Specification.

When the main contractor is not the diving contractor or the direct employer of the divers, his responsibility is to ensure that the Company Standards are met by the sub-contractors, regardless of the number of tiers in the contractual arrangements.

Manned underwater operations, other than Diving or Surface Swimming, such as Atmospheric Diving Suit (ADS) or manned submarine shall be approved by DGEP Underwater Operations Specialists.

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
Not applicable	

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	



Codes

Reference	Title
OGP (International Association of Oil & Gas Producers)	Diving Recommended Practice (DRP)
IMCA (International Maritime Contractors Association)	Current Guidance collection and Information notes from Diving (including AODC and DMAC), Marine, ROV and Survey divisions International Code of Practice for Offshore Diving
IMO (International Maritime Organization)	COLREG (International Regulations for Preventing Collisions at sea), SOLAS, MARPOL Code of Safety for Diving Systems

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
Not applicable	

3. Purpose

This General Specification sets out the minimum requirements for diving operations carried out in all DGEP affiliates or projects.

4. Application

This General Specification applies to all offshore, inshore and inland diving operations in all DGEP affiliates or projects, either directly or indirectly contracted.

This General Specification, along with the **OGP DRP**, provides the requirements to be strictly applied by any contractor providing diving services for a DGEP affiliate or project.

5. Definitions

Item	Definition
Audit	An audit is defined as a methodical, detailed and complete examination and/or evaluation of a system or process to establish that they are acceptable or suitable for their intended purpose in conformity with established standards and guidelines. There is a DGEP formal "diving contractors technical qualification audit" procedure. The Company does audit diving contractors. Diving System audits are standardized as IMCA DESIGN audits for each type of system. The Company normally does not audit diving systems. These audits are performed, depending on the complexity of the system, either by the contractor, or by a third party.
Class	Status assigned to a diving system that has met the rules of an IACS classification society.
Closed Bell	A Submersible Decompression Chamber (SDC) used for transferring divers under pressure to and from the underwater worksite.
Company	A Total E&P affiliate, Group Project or other entity carrying out oil exploration and production activities on behalf of or for DGEP. It does not include non-operated assets.
Contractor	Any person or an organization who is directly involved in execution of prescribed work under a contract with the reporting to COMPANY or COMPANY representative.
Diving	Action of a person who enters either (1) the water to perform underwater works or (2) an hyperbaric chamber and who will be subjected to a pressure greater than 0.1 bar above atmospheric pressure. Professional diving is performed using an equipment that gives the diver capability to breathe air or other gas at a pressure greater than atmospheric pressure.
Diving Accident	Situation of a diver showing clinical symptoms while or subsequent to working under pressure. This definition regardless if dive profile and procedures have been respected or not, and regardless if the symptoms have disappeared after treatment or not. A man working underwater is exposed to different types of diving accidents, with different levels of gravity: desaturation type 1 and type 2, barotraumas, drowning, physiological reactions to gas toxicity, hypothermia, work related injuries...

Item	Definition
Diving Incident	Situation of a diver submitted to a non-compliant dive profile or facing a significant down-graded situation due to an equipment failure, without clinical symptoms. Fast ascent, omission or non respect of decompression stops, non respect of the surface interval, diving spread failure or breathing gas anomaly are diving incidents.
Diving Medical Specialist (DMS)	A doctor who is competent to manage the treatment of diving accidents, including, where appropriate, mixed gas and saturation diving accidents. Such a doctor will have passed specialized training and have demonstrated experience in this field.
Diving Specialist	A qualified professional diver and diving supervisor whose competence in a specific diving technique is recognized by Head Office DGEP Underwater Operations Specialists.
Diving Support Vessel	A surface watercraft, used to support the diving team and/or from which divers are deployed, in any offshore, inshore or inland diving operation. There are dedicated DSVs, especially designed for the purpose of diving operations, and DSVs "of opportunity".
Diving System	The whole plant and equipment for the conduct of diving operations.
Deficiency or Non-Conformity	A deficiency is an item or condition that is considered sub-standard or below minimum expectations, such as those mandated by either Company Rules, Specifications or drawings.
Derogation	Is the temporary and partial revocation of a Company Rule or General Specification.
DGEP Underwater Operations Specialists	A person, assigned to Head Office DGEP TDO, who by virtue of training, education, profession, publication or experience, has extensive knowledge or ability in the area and able to give sound advice or expertise in the global field of underwater operations.
Equipment Certification	A document that confirms that a particular test or examination has been carried out or witnessed at an identified time on a specific piece of equipment or system by a competent person.
Inspection	An inspection is defined as an examination of a diving system to verify that it is suitable for its intended purpose and its conformity with its specifications and contractual prescriptions. Inspection of diving system is performed by the company regarding the IMCA DESIGN audit of the system provided by the contractor; in order to verify and assess acceptability of the diving system. It is not an audit.
Medical examiner of divers	A doctor who is trained and competent to perform the annual assessment of fitness to dive for divers. He may not possess knowledge of the treatment of diving accidents.

Item	Definition
Offshore site	The term offshore site is a generic term that applies to a geographical location in which one or more offshore installations undertake oil & gas-related activities and designate any construction, floating or otherwise, designed and built to be installed at an offshore, coastal or inland waters site including oil and gas terminals.
Review	A Review is an assessment of diving operations and interfaces with other activities or departments within an Affiliate. The purpose of a Diving Works Review is to ensure compliance with DGEP Rules & General Specifications, to identify areas of excellence or improvement and to provide assistance and advice in the management of Underwater Operations. It is not an audit.
Saturation Diving	The diving technique used during diving operations where the diver has reached the full physiological saturation state for the pressure and breathing mixture used. When this state has been reached, the time required for decompression is not further increased in relation to the duration of the dive. It requires a closed bell.
SCUBA Diving	Diving using a Self Contained Underwater Breathing Apparatus Only Air & Nitrox open circuit breathing apparatus are considered by the company and this under very restrictive circumstances (Closed & semi-closed circuit re-breathers are not considered).
Simultaneous Operations (SIMOPS)	The simultaneous execution of two or more operations. A term used when two or more operations, such as, but not limited to, production, construction, heavy lift, diving, ROV, Marine are performed concurrently. Simultaneous operations generally have an impact on the installation safety procedures and contingency planning processes.
Surface Supplied Diving	Diving Operations that do not use a closed bell, regardless of the gas mixture used. It includes (1) Mobile Surface Supplied and (2) Surface Supplied techniques using Air or Nitrox; and (3) Wet Bell technique using mixed gas Heliox or Trimix.
Surface swimming	Action of a person who enters the water to perform in-water works and who will be subjected to a pressure less than 0.1 bar above atmospheric pressure.
TUP or Bounce Diving	A form of bell diving where the diver is exposed to pressure for an insufficient time for the dissolved gas in body tissues to reach saturation. It requires a closed bell.

Item	Definition
Underwater Operations	They are an integral part of Marine Operations. Underwater Operations are those conducted by Divers, Remote Operated Vehicles (ROVs), Autonomous Underwater Vehicles (AUVs), Atmospheric Diving Suit (ADS) or Manned Submarine. Diving Operations are part of Underwater Operations.
Watercraft	Temporary marine support craft like floating unit, specialized vessel, boat, crew boat, barge, mobile offshore (drilling) units (MO(D)U), oil and gas tankers, submarines and Remotely Operated Vehicles (ROV).
Wet Bell	A diving basket with a closed top section which is capable of containing a dry gaseous atmosphere to provide a refuge for the divers. A supply of spare gas is carried on the Wet Bell. The Wet Bell is the technique used for Surface Supplied mixed gas Heliox & Trimix diving.

Acronym	Meaning
ADS	Atmospheric Diving Suit
AODC	Association of Offshore Diving Contractors (predecessor to IMCA)
AUV	Autonomous Underwater Vehicle
CDR	Company Diving Representative
COLREG	Regulation to prevent Collision at sea
CR	Company Rule
DCP	Diving Competent Person
DDC	Deck Decompression Chamber, also called hyperbaric chamber.
DESIGN	IMCA Diving Equipment Systems Inspection Guidance Note
DGEP	Total Direction Générale de l'Exploration Production
DMAC	The IMCA Diving Medical Advisory Committee
DMS	Diving Medical Specialist
DP	Dynamic Positioning
DSV	Diving Support Vessel
ERP	Emergency Response Plan/Procedure
FMEA	Failure Mode Effect Analysis
FRC	Fast Rescue Craft
GS	General Specification
HAZID	Hazard Identification