

# DRILLING COMMUNICATIONS

DEP 32.71.00.13-Gen.

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## DESIGN AND ENGINEERING PRACTICE



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## 1. INTRODUCTION

### 1.1 SCOPE

This new DEP gives minimum requirements for telecommunication equipment and systems used for drilling operations onshore and offshore and provides guidance for the selection and specification of equipment and systems meeting these requirements.

Telecommunication systems for a specific drilling rig normally form part of a total telecommunications network. Hence this DEP supplements DEP 32.71.00.10-Gen., DEP 32.71.00.11-Gen. and DEP 32.71.00.12-Gen.

### 1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by SIOP and SIEP, the distribution of this DEP is confined to companies forming part of the Royal Dutch/Shell Group or managed by a Group company, and to Contractors nominated by them (i.e. the distribution code is "C", as described in DEP 00.00.05.05-Gen.).

This DEP is intended for use in oil and gas drilling facilities.

If national and/or local regulations exist in which some of the requirements may be more stringent than in this DEP the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable as regards safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this DEP which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned with the object of obtaining agreement to follow this DEP as closely as possible.

### 1.3 DEFINITIONS

#### 1.3.1 General definitions

The **Contractor** is the party which carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party which manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party which initiates the project and ultimately pays for its design and construction. The Principal will generally specify the technical requirements. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement

The word **should** indicates a recommendation

#### 1.3.2 Specific definitions

**AZIMUTH, EPIDORIS** and **WICON** are Group common systems used in support of drilling operations.

The **campsite** is the residential and administrative area sited separately from the rigsite but normally within a radius of five kilometres from the rigsite.

**Company office** is the location from where the Drilling Contractor directs the activities of his personnel at the rigsite.

A **hazardous area, 426-03-01, IEC 50** is an area in which an explosive gas atmosphere is or may be expected to be present in quantities such as to require special precautions for the construction, installation and use of electrical apparatus.

**Head Office** is the location where the Principal's management team are located. This is often also where the majority of engineering and technical support personnel are based.

An **intrinsically safe** appliance is one that has been specifically manufactured to operate without risk of explosion in a hazardous area.

A **non-hazardous area, 426-03-02, IEC 50** is an area in which an explosive gas atmosphere is not expected to be present in quantities such as to require special precautions for the construction, installation and use of electrical apparatus.

The **operations office** is the location from where the non-routine activities at the rigsite are directed; it may be located at the Head Office.

**Principal's telecommunication facilities** are those facilities rented by or belonging to the Principal.

**Public network** is the telecommunications infrastructure in an operating area/region provided by a government, regulatory authority or private company.

The **rigsite** is the location of the drilling rig.

The **sea area** is the area of the sea in which an offshore drilling rig is located. Sea areas A1, A2, A3, and A4 are defined in the GMDSS amendments to the SOLAS convention.

A **single-string venture** of the Principal has the task of drilling a very restricted number of wells (usually one but in some cases more) in an exploration area where there are no existing Group drilling/production operations.

The **supply base** is the location from where equipment and materials are dispatched to the rig.

### 1.3.3 Abbreviations

|              |   |                                          |
|--------------|---|------------------------------------------|
| <b>GMDSS</b> | - | Global marine distress and safety system |
| <b>HF</b>    | - | High frequency                           |
| <b>IMO</b>   | - | International Maritime Organisation      |
| <b>MODU</b>  | - | Mobile Offshore Drilling Unit            |
| <b>PABX</b>  |   | Private Automatic Branch eXchange        |
| <b>SOLAS</b> | - | Safety of life at sea                    |
| <b>TDMA</b>  | - | Time division multiple access            |
| <b>UHF</b>   | - | Ultra high frequency                     |
| <b>VHF</b>   | - | Very high frequency                      |
| <b>VSAT</b>  | - | Very small aperture terminal system      |

### 1.4 CROSS-REFERENCES

Where cross-references to other parts of this DEP are made, the referenced section number is shown in brackets. Other documents referenced in this DEP are listed in (5).

## 2. GENERAL

### 2.1 PURPOSE OF DRILLING TELECOMMUNICATIONS

The general requirements and purpose for plant and offshore telecommunications are given in DEP 32.71.00.10-Gen. and DEP 32.71.00.12-Gen. Drilling telecommunications facilities may be grouped and prioritised as follows:

- safety telecommunications for compliance with the Principal's safety policy and mandatory national and local regulations;
- operational telecommunications to enhance the efficiency of drilling operations;
- non-essential telecommunications to enhance personnel welfare and recreation, and provide administrative data systems.

#### 2.1.1 Mandatory communications systems

Communications systems specifically designated as mandatory for safety reasons include:

- public address (mainly for offshore installations);
- general alarm systems;
- emergency radio communications.

Offshore, there is a requirement for equipment to operate on international maritime distress frequencies in accordance with IMO, SOLAS and MODU regulations. Emergency shutdown (ESD) requirements are sometimes necessary in simultaneous production and drilling situations. Where this is required, high integrity radio links should be used.

Onshore, there is the requirement to provide reliable communications with the operational office.

The specifications of mandatory equipment are often covered by official regulations.

#### 2.1.2 Operational telecommunications

Certain telecommunications services are provided specifically to support drilling operations. These include voice and data communications with the supply base and Head Office.

#### 2.1.3 Support telecommunications

There should be sufficient communication capacity to support the logistics necessary for the smooth running of the rig. This is usually the responsibility of the Drilling Contractor and he should make the necessary arrangements. However, the Contractor may be allowed to use the Principal's telecommunications facilities at the discretion of the Principal.

There is also often a requirement to provide facilities for personal telephone calls for staff at the drilling camp or rigsite.

#### 2.1.4 Drilling environment

There are three kinds of drilling environment:

- **Onshore drilling**, where each rig usually has its own camp. In some operating areas the camp moves with the rig. In this case the camp and rig are positioned close to each other. For batch drilling of production/development wells, the drilling programme is arranged so that the camp remains static to avoid the expense and disruption of moving while the rig will drill several holes in the vicinity. The regular movement and the variable distance between rig and camp is best covered by means of a radio link.
- **Offshore drilling**, where the accommodation is actually contained on the rig. In the case of a tender-assisted rig, the accommodation is on the barge part. There is no communication distinction between camp and rig as they are effectively combined.
- **Swamp drilling**, where a slot is dredged to make the location accessible by water and the drilling barge contains both the rig and the accommodation. As in the offshore case, communication is only required from one location which is the drilling barge itself. However, house boats sometimes provide the living accommodation.