Subsea Distribution Unit (SDU)

Presented by

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Outline

Lecture 1: Subsea Distribution System Architecture

Lecture 2: Design Parameters

Lecture 3: SDS Components Design & Requirements
  - Topside Umbilical Termination Assembly (TUTA)
  - Subsea Umbilical Termination Assembly (SUTA)
  - Umbilical Termination Head (UTH)
  - Subsea Distribution Assembly (SDA)
  - Hydraulic Distribution Manifold / Module (HDM)
  - Electrical Distribution Manifold / Module (HDM)
  - Multiple Quick Connect (MQC)
Outline


- Hydraulic Flying Leads and Couplers
- Electrical Flying Leads and Connectors
- Subsea Accumulator Module (SAM)

Conclusion
Lecture 1: Subsea Distribution System Architecture

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Introduction

- A subsea distribution system (SDS) consists of a group of products such as umbilical and other in-line structures that provide communication from subsea controls to topside.
The SDS normally includes, but is not limited to, the following major components:

- Topside umbilical termination assembly;
- Subsea accumulator module;
- Subsea umbilical termination assembly, which includes:
  - Umbilical termination head (UTH);
  - Hydraulic distribution module;
  - Electrical distribution module;
  - Flying leads.
- Subsea distribution assembly;
- Hydraulic flying leads;
- Electrical flying leads;
SDU System Architecture

- The SDS normally includes, but is not limited to, the following major components:
  - Multiple quick connects;
  - Hydraulic coupler;
  - Electrical connector;
  - Logic caps
The subsea umbilical termination assembly mainly consists of:

- inboard multiple quick connect (MQC) plates,
- mounting steel structures,
- a lifting device,
- mudmat,
- logic cap,
- long-term cover,
- field assembled cable termination,
- electrical connectors
SDU System Architecture

- The subsea distribution assembly mainly consists of:
  - hydraulic distribution module (HDM)
  - electrical distribution module (EDM)

- The HDM consists of:
  - inboard multiple quick connect (MQC) plates,
  - mounting steel structures,
  - a lifting device,
  - mudmat,
  - logic cap,
  - long-term cover,
SDU System Architecture

- The EDM consists of:
  - Bulkhead Electrical Connectors,
  - Cables,
  - Electrical Transformer Module,
SDU System Architecture

- Hydraulic flying leads (HFLs) mainly consist of:
  - two outboard MQC plates with holding structures
  - steel tubes.

- Electrical flying leads (EFLs) is mainly consist of:
  - two electrical connectors and
  - a number of cables.
SDU System Architecture

This course describes the main components of the SDS currently used in subsea oil/gas production, and defines its design and the functional requirements of the system.

The type of system to be discussed in this course is designed to perform the following functions:

- Hydraulic power distribution;
- Chemical injection distribution;
- Electrical power distribution;
- Communication distribution