Subsea Power Supply Systems

Presented by

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Outline

Lecture 1: Introduction

Lecture 2: Electrical Power System

- Design Codes, Standards, and Specifications
- Electrical Load Calculation
- Power Supply Selection
- Electrical Power Unit (EPU)
- Electrical Power Distribution
Outline

Lecture 3: Hydraulic Power System

- Hydraulic Power Unit (HPU)
  - Accumulators
  - Pumps
  - Reservoir
- Control and Monitoring

Conclusion
Lecture 1: Introduction to Subsea Power System

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Introduction

- The **power supply** for a **subsea production system** is designed according to the **subsea control system**.

- Different control system types (direct hydraulic, electrohydraulic, all-electric, etc.) require different power system designs.

- However, basically two types of power systems are used:
  - an **electrical power system**
  - a **hydraulic power system**.
Introduction

- The power system supplies either electrical or hydraulic power to the subsea equipment:
  - valves and actuators on subsea trees/manifolds,
  - Transducers and sensors,
  - SCM,
  - SEM,
  - pumps,
  - motors, etc
Introduction

- The **power sources** can come from either an **onshore factory** (in a subsea-to-beach field layout), or from the site (platform or subsea generators).

*Power Supply from Onshore to Subsea*
*(Courtesy of Vetco Gray)*