Transshipment System: Risk Assessment

Perform risk assessment when transshipment system developed

A process that involves the following steps:

- Identify potential hazards
- Define hazard scenarios
- Determine probability
- Determine consequences
- Assess risk on risk matrix
- Define prevention measures
- Reassess risk

Objective: Safety & Environmental Responsibility

Risk is a factor in all human activity
Remote Environmental Monitoring System:

*Real time metocean data gathering*

- Deploy at transshipment anchorage
- Combine with weather forecasting
- Display metocean data onboard
- Vital decision support information

Measure the environment to predict vessel motion response
Precision Navigation System:

Relative vessel position monitoring during approach

Real-Time Kinematics GPS technology to provide highly accurate relative vessel position and closing velocity information

GPS, DGPS, GLONASS & Galileo
Transshipper: Mooring Arrangement

The complete system includes: primary & secondary fenders and davits, mooring winches, fully enclosed fairleads, quick release mooring hooks, line load monitoring, remote hook release & SPM.
Transshipper: *Electrical Power Capacity*

Self-Unloader & crane transshippers are **high power consumers**

- Higher electrical power demand than typical bulk carrier
- Require electrical power sufficient for total concurrent demands
- Self-unloading system and mooring system; possibly thrusters
- Additional capacity for redundancy & to permit maintenance
Reliable Cargo Transfer System:
Cranes or Self-Unloading Gravity Reclaim Systems

- High capacity optimized to requirements
- Safe and efficient
- Environmentally responsible
- Selected cargo handling system: Must be ‘Fit-for-Purpose’
Transshipment: *Cargo Elevation System*

*Self-Unloader ‘C’-Loop or Incline Conveyor*