



WORKBOATS

The History and Development of the US Coast Guard Policy for Dynamically Positioned Offshore Supply Vessels



Peter J. Hill, PE, CSP
Risk Reliability & Safety Engineering
New Orleans, LA

Session Chair – Steve Savoy, ENSCO International

September 16-17, 2003
Houston, Texas



The History and Development of the US Coast Guard Policy for Dynamically Positioned Offshore Supply Vessels



Peter J. Hill, PE, CSP
Risk Reliability & Safety Engineering
New Orleans, LA

Presentation

- Background
- Regulatory Analysis
- Nuts & Bolts
- Gulf of Mexico Practices
- Risk Based Approach
- USCG Policy
- Formula for Compliance
- Conclusions/Lessons

Background

- Spring 2001 Article in MSO Morgan City Newsletter:
 - Using a DP system, without being moored to the rig, is not in compliance with 33 CFR 156
- Industry Response
 - Discussion
 - White Paper
- USCG Reply
 - Propose seeking of Equivalency Determination

Regulatory Analysis

- **Misapplication?** Part 156 is limited in its applicability to Navigable Waters of the United States and the Contiguous Zone, however . . .
 - Part 155 requires vessels subject to US laws to conduct oil transfer operations consistent with the requirements for U.S. waters and the CZ (Part 156)
- Inquiries to the OCMC Morgan City resulted in recommendation that industry seek USCG determination of DP equivalency to “moorings”
- Feedback from OOC and OMSA sought establishment of a District Policy granting equivalency for vessels meeting certain standards

Regulatory Analysis

- USCG article did not reveal complete/accurate understanding of DP systems
- References to Mooring system are nebulous and in terms of the mooring function, not specific hardware
- Conclusion of most Industry participants was that article was erroneous in its assertion

Nuts & Bolts

- International Maritime Organization (IMO) Circular 645
 - 3 Group Designations
 - Increased Redundancy/Segregation of Equipment
 - Intended for station keeping of drilling, construction and dive vessels
 - Not intended to address close-in operations (vessel-to-vessel, vessel-to-facility)

Gulf of Mexico Practices

- IMO Guideline recommends risk analysis by operator and customer as means for establishing optimum DP Group for environment and mission
- Deepwater Floating Facilities increasingly dependent on DP vessels as only option

Gulf of Mexico Practices

- OMSA Poll of DP Vessel Operators:
 - Most vessel DP systems not certified to IMO or Class Society rules
 - Most vessels engage in Oil/HazMat transfers in DP mode
 - Half of vessels incorporate DP elements into their Oil Transfer Procedures
 - Half of vessel operators have conducted some level of risk-analysis associated with their DP operations
 - Others have “borrowed” practices or equipment configurations that were developed through other companies risk analysis

Risk Based Approach

- Floating Facilities less tolerant of vessel contact
- Back down system in deepwater expensive, complex, and introduce new hazards to personnel
 - Significant stored energy
 - Vessel position and orientation constrained
- Manual “Joystick” operation emerged as advantageous
 - Addition of automatic position keeping prompted consideration of DP systems

Risk Based Approach

- IMCA Study
 - North Sea DP vessels
 - Collision incidents increased, despite more vessels meeting IMO DP-2 or DP-3 criteria
 - Exposed significant shortcoming of IMO Guideline
 - Does not address Close-In Operations
- Operator Studies
 - ABS
 - Vessel operators (Masters)
 - Risk Engineers
 - DP equipment providers
 - Regulatory specialists

USCG Policy

- End in Mind?
 - Improving safety or filling a perceived gap in regulations
 - Fixing what was not broken
- Participation of OMSA and OOC essential to flush issues and drive the process
- USCG likes to reference IMO or other International Standards when appropriate
- Industry had to help USCG recognize
 - ...shortcomings of IMO guideline and formulate appropriate supplemental guidance
 - ...that there was no *one-size-fits-all answer*

USCG Policy

- Several false starts
 - 300 ft water depth
 - Over-reliance on IMO Guideline
 - Requirements for formal approval of DP systems
 - Link to FPSOs by USCG Headquarters
- Final Policy reconciled these and other issues
 - DP-2 or better per IMO or Class Society
 - Alternative USCG Requirements
 - Quick Disconnect Fitting

USCG Policy

- Alternative USCG Requirements
 - Nicknamed DP-2 “minus”
 - Recognizes best practices of GoM operators
 - Emphasizes Risks of Close-In operations
 - Relaxes some redundancies for computers, control systems and sensors
- Self-Policing, but USCG will
 - ...spot check compliance at routine inspections
 - ...check compliance following pollution incident
- Class Societies *may* be used at owner’s option

Formula for Compliance

- Know how your vessels fit the IMO criteria and the USCG Policy
 - IMO, Class Society, or USCG Alternative
 - Maintain documentation that demonstrates criteria (Checklist or Class Society Certificate)
- Consider “DP-Ready” Design & Construction
- Develop DP Operating Procedures and Personnel Training Per Policy
 - May be part of Oil Transfer Procedures
 - Reconcile DP Procedures with your customers’ marine operating Procedures

Conclusions/Lessons

- Once published, regulatory opinions take on life of their own, regardless of their validity
 - Absence of regulation creates a “void that must be filled”
- Trade Associations essential to Process
 - Must have support and participation of knowledgeable membership
 - Plus appropriate consulting services as needed to research issues and foster compromise
- USCG favors alignment with IMO or other recognized standards
- Vessel Operators can be their own worst enemy

Questions?