OPERATIONS

Revisions to the Guidelines for Safe Operations of Dynamically Positioned Offshore Supply Vessels

Ian Giddings

The International Marine Contractors Association (IMCA)
Revisions to the Guidelines for Safe Operation of Dynamically Positioned Offshore Supply Vessels

Ian Giddings
<table>
<thead>
<tr>
<th>Region</th>
<th>2007</th>
<th>2006</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe &amp; Africa</td>
<td>55</td>
<td>59</td>
<td>-7%</td>
</tr>
<tr>
<td>Americas</td>
<td>70</td>
<td>48</td>
<td>45%</td>
</tr>
<tr>
<td>Middle East &amp; India</td>
<td>32</td>
<td>24</td>
<td>33%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>73</td>
<td>41</td>
<td>78%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>230</strong></td>
<td><strong>172</strong></td>
<td><strong>34%</strong></td>
</tr>
</tbody>
</table>
• Supply
• Anchor Handling
• Cable Laying
• Flexipipe Laying
• Stand By
• Oil Recovery Operations
• ROV
• Towing
• Trenching
<table>
<thead>
<tr>
<th><strong>NORMAL OPERATIONS</strong> (Green)</th>
<th><strong>DEGRADED CONDITION</strong> (Yellow)</th>
<th><strong>EMERGENCY CONDITION</strong> (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complies with appropriate DP OSV capability conditions</td>
<td>Not in compliance with appropriate DP OSV capability conditions</td>
<td>Emergency</td>
</tr>
<tr>
<td>Position and heading excursions are within acceptable limits, and Power and thrust outputs are within limits for capability of vessel, and Environmental conditions are acceptable, and Minimum risk of loss of position and/or collision, and For DP capability 2 and 3 vessels – DP equipment redundancy is intact and DP system is operating within ‘worst case failure’ limits, or For DP capability 1 vessel – DP equipment is intact and operating within acceptable limits.</td>
<td>Position or heading excursions out of acceptable limits for more than brief or isolated periods, or Power and thrust outputs are greater than the limits for capability of vessel for more than brief or isolated periods, or Environmental conditions or other conditions are considered unsuitable for continuing DP operations, or Increased risk of loss of position or collision, or For DP capability 2 and 3 vessels – failure in DP equipment that results in loss of redundancy and the vessel operating outside “worst case failure “limits, or For DP capability 1 vessels – failure in DP equipment that does not result in a loss of position</td>
<td>For DP OSV capability 1, 2 and 3 vessels Unable to maintain position, or Imminent threat of collision, or Any other emergency situation</td>
</tr>
</tbody>
</table>
DP OSV Capability 1

- DP IMO equipment class 1 (class society equivalent DP class notation)
- Vessel operating within limits of intact thruster capability in existing environmental force conditions
- DP control location manned by at least one category A bridge watchkeeping officer and one other person clearly only relevant when DP is to be used on an OSV
- At least one position reference system operating and on line
DP OSV Capability 2

- DP IMO equipment class 2 or 3 (class society equivalent DP class notation)
- Vessel operating to identified ‘worst case failure’ limits in existing environmental force conditions
- DP control location manned by at least one category A bridge watchkeeping officer and one category B bridge watchkeeping officer
- Two totally independent position reference systems operating and on line. At least three position references should be immediately available of which two should be operating and online
DP OSV Capability 3

- DP IMO equipment class 2 or 3 (class society equivalent DP class notation)
- Vessel operating to identified ‘worst case failure’ limits in existing environmental force conditions
- DP control location manned by two category A bridge watchkeeping officers
- At least three independent position reference systems operating and on line
<table>
<thead>
<tr>
<th>Close Proximity 1 (low risk)</th>
<th>DP OSV Capability 1</th>
<th>DP OSV Capability 2</th>
<th>DP OSV Capability 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Close Proximity 2 (medium risk)</th>
<th>DP OSV Capability 1</th>
<th>DP OSV Capability 2</th>
<th>DP OSV Capability 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Close Proximity 3 (high risk)</th>
<th>DP OSV Capability 1</th>
<th>DP OSV Capability 2</th>
<th>DP OSV Capability 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
| Close Proximity 1 (low risk) | ‘x’ metres from the offshore installation on lee side  
More than ‘x’ metres from the offshore installation on weather side |
|---------------------------|---------------------------------------------------------------------|
| Close Proximity 2 (medium risk) | Less than ‘x’ metres from the offshore installation on lee side (for brief periods only)  
‘x’ metres from the offshore installation on weather side |
| Close Proximity 3 (high risk) | Less than ‘x’ metres from the offshore installation on lee side  
Less than ‘x’ metres from the offshore installation on weather side (for brief periods only) |
Category A – Master or navigating officer

- STCW 95 navigating officer certificate appropriate to class of vessel
- NI DP certificate
- Fully competent in operating the OSV in manual control when in close proximity to an offshore installation
- Adequate experience of the DP control system type and equipment classification – recommend 14 days
Category A – Master or navigating officer

- Knowledge of the vessel’s FMEA, together with a detailed understanding of the implications of all identified failure modes.

- Detailed knowledge of the vessel’s DP operations manual and adequate knowledge of the contents of the vendor manuals.

- Consideration should also be given to providing manufacturers’ courses for masters and officers in this category, in particular for the DP control system and position reference systems.
Category B – Navigating officer or “other officer”

- STCW 95 navigating officer certificate appropriate for class of vessel or other appropriate certification, as required by the DP OSV owner (such as engineer, crane driver and so on).
- Received on board training of the vessel’s DP system, using the NI DPO logbook to record training received.
- Competent in taking control of the vessel in manual control and moving away from the installation.
The issues

• DP FMEA & Annual Trials

• DP OSV capability

• Close proximity situations

• DP Operators

• DP operational procedures

• IMO or Class

• Unmanned engine space
The vessel is operated by the Master, the crew and the company and the guidelines should complement rather than restrict this.

Regional or charterer’s guidelines may take precedence.

Power consumption & thruster output limits put DP1 vessels at an advantage.
The answers
• Limit use of DP Class 1 vessels

• Use DP Class 2 vessels
IMCA Station Keeping Incident reporting is being reviewed and so that section in the guidelines will need reviewing.

Incident reports are being received from offshore supply vessel owners/operators.

Guidance on RADius position reference system is being prepared.

IMCA M103 Guidelines for the Design and Operation of Dynamically Positioned Vessels is about to undergo a major overhaul.

Common Marine Inspection Document is also being revised.
Possible further IMO Guidance on Offshore Support/Supply vessels and their operation
Final questions

• Is there anything missing from the guidelines?

• Is there anything in the guidelines that could or should be removed?

• Will these guidelines work well with the new generation of offshore supply vessels?

• Will these guidelines improve offshore supply operations?
Conclusion

Thank you

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