Enclosure (2)

OOC Guidance Document USCG-052318 Rev. 1 Life Rafts on SPARS

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1 Overview

Coast Guard inspectors have raised concerns about the installation of life rafts on certain SPAR type platforms. Two issues that were highlighted involved rafts not stowed near the rail to facilitate manual launching as required and the potential risk of rafts becoming entrained in the topsides structure if the unit sank. The Coast Guard and members of the OOC met to discuss these issues on March 27, 2018 at the OOC offices in Kenner, LA. At the conclusion of that meeting, the Coast Guard requested the OOC draft a guidance document that helps detail the most suitable stowage locations for life rafts on SPAR type floating OCS facilities.

2 Relevant Requirements and Regulatory History

The relevant Coast Guard requirements for the installation of life rafts on a floating offshore installation (FOI) are found in 46 CFR 108.525(a)(2) and 108.530(c). These requirements were revised as part of an Interim Rule (CGD 84-069) on May 20, 1996. A major part of this rulemaking was the incorporation of SOLAS Chapter III and the 1989 MODU Code into Coast Guard regulation to harmonize Coast Guard requirements with SOLAS. This is an important point because; 1) SOLAS regulations do not apply to FOIs, and 2) the Coast Guard has never developed regulations specific to FOI design and operation. Instead, the Coast Guard has required FOIs to comply with certain regulations in Subchapter I-A for U.S. Flag MODUs. The application of traditional vessel-based regulations on FOIs can be problematic and is not always appropriate. Further, a review of the Interim Rule did not indicate this specific issue was raised during the comment period. This is likely due to the fact only two SPAR hulls pre-date the October 1996 implementation date of this rulemaking and neither were in operation at the time.

3 Coast Guard Concerns

The Coast Guard feels that the installation of inflatable life rafts on top of the SPAR hull may compromise the ability of the rafts to float-free should the unit sink in a nearly vertical manner, thus potentially causing the rafts to become entrained in the topsides structure as the unit sinks. The Coast Guard was also concerned that some operators installed the rafts well inboard of the rail and that this could make it more difficult to manually launch the rafts. Rafts installed in this manner do not comply with the regulations in 46 CFR 108.530(c).

4 Operator Concerns

Operators of SPARs with this type of life raft arrangement have concerns about relocating the life rafts to a higher and more outboard location for the following reasons:

1. Moving a raft to a higher location may exceed the raft's approved drop/mounting height and would require the operator to procure the appropriately rated rafts.

2. Moving a raft higher and outboard of the hull (i.e. to the outer edge of the lower deck of the topsides) puts the raft in a less protected location from fire and explosion and could place it further away from established egress routes. Installing rafts in positions closer to the production train also puts them closer to the most likely fire and explosion hazards and would likely render them unusable.

3. Moving rafts higher and outboard of the hull presents additional issues with the safe deployment and boarding of the rafts due to the fact personnel would normally be egressing via the fixed ladders on the hull all the way to the water. If the rafts were moved to the outboard edge of the topsides structure, it is not clear how personnel would be able to safely board those rafts. In this scenario, the OOC feels this creates many more problems than it attempts to resolve. As an example, should personnel begin to evacuate the unit via the required means of egress towards the water, they would end up below the location of the rafts. Personnel would need to transit back towards the hazard or remain in the proximity of the hazard to manually deploy the rafts.

4. Industry feels that moving the life rafts above the SPAR deck does not alleviate the Coast Guard concern for float-free entanglement. The life raft and/or painter could also become entangled in topsides gear or structure following deployment. Marine casualty investigation analysis on traditional sea-going vessels has shown issues with float-free rafts becoming entangled with vessel structure or rigging even though they were otherwise properly installed. A float-free arrangement is the least susceptible to entrapment and entanglement but is also largely influenced by the manner in which the vessel sinks and other environmental conditions.

5 Recommendations

The OOC feels that the installation of life rafts in a float-free arrangement on top of a SPAR hull, on or outboard of the rail to facilitate manual deployment in compliance with 46 CFR 108.530(c), is the most suitable location for the following reasons:

1. The deck located above the SPAR deck the serves as a hard barrier against fire and explosion. Loss of primary containment resulting in explosion or fire is a more likely risk scenario for which the facility needs to have adequate means of evacuation should that incident render some or all life boats unusable or inaccessible. Placing the life rafts on or within the topsides structure increases the risk and likelihood that the life rafts could be damaged by a fire and explosion incident. Mounting them on top of the hull puts the rafts closer to the water level and able to be more easily deployed from the unit so that personnel can safely board them via the hull egress ladders.

2. Primary egress and secondary egress are either of the two required life boat locations. Life rafts are considered as supplementary to tertiary egress via the fixed ladders to the water. This egress route offers better protection for the platform crew. Rafts located as close to these egress points as possible increases the likelihood of successful evacuation without personnel having to enter the water.

3. The OOC recognizes the Coast Guard's concern that there is a *potential* risk of rafts becoming entrained in the topsides should a platform sink. However, the OOC does not feel this to be realistic as the most common damage stability scenarios indicate while a SPAR would most likely sink in the vertical, it would do so very slowly. This would provide ample time for any crew who needed to egress via the fixed ladders to manually deploy the rafts from the top of the SPAR hull well before they would float-free as designed. The rapid sinking of a SPAR in a manner that would compromise the ability of properly installed life raft to float-free unencumbered is not seen as a credible risk.

4. In the most extreme case, catastrophic hull damage caused by a vessel collision is an event operators mitigate via their emergency response plans. Platform personnel can likely be evacuated via the life boats well before a threat like this matures.

It should also be noted that Coast Guard regulations currently allow at least two SPARs in the GOM to operate without being fitted with life rafts at all as part of their lifesaving equipment because of their date of build. This is a result of how the regulations identified above were developed as they allowed grandfathering for older MODUs. This, again, points to deficiencies in the Coast Guard regulatory construct for FOIs and the pitfalls of attempting to apply regulations better suited for traditional seagoing vessels to FOIs. This should also serve as an indication that lifesaving equipment requirements on offshore production platforms (both fixed and floating) is an issue long overdue for a modern, thoughtful risk assessment.

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