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Submitted via: rosborough.evelyn@epa.gov

United States Environmental Protection Agency
Region 6
Attn: Ms. Evelyn Rosborough
1201 Elm Street
Dallas, Texas 75270

Re: 22 July 2022 Environmental Protection Agency (EPA) Federal Register Notice ([Vol. 87, No. 140](#)); *Proposed NPDES General Permit for New and Existing Sources and New Discharges in the Offshore Subcategory of the Oil and Gas Extraction Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico Issuance* [Docket ID No. EPA-R06-OW-2022-0603]

Dear Ms. Rosborough,

The International Association of Drilling Contractors is a trade association representing the interests of drilling contractors, onshore and offshore, operating worldwide. Our membership includes drilling contractors currently operating mobile offshore drilling units (MODUs) on the U.S. Outer Continental Shelf.

In addition to comments provided herein, IADC acknowledges its agreement with, and support of, the comments and concerns expressed in the letter submitted by the Offshore Operators Committee regarding content offered in this proposed permit.

The below comments are offered without prejudice to those that may also be addressed to the EPA, or otherwise submitted directly to the EPA, by IADC members.

By this letter, the IADC respectfully requests consideration of the following comments as the EPA seeks insight and observations of interested stakeholders potentially subject to the proposed provisions of the reissue of the National Pollutant Discharge Elimination System (NPDES) General Permit No. GMG290000.

IADC applauds the EPA's concern for exercising prudent attention towards the protection of marine life and sustaining the biodiversity of the U.S. Gulf of Mexico. Similarly, IADC members remain committed in their resolve to enhance processes, leverage the latest technology, and cultivate workforce competencies in support of the most proficient and environmentally friendly methods of energy production. U.S. offshore oil and gas production activities are among the safest and most environmentally conscious of any such activities throughout the world. Together with its industry partners, IADC looks forward to engaging in consultative activities such as this; where stakeholders can work together in achieving efficient, productive, and safe energy production practices.

It is in this spirit of mutual benefit and collaboration that IADC comments on EPA's proposed changes to the 2017 permit (the "Draft Permit") below. IADC has focused its comments on two key areas for consideration: (1) the regulation of Cooling Water Intake Structures on offshore vessels; and (2) the scope of Maintenance and Monitoring requirements for such CWIS.

Cooling Water Intake Structures (CWIS)

As IADC considers the EPA's proposed addendums with respect to flowrate, it will take this opportunity to share insights and concerns for continuing to hold "non-fixed facilities" to the 0.5 ft/sec flowrate impingement requirements as applied to CWIS where sea chests are employed.

In Section VI of EPA's June 16, 2006 *National Pollutant Discharge Elimination System; Establishing Requirements for Cooling Water Intake Structures at Phase III Facilities; Final Rule (Vol. 71, No. 116)*, the EPA set forth the basis for its Final Rule decision whereupon CWIS provisions were implemented. In this particular section (page 35016), the EPA discussed the application of entrainment standards for facilities employing sea chests as part of their cooling water intake design, such as drill ships, jack-ups, Mobile Offshore Drilling Units ("MODUs"), and barges. IADC shares the EPA's view expressed where "facilities using sea chests may have few, if any, opportunities to meet the entrainment control requirements" applicable to facilities subject to the Phase I rule." In the 2006 Final Rule, EPA further explained that its own data:

"suggests that the only physical technology controls available for reducing entrainment at facilities with sea chests would entail installation of equipment projecting beyond the hull of the vessel. This outward projection has been shown to create problems with respect to fluid dynamics, vessel shapes, and safe seaworthy profile. Therefore, **EPA does not believe entrainment controls are feasible at such facilities...**"

EPA continued in its discussion to conclude "that building new offshore oil and gas facilities without sea chest[s] has not been shown to be practicable for the category as a whole."

Since 2006, it has become apparent that EPA's acknowledgement of the inability to apply entrainment controls to non-fixed facilities with sea chests also applies to impingement mortality measures in the design and construction of these facilities. As EPA identified "outward projections" having shown to create problems with respect to "fluid dynamics, vessel shapes, and safe seaworthy profile" when assessing entrainment controls, so too have impingement standards shown to be similarly problematic. Further, appurtenances affixed to a MODU hull for the purposes of addressing impingement concerns may impose the unintended consequence of impeding cooling water intake flow that provide service to diesel generators providing electrical power to vital ship systems including, *inter alia*, dynamic positioning (DP)

thrusters. As the majority of modern-day MODUs utilize DP thruster systems to conduct on-location drilling activities, it is a functional imperative that cooling water flow through vessel sea chests be unrestricted. Failure to properly account for this functionality will markedly increase the risk for emergency disconnect actuation of the MODU marine riser from the Blow Out Preventer (BOP) and subsequent potential for an uncontrolled release of hydrocarbons into the marine environment. Such a circumstance could result from diminished cooling water flow that would necessitate an automatic shutdown of diesel generators as a protective measure to prevent overheating of generator machinery to avert certain shipboard fire hazards. A shutdown of diesel generators would result in the loss of electrical service to DP thrusters (See [here](#) for an illustration of DP control failures and the potential resulting consequences).

Should the EPA persist in an expectation for maintaining impingement standards on non-fixed facilities equipped with sea chests as implemented in 2006, additional consultation with relevant U.S. Coast Guard DP subject matter experts would be necessary to further quantify the emergency disconnect risks associated with delimited sea chest flow imposed by a 0.5 ft/sec flowrate requirement.

While DP functionality is certainly cause for further consideration relative to impingement provisions, these concerns are secondary to the consideration of effects of DP functionality on flowrate velocities immediately adjacent to a MODU's hull. While a dynamically positioned MODU is actively engaged in drilling operations, such maneuvers are only able to be safely conducted when a DP system is fully operational. Such operation consists of a DP system comprised of 6 or more thruster units affixed to the bottom hull of the vessel. These thruster systems enable each propeller thruster unit to individually operate in an omni-directional manner. This is to say that DP propeller thrusters rotate on a 360-degree vertical axis in a synchronous fashion to maintain a MODU's position on the surface of the water within several feet of a predetermined targeted position. As this inertial-assist automated DP system is operated 24/7 during drilling operations, each thruster adjusts its direction of thrust and propeller speed in real-time to counteract the immediate "time zero (T0)" effects of wind and sea resulting in the MODU's position remaining "on-station over ground". In the course of DP operations, individual thruster units impose water flow forces through the propellers commonly referred to as "propeller wash" to generate the mechanical forces necessary to counter-balance environmental conditions. According to the Det Norske Veritas (DNV) Classification Society, the turbulent velocities of propeller flow rates imposed along the surface of a MODU's hull while a DP system is in operation is routinely at or above a 12 ft/sec flow rate at an approximate distance of 120 ft from the DP propeller. Such conditions mean that: 1) turbulent flow rates imposed across a MODU's hull, including sea chests structures, would result in a "water wash" effect over any and all hull components including sea chest CWIS arrangements where marine life otherwise thought to be at risk of impingement would be entirely expelled from the sea chest suction flow path; and 2) the ability to accurately measure a 0.5 ft/sec flowrate in way of sea chest CWIS arrangements is impossible. Further, and most

importantly, the ability to accurately measure a 0.5ft/sec flowrate is moot due to the continuous water wash effects of an operating DP system.

In sum, the operating conditions described herein are unique to non-fixed facilities constructed with sea chests. IADC therefore concludes that compliance with 40 CFR 125.134(b)(2) is fundamentally not possible as a means for implementing effective impingement measures. IADC strongly recommends that EPA explicitly acknowledge in the proposed permit, the non-applicability of impingement measures for non-fixed facilities constructed with sea chests for the reasons described above. Such recognition would provide necessary clarification of 40 CFR 125.134(b)(1)(iii) where discussion of applicability to non-fixed facilities does not distinguish between such facilities with or without sea chest arrangements as is otherwise expressed in 40 CFR 125.134(b)(1)(i) and (ii) for fixed facilities. Additionally, EPA's acknowledgement of impingement provisions as recommended by IADC will provide the necessary alignment with EPA's own acknowledgement of shortcomings pertaining to entrainment standards as expressed in its 2006 Final Rule.

Monitoring and Management Systems

As the provisions found in 40 CFR 125.134(b)(4), (6), (7), and (8) already account for monitoring and management of processes that could detect impacts on marine organisms, MODU vessels and crew are capable of integrating the intent of these provisions into existing maintenance procedures and management plans. Typical CWIS arrangements onboard MODU vessels routinely provide for servicing of water intake arrangements where crews may observe any impinged marine life. These strainer arrangements are periodically cleaned and inspected to preserve the proper functioning of suction pumps located "downstream" from the strainer components. MODU maintenance crews would be able to simply record their observations of findings when conducting maintenance in accordance with the above-mentioned provisions.

Once again, IADC appreciates the opportunity to contribute to this consultative process and looks forward to enacting the forthcoming resolutions in earnest.

As always, please feel free to contact me for further clarification or insight on the comments provided herein.

Sincerely,

 Recoverable Signature

X Jim Rocco

Jim Rocco
Sr. Director, Gov't & Industry Affairs - Offshore
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