

Safety Zones Around Offshore Installations

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Abstract

In order to protect offshore installations and reduce the risk of accidents, which results in marine pollution, certain areas around offshore installations are designated as exclusion zones and precautionary areas. Article 60 of the United Nations Convention on the Law of the Sea (UNCLOS) of 1982 recognizes the right of coastal states to establish exclusion zones around offshore installations. These zones should extend to a distance not exceeding 500 m from each point of the outer edge of the installation. Also, Resolution A.671(16) of the International Maritime Organization (IMO) (Safety Zones and Safety of Navigation around Offshore Installations and Structures) recommends that governments consider, amongst other things, the establishment of safety zones around offshore installations or structures as well as the establishment and charting of fairways or routing systems through exploration areas. In this regard, this study analyzes the effectiveness of the safety zones prescribed by law in protecting oil installations. It concludes that although UNCLOS 1982 does not stipulate the establishment of safety zones around offshore installations constructed in the territorial sea, the coastal state has a right to establish safety zones in such locations, and its radius may extend beyond 500 m if it is necessary to protect the offshore installation in the territorial sea.

Keywords: Offshore Installations, Safety Zones, International Maritime Organization.

Introduction

The owners and operators of offshore installations are generally concerned about the safety of their assets as well as the safety of the fishermen working around them. Several incidents involving vessels entering into safety zones around offshore installations while carrying out certain marine activities, such as fishing operations, have been recorded, and some of these incidents resulted in serious damage to subsea equipment and exposed the fishing vessels and their crews to great risks (Kashubsky et al, 2013: 1).

In Indonesia, oil and gas exploration and exploitation activities are highly intensified, and these activities are performed at many offshore installations (Faiz et al, 2016). In a related development, one of the nine long term policies of President

Joko Widodo of the Republic of Indonesia (*Nawacita*) entails restoring Indonesia's greatness as a maritime state as well as regrowing and revitalizing navigation activities in the country. Clearly, oil and gas exploration and exploitation activities as well as a vibrant maritime sector are both desirable, but carrying out both activities simultaneously results in increased risk of collision between ships and offshore installations (ship-platform collision) (see: SafeFISH).

The archipelagic waters offshore Madura Island is a part of Indonesian archipelagic waters where there is a high risk of collision between ships and offshore installations. This is because there is a large quantity of hydrocarbon reserve contained in the mining block of West Madura Offshore (WMO). In addition to the presence of many offshore installations, the archipelagic waters offshore Madura is navigated by many ships, since there are a number of cross province routes offshore Madura, such as the routes of navigation from Surabaya to Makassar, Semarang to Samarinda, and Surabaya to Kumai.

On 11 August, 2010, a cargo vessel collided with an offshore installation (KE40). The installation was owned by a foreign company, known as Kodeco Energy Ltd, and is located in Java Sea. It is located about 80 km North of Gresik City, Province of East Java. The collision resulted in production losses of about 1,600 barrels of oil per day and 15 million standard cubic feet of gas per day (MMSCFD) (see: Detik.com). Also, due to the collision, the installation became slanted, about 40 degrees to the south west direction. Besides, the installation base, which is useful for shipping activities related to the operation of the installation, and the installation stairs in the northern side were damaged. Some equipment, such as the separator and hand rail, were also affected. Therefore, for security reason, the installation was not operational for some time. However, it was later repaired and eventually returned to operation on 10 September, 2012.

Similarly, on 31 March, 2018, the crude oil pipelines that connect Lawe-lawe Terminal, Penajam Paser Utara Regency and Balikpapan Refinery were damaged, and this resulted in the occurrence of oil spillage in the waters of Balikpapan Bay (source: BBC.com). The steel pipes with diameter of 20 inches and thickness of 12 mm were laid at a depth of 25 m. The pipelines are contained in cement casing and are not corroded by the sea water. Nevertheless, the pipelines were shifted a distance of 120 m from their position in the seabed of the Balikpapan Bay until they were broken. The police believe that a cargo ship was responsible for the spillage.

The cases mentioned above are closely related and indicate that the establishment of safety zones around offshore installations would ensure the security of such installations. These collisions could have been avoided if the owners and operators of the installations had taken certain safety measures to protect them, but they failed in this regard. The safety measures include the establishment of safety zones around the offshore installations as well as the supervision of the activities going on around them, particularly the supervision of ships navigating the safety zones around the installations.

Based on this background, this paper is aimed at explaining the international law regulations that are related to safety zones around offshore installations and whether the regulations are effective in protecting the offshore installations from avoidable damage. The present paper also aims to explain the national regulations of the Republic of Indonesia regarding safety zones around offshore installations in relation to improving maritime safety.

Research Method

Based on the purposes of this research, the type of research employed is the normative legal research (Soerjono et al, 2011: 15), and the approach used is the statutory approach (Peter, 2010: 96). In this regard, the provisions of certain instruments of international law as well as those of some national regulations relating to the establishment of safety zones around offshore installation were studied. The data used in this research are secondary data, and they were obtained from primary and secondary legal materials. Primary legal materials include national and international legal instruments, while secondary legal materials include books, journals, reports, etc. Both types of legal materials were obtained by literature review. In this regard, a lot of documents, both official and non official documents, were reviewed, with the aim of obtaining any relevant information that is related to the present study.

Discussion

One of the main issues that are frequently discussed in international relations with regards to offshore oil and gas installations is the issue of the legal status of such installations. This issue arises frequently because it is not clearly defined in international law. The legal status of an offshore installation is very important because in certain circumstances, it will bring about variable consequences based on law and practice point of view. Also, an offshore installation's legal status can impact on the rights that might be exercised by states in relation to the installation. Furthermore, the legal status could as well influence the implementation and application of the principles and rules of maritime law regarding the offshore installation. In this regard, if an offshore installation is situated in the exclusive economic zone, then for the sake of legal interest, it could be supposed or considered as a ship if it is a mobile offshore oil and gas installation that is in motion. Nevertheless, such an installation could also be supposed as an installation if it is stationary. When an installation existing in the exclusive economic zone is supposed as a ship, then the flag state may have exclusive jurisdiction over it. On the contrary, if such installation is treated as an installation and not as a ship, then the coastal state would have exclusive jurisdiction over it. In other words, the legal status of the offshore oil and gas installation has an impact on the rights and duties of states, especially the coastal state and flag state, in

relation to the offshore installation and activities conducted by the states concerned (Churchill et al. 1983: 131-132).

Furthermore, another problem in the international arrangement regarding offshore oil and gas installations is the fact that there is lack of uniformity of national regulations among states with respect to the handling and management of such installations (Kashubsky, 2013). A number of the existing offshore oil and gas installations are immobile or permanently fixed. On the other hand, there are mobile offshore oil and gas installations in existence, and in certain context, a mobile installation is treated as a ship by virtue of international law. In principle, the permanent offshore installation (fixed offshore installation) cannot be treated as a ship in international law. However, the situation is different in the case of a mobile offshore installation, since, in general, a mobile installation can be moved from one location to another. Nevertheless, a few conventions do view and treat the mobile installation as an installation. The mobile offshore installation is viewed and treated as a ship if it is in the process of transiting or moving from one location to another one. However, it is treated as an installation if it is being used or operated as an offshore exploration and exploitation installation in a particular location (offshore operations on location). Therefore, the approach might be known as a dual status approach, since on one hand, the mobile installation is viewed and treated as a ship when it is on transit activity, but on the other hand, the mobile installation is viewed and treated as an installation when it is carrying out exploration and exploitation operations in a particular location (offshore operations on location).

Provisions Regarding Safety Zones According to International Law

The provisions on the protection and security of offshore installations in the territorial sea as stipulated in UNCLOS 1982 are relatively limited. In the territorial sea, a coastal state has the right to take several measures to protect its offshore installations, including the establishment of safety or security zones around the offshore oil and gas installations. The establishment of safety zones is done by determining the radius or distance around the installation that is needed to protect it. The Coastal State may create legislations relating to the exercise of innocent passage through the territorial sea in relation with eight points, including, inter alia, the navigation safety and the arrangement of maritime traffic, preservation of aids to navigation and navigation facility or another facility, etc.

The establishment of a safety zone may be done under the following conditions: firstly, if it does not disturb or interfere with the navigation of ships based on the principle of innocent passage and, secondly, if it can guarantee the safety of navigation (Adrianus et al. 2016: 7). Therefore, the coastal state has the right to establish and prescribe sea lanes and Traffic Separation Scheme (TSS) in the territorial sea; a foreign ship is required to use the TSS. The Coastal State should not hamper the innocent passage of a foreign ship through its territorial sea except in conformity with this Convention; the coastal state has to give adequate

publication of any danger to navigation in the territorial sea which it knows (United Nations Convention on the Law of the Sea, 1982. Article 24, paragraphs 1 and 2).

The coastal state may also temporarily (*ad interim*) suspend the innocent passage of foreign ships in certain areas of its territorial sea if the suspension is essential to ensure defense and security of the state concerned. In addition, the coastal state may take measures that are necessary in its territorial sea to prevent the passage of foreign ships that carry out activities that are against the innocent passage principle. Therefore, a foreign ship whose purpose is to conduct activities contrary to the innocent passage principle could be anticipated and prevented from passing as a security measure. Further, the coastal state may exercise criminal jurisdiction over foreign ships navigating or existing within its territorial sea. If it is necessary, the coastal state may arrest or detain persons onboard the ship, for instance when a ship is involved in activities disturbing or damaging an offshore installation. The above explanations indicate the authorities of the coastal state, which are relatively limited, in the territorial sea, mainly the authority to establish safety zones in its territorial sea for the purpose of protecting the offshore installations therein.

In comparison, the authorities of the coastal state to protect offshore installations in the exclusive economic zone and the continental shelf are far more limited than its authorities to protect such installations in the territorial sea. In this regard, the main measure of protection that can be taken by the coastal state is that the coastal state has the right to establish safety zones around offshore oil and gas installations up to a maximum distance of 500 m measured from the installation. Within the safety zones, the coastal state is entitled to implement policies and measures needed to protect offshore installations. UNCLOS 1982 does not specify the nature of the measures and to what extent the measures might be taken by the coastal state in relation to the safety zones in the exclusive economic zone. The convention merely states that there should be a relationship between the safety zones and the nature and function of the offshore installation. However, with regards to protecting offshore installations from damage, mainly by big ships, the stipulated distance or radius of 500 m is viewed as very small, since in principle, the aim of the safety zone is to prevent foreign ships from harming the interest of coastal states in the exclusive economic zone. In order to prevent such ships from conducting activities that can disturb and damage the interest of the coastal state in relation to its installations, the radius of the safety zones should extend beyond 500 m. The Coastal State, if it is necessary to ensure the safety of navigation, may require a foreign ship exercising the right of innocent passage through its territorial sea to use and follow the sea lanes and traffic separation scheme as prescribed (United Nations Convention on the Law of the Sea, 1982. Article 22, Paragraph 1).

For the purpose of implementing Article 60 of UNCLOS 1982, International Maritime Organization (IMO) adopted several resolutions with respect to offshore installations and safety of navigation. One of such resolutions is Resolution A.671 (16) (Kashubsky, 2013) which contains recommendations relating to various

measures that may be taken by the coastal and user states to prevent interference with safety zones around offshore installations. Nevertheless, the resolution itself does not give authorization to the coastal state to conduct enforcement action over a foreign ship that breaches its safety zones. According to UNCLOS 1982, the coastal state is obliged to respect and protect the navigation right of other states and the principle of exclusive jurisdiction of flag state, making it difficult for the coastal state to exercise law enforcement over a foreign ship interfering with an offshore installation existing in its territorial sea. In this regard, every coastal state that authorizes and regulates the operation and use of offshore installations and structures under its jurisdiction should undertake the following actions (Adrianus et al. 2016: 9):

1. Issue early Notices to Mariners by appropriate means to advise vessels about the location or intended location of offshore installations or structures, the breadth of any safety zones established and the rules that apply therein, as well as all available fairways.
2. Mandate operators of MODUs to provide advance notice of any change in their location to the appropriate authority of the coastal state so as to ensure timely issuance of the relevant Notices to Mariners.
3. Mandate operators of offshore installations or structures, including MODUs that are on station (either moored or resting on the sea-bed) and not actively engaged in drilling operations (either prior to commencing such operations or during temporary stoppages) for whatever reasons, to take adequate measures to prevent infringement of safety zones around such offshore installations or structures. Such measures may include effective lights and sound signals, racons, permanent visual look-out and radar watch, listening for and warning vessels on VHF channel 16 or other appropriate radio frequencies and the establishment of vessel traffic services.
4. Mandate operators of offshore installations or structures to report actions by vessels that jeopardize safety, including infringement of safety zones.

Vessels that are navigating the vicinity of offshore installations or structures should carry out the following actions:

1. Navigate with caution, giving due consideration to safe speed and safe passing distances, taking into account the prevailing weather conditions and the presence of other vessels or dangers.
2. Where appropriate, take early and substantial avoiding action when approaching an installation or structure to facilitate the installation or structure's awareness of the vessel's closest point of approach and provide information on any possible safety concerns, particularly where the offshore installation or structure may be used as an aid to navigation.
3. Use any routing systems established in the area.
4. Maintain a continuous listening watch on the navigating bridge on VHF channel 16 or other appropriate radio frequencies when navigating in the

vicinity of offshore installations or structures to allow radio contact to be established between such installations or structures, vessel traffic services and other vessels, so that any uncertainty as to a vessel maintaining an adequate passing distance from the installations or structures can be alleviated.

Every coastal state that is aware of an infringement of the regulations relating to safety zones around offshore installations or structures under its jurisdiction should take action in accordance with international law and, when it considers it necessary, notify the flag state of the infringement allegedly committed by a vessel flying its flag and provide available factual evidence to substantiate the allegation as follows:

1. The name, flag and call sign of the vessel.
2. The course and speed of the vessel.
3. The identity of the offshore installation or structure and its operators.
4. A description of the operational status of the offshore installation or structure (i.e. its latitude and longitude, nature and duration of activity on station, breadth of the safety zone, text and date of Notice to Mariners giving warning of the offshore activity and the rules applicable to the safety zone).
5. The weather condition at the time of the alleged infringement.
6. The details of attempts by the installation or structure personnel or personnel on service vessels to contact the approaching vessel, including the radio frequencies used and the interval between attempts.
7. A description of any communication with the vessel.
8. A statement as to whether the installation or structure exhibited the proper lights and sound signals.
9. A photographic evidence or a complete and detailed radar indication of whether a radar beacon or warning device was in operation.
10. The details of any apparent contravention of any other regulation by the intruding vessel, such as the International Regulations for Preventing Collisions at sea (1972) as amended and the 1974 SOLAS Convention.
11. The name of the government official to contact regarding the complaint.

Every flag state that receives a report of an infringement of a safety zone by a vessel flying its flag should make inquiries and take action where appropriate, in accordance with its national legislation, and inform, as appropriate, the coastal state concerned of the follow-up action it has taken.

The coastal state that is authorizing the search for natural resources and any subsequent exploitation of such resources on the continental shelf or in the exclusive economic zone should be responsible for the dissemination of information essential for the safety of navigation or any other legitimate activity

within the area in which, in accordance with international law, it has sovereign rights and jurisdiction.

This dissemination of information should take the form of radio-warnings and Notices to Mariners (temporary, preliminary and permanent) and should cover all stages of activity, including initial search and investigation, trial drilling and subsequent exploitation. With regards to the dissemination of information, the following should be taken into account:

1. The area, period and nature of the initial search.
2. The position of a subsequent drilling, any warning or navigational marking and period of operation.
3. The state in which the sea-bed is left, the nature of any obstruction remaining after test drilling and any navigational marking.
4. The nature and duration of any work connected with the establishment of permanent production installations or structures and any associated work, such as laying of pipelines.
5. The details of the safety zones around the installation or structure as well as the fairways and routing systems established in its vicinity, including, where relevant, their marking.

The coastal state that is responsible for authorizing the above activities should take all steps necessary, either directly or via the development and research agencies, to ensure that all information concerning the said activities is conveyed to the hydrographic authority concerned in complete detail at the earliest possible time at all stages.

Any feature of a sufficiently permanent nature, such as permanent installations or structures, bottom obstructions, pipelines, navigational marks and prohibited areas, should be shown on all appropriate navigational charts. When these features exist in such density or are of a sufficiently mobile nature as to preclude accurate charting, then information on the areas concerned together with any associated aids to navigation, fairways and appropriate warning notes should be promulgated and marked on the navigational charts. Associated publications, such as Sailing Directions and Notices to Mariners, should carry the full details of any related regulation that affects navigation or other maritime activity.

In cases where the authorizing coastal state has no facility, or has inadequate facility for charting or disseminating information as described above, it should take all appropriate steps to convey, either directly or via the development and research agencies, all necessary information to the hydrographic authority/authorities that normally carry out primary charting and associated responsibilities for the area concerned.

Having viewed safety zones around offshore installations from the point of view of international regulations, it is also pertinent to view them based on Indonesian national regulations.

Provisions Regarding Safety Zones According to Indonesian National Regulations

With respect to exploration and exploitation of natural resources in the continental shelf of Indonesia, installations, ships and other devices can be constructed, preserved and used on the continental shelf and/or above it. To protect them (the installations) from interference or damage by a third party, the government may establish prohibited zones, whose distance shall not extend beyond 500 m measured from every outermost point on the installations, ships and other devices on the continental shelf and/or above it. The IMO resolution A.671(16) on Safety Zones and Safety of Navigation around Offshore Installations and Structures recommends that Governments consider, amongst other things, the establishment of safety zones around offshore installations or structures; the establishment and charting of fairways or routing systems through exploration areas.

Besides the prohibited zones, the government may also establish restricted zones whose distance shall not extend beyond 1,250 m measured from every outermost point of the prohibited zones, where the ship of a third party is prohibited from casting its anchor (Article 6 of Law of Indonesian Republic Number 1 Year 1973 regarding Continental Shelf.). A prohibited zone or area is an area in which the ship of a third party is prohibited from passing; it shall not cast its anchor therein as well. On the other hand, a restricted area is an area in which the ship of a third party may pass, but it shall not cast its anchor. In other words, the restricted area is a prohibited anchorage area.

Based on Article 1 of Government Regulation Number 5 Year 2010, a security and safety zone is an area or space located around aids to navigation, telecommunication equipment used for navigation, and constructions or installations, and it is limited by certain radius, height and/or depth. Therefore, a security and safety zone is divided into three categories:

1. The security and safety zone located around aids to navigation, like light houses.
2. The security and safety zone located around telecommunication equipment used for navigation, like radio station.
3. The security and safety zone located around structures or installations in marine environment.

Furthermore, Article 80 of the Regulation of the Minister for Transportation Number 129 Year 2016 stipulates that the limit of the security and safety zone in national waters is delimited by the Director General for Marine Transportation. These zones consist of prohibited and restricted zones. A prohibited zone has an area of 500 m measured from the outermost points of the installation, while a restricted zone has an area of 1,250 m measured from the outermost points of the prohibited zones or 1,750 m from the outermost points of the installation.

Nevertheless, under certain conditions, the prohibited and restricted zones do not attain these limits. The conditions intended are as follows: the presence of routes of subsea pipeline installation, the existence of prohibited and restricted zones on narrow waters, and the presence of other activities of interests around the installation. Ships are not allowed, inter alia, to traverse a prohibited zone. However, the prohibition does not apply to government ships and ships that have an interest in the activities of the installation. Besides, a ship having no interest shall not conduct fishing and other related activities. It shall not conduct any activity endangering the installation.

As comparison, in the United Kingdom, the establishment of safety zones is stipulated in Offshore Installations (Safety Zones) Order 2017. Article 2 (1) stated:

A safety zone is established around the installation specified in column 1 of the schedule (being an installation to be stationed in waters to which Subsection (7) of Section 21 of the Petroleum Act 1987 applies) having a radius of five hundred meters, with respect to the installation, from the point which has the co-ordinates of latitude and longitude according to the World Geodetic System 1984(3) specified in columns 2 and 3 of the Schedule.

This Order comes into force on 30th January 2017 except for Article 2(1) which comes into force as provided in Article 2(2): comes into force—(a) on 30th January 2017 if the installation arrives at its station before this date; and (b) if the installation arrives at its station in any other case.

In the Explanatory Note (this note is not part of the Order) explain that Article 2 of this Order establishes, under Section 22 of the Petroleum Act 1987, a safety zone having a radius of 500 meters from the specified point around the installation (which is a subsea installation) specified in the Schedule to this Order to be stationed in waters to which section 21(7) of that Act applies (these include territorial waters and waters in areas designated under section 1(7) of the Continental Shelf Act 1964 (c. 29)).

In the restricted zone, a ship having no interest shall not cast its anchor. It shall not conduct fishing and other related activities. It shall not conduct activities endangering the installation. A ship sailing around an installation is obliged to respect the security and safety zone by maintaining the secure distance; therefore, the seaman must exhibit good skills.

Concluding Remarks

The position of international law regarding safety zones is stated in UNCLOS 1982 and various international resolutions, including IMO Resolution A.671 (16), which recommends that states consider the establishment of safety zones and fairways or routing system in areas of exploration. Although UNCLOS 1982 does not stipulate the establishment of safety zones on offshore installations

constructed in the territorial sea, the coastal state has a right to establish safety zones, security zones, or exclusion zones, and its radius may extend beyond 500 m if it is necessary to protect the offshore installation in the territorial sea. Safety zones in the exclusive economic zone shall not extend beyond 500 m, but this should not apply to safety zones in the territorial sea because there is a fundamental difference between the territorial sea and exclusive economic zone. The difference regarding their respective radius originates from the legal status of territorial sea and exclusive economic zone, since the coastal state has full sovereignty over the territorial sea, whereas the coastal state merely has sovereign rights in the exclusive economic zone.

The position of Indonesian national law regarding safety zones are stipulated in various legislations, such as Law Number 1 Year 1973 regarding Indonesian Continental Shelf, Government Regulation Number 17 Year 1974, Government Regulation Number 5 Year 2010 on Navigation, and the Regulation of the Minister for Transportation Affairs Number 129 Year 2016 regarding the Navigation Routes and Installation at Sea. In principle, all the legislations stipulate the right of the Indonesian Government to establish safety and security zones around offshore installations, and these zones shall consist of prohibited and restricted zones, mainly around offshore oil installations. The radius of the prohibited zone extends up to 500 m around the installation, and the ship of a third party shall not traverse this zone. This prohibition does not apply to government ships and ships having interest. The ship of a third party shall not conduct any activity in the area. However, the radius of the restricted zone extends to 1,250 m, and the ship of a third party is allowed to traverse this zone, but it shall not conduct certain activities, like fishing, casting the anchor and endangering the installation.***

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