

OFFSHORE OIL SPILL COMBAT OPERATIONS DURING COVID-19 PANDEMIC

Novelina Stephani, S.Si

Deputy Operations Director, Oil Spill Combat Team Indonesia

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Good morning, good afternoon or good evening depending on where you're joining us from, I'm Novelina from Oil Spill Combat Indonesia, it's a pleasure to speak to all of you today. We would like to thank to the committee of Petroleum Association of Japan for inviting us to the Oil Spill Response workshop 2022.

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I'd like to take this opportunity to share our latest offshore oil spill combat experience during the covid Pandemic more than a year.

And before we share our experience and lesson learn, please let me to quickly introduce about our profile and capabilities.

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OSCT Indonesia is an oil spill response center located in west Java Indonesia we have over 6 bases across Indonesia. We have over 44,000 meters of oil boom, 122 oil Skimmer and 170 trained responders in Indonesia. And we also have bases of operations in Thailand and India.

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As you can see from data 85% of Indonesia territory is ocean, as you can imagine how big the risk is of spill pollution in Indonesia especially in the marine area. from oil & gas operation, marine terminal ship to ship and many others sources of oil spill risk, which can pollute sensitive areas & world heritage sites.

As Indonesia's largest oil spill combat centre & one of the largest in the world this is the basis of our mission is to protect Indonesia's & World's natural environment. And also to support the Indonesian Government target towards oil production 1 million barrel per day with the good preparation and prevention of the oil spill.

During the Covid pandemic, we continue to support the Government operations especially in the oil & gas activity and it presented challenged and I'll share you the detail later.

Slide 5:

Here some brief detail about our capability and OSCT as National Oil Spill Response Center is approved by national authorities in Indonesia such as Ministry of Transportation, Ministry of Energy & Mineral Resources and also Internationally Certified by Nautical Institute According to IMO Standards.

We do maintain this readiness in the pandemic time. We always have with pro-actively plan and response and we integrated with the strict HSE planning that have been implemented as well during the last incident in august 2021

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For the mutual cooperation, Currently OSCT Indonesia has signed International Cooperation MOU with international OSRO in 7 countries for mutual cooperation and assistance to deliver an effective and efficient response. In case of the large of oil spill incident we are able mutual assist for each other and we also are part of RITAG the regional Oil Spill Response Organization in Asia.

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OSCT Indonesia have combated more than 60 oil & chemical spills in Indonesia and around the world including China, Qatar and Thailand supported by response experts that have more than 37 years of experience.

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Our latest experience is offshore oil spill due to subsea pipeline leak in Langsa, Aceh Province, from looking at this map, you'll see that the langsa is in the top left, It is located on the island of Sumatra, north west Indonesia. The incident most challenging because the incident occur is located near the border of Malaysia, passing ships, shoreline sensitive beaches, settlements and we combated in during Covid pandemic.

Slide 9:

As you can see at the map There is Kuala Langsa Banda Aceh with a profile of tourist beaches, settlements, river, estuary, ponds and There is a Kuala Langsa Mangrove Tourism Forest, wherein 22 types of mangroves and animals found in that area.

Slide 10:

There was a Major offshore subsea pipeline leak incident. The oil is very light oil. The incident occurred on August 8, 2021 in Langsa, Aceh. OSCT was notified on August 8, 2021 and we conducted oil spill modeling and provide radar satellite images to predict the oil spill movement and recommend response strategies to mitigate spill before it impacted shorelines / cross the border.

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The company has received a Letter of the necessary Approvals from the government and already has Oil Spill Response Equipment and trained personnel. OSCT has been appointed the company to implemented the response plan. And the response was according to pre-approved plan

Slide 12:

As you can see from the picture, OSCT was activated on 8th August 2021 this is the first bubble and carried out trajectory modeling and satellite radar to see oil movement and while we supported operations on site. Before we mobilized our personnel we follow the Covid procedure and requirement from Company to make sure the personnel safe & health to work. the team arrived on 9th August 2021 with a physical breakup. They support to aerial surveillance and prepare for oil boom deployment.

In only five days the static boom has installed with skimmer was completely deployed and we maintained it for about 2 months. On 18th October, 2021 the spill source it was successfully closed.

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Here is a brief Movie overview of what's the incident looks alike. You can see the oil its very light and use various type of equipment. There was no dispersant chemical use only mechanical dispersant with ships. We use Skimmer and oilboom almost 4000 meters to contained the oil.

Slide 14:

This is the recap of the resources used. Over 4.800 meters offshore static boom. The first layer is static boom. What is static boom. Static boom is the oil boom works with anchors to keep it operated continuously. And 2nd layer is moving the dynamic boom and skimmer to catch the oil that escapes and we also have mechanical dispersant. we use ship propeller to make sure any leftover oil sheen its also disperse naturally without any chemical If oil spill leads to shoreline, response team is standby with protection boom to protect sensitive areas.

Slide 15:

The static boom containment is pre-planned and this is key. And I'm pretty sure all of us will agree that The key off quickly successfully response is have a good planning with the oil spill contingency plan so it can be implemented quickly.

And everything was calculated in tier with total 350-400 m oil boom for each configuration total about 10 configurations total 4000m, we also calculated how many skimmer is required to make sure the oil doesn't escape from the static boom, so 1-2 skimmers to operate with a capacity of 64-100 m³/hour

Slide 16:

We can see at the picture the static boom that being deployed and there is an oilboom to required maintenance use vessel to take the static oilboom that should be replace and vessel comes in and skim where ever oil a rise on sites.

It was over 40 trained responders with over 250 assist personnel with 10 vessels and we use strict health procedures during this the covid pandemic. We use basically antigen test which is mandatory for all personnel before travel, when arrival and also the basic concept is we keep the personnel distancing when traveling and where they stay individually hence if one person tested positive then it will not disturb the rest of the team.

Additionally, we had backup teams in place, for example if we have to mobilize 10 personnel, we will instead mobilize 14. But the 14 personnel will be mobilized separately divided into separate flights, cars and hotel rooms. Basically that is the arrangement that we implement.

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For the skimmer that we used is Disc Skimmer for Light Crude Oil. You can see here the oil can be recovered as long as oil contained in the boom and then the oily water accommodated in IBC tank on board the ship and mobilized to Shore base and then immediately taken to the processing facility. And there is almost no waste that restore at the shore base.

Slide 18:

There is an absorbent boom for used. This is one of technic that we implemented for the oil very light that not effective to use the skimmer. The absorbent is installed in a front of the Static Boom configuration to absorbs any oil sheen left. But there is only effective for any oil sheen.

Slide 19:

This is the propeller wash and fire monitor for used for oil very light. We did some testing with dispersant compare to mechanical and fire monitor. Actually, the mechanical dispersant does the exact same thing that dispersant does but the pressure from the fire monitor and propeller wash that actually that processes the oil not the chemical. Because you can see the oil sheen color is silverish and the thickness its only 0,0001 milimeters its very in sheen which actually disperses by using only propeller and fire monitor, so dispersant wasn't effective for very light oil.

Slide 20:

As a preventive strategy before oil spills reach sensitive areas, we had shoreline action equipment already. that we can see in this picture, we had survey all this location so in case there any complain or any fisher man that come forward we have team stand by to take their input to just survey verify and immediate response.

Slide 21:

If you can see this is the overview response strategy and planning.

There is the near shore containment, 1st layer, 2nd layer, the static boom and mechanical dispersant, we had surveillance detection, daily helicopter, weather surveillance, everything was deployed there and drone as well.

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So the resources we have our stockpile for Jakarta and Batam allocated for the response. There are 21 km offshore boom and 22 km shoreline boom available domestically for Tier-2/3 response. OSCT Indonesia resources can fulfill several oil spill incident responses.

Slide 23: Offshore Response Chart

So there are few lesson learn that we can take based on our experience response during Covid Pandemic.

One of the most important thing is covid-19 protocols. We need to make sure that every personnel are aware about the protocols itself. Some people are confused, some people doesn't know the protocol so we always encourage them to ask and read. And we also have more HSE personnel to monitor their movements.

So one of the basic things is complying with the departure requirements, they got tested first before they go. And we have a journey management plan, so they have to stick with the plan. They are not allowed to mingle, if they do then they can do it online to minimize the risk.

Medical clearance means everybody has to be healthy. If they don't pass the MCU test obviously they can't go.

And we also have on the response location, vessel masters and everyone that have findings every two weeks was tested on the vessel.

Command post, this is one of other things that provides us good lesson learnt and challenges. Everything in the command post done virtually so we can have command post on-site. They were all in their rooms. So everything was done online including the incident management team. There was about 40 of us online at one time. We have breakout rooms and it is on-going for almost 3 months non-stop. Briefing everyday morning and afternoon. It worked as long as you set a proper rules and also proper technology.

Oil spill response for Langsa Spill, is quite challenging due to occur in the pandemic Covid-19 situation, total personnel onboard about 252 for SERT (Site Emergency Response Team) active on-site complete screening test (PCR/Antigen) and quarantine. In addition, technical meetings and command post was conducted by online which has miscommunication and miss interpretation. This was handled well during incident with proactive planning such as briefing teams how to enter location properly, latest online video conference technology usage and backup teams to support on-site team. And we also have backup teams so in case there's a finding or somebody's tested positive they get replaced immediately.

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That concludes my presentation for today. The Summary Lesson Learnt base on our experience combating in the pandemic time are:

There are three things to consider :

1. OIL SPILL COMBAT PLAN & PREPAREDNESS

Especially For oil & gas operation, it is important to have pre-approved contingency plan for effective & quick response complete with covid pandemic mitigation plan

2. EFFECTIVE RESPONSE STRATEGY

- Static boom is also important for effective response
- And one of things that we learn if the oil is very light, it's didn't have to use the dispersant.
- and the location is very sensitive near to the borders and there is passing ship as well so it's important that have ship to notify the vessel make sure they don't go to where the boom is.

3. RESPONSE DURING COVID-19

You can see this 5 things that we hear to :

- 1. Health Protocol from origin City:** very important to have a Health Protocol Improvements for next response, have pro-active antigen/PCR Tests for off-duty personnel to ensure when they are on-duty they would be ready to be mobilized and ensure all ready-teams have PCR/Antigen tests already tested on weekly basis
- 2. Follow the Quarantine session & Screening Test**
- 3. Everybody should have Medical Clearance.**
- 4. Assignment for Response should to be clear so you can't jump to vessel to should follow the protocol onsite as well and everything in the command post to be done online**
- 5. Virtual Incident Command Post,** good reliable internet connection is required and should be prepared beforehand for all command center/post members.

Slide 25:

That brings us to the end of the presentations. Hopefully its can useful for all of us.

I would like to thank you to honor committee, all the wonderful speaker today and all the participants thank you for taking time out your busy schedule, that means the worlds to me.

Stay safe, stay health and bless you all