

Oil spill while bunkering

Vessel A was starboard side alongside and carrying out a cargo operation. The Chief Engineer had ordered a fuel barge to bunker 350 MT of fuel oil. The fuel barge came alongside on the port side in the morning. A hose was connected from the barge to the portside bunker station. The Chief Engineer had planned to bunker in fuel tanks 2S, 2P and 1P.

A superintendent from the bunker supplier also came onboard to monitor the bunkering and had a briefing with the Chief Engineer. The Chief motorman was on the portside bunker station. The 3rd Engineer was on deck taking manual soundings of the fuel tanks with a sounding tape. The Chief Engineer was in the ECR (engine control room) and the 4th Engineer was in the engine room.

The bunkering started at 08.30 with an initial pressure of 2.9 kg/cm² and the 4th Engineer opened the valves to 100% for 2S and 50% for 2P.

At 09.25 when the sounding of 2S had reached 4.7 m the Chief Engineer asked the bunker superintendent at the bunker station over the radio to reduce the pressure down to 2.0 kg/cm² from the fuel barge. The Chief Engineer could see on the gauges in the ECR that the pressure had come down to 2.0 kg/cm². He told the 4th Engineer over the radio to open the valve for 2P to 100% in the engine room.

At 09.30 the Chief Engineer noticed that the speed for the bunkering had slowed down, he thought this was due to a tank change on the barge. The Chief Engineer asked the Chief motorman over the radio at the port bunker station to pay attention to the pressure gauges and told the 3rd Engineer to pay attention to the soundings.

At 09.36 the Chief Engineer noticed that the speed of the bunkering had increased for 2P and 2S. The Chief Engineer told the 3rd Engineer over the radio to sound 2S quickly and let him know



when the sounding had changed from 5.05m to 5.10m.

At 09.42 the Chief Engineer told the 4th Engineer in the engine room to close the valve for 2S to 25%.

At 09.43 the 3rd Engineer informed the Chief Engineer over the radio that the sounding for 2S was 5.10m and the Chief motorman informed the Chief Engineer that the pressure gauge for the gate valve at the bunker station on the portside was fluctuating abnormally between 1.5 kg/cm² and 4.2 kg/cm². The Chief Engineer asked the Chief motorman to tell the bunker barge to reduce the pressure.

30 seconds later, the Chief Engineer noticed that the tank level for 2S and 2P was rising. The Chief Engineer told the 4th Engineer in the engine room to close the valve for 2S.

The 3rd Engineer reported over the radio that oil was overflowing from the starboard side bunker station. He believed it was from the sounding pipe of 2S. He ran to get some oil pads and rags from the portside and started to clean up as well as he could, but oil was still pouring over the side of the vessel and into the water.

The Chief Engineer rushed to the starboard side bunker station and confirmed that oil was overflowing. More than 2 MT of oil spilled into the water. The crew used sawdust and absorbent pads on deck to try to soak up the oil.

The barge captain noticed the commotion and stopped the pumps.

The oil was spreading from the vessel into the harbour. The vessel had no oil boom. The bunker barge did have an oil boom, but they were worried about the cost of deploying it, so they waited. After about 30 minutes the owners of the oil barge told the barge captain that he could deploy the oil boom, but the oil had spread over the harbour by that time.



Discussion

Go to the "File" menu and select "Save as..." to save the pdf-file on your computer.

You can place the marker below each question to write the answer directly into the file.



When discussing this case please consider that the actions taken at the time made sense for all involved. Do not only judge but also ask why you think these actions were taken and could this happen on your vessel?

1. What were the immediate causes of this accident?

2. Is there a risk that this kind of accident could happen on our vessel?

3. How could this accident have been prevented?

4. How do we monitor the bunkering operation?

5. Are our procedures effective enough to prevent this from happening?

6. What SOPEP equipment do we have?

7. Is our SOPEP equipment sufficient?

8. How do we ensure that we open the correct valves?

9. Are our fuel valves marked effectively?

10. What sections of our SMS would have been breached if any?

11. Does our SMS address these risks?

12. How could we improve our SMS to address these issues?

13. What do you think was the root cause of this accident?

14. Is there any kind of training that we should do that addresses these issues?