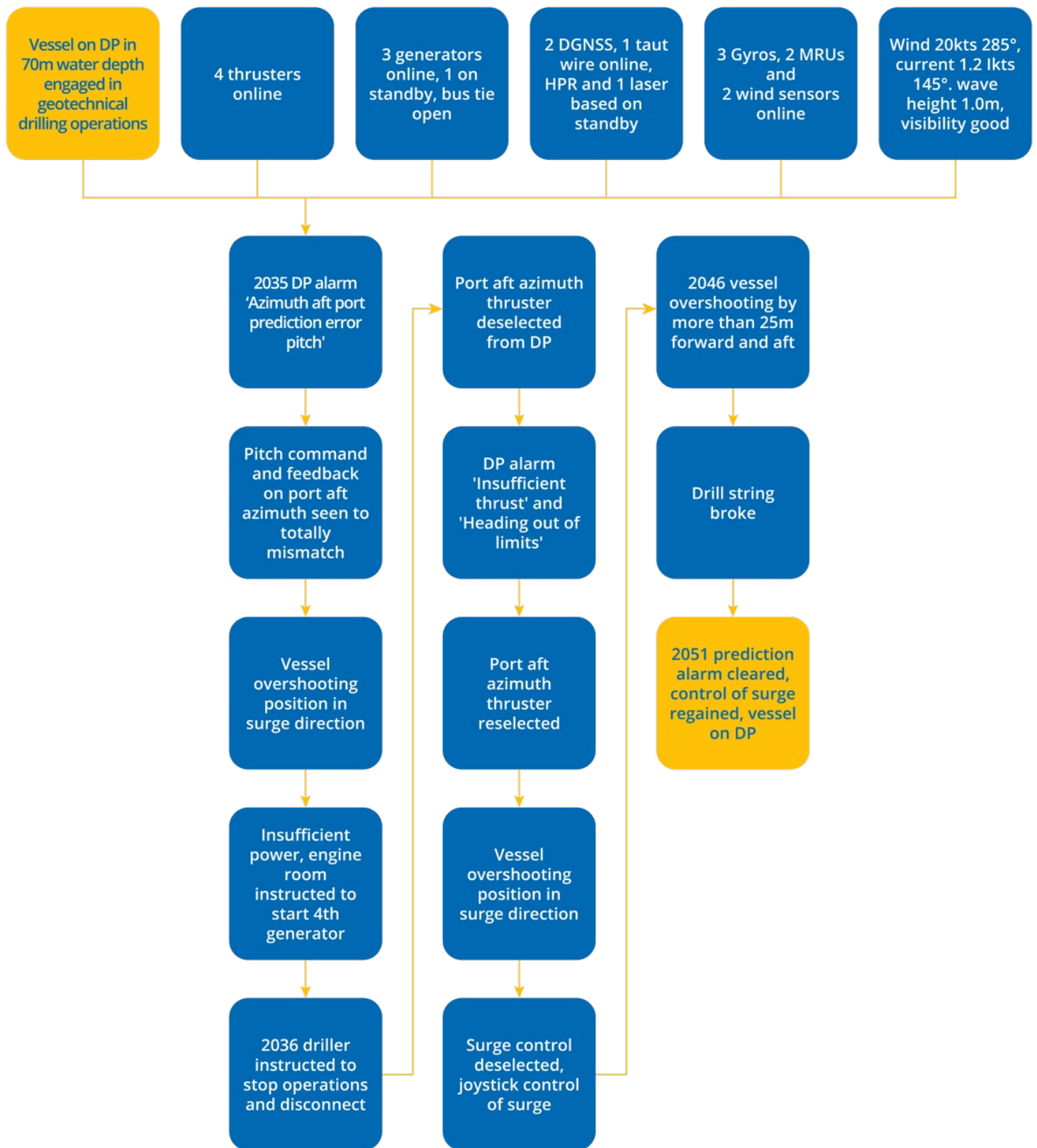


Thruster command and feedback differences

Incident ●

DP Event • Published on 2 November 2017 • Generated on 16 January 2025 • DPE 04/17

It was concluded that the fault had to be in the output control loop, and it was decided to replace items with spares held on board.



Comments

The DP system reported a thruster pitch prediction error when a large difference between the command and feedback was detected at 20:35:34. The description for a thruster prediction alarm states that the operator must take action to determine if the alarm is caused by a faulty feedback signal (DP performance nearly unaffected) or a faulty command signal (DP performance affected).

The port azimuth thruster was not stopped and only momentarily deselected from DP. The thruster gave thrust in the wrong direction while it was running and the DP system was unable to maintain position.

The prediction alarm went to normal again at 20:51:04 and the DP system was able to maintain position. No problems were reported after this.

Since the command output from the DP control system was correct, it was concluded that the fault had to be in the output control loop. It was decided to replace items in the command loop with spare parts held on board.

Trials and DP tests were carried out to verify system after replacement of parts. No problems or findings to report.

Considerations

- The reason for reselecting the errant thruster must be questioned.
- In this situation stopping the errant thruster should have allowed the DP system to regain control.
- Event box No.2 (pitch command and feedback mismatch indication) provides the trigger to stop the thruster because it indicates there is a problem with thruster commands.

The case studies and observations above have been compiled from information received by IMCA. All vessel, client, and operational data has been removed from the narrative to ensure anonymity. Case studies are not intended as guidance on the safe conduct of operations, but rather to assist vessel managers, DP operators, and technical crew.

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