Did a loose cable connection cause Dali blackouts?

Nearly six months after the late-March Dali bridge allision disaster outside the Port of Baltimore a just released report from the National Transportation Safety Board (NTSB) Office of Marine Safety presents some newly found insights.

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Credit: USCG Petty Officer 3rd Class Kimberly Reaves

Deep within the NTSB report, it is revealed that a loose cable connection discovered during inspections, conducted during April, might have been the cause of power blackouts aboard *Dali* that led to the disaster which followed in the early morning hours of 26 March.

Its latest brief provides insights from ongoing work by a newly formed "Engineering Group", which is composed of owners Grace Ocean Private Limited, ship managers Synergy Marine Group, shipbuilder HD Hyundai Heavy Industries (HHI), classification society Nippon Kaiji Kyokai (Class NK), flag-state Maritime & Port Authority of Singapore, and India, which is described as a "substantially interested State".

The 41-page report exhaustively details the weeks of tests on the ship's electrical system that were conducted in the weeks post-allision mainly by engineers from HHI, under close observation from NTSB personnel. The wording extracted from the NTSB report here, describing activity deep within the vessel electrical switchboard array, is highly technical, with emphasis added by *Seatrade Maritime News*:

HHI engineers found that one of the cable cores that connects the DB1X-1 relay of the GPT1 panel to the control line was loose. The DB1X-1 relay is for bus blackout detection. Two ends of the DB1X-1 relay are nodes 381 and 382. Node 381 is connected to node 304 of the control line and node 382 is connected to node 305 of the control line…**HHI engineers found that the cable was loosely connected at node 381. That condition can create an open circuit and interrupt the 110VDC power**

to the HR1 UVT Coil, which would trigger an under voltage release trip of HR1. This would result in a 440V blackout without leaving any records in the HiMAP-T sensor….

HHI engineers advised that if the cable is loosely connected, the UVT control voltage might not maintain a steady value of 110VDC. If this condition is not met, the HR1 will open, which would lead to a Low Voltage (440V) Switchboard blackout. If the transformers are set to an automatic switch mode, LR2/HR2 is automatically closed and TR2 is connected when HR1/LR1 is open.

Photo Credit: NTSB

These findings will no doubt be considered as the NTSB works towards a final report on the *Dali* allision.

In an April interview with *Seatrade Maritime News*, Holland & Knight lawyer Benjamin Allen, a veteran of the NTSB and now a Partner in H & K's Washington, DC office focusing on transportation accident litigation, had suggested that a one-year timeline might be a reasonable expectation for the NTSB to issue its final report on the Dali incident.

RESOURCE: Update report Sept 11, 2024 readers should refer to pages 38- 40

https://data.ntsb.gov/Docket/Document/docBLOB?ID=17630891&FileExtension=pdf&FileName=Dali%20Shipboard%20Machinery%20Examination%20and%20Record%20of%20Electrical%20Testing-Rel.pdf