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UNITED STATES DEPARTMENT OF THE INTERIOR
MARINE MINERALS ADMINISTRATION
ATLANTIC OUTER CONTINENTAL SHELF

INCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **31-May-2024** TIME: **1830** HOURS

2. LEASE: **OCS-A-0483**
   LATITUDE:
   LONGITUDE:

3. PLATFORM: **N/A**
   VESSEL NAME: **Atlantic Oceanic**

4. ACTIVITY:
   - ☐ SURVEY
   - ☑ CONSTRUCTION
   - ☐ COMMISIONING
   - ☐ OPERATION
   - ☐ DECOMISSIONING

5. TYPE:

INJURIES:	OPERATOR	CONTRACTOR
☐ REQUIRED EVACUATION.		1
☐ LTA (1-3 days).....		
☐ LTA (>3 days).....	1	
☐ RW/JT (1-3 days)....		
☐ RW/JT (>3 days).....		
☐ FATALITY.....		
☐ Other Injury.....		

- ☐ ENVIRONMENTAL DAMAGE OR HARM
- ☐ FIRE
- ☐ EXPLOSION
- ☐ COLLISION
- ☐ STRUCTURAL DAMAGE
- ☐ CRANE
- ☐ PERSONNEL/MATERIAL HANDLING
- ☐ DAMAGED OR DISABLED SAFETY SYSTEMS
- ☐ INCIDENT >$25K
- ☐ REQUIRED MUSTER
- ☐ OTHER:

6. OPERATOR: **Coastal Virginia Offshore Wind**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR: **DEME Offshore US LLC**
   REPRESENTATIVE:
   TELEPHONE:

7. CAUSE:
   - ☐ EQUIPMENT FAILURE
   - ☐ HUMAN PERFORMANCE ERROR
   - ☐ WORK ENVIRONMENT
   - ☐ SUPERVISION
   - ☐ COMMUNICATION
   - ☐ MANAGEMENT SYSTEMS
   - ☐ PERSONNEL TRAINING
   - ☐ OTHER:

8. WATER DEPTH: FT.

9. DISTANCE FROM SHORE: MI.

10. WIND DIRECTION: SPEED: M.P.H.

11. CURRENT DIRECTION: SPEED: M.P.H.

12. SEA STATE: FT.

13. PICTURES TAKEN:

14. STATMENT TAKEN:

At the time of the investigation, Marine Minerals Administration (MMA) personnel were operating under the former Bureau of Safety and Environmental Enforcement (BSEE). Therefore, all MMA personnel referenced in this report will be identified as BSEE personnel.

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15. INVESTIGATION FINDINGS:

On 31 May 2024, a Jäger Maritime worker, identified as the Injured Party(IP), sustained significant internal injuries while conducting Double Big Bubble Curtain (DBBC) supply-hose recovery and disconnection operations aboard the vessel Atlantic Oceanic at foundation location G2J03 within the Coastal Virginia Offshore Wind (CVOW) Lease Area OCS-A-0483. The severity of the injuries required the IP to be evacuated offshore for medical treatment.

Sequence of Events: The DBBC is a noise-mitigation system that supplies compressed air through a network of hoses to create a curtain of bubbles around the monopile during pile driving. Following completion of pile driving at G2J03, the crew was recovering the supply hoses, which requires disconnecting each supply hose from its forerunner. Standard practice is to release system pressure before disconnection.

At approximately 18:10 the compressors were turned off, and at 18:15 the flushing valve was opened to release pressure. However, one of four butterfly valves in the manifold system was in a partially closed position, which prevented the trapped air pressure from being released from one hose. The hose's pressure manometer read 0 bar, reinforcing the crew's belief that the system was depressurized. Because the crew believed the hose was safe, the whip check restraint had been removed.

At 18:30, while disconnecting the port side (PS) forerunner from the supply hose, the pressurized hose released its stored energy. The forerunner (a metal camlock connection piece weighing approximately 6.6 lbs / 3 kg) sprang upward and struck the IP — who was walking from the starboard side toward the PS manifold to assist — in the lower back.

The IP sustained fractured ribs, a traumatic kidney injury, and a spleen injury requiring splenectomy. The vessel bridge was notified at 18:31 and the Chief Mate responded with a first-aid kit. The Master contacted the U.S. Coast Guard at 18:43 and arranged for the installation vessel Orion to come alongside. An Orion medic boarded the Atlantic Oceanic at 19:30;the IP was transferred to Orion's sick bay at 19:50. A USCG vessel arrived at 22:00, the IP was transferred to the USCG vessel at 22:35, and reached shore at 23:43, arriving at hospital at approximately 00:00 on 1 June 2024. The injury was classified as a Lost Time Injury.

The BSEE Investigation:On June 1, 2024, the BSEE Atlantic Operations Office conducted an incident investigation. BSEE investigators met with representatives from Dominion Energy Virginia, DEME Offshore US LLC, Jäger Maritime, and the vessel Atlantic Oceanic, interviewed witnesses, and collected incident-related documentation, including the operator's 15-Day Report submitted under30 CFR § 285.833, the contractor's incident investigation report(CVOW1-TIP-DMN-RPT-HS-00024), the DBBC Noise Mitigation Risk Assessment(CVOW1-TIP-DMN-RSK-HS-00015, Rev. 02), the Jäger Maritime Operational Risk Assessment, the shift Toolbox Talk (RID-2721) dated 31 May 2024, site and simulation photographs, crew training certificates, and the personnel-on-board list.

Recovery of the DBBC supply hoses requires each hose to be disconnected from its forerunner only after the system has been depressurized. The contractor timeline showed that the crew followed the expected depressurization steps — the compressors were secured at approximately 18:10 and the flushing valve was opened at 18:15 — which ordinarily would have left the hoses without pressure. Inspection of the investigation photographs established why one hose did not vent: one of the four butterfly valves in the manifold was in a partially closed position, trapping air behind it so that opening the flushing valve could not release the pressure in that hose. The pressure manometer on the affected hose read 0 bar because the trapped pressure lay upstream of the closed valve, giving the crew a false but credible indication that the hose was safe. Believing the hose was depressurized, the crew had removed the whip-check restraint — the barrier that would otherwise contain a hose if a pressurized connection parted — leaving no protection against an unexpected release.

The investigation established that the starboard hoses had already been disconnected and that the IP was moving from the starboard manifold toward the port manifold to assist the second worker when, at 18:30, the still-pressurized hose was disconnected. His path placed him directly in line with the connection as the stored energy drove the camlock forerunner(approximately 6.6 lbs / 3 kg) sharply upward and into his lower back,accounting for the severity of the injuries sustained.

In examining why these conditions were not caught, the investigation found that, following a crew change, the replacement Jäger Maritime personnel had not participated in the project's initial DBBC dry-runs, and that no experienced DBBC supervisor was present at the aft work area at the time of the disconnection, though one had been present earlier during the Toolbox Talk. The shift Toolbox Talk (RID-2721) included the specific check "Valve status to be checked and confirmed," which was marked "ok," yet a valve remained in the wrong position at disconnection, indicating that the verification as performed did not reliably confirm that the system was depressurized. Finally, the DBBC Noise Mitigation Risk Assessment had already identified the hazard of air-hose or coupler failure causing "hoses swinging uncontrolled resulting in personnel injury," and had prescribed the controls that would have prevented it — the "use of whip checks" and ensuring "nobody to position themselves in the line of fire." The hazard and its controls were therefore recognized in the governing risk assessment but were not maintained in practice at the time of the incident.

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16. LIST OF PROBABLE CAUSE(S) OF ACCIDENT:

Human Performance Error / Work Environment:

- Stored energy not isolated. One of four manifold valves was in a partially closed position, preventing release of trapped air pressure from the supply hose prior to disconnection.

- Safety barrier defeated. The whip-check restraint, intended to contain a pressurized hose if a connection fails, had been removed because the crew believed the system was depressurized.

- Line of fire. The IP's position relative to the pressurized hose/forerunner assembly during disconnection placed him in the line of fire; the forerunner sprang up and struck him in the lower back.

17. LIST OF CONTRIBUTING CAUSE(S) OF ACCIDENT:

Personnel Training:

- Untrained replacement crew. Following a crew change, replacement Jäger Maritime personnel had not participated in the project's initial DBBC dry runs. Crew handling valves and depressurization lacked clear procedures/training for valve handling.

Work Environment / Human Performance Error:

- Misleading indication. The hose manometer read 0 bar, reinforcing the false belief that the system was depressurized, when residual pressure remained trapped upstream of the closed valve.

Management Systems:

- Verification not effective. The Toolbox Talk (RID-2721) included the item "Valve status to be checked and confirmed" (marked "ok"), yet a valve remained in the wrong position — indicating the verification step did not reliably confirm the depressurized state before disconnection.

- Procedural gap on valve handling. The Jäger Maritime RAMS lacked sufficiently detailed procedures for valve handling and system depressurization.

18. LIST THE ADDTIONAL INFORMATION:

Immediate corrective actions taken by the contractor following the incident:

- Color coding of the valves and creation of a valve-system cheat sheet to make valve status clear.
- A checklist integrated into the Toolbox Talk, including a buddy check.
- Attachment/restraint of hoses to the deck so a hose cannot spring up.
- Handover of a valve-status ("as-left") overview between shifts.

Further corrective actions planned:
- Inclusion of a Lockout/Tagout (LOTO) procedure for work on pressuresystems.
- Update of Jäger Maritime RAMS with more detailed valve-handling procedures.
- Rollout of a training plan for all personnel working with the system,including for future crew changes.
- Investigation of an engineered ("dummy-proof") solution to eliminate the risk of opening a pressurized hose.
- Sharing of Lessons Learned across all CVOW sites/packages.

19. PROPERTY DAMAGED: **No**

NATURE OF DAMAGE: **Not applicable**

ESTIMATED AMOUNT (TOTAL): 0

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20. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

Atlantic Operations recommends to the Office of Incident Investigations (OII) to consider the issuance of a Safety Alert regarding the securing and depressurizing of hoses.

21. POSSIBLE VIOLATIONS RELATED TO ACCIDENT:

22. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

23. DATE OF INVESTIGATION:

01-Jun-2024

24. INVESTIGATION TEAM MEMBERS:

25. DIRECTOR OF ATLANTIC OPERATIONS:

Gerard Moore

26. APPROVED DATE: **14-Oct-2026**