SUBSEA SURVEYS & INSPECTIONS FOR COASTAL VIRGINIA

ACTEON

PROJECT OVERVIEW

A renewable energy company required a strategic partner to perform a Multibeam Echosounder (MBES) survey to acquire bathymetric and backscatter data and obtain information on sediment mobility and environmental changes on subsea Balance of Plant assets on the Coastal Virginia Offshore Wind project operated by Dominion Energy. Multiple campaigns were performed during the second half of 2021.

The project was managed by the Acteon Integrated Solutions (AIS) team, as part of an ongoing partnership, and delivered by TerraSond, a Geo-services brand in Acteon's Data and Robotics division, performing the surveys.

THE CHALLENGE

This was the inspection of the first offshore wind project in US federal waters in water depths ranging from 6 to 40 m. The inspection schedule followed the required inspection intervals prescribed by the regulatory bodies.

A geophysical cable survey was required on two 6-megawatt (MW) wind turbine generator (WTG) monopile foundations focusing on their scour protection and spud can depressions in their vicinity. The areas to be surveyed were one 34.5-kV alternating current (AC) submarine cable interconnecting the WTGs (inter-array cable) and one 34.5-kV submarine transmission cable (export cable) with interpretation and reporting of the acquired data.

The ROV monopile inspection scope required general visual inspection (GVI) and subsea Cathodic Protection (CP) inspection to measure and record the overall condition of the monopile's external and internal surfaces with interpretation and reporting of the acquired data.

Even at the early stage in the wind farm life, there was already a lot of data collected between various contractors and suppliers meaning that it became challenging to compare the original as-built surveys with the surveys conducted by Acteon.

CUSTOMER GOAL

The customer required access to critical data about the two pilot monopiles/turbines in the preparation for the 176-turbine wind farm to be constructed nearby. Insight was required on if there were portions of export cable or inner-array cable that were exposed; whether the scour protection around the monopiles was still in place; the speed of accumulation of marine growth on the monopiles; whether the sacrificial anodes were deteriorating faster than expected.

They also needed to optimise costs by using assets that were already available in the field, including the crew transfer vessel (CTV) that was on long-term charter by Dominion Energy.

OUR SOLUTION AND ITS COMMERCIAL BENEFITS TO THE PROJECT

Market-leading services and integrated solutions

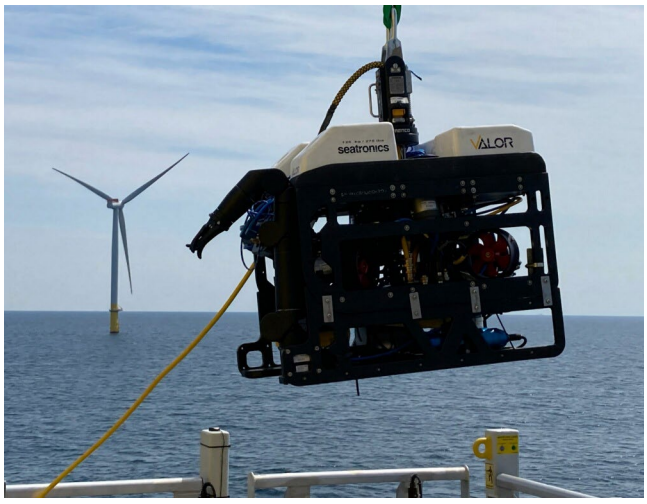
- Terrasond, a Geo-services brand in Acteon's data and robotics division, supported by Acteon, seamlessly combined expertise, personnel and equipment from across Acteon through a single point of contact to perform subsea balance of plant survey and inspection along with offshore engineering and onshore documentation support.
- Terrasond conducted a high-resolution MBES survey that was needed to observe the changes in seabed sediment around the cable.
- Seatronics, an Electronics and Tooling brand in Acteon's data and robotics division, provided the VALOR (Versatile and Lightweight Observation ROV) spread.
- Deepwater, the corrosion management brand in Acteon's Energy Services division, provided the Deep C Meter kit, along with offshore engineering and onshore documentation support.
- Clarus, an advanced systems engineering brand in Acteon's Engineering, Moorings and Foundations division, provided the iCUE; a web-based integrity management portal that allows structured data organisation and provides visual summaries of integrity information such as risks, anomalies, inspection plans and reports, condition monitoring KPIs, and more.

Optimise the project to increase commercial value

- The client provided the crew transfer vessel (CTV) which was utilised as a survey vessel for the geophysical survey and as a transportation vessel to set up the ROV crew and spread on the monopile platforms for the ROV inspection.
- Acteon had to stick to the tight schedule windows in terms of when the CTV could be used for survey and inspection while it was not needed for other work in the field.
- The vessel that was utilised was already available at no additional cost to the customer.
- ROVs with a small footprint were deployed by the existing davit on the monopile platform.

Combine digital technology and data to enhance our expertise

- Data interpretation from the MBES survey was used around the monopiles to map the seafloor and confirm the visual results from the ROV inspection.
- Acteon's data interpretation and reporting focused on cable crossings and horizontal directional drilling (HDD) punch out as the customer's critical areas of interest.



AIS seamlessly combined expertise, personnel and equipment from Acteon brands through a single point of contact.

"Acteon is proud of the ongoing work to offer seabed surveys and asset inspection as part of a fully integrated subsea balance of plant O&M package delivered through our experienced geo-services, electronics and tooling, and offshore advanced systems engineering segments," says Tim Eyles, Vice President, Acteon.

"Acteon is a global leader and brings years of experience to our Coastal Virginia Offshore Wind pilot project. The data we are able to obtain through Acteon's surveys and inspections is helping inform our larger commercial project as we work to bring reliable, renewable energy to our customers," says Michael Lundsgaard, Director Offshore Wind Operations, Dominion Energy.