GULF COAST O&G VESSEL ASSETS & THE FIRST U.S. OFFSHORE WIND PROJECT

BOEM 2017 / INFORMATION TRANSFER MEETING – SESSION 1B

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MONTCO OFFSHORE

PRESENTATION AGENDA

- **Montco Corporate Overview & Evolution to Wind**
- Uses of O&G Vessel Assets In U.S. Offshore Wind Industry
- Dock or Harbor Considerations for GOM O&G Vessels
- Summary

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INTRODUCTION TO MONTCO FAMILY OF COMPANIES

Montco Family of Companies (150 Employees)

Montco Offshore Liftboats
6 US-Flagged Liftboats in GOM O&G Theater
30 Office Employees & 120 Offshore Mariners
Primarily Based in Galliano, Louisiana

Montco Oilfield Solutions
Mobile Generators that range from
60kW to 300kW
30 Employees: Managers & Field-Technicians
Primarily Based in Midland, Texas

Montco Offshore Liftboats

Montco Oilfield Solutions

First Serving the O&G Industry in 1948 -- Over 30-Years of Liftboat Experience in the Gulf of Mexico

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HISTORY OF MONTCO OFFSHORE

Montco Timeline/Evolution

1960's – 1980's
Crewboats
Originally based on Navy PT-Boats designs
Fast Transport of personnel & light supplies

1970's – 1990's
OSVs (Offshore Supply Vessels)
Forward Cab & large back cargo deck
Under-Deck Tanks to supply fuel & water

1980's – 2000's
Offshore Tugs & Material Barges
Tremendous Bollard-Pull Capacity
Large Deck Area to Load Foundation Components

1980's – TODAY
Offshore Liftboats
Self-Propelled, Elevating Stable Work Platforms
Heavy-Lift Cranes & Worker Accommodations
Oilfield Support, Scientific-Coring, Wind-Farms

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5 WAYS LIFTBOATS (& SUPPORTING GOM VESSELS) CAN WORK IN OFFSHORE WIND

1. **Geotechnical –** Performing Site-Specific Coring for Foundation Engineering
   ECORD Exp.313 NJ-Shallow Shelf in **2009** (…& Exp.364 Chicxulub K-Pg Crater in 2016)

2. **Direct Installations --** Met-Towers, Foundations/Assist, Towers-Nacelles-Blades
   Assisted by performing jacket pin-pile install & hammering, and upper-deck install in **2015**

3. **Feeder-Barge Installations –** Ferrying WTG components to Installation Vessels ….in a Jones-Act compliant manner. Performed in **2016** for 5 WTGs for BIWF

4. **Operational Maintenance & Repair --** Blade or gearbox repair/replacements, electrical switch-gear upgrade, array / export cable repair, AND foundation repair & maintenance.

5. **Decommissioning –** End of Life Removals, 25-years down the road.

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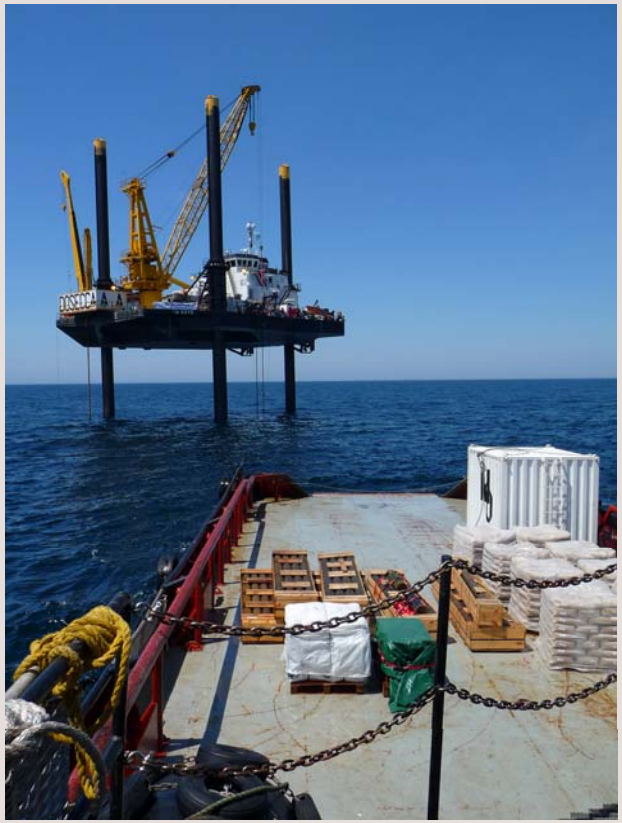
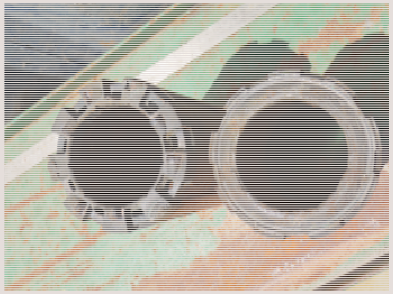
GEOTECHNICAL – SITE-SPECIFIC CORES FOR FOUNDATION ENGINEERING





Summer of 2009, Montco's ***L/B Kayd*** traveled to Atlantic City, NJ for a scientific-coring expedition. When completed, hired by Deepwater Wind to drill the site-specific cores for the Block Island Project.

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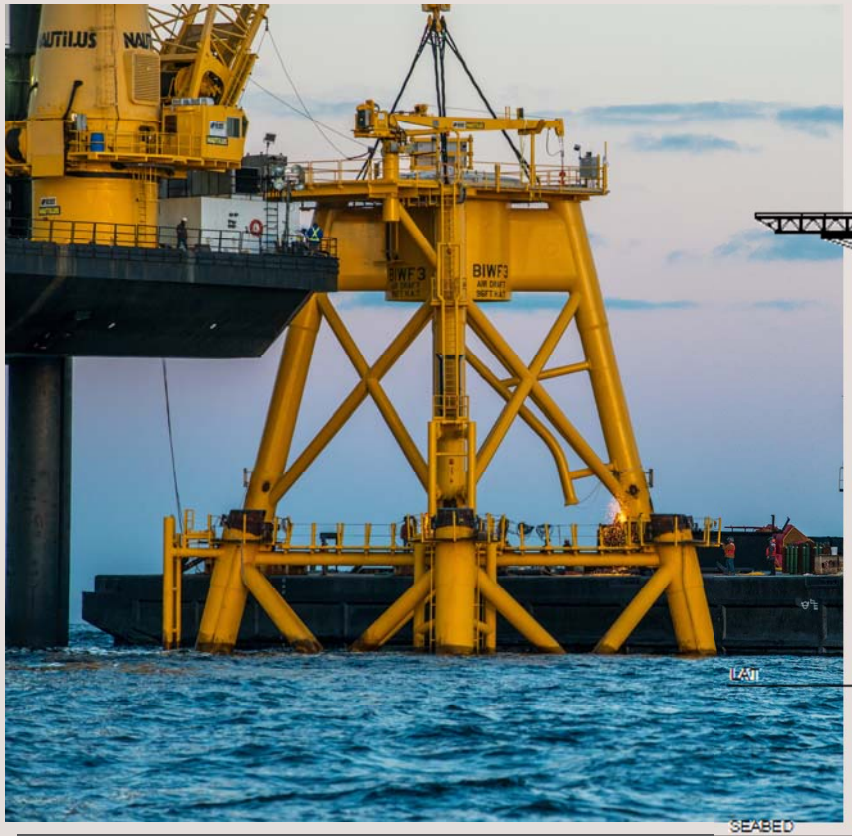
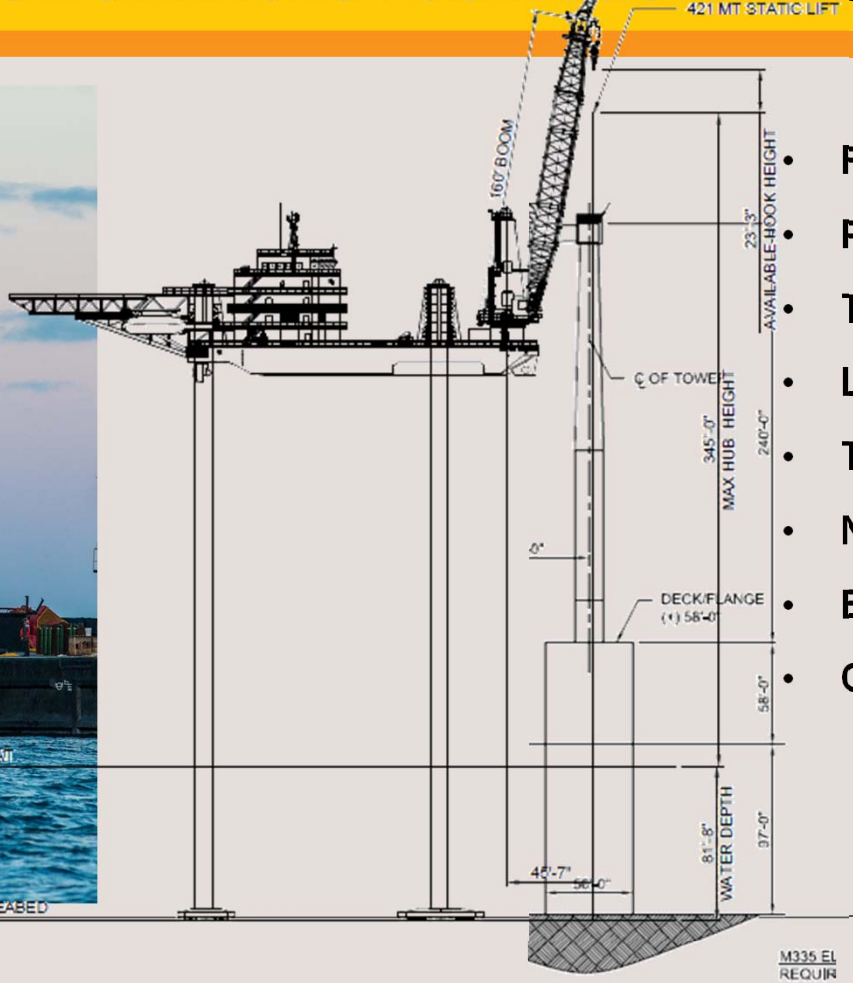
DIRECT INSTALLATIONS – USING LARGEST GOM O&G LIFTBOATS





- Foundation Setting
- Pile Hammering
- Transition / Guide Install
- Levelling / Grouting
- Towers Segments
- Nacelles
- Blades
- Commissioning

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FEEDER-BARGE INSTALLATIONS – FERRYING WTG COMPONENTS

- Utilizing two(2) liftboats to transport WTG components (in a Jones-Act compliant manner) from the shore-based dock out to wind turbine installation vessel.
- Provided stable (non-heaving) platform for potentially larger (static) lifts.
- Kept WTIV optimally utilized & completed install ahead of schedule (even with a few Wx delays.) MiNO Video

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OPERATIONAL MAINTENANCE & REPAIRS

If and when maintenance to a WTG (such as a blade replacement) is required, (appropriately-sized) GOM O&G Liftboats could be utilized.

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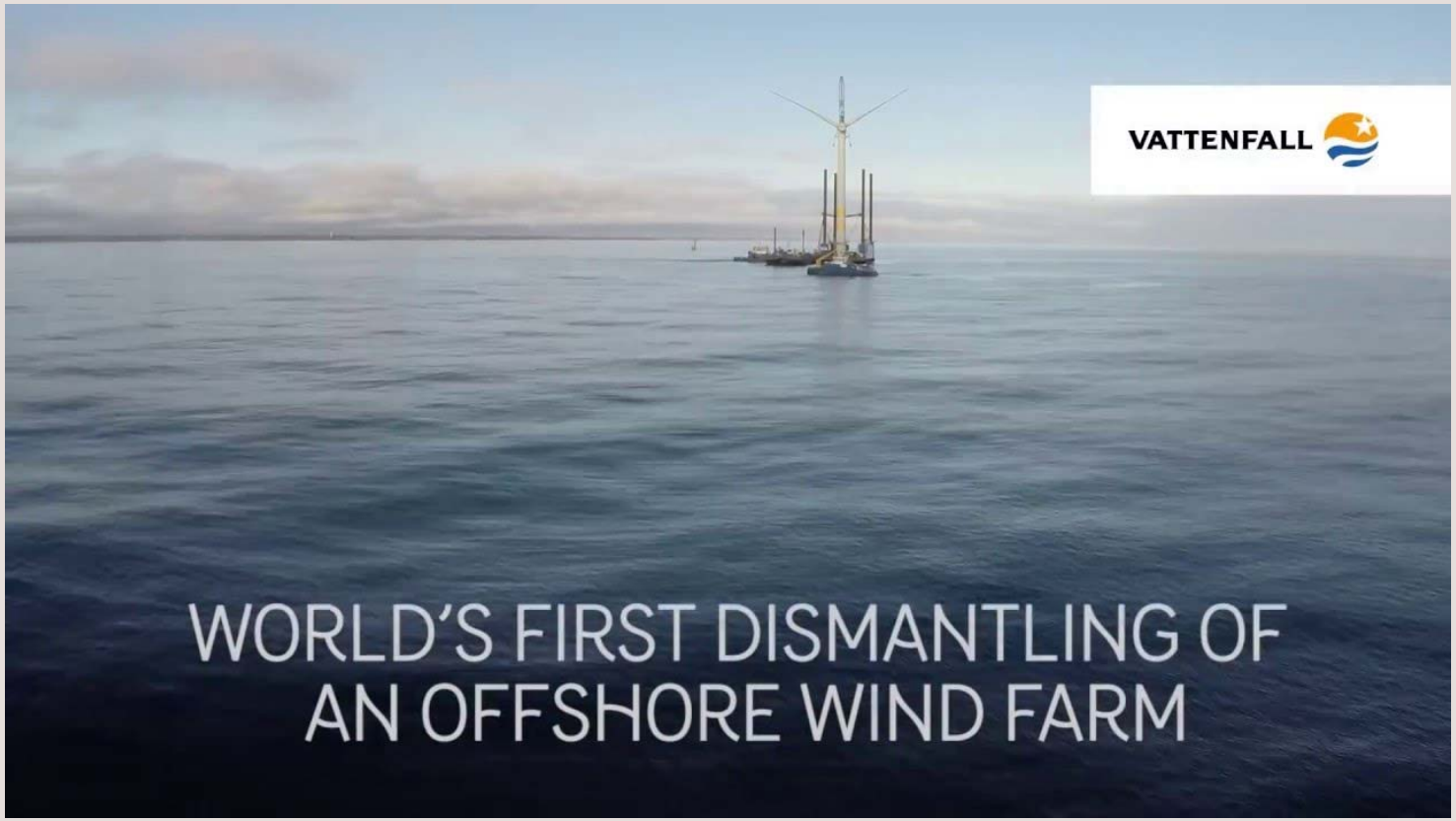
DECOMMISSIONING – END OF LIFE REMOVALS, 25-YEARS DOWN THE ROAD



The five wind turbines of Vattenfall's Yttre Stengrund offshore wind farm in Kalmar Sound in Sweden have been decommissioned and the rotors, nacelles, masts and foundations were dismantled November 2015-January 2016 - the first project of its kind.

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DOCK AND HARBOR CONSIDERATIONS WHEN USING GOM O&G VESSELS

- Docks & Ports in the GOM O&G Arena have evolved to meet the needs of these vessel-types.
- On the east-coast, early adopter vessel operators (like Montco) are learning of the below items.

Navigational Dimensions

- Horizontal Widths
  - Hurricane Gates
  - Channel Width
- Vertical Clearance
  - Bridges
  - Powerlines
- Water Depth / Draft
  - 20ft / 6m

Dock / Facility Services

- Docks w/LargeCranes
  - Hi.Load Bearing
- Fresh Water Supply Large Rate/Volume
- Diesel (LowSulphur) Tank-Pumped vs. Trucked-In
- Electrical ShorePower
- Noise-Control / Trash

Bottom Conditions

- Inshore at Docks
  - Shallower than expected
  - Organic Muck Bottoms
- Offshore at Worksites
  - Water Depths < 100’ / 30m
  - ALWAYS Firm!

Operational Wind & Sea Limitations

Mobilizing & Transitioning

- Max Seas of 6’ / 1.8m
- Max Winds ~30mph / 13.5m/s

Elevated Operations

- Max Seas of 15’ / 4.5m
- Max Winds 30mph / 13.5m/s (Crane-Operations Limits)

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SUMMARY

- **GOM O&G Offshore Assets Available and Ready**
  - Vessel Operators w/ Experienced Mariners, Knowledgeable in Safe Offshore Operations, Ready to Work
- **Non-GOM / East-Coast Docks and Shore Side Infrastructure Improvements Required (& Underway)**
  - Bad-News: Currently Not Always Easy to Find Suitable Docks and Expected Facilities for GOM Vessels
  - Good News: Offshore Wind Industry is Changing That …For The Better (New Bedford, MA -- Good Example)
- **Assets Can Be Used Through the Entire Life-Cycle of Offshore Wind Farms**
  - GOM O&G Vessel Assets Can Contribute to Every Part of the Offshore Wind Life-Cycle; Geotech-Installation-O&M-Decom
- **Future Will Provide A Better Vessel Pipeline To Accommodate Construction of US Offshore Windfarms**
  - Purpose-Built US-Flagged WTIVs to Install Commercial Grade Wind Farms (..including future/larger WTGs).
    Conversion of existing barge asset to include large-crane and jacking system to perform installs
    'Expanded Block-Island' feeder-model utilizing existing Jones-Act Compliant vessels.

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Thank You for your time & attention!

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