Block Island Wind Farm CVA
Status of Verification of Substructure Installation (July 19 to September 22)
ABS Status Update of 9/22/2015

- EHS Installation
- 2015 Installation Status
  - Jacket/TP #1
  - Jacket/TP #2
  - Jacket/TP #3
  - Jacket/TP #4
  - Jacket/TP #5
  - Repairs
- 2016 FDR
  - Alstom
  - Cable/Electrical
- 2016 FIR
  - Alstom
  - Cable/Electrical
- 2016 Fabrication
  - Alstom
  - Cable/Electrical
## Status of Safety Recommendations

<table>
<thead>
<tr>
<th>ABS Recommendations August 25th</th>
<th>Current Status on September 22nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Full time safety representation during the installation process to allow for identification and timely resolution of issues</td>
<td>WMJV has full time safety reps on W533 and W526 Montco has a safety rep on the LB Robert Increased safety sweeps and hazard hunts observed</td>
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<tr>
<td>2. Safety stand-down to review current practices, safety concerns, personnel concerns, process failures and retraining as required</td>
<td>Performed by DWBI and WMJV on August 28th</td>
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<tr>
<td>3. Review of crane capabilities based upon current experience gained from first five weeks and engineering review of rigging for operations and pile driving to minimize safety hazard to personnel</td>
<td>Performed by DWBI and WMJV resulting in WMJV deciding to add the Lift Boat Robert to the vessel spread for the project</td>
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<td>4. Establishing a safety committee to meet regularly and report on progress of safety system and resolution of issues</td>
<td>Complete according to DWBI To be confirmed by ABS</td>
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<tr>
<td>5. Establish formal process to identify root cause of near misses/issues to prevent recurrence</td>
<td>Complete according to DWBI To be confirmed by ABS</td>
</tr>
<tr>
<td>6. Verification of W/M Safety Management System for compliance with their written processes and procedures</td>
<td>Complete according to DWBI To be confirmed by ABS</td>
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</tbody>
</table>
Improvements

- Safety Stand down
- Increased safety representation on site
- LB Robert
- Safety committee
- Improved Barge fenders
- Access ladder and tie-offs for jacket rigging

Open Issues

- Manitowoc crane repair
- Manitowoc crane use at night
- Lack of PPE – gloves, welding flash shield
- Test slings for hammer after shock load
- Slings for decks
Open Issues

- Jacket Leveling
- Welding
  - No Weld Maps
  - List of Welders/ Traceability
  - Preheat 150 to 450, Temperature not measured
  - Not using rod oven
  - Voltmeters not working
  - No indications – 0% repair is that feasible?
  - Welding machine calibration
  - MTRs rods
  - Traceability of rods
  - Grinding of welds – profile, stress concentrations
  - Procedures and drawings not available on board
Installation Sequence

Jacket Lift from Cargo Barge

Jacket set on sea bed
Installation Sequence

W533 Stabbing Piles

P1 Piles Stabbed
Installation Sequence

Pile Driving

Pile Driving Hammer
Installation Sequence

Pile Splicing
Jacket removed and repaired onshore
Jacket set at location
P1 Piles stabbed but not driven
Jacket set at location
All Piles driven to depth
Ready for deck installation
Jacket set at location
All Piles driven to depth
Ready for deck installation
Jacket set at location
P1s stabbed and one leg partially driven
B1 runaway pile
P1s to be driven by LB Robert
Jacket set at location
P1 Piles driven to depth
P2 piles to be spliced by W526
Status of BIWF – Repairs

Jacket 1 Repair in Progress
Repairs have now been completed and verified

Deck 2 Repair in Progress

BIWF CVA Status Substructure Installation- presented to CRMC Sep-22-2015
Status of BIWF – Installation Equipment

BIWF CVA Status Substructure Installation- presented to CRMC Sep-22-2015
Status – WTG Fabrication

Complete
- Blades
- All Castings
- Converter

Ongoing
- Yaw and Pitch Bearings
- Switch Gear
- Transformer
- Controller

Ongoing with missing Information
- Tower (flanges)
- Generator
- Yaw System
- Onboard Cranes
- Tooling

Missed
- Main Bearings
- Pitch System
### Overview – Status of Phases

<table>
<thead>
<tr>
<th></th>
<th>FDR/FIR STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>Substructure</td>
<td>Turbine (Loads and Type Cert)</td>
</tr>
<tr>
<td>FDR</td>
<td>Complete*</td>
</tr>
<tr>
<td>FIR</td>
<td>Reviewing Changes</td>
</tr>
<tr>
<td>Fabrication</td>
<td>Complete</td>
</tr>
<tr>
<td>Installation</td>
<td>Ongoing - Open Items</td>
</tr>
<tr>
<td>Operation</td>
<td>Not started</td>
</tr>
</tbody>
</table>

* Changes made by Keystone Engineering following initial completion and submittal by DWBI. FDR requires revision submittal to CRMC
Next Steps

Installation
- Continue with installation activities
- Review changes to FIR

Wind Turbine Fabrication
- Continue with Fabrication Verification
- Need 2016 FDR and FIR

Cable Fabrication
- Need 2016 FDR and FIR
- Fabrication verification not scheduled