



BORDER WINDS ENERGY PROJECT

WEEKLY PROJECT REPORT

Weekly report no:	61
Report for week period ending COB Friday:	09/25/15
Calendar week no:	39

Executive Summary

Week's Highlights

- Xcel's Vice President and Director of Construction were onsite to discuss site work progress and scheduled construction with the Border Winds team.
- Completed VLF testing at Circuit 4 safely on 9/24/15.
- All junction boxes have been terminated on Circuit 4.
- Circuit 1-A is scheduled to be energized on 9/26/15
- Completed fiber blowing on all circuits on 9/23/2015.
- Completed the LR 1600 crane 2 build at T62, on 9/18/15, to complete the final circuit (2).
- Vestas commissioned ten (10) turbines on Circuit 3 and Circuit 6.
- LR 1600 crane 2 completed the power line drop and walk across 52nd Ave on 9/25/15.

Week's Key Issues

- The site had two property damages due to muddy condition following the rain event on 9/23/15. The crew was advised to drive according to site conditions and slow down.
- The backfilled area around the west and south side of O&M building has settled following the rain. RES will compact the area while grading the remaining area.
- Loss in production on both Cranes due to inclement weather and wind delay on 9/21/15, 9/23/15, 9/24/15.



Safety

Type	Lost Time	Recordable Injury (Medical Aid)	Minor Injury (First Aid)	Equipment Property Damage	Near Miss	Safety Walks
Current Period	0	0	0	2	0	2
Project To Date	1	5	14	43	87	689

*Full description of week's Safety Log plus the formulas for TRIR and Safety index calculation in Exhibit 2.

TRIR: Previous Week = 2.7 / Current week = 2.7

RES Safety Index: Previous Week = 0.48/ Current week = 0.48

Weeks Highlights:

- Completed excavation safely near T45 to complete the fiber blowing on Circuit 6. The crew had proper JHA and worked with safety team to complete the task.
- Completed VLF testing at Circuit 4 safely on 9/24/15.

Weeks Issues:

- The site had two property damages due to muddy condition following the rain event. The crew was advised to drive according to site conditions and slow down.
 - Due to muddy condition a RES truck slid and hit other RES truck that was in front of it. There was a minor damage on the bumper and license plate with no injuries.
 - Identified damaged axle on one of the generators.

Project Work Hours:

- Weekly Man-hours: 8,116.00
- Total Project Man-hours: 442,178.00
- Hours since Last Recordable Injury: 28,618.00

Environmental

Type	Major Incident	Minor Incident	Near Miss	Observation
Current Period	0	1	0	3
Project to Date	0	80	8	79

*Full description of week's Environmental Report and Rolling Incident Score formula in Exhibit 2.

Rolling Incident Score: Previous week: 0.52 / Current Week: 0.52

Comments:

- Received 3.98" of rain overnight on 9/23/15. Water accumulated in a few locations on site and some of the roads were muddy and slippery.
- AMR replaced the recycling bins for aluminum, wood and plastic. The materials stacked behind the bin will be put into the bins for recycling.
- Two (2) cups of hydraulic fluid leaked inside the nacelle at T75. There was no leak on the ground. The hydraulic fluid was cleaned up using absorbent pads and was disposed into the contaminated soil bin on site.

Quality

Type	RES Issued NCRs			Client Issued NCRs		
	Issued	Open	Closed	Issued	Open	Closed
Current Period	0	0	0	0	0	1
PTD	4	1	3	12	4	8

*Full description of week's Quality Report can be found in Exhibit 4

Week's Highlights:

- Xcel representative continue to review the job books. Working on resolving any questions identified during the review.
- Working with EOR to resolve the questions regarding moisture level on backfill and slump level for the concrete mix for the foundations on Job book.
- Identified gouge on the top surface of the repaired area at T33 foundation pedestal.



SCHEDULE STATUS

Project duration	68
No. of weeks into contract	66
Contract time passed (%)	97%

Key Activities (Construction)	Weighted %	Percentage Complete		
		Contract Schedule	Construction Schedule	Actual
Design Engineering	2.5%	100.0%	100%	100%
Roads & Crane Pads	20.0%	100.0%	86%	86%
Foundations	20.0%	100.0%	100%	100%
Collection System	21.5%	100.0%	100%	97%
Substation	15.0%	100.0%	100%	99%
O&M Building	6.0%	100.0%	100%	99%
WTG Delivery, Erection, & MCC	15.0%	94%	96%	87%
Overall Actual Percent Complete		99.4%	96.5%	95.5%

PROGRESS REPORT

PERMIT STATUS

Permit Type / Description	County / State	Responsible Group	Date Needed By	Status
FAA Part 2	Federal	RES	Final Height	OPEN

CONSTRUCTION STATUS

Certificates	Total	Submitted	Signed
Foundation Completion Certificate	75	75	75
Mechanical Completion Certificate	75	64	54
Electrical Works Completion Certificate	1	0	0
Project Mechanical Completion Certificate	1	0	0
Project Substantial Completion Certificate	1	0	0
Project Final Completion	1	0	0



ROADS AND CRANE PADS

Item	Weighted %	Budget	Total Completed	Total Remaining	Percent Complete
Roads	70%	Roads			80.0%
Rough Grade	30%	137,622	137,622	-	100.0%
Sub Grade	30%	137,622	137,622	-	100.0%
1st Lift	20%	137,622	137,622	-	100.0%
Shoulders	10%	152,837	0	152,837	0.0%
Ditches	10%	152,837	0	152,837	0.0%
Crane Pads & Site Laydown	30%	Crane Pads & Site Laydown			100.0%
WTG Site Ready for Delivery	30%	75	75	0	100.0%
Cut & Subgrade Compacted	40%	75	75	0	100.0%
Material Placed & Compacted	30%	75	75	0	100.0%
Roads & Crane Pads Progress					86%

Comments:

- Reclaiming turbine sites and access roads on circuit 3.



COLLECTION SYSTEM

Item	Weighted %	Quantity	Total Received	Total Remaining	Percent Complete
Deliveries	30.0%	Deliveries			100%
MV Cable	50.0%	901,972	314,910	0	100%
Fiber	40.0%	335,107	336,590	0	100%
Junction Boxes	5.0%	28	28	0	100%
Grounding Transformers	5.0%	6	6	0	100%
Installations	50.0%	Installations			100%
Trench	40.0%	278,230	278,230	0	100%
MV & Fiber/Ground Cable	50.0%	297,945	297,945	0	100%
Junction Boxes	10.0%	28	28	0	100%
Terminations	20.0%	Terminations			82.2%
MV Cable at WTG switch gear	45.0%	45.0%	75	7	90.7%
Junction Boxes	35.0%	35.0%	28	3	89.3%
Underground MV Splices	20.0%	20.0%	50	2	96.0%
Collection System Progress:					98.3%

Comments:

- Completed grounding at JB 4/5, 4/3, 4/4
- Terminated JB 4/2, 4/3 and replaced bushings at JB 4/2, 4/3, 4/4 and JB 4/5
- Pulled fiber between JB 6/2 and T45
- Completed hydro vac and spliced fiber between T15 and T16.
- Placed aggregate in and around JBs on Circuit 4
- Completed MV splices at 4/5, 4/6, 4/7



O&M BUILDING

Item	Weighted %	Budget	Total Completed	Total Remaining	Percent Complete
Design	4.0%	100%	100%	0%	100.0%
Earthworks	8.0%	100%	100%	0%	100.0%
Septic System	4.0%	100%	100%	0%	100.0%
Water Service and Filter	4.0%	100%	100%	0%	100.0%
Delivery	5.0%	100%	100%	0%	100.0%
Foundation Floor slab	9.0%	100%	100%	0%	100.0%
Electrical prep, rough-in and trim out	5.0%	100%	100%	0%	100.0%
Plumbing prep, rough-in and trim out	8.0%	100%	100%	0%	100.0%
Building Erect and enclose	8.0%	100%	100%	0%	100.0%
Internal Walls & Ceiling	9.0%	100%	100%	0%	100.0%
HVAC	8.0%	100%	100%	0%	100.0%
Finishes prep, rough-in and trim out	12.0%	100%	100%	0%	100.0%
Grading, Drainage	8.0%	100%	97%	3%	97.0%
Cleaning and Shop Finish	4.0%	100%	100%	0%	100.0%
Security System	4.0%	100%	100%	0%	100.0%
O&M Building Progress					99.7%

Comments:

- Knife River representative visited the site to resolve issues with the asphaltting. RES will prepare the grading to support repairs on 9/29/15.
- The backfilled area around the pipe connecting the well towards the building on the west side and the septic tank on the south side settled in after rains on 9/23/15. The area has been barricaded and will be compacted and fixed along with the final grading of the O&M building.



SUBSTATION

Item	Weighted %	Budget	Total Completed	Total Remaining	Percent Complete
Engineering	10%	Engineering			100%
IFC Drawings	100%	100%	100%	0%	100%
Procurement and Delivery	20%	Procurement and Delivery			100%
Foundation Rebar & Cages	5.00%	100%	100%	0%	100%
Breakers - Low and High Sides	15.00%	100%	100%	0%	100%
Reactors, Cap Back and Switchers	20.00%	100%	100%	0%	100%
MPT 230/34.5kV	10.00%	100%	100%	0%	100%
Grounding Transformer	5.00%	100%	100%	0%	100%
EEE - Control Building with DC Station	15.00%	100%	100%	0%	100%
Grounding Wire, Rods and Accessories	5.00%	100%	100%	0%	100%
Dead End and Static Mast	5.00%	100%	100%	0%	100%
Structural Steel and Bus	10.00%	100%	100%	0%	100%
MET Tower Foundation	5.00%	100%	100%	0%	100%
Chain Link Fence and Gates	5.00%	100%	100%	0%	100%
Construction	70%	Construction			99%
Site Preparation & Grading	3.00%	100%	100%	0%	100%
Site Aggregate and Finishing Rock	3.00%	100%	100%	0%	100%
Foundations work for substation	9.00%	100%	100%	0%	100%
Breakers, Switches, PTs, CTs	12.00%	100%	100%	0%	100%
Reactors, Cap Back and Switchers	8.00%	100%	100%	0%	100%
EEE - Energize and Finish	4.00%	100%	100%	0%	100%
Ground Grid, Conduits, Trenwa	12.00%	100%	100%	0%	100%
Structural Steel, Risers, Bus	12.00%	100%	100%	0%	100%
Collection Risers/Feeders and GTs	8.00%	100%	100%	0%	100%
EEE Wire Pull, Termination and Test	5.00%	100%	100%	0%	100%
SCADA Fiber Optic Cables Pull	4.00%	100%	95%	5%	95%
Chain Link Fence, Gates	4.00%	100%	100%	0%	100%
MPT Testing and Commissioning	4.00%	100%	100%	0%	100%
MET Tower Install, Wiring and Testing	4.00%	100%	95%	5%	95%
Substation Commissioning	6.00%	100%	100%	0%	100%
Handover of Job Books	2.00%	100%	80%	20%	80%

Substation Progress 99.4%

Comments:

- Energized Circuit 1-A is scheduled to be energized on 9/26/15
- Substation is scheduled to be de-energized on 9/26/15 to complete terminations on Circuit 1-A and Circuit 4.

TURBINES

	Weighted %	Budget	Total Received	Total Remaining	Percent Complete
Deliveries	20.0%	Delivered to turbine pad			100.0%
Base	15.0%	75	75	0	100.0%
Mid	14.0%	75	75	0	100.0%
Upper Mid	14.0%	75	75	0	100.0%
Top	14.0%	75	75	0	100.0%
Nacelle	14.0%	75	75	0	100.0%
Hub	14.0%	75	75	0	100.0%
Blades	15.0%	75	75	0	100.0%
Erection	60.0%	Erection			90.2%
Base	17.0%	75	75	0	100.0%
Mid	16.0%	75	75	0	100.0%
Upper Mid	16.0%	75	69	6	92.0%
Top	17.0%	75	69	6	92.0%
Nacelle	17.0%	75	68	7	90.7%
Blades	17.0%	75	68	7	90.7%
Mechanical Completions	20.0%	Mechanical Completions			80.9%
Walk downs	33.3%	75	64	11	85.3%
MCC Submitted	33.3%	75	64	11	85.3%
MCC Signed	33.4%	75	54	21	72.0%
Turbines Progress					92.7%

Week's Highlights

- Installed five (5) upper mid-sections and tops; four (4) nacelles and blades sets.
- Vestas commissioned ten (10) turbines on Circuit 3 and Circuit 6. All turbines on Circuit 3 are now commissioned.
- Completed walk downs on eight (8) turbines.
- RES completed the mechanical completion walk downs on all turbines on Circuit 4. MC crew started mechanical completion walk downs of WTGs on Circuit 2 on 9/25/15.
- Received the sample for anchor bolt cap and verified that it fits both foundation A and B & C.

Week's Issues

- WWS broke the valve for the coolant tank on T33 Nacelle while working in the turbine. RES cleaned up the leaked coolant inside the nacelle.
- Delay in powerline drop due to wet and muddy conditions on site following the rain. LR 1600 crane 2 completed the power line drop and walk across 52nd Ave on 9/25/15.
- Few roads on Circuit 4 were inaccessible with the generator due to wet and muddy condition arc flash testing of Circuit 4 was rescheduled for 9/26/2015 in preparation of energization on 9/28/2015.
- Loss in production on both Cranes due to inclement weather and wind delay throughout the week.

Exhibit 1 – Site Photographs



Fiber Blowing Near JB6/2



Cleaning Tower Section at T61



Stacking Nacelle at T61



Nacelle installed at T61



Exhibit 2 – Safety Log

Formulas for TRIR and RES Safety Index calculation:

$$\begin{aligned}
 \text{TRIR} &= ((\text{Lost Time} + \text{Medical Aid}) * 200,000) / \text{Total Project Man Hours} \quad ((1+3) * 200,000 / \text{Total Project Man Hours}) \\
 \text{RES Safety Index} &= ((\text{Lost Time} * 64) + (\text{Injury} * 16) + (\text{Minor Injury} * 4) + (\text{Damage} * 1) + (\text{Near Miss} * 0.25)) / \text{Man Hours} * 1000 \\
 &= ((1 * 64) + (3 * 16) + (14 * 4) + (40 * 1) + (85 * .25)) / \text{Total Project Man Hours} * 1000
 \end{aligned}$$

#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
881	9/25/15	Safety Walk	Hazard Observation	Fiber - Blue sky daylighting	One of the guys in the crew was not wearing the proper clothing as per site policy. He was wearing a sleeveless bright yellow shirt. Also did not have any eye protection	He changed to proper shirt and safety vest as soon as it was address. Also supervisor provided safety glasses to continue work.	None needed.
882	9/25/15	Normal Work Activities	Near Miss	RES Site	Observed settlement on the west side of the O&M building, between the well location and building, after major rain on 9/22/15.	The area has been barricaded and will need compaction.	None needed.
883	9/25/15	Normal Work Activities	Damage	RES Site	Due to muddy conditions a RES truck slide and hit other RES truck that was part. Minor damage on the bumper and license plate. No injuries.	Training the drivers in defensive driving and hazard conditions.	
884	9/26/15	Normal Work Activities	Damage	RES Site	The Axle of a Generator was damage, No responsible person for this incident was found.	Adjust Driving Habits to road conditions and keep low speed in muddy conditions	



Exhibit 3 – Environmental Log

Formula for the Rolling Incident Score =

$$((\text{Major Incident} * 16) + (\text{Minor Incident} * 4) + (\text{Near Miss} * 0.25) + (\text{Observation} * 0)) * 1000 / \text{Total Man Hours}$$

#	CLASS	SUB-CAT	CONTR ACTOR	DATE	INCIDENT DETAILS	ACTION TAKEN TO CORRECT SITUATION	ACTION TAKEN TO PREVENT REOCCURANCE
125	Observation	Wildlife	RES	9/21/15	Spotted a dead pelican at T28 crane pad site. The pelican probably hit the turbine which was already commissioned.	Picked the pelican and bagged it to dispose into the bin in the laydown yard.	Addressed at the all hands meeting to avoid any disturbance to any wildlife on site. Report any wildlife spotted on site.
126	Observation	Weather Event	RES	9/23/15	Received 3.98" of rain on the site. Water accumulated in different areas of the site	Perform BMP inspection and ensure all culverts inlets are clear of silt.	Ensure all BMPs are installed properly
127	Observation	Trash or other Refuse	RES	9/25/15	The filled aluminum, plastic and wood recycling bin has been removed off site.	None	Replace with new recycling bins on site.
128	Minor Incident (Below RQ)	Equipment Failure or leak	Turbine Manufacturer	9/25/15	2 cups of hydraulic fluid leaked on the ground from the turbine generator of erected T47 after the hydraulic hose leaked from the turbine. The leak was controlled. The oil will be cleaned up by Vestas.	Placed absorbent pads at the bottom of the base. The absorbents will be removed after cleaning the turbine and will be disposed in the contaminated soil bin.	Replace with new recycling bins on site.



Exhibit 4 – Quality Log

- Incidents - None
- CPARs - 1
- NCRs - 10

NCR log

Description of Material	NCR Opened	NCR Closed	Total NCR Open	Total NCR Closed
	(Current Week)	(Current Week)	(As of this Week)	(As of this week)
Totals			5	8
NCR-15-035 Not having 220VAC outlet in the nacelle	X			
NCR-15-034 Turnover 75 climb assist pendants	X			
NCR-15-026 Not having 115V outlets at work locations per page 1 exhibit I of the Purchase and Sale Agreement.			X	
NCR CPAR 23053-004 Sent to Vestas concerning the high rate of damage to the turbine blades during shipping			X	
NCR-15-016 Backfills and compactions of the turbine bases in freezing conditions			X	



Exhibit 5 – RFI Log

Outgoing RFIs

	Generated By	Company	Sent To	Company	Subject	Date Sent	Response Requested By	Type: Civil, Electrical, etc.	Status / Comments	Date Closed
23053-105	Kyler Leen	RES	Kyle Louis	REI	Feeder Fault Clearing Time	7/27/15	7/29/15	Substation		
23053-106	John Radabaugh	RES	Sean Simmons	Vestas	RES concerns regarding the turbine punch list	07/28/15	08/04/15	Turbine		
23053-108	Shabeeb Abdul Khader	RES	Peter Doherty	Xcel Energy - Generation	Substation Interconnect Data	08/25/15	08/28/15	SCADA		
23053-112	Chuck Marso	RES	Peter Doherty	Xcel Energy - Generation	Capacitor Test plan	09/15/15	09/21/15	SCADA		09/23/15



Exhibit 6 - Change Order Request Log

CO No.	Date Identified	Date Submitted	Date Executed	Description	Value of CO	Comments
1	06/11/15			Change in the landscaping design - larger trees for windbreak at O&M	\$ 3,176.00	RES and Xcel agreed to split total cost of \$6,352.00
2	06/11/15			Storm shelter changes at O&M	\$ 11,907.00	RES to request additional information from ABS on who directed the changes
3	06/11/15			Changes in final design vs specification of electrical layout at O&M	\$ 2,300	RES is still working through the changes
4	06/11/15			Changes in security system at O&M	\$ 8,936.00	Xcel requested breakdown of changes and the delta
5	06/11/15			Changes in the Control Building - Increasing the station service transformer, additional switch requests, and additional landings at entrance doors	\$ 36,141.00	<p>Station Service transformer sizing – Original station service transformer sizing was done at 50kVA. This was based on historic numbers initially and was later proven by station service calculations. Xcel requested to change this to 100kVA, since that is the Xcel standard (was requested at the 90% design review meeting). RES reviewed the Xcel standards provided and did not see this requirement anywhere in the standards provided. This increase in station service size also required upgrading multiple disconnect and safety switches from 200A to 400A rating in order to meet the requirements of the 100kVA station service transformer to be installed per the Xcel direction/request.</p> <p>Additional switch requests - Xcel requested during the 90% design review meeting that safety disconnect switches be moved from inside the control building to the outside. This requires the installation of waterproof cabinets for the switches. Xcel also requested an additional yard cabinet to connect and supply larger equipment from the AC system.</p> <p>Addition of landings at entrance doors – this was added at the 90% design review meeting per Xcel request and was not evident for the provided Xcel specifications.</p>



CO No.	Date Identified	Date Submitted	Date Executed	Description	Value of CO	Comments
6	06/11/15			Upgrade from SEL351 to SEL421 relay and bus relays at the substation	\$ 163,789.00	Industry standard for wind farm collection circuits are to install SEL351 relays (O/C & G/F) relays to protect the collector systems. Collection systems (although balanced) are considered distribution circuits, since they are four wire systems, with a ground reference transformer connected to each circuit. The collection circuits are insulated to 150kV BIL, which is further evidence that they are considered as distribution feeders (compared to the 200kV BIL insulation levels typically associated with transmission lines/circuits). Xcel identified the requirement to install SEL 351 relays on Distribution feeders. During design review meetings, Xcel classified these as transmission lines and required the installation of step distance protection (SEL421 relays). This resulted in additional cost. The 34.5kV bus differential relays subsequently were also upgraded from distribution bus relays to transmission class bus diff relays with 100% redundancy
7	06/11/15			Addition of three additional shield masts at the substation	\$ 73,838.00	The original substation design utilized a combination of shield masts and shield wires in order to establish a lightning shielding system for the substation equipment. During the 60% design review meeting Xcel indicated they do not allow shield wires to span over top of equipment and requested that the shield wires be removed and that lightning shielding protection be done with shield masts. This requirement is not seen in any of the supplied specifications. This required the addition of 3 additional shield masts and thus additional cost.
8	06/11/15			Addition of anchor/rigging points for the oil containment based on the change to above ground containment system at the substation	\$ 36,907.00	Xcel required an above grade containment system with a removable wall and built in rigging/anchor points in the containment system. This was not evident in any of the provided specifications or the contract agreement. The above grade construction as such does not add cost, but the inclusion of the removable wall and the addition of the anchor/rigging points that is integrated into the oil containment system does add cost
9	06/11/15			Addition of separate relay/plc controller to control the capacitor banks at the substation	\$ 23,510.00	Typical capacitor bank controls on wind farms are done by the wind farm controller through the SCADA system. Xcel requested during the 90% design review not to control the equipment through the SCADA system, but rather have a separate relay/plc controller to control the capacitor banks. This required the installation of an additional relay in order to have a dedicated controller for the capacitor banks. This was not evident from any of the supplied specifications, since Xcel does not have a standard specification for 34.5kV capacitor banks.



CO No.	Date Identified	Date Submitted	Date Executed	Description	Value of CO	Comments
10	06/11/15			Upgrade to the capacitor bank interlock system	\$ 10,846.00	Typical interlocks for capacitor banks only include a time delay after opening the associated capacitor/circuit switched to release a key that will unlock the ground switch and lock the switcher in the open position. Xcel requires a much more elaborate system, which in turn costs more. This was not identified in any of the supplied standard and was determined as designs progressed.
TOTAL					\$ 379,294.00	