



BORDER WINDS ENERGY PROJECT

WEEKLY PROJECT REPORT

Weekly report no:	62
Report for week period ending COB Friday:	10/02/15
Calendar week no:	40

Executive Summary

Week's Highlights

- Engineer of Record, Mohamed Nofal, was onsite to assess the road conditions and identify any additional work needed for final restoration.
- SCADA International completed all fiber splicing on Circuits 2 and 4. Civil crews are working on locating the splice on Circuit 1A which will provide Vestas visibility of the WTGs.
- Completed energization of Circuit 4 on 9/28/15 with the exception of T33 which has punchlist items that will be completed on 10/5/2015. complete the punch list.
- Knife River asphalted the section that did not meet the 3" depth on 9/29/15 and fog sealed the asphalt on 10/2/15.
- Transmitted the substation job books to Xcel for review on 10/2/15.
- Met tower equipment is scheduled to be installed at the substation on 10/6/15.
- All turbines on Circuit 6 are now commissioned.
- Completed the break down and shipping of LBR 1300 Crane 2 at T60 on 9/30/2015. Also, shipped out three (3) RT 1120 off site.

Week's Key Issues

- Delay in production due to wind delay 10/2/2015 and crane walk through wet and muddy conditions on site on 9/30/15 following the rain.
- Xcel Transmission notified RES about an outage for approximately 6 hours on 9/29/15 with no prior notification to RES. Xcel will ensure all key personnel are alerted on future outages.



Safety

Type	Lost Time	Recordable Injury (Medical Aid)	Minor Injury (First Aid)	Equipment Property Damage	Near Miss	Safety Walks
Current Period	0	0	0	0	1	5
Project To Date	1	5	14	45	88	694

*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 = 2.6

RES Safety Index: Previous Week = 0.49/ Current week = 0.48

Weeks Highlights:

- Julio Jauregui covered the project for Safety Supervisor Vernon George while off on break, Vernon returned to the site on 9/30/15.
- No equipment or vehicle damage to report this week.

Weeks Issues:

- Site was instructed to ensure additional safety measures are taken to prevent any injuries or damages due to inclement weather. Due to rain and high winds, crews were asked to reduce speeds due to uneven and muddy road conditions and park vehicles into the wind.
- The site experienced one (1) minor hand injury when a worker injured his index finger. This was a minor first aid.

Project Work Hours:

- Weekly Man-hours: 6,889.00
- Total Project Man-hours: 448,867.00
- Hours since Last Recordable Injury: 35,307.00

Environmental

Type	Major Incident	Minor Incident	Near Miss	Observation
Current Period	0	0	0	2
Project to Date	0	80	8	81

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

Rolling Incident Score: Previous week: 0.52 / Current Week: 0.51

Comments:

- Complete the week with no spills/leak.
- Waste Management cleared the waste bins on site. Additional bins will be brought to site to support the final clean-up process.
- Observed water accumulated at 107st and 52nd Ave intersection. Working on clearing the culvert inlets.

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.
- Transmitted the substation job books to Xcel for review on 10/2/15.



SCHEDULE STATUS

Project duration	68
No. of weeks into contract	67
Contract time passed (%)	99%

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%	96%	86%
Foundations	20.0%	100.0%	100%	100%
Collection System	21.5%	100.0%	100%	99%
Substation	15.0%	100.0%	100%	99%
O&M Building	6.0%	100.0%	100%	99%
WTG Delivery, Erection, & MCC	15.0%	98%	96%	96%
Overall Actual Percent Complete		99.7%	98.7%	96.1%

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	66	61
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.
- Engineer of Record, Mohammed Nofal, was onsite to assess the road condition and identify any additional work needed. Also, met with landowners to determine methods and measures to ensure that all drainage issues are resolved.



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%	75	75	0	100.0%
Junction Boxes	35.0%	28	26	2	92.9%
Underground MV Splices	20.0%	50	50	0	100.0%
Collection System Progress:					99.5%

Comments:

- Completed JB 2-4 and working on termination on JB 2/1 and JB 2/5 on Circuit 2.
- SCADA International completed all fiber splicing on Circuits 2 and 4. Working on locating the splice on Circuit 1A. The location will be excavated after de-energization of Circuit 1 on 10/6/2015.
- Completed MV splices SP 2/1 and SP 2/2 on circuit 2.
- Backfilled splices SP 4/11 and SP 4/12 on circuit 4.
- Completed grounding at JB 4/3, 4/2, 4/4 on Circuit 4.
- Shipped out 5 reels of inner duct from the laydown yard on 10/5/15.



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:

- RES cut the asphalt and re-graded the section to install 3” of asphalt near the O&M building gate. Knife River asphalted the section on 9/29/15 and fog sealed the asphalt on 10/2/15 to correct the exposed coarse aggregate on the asphalt.
- 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. Awaiting job books from AB Systems.

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%	100%	0%	100%
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%	100%	0%	100%

Substation Progress 99.8%

Comments:

- Completed energization of Circuit 4 on 9/28/15 with the exception of T33 to complete the punch list.
- Substation was de-energized on 9/30/15 to support Xcel transmission with transmission line outage.
- Met tower equipment is scheduled to be installed at the substation on 10/6/15.



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			97.1%
Base	17.0%	75	75	0	100.0%
Mid	16.0%	75	75	0	100.0%
Upper Mid	16.0%	75	72	3	96.0%
Top	17.0%	75	72	3	96.0%
Nacelle	17.0%	75	72	3	96.0%
Blades	17.0%	75	71	4	94.7%
Mechanical Completions	20.0%	Mechanical Completions			88.5%
Walk downs	33.3%	75	68	7	90.7%
MCC Submitted	33.3%	75	70	5	93.3%
MCC Signed	33.4%	75	61	14	81.3%
Turbines Progress					95.9%

Week's Highlights

- Installed three (3) upper mid-sections, tops and blades sets; four (4) nacelles.
- Vestas commissioned four (4) turbines on Circuit 6. All turbines on Circuit 6 are now commissioned. Waiting on commissioning certificates for T45 on Circuit 6.
- Completed four (4) mechanical completion walk downs of WTGs on Circuit 2.
- Completed the break down and shipping of LR 1300 Crane 2 at T60 on 9/30/2015. Also, shipped out three (3) RT 1120s off site.

Week's Issues

- Delay in production due to wind delay 10/2/2015 and crane walk through wet and muddy conditions on site on 9/30/15 following the rain.
- WWS is working on completing the punch list items on T33 that was isolated during Circuit 4 energization.
- Xcel Transmission notified RES about an outage for approx. 6 hours on 9/29/15. No prior notification was given to RES. Xcel is verifying who the notification went to and what steps need to be taken to ensure all key personnel are alerted to future outages.

Exhibit 1 – Site Photographs



Site View



Crane Break down at T60



O&M Building Asphaltting



O&M Building Fog Seal



Exhibit 2 – Safety Log

Formulas for TRIR and RES Safety Index calculation:

$$\text{TRIR} = ((\text{Lost Time} + \text{Medical Aid}) * 200,000) / \text{Total Project Man Hours} \quad ((1+3) * 200,000 / \text{Total Project Man Hours})$$

$$\text{RES Safety Index} = ((\text{Lost Time} * 64) + (\text{Injury} * 16) + (\text{Minor Injury} * 4) + (\text{Damage} * 1) + (\text{Near Miss} * 0.25)) / \text{Man Hours} * 1000$$

$$((1 * 64) + (3 * 16) + (14 * 4) + (40 * 1) + (85 * .25)) / \text{Total Project Man Hours} * 1000$$

#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
889	10/1/15	Safety Walk	Hazard Observation	Delivery Driver Non-RES	T-62 A Truck driver non-RES was prepping truck to de-mobilized crane parts, drivers was not wearing site required PPE.	Safety supervisor stopped and talked to the driver to get on the site required PPE, he was not aware he said of the site policy. Safety supervisor showed him on his BLO where it states what proper PPE needs to be used when coming on to the site.	In our daily all hands meeting Safety supervisor again stressed to anyone loading any trucks that are not part of this project the must give them a brief drivers orientation and make sure they have all the correct PPE on before exiting the truck.
890	10/1/15	Safety Walk	Safe Work Observation	RES Civil	On county road 52nd, civil crew were removing an old culvert, crew had road properly blocked and cones up to divert traffic around safely.	None required at this time.	None needed.
891	10/1/15	Safety Walk	Safe Work Observation	RES Erection	Erection crew were preparing a crane to be de-mobilized, worker on top of crane properly tied off and JHA in order, good job crew.	None required at this time.	None needed.



#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
892	10/2/15	Safety Walk	Hazard Observation	RES Civil	Civil crew were unloading heavy creates into the dumpster; reviewed JHA did not have heavy lifting and prevent measure to avoid mussel strains.	Talked to the crew and went over their job description and the steps to take when properly filling out the JHA for the day activities.	None needed.
893	10/2/15	Safety Walk	Near Miss	RES Civil	T-8 road driving into the pad location has a very deep rut could damage equipment or work trucks or possible bodily harm if not seen before running into it.	I placed two cones in front of the rut so drivers can see the rut, contacted the civil crew to make sure and address damaged road before we damage any trucks or someone get injured.	Civil crew has been notified and photos sent to show ruts that need to be repaired.



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
129	Observation	Informational	RES	9/30/2015	Switched 2 waste bins from the laydown yard to keep up with the trash onsite and support the final cleanup on site.	No action required	No action required
130	Observation	Lack of or Damaged BMP	Civil - Road	9/30/2015	Identified gravel pushing the silt fence on the West side of the O&M building. Noticed gully erosion on the top. No damage to the silt fence	The silt needs to be removed and to avoid further damage to silt fence.	The slope on the west has to be regarded as per the final grading plan and seeded.



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		1	4	9
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		
23053-108	Shabeeb Abdul Khader	RES	Peter Doherty	Xcel Energy - Generation	Substation Interconnect Data	08/25/15	08/28/15	SCADA		9/30/15
23053-113	Kyler Leen	RES	Ritchie Farmer	Vestas	WTG Nacelle transformer current rating	10/02/15	10/02/15	Turbines	23053-113	Kyler Leen



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	