



BORDER WINDS ENERGY PROJECT

WEEKLY PROJECT REPORT

Weekly report no:	58
Report for week period ending COB Friday:	09/04/15
Calendar week no:	36

Executive Summary

Week's Highlights

- VLF testing of circuit 1A and circuit 3 was successfully completed on 9/3/2015 in preparation of energization. Energization of circuit 3 is scheduled for 9/8/2015. Circuit 1A is on hold until blade issue and top section damage has been resolved.
- All WTGs on circuit 3 have been mechanically completed and are ready for energization.
- David Cortez, Freddie Vargas, and Byron Vasquez mobilized to site to expedite splice pit excavation and junction box setting.
- An agreement was reached with Vestas Surveillance to monitor the project 24/7 and Vestas completed SCADA troubleshooting successfully and full visibility was achieved, this will allow all commissioned WTGs to remain running throughout the night.
- LR 1600 top-out crane crossed HWY 30 successfully.
- Collection crew continues to work on junction boxes to complete circuit 3 for energization.
- Civil crew continues to work on radii and collector line reclamation.
- Nelson completed all tensioning and stair pad work and has demobilized from Border Winds.

Week's Key Issues

- Blade insert issue at T66 delayed the completion of WTG installation. The issue is similar to the cause of T79's blade replacement and is believed to be a factory defect. A replacement blade is scheduled to be onsite on 9/10/2015 and the defective blade shipped back to the factory for further analysis.
- Turbine installation night crew discovered a dent in the top component section at T64 which halted all turbine installation works on 9/4/2015. As this was the night crew, no Vestas technicians were available at the time of discovery. Vestas gather the necessary information on 9/5/2015 and inform RES of how to proceed. Crane is currently tied off to the upper mid.



- Due to the delays of WTG installation work at T66 and T64 (circuit 1A) tower wiring crews, mechanical completion work, and walk-downs have been re-focused to WTGs on circuit 4. As this is a change in circuits the mechanical completion crews will take 9/6/2015 and 9/7/2015 off to allow necessary works to be completed out ahead.
- LR 1300 at T34 breakdown and demobilization is ongoing
- Fiber splicing of the collection system and WTGs is being completed by the subcontractor shared with Vestas. Crew was unable to mobilize in enough time to complete the remaining splices and WTG terminations but is scheduled to have enough finished to provide visibility to BLANK WTGs after energization on 9/7/2015. Remaining WTG terminations will be completed after energization.



Safety

Type	Lost Time	Recordable Injury (Medical Aid)	Minor Injury (First Aid)	Equipment Property Damage	Near Miss	Safety Walks
Current Period	0	2	0	0	1	5
Project To Date	1	5	14	40	84	661

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

TRIR: Previous Week = 1.99 / Current week = 2.9

RES Safety Index: Previous Week = 0.46/ Current week = 0.52

Weeks Highlights:

- HSQE Manager Steve Sloat has arrived onsite to support the safety team.
- Crews were reminded that monthly inspections should be conducted of all applicable tools and equipment. September's color is red and all inspected items should be tagged with this color which is a visual indication that the inspections have been completed as required.
- During periods of elevated winds, turbine crews spent time cleaning up debris left due to crane walks as well as around work sites.

Weeks Issues:

- The site had two recordable injuries this week, one involving a RES employee and the other a subcontractor:
 - RES crane operator was going up and down on the crane to see why the outriggers on the were not operating correctly, after about 25 minutes he felt pain in his lower back and he taken to Presentation hospital in Rolla, ND where he was treated and released.
 - Elite Trucking's driver had just been loaded with a counterweight from the LR 1300 crane and was using a bar to tighten the last strap on the load when he slipped and put all his weight on his right foot causing his right ankle to break in two area. He was taken to Rolla, ND Presentation Hospital where he was then transported to Minot, ND hospital for surgery.

Project Work Hours:

- Weekly Man-hours: 12,642.00
- Total Project Man-hours: 413,560.00
- Hours since Last Recordable Injury: 0



Environmental

Type	Major Incident	Minor Incident	Near Miss	Observation
Current Period	0	0	0	3
Project to Date	0	78	7	74

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

Rolling Incident Score: Previous week: 0.56 / Current Week: 0.54

Week's Highlights:

- Completed the week without any spills or leaks.
- Waste Management replaced two (2) trash bins on site on 9/2/2015.
- AMR replaced three (3) recycling bins of mixed materials (wood, cardboard and plastic) on 9/4/2015.

Week's Issues:

- Observed dusty conditions on the roads as farmers continue to harvest the crops.
- Observed swarm of bees at 106th st and 5nd Ave intersection as farmers started moving boxes of bees from the field.

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	10	3	7

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

NCRs Issued Details:

- None

Week's Highlights:

- Nelson completed the pedestal repairs at T62 and T33.



SCHEDULE STATUS

Project duration	68
No. of weeks into contract	62
Contract time passed (%)	91%

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%	93%
Substation	15.0%	100.0%	100%	99%
O&M Building	6.0%	100.0%	100%	100%
WTG Delivery, Erection, & MCC	15.0%	85%	82%	78%
Overall Actual Percent Complete		97.3%	96.2%	92.4%

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	32	29
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:

- Continuing reclamation of WTG pads on circuit 5, circuit 6; collection line on circuit 4, 3 and 6 and radius removal across the site.

FOUNDATION

Item	Weighted %	Budget	Total Completed	Total Remaining	Percent Complete
Excavations	10%	75	75	0	100.0%
Mud Mats	5%	75	75	0	100.0%
Bases	40%	75	75	0	100.0%
Pedestals	20%	75	75	0	100.0%
Earthing Kit	5%	75	75	0	100.0%
Backfill	20%	75	75	0	100.0%
Foundation Progress					100.0%

Comments:

- All foundation work complete.



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			97.1%
Trench	40.0%	278,230	278,230	0	100.0%
MV & Fiber/Ground Cable	50.0%	297,945	297,945	0	100.0%
Junction Boxes	10.0%	28	20	8	71.4%
Terminations	20.0%	Terminations			70.0%
MV Cable at WTG switch gear	45.0%	75	46	29	61.3%
Junction Boxes	35.0%	28	22	6	78.6%
Underground MV Splices	20.0%	51	37	14	74.52%
Collection System Progress:					92.6%

Comments:

- Circuit 3 and 1A were successfully VLF tested on 9/3/2015.
- Installed riser pole terminations for circuit 3.
- Terminated grounding transformer for circuit 3.
- Installed one (1) junction box.
- Terminated four (4) WTG switchgears, one (1) junction box and three (3) underground splices.



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%	95%	5%	100.0%
Cleaning and Shop Finish	4.0%	100%	100%	0%	100.0%
Security System	4.0%	100%	100%	0%	100.0%
O&M Building Progress					100.0%

Comments:

- AB system will complete remaining entrance gate work on 9/7/2015.
- AB system will start on the asphalt work on the east side of the building on 9/7/2015.
- Trees planted at the O&M building slanted due to the high wind experienced on 8/22/2015. RES planning to complete the rest of the grading by 9/10/2015.



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:

- Circuit 3 is scheduled for energization on 9/8/2015.
- Circuit 6 is scheduled for energization on 9/15/2015.

TURBINES

Item	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			76.4%
Base	17.0%	75	75	0	100.0%
Mid	16.0%	75	67	8	89.3%
Upper Mid	16.0%	75	51	24	68.0%
Top	17.0%	75	51	24	68.0%
Nacelle	17.0%	75	50	25	66.7%
Blades	17.0%	75	50	25	66.7%
Mechanical Completions	20.0%	Mechanical Completions			40.2%
Walk downs	33.3%	75	30	45	40.0%
MCC Submitted	33.3%	75	32	43	42.0%
MCC Signed	33.4%	75	29	46	38.6%
Turbines Progress					73.9%

Week's Highlights

- Installed five (5) lower middles, six (6) upper middles, five (5) tops, six (6) nacelle and four (4) blades.
- Vestas commissioned the eight (8) WTGs on circuit 5.
- Completed nine (9) mechanical completion walk downs on circuit 3 and circuit 6.

Week's Issues

- During installation of the blade at T66 an issue was discovered with the blade stud inserts. The inserts pulled out requiring the crew to discontinue the installation process and remove the blade. Vestas technicians relayed the incident to their engineers who have determined that the blade requires replacement. The defective blade will be returned to the factory for further root cause analysis. The replacement blade is scheduled to arrive on 9/10/2015. The blade at T79 was replaced for a similar issue.
- During the installation of the top section at T64 an existing dent was discovered in the component which was not identified during the offloading process due to the location of the damage/defect. As the discovery was made during the night shift operations, no Vestas technicians were available. Measurements and pictures were taken and sent to Vestas engineering for direction. The crane remains hooked up to the upper-mid.

Exhibit 1 – Site Photographs



Early Morning at Border Winds



Setting the Nacelle at T67



Stabbing the Hub on the Nacelle



Installing the Gate Loop and the O&M Building



Exhibit 2 – Safety Log

Formulas for TRIR and RES Safety Index calculation:

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

RES AMERICAS Protecting People		Border Winds		Project USSI =	Total Recordable Incident Rate =	Project KPI =	
Incident Number	Date of Incident	Incident Observed during:	Incident Type	Company Involved:	Incident Details:	Corrective Action Details	Action Taken to Prevent Recurrence:
834	9/1/2015	Normal Work Activities	Injury	RES Erection	On turbine pad 34 Elton Scott the crane operator was helping disassemble a crane, he was going up and down the control the lever for the out riggers and bending over to look under the crane when he felt extreme pain in his lower back and legs.	Elton Scott was taken to Rolla Presentation Hospital for medical treatment, The doctor said he had a possible pulled lower back muscle and was given two shorts for pain and medication for pain, he was given the rest of the day off to rest.	The Incident will be reviewed at the next all hands and employees will be reminded to perform stretch and flex before any material handling activities or activities that will place their bodies in an awkward posture.
835	9/1/2015	Normal Work Activities	Injury	Sub Contractor (Elite Trucking Co.)	Jason Wellesch a truck driver from Elite Trucking was attempting to lighted down his last strap on his load and was standing on one foot the left, he slipped and fell back on his right foot when he did the ankle broke in two places.	Jason Wellesch was found laying in the road by two RES employee's who assist in getting Jason to the hospital, at the hospital is when they discovered he the a broken ankle and was transported to Minot, ND medical center for surgery.	We will provide all field managers, foreman and leads to give all truck drivers a brief orientation and make sure they have the proper PPE and a RES employee will stay with that driver to assure the exit the site in the same manner they arrived.
836	9/1/2015	Safety Walk	Safe Work Observation	RES Cable and Earth	Off county road 107 Cable crew was landing cable in a junction box, crew had a good JHA wearing all required PPE and had work area blocked off for the safety of other workers not involved with that job. Employees had cad welding listed on the JHA, but did not have a hot work permit, they were reminded to pick up a hot work if they were going to do any hot work.	None required at this time.	None needed.
837	9/1/2015	Safety Walk	Hazard Observation	RES Erection	On Pad 22 the crew that was working in the nacelle had cords with no inspection tape and the generator being used did not have a ground. The JHA was missing the location and work activity on the front page.	I talked to the crew they assured me that they would take care of the cords color code and they did get a ground for the generator. The JHA was updated immediately. No strike issued.	Issue with inspection and color code was brought in our weekly all hand meeting and I will be making more inspections on generator grounds to assure they are getting done.
838	9/2/2015	Normal Work Activities	Hazard Observation	RES	A delivery driver was observed in the project compound with shorts on, HSQE manager told him the clothing requirements and he immediately got in his cab and changed into jeans.	The employee was very receptive and immediately changed into jeans	All delivery companies will be contacted and informed of the project minimum PPE.



		Border Winds		Project USSI =	Total Recordable Incident Rate =	Project KPI =	
Incident Number	Date of Incident:	Incident Observed during:	Incident Type	Company Involved:	Incident Details:	Corrective Action Details	Action Taken to <u>Prevent</u> Recurrence:
839	9/2/2015	Safety Walk	Near Miss	RES	No flaggers for work along roadside of highway 30.	Foremna was conacted and the issue was immediately resolved	Employees were reminded at all hands meeting to use flaggers and use road signage as necessasary.
840	9/3/2015	Safety Inspection	Hazard Observation	RES	12 - Flammable Gasses and Liquids. Two propane cylinders and a plastic gas can were found in a flammable liquid storage cabinet at the site compound. The flammable liquid storage cabinet was also vented on one side.	The compound supervisor had left the site for the day. Once the propane tanks are removed, the vent should be closed and bung put back in place. Site Safety Supervisor will verify compliance.	NFPA/OSHA requirements will be reviewed with the compound supervisor upon his return to the project. Site Safety Supervisor will check cabinets regularly to verify continued compliance.
841	9/5/2015	Safety Walk	Hazard Observation	RES Cable and Earth	On county road 107 2 splice pits were not barricaded.	I called one of the new cable crew foreman and let him know what I found, he had his crew go out to locations and install barricades.	Meet with all RES cable and earth crews to make sure do drive the site and make sure we have no open pits and proper barricades have been erected.
842	9/5/2015	Safety Walk	Hazard Observation	RES Civil	Thought out the site cones warning of ditches, culverts and turn radius were down due to farming (harvest) , and weather conditions.	Safety Supervisor Vernon drove the site, pulled cones out of ditches and added missing cones.	Safety will talk to foreman to make sure we they are making sure these area's have proper cone's and are not laying in the ditch or fallen over.
843	9/5/2015	Safety Walk	Safe Work Observation	RES Cable and Earth	RES crew installing junction box on county road 107 good job on equipment inspection on both back hoe's.	None required at this time.	None needed.
844	9/5/2015	Normal Work Activities	Near Miss	RES Erection	RES employee was working at the top mid section he was using a pair of side cutter's to cut some zip tie's when he dropped the side cutters, they fell two section down landing on the base top section no one was working below the RES employee.	VESTAS called a safety stand down on the incident, incident was reviewed between RES and Vetas, the site will have a safety stand down with all employees working in and around the turbines to review incidnet and training.	A safety stand down will take place on the 7th and 8th of September with returning crews returning from long holiday weekend, we want to make sure everyone is part of this stand down to help prevent any more reoccurrences.



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
118	Observation	Wildlife	RES	8/29/2015	Spotted swarm of bees at the 106th St and 52 nd Ave intersection. Farmers started removing boxes of bees from the field.	Informed all crews to stay away from bees if allergic.	Avoid working in these areas until the bees are gone.
119	Observation	Informational	RES	9/2/2015	Waste Management removed two (2) filled trash bins off site.	No action required	No action required
120	Observation	Trash or other Refuse	RES	9/3/2015	Three (3) filled bins for mixed material (plastic and cardboard).	No action required	No action required



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	7
NCR-2015-026 for 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-2015-024 Concerning tower door to be facing south.		X		
NCR-2015-016 Backfills and compactions of the turbine bases in freezing conditions			X	
NCR-2015-026 for not having 115V outlets at work locations per page 1 exhibit I of the Purchase and Sale Agreement.			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
23053-096	Emad Alaydi	RES	Ritchie Farmer	Vestas	Ice detection documentation	06/22/15	06/29/15	SCADA	Vestas responded on 6/23/15. Awaiting additional info	
23053-098	Emad Alaydi	RES	Ritchie Farmer	Vestas	VPN Tunnel in tunnel communication	06/25/15	07/02/15	Turbine	Vestas responded. Awaiting additional info	
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		
23053-109	Chuck Marso	RES	Peter Doherty	Xcel Energy - Generation	Capacitor Bank Control	09/01/15	09/03/15	SCADA		
23053-110	Chuck Marso	RES	Peter Doherty	Xcel Energy - Generation	Standby RTU state	09/01/15	09/03/15	SCADA		09/05/15



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	