



BORDER WINDS ENERGY PROJECT

WEEKLY PROJECT REPORT

Weekly report no:	54
Report for week period ending COB Friday:	08/07/15
Calendar week no:	32

Executive Summary

Week's Highlights

- Working on the last crane pad /turbine staging area for Border Winds. Next week we will begin the restoration phase of the turbine sites and roads.
- The 144-count fiber cable was pulled into the O&M building and prepared for termination.
- End to end testing between Border Winds substation and Peace Garden substation is complete.
- Border Winds substation construction work and protection testing was completed and is ready for the August 10, 2015 energization as planned.
- Completed five (5) WTG mechanical completion walk downs, submitted four (4) mechanical completion certificates, and received two (2) executed certificates from Vestas.

Week's Key Issues

- The collection team is having some difficulties getting through circuit 2 and circuit 3 bores outside the office area on 52nd Avenue. Dolan mobilized to site to clean out the bores and assist the cable pulling process.
- Xcel requested a change to the SCADA design and informed RES of EMS' unavailability to support the required testing. EMS will advise when they will be available to support the remaining SCADA testing.



- **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	17
Project To Date	1	3	13	38	84	631

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

TRIR: Previous Week = 2.33 / Current week = 2.22

RES Safety Index: Previous Week = 0.65 / Current week = 0.59

Weeks Highlights:

- RES contacted the crop dusting company and obtained the SDS for the chemicals being used to treat the surrounding fields. In addition, RES requested to be notified prior to crop dusting activities in order to ensure workers are not exposed to any chemicals.
- The safety team is utilizing a radar gun to control the speed on the project site.
- A bag of Ammonium Sulfate was found on the side of 52 Avenue and it was removed from the project.

Weeks Issues:

- A near miss incident was observed at T26 during the turbine walk down. A knife was unintentionally dropped down the tower and it opened due to hitting the floor. No injuries were recorded but all crews had a safety stand down to discuss the incident and implemented a procedure to ensure the prevention any similar incidents.

Project Work Hours:

- Weekly Man-hours: 17,857.00
- Total Project Man-hours: 360,000.00
- Hours since Last Recordable Injury: 34,721.00



Environmental

Type	Major Incident	Minor Incident	Near Miss	Observation
Current Period	0	2	0	1
Project to Date	0	77	7	62

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

Rolling Incident Score: Previous week: 0.66 / Current Week: 0.45

Week's Highlights:

- The civil teams assisted in inspecting some of the culverts across site and helped perform the necessary repairs.
- The new contaminated soil bin appears to be leak and issue free.
- Wood/Cardboard/Plastic bins are scheduled to be picked up weekly to keep up with the construction needs.

Week's Issues:

- Observed two (2) minor leaks: three (3) gallon at T26 and five (5) gallons at T3. The leaks were contained and disposed properly.
- The incident at T26 was not reported by the crews and it was found out a day after the leak occurred. The crews were reminded to report all leaks and spills in a timely manner to help address it immediately.
- The garbage bin in the laydown yard is full and the vendor is still working on scheduling a pick up.

Quality

Type	RES Issued NCRs			Client Issued NCRs		
	Issued	Open	Closed	Issued	Open	Closed
Current Period	0	0	0	0	0	0
PTD	4	1	3	9	3	6

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

NCRs Issued Details: A response to NCR-2014-038 and NCR-2015-016 was sent back to Xcel for approval.

RES CPARs Issued Details:

Week's Highlights:

- Building & Earth: Checking densities for collector trench backfills, roads, testing Class 5 material gradations every 2500cy, witnessed proof rolls for crane pads, taking compaction test for crane pad base and lifts and sampling and breaking grout cubes.
- Working on job books and Vestas mechanical completion books.
- Monitor grouting at T-4, T-5, T-6, T-12, T-13, T-71, T-72, T-73, T-74 and T-75.
- Inspecting collector trenching backfills.

Week's Issues:

- The quality issues were addressed during execution of the work and no new quality issue is pending.



SCHEDULE STATUS

Project duration	68
No. of weeks into contract	56
Contract time passed (%)	82%

Key Activities (Construction)	Weighted %	Percentage Complete		
		Contract Schedule	Construction Schedule	Actual
Design Engineering	2.5%	100.0%	100.0%	100%
Roads & Crane Pads	20.0%	100.0%	99.0%	85%
Foundations	20.0%	100.0%	100.0%	100%
Collection System	21.5%	69.0%	100.0%	87%
Substation	15.0%	89.0%	100.0%	98.3%
O&M Building	6.0%	100.0%	99.0%	99%
WTG Delivery, Erection, & MCC	15.0%	50.0%	50.0%	51%
	Overall Actual Percent Complete	84.2%	92.2%	86.6%

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	6	4
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 & CRANE PADS

Item	Weighted %	Budget	Total Completed	Total Remaining	Percent Complete
Roads		70%	Roads		86.6%
Rough Grade	30%	137,622	137,622	0	100%
Sub Grade	30%	137,622	137,622	0	100%
1st Lift	20%	137,622	137,622	0	100%
Shoulders	10%	152,837	0	152,837	0.0%
Ditches	10%	152,837	0	152,837	0.0%
Crane Pads		30%	Crane Pads		97.1%
WTG Site Ready for Delivery	30%	75	67	8	94.7%
Cut & Subgrade Compacted	40%	75	74	1	98.7%
Material Placed & Compacted	30%	75	71	4	97.3%

Road and Crane Pad Progress 90%

Comments:

- Continue to maintain roads to support WTG component delivery.
- Completed nine (4) turbine sites for delivery and four (2) crane pads with material.

Foundations					
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:

- Four (4) foundation completion certificates submitted and executed.



Collection System					
Item	Weighted %	Budget	Total Received	Total Remaining	Percent Complete
Deliveries	30.0%	Deliveries			100.0%
MV Cable	50.0%	593,684	606,020	-12,336	102.1%
Fiber	40.0%	328,520	336,590	-8,070	102.5%
Junction Boxes	10.0%	28	28	0	100.0%
Installations	50.0%	Installations			93.9%
Trench	40.0%	278,230	277,230	1,000	99.6%
MV & Fiber/Ground Cable	50.0%	297,945	294,473	3,472	98.8%
Junction Boxes	10.0%	28	13	15	46.4%
Terminations	20.0%	Terminations			51.0%
MV Cable at WTG switch gear	45.0%	75	26	49	34.7%
Junction Boxes	35.0%	28	14	14	50.0%
Underground MV Splices	20.0%	29	26	3	89.7%
Collection System Progress:					87.2%

Comments:

- Completed all cable and fiber installation into the substation.
- The collection team is having some difficulties getting through the remaining bores on 52nd Avenue. Dolan mobilized to site to clean out the bores and assist in the cable pulling process.
- Cable installation works is scheduled to be complete by 8/10/2015.
- Completed VLF testing of circuit 1B.
- Completed fiber terminations for 3 towers and 1 junction box in circuit 1B, and three towers in circuit 5.
- Blew fiber in circuits 1A, 2, 3, 4 and work is ongoing in circuits 6 and 5 where broken duct was discovered.
- Terminated switchgears in 2 WTGs, set and terminated 1 junction box.

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%	91%	9%	91.0%
Cleaning and Shop Finish	4.0%	100%	100%	0%	100.0%
Security System	4.0%	100%	100%	0%	100.0%
O&M Building Progress					99.3%

Comments:

- Working through the last few Punchlist items with AB Systems. Anticipating completion of all remaining work by the end of August.
- 144-count fiber was pulled into the O&M building and prepared for termination.

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%	100.00%
Breakers - Low and High Sides	15.00%	100%	100%	0%	100.00%
Reactors, Cap Back and Switchers	20.00%	100%	100%	0%	100.00%
MPT 230/34.5kV	10.00%	100%	100%	0%	100.00%
Grounding Transformer	5.00%	100%	100%	0%	100.00%
EEE - Control Building with DC Station	15.00%	100%	100%	0%	100.00%
Grounding Wire, Rods and Accessories	5.00%	100%	100%	0%	100.00%
Dead End and Static Mast	5.00%	100%	100%	0%	100.00%
Structural Steel and Bus	10.00%	100%	100%	0%	100.00%
MET Tower Foundation	5.00%	100%	100%	0%	100.00%
Chain Link Fence and Gates	5.00%	100%	100%	0%	100.00%
Construction	70%	Construction			98%
Site Preparation & Grading	3.00%	100%	100%	0%	100.00%
Site Aggregate and Finishing Rock	3.00%	100%	100%	0%	100.00%
Foundations work for substation	9.00%	100%	100%	0%	100.00%
Breakers, Switches, PTs, CTs	12.00%	100%	100%	0%	100.00%
Reactors, Cap Back and Switchers	8.00%	100%	100%	0%	100.00%
EEE - Energize and Finish	4.00%	100%	100%	0%	100.00%
Ground Grid, Conduits, Trenwa	12.00%	100%	100%	0%	100.00%
Structural Steel, Risers, Bus	12.00%	100%	100%	0%	100.00%
Collection Risers/Feeders and GTs	8.00%	100%	100%	0%	100.00%
EEE Wire Pull, Termination and Test	5.00%	100%	100%	0%	100.00%
SCADA Fiber Optic Cables Pull	4.00%	100%	95%	5%	95.00%
Chain Link Fence, Gates	4.00%	100%	100%	0%	100.00%
MPT Testing and Commissioning	4.00%	100%	100%	0%	100.00%
MET Tower Install, Wiring and Testing	4.00%	100%	95%	5%	95.00%
Substation Commissioning	6.00%	100%	100%	0%	100.00%
Hand over of Job Books	2.00%	100%	0%	100%	0.00%

Substation Progress 98.3%

Comments:

- End to End testing between Border Winds substation and Peace Gard substation is complete.
- All fiber installations and terminations are complete in the Electrical Equipment Enclosure (EEE).
- Completed installation of the T-line jumpers to finalize all prep-work for substation energization.
- BWF substation construction work and protection testing is completed and ready for the August 10, 2015 energization as planned.
- Continued working on final grading across the yard and installation of finish rock.
- Poured EEE stairs foundation.
- Completed all fence work installations.

Turbines					
Item	Weighted %	Budget	Total Received	Total Remaining	Percent Complete
Deliveries	20.0%	Delivered to turbine pad			91.6%
Base	15.0%	75	71	4	94.7%
Mid	14.0%	75	71	4	94.7%
Upper Mid	14.0%	75	68	7	90.7%
Top	14.0%	75	68	7	90.7%
Nacelle	14.0%	75	68	7	90.7%
Hub	14.0%	75	68	7	90.7%
Blades	15.0%	75	67	8	89.3%
Erection	60.0%	Erection			52.2%
Base	17.0%	75	67	8	89.3%
Mid	16.0%	75	54	21	72.0%
Upper Mid	16.0%	75	29	46	38.7%
Top	17.0%	75	29	46	38.7%
Nacelle	17.0%	75	29	46	38.7%
Blades	17.0%	75	27	48	36.0%
Mechanical Completions	20.0%	Mechanical Completions			8.0%
Walkdowns	33.3%	75	8	67	10.7%
MCC Submitted	33.3%	75	6	69	8.0%
MCC Signed	33.4%	75	4	71	5.3%
Turbines Progress					51.2%

Week's Highlights

- Set nine (9) bases, and stacked out six (6) complete WTGs.
- Completed five (5) mechanical completion walk down, submitted 4 mechanical completion certificates, and received two (2) executed certificates.

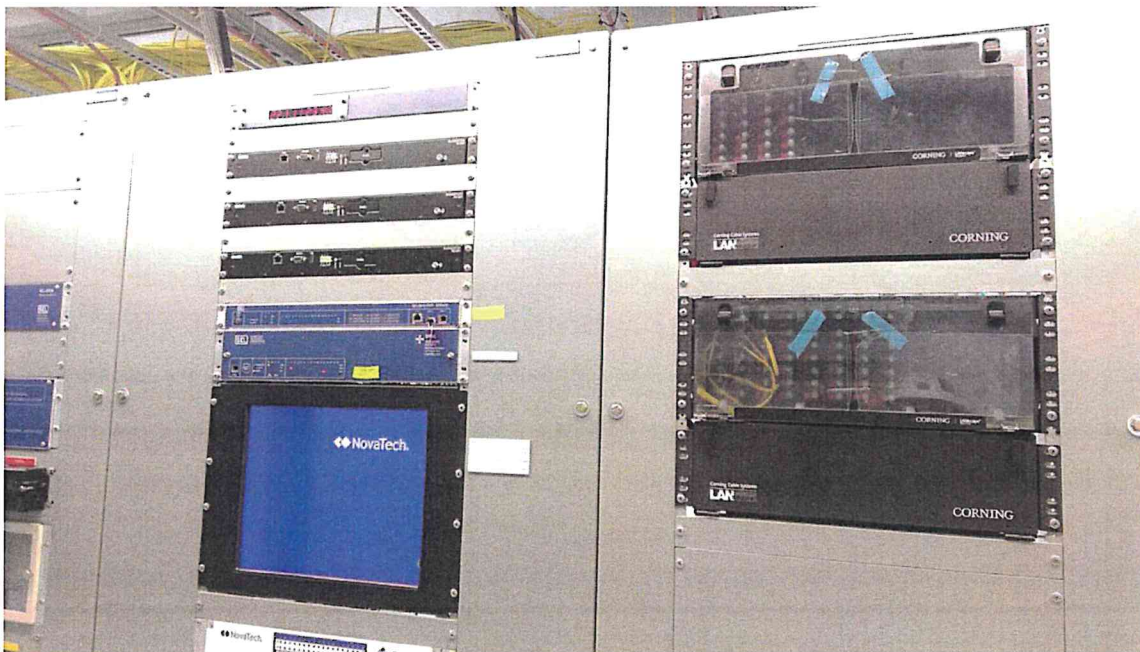
Week's Issues

- A rental crane was brought in to clean black marks off T25 & T26 and it was damaged in transport from Fargo with a hydraulic cracked. The crane was inoperable on arrival. A replacement Liebherr 1350 crane is expected to arrive on Wednesday 8/12/15.

Exhibit 1 – Site Photographs



Substation – Grading work



Substation – Fiber terminations and HMI



Collection – Cable trenching



Civil Work – Removing Intersections for Reclamation



Site View



Site view



Exhibit 2 – Safety Log

Formulas for TRIR and RES Safety Index calculation:

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

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

$$((1 * 64) + (3 * 16) + (13 * 4) + (38 * 1) + (84 * .25)) / \text{Total Project Man Hours} * 1000$$

#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
766	8/4/2015	Normal Work Activities	Hazard Observation	Unknown/ Crop Dusters	Crop dusters by towers 31,32 and 33 spraying herbicide to kill wheat crop, erection crew at T-32.	Found crop dusters at the Rolla Airport and talked with them and gave them my phone number to call and give us advance notification if possible also obtained SDS for the herbicide.	I talked with our managers on site to see if we could talk to the land owners and ask them to give us proper notification when crop dusting may be going on so we can notify our crew and subcontractors.
767	8/4/2015	Safety Walk	Safe Work Observation	Rosendin Electric	JHA good job, good communication over all job site looked good.	None required at this time.	None, this was a Safe Observation.
768	8/4/2015	Safety Walk	Hazard Observation	RES Erection	T-76 during safety walk work trucks had no cones out.	Talked with off load foreman and correction was made.	Talked to off load foreman and crew correction were made, no strikes issued this time but I made it clear next time a strikes would be issued
769	8/4/2015	Safety Inspection	Hazard Observation	RES	House keeping in the laydown yard is looking poor, need to get crew's to get on top of the house keeping issues.	I will bring up with our management team.	Clean up will need to be done.



#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
770	8/6/2005	Safety Walk	Safe Work Observation	RES Erection	Foreman came up to me and explained JHA, work scope, job area looked very good. Great attitude among all the crews.	None required at this time.	None, this was a Safe Observation.
771	8/6/2015	Safety Walk	Safe Work Observation	RES Erection	Good JHA, work area looked good, crew members good attitude.	None required at this time.	None, this was a Safe Observation.
772	7/21/2015	Safety Walk	Hazard Observation	RES Erection	I could not find JHA.	JHA in wrong location, Shannon located JHA and talked to crew, no strikes were issued.	Crew was corrected on JHA issue, no strikes issued.
773	7/22/2015	Safety Walk	Hazard Observation	RES Erection	I looked in the back of two trucks and they did not have any cones.	After Shannon talked to the crew they went to the safety office and got the cones they needed, no strikes issued.	Cone issue corrected, not strike issued.
774	8/1/2015	Safety Walk	Safe Work Observation	RES Erection	Good Communication between Tim, the crane operator and Tom the foreman Turbine 70.	None required at this time.	None, this was a Safe Observation.
775	8/1/2015	Safety Walk	Safe Work Observation	RES Erection	Operated Forklift smoothly, excellent communication between operator and the riggers who were hooking up the back of the trailer. Turbine 72.	None required at this time.	None, this was a Safe Observation.



#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
776	7/28/2015	Safety Walk	Safe Work Observation	RES Erection	Good on inspection on rigging, good on 100% tie off, good communication with the crew. Turbine 73.	None required at this time.	None, this was a Safe Observation.
777	7/31/2015	Safety Walk	Safe Work Observation	RES Erection	I observed the off load crew using a 100% tie off and using a spotter on the ladder, this work was put on the JHA.	None required at this time.	None, this was a Safe Observation.
778	8/4/2015	Safety Walk	Safe Work Observation	RES Erection	Crew was quick with their JSEA as RES arrived at the tower. Great explanation of the hazards and safety was made to sign on to paper work. Workers were at slow, safe and with a clean area.	None required at this time.	Good safe observation.
779	8/4/2015	Safety Walk	Safe Work Observation	RES	MCC crew at T-45 was inspecting their harnesses prior to the tower climb. This included RES and Vestas. Generators cords were also inspected to make sure they were in good order.	None required at this time.	Good work being performed by all.
780	8/4/2015	Safety Walk	Safe Work Observation	RES Electrical	At the substation the MV cable crew were running cable to the sub and working carefully with all open trenches. Good egress into trenches and JSEA covered all hazards for the crew. Great presentation on their JSEA.	Good work by all present	Crew at the substation were working in unison to get the cable into the trench and great communication.



#	Date:	Incident Observed During:	Incident Type:	Company Involved:	Incident Details:	Corrective Action Details:	Actions Taken to Prevent Reoccurrence:
781	8/4/2015	Safety Walk	Safe Work Observation	Entire Site	At the intersection of 43rd street and 109th RES Safety set up with a radar gun to monitor the speed on site. A few complaints were heard from the site about not notifying the site prior to using the radar.	Radar slowed quite a few individuals down as they were coming to site.	Site now understands that there is a radar gun onsite and know that RES will use it to slow down speeders one way or another.
782	8/6/2015	Safety Inspection	Safe Work Observation	Lay Down Yard	3.2 Housekeeping and Sanitation: Dumpster company has been contacted and have not responded to having the now full containers taken off site as they are now over flowing.	Company needs to pick up trash containers.	RES office will continue to try to contact the dumpster company to pick up the now full containers.
783	8/15/2015	Safety Inspection	Safe Work Observation	RES	3.3 Fire Prevention: The RES had all fire extinguishers in good working order in the main office as well as the RES safety office. Inspections were up to date and no smoking signage in place at the fueling station.	None needed.	Good job by RES on the fire extinguishers.



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	CONTRACTOR	DATE	INCIDENT DETAILS	ACTION TAKEN TO CORRECT SITUATION	ACTION TAKEN TO PREVENT REOCCURANCE
104	Minor Incident (Below RQ)	Equipment Failure or leak	Electrical - Collection Sys.	8/4/2015	3 gallons hydraulic fluid leaked was found at T26. The leak was not reported by the collection team but it was noticed right after they performed work on the turbine location	the area was cleared and the soil was disposed to the contaminated soil bin.	Reminded the crews to report all leaks and spills to ensure its taken care of in a timely manner
105	Observation	Trash or other Refuse	RES	8/5/2015	Trash seen across the laydown area because of the high winds and the trash bin being filled up	Contacted the trash bin vendor to schedule a pick up. However, we are working on some payments issues to close this item	Informed the vendor to send his invoices to the correct address to ensure timely payments
106	Minor Incident (Below RQ)	Equipment Failure or leak	Reclamation	8/6/2015	5 gallons hydraulic fluid leaked from a grader at T3 after the hydraulic hose blew off. The leak was controlled and cleaned by the civil crew.	5 ft3 of spoil was collected using a backhoe and disposed in the contaminated soil bin. The leak was controlled by applying absorbent pads and collecting the leaking oil in a bucket until the hose was capped off	Advised everyone to inspect the equipment for leaks every morning.



Exhibit 4 – Quality Log

- Incidents - None
- CPARs - 1
- NCRs - 9

NCR log

Description of Material	NCR Opened (Current Period)	NCR Closed (Current Period)	Total NCR Open (As of this Week)	Total NCR Closed (As of this Week)
Totals			4	6
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-2014-38, T3 grounding was not installed per specifications			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
23053-030	Shabeeb Khader	RES	Bradley Morrison	Xcel Energy - Generation	Install crushed aggregate on the substation site	10/31/14	11/6/14	Civil	Xcel Responded. RES to perform density test.	
23053-092	Emad Alaydi	RES	Jayne Orrock	Xcel Energy - Generation	Fiber termination inside the turbine	06/16/15	06/22/15	Turbine	Xcel response received 6/17/15- RES responded 7/22/15	07/30/15
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	
23053-100	Emad Alaydi	RES	Chris Ayika	Xcel Transmission	Fiber Transceiver	06/30/15	07/08/15	BW Substation	Xcel responded 7/1/2015. RES responded on 7/13/15. Response was sent in an email format	
23053-102	Shabeeb Abdul Khader	RES	Peter Doherty	Xcel Energy - Generation	Access Road Adjustment to T9, T10, T11	07/16/15	07/23/15	Civil		07/29/15
25035-104	Emad Alaydi	RES	Sean Simmons	Vestas	Fiber Installation in the Turbines	07/23/15	07/31/15	Turbine		07/29/15
23053-105	Kyler Leen	RES	Kyle Louis	REI	Feeder Fault Clearing Time	7/27/2015	7/29/2015	Substation		



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	