



## BORDER WINDS ENERGY PROJECT WEEKLY PROJECT REPORT

Weekly report no:	20
Report for week period ending COB Friday:	11/28/14
Calendar week no:	48

### Executive Summary

#### This Week's Highlights

- Continued efforts are being made to encourage employee participation in the site observation program;
- Poured all eight (8) remaining pedestals for a total of 71 of 75 project to date – 95% complete;
- Installed Degadeck crack sealant and continued WTG Foundation backfills at T5, T9, T6, T7, T8, T12, T13, and T14 for a total of 54 completed backfills;
- Native backfill material was predominantly found suitable for achieving proper compaction with limited import required during this period
  - Increased import fill expected upon return from Thanksgiving break due to increased frost penetration of stockpiles;
- Continued stockpiling aggregate for use in crane pad construction in Spring;
- Installed culverts at T13, T26, T67, T28, and T38;
- Improved drainage shoulders at T21, T22, T35, T36, T37, T38, T39, T41, T42, T43, T66, T67, T68, T72, T73, T74, T75, T76, T77, T78, T79, T82;
- Backfilled directional bore pits and splices at 3/4, 3/5, 3/6, 2/4, 2/5, 5/2, 5/3, 5/4, 5/5;
- Commenced backfill of foundation walls at O&M;
- Received 90% foundation drawings for substation.

**Additional trucking company, Site Energy Services, added to site and began hauling from borrow pit located near T71. Will remain onsite to assist Pinky's in stockpiling crane pad sites.**



**This Week’s Key Issues**

- Cold weather continues to impact civil work – expected shutdown within two weeks following return from Thanksgiving holiday;
- Property damage continues to be a concern – Safety and REC to continue focus in preventing property damage incidents;
- Strong winds affecting production and concerns for debris issues – everyone to be cautious of strong winds and effect on safety;
- Positive review of Substation 90% foundation drawings needed to ensure construction commences immediately following return from the Thanksgiving break.

**Safety**

\*Full description of week’s Safety Log can be found in Exhibit 2

Type	Lost Time	Recordable Injury (Medical Aid)	Minor Injury (First Aid)	Equipment Property Damage	Near Miss	3X20 Observation
Current Period	0	0	0	0	2	6
Project To Date	1	0	9	18	2	359

**TRIR = 1.58**

((Lost Time + Medical Aid) \* 200,000) / Total Man Hours

**RES Safety Index = 1.01**

((Lost Time \* 64) + (Injury \* 16) + (Minor Injury \* 4) + (Damage \* 1) + (Near Miss \* 0.25)) / Man Hours \* 1000

**Week’s Highlights:**

- Zero incidents this week;
- The employees continue to show their commitment to the RES Safety Culture.

**Week’s Issues:**

- Continued focus on property damage incidents and prevention;
- Cold weather work and working in high winds.

**Project Work Hours:**

- Weekly Man-hours: 3,288
- PTD Man-hours: 126,698.20



**Environmental**

\*Full description of week’s Environmental Report can be found in Exhibit 2

Type	Major Incident	Minor Incident	Near Miss	Observation
Current Period	0	2	0	0
Project to Date	0	45	3	12

**Rolling incident Score**

Previous week: 0.96 Current Week: 1.22

**Week’s Highlights:**

- Continuing rip-rap placement at the culvert inlets;
- Extend culvert length based on road width and crane path.

**Week’s Issues:**

- 1 cup of engine oil, from unknown source, found on the ground in the lay down yard;
- 0.5 gallon of diesel overflow from the generator while fuelling in the laydown yard;
- Continue corrective action for items identified in recent site audit.

**Quality**

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

	NCRs			Incidents			CPARs		
	Issued	Open	Closed	Issued	Open	Closed	Issued	Open	Closed
Weekly	1	1	0	0	0	0	0	0	0
Total	8	3	5	0	0	0	0	0	0

**Week’s Highlights:**

- On-going - Concrete breaks, and density testing for turbine foundation backfills;
- On-going – Monitored concrete placement for turbine pedestals;
- On-going Daily Quality Meeting, the purpose of the meeting is to convey any quality construction issues between the RES quality team, RES management and Xcel.



**Work Area Inspections conducted:**

- Inspection of pedestal reinforcing steel for T1, T33, T-35, T-53 & T-54;
- Monitored turbine pedestal concrete placement for T1, T33, T-35, T-53 & T-54;
- Inspection and density test back fills for T5, T6 T7, T8, T9, T12 & T14;
- Inspection and density test Backfill for South side of O&M Building.

**Week's Issues through 11/28/2014:**

Issued NCR-23053-004 to AB systems regarding crack identified in foundation wall at O&M building. The crack is suspected to be plastic shrinkage and non-structural. EOR comment pending. **RES Engineering determined the crack does not present structural issues. Planning to seal crack with previously approved sealant.**

**Schedule Status**

Project duration	68
No. of weeks into contract	21
Contract time passed (%)	31 %

Key Activities (Construction)	Weighted %	Percent Complete		
		Contract Schedule	Construction Schedule	Actual
Design Engineering	2.5%	100%	100%	100%
Roads	14%	95%	95%	83%
Crane Pads	6%	0%	0%	0%
Foundations	20%	100%	100%	95%
Collection System	20%	46%	33%	23%
Substation	10%	50%	37%	18%
WTG Delivery, Erection, MCC	20%	0%	0%	0%
O&M Building	5%	55%	40%	27%
Completion	2.5%	0%	0%	0%
<b>Overall Actual Percent Complete</b>				<b>41%</b>



## Progress Report

### Permit Status

Permit Type / Description	County / State	Responsible Group	Date Needed By	Status
O&M Well Permit	ND State	AB Systems	8/30/15	Pending submittal
O&M Septic Permit	ND State	AB Systems	8/30/15	Working with ND State HD

#### Comments:

- Rural water option still pending diligence in determining final costs compared to well system;
- State of North Dakota Health Department reviewing location for placement of septic system drain field at O&M site.

**Received approval from ND Department of Health to install septic system drain field in grassy vegetation area alongside O&M site.**

### Construction Status

Certificates	Total	Submitted	Signed
Foundation Completion Certificate	75	0	0
Mechanical Completion Certificate	75	0	0
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			69%
Clear and Grub	20%	152,837	152,837	0	100%
Subgrade	25%	152,837	141,346	11,491	92%
Place and Compact Road Base	30%	207,469	185,555	21,914	89%
Shoulders	15%	152,837	0	152,837	0%
Ditches	10%	152,837	0	152,837	0%
Crane Pads	30%	Crane Pads			0%
Shape and Compact Sub Grade	40%	75	0	75	0%
Place and Compact Road Base	60%	75	0	75	0%



**Comments:**

- Encountering frozen subgrade conditions;
- Continued work on improving drainage conditions at roadway shoulders including sites T21, T22, T35, T36, T37, T38, T39, T41, T42, T43, T66, T67, T68, T72, T73, T74, T75, T76, T77, T78, T79, T82;
- Continued culvert installations at T13, T26, T67, T28, T38;
- REC preparing a punchlist for each road system in preparation for Spring remobilization and work planning.

**Shoulders and drains are currently 80% prepared for spring thaw and runoff. Staking completed for the road adjustment to be made at CR108, near T9, T10, and T11. Unable to make changes to the road at this time; to be completed in the spring. Punch list completed and will be published ASAP.**

**Foundations**

Item	Weighted %	Budget	Total Completed	Total Remaining	Percent Complete
Excavations	10%	75	74	1	99%
Mud Mats	5%	75	74	1	99%
Bases	45%	75	71	4	95%
Pedestals	20%	75	71	4	95%
Backfilled	15%	75	54	21	72%
Vestas Ground Kit	5%	75	74	1	99%

**Foundation Progress      92%**

**Comments:**

- The four (4) remaining foundations will require completion in the Spring due to winter conditions;
  - Three (3) bases currently have all steel installed which will be removed and stored for installation in the Spring;
  - The excavations will be backfilled to protect the subgrade from frost;
- Backfilling resumed this week following installation of approved cold-weather crack sealant. Native material is working well for compaction. Alternate material source has been identified to support backfilling as necessary;
- Eight (8) pedestals poured in this period completing all available pedestals;
- Subcontract for installation of shrink-wrap protection of grout troughs being finalized.

**Determined that three remaining open bases must be backfilled prior to winter shutdown. Discussing possibility of pouring those foundations during upcoming above freezing temperatures, or removing steel.**



Discussing protection plan for pedestals. Shrink wrap manufacturer states that 18" of backfill will need to be excavated to accommodate shrink wrap- Will not guarantee warranty of shrink wrap in temperatures below 20 degrees.

### Collection System

Item	Weighted %	Quantity	Total Received	Total Remaining	Percent Complete
<b>Deliveries</b>		<b>30.0%</b>	<b>Deliveries</b>		<b>63%</b>
Grounding Transformers	10.0%	6	0	6	0.0%
MV Cable 3/0 AWG AL	15.0%	297,896	37,912	259,984	13%
MV Cable 350 Kcmil AL	7.5%	140,708	50,821	95,583	35%
MV Cable 750 Kcmil AL	15.0%	205,038	95,460	91,677	51%
MV Cable 1000 Kcmil AL	7.5%	88,167	90,485	0	100%
MV Cable 1250 Kcmil AL	20.0%	147,069	133,520	13,549	91%
Fiber 12 count	2.5%	328,520	336,590	0	100%
Fiber 120 count	2.5%	6,587	0	6,587	0.0%
Ground Cable	10.0%	299,663	299,663	0	100%
Junction Boxes	5.0%	25	0	25	0.0%
Rubber Goods	5.0%	1420	772	648	54%
<b>Installations</b>		<b>50.0%</b>	<b>Installations</b>		<b>9%</b>
Trench	60%	288,150	24,552	263,598	9%
MV & Fiber/Ground Cable	30%	288,150	31,652	257,098	11%
Grounding Transformers	5%	6	0	6	0.0%
Junction Boxes	5%	25	0	25	0.0%
<b>Terminations</b>		<b>20.0%</b>	<b>Terminations</b>		<b>0.0%</b>
Grounding Transformers	10.0%	6	0	6	0.0%
Junction Boxes	30.0%	25	0	25	0.0%
Turbines	60.0%	75	0	75	0.0%

**Collection System Progress: 23%**

#### Comments:

- REC collector crews demobilized;
- All directional drill and splice pits have been backfilled.

Receiving miscellaneous materials (cable, junction box parts, etc.) and storing for use in the spring.



## O&M Building

Activity Description	Required	Unit	To Date Total	Remains	% Comp.
Earthworks	100	%	75	25	75%
Foundation	100	%	75	25	75%
Deliver Building	100	%	100	0	100%
Building Enclosed	100	%	0	100	0%
Building Interior Framing	100	%	0	100	0%
Building Electrical	100	%	0	100	0%
Building HVAC	100	%	0	100	0%
Plumbing	100	%	0	100	0%
Building Interior Trim & Finishing	100	%	0	100	0%
Septic System	100	%	0	100	0%
Water Well	100	%	0	100	0%
Fence and Yard Rock	100	%	0	100	0%

**O&M Building Progress: 21%**

- Stoops poured and backfill operations commenced;
  - Area where crack in wall is located to remain open until repair material determined and installed;
- Building erection to commence following the Thanksgiving break.

**RES Engineering determined the crack does not present structural issues. Planning to seal crack with previously approved sealant.**

**Backfilling to be completed middle of next week. Will submit an updated schedule on December 8<sup>th</sup> - Expected to receive updated lift plans December 5<sup>th</sup> – Plan to begin building erection December 10<sup>th</sup>. June 1, 2015 projected completion date.**



## Substation

Item	Weighted	Required	Total Completed	Total Remaining	Percent Complete
<b>Design</b>	<b>20%</b>	<b>Design</b>			
Design Drawings	20%	100	70	30	70.0%
<b>Deliveries</b>	<b>35%</b>	<b>Deliveries</b>			
Structural Steel	5%	100	0	100	0.0%
Main Transformer	15%	100	0	100	0.0%
Control House	5%	100	0	100	0.0%
Relay Panel	2.5%	100	0	100	0.0%
Arrestors	2.5%	100	0	100	0.0%
Switches	2.5%	100	0	100	0.0%
Breakers	2.5%	100	0	100	0.0%
<b>Construction</b>	<b>45%</b>	<b>Construction</b>			
Grading & Drainage	5%	100	75	25	75.0%
Foundations	10%	100	0	100	0.0%
Underground/Grounding	5%	100	0	100	0.0%
Structural Steel Work	5%	100	0	100	0.0%
Equipment Installation	5%	100	0	100	0.0%
Control Building/Wiring	5%	100	0	100	0.0%
Transformer Fit Out	5%	100	0	100	0.0%
Commission	5%	100	0	100	0.0%
Fence, Gravel, & Clean Up	2.5%	100	0	100	0.0%

**Substation Progress: 16%**

- 90% foundation package submitted to Xcel on Friday, November 21, 2014;
  - Design review with Xcel scheduled for Monday, December 1, 2014;
  - Foundation construction expected to commence following design review;
- Main transformer foundation design reviewed by RES;
  - Design determined not to meet Xcel standards – drawings to be updated and resubmitted the first week of December.

**Expecting response from Xcel on newest drawings by end of the week, as well as updated transformer pad and containment pit drawings from Rosendin.**