

Mikayla Boche

From: Bowker, Alexandria C. (SPC) <acbowker@southernco.com>
Sent: Wednesday, April 24, 2019 9:22 PM
To: Ashley Ross; Mikayla Boche
Cc: Wash, Elizabeth H. (SPC)
Subject: Ruso PSC Permit-USDOD Update
Attachments: RE: Ruso Wind Project Updated KMZ; 2018-04-23 Ruso Wind Farm Design Data.kmz; 20180116 Minot Airforce Base Collector System Issues.pdf; 20180201 Ruso Wind Farm Design Data-Landowner Agency Input.kmz; AF crossing 1.jpg; AF crossing 2.jpg; Minot AFB Document Explanation.docx; RE: Ruso Wind Project ; RE: Convert kmz to Shapefile

Ashley and Mikayla,

On 12/19/2018, Ruso Wind Partners, LLC sent Minot Airforce Base shapefiles of our layout including turbine locations, collector lines, roads, and crane walks. We were informed their requirements are as follows: (1) No dirt moved on our cable easement (16.5') without AF personnel on site (2) Minimum 2' of separation, incased in metallic conduit the width of our cable easement (16.5') (3) 90 degree crossing is mandatory (4) No cable crossing within 50ft of buried splices (5) Access roads will cross the cable at a minimum of 45 degrees (90 degrees preferred) (6) Will not allow access road to run in USAF easement (6) AF will not allow any ditch cutting for access roads on their easement without approval (7) AF requires a 48hr notice prior to cable crossing or any construction on USAF easement. On 1/9/2019, Ruso Wind Partners, LLC sent Minot Airforce Base shapefiles based on a revised layout including turbine locations, collector lines, roads, and crane walks. On 1/16/2019, Ruso Wind Partners, LLC met with Minot Airforce Base to discuss the locations that the collector lines, roads, and crane walks crossed the AF communication lines. On 3/8/2019, Ruso Wind Partners, LLC provided a revised layout including collector lines, roads, and cranewalks which took into account the comments from the AF on 1/16/2019. On 3/26/2019, the AF commented that two areas didn't meet the 90 degree crossing requirement. On 4/24/2019, Ruso Wind Partners, LLC sent the AF a revised layout including collector lines, roads, and cranewalks which addressed the two areas of issue. On 4/24/2019, the AF replied and said, "The changes look great and I have no other issues at the moment."

Thanks,
Alex

Alex C. Bowker

Siting
Southern Power Company
3535 Colonnade Parkway, BIN S-855-EC
Birmingham, AL 35243
O: 205.992.0163
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From: [MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK](#)
To: [Bowker, Alexandria C. \(SPC\)](#)
Subject: RE: Ruso Wind Project Updated KMZ
Date: Wednesday, April 24, 2019 4:51:52 PM
Attachments: [image001.gif](#)

Alex,

I'm doing good, how are you? The changes look great and I have no other issues at the moment. Thanks.

Cy Munos
Chief, Cable Affairs
91 MMXS/MMXSFK
Minot AFB, ND
DSN: 453-6053
COMM.: 701-723-6053
CELL: 701-720-8274

From: Bowker, Alexandria C. (SPC) <acbowker@southernco.com>
Sent: Wednesday, April 24, 2019 1:28 PM
To: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Cc: KINKER, LAUREN K GS-12 USAF AFGSC 5 CES/CENP <lauren.kinker@us.af.mil>; JOHNSON, BRUCE A GS-12 USAF AFGSC 5 CES/CENP <bruce.johnson.25@us.af.mil>; Wash, Elizabeth H. (SPC) <ewash@southernco.com>
Subject: [Non-DoD Source] Ruso Wind Project Updated KMZ

Cy,
I hope you are doing well! Based on the 3/26 communication from you regarding two areas that didn't meet the 90 degree crossing, we revised our civil design (see attached). Please review and let me know if there are any other issues. We would like any comments by close of business this Friday to ensure we can make any necessary revisions before our permit amendment filing at the beginning of May.
Thanks,
Alex

Alex C. Bowker
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From: [MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK](#)
To: [Bowker, Alexandria C. \(SPC\)](#)
Subject: RE: Ruso Wind Project
Date: Tuesday, March 26, 2019 9:28:54 AM
Attachments: [AF crossing 1.jpg](#)
[AF crossing 2.jpg](#)

Alex,

Attached are the 2 areas that doesn't meet our 90 degree crossing angle. Let me know what you think. Thanks.

Cy Munos
Chief, Cable Affairs
91 MMXS/MMXSFK
Minot AFB, ND
DSN: 453-6053
COMM.: 701-723-6053
CELL: 701-720-8274

-----Original Message-----

From: Bowker, Alexandria C. (SPC) <acbowker@southernco.com>
Sent: Friday, March 8, 2019 10:19 AM
To: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Cc: Barry, Chris (SPC) <CTBARRY@SOUTHERNCO.COM>
Subject: [Non-DoD Source] Ruso Wind Project

Cy,

I have attached the revised Ruso Wind Partners, LLC layout and civil design shapefiles. Additionally, I have updated the table below as it relates to the revised layout. Additionally, the minimum spacing for the cables as they approach the substation would be 4 feet center-to-center. This would apply to the 3 circuits approaching from the north and the 3 circuits approaching from the southwest.

NOTE: feeder 7 has two homeruns so there are 4 parallel cables for the southwest approach; 4' spacing between all cables.

Feeder 4 approaches on its own from the southeast and therefore was not included in the multi-circuit thermal analysis.

The total trench width for the 3 circuits from the north would be approximately 9'

Total trench width for the 4 circuits from the southwest would be approximately 13'

Please let me know if you have any questions or concerns.

Turbine Type

Rotor Diameter

(meters - feet)

Rotor Swept Area

(meters² - feet²)

Cut-in Wind Speed

(m/s)

Rated Power

(MW)

Cut-out Wind Speed

(m/s)

Blade Length

(meters - feet)

Hub Height

(meters - feet)

Blade Height (Highest)

(meters - feet)

Blade Height (Lowest)

(meters - feet)

Max # of Project Turbines

Siemens SWT-2.415-108

108 - 354.3

9,144 - 98,425.2

3.0

2.415

25.0

52.6 - 172.6

80 - 262.5

134 - 439.6

26 - 85.3

11

Siemens SG 4.8-145

145 - 475.7

16,506 - 177,669.1

3.0

4.2

27.0

71 - 232.9

107.5 - 352.7

180 - 590.6

35 - 114.8

36

Thanks,
Alex

Alex C. Bowker

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From: [MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK](#)
To: [Bowker, Alexandria C. \(SPC\)](#)
Cc: [JOHNSON, BRUCE A GS-12 USAF AFGSC 5 CES/CENP](#)
Subject: RE: Convert kmz to Shapefile
Date: Wednesday, December 19, 2018 2:42:28 PM

EXTERNAL MAIL: Caution Opening Links or Files

Alex,

Thanks for the files. From a quick look of things, we have 9 collector crossings. We have regulations on collector cable crossings and a few of them will have to be modified to be within our regulations. Some access roads will have to be modified as well.

These are our requirements:

- No dirt moved on our cable easement (16.5') without AF personnel on site.
- Minimum 2' of separation, incased in metallic conduit the width of our cable easement (16.5)'
- 90 degree crossing is mandatory
- No cable crossing within 50ft of our buried splices
- Access roads will cross our cable at a minimum of 45 degrees (90 preferred)
- Will not allow access road to run in USAF easement
- We will not allow any ditch cutting for access roads on our easement without approval.
- We require a 48hr notice prior to cable crossing or any construction on USAF easement. (Cable Affairs Office 701-723-6053)

Cy Munos
Chief, Cable Affairs
91 MMXS/MMXSFK
Minot AFB, ND
DSN: 453-6053
COMM.: 701-723-6053
CELL: 701-720-8274

-----Original Message-----

From: Bowker, Alexandria C. (SPC) <acbowker@southernco.com>
Sent: Wednesday, December 19, 2018 1:18 PM
To: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Subject: [Non-DoD Source] FW: Convert kmz to Shapefile

Cy,

Please see the attachments.

Thanks,
Alex

Alex C. Bowker

Siting

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20180116 Minot Airforce Base Collector System Issues

Pictures provided by Minot Airforce Base at SPC's in person meeting with Minot Airforce Base on 1/16/2019 to show areas that didn't meet missile cable crossing requirements.

20180201 Ruso Wind Farm Design Data-Landowner Agency Input

KMZ put together by SPC that was provided to Westwood to revise the civil design based on input from the landowners and state/local agencies.

AF crossing 1 and AF crossing 2

Pictures provided by Minot Airforce Base on 3/26/2019 which show two areas that don't meet the 90 degree crossing requirement on the revised civil design.

2018-04-23 Ruso Wind Farm Design Data

Revised civil design from Westwood that addresses the two areas that didn't meet the 90 degree crossing requirement.

RE Ruso Wind Project Updated KMZ

Email from Minot Airforce Base confirming we met their crossing requirements and they see no other issues with the civil design.