

BEFORE THE OHIO POWER SITING BOARD

**In the Matter of the Application of)
South Field Energy LLC for a)
Certificate of Environmental)
Compatibility and Public Need to) Case No. 15-1716-EL-BGN
Construct an Electric Generating)
Facility in Columbiana County, Ohio)
)**

**In the Matter of the Application of)
South Field Energy LLC for a)
Certificate of Environmental) Case No. 15-1717-EL-BTX
Compatibility and Public Need for a)
345kV Transmission Line in)
Columbiana County, Ohio)**

DIRECT TESTIMONY OF LYNN GRESOCK

1 **Q.1. Please state your name, title and business address.**

2 A. My name is Lynn Gresock. I am Vice President – Energy Program with Tetra
3 Tech, Inc., 2 Lan Drive, Suite 210, Westford, MA 01886.

4 **Q.2. What are your duties as Vice President – Energy Program?**

5 A. Tetra Tech is a provider of consulting, engineering, construction and technical
6 services focused on resource management and infrastructure. In my role at Tetra Tech, I
7 coordinate the company’s national practice for the conventional generation market, and
8 provide consulting services for a broad range of energy projects. That work has included
9 supporting project development from early definition phases, through obtaining licensing
10 approvals, construction oversight, operational compliance support, and transactional due
11 diligence.

1 **Q.3. What is your educational and professional background?**

2 A. I have a B.S. degree from the University of Massachusetts in Landscape
3 Architecture and Regional Planning, and over 32 years of professional experience
4 providing environmental permitting and compliance services. I have supported a wide
5 range of projects nationwide, including permitting over 20,000 megawatts of energy
6 facilities. Through this work, I have gained a strong knowledge of the range of related
7 issues and work closely in directing technical experts to provide strategic, technical, and
8 regulatory support for facility development and operations. My work includes Ohio
9 Power Siting Board permitting for ten generating facilities either successfully approved
10 or currently in process.

11 **Q.4. On whose behalf are you offering testimony?**

12 A. I am testifying on behalf of the Applicant, South Field Energy LLC (“SFE”).

13 **Q.5. What is the purpose of your testimony?**

14 A. The purpose of my testimony is to describe certain studies undertaken and
15 directed by Tetra Tech on behalf of the Applicant and summarize the results of those
16 studies.

17 **Q.6. What studies did you and your firm undertake on behalf of the Applicant to support**
18 **the Application?**

19 A. I am the lead environmental consultant for the South Field Energy project, which
20 includes:

- 1 • The 86.5-acre “Generating Facility Site,” within which power generating
2 equipment, an on-site switchyard, and other ancillary facilities (“Generating
3 Facility”) will be located on about 30 acres; and,
- 4 • The 13-acre “Construction Laydown Site” located southeast of and adjacent to the
5 Generating Facility; and,
- 6 • The “Interconnection Facilities,” which include the approximately 3.9 mile
7 preferred and alternate rights of way (“ROWS”) over one of which SFE will
8 construct a 345-kilovolt “Transmission Line” and a 38-acre site (“Switchyard
9 Site”) where the “Switchyard” will be constructed to connect the Transmission
10 Line to the existing First Energy Highland-Sammis 345-kV circuit.

11 I have managed, been directly involved and am familiar with the full range of
12 environmental assessments completed for the all aspects of the project. Written studies
13 and documentation prepared under my direction are attached to the Generating Facility
14 Application as Appendices D, E, G, H, I, K and L and to the Interconnection Facilities
15 Application as Appendices F, G, H and I.

16 In addition, Tetra Tech supported obtaining the air permit for the Facility including air
17 emission modeling, and reviewed and integrated other contributions to the Ohio Power
18 Siting Board application.

19 **Q.7. Please describe and summarize the study of subsurface conditions included in the**
20 **Generation Facility Application.**

21 **A.** Tetra Tech was contracted by SFE to conduct a preliminary geotechnical
22 exploration at the location of the Generating Facility. The purpose of the exploration was
23 to 1) determine the generalized subsurface conditions to the depth penetrated by the

1 borings; 2) evaluate the engineering characteristics of the subsurface materials; and 3)
2 provide preliminary geotechnical information and recommendations to assist in designing
3 the proposed Generating Facility.

4 The subsurface conditions appear to be satisfactory for the proposed Generating Facility
5 based on investigation. The investigation included a review of published geologic and
6 soils information, drilling eight standard test borings, laboratory soil testing, and a
7 geotechnical engineering evaluation of the test results. Test boring locations were
8 selected to be representative of the geotechnical conditions on the site at the proposed
9 locations of structures. The test boring locations and depths were approved by SFE prior
10 to mobilizing to the site.

11 The geotechnical characteristics of the site encountered during the investigation appear to
12 be satisfactory for the proposed Facility. More complete details of the study are in
13 Appendix D to the Generating Facility application.

14 **Q.8. Please describe and summarize the study of wetlands, streams and other waters**
15 **within the project area.**

16 **A.** Tetra Tech subcontracted with EnviroScience to perform a delineation of
17 wetlands and other waters for the project sites. For the Generating Facility application,
18 the delineation was performed in April 2015 (Generating Facility) and August 2015
19 (Construction Laydown Site). Delineation was performed for the Interconnection
20 Facilities Application in April 2015 and November 2015.

21 Wetland areas and other waters, including streams, were delineated on site using
22 methodology enumerated in the United States Army Corps of Engineers (“USACE”)

1 Wetland Delineation Manual (Environmental Laboratory, 1987) (1987 Manual) and the
2 Eastern Mountains and Piedmont Regional Supplement (USACE, 2012) (Regional
3 Supplement), as well as the Ohio Rapid Assessment Method (“ORAM”) for wetlands
4 (Mack, 2001). Headwater Streams were evaluated using the Field Evaluation Manual for
5 Ohio’s Primary Headwater Streams (Ohio EPA, 2012) or Ohio EPA's Headwater Habitat
6 Evaluation Index as well as the USACE Jurisdictional Determination Form Instruction
7 Guidebook (USACE and USEPA, 2007).

8 Secondary literature sources were reviewed to identify known wetlands and other
9 significant ecological resources and areas with high potential for wetlands in or near the
10 project area. A field inspection was then conducted to identify major plant communities
11 and potential wetlands and other waters. Wetlands and other waters were surveyed using
12 a global positioning system (“GPS”) unit as well as aerial photography and topographic
13 figures.

14 Generating Facility Application

15 Although the Generating Facility will be located on approximately 30 acres, the study
16 area included the entire 86.5-acre Generating Facility site and 13-acre Construction
17 Laydown Site. The study area contains active agricultural areas as well as forest,
18 scrub/shrub, old field, open field and maintained lawn communities.

19 No wetlands, open water, or streams were identified within the Construction Laydown
20 Site. Within the Generating Facility Site, there are nine small wetlands that total 0.783
21 acres. Eight of these (W-2 through W-9) were classified as a Category 1, being of the
22 lowest quality and generally lacking diversity of plant species or available habitat and

1 having limited potential to perform major wetland functions. The remaining wetland (W-
2 1) was classified as a Modified Category 2, which means it has potential to be restored to
3 higher quality but is presently of lower quality or degraded.

4 Portions of six streams were also identified during field investigations, generally along
5 the edge of the property. All are low to moderate quality and are generally small in size,
6 being 0 to 4 inches deep and 0.105 acres in total. There are no open water aquatic
7 resources on the Generating Site.

8 The project area was also studied for suitable habitat for state and federal listed species.
9 Agency correspondence confirmed that there are no ecological sites, geologic features,
10 animal assemblages, scenic rivers, state wildlife areas, state natural preserves, state or
11 national parks, state or national forest, national wildlife refuges or other protected natural
12 areas within the project area. No listed species were observed and most of the project
13 area habitat is not suitable for listed species. There are approximately 15 acres of forest
14 on the Generating Facility site, a minority of which contain suitable habitat for listed bat
15 species. No impact or adverse effects are anticipated, although any tree removal may be
16 limited to approved winter clearing limits from October 1 to March 31 if there is habitat
17 suitable for listed bat species.

18 In my opinion, based on my experience and the results of the studies conducted under my
19 direction, the ecological impact of the Generating Facility and Construction Laydown
20 will be minimal.

21

1 Interconnection Facilities Application

2 Within the Interconnection Sites, six upland communities exist, including agricultural
3 land, maintained lawn, open field, old field, scrub-shrub, and forest, some of which is
4 located within former strip mines.

5 Four open water ponds occupy about 0.470 acres of the project area and are located on
6 the shared portion of the Transmission Line route. These are associated with inactive
7 strip mine sites and are located at the bottoms of steep gorges and rocky slopes. No
8 impacts are anticipated to these resources.

9 A total of 23 wetlands were identified. Combined, these wetlands total 3.674 acres of the
10 240-acre Interconnection Facilities sites. None of the identified wetlands are Category 3
11 wetlands, which are wetlands of the highest quality. Of the 23 wetlands, 14 are located
12 within the shared portion of the Interconnection Facilities, 6 of them only occur within
13 the Preferred ROW, and 3 of them only occur within the Alternate ROW. No wetlands
14 are proposed to be impacted by either the Preferred or Alternate configuration. Only 3 of
15 the wetlands are classified as palustrine forested, indicating that the ROW could result in
16 conversion from forest to scrub-shrub in association with clearing for the overhead
17 transmission lines; of these, one is in the shared configuration and two would be within
18 the Preferred ROW.

19 There also are 25 streams within the Interconnection Facilities sites. All of the streams
20 within the Interconnection Facilities sites (including both the Alternate and Preferred
21 Routes) flow south and eventually into the Little Yellow Creek. None of the streams are
22 high quality or waters of special concern. Two of these (Alder Lick Run and Bailey Run)

1 are perennial streams that flow through former strip mine areas and are located within the
2 shared Transmission Line ROW. The remaining 23 streams are either ephemeral
3 (meaning they are most often dry) or intermittent (meaning they have dry periods). A
4 total of 10 of these stream or stream segments are located within shared portions of the
5 Interconnection Facilities. A total of 6 and 7 stream or stream segments are located
6 within the Preferred ROW or Alternate ROW only, respectively. No impact to streams is
7 proposed due to placement of structures. With use of either the Preferred or Alternate
8 ROW, one intermittent stream (S-19) will require 0.002-acre of impact associated with
9 the access road. If the Alternate ROW is selected, an additional 0.007-acre of impact
10 associated with access road impacts to small portions of three intermittent or ephemeral
11 streams (S-7, S-9, and S-10) would be required. These levels of impact are consistent
12 with authorization under a U.S. Army Corps of Engineers nationwide permit.

13 Agency correspondence has confirmed that there are no ecological sites, geologic
14 features, animal assemblages, scenic rivers, state wildlife areas, state natural preserves,
15 state or national parks, state or national forest, national wildlife refuges or other protected
16 natural areas within the project area (including both the Alternate and Preferred
17 Transmission Routes). Federal and state agencies were consulted regarding presence or
18 habitat of listed species. Tree removal may be limited to approved winter clearing limits
19 from October 1 to March 31 if there is habitat suitable for listed bat species.

20 In my opinion, based on my experience and the reviews conducted under my direction,
21 no impact or adverse effects are anticipated as a result of the construction of the
22 Interconnection Facilities regardless of whether the Transmission Line is constructed on
23 the Alternate Route or the Preferred Route.

1 **Q.9. Did you direct a sound survey and, if so, what was the result of the survey?**

2 A. Tetra Tech completed a Sound Survey and Analysis Report for South Field
3 Energy in December 2015. A true and accurate copy is attached to the Generating
4 Facility Application as Appendix H. The study involved documenting the baseline
5 acoustic environment, then modeling the impacts of mitigated construction and
6 operational sounds using state of the art equipment and industry standards. Ambient
7 sound levels surrounding the facility site were representative of sound sources within
8 their area-specific environment and ranged from 41 dBA to 64 dBA during the daytime
9 and from 26 dBA to 37 dBA at nighttime.

10 Construction of the Generating Facility is expected to be typical of other power
11 generating facilities. Construction sound levels are predicted to range from 37 to 58 dBA
12 Leq, although overall sound levels should generally be lower because of attenuation and
13 the trend toward quieter construction equipment than the equipment from which USEPA
14 data was developed. Due to the temporary nature of the construction noise, and
15 reasonable mitigation efforts, no adverse or long-term effects are expected.

16 Although 50 dBA is an oft-used standard at residential receivers, the project uses a more
17 conservative exterior noise level design goal of 45 dBA at the nearest non-participating
18 residences during full load normal operation. Even without mitigation, Generating
19 Facility sound levels as modeled were not unreasonable and all expected levels will be
20 less than the commonly used 50-dBA Leq goal. When mitigated, noise levels at all
21 residences are expected to be well below the 45dBA design goal for all but one location.
22 At the remaining location, sound levels are projected to be 48 dBA which is still below
23 the commonly used 50 dBA Leq goal. My understanding is that SFE has reached

1 agreements on a sound easement (otherwise known as a “good neighbor agreement”)
2 with landowners for this remaining location.

3 Based on my experience, which includes work on many other generation facilities,
4 operational noise from the Generation Facility should pose minimal impact on
5 surrounding residences and will be properly mitigated as presented in the application.

6 **Q.10. Please summarize the air modeling undertaking for the Generation Facility.**

7 **A.** As noted in the Application, atmospheric dispersion modeling was performed to
8 predict maximum concentrations of air emissions as a result of operating the Generation
9 Facility over a range of operating conditions. The modeling confirmed that the
10 Generation Facility impacts will be lower than all NAAQS and Prevention of Significant
11 Deterioration (“PSD”) Increments imposed by the Federal Clean Air Act and the USEPA.
12 The air quality dispersion model accounts for emission rates, stack heights, exhaust
13 parameters, meteorological conditions (wind speed, direction, atmospheric stability, and
14 temperature), the topography around the Generation Facility Site, and proposed building
15 dimensions.

16 The air pollution controls proposed for the Generation Facility are proven technologies
17 that are considered Best Available Control Technologies (“BACT”) as defined by the
18 1990 Amendments to the Clean Air Act and Best Available Technology (“BAT”) by the
19 Ohio Environmental Protection Agency (“Ohio EPA”) (Ohio Administrative Code
20 [“OAC”] Rule 3745-31-01(T)). In addition, emissions from the Generation Facility will
21 be continuously tracked using a Continuous Emissions Monitoring System (“CEMS”).

1 **Q.11. Please describe and summarize the Phase I archaeological surveys of the areas in**
2 **and around the project facility sites.**

3 A. Tetra Tech conducted Phase I Archaeological Surveys relative to the project sites
4 in Madison Township and Yellow Creek Township, Columbiana County, Ohio during
5 June 2015, October 2015, and November 2015. Each survey included an archaeological
6 literature review utilizing resources available on file at the Ohio State Historic
7 Preservation Office (“SHPO”) in Columbus, Ohio, as well as county atlases, histories and
8 maps in addition to searchable databases of the Ohio Archaeological Inventory, the
9 National Park Service, the Ohio Department of Transportation, the Ohio Department of
10 Natural Resources, and other accessible websites. Fieldwork was conducted for each
11 survey area.

12 Generating Facility

13 In June 2015, a Phase I archaeological investigation was completed of the Generating
14 Site as well as within a 5-mile radius of the Generating Site. Archaeological sites were
15 not indicated by the literature review and prehistoric and historic cultural materials do not
16 seem likely based on the literature review. Field shovel probing and visual inspection
17 were conducted on the Generating Site in areas with steeply sloping conditions, severe
18 existing or prior disturbance, and previous surveys. In addition, 403 shovel test units
19 were excavated in field, scrubland and woods within the Generating Site. Two
20 archaeological sites were identified – two flakes of Upper Mercer chert. Both sites,
21 however, lack integrity and neither is a significant archaeological deposit. No further
22 work is recommended and the planned work at the Generating Site will not affect any
23 significant archaeological sites.

1 In October 2015, a Phase I archaeological investigation was completed of the Laydown
2 Site as well as within a 1,000-foot radius of the Construction Laydown Site. The
3 literature review identified no archaeological or other resources within the Construction
4 Laydown Site study area other than the two finds on the Generating Facility Site. The
5 field investigation included visual inspection as well as 230 shovel test units. No
6 archaeological sites were identified during these systematic investigations.

7 Interconnection Facility

8 In November 2015, both a literature review and pedestrian survey were conducted of the
9 Transmission Line ROWs (both the Alternate Route and Preferred Route). No
10 archaeological or architectural sites were identified in the literature review. Much of the
11 ROW area (both the Alternate and Preferred Route) is considered to have low
12 archaeological sensitivity due to prior disturbances, including coal mining and
13 construction of roadways and driveways, as well as steeply sloped conditions. Additional
14 field investigation has been subsequently conducted that indicated only one isolated find
15 along the shared portion of the Transmission Line ROWs, and recommends no further
16 assessment; once this reporting is finalized it will be submitted to the SHPO and OPSB.

17 Also in November 2015, an investigation was conducted of the 38-acre Switchyard Site
18 as well as within a 1,000-foot radius. The investigation included an archaeological
19 literature review, field investigation and visual inspection of the Area of Potential Effects
20 (“APE”). The literature review did not indicate any archaeological sites within the
21 Switchyard study area. The majority of the Switchyard Site was subject to surface
22 collection, shovel probing, or visual inspection, according to the topographic and

1 geologic features of the Switchyard Site and accounting for existing disturbance. Only
2 one archaeological site was identified as having potential importance and National
3 Register of Historic Places (“NRHP”) eligibility – a disturbed, low density historic
4 domestic site in dilapidated condition (Site 33CO993). However, the site is outside the
5 Switchyard Site and needs no further archaeological work relative to the South Field
6 Energy project.

7 **Q.12. Will the project adversely impact cultural historic resources?**

8 **A.** No. For all aspects of the project including both the Alternate and Preferred
9 Routes for the Transmission Line, cultural historic investigations were conducted in
10 accordance with the guidelines from the SHPO and Ohio Administrative Code Section
11 4906-13(D). Given the type and location of the project, however, the SHPO agreed that
12 while all architectural resources 50 years of age or older should be surveyed within a one-
13 mile radius of the project, only those resources listed on, or eligible for listing on, the
14 NRHP should be surveyed within a five-mile radius of the project.

15 Generating Sites

16 Even using conservative assumptions regarding the final height of exhaust stacks, which
17 will be the tallest element of the Generating Facility, a GIS-generated viewshed analysis
18 and field visual verification found that the Generating Facility will not be visible at 95
19 percent of the residential properties within the one-mile radius intensive survey area.

20 There are two properties that will have a direct line of site to the Generating Facility, but
21 neither is eligible for the NRHP. Within the five-mile APE, there are four NRHP listed
22 properties, but these will not be adversely affected by the Generating Facility due to the
23 rugged terrain, the presence of large and mature forested areas, and other existing modern

1 or industrial disturbances. The SHPO has agreed that the construction of the Generating
2 Facility will not adversely affect historic properties.

3 Interconnection Sites

4 A cultural historic survey was also conducted relative to the Interconnection Facilities
5 and 1,000-foot radius from the Interconnection Facilities. This survey addressed both the
6 Preferred and Alternate Routes for the Transmission Line. Due to the undulating terrain
7 and multiple forested areas, the vast majority of architecture in the study area is shielded
8 from view of the Interconnection Facilities. In addition, the study area includes multiple
9 modern intrusions – including existing transmission, telephone and other lines. The
10 survey determined that only one property 50 years of age or older would have a direct
11 line of sight to the Interconnection Facilities. That property, however, is not listed on, or
12 eligible for listing on, the NRHP. Regardless of whether the Interconnection Facilities
13 are constructed on the Alternate Route or the Preferred Route, they are not expected to
14 adversely affect any historic properties.

15 **Q.13. Have you reviewed the May 20, 2016 Staff Reports of Investigation issued in this**
16 **proceeding?**

17 **A.** Yes.

18 **Q.14. Do you have observations or responses to any of the conditions listed in the Staff**
19 **Reports of Investigation?**

20 **A.** Not from an environmental or ecological perspective. However, I understand the
21 Applicant is requesting flexibility on the Transmission Line route selection, which I will
22 address later in my testimony. The Facilities are well sited, taking advantage of open,

1 agricultural land to minimize the need for clearing, avoid and minimize wetland and
2 stream impacts, and to avoid impacts to threatened or endangered species or significant
3 cultural resources. The Generating Facility has also been designed to meet air quality
4 standards, incorporate significant noise attenuation, and limit Facility-related impacts
5 within Columbiana County.

6 **Q.15. Are you aware that the Applicant is considering constructing the Transmission Line**
7 **on the Alternate Route instead of the Preferred Route?**

8 A. Yes, I am.

9 **Q.16. Do you have any concerns if the Transmission Line is constructed on the Alternate**
10 **Route?**

11 A. No. Both routes have been fully evaluated and are viable routes from an
12 environmental and ecological perspective. The Alternate and Preferred Routes in this
13 case are mostly shared, with the routes differing for less than a mile. Staff has studied
14 both routes and also stated that both are viable routes. I agree and support the condition
15 revision in Jonathan Winslow's testimony that would allow the Applicant to give the
16 Board a notice as to which route will be used for the Transmission Line. The viability of
17 and limited impacts associated with both routes, especially given the short distance of the
18 non-shared corridor, all support providing the Applicant in this instance with the
19 flexibility to select a route at a later date. As seen in my testimony and expressed in
20 Section 4906-5-04(A)(6) of the Application, while minor attributes of the ROWs vary,
21 they are very comparable and both reflect options that would result in minimal
22 environmental and community impacts.

1 **Q.17. Why do you believe the short distances are a factor in supporting the requested**
2 **flexibility in selecting a route?**

3 A. My experience is that the longer the difference in the non-shared route (Preferred
4 versus Alternate), the more differing characteristics that may arise. Differing
5 characteristics could include differences in environmental features, ecological
6 characteristics and housing density. For example, if the difference between an Alternate
7 Route and Preferred Route is 10 miles, I would expect to see significant differences
8 which would lead to a recommendation for one route over the other by a regulatory body
9 like the Board. With respect to the Alternate and Preferred Routes in this case, the
10 differences are minimal between the two routes and the distances for the non-shared
11 portions are under a mile. Thus, the short distance of the routes coupled with the general
12 similarity of characteristics presents a fact-specific situation to the Board that is unique to
13 this project.

14 **Q.18. Does this conclude your direct testimony?**

15 A. Yes, it does. However, I reserve the right to offer testimony in support of any
16 stipulation reached in this case.

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket and who have electronically subscribed to this case. In addition, I certify that a copy of the foregoing document was served via electronic mail on the following persons this 13th day of June, 2016.

s/ William A. Sieck
William A. Sieck

John Jones
Assistant Attorney General
Public Utilities Section
180 East Broad St., 6th Floor
Columbus, Ohio 43215-3793
john.jones@ohioattorneygeneral.gov
Attorney for Ohio Power Siting Board

Tad D. Herold
Director, Columbiana County Development Dept.
130 Maple Street
Lisbon, Ohio 44432
therold@columbianacodev.org

Christopher L. Miller
Jeremy Grayem
Ice Miller, LLP
250 West Street
Columbus, Ohio 43215
christopher.miller@icemiller.com
jeremy.grayem@icemiller.com
Attorneys for Yellow Creek Township

Robert J. Schmidt
L. Bradford Hughes
Porter Wright Morris & Arthur, LLP
41 South High Street
Columbus, Ohio 43215
rschmidt@porterwright.com
bhughes@porterwright.com
*Attorneys for American Transmission Systems,
Incorporated*

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Summary: Testimony of Lynn Gresock for Applicant South Field Energy LLC electronically filed by Mr. William A Sieck on behalf of South Field Energy LLC