



Bricker & Eckler LLP
100 South Third Street
Columbus, OH 43215
Office: 614.227.2300
Fax: 614.227.2390

Dylan F. Borchers
Direct Dial: 614.227.4914
dborchers@bricker.com
www.bricker.com
info@bricker.com

May 14, 2021

Via Electronic Filing

Ms. Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: Union Ridge Solar, LLC, Case No. 20-1757-EL-BGN

Dear Ms. Troupe:

On May 6, 2021, Union Ridge Solar, LLC (“Union Ridge”) filed its response to OPSB Staff’s First Data Request. Attached for filing is Union Ridge’s updated response to Staff’s First Data Request.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Dylan F. Borchers

Attachment

Cc: Mark Bellamy (w/Attachment)

OPSB DATA REQUEST
Union Ridge Solar

- 1. Does Union Ridge Solar, LLC intend to hold a preconstruction conference prior to commencement of construction activity?**

Response: Yes, we will hold a preconstruction conference.

- 2. What does Union Ridge Solar, LLC estimate the contingency cost to be for this solar farm?**

Response: The costs detailed in the initial decommissioning plan are preliminary estimates. A contingency cost will be included in updated decommissioning plan.

- 3. Referring to Table 1 from Exhibit L (Decommissioning Plan), there appears to be no line item for contingency costs, will this be included in in the final decommissioning plan?**

Response: Yes

- 4. Please fully explain what financial assurance mechanism Union Ridge Solar, LLC will employ, and when the funds will be available to perform decommissioning activities. Staff would recommend that the decommissioning funds be posted in the form of a performance bond where the company is the Principal, the insurance company is the Surety, and the Ohio Power Siting Board is the Obligee.**

Response: Union Ridge Solar, LLC will post decommissioning funds in the form of a performance bond where the Union Ridge Solar, LLC is the Principal, the insurance company is the Surety, and the Ohio Power Siting Board is the Obligee. The performance bond will be posted within 30 days of commercial operation.

- 5. The decommissioning plan was developed by a professional engineer and on page 33 the Application Union Ridge Solar indicates that the cost estimate will be periodically updated. Staff would recommend that the Applicant retain an independent, registered professional engineer, licensed to practice engineering in the state of Ohio to periodically estimate the total cost of decommissioning facility, salvage value, and appropriateness of any contingency percentage. Please indicate the Applicant's understanding and commitment to provide this to Staff and indicate when this would be provided.**

Response: Union Ridge Solar LLC will update the Decommissioning Plan and financial assurance in year 10 of operations and every 5 years thereafter to assess the value of the financial assurance versus the Total Decommission Cost. This work will be conducted and approved by a licensed Ohio professional engineer.

- 6. Will the Union Ridge Solar, LLC submit an updated decommissioning plan and cost estimate based upon the final design at least 30 days prior to the preconstruction conference?**

Response: Union Ridge Solar LLC will update the Decommissioning Plan before the preconstruction meeting.

- 7. Please provide the following information for the gen-tie line referenced on page 2 of the Application:**

- a. Tower designs, pole structures, conductor size and number per phase, and insulator arrangement.**
- b. Base and foundation design.**
- c. Cable type and size, where underground.**
- d. Other major equipment or special structures.**

Response: The gen-tie line has not been designed yet, but we have provided some typical drawings for reference. Final engineering will have to be coordinated with AEP. We will provide detailed design information to staff after final engineering, at least 30 days prior to the preconstruction meeting.

- 8. Page 12/115 of the Application states that two collection substations, gen-tie lines, and O&M facilities are represented in the design, and the final location will be determined during the Application review. Please be more specific on the timing of the decision on the alternatives considered for the location of the collection substation and related ancillaries.**

Response: Our design team had the facility study kick-off call with PJM/AEP on 4/26/21, which is the triggering event for AEP to explore the details of our requested interconnection to their Kirk substation. Union Ridge Solar has selected the "Alternate West" gen-tie route for the Facility. The "Alternate East" route should no longer be considered as part of the Application. A letter regarding route selection will be filed in the docket for this case.

- 9. Page 17/115 of the Application mentions an Irradiance of 3.9 kW/m²/day; should that be expressed as 3.9 kWh/m²/day or 3.9 kWh/m²/day?**

Response: kWh/sq.m/day.

- 10. Please explain how Union Ridge Solar, LLC will, during the detailed engineering phase, minimize any potential damage from high wind velocities by proper structural design of the project support equipment at sufficient depths based on the site-specific soil conditions to preclude any adverse influence from high wind velocities.**

Response: An Ohio licensed structural professional engineer will design the foundations per ASCE 7-16 Risk Category I: 100 mph wind loading, as well as considering other loadings as required by code. The engineer will use recommendations from the geotechnical report and geotechnical engineer of record.

11. Please indicate any wind loading precautions or wind equipment specific ratings that will be included in the final project design.

Response: All equipment will be rated to withstand the design wind speed per ASCE 7-16 Category I: 100 mph as required by this code. As a precaution the modules that are mounted to the trackers can be rotated to a wind stow position to reduce wind forces via tracker control system. This system typically activates at 60 mph, 3 second gusts.

12. What specific structural design codes and building codes, referenced on page 55 of the Application, will the final project design adhere to?

Response: American Society of Civil Engineers (ASCE) 7-16, 'Minimum Design Loads and Associated Criteria for Buildings and Other Structures', per local authority having jurisdiction (AHJ).

13. Will the emergency response plan for the project referenced on page 469 of the Application be provided to OPSB Staff prior to the preconstruction conference?

Response: Yes. Please see response to question 14.

14. Please provide the current draft emergency response plan or an example emergency response plan.

Response: Please refer to the attached emergency action plan.

15. Referring to page 41 of the Application, what is the approximate limited volume of water that would be required to clean the solar farm?

Response: Roughly 50,000 gallons per wash, but we do not anticipate washing as normal rainfall amounts will naturally clean the modules.

16. Referring to Figure 7 in the Geology and Hydrogeology Report (Exhibit O), how many water wells are within the project area?

Response: Page 51 of the application notes that there are 6 abandoned water wells within the project area. Based on Hull's well survey questionnaire response, there are currently no working wells located on Project Area property. Any abandoned wells that are encountered will either be avoided or verified as properly decommissioned.

17. What is the distance between the solar farm equipment and nearest water well within the project area?

Response: Based on data provided by ODNR, there are three abandoned wells within the project panel area. These wells are all located on parcels owned by the same property owner, a project participant, who responded to the well survey conducted by Hull and Associates. The survey results concluded that all six wells within the project area are abandoned wells.

18. Please explain what avoidance, minimization, and/or mitigation measures Union Ridge Solar, LLC will employ during construction for water well locations in the project area.

Response: Because the wells located with the project area are abandoned and are located on a project participant's property, impacts to active water wells would not be an issue.

19. The application at page 30 states, "Information has also been shared through direct landowner mailings, and through a web based public information meeting and a teleconference call, both held on June 25, 2021." Please clarify for the record when the public informational meeting and teleconference call were held.

Response: The public informational meeting and teleconference call were held on February 25, 2021.

20. HULL anticipates permanent or unavoidable impacts to approximately 0.006 acres of emergent wetlands and approximately 32 linear feet (0.003 acres) of perennial stream channel. How many stream and wetland crossings are anticipated in total? Will these crossings for gen-tie lines and collection lines all be done via HDD or through some other method?

Response: Impacts are proposed to two wetlands (Wetlands B and D, both Category 1 emergent wetlands) for the permanent placement of access roads and support piles for the solar arrays, and one perennial stream (Stream 2) for the permanent placement of an access road. Impacts from collection line crossing of one wetland and one stream will be avoided by using horizontal directional drilling (HDD) to install the underground collection line. The gen-tie line will be installed overhead. There are no stream or wetland crossings for the western gen-tie line. Union Ridge Solar has selected the "Alternate West" gen-tie route for the Facility. The "Alternate East" route should no longer be considered as part of the Application. Surface water delineations and impacts are detailed in Attachments C and D of the Ecological Assessment (Exhibit P of the OPSB Application).

21. The ODNR DOW states the project lies within the range of the Upland Sandpiper. This species utilizes grasslands and pastureland for nesting and/or hunting. In the application, HULL lists pastureland/grassland as accounting for 9.61 acres within the project area. Will you be avoiding these types of habitats altogether? Or will efforts be made to committing to avoid these types of habitats during the species' nesting periods of April 15-July 31?

Response: Construction activities will likely be avoided in upland sandpiper habitat from April 15 through July 31, during the upland sandpiper nesting period. If construction can not be avoided

in those areas during that time period, the areas will be mowed and maintained to lower than 4 inches prior to April 15, to discourage the use of the area for nesting.

- 22. Page 6/24 of Exhibit C (Geotechnical Report by Kleinfelder) indicates “It is possible that abandoned underground structures, such as foundations, may still exist in the area.” Please provide Staff with any plans to mitigate and/or remediate any such areas should they be encountered during construction of the proposed solar facility.**

Response:

In general, abandoned structures are not anticipated to be a concern for the solar facility. Kleinfelder’s desktop review identified an area where a structure had been previously demolished. If abandoned structures are encountered during foundation installation, they will be completely removed within the influence of the new foundation element. The void left by the removed foundation will be backfilled with structural fill in accordance with the recommendations on the Geotechnical Report.

- 23. Page 8/24, Table 3-2 of Exhibit C provides risk levels assigned to a variety of potential geologic hazards. In discussing the Earthquake hazard risk assessment, a risk level of “Low” is provided in part due to “There are no known faults shown in the project area on the USGS Quaternary Faults and Folds Database.” Please revise this risk assessment to consider all faulting (not limited to Quaternary Period), and previous seismic events within or near the project area.**

Response:

The data sources cited in the Geotechnical Report are the primary data sources used in assessing initial seismic risk. The data cited in the Geotechnical Report indicates the relative risk of occurrence of an earthquake with a magnitude great enough to cause minor damage is low. There is recent documented seismic activity in the state of Ohio, but generally greater than 5 miles from the project site and generally of low intensity. To clarify, geotechnical report does not state that risk of seismic activity is low. The assessment of seismic risk is that the risk of damage to structures caused by seismic activity is low.

- 24. Page 16/24 of Exhibit C discusses recommendations for PV array foundations which were based on field investigation, lab testing, and experience in the area. The geotechnical report indicates it assumes driven steel piles are preferred. Can the Applicant please provide an explanation as to how this assumption was made and clarify if driven steel piles are in fact the recommendation of the report?**

Response:

The report lists various types of foundations that can be used. The majority of these will be driven steel piles for solar field foundations, combiner boxes, and inverter skids. Leeward conducted pile load testing to verify the required depths of the piles for the solar field.

- 25. Did the Applicant conduct a pile load testing investigation within the project area? If not, are there any intentions to conduct pile load testing prior submittal of the final engineering design?**

Response:

Yes, we conducted a pile load testing investigation within the project area. A copy of the report documenting the pile load testing investigation is attached.

- 26. Can the Applicant please expand upon its experience in the area relative to pile foundation engineering design? Exhibit C also provides a recommendation of 7.5 feet below ground surface for pile embedment depth, but also states "Greater depths may be required to achieve structural requirements." Could the Applicant please specify or provide reference to the structural requirements it's speaking to?**

Response:

Leeward has worked with Kleinfelder to conduct preliminary pile design. Kleinfelder is an industry expert on solar field foundation design. There are various tracker structures on the market and they can have different number of support posts and loads. A 7.5' embedment will work with most trackers under the design load conditions but other trackers with fewer larger supports may require deeper embedment. This will be finalized after final selection of the tracker system. The foundations must support the loads and meet the deflection requirements of the manufacturer as well as resist frost loads and long-term differential settlement for example. Also, outer rows of trackers will have a higher wind load and require different foundation designs than interior rows.

- 27. Page 55 of the application indicates additional geotechnical testing (borings) may be conducted for very site-specific engineering considerations, but there are no intentions to provide that data to OPSB Staff as the results are not expected to alter the placement of Facility components. Given the limited geotechnical investigation to date (6 borings, and 2 test pits) and apparent lack of site-specific pile load testing, additional test borings would appear appropriate. Plans for those test borings should be provided in accordance with Ohio A.C. Rule 4906-4-08 (A)(5)(b). The resulting data and interpretation should supplement the final engineering design to be presented to OPSB Staff at least 30 days prior to the preconstruction conference.**

Response:

Please refer to question 25 above – we have conducted pile load testing and are providing a copy of the report. Leeward considers the geotechnical test borings and pile load testing that have been done to date to be preliminary, and anticipates that the engineer of record for structural design will require additional borings and/or pile load testing before final design and stamping the plans.

- 28. Page 32 of the application discusses developing a Road Use and Maintenance Agreement (RUMA) with the Licking County Engineer's Office. Given a portion of the proposed travel route will fall under Etna Township jurisdiction, will Etna Township also be involved in the development of the RUMA?**

Response:

Yes. Our experience has been that only one RUMA would be prepared for both County and Township roads for a project. We would presume that the County Engineer would coordinate with Etna Township.

29. Page 4 of Exhibit K (Route Evaluation Study by Hull & Associates) of the application provides an assessment of the current conditions of the roadways expected to be impacted. Are there plans to re-assess these conditions immediately prior to commencement of construction?

Response:

Typically, if a pre-construction assessment of the roads would be required, it would be part of the RUMA.

Because it is not known specifically when construction on a project would begin after a Certificate is approved, the Route Evaluation Study should not be used as the baseline of the condition of the roads because further deterioration may occur after the time the Study is performed. Usually, the RUMA will specify any required pre-construction roadway assessment that should be performed and that is something to negotiate with the County Engineer. Union Ridge Solar, LLC intends to perform this assessment before the preconstruction conference to establish an accurate baseline condition that the roads will be evaluated from after construction.

30. Will the RUMA provide for any arrangements for the County Engineer and Etna Township to corroborate the Applicant's road condition assessment, or otherwise provide their own assessments prior to initiation of construction?

Response:

If the County Engineer and Etna Township request to corroborate the Applicant's road condition assessment or provide their own assessment prior to construction, those conditions would be negotiated as part of the RUMA for the project.

31. Will the laydown yards be surrounded by a fence? If so, what will the height of the fence be?

Response:

The project fence will surround the whole project and the laydown yards will be temporary areas inside the project fence. We are proposing a 7' high agricultural security fence for the project except for the high voltage substation which will have a chain link fence.

32. What is status of the cultural resource studies?

Response:

We have received full concurrence from SHPO for the Phase 1 Archaeological Survey. We have received partial concurrence from SHPO for the Phase 1 Historic Architecture Survey. To provide more project flexibility, the panel area was expanded in the southwest portion of the project area consistent with the layout filed in our application with the OPSB. This expansion is currently under

OHPO review to confirm the conclusion that there are no addition impacts to eligible resources. The partial concurrence letter is attached as Appendix A. The letter to OHPO regarding the additional panels is attached as Appendix B.

33. Will you sign a programmatic agreement or a concurrence with a memorandum of understanding with OHPO?

Response:

We have received partial concurrence from SHPO for the Phase 1 Historic Architecture Survey. To provide more project flexibility, the panel area was expanded in the southwest portion of the project area consistent with the layout filed in our application with the OPSB. This expansion is currently under OHPO review to confirm the conclusion that there are no addition impacts to eligible resources. The partial concurrence letter is attached as Appendix A. The letter to OHPO regarding the additional panels is attached as Appendix B.

34. When do you expect a programmatic agreement or a concurrence with OHPO to be finalized?

Response:

Because the Phase 1 Archaeological Survey concurrence letter was received, and a concurrence letter is anticipated by June 2, for the Phase 1 Historic Architecture Survey, Union Ridge Solar does not anticipate needing a programmatic agreement.

35. Please provide a photo or drawing of what the 7-foot-tall woven wire agricultural fence surrounding the facility would look like?

Response:

Please see the Visual Simulations in Appendix C of the Visual Resource Assessment (Exhibit S). Viewpoint 3 and Viewpoint 19 (shown below) show good examples of agricultural fencing.



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Summary: Text Response of Union Ridge Solar, LLC to OPSB Staff First Data Request Part 1 electronically filed by Teresa Orahoud on behalf of Dylan F. Borchers