

POST-CONSTRUCTION INSPECTION REPORT

Basin Electric Power Cooperative
Pioneer Generation Station Phase II
Williams County, North Dakota

*PSC Case No. PU-12-509
Carlson McCain Project #4570*

Prepared for:

North Dakota Public Service Commission
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EXECUTIVE SUMMARY

The North Dakota Public Service Commission (Commission) had approved an energy conversion facility application for Basin Electric Power Cooperative's (Basin Electric) Pioneer Generating Station Phase II (Project) consisting of two additional 45 MW natural gas combustion turbines and associated facilities to be located at the existing Pioneer Generation Station site. The Project Site consists of approximately 7 acres under permanent conversion as depicted. Basin Electric used temporary construction areas surrounding the Project Site, all on a 120-acre parcel purchased by Basin Electric within the SE1/4 of Section 20, Township 155 North, Range 103 West in Williams County, North Dakota.

The Commission issued its Finding of Fact, Conclusion of Law and Order of the Commission in Case No. PU- 12-509 dated March 27, 2013, granting a Certificate of Site Compatibility for Energy Conversion Facility No. 33. The Project construction was reported as complete on February 26, 2014, with final reclamation activities occurring in June 2014.

The Commission retained Carlson McCain, Inc. (Carlson McCain) to complete construction inspections applying engineering and science principles for the purpose of ensuring that the Project has been constructed in compliance with the siting laws (N.D.C.C. 49-22), rules (N.D. Administrative Code Article 69-09) and applicable Commission orders. Project construction inspection occurred on September 26, 2013, and the post-construction inspection was completed on September 10, 2014.

Overall, the Project appears to be constructed as designed with minimal impacts to the surrounding natural and human environment. Carlson McCain recommends that the Commission request the documentation of a One-Call order (Order #35). The Commission will need to decide whether these recommendations are necessary to fulfill Project obligations. Carlson McCain expects follow-up action taken by Basin Electric to address these particular issues can be resolved by document submission.

After review of the Commission case docket and multiple site inspections, Carlson McCain has found the Pioneer Generation Station Phase II (Case No. PU-12-509) has been constructed in compliance with the siting laws (N.D.C.C. 49-22) and rules (N.D. Administrative Code Article 69-09) and applicable Commission orders.

BACKGROUND

1.1 Introduction

North Dakota Public Service Commission (Commission) had approved an energy conversion facility application for Basin Electric Power Cooperative's (Basin Electric) Pioneer Generating Station Phase II (Project) consisting of two additional 45 MW natural gas combustion turbines and associated facilities to be located at the existing Pioneer Generation Station site. The Project Site consists of approximately 7 acres under permanent conversion as depicted. Basin Electric used temporary construction areas surrounding the Project Site, all on a 120-acre parcel purchased by Basin Electric within the SE1/4 of Section 20, Township 155 North, Range 103 West in Williams County, North Dakota.

The Project is under the jurisdiction of the Commission, which issued its Finding of Fact, Conclusion of Law and Order of the Commission in Case No. PU- 12-509 dated March 27, 2013, granting a Certificate of Site Compatibility for Energy Conversion Facility No. 33. The Project construction was reported as complete on February 26, 2014, with final reclamation activities to occurring June 2014.

1.2 Purpose and Scope of Inspection

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Commission to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Construction inspections ensure the project is constructed in compliance with the siting laws and rules and the applicable Commission Findings of Fact, Conclusions of Law, and Order (Order).

The Commission retained Carson McCain to complete a construction inspection of the Project. The inspection process included a review of the Siting Plan, Order, and other applicable documents to determine Project-specific siting and construction requirements; a site visit and inspection of facilities; documentation of compliance; and a report summarizing findings. This report includes, but is not limited to, documentation of site visit observations, documentation of compliance deficiencies, and a summary of issues that should be addressed for the Project to be considered complete and in full compliance.

PROJECT REVIEW

2.1 Methods

Carlson McCain reviewed North Dakota siting laws and rules, the Applications for the Certificate of Corridor Compatibility and Route Permit (Application), and the Order for the Project to identify what Project-specific documentation was required for compliance. Carlson McCain then reviewed Project documents in the Commission Online Case Search to identify those siting laws and rules and Application and Order assertions that had written verification, those that still required documentation, and those that required physical site verification.

Carlson McCain Inspector Ryan Krapp visited the project site on September 26, 2013, with Mr. Craig Muilenberg and September 10, 2014, with Mr. Chris Johnson, both of Basin Electric, to inspect final construction and reclamation results. Mr. Johnson replaced Mr. Craig Muilenburg as the construction coordinator for the project on December 16, 2013.

2.2 Orders

The following section includes discussion of the list of components of the Project that were asserted in the Application and Order which could be documented during the post-construction inspection to verify compliance with siting laws, rules and the Order for the Project, by either written documentation or physical site verification.

On March 27, 2013, the Commission ordered:

1. Certificate of Site Compatibility No. 33 is issued to Basin Electric Power Cooperative authorizing the construction, operation and maintenance of two nominal 45 MW simple cycle aero derivative natural gas combustion turbines and associated facilities as identified in the application.
2. For purposes of the Certificate, the Site consists of approximately 7 acres in the SE1/4 of Section 20, Township 155 North, Range 103 West, Williams County, North Dakota, as described in the Application.
3. Basin Electric shall request a jurisdictional determination from the Commission under N.D. Admin. Code chapter 69-06-02.1 prior to the construction of any improvements or facilities outside of the Commission designated Site but within the 120 acres owned by Basin Electric.
4. The February 6, 2013, Certification Relating to Order Provisions-Energy Conversion Facility Siting, with accompanying Tree and Shrub Mitigation Specifications is incorporated by reference and attached to this Order.

5. To the extent there are any conflicts or inconsistencies between Basin Electric's application and the February 6, 2013, Certification, the Certification provisions control.

2.3 Certification Relating to Order Provisions – Energy Conversion Facility Siting

The Commission issued the Certificate of Site Compatibility for Energy Conversion Facility, Certificate Number 33 on March 27, 2013. Mr. Myron Steckler, a representative of Basin Electric Power Cooperative (Company) with authority to bind Company to requirements to be set forth by the Commission in its Order and certified the following:

- 1. Company understands and agrees that the Certificate of Site Compatibility will be issued by the Commission subject to the conditions and criteria set forth in Chapter 49-22 of the North Dakota Century Code and Chapter 69-06-08 of the North Dakota Administrative Code, and that Company shall be responsible for compliance with this order and conditions and criteria set forth in the applicable laws and rules.**

Docket #37 & #38 - Findings of Fact, Conclusions of Law and Order, Commission Motion of Adoption. No issues of blatant non-compliance with this order and conditions and criteria set forth in the applicable laws and rules have been found during the post-construction inspection.

Order #1 considered satisfied.

- 2. Company agrees to hold a preconstruction conference prior to commencement of any construction, which must include a Company representative, its construction supervisor, and a representative of Commission Staff, to ensure that Company fully understands the conditions set forth in the Commission's order.**

Docket #41 – Prehearing Conference Minutes and Notice of Intent to Start Construction.

Order #2 considered satisfied.

- 3. Company agrees to comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed energy conversion facility including all city, township, and county zoning regulations.**

Included in Application for waiver of procedures and consolidated certificate of site compatibility (Docket #4)

Order #3 considered satisfied.

- 4. Company understands and agrees that it shall obtain all other necessary licenses and permits, and shall provide copies of all licenses and permits to the Commission prior to construction activity associated with the energy conversion facility that requires said license or permit.**

Docket #43 - Unanticipated Discovery Plan and ND Air Pollution Control Permit

Order #4 considered satisfied.

- 5. Company agrees to inform the Commission and the Commission's third-party construction inspector of its intent to start construction on the energy conversion facility prior to the commencement of construction. Once construction has started, Company shall keep the Commission and the Commission's third-party construction inspector updated of construction activities on a weekly basis.**

Docket #'s 44-52, 56-64 & 66-84. – Pioneer Generation Station Phase II weekly progress reports. Basin Electric has supplied the final progress report (June 5, 2014) to the third-party construction inspector, Carlson McCain, discussing final reclamation activities; however it is not found on the Commission website.

Order #5 considered satisfied upon submittal of final progress report to Commission dated June 5, 2014.

- 6. Company understands and agrees that the Certificate of Site Compatibility is subject to suspension or revocation and may, in an appropriate and proper case, be suspended or revoked for failure to comply with the Commission's order, the conditions and criteria of the certificate or subsequent modification, or failure to comply with the applicable statutes, rules, regulations, standards, and permits of other state or federal agencies.**

No concerns of non-compliance with the Certificate of Site Compatibility have been found during the post-construction inspection.

Order #6 considered satisfied.

- 7. Company agrees to maintain records that will demonstrate that it has complied with the requirements of the Commission's order and the Certificate of Site Compatibility, and that it will preserve these records for Commission inspection at any reasonable time upon reasonable notice.**

Carlson McCain believes Basin Electric has maintained and submitted records that demonstrate compliance with the requirements of the Commission's order and the Certificate of Site Compatibility.

Order #7 considered satisfied.

- 8. Company agrees to construct and operate the energy conversion facility in accordance with all applicable safety requirements.**

Through Docket #'s 44-52, 56-64 & 66-84 (weekly progress reports) Basin Electric documented safety procedures and reported injuries or incidences and the corrective actions taken.

Order #8 considered satisfied.

- 9. Company agrees to construct and operate the energy conversion facility in the manner described in Company's application, in any late filed exhibits, and supplemental materials, (Application). To the extent there are any conflicts or inconsistencies between Company's Application and the provisions in this Certification Relating to Order Provisions, the Certification provisions control.**

Carlson McCain believes Basin Electric has constructed and is operating as indicated in "Application". On May 13, 2013, Basin Electric requested that the Commission consider a request and grant approval of a modification to the Pioneer Generation Station Phase II energy conversion facility to provide additional on-site anhydrous ammonia storage (Docket #42). A recommendation of approval was issued (Docket #53) and then the Commission issued (Docket #54 & 55).

Order #9 considered satisfied.

- 10. Company agrees to report promptly to the Commission the presence in or near the approved site of any critical habitat of threatened species, endangered species, bald eagles, or golden eagles that Company becomes aware of and which were not previously reported to the Commission.**

Discussions with Basin Electric construction manager during the post-construction on-site visit indicated that no threatened species, endangered species, bald eagles, or golden eagles were discovered in or near the Project during construction and therefore no documents were submitted.

Order #10 considered satisfied.

- 11. Company understands and agrees that all cultural resource mitigation plans must be submitted to the North Dakota State Historic Preservation Office (SHPO) and approved prior to the start of any fieldwork and construction activity in the affected area.**

Company submitted cultural resource reports to SHPO. The SHPO verified that no cultural resources will be affected. (within Docket #4).

Order #11 considered satisfied.

12. Company understands and agrees that if any cultural resource, paleontological site, archeological site, historical site, or grave site is discovered during construction, it must be marked, preserved and protected from further disturbances until a professional examination can be made by the State Historical Society, a report of such examination is filed with the Commission, and clearance to proceed is given by the Commission.

Unanticipated Discovery Plan also submitted as Docket #43. It was discussed with the Company construction project manager that no unanticipated cultural resources were discovered.

Order #12 considered satisfied.

13. Company understands and agrees that all buried facility crossings of graded roads shall be bored unless the responsible governing agency specifically permits Company to open cut the road.

No buried facilities were constructed under government roads during Project construction.

Order #13 considered satisfied.

14. Company understands and agrees that all pre-existing township and county roads and lanes used during construction must be repaired or restored to a condition that is equal to or better than the condition prior to the construction of the energy conversion facility and that will accommodate their previous use, and that areas used as temporary roads or working areas during construction must be restored to their original condition.

County Road 5 was used to access the Site during Project construction. No adverse effects to the paved surfaced was evident at time of inspections.

Order #14 considered satisfied

15. Company understands and agrees that construction must be suspended when weather conditions are such that construction activities will cause irreparable damage to roads or land, unless adequate protection measures approved by the Commission are taken.

Through Docket #'s 44-52, 56-64 & 66-84 (weekly progress reports) Basin Electric documented adverse weather conditions occasionally and responded appropriately to conditions.

Order #15 considered satisfied.

16. During construction, at least 12 inches of topsoil, where available (or topsoil to the depth of cultivation, whichever is greater), over and along areas where facilities will be placed must be stripped and segregated from subsoil. Any area on which excavated subsoil will be placed must first be stripped of topsoil. After backfilling with subsoil is completed, any excess subsoil must be placed over the excavation area, blending the grade into existing topography. Topsoil must not be placed within the footprint of the facilities, and must be placed over areas containing topsoil.

Carlson McCain's construction inspection on September 26, 2013, documented adequate topsoil stripping and storage areas (Docket #65).

Order #16 considered satisfied.

17. Company understands and agrees that reclamation, fertilization, and reseeding is to be done according to the Natural Resources Conservation Service recommendations, unless otherwise specified by the landowner and approved by the Commission.

A post-construction inspection of the Site on September 10, 2014, documented the final reclamation of the temporary construction workspace south and west of the Site has occurred as planned and documented (late-May). The majority of the lay-down/construction area had spring wheat planted on it; however, these areas had noticeable differences in growth compared to adjacent areas which were undisturbed by project construction (see attached figures). Mr. Johnson had indicated that Basin Electric will continue to work with the renter of the Basin Electric owned land to ensure these areas will be returned to as near pre-disturbance agricultural productivity as possible, acknowledging that treatment with fertilizers or supplements may be necessary.

Order #17 considered satisfied with the Company commitment to monitor and coordinate with the renter.

18. Company understands and agrees that its obligation for reclamation and maintenance of the approved site will continue throughout the life of the energy conversion facility.

A post-construction inspection of the Site on September 10, 2014, documented that silt fencing was being maintained at the edge of the planted agricultural field in a drainage

area leading to the highway ditch. The planted spring wheat effectively reduced soil erosion on the reclaimed areas. No noxious weed species were found in the area. Russian thistle (*Salsola kali*) and kochia (*Bassia scoparia*) were prevalent across the previously disturbed areas. The grass mix planted at time of reclamation is sparsely found on-site and has not been able to fully establish. Regular mowing recommended to help with grass establishment.

Order #18 considered satisfied with the Company commitment to monitor and maintain the Site as necessary.

19. Company agrees to comply with the Tree and Shrub Mitigation Specifications.

As documented in the Application and reiterated by Basin Electric during the preconstruction meeting, no trees or shrubs were present within the Project area (Docket #41).

Order #19 considered satisfied.

20. Company understands and agrees that it shall repair or replace all fences and gates removed or damaged during all phases of construction and operation of the proposed energy conversion facility.

No fences or gates were disturbed during construction and as verified during inspections.

Order #20 considered satisfied.

21. Company understands and agrees that it shall repair or replace all drainage tile broken or damaged as a result of construction and operation of the proposed energy conversion facility.

No drainage tile occurred in the construction area.

Order #21 considered satisfied..

22. Company understands and agrees that it shall work with landowners and residents to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.

Basin Electric indicated there were no complaints related to television and residential radio interference.

Order #22 considered satisfied.

- 23. Company understands and agrees that staging areas or equipment shall not be located on land owned by a person other than Company unless otherwise negotiated with landowners.**

Basin Electric owns the 120 acre parcel surrounding the Project site. All staging areas and equipment stayed within the property boundaries.

Order #23 considered satisfied.

- 24. Company understands and agrees that it shall remove all waste that is a product of construction and operation, restoration, and maintenance of the site, and properly dispose of it on a regular basis.**

Basin Electric indicated that construction waste was properly disposed of on a regular basis. Trash bins and concrete wash-out pits were found on-site during the construction inspection (Docket #65 and Docket #'s 44-52, 56-64 & 66-84).

Order #24 considered satisfied.

- 25. Company agrees that it shall, as soon as practicable upon the completion of the construction of the energy conversion facility, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.**

See Order #17 above.

Order #25 considered satisfied with the Company commitment to monitor and continue to co-ordinate with the renter.

- 26. Company understands and agrees that it shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversion facility.**

Basin Electric erected chain-link fence around the temporary construction site and Station. Access to the site was/is controlled by automated gate system operated remotely by Station operator. Fencing was found to be appropriate during the construction inspection (Docket #65 and Docket #'s 44-52, 56-64 & 66-84).

Order #26 considered satisfied.

- 27. Company understands and agrees that it shall advise the Commission of any extraordinary events which take place at the site of the energy conversion facility, including injuries to any person, the death of any threatened or endangered species within five business days of such event.**

See Order #10 above. Additionally, any personal injuries were reported and remedies outlined within the weekly progress reports (Docket #'s 44-52, 56-64 & 66-84).

Order #27 considered satisfied.

28. Company understands and agrees that it shall implement a procedure for how complaints concerning the proposed energy conversion facility will be handled by Company.

Within the Public Hearing Transcript (Docket #35 and Docket #41) it was documented that a public witness raised his concern over a possibility that the project's evaporation pond could cause flooding on his property located immediately across the road to the northeast of the project. Basin Electric committed to work with landowners as needed to alleviate any drainage problems that may arise from the pond. Basin Electric indicated that no problems have arisen from the pond operations and did not hear from the adjacent landowner. No other complaints were reported.

Order #28 considered satisfied.

29. Upon request, Company agrees to provide the Commission with engineering design drawings showing surveyed structure(s) prior to construction.

Construction plans and engineering drawings were supplied in the Application and as Exhibits 1-5 (Docket #22-26).

Order #29 considered satisfied.

30. Company understands and agrees that it shall inform the Commission in writing of any plans to modify the energy conversion facility, or of any plans to modify the site plan for the energy conversion facility. Company understands and agrees to obtain written approval from the Commission prior to any modifications to the site plan or the energy conversion facility, associated facilities, and roadway locations. Approval may be granted after notice and opportunity for hearing.

On May 13, 2013, Basin Electric requested that the Commission consider a request and grant approval of a modification to the Pioneer Generation Station Phase II energy conversion facility to provide additional on-site anhydrous ammonia storage (Docket #42). A recommendation of approval was issued (Docket #53) and then issued (Docket #54 & 55).

Order #30 considered satisfied.

31. Company agrees to provide the Commission with both an electronic and a paper copy of the site approved by the Commission and the facility design specifications for the construction of the energy conversion facility showing the location of the energy conversion facility as built, and will provide this information within 3 months of the completion of the construction. Company also agrees to provide an electronic version of the site approved by the Commission and the facility design specifications for the construction of the energy conversion facility showing the location of the energy conversion facility as built that can be imported into ESRI GIS mapping software within 3 months of the completion of the construction. This electronic map data must be referenced to the North Dakota coordinate system of 1983, North and/or South zones US Survey feet (NAD 83) UTM Zone 13N or 14N feet (NAD 83), or geographic coordinate system (WGS 84) feet. The vertical data must be in the appropriate vertical datum for the coordinate system used. All submissions must specify the datum in which the data was developed.

Basin Electric submitted the facility design specifications and site map and a CD of the electronic As-Built files that can be imported into ESRI GIS Mapping software for the Pioneer Generation Station Phase II Project. All files were submitted to the Commission's electronic project docket on April 10, 2014.

Order #31 considered satisfied.

32. Company understands and agrees that the authorizations granted by the Certificate of Site Compatibility for the energy conversion facility are subject to modification by order of the Commission if deemed necessary to protect further the public or the environment.

The Commission did not order any modifications to the Project to protect further the public or the environment.

Order #32 considered satisfied.

33. Company understands and agrees that in the event Company desires to construct, within any site granted by a Certificate of Site Compatibility in this proceeding, an energy conversion facility that was not requested in Company's application in this proceeding, Company shall apply for a Certificate of Site Compatibility for the facility.

Basin Electric understands that any other facility construction will require a new application for a Certificate of Site Compatibility for such facility.

Order #33 considered satisfied.

34. Company shall notify the Commission, as soon as reasonably possible, if any damage, as defined by North Dakota Century Code Chapter 49-23, occurs to underground facilities during construction conducted under the certificate or permit issued in this proceeding. In the event of any damage to underground facilities, Company shall suspend construction in the vicinity of the damage until compliance with One-Call Excavation Notice System requirements under North Dakota Century Code Chapter 49-23 has been determined and clearance to proceed has been given by the Commission.

No damage occurred to underground facilities. Basin Electric understood that continuation of facility construction would require a new utility clearance with the One-Call system and clearance from Commission.

Order #34 considered satisfied.

35. The certificate of site compatibility is subject to suspension or revocation and may, after hearing, be suspended or revoked for failure to comply with the Commission's order, requirements of the One-Call Excavation Notice System under North Dakota Century Code Chapter 49-23, the conditions and criteria of the certificate or permit or subsequent modification, or failure to comply with applicable statutes, or rules, regulations, standards, and permits of other state or federal agencies.

The contractor that Basin Electric retained on this project, The Industrial Company (TIC), ensures that the One-Call Excavation Notice System was utilized before any construction digging. It is part of standard pre-construction procedures of any Basin Electric construction project that the contractor is responsible for. However, Carlson McCain cannot find documentation of the call or site marking at this time.

Order #35 will be considered satisfied when Basin Electric or TIC can supply documentation.

CONCLUSION

Overall, the Project appears to be constructed as designed with minimal impacts to the surrounding natural and human environment. Carlson McCain recommends that the Commission request the documentation of the One-Call order (Order #35). The Commission will need to decide whether these recommendations are necessary to fulfill Project obligations. Carlson McCain expects follow-up action taken by Basin Electric to address these particular issues can be resolved by document submission.

Thereby, after review of the Commission case docket and multiple site inspections Carlson McCain has found the Pioneer Generation Station Phase II (Case No. PU-12-509) has been constructed in compliance with the siting laws (N.D.C.C. 49-22) and rules (N.D. Administrative Code Article 69-09) and applicable Commission orders.

APPENDIX A. FIGURES

*Post-Construction Inspection Report
Basin Electric Pioneer Generation Station Phase II – Williams County
Case No. PU-12-509*



Figure 1. Photo of the Pioneer Generation Station Units 2 & 3. The perimeter is fenced from adjacent agricultural land and remaining working area rocked/graveled.



Figure 2. Photo of reclaimed lay-down/construction area. Undisturbed lands (left), Reclaimed area (right).



Figure 3. Reclaimed area to the west of the Station in cultivated agricultural field. Area was not planted with spring wheat this season due to topsoil spreading not completed at time of seeding adjacent land.



Figure 4. Photo of areas just outside of fenced station areas. Grass had been planted in these fine, sandy soils with limited success. Mowing recommended to aid in grass reestablishment.