

**Basin Electric Power Cooperative  
Pioneer Generation Station  
Phase III Project  
Post-Construction Inspection Report**

**December 28, 2017  
Case No. PU-14-829**



**Prepared for:**



**Prepared by:**

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**75 PU-14-829 Filed: 12/29/2017 Pages: 23**  
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## 1.0 EXECUTIVE SUMMARY

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission (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 the citizens of North Dakota. Commission construction inspections ensure that projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and applicable Commission Orders.

The Commission retained ProSource Technologies, LLC (ProSource) to complete construction inspections of the Basin Electric Power Cooperative (Basin Electric) Pioneer Generation Station Phase III Project (Project), Case No. PU-14-829, which was constructed by Basin Electric in Williams County, North Dakota. The Project consists of the construction, operation, and maintenance of 12 new Reciprocating Internal Combustion Engines (RICE) at the existing Pioneer Generation Station located approximately 15 miles northwest of the City of Williston, North Dakota. The Project has the capability of generating up to 111 megawatts (MW) of electricity and is designed to produce electricity ranging from 3 to 111 MW. The new engines occupy approximately 8.2 acres within the energy conversion facility area. The new engines have been installed adjacent to the three existing 45 MW simple-cycle combustion turbines located on the site. In addition, approximately 711 feet of six-inch diameter natural gas pipeline, approximately 0.5 miles of 115kV electric transmission line, approximately 408 feet of 3-inch water line, an approximately 0.9-acre storm water pond, and an approximately 3.7-acre switchyard have been constructed as part of the Project.

The Commission issued a Certificate of Site Compatibility and Route Permit on April 29, 2015. The Commission retained ProSource to conduct an Interim and Post-Construction inspection for the facilities. ProSource conducted the Interim Construction inspection on January 5, 2016 and the Post-Construction Inspection on November 15, 2017. ProSource prepared this report to document the post-construction inspection and to provide a summary of compliance with the Commission's Orders.

The purpose of the post-construction inspection was to observe current site conditions at the Project areas, and to ensure the Project was constructed in compliance with the siting laws and rules and the Findings of Fact, Conclusions of Law and Order for Case No. PU-14-829 dated April 29, 2015. Photographs taken during the site inspection are included in Appendix A. Prior to the post-construction inspection, ProSource reviewed Project documents and filings.

## 2.0 BACKGROUND AND SCOPE

On November 26, 2014, Basin Electric filed an application in Case No. PU-14-829 for a Certificate of Site Compatibility for the proposed Pioneer Generation Station Phase III Project. In the application, Basin Electric proposed to construct, operate, and maintain up to 12 new Reciprocating Internal Combustion Engines (RICE) or gas engines at the existing Pioneer Generation Station. The proposed Project has the capability of generation up to 111 MW of electricity and is designed to produce electricity ranging from 3 to 111 MW. The new RICEs would be installed adjacent to the three existing 45 MW SCCTs located on-site. An approximately 3.7-acre electrical switchyard has also been constructed on-site.

Construction of the Project commenced during the week of May 4, 2015. According to the August 2016 Monthly Progress Report, grading and seeding was completed and the on-going scheduled activities included monitoring of Best Management Practices and the vegetation growth.

In accordance with the North Dakota Energy Conversion and Transmission Facility Siting Act, Basin Electric considered exclusion areas, avoidance areas, the selection criteria, and the policy criteria in the design of the Project. Basin Electric located and designed the Project to minimize environmental impacts by utilizing an existing generation station site with compatible existing infrastructure.

Facilities to be constructed on Basin Electric property as part of this Project are:

- 12 9.22 MW RICE units and auxiliary equipment, occupying approximately 8.2 acres
- 115-kV electricity switchyard, approximately 3.4 acres
- Stormwater retention pond, approximately 0.9 acres
- Approximately 408 feet of three-inch diameter water line
- Approximately 711 feet of six-inch diameter natural gas line
- Approximately 2,500 feet of additional 115-kV electricity transmission line
- Approximately 1.2-acre temporary material laydown yard
- Approximately 5.9-acre temporary material laydown yard and construction parking area.

According to the November 2014 Application for Certificate of Site Compatibility, the Basin Electric service area in northwestern North Dakota is experiencing a rapid increase in development because of the activities associated with oil and gas extraction from the Bakken shale formation, currently concentrated in McKenzie, Mountrail, and Williams Counties. The development that has already occurred and additional development planned for the future require numerous infrastructure upgrades throughout the region, including an increase in electrical generation capacity and reliability.

On November 15, 2017, ProSource conducted the post-construction inspection of the Pioneer Generation Station facilities. The photo documentation of the inspection is included in Appendix A of this report. The generation station facilities are depicted in Photos 1-4. The switchyard and stormwater pond are shown in Photos 5 and 6. Successful restoration of the utility corridors (powerline, natural gas pipeline, and water line) are shown in Photos 7-12. The interior of the South and North Engine Buildings is shown in Photos 13 and 14.

The restoration of the project area appeared to be successful and the vegetation appeared to be at least 70% in comparison to adjacent non-impacted areas.

Condition Number 31 of the Commission's Order states that the Company agrees to provide the as-built alignment sheet copies within 3 months of the completion of construction. According to the Monthly Construction Progress Report, construction activities were complete in August 2016. Copies of the as-built construction drawings were filed by Basin Electric on January 25, 2017. The drawings were filed after the 3-month timeline.

Based on field inspections and review of the records, with the exception of the late filed as-built facility drawings, the Project was constructed in compliance with siting laws and rules, and applicable Commission Orders.

### 3.0 ORDER CONDITIONS

#### Findings of Fact, Conclusions of Law and Order January 29, 2015

Order Number	Order Provision	Reference Confirmation
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.	No issues of non-compliance were identified during the post-construction field inspection.
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.	The preconstruction meeting was held on May 1, 2015.
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.	Basin Electric agreed to comply with rules and regulations of all other agencies having jurisdiction over the facility.  Basin Electric filed state and county permits on May 1, 2015.
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.	Basin Electric agreed to comply with rules and regulations of all other agencies having jurisdiction over the facility.  Basin Electric filed state and county permits on May 1, 2015.
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.	Basin Electric filed monthly progress reports with the Commission during construction.

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Order Number	Order Provision	Reference Confirmation
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 issues of non-compliance were identified during the field inspection.
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.	Basin Electric has agreed to maintain the required records.
8	Company agrees to construct and operate the energy conversion facility in accordance with all applicable safety requirements.	Basin Electric has agreed to construct and operate the energy conversion facility in accordance with applicable safety requirements.
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 material, (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.	No issues of non-compliance were identified during the field inspections.
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.	No discoveries of threatened or endangered species were communicated to inspection staff.
11	Company understands and agrees that all cultural resource mitigation plans must be submitted to the North Dakota State Historic Preservation Office and approved prior to the start of any fieldwork and construction activity in the affected area.	Basin Electric filed the cultural resource report and correspondence letter from the State Historic Preservation Office in Appendix D of its Application for Certificate of

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Order Number	Order Provision	Reference Confirmation
		Site Compatibility on November 26, 2014.
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.	No discoveries of cultural resources during construction were communicated to the inspector.
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.	Basin Electric agreed to this condition.
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.	The post-construction inspection did not identify road restoration issues.
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.	Basin Electric agreed to this condition.
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.	Basin Electric agreed to this Condition. No topsoil separation issues were communicated to the inspector.

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Order Number	Order Provision	Reference Confirmation
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.	Basin Electric agreed to this condition.  The post-construction inspection identified successful revegetation of the project area.
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.	Basin Electric agreed to continue the reclamation and maintenance of the site throughout the life of the transmission facility.
19	Company agrees to comply with the Tree and Shrub Mitigation Specifications, attached.	Basin Electric agreed to comply with its Tree and Shrub Mitigation Specifications attached to the Commission's Order.
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.	Basin Electric agreed to this condition.  No issues of non-compliance related to fences or gates were identified during the inspections.
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.	Basin Electric agreed to this condition.  No drainage tile issues were communicated to the inspector.
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 agreed to this condition.  No television or residential radio interference issues were communicated to the inspector.

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Order Number	Order Provision	Reference Confirmation
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.	No issues with the location of staging areas or equipment were identified during the field inspections.
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.	No issues of improper disposal of waste were identified during the field inspections.
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.	Restoration of the disturbed areas was acceptable, as observed during the post-construction field inspection.
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 agreed to this condition.  The energy conversion facility is fenced with a controlled access.
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.	No extraordinary events were communicated to the inspection staff.
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.	Basin Electric agreed to implement a procedure for handling complaints concerning the energy conversion facility.
29	Upon request, Company agrees to provide the Commission with engineering design drawings showing surveyed structure prior to construction.	On April 2, 2015, Basin Electric filed drawings and maps of the project facilities.

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Order Number	Order Provision	Reference Confirmation
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 conversation 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.	Basin Electric agreed to inform the Commission in writing of any plans to modify the transmission facility or site plan of the transmission facility.
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 conversation 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 conversation 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.	<p>According to the monthly progress reports, construction was completed during August 2016.</p> <p>Basin Electric filed a paper copy and an electronic copy of the as-built drawings for the energy conversion facility on January 25, 2017.</p> <p><b>The drawings were filed after the 3-month timeline.</b></p>
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.	Basin Electric agreed to this Condition.
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 agreed to this Condition.

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Order Number	Order Provision	Reference Confirmation
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 reports of damage to underground facilities were reported to the inspection staff.
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.	Basin Electric agreed to this Condition.

#### **4.0 CONCLUSION**

The post-construction inspection did not identify issues of non-compliance. Overall, the Project was in satisfactory condition and was constructed as planned with efforts to minimize impacts. Based on the post-construction field inspection and review of the records, with the exception of the late filed as-built drawings, the Project was constructed in compliance with siting laws and rules, and applicable Commission Orders.

**5.0 SIGNATURE**

Recommendations and findings contained in this report are based on available information and technically accepted practices at the present time.

Project Manager David Hennen, Director of Environmental Services, prepared this report.



12-28-17

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David E. Hennen, Director of Environmental Services  
ProSource Technologies, LLC

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Date

## 6.0 REFERENCES

North Dakota Public Service Commission (NDPSC) Online Case Search. Available from <http://www.psc.nd.gov/database/documents>. Accessed December 2017.

# APPENDIX A

## Photographs

**PHOTOGRAPHS**



Photo 1 – View of Pioneer Generation Station Phase III facilities.



Photo 2 – View of Pioneer Generation Station Phase III facilities.

**PHOTOGRAPHS**



Photo 3 – View of Pioneer Generation Station Phase III facilities.



Photo 4 – View of Pioneer Generation Station Phase III facilities.

**PHOTOGRAPHS**



Photo 5 – View of switchyard.



Photo 6 – View of stormwater pond.

**PHOTOGRAPHS**



Photo 7 – View of restored power line corridor.



Photo 8 – View of restored power line corridor.

**PHOTOGRAPHS**



Photo 9 – View of restored gas pipeline corridor.



Photo 10 – View of restored water line corridor.

**PHOTOGRAPHS**



Photo 11 – View of successful revegetation.



Photo 12 – View of successful revegetation.

**PHOTOGRAPHS**

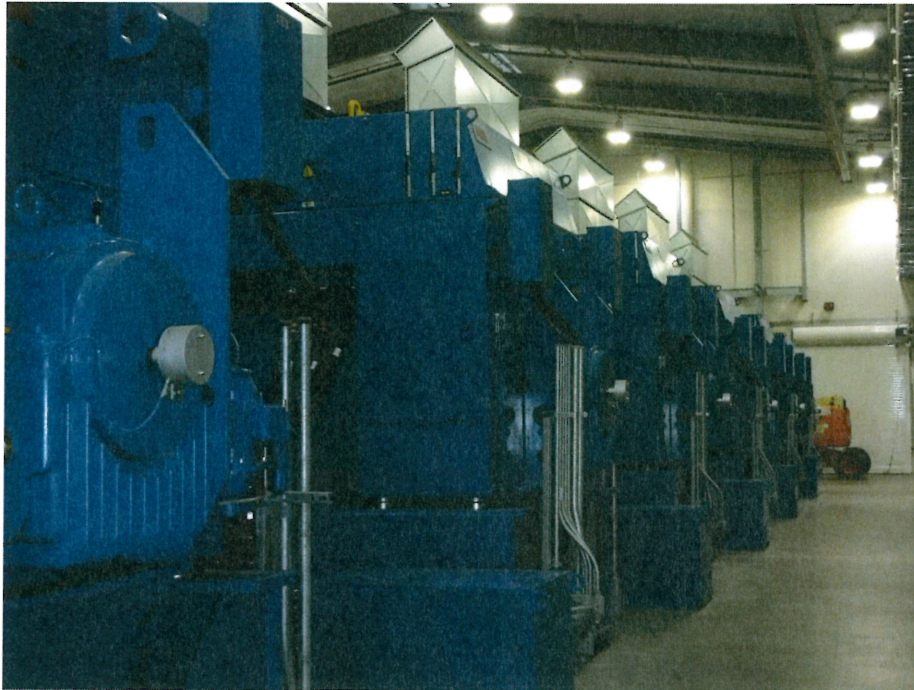


Photo 13 – View inside South Engine Building.

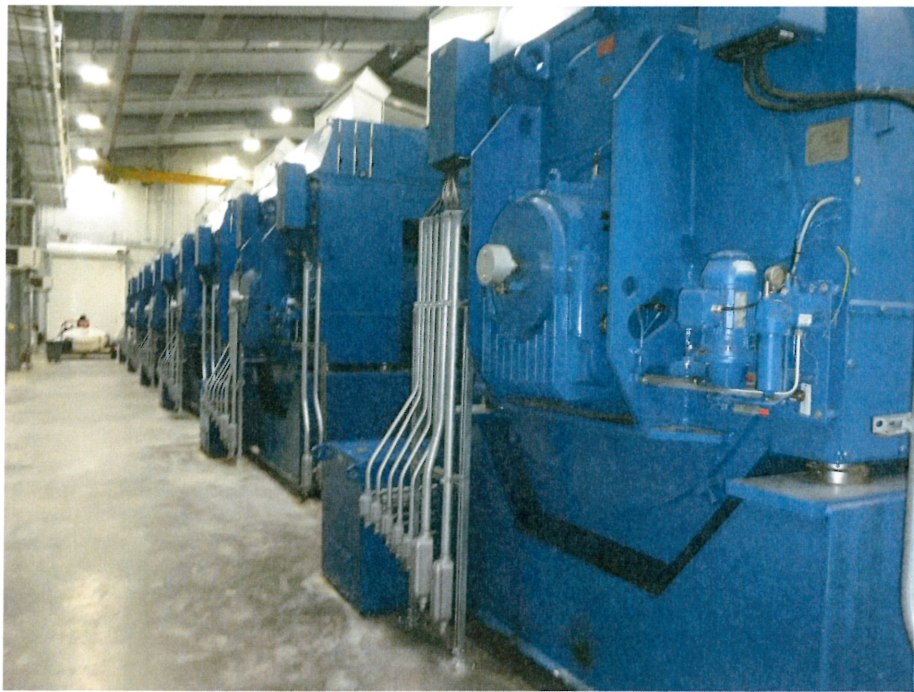


Photo 14 – View inside North Engine Building.