

5.201 (2)(d) The functions and sizes of substations.

The Vollmer substation will be 115/12.5-kV. The substation will be 1.18 acres located within a 5-acre parcel. The substation will be designed for two 115-kV transformers and will include the following equipment:

- Equipment enclosure to house electric equipment
- Distribution feeders (10)
- 115/12.5 transformer (1) with provisions for a second, future transformer
- Detention pond

5.201 (2)(e) The diameters and lengths of pipelines.

Not applicable.

5.201 (2)(f) The capacities of the storage tanks and types of petroleum derivative to be stored.

Not applicable. No diesel or other fuel storage will exist on site.

5.201 (2)(g) Corridor locations and dimensions.

Please see the Site Plan provided in Appendix G.

5.201 (2)(h) Service area.

The Project will provide electric service to the proposed Sterling Ranch and The Ranch subdivisions, and other surrounding areas. Currently MVEA could provide service to an additional 250 homes. As an estimated addition of more than 7,400 residential lots, 50 acres of commercial space, 6 water wells, and 3 schools is projected without the Project nearly all of the proposed development could not be provided electric service.

5.201 (3) Resource area (e.g., source of power being generated or transmitted, source of petroleum derivative being transported).

No new or additional generation sources are associated with the Project. The Project will bring existing and future resources within Tri-State's energy portfolio to residents of the proposed The Ranch and Sterling Ranch developments in El Paso County.

Tri-State provides power for approximately 1.5 million consumers in its member systems through a combination of owned baseload and peaking generation facilities, purchased power, federal hydroelectric allocations, and renewable resources. Tri-State's member cooperative consumers include rural residences, farms, ranches, towns, suburban communities, commercial businesses, and industry. Tri-State's mission is to provide its members a reliable, cost-based supply of electricity while maintaining a sound financial position through effective use of human, capital, and physical resources in accordance with cooperative principles. In 2018, nearly a third of the energy consumed in the communities served by Tri-State members came from renewable resources. Tri-State recently announced its Responsible Energy Plan which outlines our goal of being 50% renewable by 2024 and striving for 100% clean energy in Colorado by 2040.

5.201 (4) Projected development schedule.

5.201 (4)(a) Specify timetable for planning (e.g., federal permits, other State permits, local zoning, etc.).

The Project is currently in the County permitting phase, and state and local construction permit applications are being submitted concurrently with this 1041 application. MVEA is securing federal financing for the Project, but no other federal permits are required. Construction is planned to commence approximately 12-15 months after receipt of the El Paso County approval. However, due to some uncertainty surrounding the possible annexation of all or portions of the Sterling Ranch subdivision, MVEA and Tri-State request that the 1041 permit allow for construction of the Project to begin within 5 years following approval.

5.201 (4)(b) Estimate beginning and completion of construction and beginning of operation of facility.

Below is an outline of the expected construction schedule timelines for the substation and transmission line. Given the uncertainty surrounding the Sterling Ranch subdivision, it is requested that the permit allow construction to begin within 5 years of issuance.

Vollmer Substation:

1. Substation construction duration is approximately 4-6 months, from contractor mobilization to energization.
2. Construction to begin approximately 12-15 months after receipt of county permit.
3. Land option agreements will be exercised upon receipt of county permit.
4. Substation is energized approximately 16-21 months after receipt of county permit.
5. Substation construction drives the Project energization schedule, primarily due to the long procurement lead time on the power transformer.
6. The Vollmer substation is expected to be in operation indefinitely and 100 years has been requested for the life of the County permit.

Vollmer-Vollmer Tap 115-kV Transmission Line:

1. Construction duration is approximately 3-4 months.
2. Construction is required to begin in time to meet the energization schedule for the substation.
3. Land option agreements will be exercised upon receipt of county permit.
4. Transmission line construction could begin before the substation, or the two could be built at the same time, depending on system load, staffing, etc.
5. The Vollmer-Vollmer Tap 115-kV Transmission Line is expected to be in operation indefinitely and 100 years has been requested for the life of the County permit.

5.201 (5) Hazards and emergency procedures:

5.201 (5)(a) Describe hazards, if any, of fire, explosion and other dangers to the health, safety and welfare of employees and the general public.

All Tri-State and MVEA electric facilities are designed, constructed, operated, and maintained to meet or exceed all applicable standards of design and performance set forth in the National Electric Safety Code (NESC 2017). Tri-State prohibits storage of flammables, construction of flammable structures, and other activities that have the potential to cause or provide fuel for fires on its property. There are no explosive substances associated with the proposed substation. Post-construction, the proposed substation and transmission line would be unmanned and controlled remotely by Tri-State. The substation will be designed with overhead ground wires and grounded towers to protect the system from becoming damaged by lightning. The substation facility will be fenced and locked to prevent public access.

5.201 (5)(b) Describe hazards, if any, of environmental damage and contamination due to solid waste, hazardous waste, petroleum products, hazardous, toxic, and explosive substances or materials used at, or activities taking place at, the proposed facility.

Construction, operation, and maintenance activities will comply with applicable local, state, and federal laws and regulations regarding the use of hazardous substances. All hazardous waste, including solid wastes, petroleum products, or other potentially hazardous materials will be disposed of at a licensed recycling or disposal facility authorized to accept such materials.

5.201 (5)(c) Describe emergency procedures to be used in the event of fire, explosion or other event which may endanger the public health, safety and welfare.

All of Tri-State's transmission lines are monitored remotely through Supervisory Control and Data Acquisition (SCADA). The SCADA system is monitored 24 hours per day/7 days per week by Tri-State's System Operation Department, which immediately dispatches trained field personnel to investigate faults on the line (e.g., a breaker trip resulting from fire, smoke, lightning, bird strike, etc.) and de-energizes the facilities where appropriate. Tri-State field personnel notify the proper emergency services if necessary. In the event that a public official needs to notify Tri-State of an incident, Tri-State's Dispatch can be reached at 303.332.9135. Tri-State's Security Operations can be reached at 303.354.3940. An Emergency Action Plan for the facility is provided in Appendix Z.

5.201 (6) The applicant shall supply an analysis of non-structural alternatives to the Project, such as conservation of energy use, no development or management (different scheduling, conservation programs, facility design, land trades etc.), if applicable.

No non-structural alternatives would meet the needs of the Project. The Project alternatives are provided in 2.303 (5)(d). In addition, MVEA performed an initial feasibility analysis of serving proposed developments through distribution from existing transmission and substation facilities. It was quickly determined that the current distribution system cannot support the projected load increase posed by Morley-Bentley's Sterling Ranch and Classic

Homes' The Ranch subdivisions. Currently MVEA could provide service to an additional 250 homes. As an estimated addition of more than 7,400 residential lots, 50 acres of commercial space, 6 water wells, and 3 schools is projected without the Project nearly all of the proposed development could not be provided electric service.

5.201 (7) *The applicant shall supply an analysis of structural alternatives to the Project, such as alternate locations and routes, alternative types of facilities, use of existing rights-of-way, and joint use of rights-of-way with other utilities and upgrading of existing facilities.*

Project alternatives are provided in 2.303 (5)(d).

5.201 (8) *Detailed description of the need for the proposed development or activity, including but not limited to:*

5.201 (8)(a) *The present population of the area to be served and the total population to be served when the project is operating at full capacity.*

MVEA is the sole provider of electric service within its certificated service territory, which includes the areas intended to be served by the facilities of the Project. The Project is required so that MVEA can continue to provide reliable service while meeting the increasing demand for electricity in the area. The proposed substation will be located within the Sterling Ranch subdivision and is necessary in order to provide electrical service to an estimated addition of more than 7,400 residential lots, 50 acres of commercial space, 6 water wells, and 3 schools within the Sterling Ranch subdivision, The Ranch subdivision, and surrounding areas. Tri-State is the wholesale provider of electrical energy to its Member System, MVEA, which provides retail electrical service to their customers. MVEA received a formal request from the developers of the Sterling Ranch and The Ranch subdivisions to serve planned subdivisions in their service territory, which MVEA is obligated to provide.

5.201 (8)(b) *The predominant type of users or communities to be served by the proposal.*

The Project will predominantly serve new developments including approximately 7,400 residential lots, 50 acres of commercial space, 6 water wells, and 3 schools within the area.

5.201 (8)(c) *The percentage of the design capacity at which the current system is now operating.*

The need for a substation in this area is dependent on the distribution capacity in the area, not the capacity of the existing electric system. There is not enough distribution in this area to serve the projected load without the proposed Vollmer Substation. Please also refer to the response in section 5.201(9)(ii).

5.201 (8)(d) *If the proposal is for construction of a new facility and the capacity of that facility exceeds a ten-year projected increase in demand, a detailed explanation of the excess service capacity and the cost of the excess capacity.*

The Project will meet the 10-year projected increase in demand for the Sterling Ranch subdivision, The Ranch subdivision, and surrounding areas. This Project was identified in MVEA's 2009 Long Range Plan to serve the area.

5.201 (8)(e) *The relationship of the proposal to the applicant's long-range planning and capital improvement programs.*

This Project was identified in MVEA's 2009 Long Range Plan to serve this area. No other facilities are planned in this area at this time; however, as distribution needs arise in other parts of the County, additional substations will be required.

5.201 (8)(f) *A description of the user needs and user patterns to be fulfilled by the proposed Project.*

The Project will provide reliable electric service to residents of El Paso County.

5.201 (8)(g) *A description of the relationship of the Project to other existing and planned utility facilities of a similar nature, other communication or energy generation and transmission facilities, local government capital improvement programs and special district expansion programs.*

Applicants are electric utilities and at this time there are no planned generation projects other than consumer-owned distributed generation projects. The purpose of this Project is to serve distribution needs in the vicinity of the proposed substation. The transmission line is needed to connect the substation to the interconnected transmission system in the area. No other transmission facilities are planned in this area at this time; however, as distribution needs arise in other parts of the County, additional substations will be required.

The proposed transmission easement overlaps a sewer line easement and will also be used for the proposed trial trail/recreation purpose identified in The Sterling Ranch and The Ranch Sketch Plans. Figure 4 depicts the locations of similar utility Infrastructure that exists within the County.

5.201(9) *Environmental impact analysis.*

5.201 (9)(a) *Land use:*

(i) *Specify how the proposed development will utilize existing easements or rights-of-way for any associated distribution or collector networks.*

MVEA plans to utilize the transmission line easement for distribution feeder lines after construction of the proposed Project. The Vollmer-Vollmer Tap Transmission line right-of-way and MVEA distribution feeders will cross an existing utility corridor. An existing sewer line located within a portion of the easement, and a trail has been proposed within the easement (see Appendix R).

A number of environmental analysis reports were prepared for the following appendices are relevant environmental materials:

- Appendix I: Stormwater Management Plan
- Appendix L: MVEA RUS Environmental Report

- Appendix M: Agency Correspondence
- Appendix N: Biological Resource Report
- Appendix O: Cultural Resource Report
- Appendix P: Geotechnical Report
- Appendix U: Drainage Report

5.201 (9)(b) Information regarding other utility facilities:

5.201 (9)(b)(i) A map showing each existing major facility of a public utility within the County of the type proposed for development.

Please see Figure 4.

5.201 (9)(b)(ii) The design capacity of each such facility, the excess capacity of each such facility and the percentage of capacity at which each such facility operates.

MVEA has three other substations within the vicinity of the Project area: the Black Forest Substation, Black Squirrel Substation, and Falcon Substation. The Black Forest Substation has a design capacity of two 10-megavolt ampere (MVA) transformers and operates at a capacity of approximately 75%. Black Forest Substation is also the only MVEA substation within 2 miles of the proposed Vollmer substation. There is not enough capacity at Black Forest Substation to carry the load that is projected for this area and to address the Project purpose and need.

The Black Squirrel Substation has two 15 MVA transformers and operates at approximately 85% of capacity. The Falcon Substation has one 15 MVA transformer and one 24 MVA transformer and operates beyond its current capacity (185% loaded). Currently, there is not enough substation or distribution circuit capacity to provide reliable power for the amount of load projected in the Project area. The additional capacity provided by the proposed Vollmer Substation is needed in order to meet the projected load posed by development in the area.

Table 2 below outlines the design capacity, 10-year forecast , and excess capacity of the substation and transmission line.

**Table 2:
 Projected Capacity of the Vollmer Tap and Substation**

Facility Element	Figure 3 EPC ID	Design Capacity (MW)	Initial Load (MW)	10 Year Forecast (MW)	Excess Capacity (MW)*
115-kV Line—Vollmer Tap	1	243	3.75	14	229 (a)
Vollmer Substation	2	25	3.75	14	11 (b)

* Excess capacity values are based on facility ratings compared to the 10 year forecast. Actual future excess capacity is dependent upon the interconnected transmission system.

Notes:

- (a) Transmission line estimates are based on 795 (ACSR) Drake conductor.
- (b) The substation facility will be constructed with one (1) 115-12.47kV 15/20/25MVA transformer to accommodate initial load and growth estimates. The substation shall be designed with the capability to add a second transformer unit to accommodate potential changes to load growth estimates.

5.201 (9)(b)(iii) Whether present facilities can be upgraded to adequately accommodate a ten-year projected increase in demand for services to be offered by the proposed project.

The Project is required as a response to immediate and 10-year projected growth in the area. The existing infrastructure in the area is not sufficient to support new loads and the Project must be completed in order to provide electric service to new development within the County.

In addition to alternatives discussed in section 2.303 (5)(d), MVEA performed an initial feasibility analysis of serving proposed developments through distribution from existing transmission and substation facilities. It was quickly determined that the current distribution system cannot support the projected load increase posed by Morley-Bentley's Sterling Ranch and Classic Homes' The Ranch subdivisions. Under current service conditions, MVEA could only support an additional of 250 homes, and 7,400 are projected.

5.201 (10) Applicants seeking a permit for the site selection and construction of a power plant shall submit, in addition to those requirements set forth above, a map locating and describing resource areas to be utilized as sources of energy.

Not applicable.

5.201 (11) Applicants seeking a permit for the site selection and construction of transmission lines or substations shall submit the following additional documents and information:

5.201 (11)(a) Computer modeled electromagnetic field measurement within the proposed transmission line easement for that portion of the transmission line between substations or transition sites; and

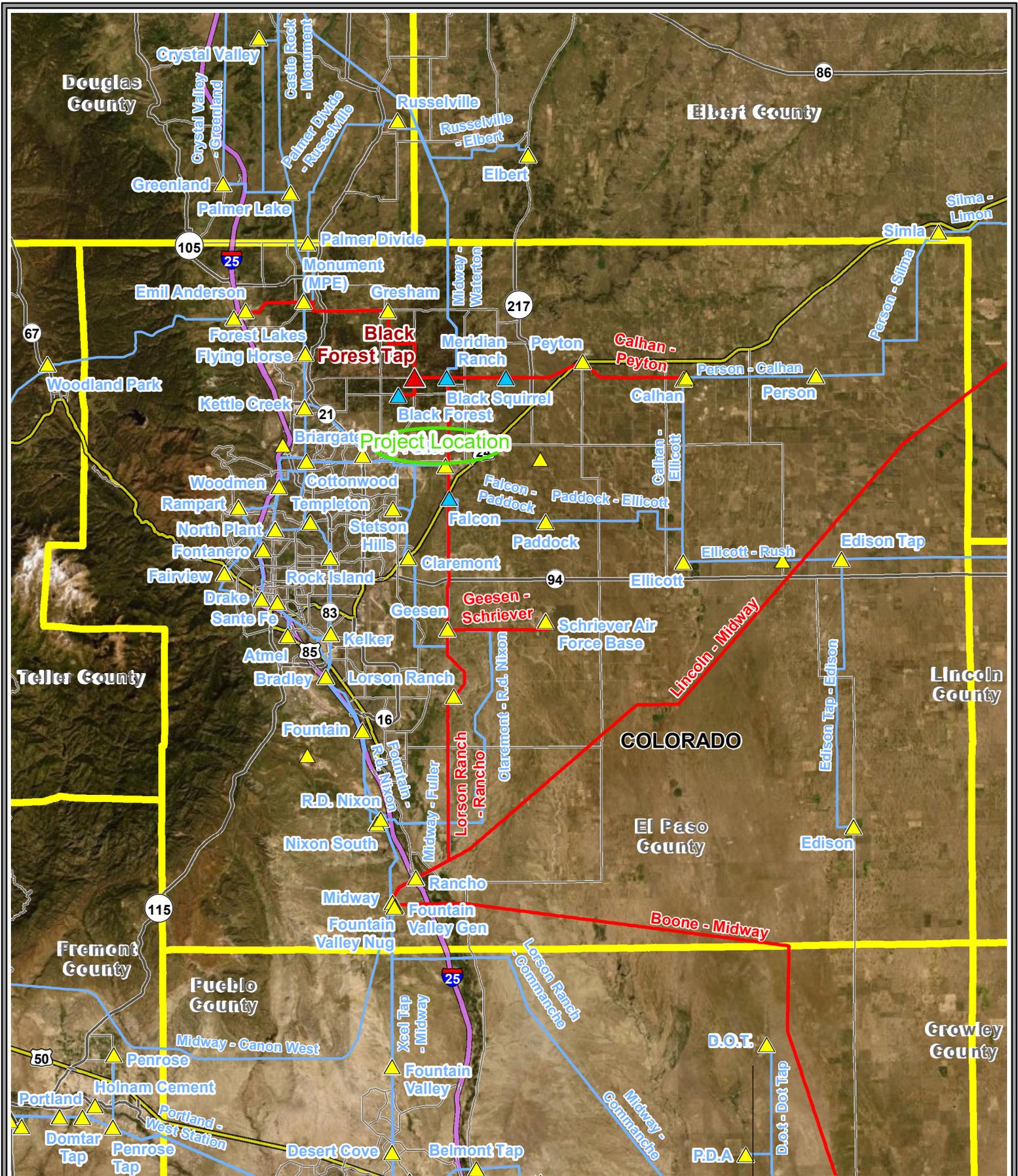
Please see the *Analysis of Audible Noise and Magnetic Fields* Report provided in Appendix S. As outlined in the report, electromagnetic fields and noise resulting from the Project are well within allowable limits set by the Colorado PUC.

5.201 (11)(b) Measures taken to comply with the concept of prudent avoidance with respect to planning, siting, construction and operation of transmission lines, which may be those steps taken to comply with CCR 723-3 Section 3206(9)(b) or similar authority, for projects where other similar authority is applicable.

Please refer to 5.201(11)(a) and Appendix S related to electromagnetic fields. While this Project does not meet the threshold for Colorado PUC review, it indeed meets the standards set forth in CCR 723-3 Section 3206 regulations.

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Figure 4: Transmission Lines and Substations within El Paso County



Tri-State Generation and Transmission

Figure 4



- ▲ Station - MVEA
- ▲ Station - Colorado Springs Utility
- ▲ Station - Tri-State
- Proposed Transmission Line
- Existing Tri-State Transmission Line
- Transmission Line - Other Utility
- Interstate Highway
- U.S. Highway
- State Route
- Other Major Road
- Vollmer Substation Property
- County Boundary
- State

0 2.25 4.5 9 Miles

Updated By: curtmi
Updated: 7/11/2019

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Appendix A:
Application Form

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Appendix B:
Traffic Study, Haul Route Map, and Pavement Condition Assessment

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Appendix C:
September 17, 2019 Public Open House Summary Report

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Appendix D:
Mineral Owners Notice Letter

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Appendix E:
Land Option Agreements

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Appendix F:
Tri-State and MVEA Annual Financial Reports

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Appendix G:
Site Plan and Construction Drawings

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Appendix H:
Landscaping Plan

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Appendix I:
Stormwater Management Plan

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Appendix J:
List of Adjacent Landowners

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Appendix K:
Easement and Entitlement Documents

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Appendix L:
MVEA RUS Environmental Report

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Appendix M:
Agency Correspondence

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Appendix N:
Biological Resource Report

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Appendix O:
Cultural Resource Report

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Appendix P:
Geotechnical Report

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Appendix Q:
FAA Filing Correspondence

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Appendix R:
Land Use Maps

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Appendix S:
Analysis of Audible Noise and Magnetic Fields

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Appendix T:
PUC Renewable Energy Standard Filing

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Appendix U:
Drainage Report

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Appendix V:
Visual Simulation

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Appendix W:
Elevation Drawings

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Appendix X:
Grading and Erosion Control Plan

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Appendix Y:
Transmission Structure Exhibits

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Appendix Z:
Emergency Action Plan

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