ARAPAHOE COUNTY

Arapahoe County

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Board Summary Report

File #: 25-385 **Agenda Date:** 7/22/2025 **Agenda #:** 7.c.

To: Board of County Commissioners

Through: Bryan Weimer, Director, Public Works and Development

Prepared By:

Molly Orkild-Larson, Principal Planner, Public Works and Development

Presenter: Molly Orkild-Larson, Principal Planner, Public Works and Development

Subject:

UASI25-001 Canyon Peak Power Station - Use by Special Review

Purpose and Request:

The applicant, Canyon Peak Power LLC (an affiliate of Kindle Energy LLC), on behalf of the property owner, CORE Electric Cooperative (CORE), is seeking approval of a USR application on a 20-acre parcel located at 5050 S. County Road 149 in Bennett, to build a natural gas combustible power generation facility. The property and the existing electrical substation (Brick Center Substation) on-site are owned by CORE, and 11 acres of the site will be leased to the applicant. This approval also includes 3.9 miles of a 10-inch natural gas supply line to provide gas to the power generation facility. This project will support CORE's transition from previous power providers to more renewable-based power sources.

The natural gas simple-cycle combustible power generation facility will be comprised of six electric power generation units with a cumulative generating capacity of 156 megawatts (MW). This facility is to generate electricity for the Brick Center Substation and is to exclusively serve CORE's members. The project also intends to construct an administrative/maintenance building (control trailer), a stormwater detention pond, drive aisles and employee parking, a fire water tank, and a fire suppression loop. The facility will be staffed with two employees per shift, with two shifts of 12 hours.

The Public Works and Development Planning and Engineering Services Division has reviewed the application, and the Arapahoe County Public Works and Development Department is recommending approval of this case.

On June 17, 2025, the Planning Commission recommended approval by a 5-0 vote.

Background and Discussion: The subject parcel contains the existing Brick Center Substation, which is located in the central portion of the parcel. The substation was reviewed and approved through a Location and Extent application (L17-001).

The subject parcel has been subdivided through a Subdivision Exemption plat (X07-001).

The applicant, Canyon Peak Power LLC (an affiliate of Kindle Energy LLC), on behalf of the property owner, CORE Electric Cooperative (CORE), is seeking approval of a USR application on a 20-acre parcel located at 5050 S. County Road 149 in Bennett, to build a natural gas combustible power generation facility. The property and the existing electrical substation (Brick Center Substation) on-site are owned by CORE, and 11 acres of the site will be leased to the applicant. This approval also includes 3.9 miles of a 10-inch natural gas supply line to provide gas to the power generation facility. This project will support CORE's transition from previous power providers to more renewable-based power sources. The natural gas simple-cycle combustible power generation facility will be comprised of six electric power generation units with a cumulative generating capacity of 156 megawatts (MW). This facility is to generate electricity for the Brick Center Substation and is to exclusively serve CORE's members. The project also intends to construct an administrative/maintenance building (control trailer), a stormwater detention pond, drive aisles and employee parking, a fire water tank, and a fire suppression loop. The facility will be staffed with two employees per shift, with two shifts of 12 hours.

As mentioned above, the project will install a natural gas supply pipeline to provide gas fuel to the proposed facility. The pipeline will be located along the east side of County Road 129 (CR 129) within the road right-of-way. At the north end of the pipeline, it will connect to an existing Colorado Interstate Gas (CIG) pipeline in a fenced meter yard north of E. Iliff Trail. The south end of the pipeline will connect to the proposed gas facility. The gas facility is to have a 25-year design life, but with proper maintenance, the plant life will likely be extended beyond the design life.

CORE wishes to transition to a more renewable-based power generation for its source of electrical power. Renewable-based power generation, such as solar or wind, is an intermittent resource, subject to weather conditions and power demands placed on the grid and can be complemented by alternative resources such as gas to provide reliability and stability to the grid. Natural gas-fired power plants are flexible and reliable and can provide a solution for Colorado's evolving energy grid. The applicant has indicated that this type of power plant is known for having fast start capabilities (10 minutes or less), only runs when energy demand is high, and when the grid requires additional power resources. The facility will run for less than 20 percent of the hours in a single year and is capped at approximately 32 percent capacity factor on a consolidated basis as allowable per the Colorado Department of Public Health and Environment (CDPHE) issued synthetic minor source air permit. The 32 percent capacity factor means that the facility, if all six units were fully dispatched in unison, could run for 2,803 hours during the year; it will not operate continuously.

The applicant also stated that this facility can act as a safety net when intermittent renewable energy sources

(solar and wind) cannot fully meet power grid electricity needs and ensure grid stability as more renewable energy resources are integrated into the system.

Gas Facility Design

Connection to Brick Center Substation: The project will connect to CORE's existing 115 kV transmission system on the site with no additional infrastructure required outside of the parcel's boundaries. Each combustion turbine generator produces power at 13.8 kV, which is fed to a generator step-up transformer that converts the power to 115 kV. This 115 kV power is then connected to CORE's existing Brick Center Substation, which supplies CORE's 115 kV transmission system. The connection to the 115 kV transmission system will occur on the north side of the existing Brick Center Substation with new high-voltage disconnects and circuit breakers.

Combustion Turbine Generator (CTG): The facility is powered by generation units outfitted with selective catalytic reduction (SCR) and oxidation catalysts to control nitrogen oxide (NOx) and carbon monoxide (CO) emissions. Six combustion turbine generators are proposed, and each generator is considered a unit. Each CTG uses a dry low-NOx emission oxidation combustion system to reduce NOx emissions during natural gas combustion. In addition to the dry low NOx combustion technology, each CTG unit will be equipped with an SCR system that will further reduce NOx emissions from the flue gas before exiting the CTG stack. The SCR utilizes 19% aqueous ammonia as the reagent in the catalytic conversion of NOx emissions to nitrogen and oxygen. The 19% aqueous ammonia is supplied by an on-site 20,000-gallon ammonia storage and forwarding system with containment (at least 110% of the tank's volume) and a truck unloading pad. The aeroderivative-based combustion turbine generator is designed with considerations for both efficiency and emissions. The facility will implement effective containment measures into the design to mitigate the effects. This design allows the power turbine to operate at a continuous speed, allowing for startup to full load in less than 10 minutes. The turbines will use natural gas from the pipeline.

CRS Exhaust Stack: Each unit is equipped with an 80-foot exhaust stack. Each exhaust stack includes a selective catalytic reduction to control nitrogen oxides (NOx) and catalytic oxidation (CatOx) to control CO and Volatile Organic Compound (VOC) emissions. Each exhaust stack will be equipped with an emissions monitoring system that monitors CO emissions, NOx emissions, and fuel flow.

Fire Water System: A 165,000-gallon water storage tank and fire suppression loop are located on-site for fire protection. An underground water line will encircle the plant and have fire hydrants spaced as per the National Fire Protection Association standards. A 165,000-gallon water tank will supply water to this system and will be filled by a certified water supplier. See the attached will serve letter.

Control Trailer: The gas plant operations will be monitored and controlled from a building centrally located on the subject property. The control trailer will house two employees monitoring the facility and operations. This building will include operator offices, conference and break rooms, bathrooms, and critical network and control system hardware and infrastructure for the facility's operations.

Fencing: The lease area of the gas facility will be fenced. The fence will be seven feet tall with one foot of three strands of barbed wire at the top. This fence does not comply with Colorado Division of Wildlife (CPW) fencing standards. However, after discussions with CPW, this agency felt that this facility was small, and the allowance of animals within the facility should be avoided and therefore would not object to the proposed fence design.

Lighting: The applicant indicates that the site lighting will be directed inward, downward, and shielded. The height of the light poles on-site shall be a maximum of 25 feet in the parking area and 20 feet elsewhere on-site. The facility shall comply with the Land Development Code regulations. This shall be made as a condition of approval.

Access: The gas facility will obtain access from E. Belleview Avenue.

Water and Sanitary Sewer: A potable water tank will be installed next to the control trailer, and an On-site Wastewater Treatment System (OWTS) will be located east of this building.

Stormwater: A detention pond is proposed in the southeast corner of the lease area.

Construction: During the construction of the facility, the applicant will be using the eight acres west of the substation as a laydown yard, equipment storage, employee parking, and the location of construction trailers. The applicant is also proposing three additional areas as laydown yards to the north and east of the subject property. See “Lease Areas” below.

Lease Areas: Since the Planning Commission hearing, the applicant has added three lease areas outside the subject property, see sheet CS080 in the plan set. The areas are to be used as laydown yards to store staging equipment, construction materials, and additional soil storage. No liquids or hazardous materials will be stored in these areas. CPW is requesting that when the ground-nesting bird study is conducted, these areas be included in the study. The conditions of approval nine and ten have been amended so that the ground-nesting bird and pronghorn studies are to include the subject property, pipeline alignment area, and the three lease areas. Also, a condition of approval has been added requiring the applicant to provide the lease agreements for the three lease areas prior to the signature of the final plan.

Fiscal Impact: This application may generate employment for individuals living in Arapahoe County during the construction of the facility and the operator positions for the gas facility.

Alternatives: The Board of County Commissioners has alternatives that include the following:

1. Approve the proposed Use by Special Review with the proposed conditions or with alternative conditions;

2. Continue to a date certain for more information.

3. Deny the proposed Use by Special Review.

Alignment with Strategic Plan:

☒Be fiscally sustainable

☒Provide essential and mandated service

☐Be community-focused

Staff Recommendation: Considering the findings and other information provided herein, staff recommends approval of Case No. UASI25-001, Canyon Peak Power Station - Use by Special Review, with the following conditions of approval:

1. Prior to the signature of the final copy of these plans, the applicant must address Public Works and Development staff's comments and concerns.

2. Prior to the signature of the final copy of these plans, the applicant shall dedicate the proposed drainage easement to the County and vacate the existing drainage easement.

3. The applicant shall develop a wildfire mitigation plan acceptable to the local fire district before the issuance of a building permit.

4. The applicant shall obtain approval of the firefighting water supply plans from Bennett Watkins Fire Rescue before the issuance of a building permit.

5. The Decommissioning Plan Agreement shall be signed and financial assurance provided before the issuance of a Certificate of Completion by the County. The Decommissioning Plan cost estimate shall be reviewed every five years by the Planning and Building Divisions, commencing from the year of the issuance of the Certificate of Completion. This cost estimate shall be submitted by December 31st every five years.

6. The applicant shall comply with an inadvertent discovery clause and conduct archaeological monitoring

during construction of the facility and pipeline.

7. The applicant shall sign a County Agreement to repair any county roads that may be damaged during construction.

8. The facility shall comply with the lighting standards of the Land Development Code. The lighting for the gas facility shall be directed inward, downward, and shielded. The height of the light poles shall be a maximum of 25 feet in the parking area and 20 feet elsewhere on-site.

9. If grading and/or construction is to occur on the project (facility site, pipeline alignment area, and lease areas) between April 1 through August 30, the applicant shall conduct a survey to determine if any ground-nesting birds are present during the migratory bird nesting season. The results of the survey shall be submitted to Colorado Parks and Wildlife (CPW) and the Planning Division for their review and approval. If nesting birds are present, no construction/grading is permitted during those dates without prior CPW authorization.

10. If grading and/or construction is to occur on the project (facility site, pipeline alignment area, and lease areas) between January 1 through April 30, the applicant shall conduct a survey to determine if Pronghorn are present. The results of the survey shall be submitted to CPW and the Planning Division for their review and approval. If Pronghorn are present, no construction/grading is permitted during those dates without prior CPW authorization.

11. Prior to the signature of the final copy of these plans, the applicant shall provide Planning Staff with the lease agreements for the three lease areas.

Concurrence: The Public Works and Development Planning and Engineering Services Division has reviewed the application, and the Arapahoe County Public Works and Development Department is recommending approval of this case. On June 17, 2025, the Planning Commission recommended approval by a 5-0 vote.

Suggestion Motion(s): Draft motions have been included as an attachment to the Board Summary Report.

Resolution: A draft resolution is attached to this report.