

INTRODUCTION

Salt River Project Agricultural Improvement and Power District (SRP or District), under Arizona Revised Statute (A.R.S.) § 40-360 et seq., submits this application (Application) for a Certificate of Environmental Compatibility (CEC) to expand the Coolidge Generating Station, a natural gas-fired, simple-cycle power plant near Coolidge, Arizona, that was built between 2009 and 2011 and purchased by SRP in 2019 to help support growing demand for power in the region.

SRP is a community-based, not-for-profit utility providing water and power to more than 1,000,000 residential, commercial, industrial, agricultural, and mining customers in Arizona. As a community-based public power provider, SRP is focused on providing reliable, sustainable, and affordable power to its customers. To meet that goal, SRP operates or participates in a broad portfolio of generating resources, including nuclear, coal, natural gas, hydroelectric, and renewable facilities. The District is an agricultural improvement district and a political subdivision of the State of Arizona formed in 1937.

During public meetings held on August 24, 2021, and September 13, 2021, the District's publicly elected Board of Directors (Board) considered and approved the Coolidge Expansion Project (CEP or Project), the subject of this Application. The CEP is critical to the overall transition of SRP's power generation resource portfolio. SRP requests a CEC for the construction of up to 820 megawatts (MW) of new capacity and associated transmission infrastructure to interconnect the new generation to the regional transmission system, as shown in Figure 1. The new transmission components include a 500-kilovolt (kV)¹ generation tie line and a new 500kV switchyard to interconnect with the existing Pinal Central to Browning 500kV transmission line.

As required by Arizona Administrative Code R14-3-219, this Application is structured as follows:

- **Exhibit A – Project Location and Land Use**
- **Exhibit B – Environmental Studies**
- **Exhibit C – Areas of Biological Wealth**
- **Exhibit D – Biological Resources**
- **Exhibit E – Scenic Areas, Historic Sites and Structures, Archaeological Sites**
- **Exhibit F – Recreational Purposes and Aspects**
- **Exhibit G – Concepts of Typical Facilities**
- **Exhibit H – Existing Plans**
- **Exhibit I – Noise Emissions and Communication Interference**
- **Exhibit J – Special Factors**

A list of abbreviations is provided following the Table of Contents.

¹ Nominal 500 kV transmission and generation infrastructure is technically 525 kV. For ease and consistency, this document refers to 525 kV as 500 kV.

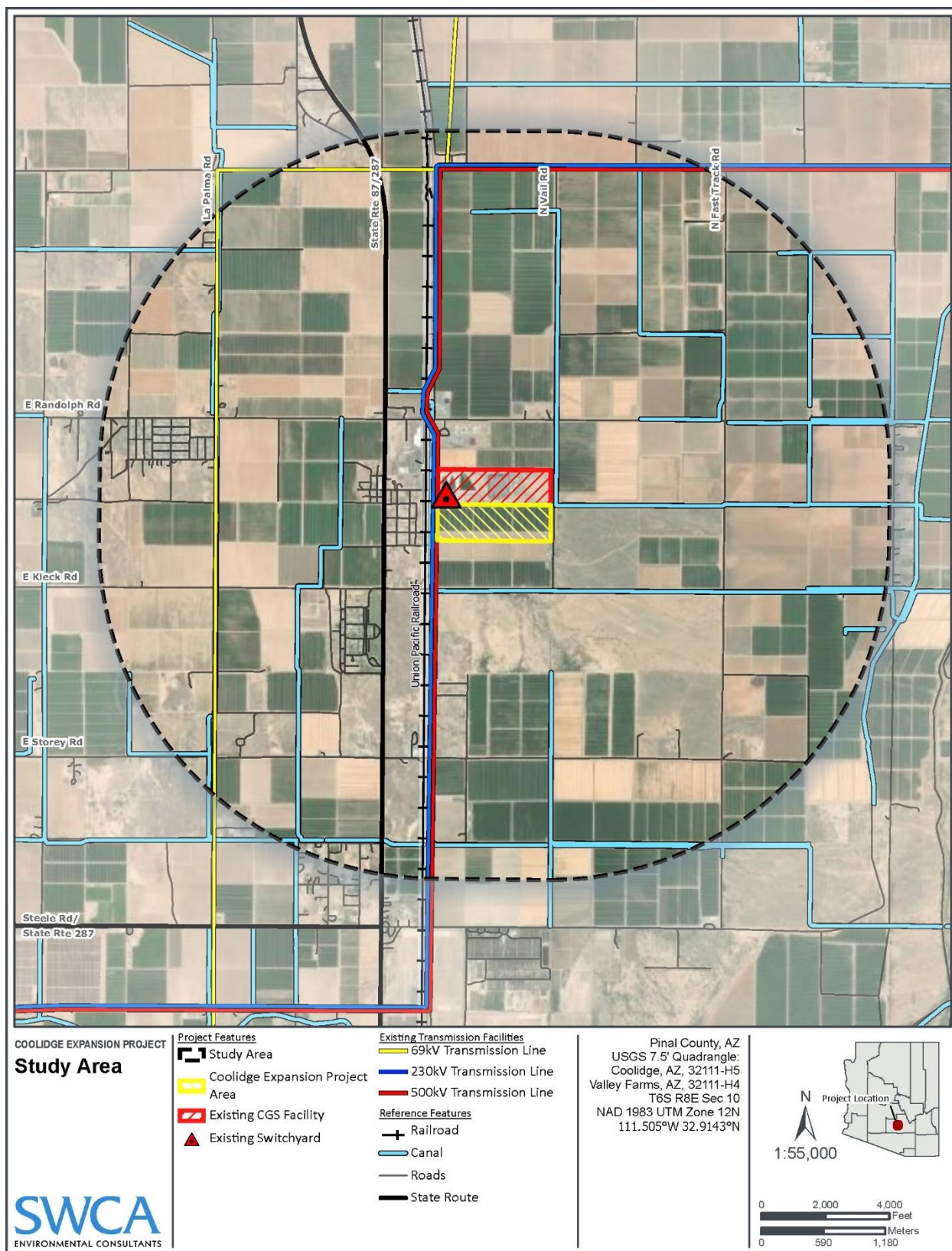


Figure 1. Project Study Area.

Need and Benefit

The CEP will allow SRP to meet the significant near-term capacity needs in its service territory, which is among the fastest growing regions in the nation. While providing critically needed capacity and reliability, the CEP will also facilitate the integration of additional renewable resources. Specific needs and benefits addressed by the CEP include the following:

Meeting Near-Term Peak Capacity Need: One of SRP's primary responsibilities to the communities it serves is to provide reliable electric service. SRP's service territory continues to demonstrate strong economic recovery with a population growth that is more than three times the national average. With the recently announced Intel expansion, new data centers, and other high-profile businesses with significant loads locating in SRP's service territory, SRP's peak demand forecast is growing significantly.

With this unprecedented amount of economic growth, SRP is using a comprehensive strategy that includes improving existing generation fleet operational efficiencies, additional customer demand response programs, purchase of additional interest in Palo Verde Generating Station, and significant amounts of new solar and battery storage. Even with all of those additions, SRP still needs more than 1000MW of additional capacity by 2025.

The CEP will ensure that SRP can meet these significant near-term capacity needs, while maintaining system reliability and staying on the path to achieve SRP's deep decarbonization goals over the long term.

Reliable Integration of Additional Renewable Generation: SRP has committed to add 2,025 MW of solar photovoltaic energy to its renewable portfolio by 2025 to meet its Board-approved goal of a 65% reduction in carbon emissions intensity by 2035. Along with increased solar generation comes greater fluctuations in demand for electricity from SRP's power system and a need for fast-ramping generation to meet that increasingly variable demand. Each combustion turbine at the CEP will be capable of rapid starts (within 10 minutes) and a quickly changing power output to match variable electricity demand. This flexible operating capability serves reliability needs both when the units are generating and when the plant is offline and not burning fuel.

Complementing SRP's Storage Portfolio: Battery storage is an important component of SRP's resource planning strategy. SRP is adding nearly 350 MW of battery storage in 2023, bringing total battery storage capacity on SRP's system to approximately 400 MW, among the highest of any utility in the nation. The addition of flexible natural gas turbines provides a proven technology to complement batteries in serving SRP's near-term additional capacity needs. The addition of gas-fired capacity will allow SRP to focus batteries on maximizing carbon reduction i.e., to discharge renewable resources frequently to match loads rather than holding energy indefinitely for long-duration reliability events.

Supporting SRP's Transmission System: A large portion of the state's generation facilities are interconnected at or near the Palo Verde Hub west of Phoenix. The CEP location will better balance generation in the East Valley with the generation located in the West Valley and will optimize the overall transfer capability, reliability, and flexibility of SRP's transmission system. The CEP is also favorably situated to provide voltage support and improve Valley-wide load serving capabilities.

Leveraging Existing Infrastructure: The CEP will utilize an existing generation site that has land available to construct the needed facilities. Further, the Project will leverage other existing infrastructure at the site, including the gas pipeline, transmission network, and wells, which will minimize the need for new infrastructure in the general area and reduce the cost of the CEP.

SRP's Evaluation of Options to Meet Need

When SRP considers investing in a new power generation resource, it carefully considers alternatives in the context of reliability, SRP's 2035 Sustainability Goals, and affordability for its customers. In evaluating options for the CEP, SRP evaluated a broad range of generation technology options, including whether it could build a portfolio of zero-carbon resources that could achieve the same reliability as the Coolidge plant expansion. In addition, SRP evaluated different sensitivities, including higher natural gas prices and lower battery costs than current forecasts suggest.

As a result of the variability of renewables like solar and wind, and the limited duration of current battery storage technology, SRP would need to build three to four times the megawatt capacity of zero-carbon resources (primarily solar and batteries) to achieve similar reliability as the Coolidge expansion. SRP is an early adopter of battery technology and has already committed to adding 350 MW by 2023—among the highest of any utility in the West. SRP anticipates adding more battery storage projects in the coming months and years as the technology matures.

However, SRP does have significant concerns about adding the amount of battery storage that would be required to achieve similar reliability as the CEP, especially in the timeframe required. Neither SRP nor the utility industry as a whole have much operational experience with batteries, particularly long-term operating experience. The United States has only approximately 3,200 MW of energy storage—1,300 MW of that began operation this year, with the other 1,900 MW operating less than 3 years.² To put this into context, that 1,900 MW represents 0.2% of the United States' total electricity generation capacity. For these reasons, SRP determined that adding battery storage over the next 3 years in the amounts to achieve similar reliability as Coolidge expansion was impractical and costly. Increasing battery storage at a measured pace, however, allows SRP to gain experience as the technology evolves and realize the benefits of both decreases in battery prices and increases in storage duration that we expect to occur.

In addition to providing assurances of reliability, the Coolidge portfolio was the lower-cost option in all scenarios and did not impact SRP's ability to meet or exceed Board-established carbon reduction commitments. The CEP is not just the most prudent and practical decision but also is the best economic decision that provides the most value to SRP's customers.

Project Description

The Coolidge Generating Station is an existing natural gas-fired, simple-cycle power plant that supplies power during periods of peak electricity demand. The proposed CEP will add 16 General Electric (GE) combustion turbine generators (CTGs) designed to produce up to 820 MW of net electrical output based upon the optimal coincident ambient air conditions of temperature and relative humidity.

SRP selected the GE LM6000 turbine technology for the CEP based on three factors: reliability, flexibility, and operational experience. The LM6000 turbines are flexible resources that allow SRP to integrate more renewables into the power system. They can start up and change output quickly to support

² Acp, "Clean Power Quarterly Report Q3 2021," ACP, October 25, 2021, <https://cleanpower.org/resources/clean-power-quarterly-report-q3-2021/>.

the variability of renewable resources. In addition, the flexibility of this technology allows us to operate just one or two turbines when needed, versus having to run all of them at the same time. The LM6000 model is an industry leader in reliability with over 40 million operating hours and over 99% reliability. In addition, the existing Coolidge Generating Station utilizes the LM6000 technology, providing operational familiarity and common spare parts to reduce maintenance costs.

The CEP will be operated as a peaking facility, and as such, will run to help meet SRP's peak demand at the hottest times of the year, or when needed to smooth out the variability of renewable resources. The CEP also could be called upon in unexpected longer duration events such as outages of other units. The CTGs are capable of rapid start-up, allowing the CEP to respond to fluctuations in electric demand within 10 minutes when offline.

The CTGs will use best available emission control technology to control nitrogen oxides (NO_x) and carbon monoxide (CO) emissions. Each CTG is equipped with water injection to the combustors to minimize the production of NO_x. In addition, selective catalytic reduction (SCR) systems will further reduce NO_x emissions using a combination of catalysts and injection of 19% aqueous ammonia solution. CO emissions will be controlled with the use of oxidation catalyst.

The CEP generation method is a simple cycle, which does not rely on steam to produce power, so it uses significantly less water than other types of generation, such as a combined cycle natural gas power plant. After completion of the expansion, SRP will discontinue the use of groundwater and will rely exclusively on stored Central Arizona Project (CAP) water to serve the Coolidge Generating Station.

To put the CEP water use in context, the statewide water use in 2017 was about 7 million acre-feet. SRP projects the Coolidge Generating Station to use about 450 acre-feet after expansion. This represents less than 1/100th of 1% of total water use in the Arizona.

Figure 2 depicts the site layout and arrangement of the existing Coolidge Generating Station and the CEP. The new generation facilities will occupy approximately 30 acres of the 100-acre site.

In addition to the generating facilities, SRP is requesting approval for the transmission line and associated infrastructure needed to interconnect the facility to the existing 500 kV transmission line that runs along the west side of the site. The new infrastructure includes transmission lines and a new 500 kV switchyard. The existing Pinal Central to Browning 500 kV transmission line will be looped in and out of the new 500 kV switchyard resulting in a Pinal Central to new 500 kV switchyard transmission line, and a new 500 kV switchyard to Browning 500 kV transmission line. In addition, four new generator tie lines will traverse from the new generating facilities to the new 500 kV switchyard. All new transmission line infrastructure, including the new switchyard, will be located on land owned by SRP. Figure 2 depicts the transmission-related facilities included in this Application.

Public Outreach Summary

SRP first identified a need for future flexible gas ramping resources like this Project in its 2017–2018 Integrated Resource Plan as part of SRP's strategic resource directions. The decision to move forward with the proposed expansion of the existing Coolidge Generation Facility was announced in August 2021 as part of its 2021 summer stakeholder process.

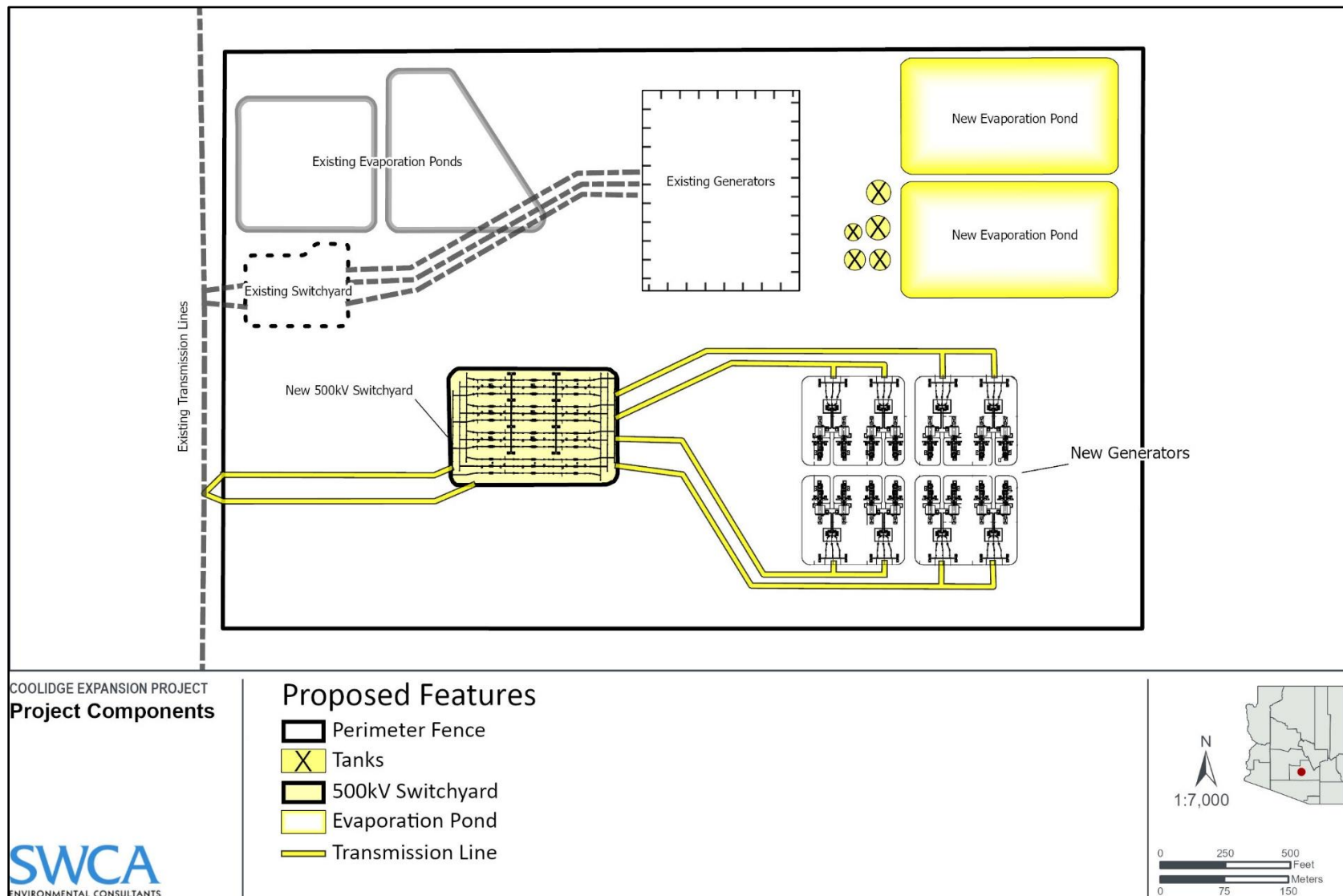


Figure 2. Project components.

Following SRP's Power Committee in August 2021 and subsequently SRP's Board approval of the Project in September 2021, SRP has conducted a robust public outreach and stakeholder engagement process comprised of numerous outreach activities. The outreach process informed the public, public officials representing the region, jurisdictional agencies, key landowners, and stakeholders.

The process included in-person briefings, postcard mailings, social media outreach, a virtual open house, several online and in-person open houses, telephone calls, and emails. The virtual open house has been available on demand 24 hours a day since September 30, 2021. In-person meetings included many briefings with local officials and regional representatives; a public meeting in the community of Randolph on October 16, 2021; and public open houses on November 3, and December 9, 2021. SRP also hosted four live on-line open houses in October.

SRP mailed postcards announcing the Project and providing guidance on how to obtain additional information to landowners within a 7-mile radius of the Project site – over 7,000 mailers in total. SRP sent a second mailing to these landowners informing them of the online and in-person open houses. In addition, SRP used social media to inform the public and stakeholders of the virtual open house, the online live open houses, and the in-person open houses. SRP also advertised the in-person open houses in the *Coolidge Examiner*. Additionally, SRP hosted a toll-free information telephone line and developed a Project website to allow members of the public to obtain information about the Project and provide comments. SRP's public outreach process is described in further detail in Exhibit J.

Summary of Environmental Compatibility

The CEP is located within an area previously planned and zoned by the City of Coolidge for industrial uses. Expanding at an existing site allows access to critical infrastructure including transmission, fuel, and water, eliminating the need to develop or construct new off-site transmission or pipelines reducing environmental impacts.

The following provides a summary of the environmental compatibility of the Project sought in this Application:

- **The Project is consistent with existing plans of this state, local government, and private entities for other developments at or in the vicinity of the proposed site.**
- **No significant or detrimental effects to fish, wildlife, plant life, and associated forms of life upon which they are dependent.**
- **No significant or detrimental effects associated with noise emission levels and interference with communication signals.**
- **Neither SRP nor jurisdictional agencies have any plans for future development of recreational facilities associated with the Project.**
- **Project implementation would be consistent with safety considerations and regulations.**
- **No significant or detrimental effects to existing scenic areas, historic sites and structures, or archaeological sites at or in the vicinity of the Project.**
- **The Project is environmentally compatible with the total environment of the area.**

SRP respectfully requests the Arizona Power Plant and Transmission Line Siting Committee approve, and the Arizona Corporation Commission affirm, the requested CEC for the CEP, which is needed to allow SRP to meet the significant near-term capacity needs in its service territory and provide reliability and fast-ramping power output to facilitate the integration of additional renewable resources.

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