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1.0 EXECUTIVE SUMMARY

1.1 PROJECT PHILOSOPHY

“Puente,” meaning “bridge” in Spanish, was chosen as the name for the Puente Power Project (P3 or project) to signify the role the project would play as a bridge to California’s energy future. California has made great strides transitioning from a system heavily reliant on traditional fossil-fuel-fired generation to one increasingly comprised of renewable generation. This transition is driven by the dual objectives of improving our ambient air quality and reducing the carbon footprint of our electricity generating sector. The owner and developer of P3, NRG Energy Center Oxnard LLC (NRG, Project Owner or Applicant), and its parent company, NRG Energy, Inc., fully embrace these objectives. Affiliates of NRG Energy, Inc., operate 1,190 megawatts (MW) of renewable generation in California. The company is also a leader in advancing low-carbon and zero-carbon technologies across a broad range of applications, including a network of electric-vehicle-charging stations across California.

As new technology is deployed, including large-scale cost-effective electricity storage, California’s ability to rely on renewable energy sources for a greater percentage of its overall electricity needs will increase. Flexible and efficient natural-gas-fired generation, like P3, has and will continue to play a critical role in integrating renewable sources into the grid while ensuring a stable and reliable supply of electricity. Operating on a limited, as-needed basis to ensure reliability, P3 would act as a bridge from our current mix of electrical generation to a future that relies more heavily on renewable sources.

P3 has been designed to minimize environmental impacts to the maximum extent feasible. P3 would be built on a previously disturbed site within the boundaries of an existing power plant—the Mandalay Generating Station (MGS). Not only would this eliminate the need to convert greenfield land to an industrial use, it would allow re-purposing and re-use of existing infrastructure, including water and gas supply pipelines and transmission lines, further reducing the impacts of development on the environment. P3 would also allow for the retirement of the existing MGS Units 1 and 2, replacing this aging generation with efficient, lower-emitting technology.

Addressing climate change includes not only reducing the greenhouse gas emissions intensity of electricity generation, but also adapting to a changing climate. Climate change is expected to contribute to sea-level rise (SLR), the frequency and intensity of weather-related events, and shifting coastlines. NRG has planned for those potential impacts in the design of P3, allowing for use of the existing industrial coastal site, while ensuring that P3 would be a reliable source of electricity for the region.

1.2 PROJECT LOCATION

P3 would be developed on approximately 3 acres of previously disturbed vacant brownfield land within the existing boundaries of MGS on Assessor’s Parcel Number 183-0-022-025. The project site (Figure 1-1) is in the Rio De Santa Clara Spanish Land Grant Sections inferred as 35 and 36, Township 2 North, Range 23 West, on the U.S. Geological Survey Oxnard/Oxnard OE Topographic Map Quadrangles (Latitude: 34.207115; Longitude: 119.250000). To minimize environmental impacts, existing ancillary systems would be upgraded and re-purposed to serve P3 to the extent feasible. No offsite linear developments are currently proposed as part of the project.

The California Independent System Operator (CAISO) has recognized the importance of the existing MGS location in providing energy and contingency reserve for the Moorpark Sub-Area of the Big Creek/Ventura Local Reliability Area. Specifically, this location provides essential electrical service to the existing Southern California Edison (SCE) switchyard through a dedicated 220-kilovolt (kV) transmission line connection. P3 would ensure the long-term viability of this existing critical generating location and would provide essential electrical service to the residents of Ventura County and the City of Oxnard.

1.3 PROJECT OVERVIEW

P3 is a nominal 262-MW generating facility consisting of a new General Electric (GE) Frame 7HA.01 single-fuel combustion turbine generator (CTG) and associated auxiliaries.

The generator output from P3 would be stepped-up to 220-kV transmission voltage from the GE 7HA.01 CTG operating in simple-cycle mode. The power block would provide peaking power and is expected to operate at up to approximately 30 percent capacity factor. Full-load output of the unit under expected operating and ambient (temperature/relative humidity) conditions would range from approximately 241 net MW to a peak of 271 net MW.

The new generating unit would tie into the existing SCE Switchyard, using one of the breaker positions that would be vacated when MGS Units 1 and 2 are removed from service. Natural gas would be delivered via an existing Southern California Gas 30-inch-diameter line. As part of the project, a new gas metering station and new gas compressor station would be constructed. Potable process water and domestic water would be provided by the City of Oxnard, delivered via an existing water line and connection on the MGS property.

The project would use dry-cooling technology, which eliminates the large water supply required by wet-cooled power generating projects. Total estimated annual water use for P3's process and service water needs is expected to be approximately 16 acre-feet per year (AFY), most of which is for the inlet air evaporative coolers that are used for power augmentation. Estimated annual domestic water use is expected to be the same as for MGS, or approximately 3 AFY.

Process wastewater would be stored in one of the existing MGS retention basins, and ultimately discharged to the ocean via the existing outfall. Stormwater also would be directed to one of the existing MGS retention basins, where the water would be reused onsite for industrial purposes (i.e., evaporative cooling for the P3 unit), and/or irrigation purposes to the extent feasible and practical. Surplus stormwater would be discharged to the ocean via the existing outfall. Discharge flows would substantially decrease, as compared to existing operating conditions for Units 1 and 2, due to decreased plant water use for P3.

Sanitary wastewater would continue to be discharged to the existing MGS septic system.

Construction of P3 would be expected to occur over a 21-month period (from October 2018 through June 2020). Construction would be expected to cost approximately \$235 to \$270 million (in 2015 dollars). Commercial operation of P3 would be expected by June 2020.

Figure 1-2 shows a visual simulation of the site after construction of P3. A detailed Project Description is included in Chapter 2.

1.4 PROJECT OBJECTIVES

SCE issued the 2013 Local Capacity Requirements Request for Offers for the Moorpark Sub-Area (Track 1) in September 2013. SCE wished to procure between 215 and 290 MW of electrical capacity in the Moorpark Sub-Area of the Big Creek/Ventura local reliability area to meet long-term local capacity requirements by 2021.

In November 2014, the Applicant was awarded a contract with SCE to replace MGS Units 1 and 2 with 262 MW (nominal net) of state-of-the-art, more flexible and efficient natural gas generation at the site of the existing MGS facility. The Applicant has entered into a 20-year Resource Adequacy Purchase Agreement (RAPA) with SCE. P3 has been designed to ensure continued reliability, and to help integrate renewable energy into the grid.

NRG has identified several basic objectives for the development of P3:

- Fulfill NRG's obligations under its 20-year RAPA with SCE requiring development of a 262-MW nominal net output of newer, more flexible and efficient natural-gas generation at the site of the existing MGS;
- Provide an efficient, reliable, and predictable power supply by using a simple-cycle, natural-gas-fired combustion turbine to replace the existing once-through cooling (OTC) generation;
- Support the local capacity requirements of the CAISO Big Creek/Ventura Local Capacity Reliability area;
- Develop a 262-MW nominal net power-generating plant that provides efficient operational flexibility with rapid-start and fast-ramping capability to allow for efficient integration of renewable energy sources in the California electrical grid;
- Be designed, permitted, built, and commissioned by June 1, 2020;
- Minimize environmental impacts and development costs by developing on an existing brownfield site and reusing existing transmission, water, wastewater, and natural-gas infrastructure;
- Site the project on property that has an industrial land use designation with consistent zoning; and
- Safely produce electricity without creating significant environmental impacts.

1.5 PROJECT BENEFITS

P3 would provide the following benefits:

- Improve the reliability of California's electrical grid by generating a nominal 262 MW of new, state-of-the-art electricity—enough electricity to power over 130,000 homes.
- Provide quick-start peaking electric generation capacity to meet peak demand and resource adequacy requirements.
- Provide flexible capacity to help reliably integrate additional renewable sources of electricity.
- Provide local jobs to an estimated 90 construction workers at peak construction. Estimated total construction payroll is expected to be \$16 million, with approximately 90 percent of the construction workforce expected to reside in Ventura and Los Angeles counties.
- Provide annual property tax revenue of approximately \$2.8 million.
- Provide annual sales tax paid during operations of approximately \$32,000 to the City of Oxnard, \$37,500 to Ventura County, and \$99,000 to Los Angeles County.
- Provide estimated total sales tax paid during construction of approximately \$1.0 million to the City of Oxnard, \$1.2 million to Ventura County, and \$3.2 million to Los Angeles County.
- Provide a one-time Developer Fee payment to the Oxnard School District; based on the estimated 600 square feet for the new control room and the 4,000-square-foot area of the administrative building, the one-time Project Developer Fee is estimated to be \$2,484.

- Replace aging generating technology with state-of-the-art efficient technology, resulting in lower criteria pollutant and greenhouse gas emissions per MW.
- Repurpose existing infrastructure to minimize environmental impacts; and to the extent possible, update existing office, maintenance, and warehouse facilities to achieve LEED certification
- Use air cooling, which would result in a 50 to 80 percent reduction in potable water use compared to the existing MGS (19 AFY compared to 40 to 90 AFY).

1.6 EXISTING SETTING

MGS is an existing natural-gas-fired steam electric-generating facility owned by NRG California South LP, in the City of Oxnard, Ventura County, California (Figure 1-1). MGS consists of two conventional steam turbine units (Units 1 and 2) and one gas combustion turbine unit (Unit 3).

MGS Units 1 and 2 were constructed in the 1950s, and have a combined generating capacity of 430 MW. Cooling water for Units 1 and 2 is ocean water conveyed via the 2.5-mile-long Edison Canal from the Channel Islands Harbor (also referred to as the Mandalay Canal). The generating station intake is in the Edison Canal. At maximum capacity, MGS withdraws up to 254 million gallons per day. On an annual basis, MGS withdraws substantially less than its design capacity, due to its low generating capacity use (3.9 percent average capacity factor for years 2010 to 2014). MGS discharges up to 255.3 million gallons per day of wastewater, consisting of once-through cooling water and other process wastewaters into the Pacific Ocean via a concrete-and-rock revetted structure at a point immediately offshore of the facility. MGS discharges its wastewater in compliance with its National Pollutant Discharge Elimination System (NPDES) permit for withdrawal and discharge (LARWQCB, 2001).

MGS Units 1 and 2 are subject to the California State Water Resources Control Board's OTC Policy. Irrespective of the proposed development of P3, the cooling system for MGS Units 1 and 2 must be modified to comply with the OTC Policy compliance date of December 31, 2020. If P3 is approved and developed, MGS Units 1 and 2 would be retired, although not necessarily demolished, by the completion of commissioning of P3.

MGS Unit 3 is a jet-engine-powered unit that was commissioned in 1970, and has a generating capacity of approximately 130 MW. Unit 3 would continue to operate and would not be affected by P3.

1.7 PROJECT SCOPE

Development of P3 would include activities associated with the removal of certain existing MGS ancillary facilities, construction of new facilities, repurposing of various existing MGS facilities, and decommissioning of MGS Units 1 and 2. The elements for each phase are summarized below.

1.7.1 Removal Activities

Certain existing ancillary facilities would be removed to accommodate development of P3. Approximately 500 linear feet of the abandoned aboveground 10-inch-diameter fuel oil pipeline south of MGS Unit 2 near the water storage tanks would be removed to make room for auxiliary equipment for P3.

If required, the existing 10-inch and 30-inch underground gas lines serving MGS Unit 3, and Units 1 and 2, respectively, may need to be relocated prior to the start of construction. These two gas lines currently run through the proposed project site.

1.7.2 Construction Activities

The following major new facilities would be constructed for P3:

- One natural-gas-fired GE 7HA.01 CTG equipped with ultra-low oxides of nitrogen (NO_x) combustors and inlet air evaporative cooler, an air-cooled heat exchanger, and associated auxiliary systems and equipment;
- Natural-gas compressor;
- One approximately 188-foot-tall stack equipped with continuous-emissions-monitoring systems;
- New 10-inch-diameter gas line to the new P3 gas-metering station; length of pipe is approximately 500 feet;
- New 3-inch-diameter water line to the existing MGS demineralized-water storage tanks; length of pipe is approximately 1,450 feet;
- New 3-inch-diameter water line to the existing MGS service-water storage tank; length of pipe is approximately 1,440 feet;
- New 2-inch-diameter water line to the existing MGS domestic-water-supply tie-in; length of pipe is approximately 630 feet;
- New 1-inch-diameter ammonia line to the existing MGS ammonia tank; length of pipe is approximately 550 feet;
- Single-circuit 220-kV transmission lines from the new generator to SCE's adjacent switchyard; includes four new 100-foot-tall poles;
- New underground fire loop that would be fed from the existing MGS fire system;
- New stormwater collection and conveyance system with connection to the existing MGS basins;
- Process-wastewater conveyance system to the existing MGS basins; and
- New backup diesel generator.

1.7.3 MGS Facilities to Be Repurposed or Reused

The proposed project would reuse or repurpose several of the existing MGS auxiliary facilities. The major MGS equipment and features proposed for reused by P3 are listed below:

- The existing MGS potable water and demineralized water/reverse osmosis equipment, storage tanks (i.e., the existing Service Water Tank and the two Demineralized Water Tanks), and systems would be retained and used as the source for evaporative cooling water and service water for P3.
- The existing MGS electrical firewater pumps at the existing Service Water Tank would be retained, and used to service the new facility.
- The existing ammonia receiving and storage system and tank would be retained and reused.
- A portion of the existing MGS warehouse would be reconfigured to add a control room for the new plant, including all required heating, ventilation, and air conditioning modifications.

- The existing MGS administration building would continue to be used as the administration building for the new P3 facility and the existing MGS Unit 3. Upgrades are likely to include new wall and roof insulation, new windows, new low-flow plumbing fixtures, new electrical lighting, and new heating, ventilation, and air conditioning units.
- The existing MGS basins would be used to retain P3 process wastewater and stormwater runoff.
- The existing outfall structure would be used for discharge of process wastewater and stormwater to the ocean. Discharges would comply with the provisions set forth in the existing MGS NPDES Permit Number CA0001180.
- The existing MGS septic system would continue to be used.

1.7.4 Decommissioning

MGS Units 1 and 2 would be retired by the completion of commissioning of P3. The existing MGS backup-diesel generator, located near the warehouse building, would also be retired. Demolition of MGS Units 1 and 2 is not needed to accommodate development of P3.

Decommissioning of the retired facilities would consist of the following activities:

- De-energize electrical equipment;
- Purge gases from equipment (e.g., natural gas, hydrogen);
- Remove oil from all pumps, motors, pipes, oil reservoirs, transformers, and other equipment;
- Electrically isolate equipment;
- Physically isolate equipment by disconnecting from piping systems or other means;
- Operate and maintain equipment as required for environmental permit compliance (e.g., storm drainage system);
- Remove from service the backup diesel generator; and
- Verify that all facilities are left in a safe condition.

As discussed above in Section 1.6, the OTC Policy would require modification of the cooling system for MGS Units 1 and 2 to reduce entrainment and impingement mortality impacts in accordance with the OTC Policy, irrespective of the proposed development of P3. Therefore, any impacts associated with modification or elimination of the existing cooling system are the direct result of the OTC Policy, and not a consequence of the development of P3.

1.8 PROJECT OPERATIONS

Power produced by P3 would be sold into the wholesale energy market and serve electricity demand in Southern California. Peak-load operation would most likely occur during summer on-peak hours, and minimum-load operation during off-peak hours. The P3 design provides for a wide range of operating flexibility (i.e., an ability to start up quickly and operate efficiently during operating modes). Shutdown periods for annual maintenance would be scheduled during extended periods of low demand, which typically occur in the autumn or spring.

An ultra-dry low-NO_x combustor system would be used to control the NO_x concentration exiting the CTG. As an additional post-combustion NO_x control system, a selective catalytic reduction (SCR) system, would be installed downstream of the gas turbine to further reduce the NO_x emissions. The SCR system would inject an aqueous ammonia solution into the exhaust gas stream upstream of a catalyst bed to reduce the NO_x to inert nitrogen and water. Dilution air fans would temper flue gas temperatures to meet SCR catalyst temperature requirements. An oxidation catalyst system would also be incorporated into the air quality control system to control emissions of carbon monoxide (CO) and volatile organic compounds.

1.9 PROJECT SCHEDULE

Construction would begin approximately in autumn 2018. Commercial operation of P3 is expected by June 2020. Decommissioning of Units 1 and 2 would follow, and completion would be anticipated by the end of 2020.

1.10 PROJECT ENVIRONMENTAL FACTORS

Impacts that the project could have on the environment have been evaluated in detail. The project would avoid or minimize potential environmental impacts through project siting and design, and through incorporation of mitigation measures. As a result, the project would not have any significant environmental impacts. The impact evaluations are summarized below and provided in detail in Chapter 4.0.

1.10.1 Air Quality

The proposed P3 consists of replacing the existing MGS Units 1 and 2 (1 990 million British thermal units per hour [MMBtu/hr] each, 215-MW net each, natural-gas-fired boilers) with a new natural-gas-fired H Class simple-cycle CTG (approximately 2,500 MMBtu/hr, 262 MW net nominal), replacing the existing diesel emergency generator engine with a new emergency diesel generator, and shutting down the existing diesel emergency fire pump engine. With the exception of certain existing equipment that would be repurposed for P3, the remainder of the emission-generating equipment at the facility would remain unchanged, including one natural-gas-fired peaker combustion turbine (MGS Unit 3) and ancillary facilities.

Under Rule 26.9, the Ventura County Air Pollution Control District (VCAPD) regulates the construction and operation of new and modified power plants. As part of the application review process, the VCAPD District will conduct a Determination of Compliance (DOC) review. Although the VCAPD considers the Application for Certification (AFC) to be equivalent to an application for an Authority to Construct (ATC), a separate application package for a DOC/ATC was submitted to the VCAPD on March 13, 2015. The DOC review will consist of a review identical to that which would be performed if an application for an ATC had been received for a power plant, and will confirm that the project will meet all applicable air quality rules and regulations.

Construction of the proposed project is scheduled to occur over a 21-month period. The construction/decommissioning emission estimates include emissions from vehicle and equipment exhaust, and fugitive dust generated from material handling and paved/unpaved road travel. A dispersion modeling analysis and a screening health risk assessment were conducted based on these emissions. A variety of construction mitigation measures are available to control exhaust emissions from the diesel heavy equipment, and the potential emissions of fugitive dust during construction activities. These include, but are not limited to, reducing speed to 15 miles per hour in the construction site; applying water to prevent dust plumes; gravel ramps and tire-washing/cleaning stations; covering soil storage piles; cleaning paved roads in the construction site; and applying wind-erosion-control techniques. Results of the analyses

indicate that with mitigation, emissions during construction would meet laws, ordinances, regulations, and standards (LORS), and impacts due to project construction would be less than significant.

The new CTG will be equipped with dry low-NO_x combustors and a SCR system for NO_x control, and an oxidation catalyst will be used to reduce CO emissions. Particulates less than or equal to 10 microns in diameter (PM₁₀), sulfur oxides (SO_x), and reactive organic compounds (ROCs) emissions will be minimized through the use of natural gas as the fuel. Emission control systems will operate at all times except during commissioning, startups and shutdowns.

The project would not have a significant adverse impact on air quality. The proposed project would result in a reduction in the facility-wide Potential to Emit to below 15 tons/year for PM₁₀. There would be no emissions increase for ROC or SO_x. There would be an increase in emissions of NO_x that will be fully offset by providing emission reductions from emission reduction credits controlled by the Applicant. The appropriate number of NO_x emission offset credits will be surrendered to the VCAPCD prior to issuance of the final ATC.

1.10.2 Biological Resources

Biological impacts have been minimized by siting proposed facilities in an existing power plant facility with limited biological resources present. Construction of the project would result in the removal of existing vegetation in the P3 site. The existing vegetation is disturbed and provides limited value for wildlife. One special-status species, woolly seablite, has been documented in the project site, and approximately 1,100 individuals would be removed during construction. Because this species is of relatively low sensitivity, and because the occurrence to be affected is of small size and in a highly disturbed setting, this impact would not be significant.

Near the project site, snowy plovers and California least terns could be affected by construction noise—particularly when noise levels reach levels higher than the ambient noise levels—and at sudden loud noises. Effects are unlikely, but could include temporary or permanent nest abandonment, decreased reproductive success, and even mortality. Predicted sound levels during construction at potential bird-nesting areas west and northwest of the site, 1 foot above the ground surface, would range between 46 and 69 A-weighted decibels (dBA), depending on wind conditions and the month of construction. Based on reviewed literature, dBA levels of 69 would not be an issue for nesting western snowy plovers, and likely would not be a serious issue for nesting California least terns. Avoidance and minimization measures outlined in Section 4.2.4 will be used as needed during the nesting season to ensure that construction-related noise does not result in nest failure in adjacent areas. Therefore, impacts would be less than significant. Operation of P3 would not result in noise levels substantially different from those existing currently; therefore, impacts associated with noise during project operation would be less than significant.

1.10.3 Cultural Resources

The cultural resources inventory efforts completed for the project included a literature review and records search, archival research, review of collected data, consultations with the Native American Heritage Commission (NAHC), contact with all groups and individuals identified by the NAHC, and pedestrian surveys. Pedestrian surveys were performed for both archaeological and historic architectural resources of each cultural resource sub-discipline's Project Area of Analysis (PAA). Site-specific surveys conducted for the proposed project, including laydown areas, did not identify significant archaeological or built-environment resources. No significant cultural resources were identified in either the archaeological or historic architectural PAA defined for the P3 project.

Although no evidence of archaeological resources was identified in the archaeological PAA defined for P3, and the site has been previously disturbed, it is nonetheless possible that with project implementation, previously undiscovered archaeological resources could be inadvertently exposed during construction

activities. Unless properly evaluated and managed, this could result in a significant impact to cultural resources. Therefore, the mitigation measures proposed by the Applicant are focused on the inadvertent discovery of buried archaeological resources during project implementation. Impacts would be less than significant with implementation of the mitigation measures identified in Section 4.3.4.

None of the built environment resources surveyed meet the criteria for listing in the California Register of Historical Resources, and none are historical resources for the purposes of the California Environmental Quality Act (CEQA). Therefore, the proposed project would have no impact on historic architectural resources.

1.10.4 Geologic Hazards and Resources

P3 is in the Oxnard Plain, a broad, low-lying coastal plain composed of unconsolidated alluvium consisting of stream deposits. The site is in a seismically active area, as is the majority of southern California. There are no faults beneath the project site; the closest faults are the McGrath and Oak Ridge fault zones, which are approximately 2 miles to the northwest. The Applicant conducted a geotechnical investigation to evaluate potential geologic hazards; the investigation considered ground rupture, seismic shaking, liquefaction, depth to groundwater, subsidence, slope stability, and expansive soils. Based on the investigations, impacts to the site by either of these geologic hazards would not be considered significant. P3 foundation design would incorporate mitigation measures to reduce impacts from seismic shaking and liquefaction. Furthermore, no geologic or soil-related impacts would be anticipated from the construction or operation of P3.

The Geology section also included an analysis of tsunami wave run-up; tsunami may result from submarine fault movement caused by an earthquake or a landslide. The project site is adjacent to a State of California Tsunami Inundation Area mapped for susceptibility to tsunami run-up hazard (California Emergency Management Agency, 2009). The tsunami threat in Ventura County is mainly confined to immediate beach areas and river mouths. The effects of structures and topography may locally affect the inland extent of the tsunami run-up (County of Ventura, 2011). In the vicinity of P3, the potential tsunami inundation area is along Mandalay Beach on the western side of the dunes that border the western side of the MGS property. The dunes are elevated up to approximately 20 to 30 feet mean lower low water (MLLW), and offer adequate protection to the site from tsunami run-up.

1.10.5 Hazardous Materials Handling

Minimal storage of hazardous materials would occur on site. Hazardous materials would include aqueous ammonia for the SCR system; various water additives and water-treatment chemicals, including acids and caustics; and various cleaning chemicals. P3 would repurpose the existing ammonia storage tank and secondary containment that serves Units 1 and 2; P3 would use 19 percent aqueous ammonia, as compared to the current 29 percent aqueous ammonia that MGS uses. Equipment and containers would be located inside containment berms, and incompatible materials would be stored in separate containment areas. Areas susceptible to potential leaks or spills would be paved and bermed. Piping and tanks would be protected from potential traffic hazards by concrete and/or steel barriers. The P3 will implement accident prevention and mitigation measures to reduce the risk associated with the use and storage of hazardous materials. Analyses of public health impacts associated with a hypothetical release of ammonia indicate that the predicted worst-case scenarios would not result in a predicted impact exceeding any of the toxic endpoint concentrations at the nearest offsite receptor locations. Therefore, the potential impacts of these release scenarios would be less than significant.

1.10.6 Land Use and Agriculture

The proposed project is in an existing industrial facility in the portion of the City of Oxnard designated for heavy industrial use. The existing MGS facility, of which the P3 project site is a portion, has been in

operation for over 60 years. The MGS site and proposed project are in an industrial area that includes SCE-owned power generation and transmission facilities, and oil drilling and processing operations. The proposed project is also compatible with surrounding nonindustrial uses.

The project is compatible with the land use designations and zoning, and with applicable land use plans and policies. The P3 site has a General Plan land use designation of Public Utility/Energy Facility. The P3 site is in the City of Oxnard's Coastal Zone. The city considers the Coastal Zone the primary zone, and has established sub-zoning designations for land in the Coastal Zone. The P3 site has a sub-zoning designation of EC. The purpose of the EC sub-zone is to provide areas that allow for siting, construction, modification, and maintenance of power-generating facilities and electrical substations.

On July 1, 2014, the City of Oxnard City Council adopted an interim urgency ordinance imposing a moratorium on certain developments in the Coastal Zone, pending the City's update to its Local Coastal Plan (LCP). The ordinance imposes a temporary moratorium on the approval of any special use permit, coastal development permit, or any other discretionary City permit or approval for the construction, expansion, replacement, modification, or alteration of any facilities for the onsite generation of electricity on any property in the Oxnard Coastal Zone until the City can update its LCP. The moratorium is currently set to expire on June 30, 2015. The City has also proposed updating its LCP in ways that may be incompatible with the proposed project. At this time, it is not clear what the status of the moratorium or the LCP update will be when this AFC comes before the California Energy Commission (CEC) for a decision. At that time, if the moratorium has been extended and remains in place, or if the LCP has been updated and certified in a manner that is inconsistent with development of the P3 project, the Applicant will seek a finding of overriding considerations from the CEC.

Because the proposed project is consistent with all current land use designations and policies, and is compatible with surrounding uses, land use impacts would be less than significant.

1.10.7 Noise

The overall noise level would vary during the 21-month construction period, depending on the phasing and concurrence of different construction activities and their general locations or zones in the project construction area. The majority of construction operations are expected to take place between 7:00 a.m. and 6:00 p.m., 5 days per week. Construction noise would temporarily elevate the noise levels in the surrounding areas. The sound levels mostly would be moderate, with a few processes causing short-term, substantially elevated noise levels to occur.

Modeling results indicate that during construction, no significant impacts would be expected at any of the representative noise-sensitive receptors. Even during pile-driving, impacts would still not be significant.

No significant impacts are anticipated when P3 is operating. Modeling results indicate that the predicted sound levels would not exceed the 55-dBA hourly L50 during the daytime hours (7 a.m. to 10 p.m.) or the 50-dBA hourly L50 during the nighttime hours (10 p.m. to 7 a.m.) at the closest existing residence (Oxnard Shores Mobile Home Park) and closest future residence (North Shore at Mandalay Bay), as established by the City of Oxnard.

P3 would use a noise "hotline" to receive project-related complaints during construction and operations. The Project Owner in connection with the CEC Compliance Project Manager would investigate each complaint and develop a complaint resolution if/where applicable.

1.10.8 Paleontological Resources

Literature and archival reviews, as well as pedestrian surveys, did not provide evidence that any paleontological resources would be affected by the construction or operation of the P3. The project site

and laydown areas have been previously disturbed, and the original sedimentary unit has a low sensitivity for paleontological resources. Nevertheless, in the event that paleontological resources are encountered during construction, the Applicant proposes mitigation measures that will be implemented to avoid and/or reduce project-related impacts to paleontological resources to less-than-significant levels.

1.10.9 Public Health

Because project construction would be of short duration, significant long-term public health effects would not be expected to occur as a result of construction. During operation, the proposed project would be fueled with clean-burning natural gas to minimize potential toxic air emissions.

The maximum potential acute noncancer health hazard index associated with operation of the proposed project falls below 1.0, the CEC threshold of significance. Similarly, the maximum potential chronic and 8-hour chronic noncancer health hazard indices associated with operation of the proposed project are below 1.0, the CEC threshold of significance. Furthermore, the maximum potential cancer risk is below 10 in 1 million, the CEC threshold of significance. Based on this evaluation, using conservative assumptions, P3 emissions are expected to pose no significant cancer or noncancer health effects. As demonstrated by the air quality analysis, criteria pollutant emissions from the P3 would not cause or contribute to violations of federal or state ambient air quality standards, which have been set at levels designed to protect public health. No significant adverse health effects from criteria pollutant emissions are anticipated.

With respect to Valley Fever, spores may be spread as a result of dust emissions; therefore, to minimize potential risk during grading or disturbance of soils, a variety of dust mitigation measures will be in place during the construction of the project. With implementation of best management practices (BMPs) during construction, no significant adverse health effects due to Valley Fever are anticipated.

1.10.10 Socioeconomics

The project's potential impacts on socioeconomics (direct, indirect, and induced effects) and analysis related to environmental justice are summarized below.

1.10.10.1 Direct Effects

The average size of the workforce over the 21-month construction period would be 45 workers (including construction workers and contractor staff). Peak construction employment would be approximately 90 workers. The majority of the workforce (approximately 90 percent) is expected to be hired from Ventura and Los Angeles counties.

The total cost of materials and supplies (excluding major equipment, such as the CTG) required for the project during construction is estimated at \$179 million. For the purpose of this analysis, the estimated value of materials and supplies that are assumed to be purchased locally in the Ventura and Los Angeles county areas (i.e., study area) during the construction phase is \$64.6 million, and was determined based on locations where supplies and materials would reasonably be expected to be purchased.

The project would provide approximately \$16 million in construction payroll, including benefits, over the project's 21-month construction timeframe. Based on the available regional workforce in the Ventura and Los Angeles county areas, it is conservatively assumed that 90 percent of the construction workforce would reside in the two-county areas, resulting in approximately \$14.40 million in local payroll during the project construction period. These additional funds would result in a temporary beneficial impact by creating the potential for other employment opportunities for workers in other service areas in Ventura and Los Angeles counties, such as transportation and retail. The anticipated purchase of materials and supplies and payroll for employees during construction would have a beneficial temporary impact in the

Ventura and Los Angeles county areas. No significant adverse impacts are expected to result related to the local economy and employment.

1.10.10.2 Indirect and Induced Effects

The labor income and materials spending related to the project would represent a permanent economic benefit to Ventura and Los Angeles counties.

During construction, the estimated indirect and induced employment in the study area would be 115 and 84 jobs, respectively. These additional jobs result from the approximately \$37 million in annual local construction expenditures and the \$6 million in annual spending by local construction workers. The \$6 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$14 million, annualized). Indirect and induced income impacts associated with the project construction were estimated at approximately \$7 million and \$4 million, respectively.

The local fire protection, emergency response, and law enforcement systems are adequately staffed and equipped to serve the additional population associated with project construction and operation. Consequently, construction and operation impacts would be expected to be less than significant on public services.

With implementation of project design features, the project would not result in significant adverse impacts on socioeconomics. The project would have a positive impact on fiscal resources in the local community and region.

1.10.10.3 Environmental Justice

Based on a review of U.S. Census data, no minority or poverty populations occur in the study area that: 1) exceed the 50 percent threshold in the study area for environmental justice analysis; and 2) are considered meaningfully greater than the project region. Furthermore, the proposed project would not result in potential environmental impacts having the likelihood of impacting populations more susceptible to pollution, environmental degradation, and transportation. The project is designed to employ state-of-the-art environmental controls and would employ mitigation measures to reduce any potential impacts to a less-than-significant level. Consequently, no significant and adverse impacts would occur that would result in disproportionately high and adverse impacts on minority or low-income populations.

1.10.10.4 Taxes and Development Fees

During project construction, local commodity expenditures are expected to be approximately \$64.6 million, and would occur in the City of Oxnard, Ventura County (outside of the City of Oxnard), and Los Angeles County. The project sales tax and allocations resulting from local expenditures are expected to be \$1.0 million to the City of Oxnard (total sales/use tax rate of 8 percent), \$1.2 million to Ventura County, and \$3.2 million to Los Angeles County.

During project operation, local commodity expenditures are expected to be approximately \$2 million (2014 dollars) annually. Total annual sales tax paid are anticipated to be \$32,000 to the City of Oxnard, \$37,500 to Ventura County (outside of Oxnard), and \$99,000 to Los Angeles County (based on 2014 dollars).

In accordance with California Government Code 65995, the Oxnard School District assesses a Developer Fee on new commercial and industrial construction at \$0.54 per square foot of new, chargeable, covered, and enclosed space, in order to fund expanded or new school facilities. Based on the estimated 600 square feet for the new control room and the 4,000-square-foot area of the administrative building, the one-time Project Developer Fee would be estimated to be \$2,484.

1.10.11 Soils

The proposed project would be built in an existing industrial facility. The erosion characteristics of the soil types on the project site range from slight to moderate. With BMPs incorporated into the project, impacts from soil erosion would be less than significant.

There are no existing, permitted, or planned agricultural uses in or contiguous to the project site; therefore, the project would not result in impacts on soils considered prime farmland. Given the use of air emission control technology equipment and the absence of ultramafic bedrock and associated soils in the project area, the potential effects of emissions on soil vegetation systems are considered to be less than significant.

1.10.12 Traffic and Transportation

Primary access to the project site during construction would be from Highway 101, Victoria Avenue, Gonzales Road, and North Harbor Boulevard. During the peak construction month in May 2019, there would be an estimated 90 workers traveling to the project site. Weekday traffic during peak hours was evaluated for the local roadway network adjacent to the project during construction. The construction schedule has been estimated on a single-shift, 10-hour-per-day, and 50-hour-per-week basis. The analysis of construction traffic assumed that approximately 10 percent of the workers would arrive during the morning peak period (7 a.m. to 9 a.m.), and approximately 60 percent of the workers would leave the site during the evening peak period (between 4 p.m. and 6 p.m.) after a 10-hour work schedule. In the interest of completeness, the traffic analysis for P3 was done using both an existing conditions baseline and a future baseline.

For Existing Baseline (2015) Plus Project Conditions, the addition of project construction traffic is not anticipated to degrade the level of service (LOS) along the study roadway segments or at the three signalized intersections (Victoria Avenue/Gonzales Road, Gonzales Road/North Harbor Boulevard, and North Harbor Boulevard/West 5th Street) to unacceptable levels. Only the unsignalized North Harbor Boulevard/MGS Entrance could experience deterioration in LOS during the morning peak period, and a slightly increased delay of exiting the site during the evening peak period. The incremental addition and short-term nature of the project-added construction trips does not impact or burden the general public traffic, because North Harbor Boulevard is operating uncontrolled; therefore, the worst-case LOS at the private MGS driveway is solely attributed to the project by itself, and the Applicant will accept the consequences of incremental delay and associated wait time to exit, and wait for gaps in traffic to transition to Harbor Boulevard. This occurs only as a short-term inconvenience during the peak months of the construction period, rather than a long-term project impact. As mitigation, the project will prepare and implement a Traffic Control Plan during construction to minimize these impacts to workers and traffic along Harbor Boulevard.

For the Future Baseline (2019) plus Project Conditions, the addition of project construction traffic is not anticipated to degrade the LOS of intersections or roadway segments to unacceptable levels. Therefore, under these conditions, the addition of the project traffic during construction of the project would not have significant impacts at the study intersections or roadway segments.

The project would use existing MGS staff during plant operations. Because there would be no change in staff, and only a very small increase in operation-related trips, the proposed plant operations would not change the LOS of the roads and intersections in the study area. Therefore, no significant traffic impacts during project operations are anticipated. In addition, traffic from project operations would not impede or obstruct existing emergency access.

With implementation of the proposed mitigation measures (i.e., prepare and implement a Traffic Control Plan during construction), project-related impacts to traffic and transportation would be avoided and/or reduced to less-than-significant levels.

1.10.13 Visual Resources

The proposed project would be sited within existing industrial uses. Project features designed to reduce visual impacts include colors chosen to blend with the surroundings; use of nonreflective materials; and shielded and controlled lighting using high-pressure sodium vapor fixtures.

In general, short-term construction impacts are not expected to lead to greater visual impacts than those of project operation, and are not expected to lead to significant impacts due to their temporary nature. Five Key Observation Points (KOP) were selected, in consultation with CEC staff, and evaluated to represent a range of views of the project site. All five KOPs received a View Landscape Inventory Ranking of Low to Moderate.

The impact assessment followed the CEC's 2015 Methodology for Visual Impact Assessment contained in Draft Appendix VR 1 (CEC, 2015). Levels of potential visual impact to resources in the visual sphere of influence were interpreted based on individual characteristics of each of the five KOPs evaluated. The existing condition, or Landscape View Inventory for each KOP, was compared to the Project Prominence ranking and the Visual Absorption Capability (VAC) of the existing environment. Together, the Project Prominence and the VAC collectively determine the potential for a project to alter the visual character of the Visual Sphere of Influence. Simulations were used to determine the level of potential impact. For all five KOPs, the overall Project Prominence would have a moderate degree of "prominence," but would not substantially contrast with the existing visual character. Combined with the high VAC of each, development of the proposed P3 facility would have less-than-significant impacts to existing measures of visual character and quality of the site and its surroundings.

1.10.14 Waste Management

Wastes generated by P3 during construction and operation of the facility would be recycled to the extent practicable. Wastes would include nonhazardous solid and liquid wastes (e.g., scrap metal and sanitary waste), as well as hazardous solid and liquid wastes (e.g., spent SCR and oxidation catalyst and waste lubrication oil). A Soil Management Plan has been prepared and would be implemented to provide guidance for the proper identification, handling, onsite management, and disposal of impacted soil or groundwater that may be encountered during construction activities (ground disturbance). Appropriate procedures and personnel training would provide assurance that nonhazardous and hazardous wastes are properly handled and do not significantly affect the environment or health and safety.

Disposal of nonhazardous waste from the plant would not significantly impact the capacity of the Class II and III waste disposal facilities identified as available for use by the project. Similarly, hazardous waste generation and disposal from the P3 would be minimized by recycling, and would not significantly impact the capacity of Class I hazardous waste disposal facilities identified as available for use by the project.

1.10.15 Water Resources

The project's impacts to water resources are summarized below.

1.10.15.1 Water Supply

P3 would use potable water provided by the City of Oxnard for process water and domestic water needs. The project would use dry-cooling technology, which eliminates the large water supply required by wet-

cooled power generation projects. Recycled water is not currently available. Total estimated annual water use for P3's process and service water needs is expected to be approximately 16 AFY, most of which is for the inlet air evaporative coolers that are used for power augmentation. Estimated annual domestic water use is expected to be the same as currently used for MGS, or approximately 3 AFY.

P3's use of less than 20 AFY would be less than 0.1 percent of the total amount of potable water that the City distributes to its customers. With the retirement of MGS Units 1 and 2, the proposed project would result in a net reduction of approximately 18 to 68 AFY of potable water use when compared to the historical amount of potable water used by MGS over the past 5 years (38 to 69 AFY). This reduction in water use would provide additional water supply for other beneficial users served by the City of Oxnard.

Therefore, the impact on potable water supply or other users of this source would be considered less than significant, and a benefit to the region.

1.10.15.2 Wastewater Discharge and Water Quality

Stormwater runoff would be collected and reused to the extent practicable to offset potable water usage. Surplus stormwater would be discharged to the ocean as it currently does. Process wastewater would be stored in the existing MGS retention basins, and ultimately discharged to the ocean via the existing outfall. Discharge flows would substantially decrease, with a similarly proportional decrease in pollutant loading, compared to existing conditions due to decreased plant water use. All discharges would meet ocean discharge standards. Stormwater and process wastewater would be discharged to the ocean in accordance with the MGS NPDES Permit Number CA0001180, similar to current MGS operations.

The project is in the unsewered portion of the City of Oxnard; therefore, sanitary wastewater would continue to be discharged to the existing MGS septic system, in accordance with the existing MGS waste discharge requirements. During construction, portable toilets would be used to accommodate the construction workforce, estimated to be a maximum of 90 workers.

The project has developed a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the provisions of the General Construction Permit and the MGS' NPDES Permit Number CA0001180. The project will use a variety of BMPs, which may include the following: good housekeeping practices, proper handling and storage of hazardous materials, stabilized construction entrances, silt fencing, berms, and hay bales to control runoff and prevent discharge of pollutants from construction areas. Hydrostatic testing water will be discharged in accordance with the Los Angeles Regional Water Quality Control Board (LARWQCB's) Waste Discharge Requirements (WDRs) for Discharges of Low-Threat Hydrostatic Test Waters, General Permit Number R4 2009 0068 (LARWQCB, 2009).

Some dewatering could be required during trenching for the pipelines or excavation of foundations associated with the power block; however, this would likely be localized and of short duration. Groundwater collected from dewatering would be discharged to holding tanks, tested, and then reused (e.g., for landscape irrigation); or discharged to the existing MGS basins, and ultimately released to the ocean in accordance with the provisions of the General NPDES Permit Number R4 2013-0095, WDRs for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties.

With development of the SWPPP, and implementation of BMPs, compliance with WDRs, and compliance with LORS; impacts to surface waters and groundwater due to construction of the proposed project would be less than significant.

1.10.15.3 Flood Risks

The grade elevation of the proposed project would be at 14 feet MLLW. Existing beach dunes (top of dunes range from approximately 20 to 30 feet MLLW) separate the ocean and the proposed site. The 3-acre P3 site is not in a Federal Emergency Management Agency–designated 100-year or 500-year floodplain.

The Applicant has evaluated potential impacts of climate-change–influenced SLR on the proposed project. This analysis, included in Appendix N-2, Technical Memorandum, Sea Level Rise Analysis, summarizes the estimated SLR at two planning horizons (i.e., years 2030 and 2050); presents an evaluation of the impacts of SLR; and considers the potential combined effects of SLR and other sources of flooding that may occur simultaneously due to natural phenomena such as an earthquake or weather-related events.

Climate change is expected to contribute to SLR, and to the frequency and intensity of weather-related events; however, potential future effects related to SLR would not be anticipated to have significant impacts on P3 during the expected 30-year life of the project. As noted in the Technical Memorandum, SLR alone is anticipated to range from 2 to 25 inches from 2030 to 2050; which, when added to high water levels, is significantly below the beach dunes along the western boundary of the project site, and the levee along the northern edge of the project site. As recommended in the State of California Sea-Level Rise Guidance Document, consideration should be given to scenarios that combine extreme oceanographic conditions on top of the highest water levels projected to result from SLR over the expected life of a project. The combined effects of SLR, potential erosion of the berm, wave events, and storm surge run-up that could occur during the life of the project through planning horizon 2050 would not be expected to adversely impact the project. The potential anticipated elevation of SLR, in combination with any of these natural phenomena or weather-induced events, would be below the beach dunes in proximity to the west boundary of the project site.

In summary, the predicted SLR elevations would be below the site elevation of 14 feet, and are below the toe (elevation of approximately 14 feet) of the existing sand dunes along the western property boundary of the site that separates the site from the ocean. If any of the sources of flooding occurs in combination with SLR, the estimated wave-run-up elevation is still anticipated to be below the top of the beach dunes. Therefore, the existing beach dunes provide adequate protection to the coastline in proximity to P3.

1.10.16 Worker Safety

Worker exposure to physical and chemical hazards would be minimized through adherence to appropriate engineering design criteria, implementation of appropriate safety and administrative procedures, use of personal protective equipment, and compliance with applicable health and safety regulations. Impacts would be less than significant.

1.11 PROJECT ALTERNATIVES

As required by CEQA and CEC regulations, this AFC provides a detailed discussion “on the range of reasonable alternatives to the project, including the no project alternative which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives.”

The Applicant has identified several basic objectives for the development of P3:

- Fulfill Applicant’s NRG’s obligations under its 20-year RAPA with SCE requiring development of 262-MW nominal net output of newer, more flexible and efficient natural-gas generation at the site of the existing MGS;

- Provide an efficient, reliable, and predictable power supply by using a simple-cycle, natural-gas-fired combustion turbine to replace the existing OTC generation;
- Support the local capacity requirements of the CAISO Big Creek/Ventura Local Capacity Reliability area;
- Develop a 262-MW nominal net power-generating plant that provides efficient operational flexibility with rapid-start and fast-ramping capability to allow for efficient integration of renewable energy sources in the California electrical grid;
- Be designed, permitted, built, and commissioned by June 1, 2020;
- Minimize environmental impacts and development costs by developing on an existing brownfield site, and reusing existing transmission, water, wastewater, and natural-gas infrastructure;
- Site the project on property that has an industrial land use designation with consistent zoning; and
- Safely produce electricity without creating significant environmental impacts.

A range of reasonable alternatives that could feasibly attain most of the basic objectives of the proposed project, or certain elements thereof, were identified and evaluated. These alternatives included:

- The “No Project” alternative (that is, not developing a new power-generating facility);
- Alternative generating technologies and configurations;
- Alternative sources of water supply;
- Alternative wastewater handling systems; and
- Alternative emission control technologies.

In all cases assessed, the project as presented in this AFC represents the least impact on the environment.

1.12 REFERENCES

California Emergency Management, 2009. Tsunami Inundation Map for Emergency Planning, Oxnard Quadrangle: Scale 1:24,000, dated February 15.

CEC (California Energy Commission), 2015. Methodology for Visual Impact Assessment Draft Appendix VR 1.

County of Ventura, 2011. Ventura County Operational Area Tsunami Evacuation Plan. Prepared by the Ventura County Sheriff’s Office of Emergency Services with the Cities of Ventura, Oxnard, and Port Hueneme, and Naval Base Ventura County. June.

LARWQCB (Los Angeles Regional Water Quality Control Board), 2001. Waste Discharge Requirements for Mandalay Generating Station Order No. 01-057. NPDES No. CAS0001180.

LARWQCB (Los Angeles Regional Water Quality Control Board), 2009. Waste Discharge Requirements for Discharges of Low-Threat Hydrostatic Test Waters, General Permit Number R4 2009 0068.



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Source: ESRI Basemap

SITE VICINITY MAP

Puente Power Project Site

NRG
Puente Power Project
Oxnard, California
April 2015

FIGURE 1-1



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VISUAL SIMULATION OF PUENTE POWER PLANT

NRG
Puente Power Project
Oxnard, California

April 2015

FIGURE 1-2