



## Operation and Maintenance Plan

### Palmer Solar Project

Palmer Solar LLC is responsible for all daily solar facility operations, managing all operational and reporting requirements, and performing inspections under the interconnection agreement, power purchase agreement, lease agreements, and permits. The unmanned site will be monitored remotely during daylight hours. Frequent on-site inspections will be carried out as described in this plan. Systemized reporting of the inspections will also be generated. Palmer Solar LLC reserves the option to complete these tasks however it sees fit, including subcontracting the responsibilities to a designated, certified operations and maintenance (O&M) provider.

Palmer Solar LLC will perform all scheduled and unscheduled services and required preventative maintenance according to manufacturers specifications and warranty obligations for all equipment, including (but not limited to): PV modules, tracker system and components, inverters, controllers, control panels, connections to SCADA system sensors, DC electrical collection systems, controls, and instruments. Additionally, Palmer Solar LLC will provide scheduled and unscheduled services to the electrical system related to inverters to the substation including, including pad mount transformers and collection system and the overhead lines.

Palmer Solar LLC will remotely monitor the solar facility daily which includes (a) meteorological stations; (b) inverters; (c) trackers; (d) power station transformers; (e) DC sub-system (f) soil measuring stations (g) AC systems; (h) interconnection check metering; and (i) protection equipment, relays, and breakers. If repair work is necessary and cannot be performed remotely, qualified and trained personnel will be dispatched to site to perform the repairs. Modules can be easily maneuvered and picked up with a small loader and placed on a flatbed truck if repairs are necessary.

Outside daily monitoring, the following operations and maintenance actions are planned for the facility:

#### **a) Monthly Inspections**

Monthly inspections occur every month during facility operation. The interval between services will not exceed seven (7) weeks. Each inspection shall include the following tasks: (a) inverters inspection, (b) perimeter security fence line inspection, (c) combiner boxes inspection, (d) transformers inspection, (e) landscape inspection

The purpose of landscaping inspection is work is to ensure the site is maintained with a neat appearance. Vegetation is to be kept and trimmed to minimize encroachment at electrical enclosure, limit fire hazards, and mitigate potential effects on energy generation of the solar modules caused by shading. The Site will be mowed, or herbicide applied, to maintain vegetation less than fifteen (15) inches in vertical height within the perimeter security fence. Within the footprint of the substation there should not be any vegetation for safety reasons. If vegetation is discovered herbicide will be applied.

#### **b) Annual Maintenance Work**

Annual maintenance work occurs every year, with the interval between services not to exceed fourteen (14) months and will include the following tasks: (a) inventory and maintenance of modules, racks, cabling, electrical connection line, combiner and re-combiner boxes, (b) inverter maintenance, (c) array tracking systems, (d) transformer maintenance including oil sampling, (e) thermal imaging, (f) inventory of spare parts and (g) substation maintenance.

#### **c) Panel Washings**

Panel washings would occur as necessary to increase the average optical transmittance of the panel's surface. Wash water will be obtained from existing municipal sources in El Paso County and trucked to the site.



#### **d) Health and Safety Program**

A certified safety program will be created for the operational phase of the facility. This includes safe work practices, site security, emergency response procedures, fire control and transportation. The health and safety program will meet requirements under the federal Occupational Safety and Health Administration regulations; designed to protect works and the public during construction and operational phases. Health and safety protocols will be followed during operation.

#### **Williams Creek Substation Project**

Colorado Springs Utilities is responsible for all daily operations, managing all operational and reporting requirements, and performing inspections for their substation. The unmanned site will be monitored remotely 24 hours/day through qualified and trained personnel. Frequent on-site inspections will be carried out. Colorado Springs Utilities reserves the option to complete these tasks however it sees fit, including subcontracting the responsibilities to a designated, certified operations and maintenance (O&M) provider.

Colorado Springs Utilities will perform all scheduled and unscheduled services and required preventative maintenance according to manufacturer's specifications and warranty obligations for all equipment. Additionally, the utility will provide scheduled and unscheduled services and perform repair work through qualified and trained personnel as needed. Within the footprint of the substation there should not be any vegetation for safety reasons. If vegetation is discovered herbicide will be applied.

A safety program will be followed. This includes safe work practices, site security, emergency response procedures, fire control and transportation. The health and safety program will meet requirements under the federal Occupational Safety and Health Administration regulations; designed to protect works and the public during construction and operational phases. Health and safety protocols will be followed during facility operation.