ATMOSPHERIC DYNAMICS, INC
Meteorological & Air Quality Modeling
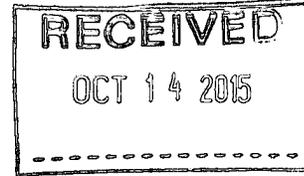
October 2, 2015

Mr. Gerardo Rios
EPA Region 9
Mail Code: AIR-7
75 Hawthorne Street
San Francisco, CA 94015

Re: Palmdale Energy Project Prevention of Significant Deterioration Permit Application

Dear Mr. Rios:

Included with this cover letter is the Palmdale Energy Project (PEP) Prevention of Significant Deterioration permit application package. Palmdale Energy, LLC is proposing to construct and operate the proposed project which will be located on an approximately 50-acre parcel west of the northwest corner of U.S. Air Force Plant 42, and east of the intersection of Sierra Highway and East Avenue M, in Palmdale. The existing site is currently on undeveloped land. The project will utilize two Siemens SCC6-5000F natural gas turbines with heat recovery steam generators. The project will include the Siemens fast start design (Flex Plant) which allows for quick starts and rapid ramp rates. The project will also include dry cooling.

The Project is designed to provide flexible capacity within the CAISO and will have a nominal electrical output of 660 megawatts (MW). Commercial operation is planned for the summer of 2019. The design and location of the proposed PEP would serve to complement electrical generation needs for flexible resource support.

The PEP is a major source as defined by the Prevention of Significant Deterioration (PSD) regulations and will apply to the PEP for emissions of NO_x, CO, VOCs, GHGs, PM10, and PM2.5.

Facility PTE Summary

Pollutant	PEP TPY	EPA Major PSD Source Thresholds (TPY)*
NO_x	139	40
CO	351	100
VOC	52	40
SO_x	11	40
PM10	81	15
PM2.5	81	10
CO_2e	2,117,730	75,000

*PSD major source is triggered for combined cycle turbine at 100 tpy, from which the major modification thresholds are then used for the remaining pollutants.

6.4 RECEPTOR GRID SELECTION AND COVERAGE

Receptor and source base elevations and receptor hill slope factors were determined from the U.S. Geological Survey (USGS) National Elevation Dataset (NED) using either 1/3-arcsecond (~10-meter) spacing for receptor grids with spacing between adjacent receptors of less than 100 meters or 1-arcsecond (~30-meter) spacing for receptor grids with spacing greater than 100 meters. All coordinates were referenced to UTM North American Datum 1983 (NAD83), Zone 11. The NED files will extend beyond the receptor grid boundaries as appropriate for the hill slope factors.

Cartesian coordinate receptor grids are used to provide adequate spatial coverage surrounding the Project Area for assessing ground-level pollution concentrations, to identify the extent of significant impacts, and to identify maximum impact locations. The receptor grids used in this analysis are listed below.

- Receptors were placed along the proposed Project fenceline with a 10-meter or less receptor spacing.

- Receptors extending outwards from the proposed Project fenceline in all directions at least 500 meters from project with a 20-meter receptor spacing were modeled, called the downwash receptor grid.

- An intermediate receptor grid with a 100-meter resolution was modeled that extended outwards from the edge of the downwash grid to one (1) kilometer (km) from the Project.

- The first coarse receptor grid with 200-meter spacing extended outwards from the edge of the intermediate grid to 5 km from the Project, while the second coarse grid with 500-meter receptor spacing extended to 10 km from the Project.

- In addition, the 500-meter spaced coarse grid was extended to 20 km from the Project in order to delineate the extent of the NO_2 significant impact area.

- Finally, if necessary, refined receptors grids with 20-meter resolution were modeled around any location on the coarse and intermediate grids where a maximum impact was modeled for the PEP facility modeling analyses (i.e., with a PEP impact that was above the concentrations on the downwash grid). Based on the locations of the maximum modeled concentrations, no refined receptor grids were required as all maximum PEP facility impacts occurred on the 10-meter fenceline or 20-meter downwash receptor grids.

Concentrations within the facility fenceline were not calculated. Neither were impacts calculated for locations inside the Plant 42 fenceline in the NO_2 and PM10/PM2.5

cumulative impact analyses which includes sources at the Lockheed-Martin, Northrup-Grumman, and Boeing facilities inside Plant 42 (Plant 42 is not open for public access). Receptor grid Figures 6-2 and 6-3 displays the receptors grids used in the modeling assessment with respect to the PEP fenceline.