Preliminary Determination Summary

Permit Numbers 1467, N284, PSDTX1090M1, and GHGPSDTX199

I. Applicant

El Paso Electric Company
PO Box 982
El Paso, TX 79901

II. Project Location

4900 Stan Roberts Sr Ave
El Paso TX 79934
El Paso County

III. Project Description

The purpose of the proposed project is to provide additional generation capacity based on El Paso Electric (EPE) forecasts for energy and demand needs for future operating years. EPE proposes to install a new Mitsubishi Model M501GAC Simple Cycle gas turbine rated 230 MW which will be fired by pipeline quality natural gas. The turbine will be used to provide new power generation capacity, especially during EPE's summer peak hours. The M501GAC model turbine was selected due to benefits such as efficiency, cycling capability without impacting maintenance intervals, ramping capability to follow load, sufficient turndown, and low mass emissions. The unit will be equipped with dry low-NOx burners, a Hot selective catalytic reduction (SCR), and an oxidation catalyst to further reduce emission rates. Additional equipment associated with the project includes piping and components which will be a source of fugitive emissions and a natural gas fired line heater which will be used to ensure that natural gas fueling the turbine is at an acceptable temperature for combustion. An emergency use firewater pump will also be installed as part of this project for safety purposes.

IV. Emissions

Air Contaminant	Proposed Allowable Emission Rates (tpy)
VOC	190.70
NO_x	2250.03
SO_2	88.87
CO	3541.87
PM	183.97
PM_{10}	177.88
$PM_{2.5}$	177.47
H_2SO_4	16.48

HAPs	28.20
NH_3	186.10
CO2	1,318,894.41
CH4	632.35
N2O	2.66
CO2 Equivalents (CO2e)	1,335,499.25

CO2e - carbon dioxide equivalents based on global warming potentials of CH4 = 25, N2O = 298, SF6=22,800.

V. Federal Applicability

The following chart illustrates the annual project emissions for each pollutant and whether this pollutant triggers PSD or Nonattainment (NA) review.

Pollutant	Project Emissions (tpy)	Major Mod Trigger (tpy)	NA Triggered Y/N	PSD Triggered Y/N
VOC	114.26	40 for PSD	N	Y
NO_x	121.12	40 for PSD	N	Y
SO_2	6.76	40	N	N
CO	237.66	100	N	Y
PM	30.74	25	N	Y
PM_{10}	30.74	15	Y	N
$PM_{2.5}$	30.74	10	N	Y
H_2SO_4	6.18	7	N	N

The proposed project triggers PSD review for non-GHG NSR regulated pollutants. As shown in the table below, because the project increase is more than 75,000 tpy of CO2e, PSD review is triggered for GHG emissions.

Pollutant	Project Emissions (tpy)	Major Source or Major Mod Trigger Level (tpy)	PSD Triggered Y/N
CO2e	1,211,545	75,000	Y

VI. Control Technology Review

Source Name	EPN	Best Available Control Technology Description
Simple Cycle Turbine	SC-7	**NOx**: 2.5 ppmvd at 15% O_2 achieved with the use of dry low-NO_x burners and SCR. **CO**: 3 ppmvd at 15% O_2 achieved with the use of an oxidation catalyst. **VOC**: 2 ppmvd at 15% O_2 achieved with the use of an oxidation catalyst, pipeline quality natural gas, and good combustions practices. **$PM/PM_{2.5}$**: Controlled using good combustion practices and the use of pipeline quality natural gas. **PM_{10}**: The of use pipeline-quality natural gas to fuel the proposed unit, operate the unit to ensure good combustion of fuel, and complete the required quarterly visible emission observations to ensure the unit is functioning properly and complying with opacity standards. These emission limitation strategies for PM_{10} result in the lowest achievable emission rates for the unit and should be considered to meet the requirements for achieving the LAER. **MSS**: Minimizing the duration of MSS activities and operating the facility in accordance with best management practices and good air pollution control practices. **GHG**: Good combustion practices and properly maintaining the unit to remain inherently efficient. Oxidation catalyst will also help reduce hydrocarbon emissions, including CH_4.
Emergency engine	FIRE-2	**NO_x**: Will meet the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel (no more the 15 ppm sulfur by weight). Limited to 100 hrs/yr of non-emergency operation. Non resettable runtime meter.

Source Name	EPN	Best Available Control Technology Description
		CO: Will meet the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel (no more the 15 ppm sulfur by weight). Limited to 100 hrs/yr of non-emergency operation. Non resettable runtime meter. **VOC**: Will meet the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel (no more the 15 ppm sulfur by weight). Limited to 100 hrs/yr of non-emergency operation. Non resettable runtime meter. **$PM/PM_{2.5}$**: Meeting the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel (no more than 15 ppm sulfur by weight). Limited to 100 hrs./yr. of non-emergency operation. Have a non-resettable runtime meter. No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent. **PM_{10}**: The unit is inherently designed to reduce particulate emissions, is certified to comply with NSPS standards based on its model year rating by the EPA and will burn solely ultra-low sulfur diesel this unit achieves the LAER for PM_{10} emissions. **GHG**: Good combustion practices and properly maintaining the unit to remain inherently efficient. Limited to 100 hrs/yr of non-emergency operation. Non resettable runtime meter.
Line Heater (3.9 MMBtu)	LH-1	**NO_x**: Emission rate limited to 0.03 lb/MMBtu using low-NO_x burner, pipeline quality natural gas and good combustion practices. **CO**: Good combustion practices and pipeline quality natural gas to limit to 50 ppmvd at 3% O_2. **VOC**: Good combustion practices and pipeline quality natural gas. **$PM/PM_{2.5}$**: Good combustion practices and firing pipeline quality natural gas to limit opacity to 5%. **PM_{10}**: Good combustion practices and firing pipeline quality natural gas will be used as the mechanism to achieve the LAER for PM_{10} emissions.

Source Name	EPN	Best Available Control Technology Description
		GHG: Good combustion practices and properly maintaining the unit to remain inherently efficient.
Fugitives	FUG-7	**VOC**: Weekly AVO inspections **GHG**: Weekly AVO inspections.

VII. Air Quality Analysis

The air quality analysis (AQA) is acceptable for all review types and pollutants. The results are summarized below.

A. De Minimis Analysis

A De Minimis analysis was initially conducted to determine if a full impacts analysis would be required. The De Minimis analysis modeling results for CO, $PM_{2.5}$, and NO_2 indicate that the project is below the respective de minimis concentrations and no further analysis is required.

The justification for selecting the EPA's interim 1-hr NO_2 De Minimis level is based on the assumptions underlying EPA's development of the 1-hr NO_2 De Minimis level. As explained in EPA guidance memoranda[1], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 NAAQS.

The $PM_{2.5}$ and ozone De Minimis levels are the EPA recommended De Minimis levels. The use of the EPA recommended De Minimis levels is sufficient to conclude that a proposed source will not cause or contribute to a violation of an ozone and $PM_{2.5}$ NAAQS or $PM_{2.5}$ PSD increments based on the analyses documented in EPA guidance and policy memoranda[2].

Table 1. Modeling Results for PSD De Minimis Analysis in Micrograms Per Cubic Meter (µg/m³)

Pollutant	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
$PM_{2.5}$	24-hr	0.3	1.2
$PM_{2.5}$	Annual	0.05	0.2
NO_2	1-hr	5.6	7.5
NO_2	Annual	0.8	1

[1] www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf
[2] www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
CO	1-hr	140	2000
CO	8-hr	60	500

The 1-hr NO_2 GLCmax is based on the highest five-year average of the maximum predicted concentrations determined for each receptor.

The GLCmax for all other pollutants and averaging times represent the maximum predicted concentrations associated with five years of meteorological data.

Intermittent guidance was relied on for the 1-hr NO_2 De Minimis analysis. Additional information is provided below in Section H.

To evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The basic idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the worst-case hypothetical source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.077 µg/m^3 and 0.003 µg/m^3, respectively. When these estimates are added to the GLCmax listed in the table above, the results are less than the De Minimis levels.

Table 2. Modeling Results for Ozone PSD De Minimis Analysis in Parts per Billion (ppb)

Pollutant	Averaging Time	GLCmax (ppb)	De Minimis (ppb)
O_3	8-hr	0.53	1

The applicant performed an O_3 analysis as part of the PSD AQA. The applicant evaluated project emissions of O_3 precursor emissions (NO_x and VOC). For the project NO_x and VOC emissions, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs. As noted above, the basic idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the worst-case hypothetical source, the applicant estimated an 8-hr O_3 concentration of 0.53 ppb. When the estimates of ozone concentrations from the project emissions are added together, the results are less than the De Minimis level.

B. Air Quality Monitoring

The De Minimis analysis modeling results indicate that NO_2 and CO are below their respective monitoring significance levels.

Table 3. Modeling Results for PSD Monitoring Significance Levels

Pollutant	Averaging Time	GLCmax (µg/m^3)	Significance (µg/m^3)
NO_2	Annual	0.8	14
CO	8-hr	60	575

The GLCmax represent the maximum predicted concentrations associated with five years of meteorological data.

The applicant evaluated ambient $PM_{2.5}$ and ozone monitoring data to satisfy the requirements for the pre-application analysis.

Background concentrations for $PM_{2.5}$ were obtained from the EPA AIRS monitor 481410044 located at 800 S San Marcial St., El Paso, El Paso County. The three-year average of the 98th percentile of the annual distribution of 24-hr concentrations from 2016-2018 was used for the 24-hr value (26.3 µg/m^3). The three-year average of the annual concentrations from 2016-2018 was used for the annual value (8.9 µg/m^3). The applicant used monitoring data collected from sampler 1, but did not explain why they used data from sampler 1 instead of data from the two other samplers located at the monitoring site. However, based on ADMT's review of the data collected from all samplers, the overall conclusions do not change. The use of this monitor for a background concentration of $PM_{2.5}$ is reasonable based on the analysis by the applicant.

Since the project has a net emission increase of 100 tons per year (tpy) or more of volatile organic compounds or nitrogen oxides, the applicant evaluated ambient O_3 monitoring data to satisfy pre-application analysis requirement.

Background concentrations for O_3 were obtained from the EPA AIRS monitor 481410055 located at 650 R E Thomason Loop, El Paso, El Paso County. A three-year average (2016-2018) of the annual fourth highest daily maximum 8-hr concentrations was used in the analysis (69 ppb). The use of this monitor for a background concentration of O_3 is reasonable based on the analysis by the applicant.

C. National Ambient Air Quality Standards (NAAQS) Analysis

The De Minimis analysis modeling results for CO, $PM_{2.5}$, and NO_2 indicate that the project is below the respective de minimis concentrations and no further analysis is required.

D. Increment Analysis

The De Minimis analysis modeling results for $PM_{2.5}$ and NO_2 indicate that the project is below the respective de minimis concentrations and no further analysis is required.

E. Additional Impacts Analysis

The applicant performed an Additional Impacts Analysis as part of the PSD AQA. The applicant conducted a growth analysis and determined that population will not significantly

increase as a result of the proposed project. The applicant conducted a soils and vegetation analysis and determined that all evaluated criteria pollutant concentrations are below their respective secondary NAAQS. The applicant meets the Class II visibility analysis requirement by complying with the opacity requirements of 30 TAC Chapter 111. The Additional Impacts Analyses are reasonable and possible adverse impacts from this project are not expected.

The ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Guadalupe Mountains National Park, is located approximately 130 kilometers (km) from the project site.

The H_2SO_4 24-hr maximum predicted concentration of 0.05 µg/m^3 occurred approximately 300 meters from the property line towards the east. The H_2SO_4 24-hr maximum predicted concentration occurring at the edge of the receptor grid, 50 km from the proposed sources, in the direction of the Guadalupe Mountains National Park Class I area is 0.001 µg/m^3. The Guadalupe Mountains National Park Class I area is an additional 80 km from the edge of the receptor grid. Therefore, emissions of H_2SO_4 from the proposed project are not expected to adversely affect the Guadalupe Mountains National Park Class I area.

The predicted concentrations of $PM_{2.5}$, NO_2, and SO_2 for all averaging times, are all less than de minimis levels at all modeled receptors. Since the Guadalupe Mountains National Park Class I area is 130 km away, emissions from the proposed project are not expected to adversely affect the Guadalupe Mountains National Park Class I area.

F. Minor Source NSR and Air Toxics Review

Table 4. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	0.5	20.4
H_2SO_4	1-hr	0.3	1
H_2SO_4	24-hr	0.05	0.3

Table 5. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	0.5	7.8
SO_2	3-hr	0.2	25

The GLCmax are the maximum predicted concentrations associated with one year of meteorological data.

The primary NAAQS for 24-hr and annual SO_2 have been revoked for El Paso County and are not reported above.

The justification for selecting the EPA's interim 1-hr SO_2 De Minimis level was based on the assumptions underlying EPA's development of the 1-hr SO_2 De Minimis level. As explained in EPA guidance memoranda[3], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr SO_2 NAAQS.

Table 6. Minor NSR Production Project-Related Modeling Results for Health Effects

Pollutant & CAS#	Averaging Time	GLCmax (µg/m^3)	10% ESL (µg/m^3)
formaldehyde 50-00-0	1-hr	0.3	1.5

The applicant evaluated other site-wide emissions of formaldehyde to show they meet criteria of Step 6 of the MERA guidance.

Table 7. Minor NSR Site-wide Modeling Results for Health Effects

Pollutant	CAS#	Averaging Time	GLCmax (µg/m^3)	GLCmax Location	ESL (µg/m^3)
ammonia	7664-41-7	1-hr	112	Property Line	180
ammonia	7664-41-7	Annual	2	Property Line	92

The GLCmax locations are listed in Table 7 above.

G. Greenhouse Gases

EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there is no National Ambient Air Quality Standard (NAAQS) for GHGs, including no PSD increment. The global climate-change inducing effects of GHG emissions, according to the "Endangerment and Cause or Contribute Finding", are far-reaching and multi-dimensional (75 FR 66497). Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in PSD permit reviews. Quantifying the exact impacts attributable to a specific GHG source obtaining a permit in specific places and points would not be possible [EPA's PSD and Title V Permitting Guidance for GHGs at 48]. Thus, EPA has concluded in other GHG PSD permitting actions it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit.

The TCEQ has determined that an air quality analysis would provide no meaningful data and has not required the applicant to perform one. As stated in the preamble to TCEQ's adoption of the GHG PSD program, the impacts review for individual air contaminants will continue to be addressed, as applicable, in the state's traditional minor and major NSR permits program per 30 TAC Chapter 116.

H. Modeling Emission Inventory

[3] www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf

The modeled emission point and area source parameters and rates were generally consistent with the modeling report. The source characterizations used to represent the sources were appropriate.

For the AERSCREEN model runs, the modeled temperature and velocity for Case SD_MAX was not consistent with the reported values. However, this will not affect the selection of the worst-case scenario.

For the site-wide ammonia modeling, existing area sources were modeled with a vertical sigma. However, the modeling report did not include documentation for this approach. Even though the documentation wasn't provided, the use of the vertical sigma is reasonable given that the sources were modeled with a release height of 1 meter and the emissions have some vertical component to them.

For the 1-hr NO_2 de Minimis analysis, emissions from the emergency engine (EPN FIRE2) were modeled with an annual average emission rate, consistent with EPA guidance for evaluating intermittent emissions. Emissions from the engine were represented to occur for no more than 100 hours per year.

The applicant evaluated emissions from EPN SC7 based on EPA guidance related to intermittent emissions for the 1-hr NO_2 de Minimis analysis. According to the applicant, the emissions associated with start-up of the proposed turbine (SC7) are intermittent. The modeled emissions for the turbine consisted of maximum allowable emission rates associated with normal operations plus the annual average emission rate associated with the start-up scenario.

Except as noted above, maximum allowable hourly emission rates were used for the short-term averaging time analyses, and annual average emission rates were used for the annual averaging time analyses.

VIII. Offsets

El Paso County has Been Designated Nonattainment for PM_{10}. The applicant must meet an offset ratio of 1 to 1. Prior to the commencement of operation, the permit holder shall obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

IX. Conclusion

EPE has demonstrated that this project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts. The proposed facilities and controls represent BACT. The modeling analysis indicates that the proposed project will not violate the NAAQS, cause an exceedance of the increment, or have any adverse impacts on soils, vegetation, or Class I Areas. The applicant has demonstrated the project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts. The executive director makes a preliminary recommendation to issue Permit Nos. 1467, N284, PSDTX1090M1, and GHGPSDTX199.