



Data Center Air Permitting in Texas

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Logistics

- ❑ How can I ask questions?
 - Please enter your questions in the Questions box.
 - There will be a Q&A at the end.
- ❑ Will I get a certificate of completion?
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Overview

- ❑ Regulatory Background for Air Permits
- ❑ Federal vs. State Air Permitting
- ❑ Emission Source Types
- ❑ Early Permitting Considerations
- ❑ Challenges
- ❑ Nuances of Texas Air Permitting
- ❑ Timeline and Post-Submittal Actions



Federal Regulatory Background



- Clean Air Act (CAA) and CAA Amendments
 - Established National Ambient Air Quality Standards (NAAQS)
 - Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR)
 - Created the Operating Permit Program (Title V of the CAAA of 1990)
 - Established Standards of Performance for New Stationary Sources (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP)
 - NSPS IIII or JJJJ (engines)
 - NESHAP ZZZZ (engines)
 - NSPS KKKK or KKKKa (turbines)



Federal vs. State Air Permitting

- Federal construction permitting through New Source Review (NSR)
 - If area is classified as in attainment with NAAQS, falls into PSD permitting
 - Major source threshold for data centers of 250 tons/year of a criteria pollutant
 - If area is classified as in nonattainment NAAQS, falls into Nonattainment NSR permitting
 - Major source thresholds vary based on classification (Moderate, Serious, Severe, or Extreme)
 - Lengthy permitting process for major sources with extensive modeling, emissions offsets, public input, and/or emissions control requirements
 - These programs consider “project” emissions – may be facility-wide or a subset
- Avoid Major NSR by taking federally enforceable operating limits and permit as a Synthetic Minor Source



Federal vs. State Air Permitting

- Each state has its own air quality program to meet U.S. EPA commitments and targets
 - Air pollution control regulations
 - Air permitting program, including key thresholds and exemptions
 - Required forms and other construction permit application components
 - Air dispersion modeling requirements
 - Short term emission rate requirements
 - Identification of pollutants of concern
 - Air compliance/enforcement program
- Federal construction permitting is typically conducted at the state level, although it may involve U.S. EPA input

Federal vs. State Air Permitting

- In addition to construction permitting, operating permits may be required
 - Major Source Title V Operating Permit
 - Threshold is 100 tons/year for criteria pollutants unless area is in nonattainment
 - Federal program, but issued at the state level
 - This program considers aggregated emissions from entire facility/campus
 - Minor Source (True or Synthetic)
 - Some states require their own operating permit



Emission Sources at Data Centers

- ❑ Air permitting for data centers is typically driven by engines
 - Diesel-fired emergency generators (NSPS Subpart IIII)
 - Natural gas-fired emergency generators (NSPS Subpart JJJJ)
- ❑ Natural gas-fired combustion turbines (NSPS Subpart KKKK or KKKKa)
- ❑ Other equipment of interest includes fuel storage tanks, cooling equipment, fuel cells, and emission controls (if required)



Early Permitting Considerations

- ❑ Many factors affect air permitting, but considering air permitting early in process might influence aspects of the project
 - Size of Data Center (MW, number of buildings, etc.)
 - Attainment vs. Nonattainment and impact on Major source thresholds
 - Ownership of Data Center
 - Same LLC/owner vs. separate owners
 - Common operatorship could also play a role
 - Construction Schedule or Phasing



Early Permitting Considerations

- Additional factors to consider:
 - Number of generators needed and how they will be operated
 - Emergency vs. Non-emergency
 - Emergency Demand Response
 - Customer Operating Requirements
 - Evaluate need for emissions controls and associated financial cost
 - Evaluate if on-site power generation due to limits on utility availability
 - Separate owner vs. data center owner
 - Additional emissions sources
 - Air Dispersion Modeling
 - Location of the facility [e.g., in Environmental Justice (EJ) area, community perception of data centers]



Early Permitting Considerations

- Air Permitting strategy culminates in the three main considerations:
 - Regulatory burden
 - Difference in permitting programs (Major vs. Synthetic Minor)
 - Operational flexibility
 - Total operating hours or fuel consumption allowed
 - Capital cost
 - Emissions controls



Challenges

- ❑ Evolving Regulatory Landscape
 - Redesignation of attainment status
 - Potential for changing requirements
- ❑ Receptiveness of communities, public perception
- ❑ Building in states that are unfamiliar with data centers
 - TX is familiar with data centers
- ❑ Power needs – both denser power on-site and power availability
 - On-site power generation in TX





Nuances of Texas Air Permitting

Texas Air Permitting: 5 Things to Know

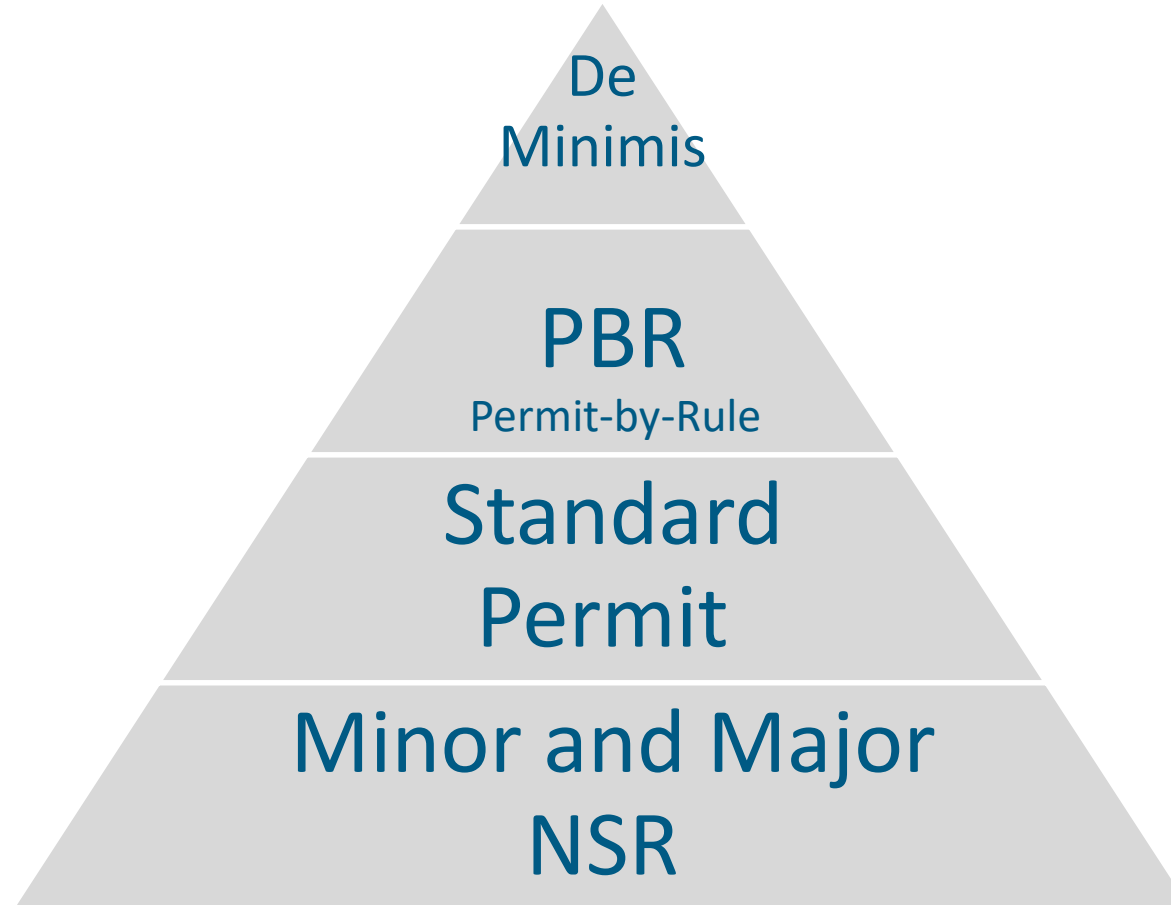
#1: Texas has multiple nonattainment areas that have different classifications

- Houston-Galveston-Brazoria (HGB) and Dallas-Fort Worth (DFW) areas are classified as severe nonattainment areas for the 2008 eight-hour ozone standard
 - Major Source Thresholds are 25 tons/year for NO_x and VOC
- San Antonio area is classified as serious nonattainment areas for the 2015 eight-hour ozone standard
 - Major Source Thresholds are 50 tons/year for NO_x and VOC
- Austin-Round Rock area is currently classified as in attainment for the 2015 eight-hour ozone standard, but this may change soon
- New data centers may need to evaluate taking stricter operating limits and/or introduce NO_x reduction technology, or become a major source



Texas Air Permitting: 5 Things to Know

#2: Main Air Permitting Pathways in Texas



Texas Air Permitting: 5 Things to Know

#2: Main Air Permitting Pathways in Texas: Application Components

- **For Registered PBRs, PBR CERTs, and Standard Permits:**
 - Applicable TCEQ forms
 - Emissions calculations
 - Supporting documentation to prove the Facility complies with all requirements under the PBR, Standard Permit, and State and Federal Regulations
- **For minor or major NSR permit (additional information required for PSD/NNSR permitting):**
 - Emissions calculations
 - Process and project descriptions
 - Diagrams, figures, and maps
 - Regulatory applicability analysis (Federal and State)
 - TCEQ BACT Analysis
 - Air Dispersion Modeling
 - Applicable TCEQ forms
 - PE seal if capital cost is >\$2,000,000



Texas Air Permitting: 5 Things to Know

#3: Permit-by-Rule (PBR)

- 106.4 - General Requirements
- 106.511 - Portable and Emergency Engines and Turbines
 - Emergency engines can be permitted this way so long as their operation does not exceed 10% of the facility's regular operating schedule.
 - 24/7 data center would have potential engine operating time of 876 hours under this PBR, although EPA's 500 hours/year emergency generator guidance would also be considered.
 - Typically, this PBR does not need to be registered, but there are exceptions.
 - If data centers need to accept federally enforceable operating limits to qualify for PBR, these limits need to be memorialized through a PBR CERT file with TCEQ.
- 106.472 (or others) - Diesel Storage Tanks
- 106.373 - Refrigerants
- Relatively fast turnaround time

Emissions Limits (tpy)	Pollutants
250*	NO _x , CO
25	VOC, SO ₂ , PM, any other air pollutant
15	PM ₁₀
10	PM _{2.5}

*25 tpy, for example, in DFW/HGB nonattainment areas



Texas Air Permitting: 5 Things to Know

#4: Standard Permit – Air Quality Standard Permit for Electric Generating Units

- Ideal for prime power engines, turbines, and/or fuel cells
- Emissions must be certified at or below applicable thresholds

Region	Operates ≤ 300 hr/yr	Operates > 300 hr/yr
East Texas:	0.47 lb/MWh	0.14 lb/MWh or 0.47 lb/MWh if unit ≤ 250 kW
West Texas:	21 lb/MWh	3.11 lb/MWh

East Texas Region - All counties traversed by or east of Interstate Highway 35 or Interstate Highway 37, including Bosque, Coryell, Hood, Parker, Somervell and Wise Counties.

- Permit issuance is faster than NSR permitting but may take longer than PBR
- New Option: Air Quality Standard Permit for Natural Gas Electric Generating Units

- Stack parameters requirements
- Engine location requirements
- Emissions and operating limitations
- Stack testing requirements

Emissions Limits (tpy)	Pollutants
100*	NO _x , CO, VOC, SO ₂ , PM, PM ₁₀ , PM _{2.5}
25	Total HAP
10	Single HAP

*25 tpy limit, for example, for NO_x and VOC in DFW/HGB nonattainment areas

Texas Air Permitting: 5 Things to Know

#5: Public Notice and Comments

- TCEQ gathers public comments through the Public Notice Process
- Public Notice is not required for:
 - Permit by Rules
 - Certain Standard Permits (including the ones for electric generating units)
- Public Notice is required for all minor and major NSR (case-by-case) permitting
 - Components of case-by-case permitting provided on earlier slide
- Public comments and community engagement have increased around data center projects across Texas over the past few years



Texas Air Permitting: Best Practices

- ❑ Set up a pre-application meeting with Texas
 - Discuss project, ensure correct permitting program, and resolve questions
- ❑ TCEQ is responsive to questions
 - Reach out by phone or email
- ❑ Public Notice and Notice of Deficiency (NOD) processes are fast; ensuring alignment with TCEQ teams on deadlines is recommended.
- ❑ All submittals must be submitted through the State of Texas Environmental Electronic Reporting System (STEERS)



Texas Air Permitting: Timeline

- TCEQ publishes processing times for different types of air permit applications (2024 Data):

Application Type	Minimum Time (Days)	Maximum Time (Days)	Average Time (Days)	Target Maximum (Days)
NSR New Permits	34	464	241	285
PSD New Permits	18	1,940	347	365
PBRs	1	140	12	45
Standard Permit	1	305	9	45

- TCEQ also has an expedited permitting option.

Texas Air Permitting: Cost

- TCEQ has the following permitting fees

Application Type	Standard Fee	Expedited Fee
NSR New Permits	0.30% of Capital Assessment (Min: \$900 and Max \$75,000)	\$10,000
PSD New Permits	1.00% of Capital Assessment (Min: \$3,000 and Max \$75,000)	\$20,000
PBRs	\$450	\$500
Standard Permit	\$900	\$500



Air Permit Application Submitted, Now What?

- ❑ Respond to any TCEQ additional information requests/NODs
- ❑ Public Notice, if required
- ❑ Review permit, and prepare for monthly and annual recordkeeping (i.e., tracking tool)
- ❑ Annual Emissions Report, if required
- ❑ Non-air considerations:
 - Storage tank registration
 - Spill Prevention, Control, and Countermeasure (SPCC) Plan and associated training typically required
 - Emergency Planning and Community Right-to-Know Act (EPCRA) Tier II Report



Questions or Comments?

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