OZONE STANDARD UPDATE

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July 15, 2015
AGENDA

- Background
- Comments Submitted to EPA
- Real Impacts of a Lower Ozone Standard
- Clean Air Act Provisions Relating to Ozone Standard
BACKGROUND
Ozone Chemistry

- Little or No Wind
- Clear Skies

Ground Level Ozone ($O_3$) Formation

- Volatile Organic Compounds (VOC)
- Nitrogen Oxides ($NO_x$)

Data Source: HRM and 3/10/2010 TCEQ Adopted SIP, Chapter 3
New EPA Proposal

National Ozone Standard

□ New proposal published Dec 17, 2014
□ Current primary standard 75 ppb
  ➢ EPA considering 60–75 ppb primary standard (human health)
  ➢ EPA also considering a secondary standard (vegetation) weighted metric (W126) within a range of 13 to 17 ppm-hours averaged over three years
□ Written comments submitted by March 17, 2015
□ EPA decision, per court consent decree with NGOs, due by Oct 1, 2015

Implementation Timeline is Fluid

➢ EPA finalizes new standard: Oct 1, 2015
➢ States make designation recommendations to EPA ~Oct 2016
➢ EPA finalizes designations and classifications ~Oct 2017
➢ EPA finalizes Implementation Rule ~ Oct 2017
➢ States propose rules/controls to meet new standard ~2017 / 2018
➢ Potential compliance date for non-attainment areas
  ▪ “Marginal” areas (3 yrs from EPA final designation) ~2020
  ▪ “Moderate” areas (6 yrs from EPA final designation) ~2023
  ▪ “Serious” areas (9 yrs from EPA final designation) ~2026
COMMENTS SUBMITTED TO EPA
8-Hour Coalition Comments

- EPA stated in numerous materials that only 9 counties would violate 70ppb level in 2025 with controls OTB/OTW.
- Houston and Dallas projected to not attain.
- Reasonable conclusion is that for most of country, new standard can be achieved without onerous new controls.
- If no new controls needed, many might not know they are affected and not comment.
RIA Tells A Different Story

- In the RIA, and not mentioned in press/public materials, are EPA’s projections about what will be needed to get those 9 counties into attainment.

- Alpine Geophysics used data in RIA, and source files provided by EPA, to calculate reduction amount to get 9 remaining counties into attainment.
EPA Reduction Assumptions

- EPA modeling assumption for nine N/A counties is that they will rely on combination of known and unknown NOx and VOC controls.

- Unknown controls can only be used in an attainment demonstration for an area classified as “Extreme”.
Reductions to Attain 70ppb NAAQS—Known Controls
Reductions to Attain 65ppb NAAQS—
Known Controls

Annual NOx Emissions Reduction (%)
Proposed 65 ppb from Baseline
75 to 100   (3)
50 to 75   (108)
25 to 50   (270)
10 to 25   (337)
5 to 10   (263)
0 to 5   (1037)
No Control Applied   (20)
CA Not Included   (58)
Reductions to Attain 70ppb—Unknown Controls
REAL IMPACTS OF A LOWER OZONE STANDARD
2014* County Ozone Design Values

<table>
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<tr>
<th>Region</th>
<th>County</th>
<th>2014 8Hr Ozone DV (ppb)</th>
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*2014 data as of January 7, 2015 and subject to change. Counties in white indicate that the county does not have enough data for a 2014 design value or that there is no monitor located within that county. Only regulatory data shown.

Source: TCEQ Air Quality Division Presentation, January 22, 2015
Impact to U.S.

**EPA Estimates**
- 358 counties in the U.S. would violate the ozone standard (non-attainment) at 70 ppb and 558 counties would violate the standard at 65 ppb.
- A 70 ppb standard will cost $3.9 billion in 2025 (excluding California), and a 65 ppb standard will cost $15 billion.

**Industry Estimates**
- 1,320 counties would violate a 70 ppb standard and 2,110 counties would violated a 65 ppb standard.
- Study sponsored by NAM - EPA’s proposed rule could reduce GDP by $140 billion annually and eliminate 1.4 million job equivalents per year. In total, the costs of complying with the rule from 2017–2040 could top $1 trillion, making it the most expensive regulation ever issued by the U.S. government.
Impacts To Industry

- **Potential Costs**
  - Point Sources
    - NOx controls (SCRs)
    - VOC controls (IFRs and closed roof/domed tanks)
    - HRVOC controls (Chapter 115 Rules - Stricter LDAR definitions and repair times, wastewater emissions, loading/unloading)
  - Area / Individual Sources
    - Impact to Small Businesses - Restrictions on drive-thru windows, lawn mowing, generators, barbecuing, dry cleaners, machine shops
    - Speed limits, Auto Inspection and Maintenance fees
    - Restrictions on use of heavy equipment (bulldozers, cranes, etc.)

- **Regulatory Issues**
  - Change from PSD (attainment) to NSR (non-attainment) permitting
  - Higher NSR Offset Ratios; Lower Major Source Thresholds
  - Stricter Permit Limits
  - Lower State RQs

- **Growth**
  - New Non-Attainment Areas – attracting jobs, tourism
  - NOx, VOC, HRVOC allocations and generation of credits
  - Permitting - CAA requires facilities to comply upon “promulgation” (Oct 1). If standard is lowered, how will PSD areas demonstrate that planned projects would not “cause or contribute to a violation of any NAAQS” while waiting for EPA designation/guidance.
CLEAN AIR ACT PROVISIONS RELATING TO OZONE STANDARD

- If standard is lowered to approach background levels, using provisions of the CAA that deal with emissions that can’t be controlled by the state becomes increasingly important.
  - Exceptional Events Provisions
  - 179(b) Provisions for International Transport
Exceptional Events

- March 22, 2007 Federal Register final rule (Required per CAA)
  - Provides a mechanism by which air quality data can be excluded from regulatory decisions and actions
  - Can affect design value calculations, NAAQS designation status, attainment determinations
  - Criteria for claiming exceptional events – High Bar
    - The event affects air quality
    - The event is not reasonably controllable or preventable
    - The event is caused by human activity that is unlikely to recur at that location or is a natural event
    - Clear causal relationship between the event and monitored concentration
    - Event is associated with a measured concentration in excess of normal historical fluctuations
    - There would have been no exceedance or violation “but for” the event
  - Examples Given By EPA
    - High Wind Events, Wildfire Events, Volcanic and Seismic Activities, Chemical Spills and Industrial Accidents
Exceptional Events

State Responsibilities

- Must flag data “not later than July 1st of the calendar year following the year in which the flagged measurement occurred” (using EPA's AQS database)
- Must provide notice and opportunity for public comments
- Must submit technical data and demonstration to EPA within 3 years
- No penalty if a state flags data and subsequently declines to submit a demonstration

State Submissions

- Sacramento, CA
- San Joaquin Valley, CA
- HGB Area–TCEQ
  - Several PM2.5 events due to Saharan Dust
  - August 26, 2011 ozone event due to wildfires
Example of Wildfire Impacts

September 1, 2010
Clean Air Act 179(b) Petitions

- International Emissions/Transport
  - Provides some relief from certain state planning and control requirements for nonattainment areas where projected air quality would meet the NAAQS “but for” emissions from another country
  - Policy-Relevant Background (PRB) is defined by EPA as surface O₃ occurring in the absence of all North American anthropogenic emissions (stratospheric intrusion, lightning, intl transport)
  - A weight of evidence demonstration usually backed by modeling
  - Examples
    - Imperial Valley, CA - PM10 plan approved in 2001
    - Nogales, AZ - PM10 plan approved August 24, 2012
    - San Joaquin Valley, CA – Ozone (under development)
Is International Transport a Big Factor?

- From EPA’s RIA on the NAAQS:
  - “When averaged over all sites, ozone from sources other than U.S. anthropogenic emissions is estimated to comprise 66 (zero out) and 59 (source apportionment) percent of the total seasonal ozone mean.”

- One study showed that ozone precursors from Asia are expected to increase 44% (NOx) and 99% (VOC) between 2000 and 2020 (Ohara et al).

- Transboundary Ozone Conference in CA (March 2015)
  - PRB ozone can be as high as 40 – 50 ppb in the West. Cannot apply controls to this portion.
  - Transported Asian ozone can contribute 5 - 8 ppb

- We encourage TCEQ to continue to use every CAA provision available to not penalize the state for emissions we can’t control.
Things To Think About

- If Ozone standard is lowered
  - Additional NOx Reductions? How will SCRs effect PM in the air shed?
  - Additional VOC reductions? Which sources?
  - Additional HRVOC reductions? Expansion of definition?
  - New NA areas? How large? Which rules will apply?
  - Does a state have resources to manage multiple NA areas? Eastern states are talking about one large NA area (multi-state)? Which counties get included even though they may not be NA.
  - What if my county does not have a monitor?
  - What is the background ozone in my county/area?
Resources

- Download the Coalition’s comments for source material/data/methods used

- Resource for Houston air quality

- TCEQ (Dr. Honeycutt) and TERA sponsored Ozone Workshop
  [http://www.tera.org/Peer/ozone/index.html](http://www.tera.org/Peer/ozone/index.html)

- National Association of Manufacturing (NAM) Estimate of costs