Proposed Revisions to Colorado Air Quality Control Commission Regulation No. 7

Garry Kaufman

Air Pollution Control Division

Introduction

- The Colorado Air Pollution Control Division is proposing two separate sets of revisions to Colorado Air Quality Control Commission Regulation No. 7 for the control of air emissions from oil and gas operations in Colorado

Introduction

- The first set of revisions tightens existing emission control requirements set forth in Regulation No. 7, Section XII for condensate tanks located in the 8-Hour Ozone Control Area
  - The existing requirements were adopted in connection with the Early Action Compact Ozone Action Plan ("EAC") entered into between the State of Colorado and EPA

Introduction

- The second set of revisions establishes statewide controls for condensate tanks, natural gas fired engines and natural gas dehydrators

EAC Revisions: Background

- Colorado and EPA entered into the EAC as a means of deferring an ozone non-attainment designation for Adams, Arapahoe, Boulder, Douglas and Jefferson Counties, the Cities and Counties of Denver and Broomfield and parts of Larimer and Weld Counties ("8-Hour Ozone Control Area')
- The EAC was a response to monitoring data along the front range showing exceedances of the federal 8-Hour ozone standard
- As part of the EAC process, the AQCC promulgated Regulation No. 7, Section XII requiring controls for condensate tanks, natural gas dehydrators and certain natural gas fired engines located in the 8-Hour Ozone Control Area

EAC Revisions: Background

- The EAC approach requires cleaner air faster than standard air quality requirements
- There are incentives for the State
  - No nonattainment designation
  - Lesser permitting requirements
  - No transportation conformity

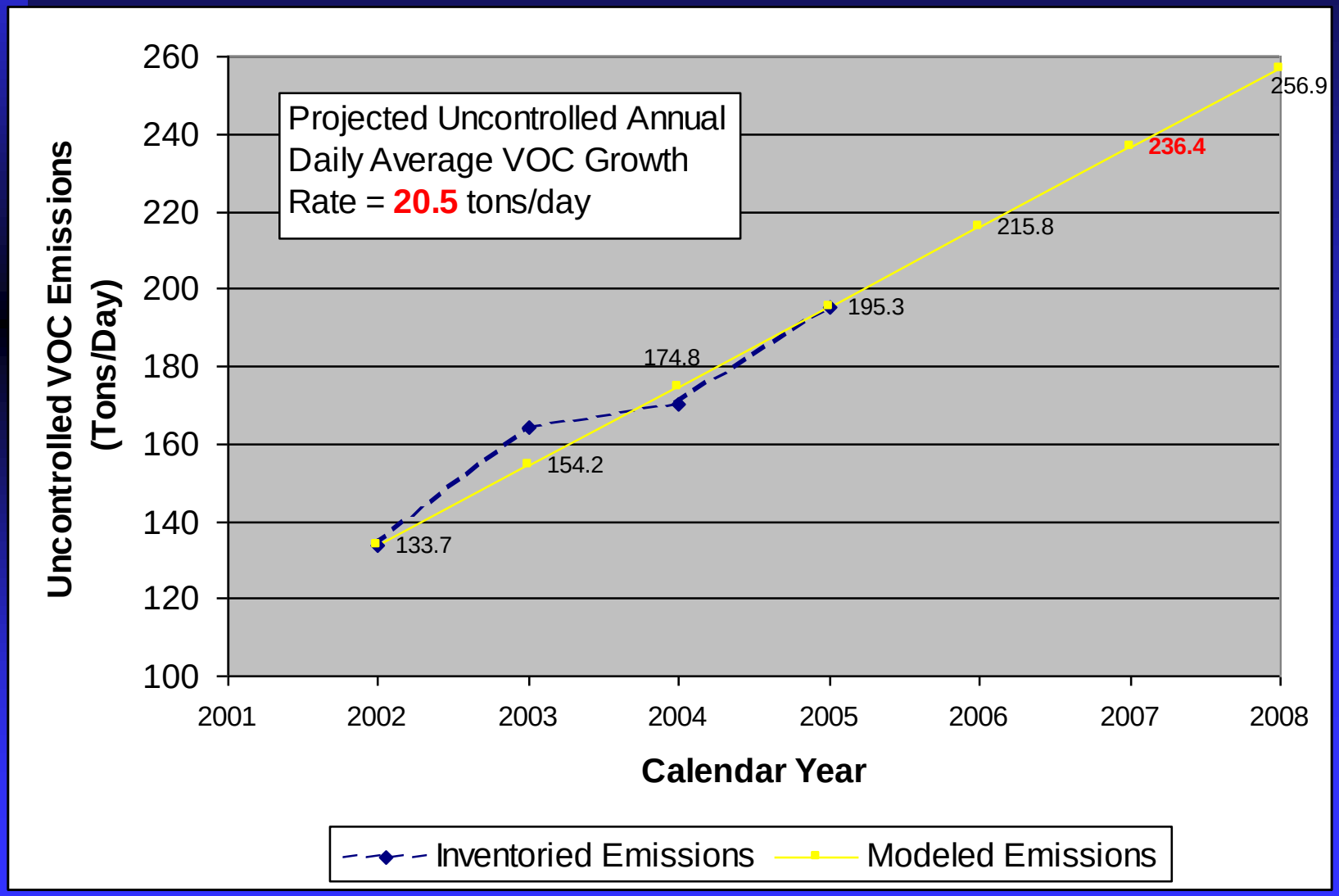
EAC Revisions: Background

- As part of the milestones set forth in the EAC , VOC emissions from condensate tanks in the 8-Hour Ozone Control Area were not to exceed 91.3 tons per day for the period from May 1 through September 30 (‘Ozone Season) 2007, and were not to exceed 100.9 tpd for the ozone season 2012
- To achieve these numbers, Regulation No. 7, Section XII provides, in part that owners and operators of condensate tanks in the 8-Hour Ozone Control Area achieve an overall VOC emission reduction of 47.5% during the Ozone Seasons for the years 2006 and beyond

EAC Revisions: Background

- The 47.5% reduction requirements was premised on growth projections that indicated that uncontrolled VOC emissions from condensate tanks in the 8-Hour Ozone Control area would be 146.1 tpd in 2007
- Actual data shows that uncontrolled emissions from condensate tanks in 2005 totaled 195.3 tpd
- Current growth projections forecast 236.4 tpd during 2007

EAC Revisions: Background



EAC Revisions: Background

- The Division is required to periodically assess the underlying assumptions of the Ozone Action Plan
  - The overarching goal is to maintain the integrity of the EAC and avoid a nonattainment designation
  - EPA's next scheduled date to decide whether to defer the NAA designation is Sept 2006

EAC Revisions: Background

- EPA has indicated that unless new control strategies that reduce condensate tank emissions to 91.3 tpd are put in place by May 1, 2007, the EAC will be retracted and the area will be designated as a non-attainment area

EAC Area: Proposed Revisions

- The proposed revisions are intended to accomplish two objectives:
  - Ratchet down control requirements in order to meet the 2007 and 2012 milestones in the EAC
  - Simplify the rule by eliminating burdensome recordkeeping and reporting requirements

EAC Area: Proposed Revisions

- The current rule requires companies to attain a 47.5% reduction in VOC emissions from condensate tanks in the 8-Hour Ozone Area during ozone season (May-September) and a 37.5% reduction during non-ozone season
- Because reductions are only required system-wide and do not apply to individual units the regulation requires detailed record-keeping in order to verify compliance with the reduction requirements

EAC Area: Proposed Revisions

- The proposed regulation will replace the system wide reduction requirement with an emission threshold control requirement that will apply to individual units
- In conjunction with this change, the proposed revisions eliminate the extensive record-keeping, requiring instead that operators track condensate production from each tank and maintain records of any period where a required control device is not operating

EAC Area: Proposed Revisions

- The emission control threshold will be set at a level that will allow the area to meet the 91.3 tpd milestone set forth in the EAC.
- The proposed revisions currently set the threshold at 11 tons of VOC emissions per year

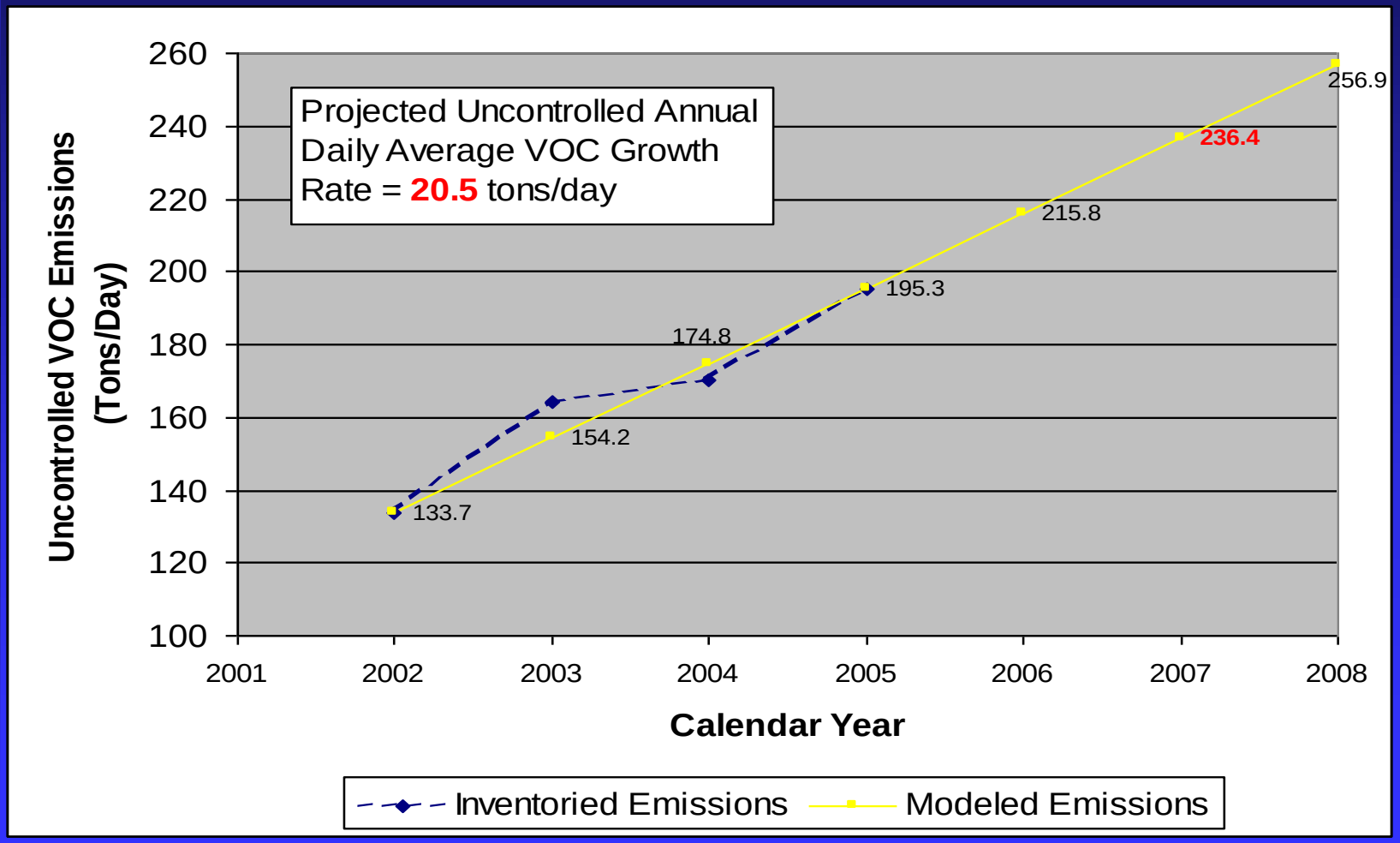
EAC Area: Emission Control Threshold

- The 11 tpy threshold was determined using the following methodology:
  - Calculation of projected emissions in 2007 based on a straight line projection using actual data from 2003-2005
  - calculation of of the distribution of 2005 emissions based on emission magnitudes

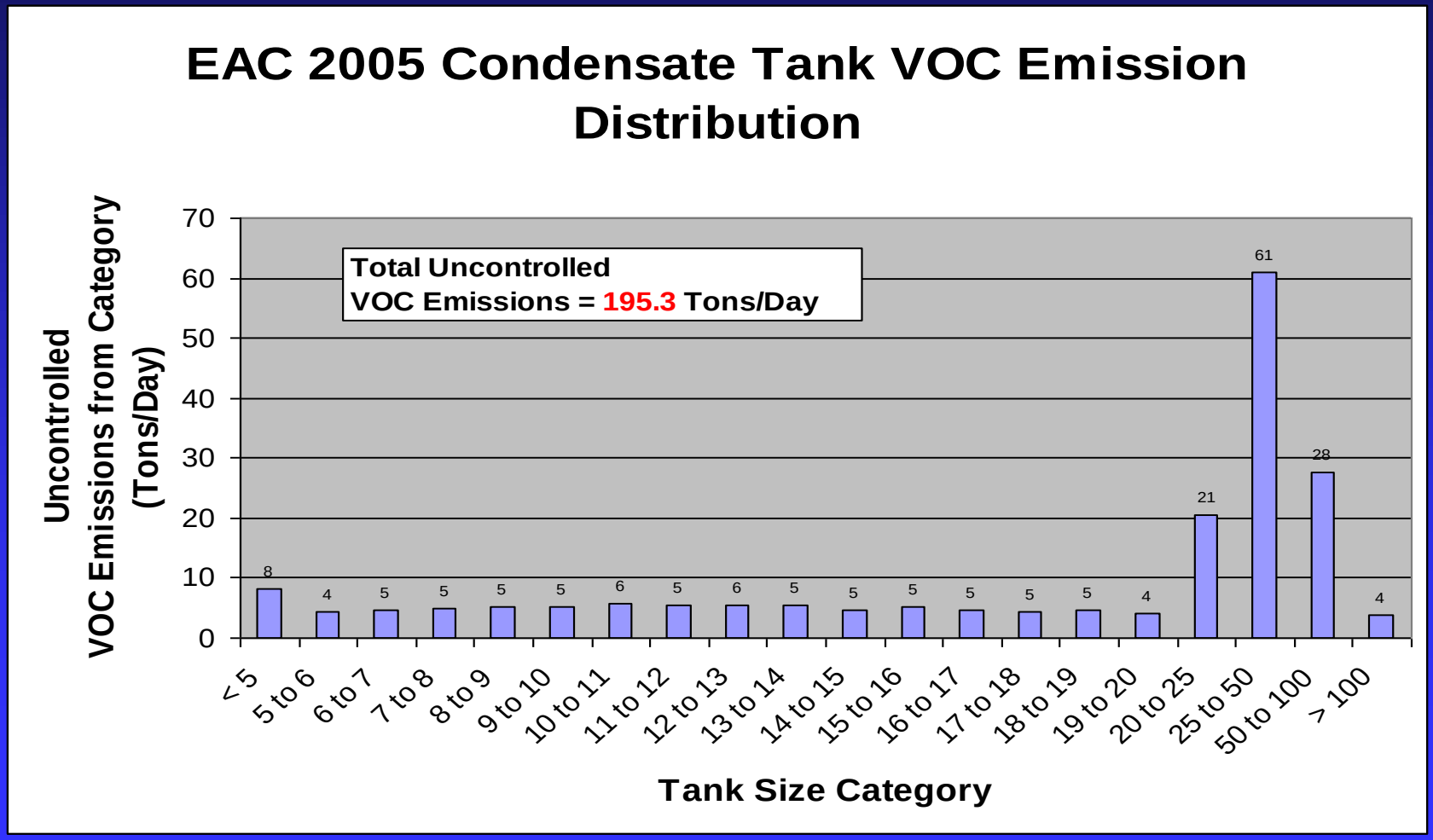
EAC Area: Emission Control Threshold

- Use of these two data sets to project distribution of 2007 emissions based on emission magnitudes
- Application of a 76% control factor based on 95% control efficiency and 80% rule effectiveness

EAC Area: Emission Control Threshold



EAC Area: Emission Control Threshold



EAC Area: Emission Control Threshold

Tank Battery Category (Tank Size TPY)	% of 2005 Daily Emissions	Projected 2007 Uncontrolled VOC Emissions (Tons/Day)
All	100%	236.4
>= 5	96%	226.5
>= 6	94%	221.2
>= 7	91%	215.7
>= 8	89%	209.8
>= 9	86%	203.4
>= 10	83%	197.3
>= 11	**80%**	**190.2**
>= 12	78%	183.7
>= 13	75%	177.0
>= 14	72%	170.4
>= 15	70%	164.9
>= 16	67%	158.5
>= 17	65%	152.8
>= 18	62%	147.3
>= 19	60%	141.6
>= 20	58%	136.6
>= 25	47%	111.8
>= 50	16%	38.1
>= 100	2%	4.5

EAC Area: Emission Control Threshold

- 2007 projected uncontrolled emissions for tanks greater than 11tpy is 190.2 tpy and for tanks less than this magnitude emissions are 46.2 tpy (236.4-190.2=46.2)
- Using a 76% control factor controlled tanks of 11 tpy and greater will emit 45.6 tpy for a total emissions of 91.8 tpy

EAC Area: Proposed Revisions

- In addition to the 11tpy threshold commencing in May 2007, the proposed rule also sets a control threshold of 6tpd commencing in 2012 in order to meet the 100.9 tpd EAC milestone for the ozone season 2012
- This number is pretty speculative and will probably need to be revisited as 2012 approaches

EAC Area: Proposed Revisions

- The proposed revisions also require tanks serving newly drilled, recompleted or restimulated wells to employ control equipment during the first 90 days of production
- This provision is intended to address the facts that emissions are greatest during this period and actual production/emission levels are not known prior to drilling

Proposed Statewide Regulation

- The AQCC has requested that in addition to the EAC Area revisions, the Division propose statewide control requirements for oil and gas operations
- While for the most part statewide emissions don't pose an immediate threat to ambient air quality standards, given the expected growth of drilling in various parts of the state the Commission and Division are concerned about possible future impacts

Proposed Statewide Regulation

- The current proposal includes controls for three types of equipment
  - condensate tanks
  - new engines
  - natural gas dehydrators

Proposed Statewide Regulation

- The condensate requirements mirror those proposed for the EAC area except the threshold is set at 20 tpy or greater
- The 20tpy threshold would require controls at 152 tanks and result in an annual emission reduction of approximately 5000 tpy of VOCs

Proposed Statewide Regulation

- For engines, the Division is proposing emission limits for new engines
  - starting July 1, 2007 engines over 500hp will need to 2.0 g/hp-hr Nox, 4.0 g/hp-hr CO and 1.0 g.hp-hr VOCs. These limits will drop to 1.0, 2.0 and 0.7 in 2010
  - The same limits will apply to engines between 100 and 500 hp commencing in 2008 and 2011

Proposed Statewide Regulation

- Commencing on May 1, 2008, glycol natural gas dehydrators with a design rate of 3MMscf per day or more will need to achieve a control efficiency of 90% of emissions from the still vent and flash tank

Conclusions

- A new way of doing business?