Compliance Program Development for Title V Facilities in Serious Nonattainment Area

Dawn Meyers and Tony Widboom
Barr Engineering Co.
August 20, 2020
12:00 – 1:00 pm MST
Outline

• Title V Program Overview
  – History, Applicability, Attainment Area Designation
• Application
  – Initial
  – Permit Modifications and Renewals
• Reporting
  – Deviations, Semi-Annual Monitoring Reports, Annual Compliance Certifications
• Compliance Programs
• Wrap-up, Q & A
1990 CAA Amendments

• Purpose: improve compliance by clarifying what sources must do to control air pollution

• Singular permit: “Many of the same sources and pollutants will be controlled under multiple titles—the **same facilities and pollutants** will often be controlled under the hazardous air pollutant, nonattainment, and acid rain programs. EPA must make every effort to **harmonize and prevent unproductive duplication under those titles**. The permit provisions of title V provide for a focus for this harmonization, although title V does not change, and gives EPA no authority to modify, the substantive provisions of these other titles.”

• Legally-enforceable document
Rules

- Operating Permits (Title V of CAA)
- Part 70 of the Code of Federal Regulations (CFR)
- Colorado Regulation No. 3, Part C (generally patterned after federal rule)
  - Applicability, Permit Modifications and a variety of other things
Title V Applicability

- Title V permit required for:
  - Any major source (discussed on next slide)
  - Sources that are subject to certain New Source Performance Standards or National Emission Standards for Hazardous Air Pollutants that require a Title V permit
  - Any affected source (i.e. subject to the Acid Rain Program)
  - There are rare exemptions outlined in Reg 3, Part C. II.E.
Definition of Major Source

• What is a “major source”?
  – For sources located in attainment areas
    • PTE of 100 tpy of any regulated air pollutant, including fugitive emissions if a “listed” source category
  – For sources located in the DMNFR “serious” ozone nonattainment area
    • PTE of 50 tpy or more of NOx or VOC
    • Sources have 1 year from redesignation to submit a permit application
    ➢DUE 1/27/2021
  – 10 tpy individual HAP or 25 tpy all HAP combined
Criteria for Determining a “Major Source”

• Any building, facility or installation which emits or may emit any air pollutant subject to regulation under the Clean Air Act (CAA)
  – Same industrial grouping (two-digit primary SIC code, or a “support facility”)
  – Continuous or adjacent properties – based on proximity
    • For O&G: same surface site or within ¼ mile sharing equipment
    • Others: no “bright line”
  – Common control
Minor Sources

• “Minor source” is not a “major source” and is not required to obtain a Title V permit
  – True minor source – potential to emit is less than major source thresholds
  – Synthetic minor source – potential to emit would be above the major source thresholds but have established a limit below the thresholds
    • For either criteria pollutants or HAPs (or both)
Colorado 8-hour Ozone Non Attainment Area (2008 Standard)
Ozone Nonattainment History

• Areas Impacted:
  – Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, parts of Larimer and Weld Counties
• 1997 Ozone Standard (80 ppb)
  – DMNFR designated “marginal” nonattainment on 11/20/07
• 2008 Ozone Standard (75 ppb)
  – DMNFR designated “marginal” nonattainment in 2012
  – DMNFR bumped from “marginal” to “moderate” in 2016
  – DMNFR bumped from “moderate” to “serious” in Jan 2020
• 2015 Ozone Standard (70 ppb)
Title V Applications

- Initial Application
- Modifications
- Renewal
Initial Application Requirements

• Timely
  – PS Memos 09-01 and 20-01
  – Existing facility that became a major source on January 27, 2020, application due by January 27, 2021

• Complete
  – Provide sufficient information to evaluate the source and determine all applicable requirements

• Application Shield – if timely AND complete
  – Application shield allows source to keep operating until the final permit is issued or denied
Required Application Contents

- General identifying information
- Description of processes and products including any associated with alternate scenarios
- **Potential-to-emit calculations and supporting information**
- Citation and description of all applicable requirements, and method for determining compliance
- Explanation of any proposed exemptions from otherwise applicable requirements
- Compliance plan and schedule
- Data necessary to allow the Division to determine compliance with applicable regulations
- Copies of Air Pollutant Emission Notices on file with the Division
The Public’s and EPA’s Role (1/2)

• Public review and comment
  – 30 day public comment period
  – Opportunity to request a hearing

• EPA review (concurrent)
  – 45 days to object
  – EPA objection
    • Agency cannot issue until objection is resolved
    • 90 days to resolve
    • If 90 days passes w/o resolution, permit may be issued
The Public’s and EPA’s Role (2/2)

• One last opportunity for the public to object
  – Petition EPA to object
    • 60 days after EPA’s 45-day review period
    • Petition to object does not stay an issued permit
    • State must resolve EPA’s objection
    • No violation in the interim
Operating Permit Renewal Application

- Operating Permits have a five year term and expire five years after initial and/or renewal permit issuance. A renewal application must be submitted to the Division at least 12 months but no earlier than 18 months prior to the expiration of the operating permit (Regulation No. 3, Part C, Section III.B.6). If a timely and complete renewal application is submitted, the operating permit does not expire until the renewal operating permit is issued.

Operating Permit Modifications

- Once the initial operating permit has been issued, the applicant can submit an application for a permit modification.
- There are three types of operating permit modifications:
  - Administrative Amendment
  - Minor Modification
  - Significant Modification
- See the Air Pollution Control Division (APCD) Title V Permit Revision Flowchart for assistance in determining which modification is appropriate for the requested revision.
Title V Permit Changes

• Refer to CDPHE’s "Title V Permit Revision Flowchart"
Administrative Amendments

• Correct typographical errors
• Identify a change in the name, address, or phone number of any person identified in the permit, or provide a similar minor administrative change at the source
• Require more frequent monitoring or reporting by the permittee
• Allow for a change in ownership or operational control of a source
Minor Modification

• Does not/Is not:
  – Violate any applicable requirement
  – Involve a significant change to existing monitoring, reporting or recordkeeping requirement in the permit
  – Require a case-by-case determination (e.g. RACT)
  – Change a federally enforceable emissions cap
  – Excepted from the definition of a Permit Modification in Reg 3, Part C, I.A.3.
  – Required to be processed as a Significant Modification
Significant Modification

• Most commonly required for projects that:
  – Causes a significant increase in the rate of emissions, monitoring or recordkeeping
  – Causes a change that is considered a modification under Title I (see Reg No. 3, Part G, Section I.L.I.G.2)
    • PSD, NSPS or NESHAP modifications
  – Requires a case-by-case determination (e.g. RACT)
• Include compliance plans
• Subject to 45-day review period by EPA
• Public notice
Options for Significant Modifications

• Construction permit first, then apply for Title V modification within 12 months of beginning operation; or,
• Combined construction/operating permit modification
Permit Renewal Applications

- Permit term of 5 years
- Due at least 12 months but no earlier than 18 months prior to expiration
- **Permit Application Form Applicability Matrix**
  - Renewals require same forms as initial application*
  - Cross-referencing the initial application or current permit
  - Focused on changes since initial application and providing new compliance certification
  - Redline-strikeout of current Title V permit
  - Consider newly applicable regulations since the last renewal
  - New insignificant activities
Compliance Assurance Monitoring (CAM)

• Three applicability criteria on an emissions unit basis
  – Applicable emission limit or standard,
  – Control device used for compliance, and
  – Pre-controlled emissions are >100% of major source threshold

• Many exemptions to consider
  – Control devices do not include “inherent process equipment” or passive controls
  – NSPS or NESHAP established after 11/15/90
  – Continuous compliance demonstration required
  – And others
## Application Timing - Reference

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Application due within...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing minor source, modification to an existing emission unit which results in the source exceeding a Title V applicability threshold</td>
<td>Modification to an existing emission point that doesn’t require a physical modification ...one year of the issuance date of the modified construction permit</td>
</tr>
<tr>
<td></td>
<td>Modification to an existing emission point that requires a physical modification           ...one year of commencing operation of the modified equipment</td>
</tr>
<tr>
<td>Source already has an operating permit and adds a new emission point via a construction permit</td>
<td>...one year of commencing operation of the equipment covered by the construction permit</td>
</tr>
<tr>
<td>Source already has an operating permit and modifies an existing emission point via a construction permit</td>
<td>Modification to an existing emission point that doesn’t require a physical modification ...one year of the issue date of the modified construction permit</td>
</tr>
<tr>
<td></td>
<td>Modification to an existing emission point that requires require a physical modification ...one year of commencing operation of the modified equipment</td>
</tr>
<tr>
<td>A construction permit (new or modified) is issued to a source which is subject to Title V and has submitted a Title V application but the Title V permit is not yet issued.</td>
<td>...30 days of the issuance date of the construction permit unless prior approval for a longer time period is obtained</td>
</tr>
<tr>
<td>A new emission unit is to be installed at a source which is required to have an operating permit, and the unit does not trigger construction permit requirements, but is not considered an insignificant activity under Regulation No. 3, Part C</td>
<td>No operating permit revision required. However, requires that written notice of the new emission unit(s) be submitted within 30 days of commencing construction</td>
</tr>
</tbody>
</table>
Deviations, Reporting and Compliance Certifications
Reporting under Title V Program

• 3 key types of reports
  – “Prompt” reporting of deviations
  – Semi-annual monitoring report
  – Annual compliance certification
What’s a “Deviation”

- “Deviation means any situation in which an emissions unit fails to meet a permit term or condition”
- Not always a violation (per EPA)
- Not all deviations result in enforcement (as a practical matter)
Example Deviations

- Emissions exceed a limit or standard
- Parameter outside of required range for control equipment or process
- Observations or data demonstrate noncompliance
- Exceeding throughput and fuel limits
- Monitoring not conducted
- Failure to timely report
Title V Deviation Report
Prompt Reporting of Deviations

• Generally "prompt" reporting shall entail submission of reports of deviations from permit requirements at least every six months except as otherwise specified by the Division in the permit.

• More frequent “prompt” reporting requirements:
  – For emissions of a hazardous air pollutant or a toxic air pollutant that continue for more than an hour in excess of permit requirements, the report shall be made within 24 hours of the occurrence;
  – For emissions of any regulated air pollutant, excluding a hazardous air pollutant or a toxic air pollutant that continue for more than two hours in excess of permit requirements, the report shall be made within 48 hours.
Excess Emissions Reporting

• The owner or operator of the facility experiencing excess emissions during startup and shutdown or malfunction shall notify the Division verbally as soon as possible,
  – During Startup and Shutdown
    • no later than two (2) hours after the start of the next working day.
  – During Malfunctions
    • no later than noon of the Divisions next working day

• Written notification by the end of the next reporting period
Suggested Approach for Reporting

• Build a site-specific flow chart or tools
  – Consider scenarios relevant to you (e.g., scrubber pump malfunction)
  – Define roles and responsibilities
  – Reporting requirements in your permit & state rules
  – Plan corrective actions and methods to reduce emissions during the event

• Consider overlap with other programs (e.g., release reporting)
Semi-annual Monitoring Report

• Summary of deviations during 6-month period covered by the report
  – Deviations identified by continuous or periodic monitors
  – Monitor downtime
  – Deviations discovered through recordkeeping
• Reports must be submitted as paper copies
  – Refer to CDPHE Electronic reporting policy
• Format for reports is included as an Appendix to the Title V Permit
## Monitoring and Permit Deviation Report - Part I

1. Following is the **required** format for the Monitoring and Permit Deviation report to be submitted to the Division as set forth in General Condition 21. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.

2. Part II of this Appendix B shows the format and information the Division will require for describing periods of monitoring and permit deviations, or malfunction or emergency conditions as indicated in the Table below. One Part II Form must be completed for each Deviation. Previously submitted reports (e.g. EER’s or malfunctions) may be referenced and the form need not be filled out in its entirety.

### FACILITY NAME:

### OPERATING PERMIT NO:

### REPORTING PERIOD:

(see first page of the permit for specific reporting period and dates)

<table>
<thead>
<tr>
<th>Operating Permit</th>
<th>Unit Description</th>
<th>Deviations noted During Period</th>
<th>Deviation Code</th>
<th>Malfunction/ Emergency Condition Reported During Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-811</td>
<td>Storage Tank D-811</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>D-812</td>
<td>Storage Tank D-812</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>D-813</td>
<td>Storage Tank D-813</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>D-814</td>
<td>Storage Tank D-814</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>T1</td>
<td>Storage Tank T1</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>T2</td>
<td>Storage Tank T2</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>T3</td>
<td>Storage Tank T3</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

---

Air Pollution Control Division  
Colorado Operating Permit  
Monitoring and Permit Deviation Report  
Appendix B  
Page 5

---

Air Pollution Control Division  
Colorado Operating Permit  
Monitoring and Permit Deviation Report  
Appendix B  
Page 10

---

**REPORT CERTIFICATION**

**SOURCE NAME:**  
**FACILITY IDENTIFICATION NUMBER:**  
**PERMIT NUMBER:**  
**REPORTING PERIOD:** (see first page of the permit for specific reporting period and dates)

All information for the Title V Semi-Annual Deviation Report must be certified by a responsible official as defined in Colorado Regulation No. 3, Part A. Section 1.13.38. This signature document must be attached with the documents being submitted.

**STATEMENT OF COMPLETENESS**

I have reviewed the information being submitted in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this submission are true, accurate and complete.

Please note that the Colorado Statutes state that any person who knowingly, as defined in Sub Section 18 1.501(6), C.R.S., makes any false material statement, representation, or certification in this document is guilty of a misdemeanor and may be punished in accordance with the provisions of Sub Section 25.7 122.21, C.R.S.

Printed or Typed Name:  
Title:  

Signature of Responsible Official:  
Date Signed:  

---

**resourceful. naturally.**
Annual Compliance Certification

APPENDIX C

Required Format for Annual Compliance Certification Report

Following is the format for the Compliance Certification report to be submitted to the Division and the U.S. EPA annually based on the effective date of the permit. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.

FACILITY NAME:

OPERATING PERMIT NO:

REPORTING PERIOD:

I. Facility Status

During the entire reporting period, this source was in compliance with ALL terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance are the method(s) specified in the Permit.

With the possible exception of the deviations identified in the table below, this source was in compliance with all terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference, during the entire reporting period. The method used to determine compliance for each term and condition is the method specified in the Permit, unless otherwise indicated and described in the deviation report(s). Note that not all deviations are considered violations.

<table>
<thead>
<tr>
<th>Operating Permit Unit ID</th>
<th>Unit Description</th>
<th>Deviations Reported</th>
<th>Monitoring Method per Permit</th>
<th>Was compliance continuous or intermittent</th>
</tr>
</thead>
<tbody>
<tr>
<td>F001</td>
<td>Crude Distillation Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B001</td>
<td>Crude Reactor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B010</td>
<td>Vacuum Heater</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F003</td>
<td>Fluid Catalytic Cracking Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

II. Status for Accidental Release Prevention Program:

A. This facility ________ is subject ________ is not subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act)

B. If subject: The facility ________ is ________ is not in compliance with all the requirements of section 112(r).

1. A Risk Management Plan ________ will be ________ has been submitted to the appropriate authority and/or the designated central location by the required date.

III. Certification

All information for the Annual Compliance Certification must be certified by a responsible official as defined in Colorado Regulation No. 3, Part A, Section 1. This signed certification document must be packaged with the documents being submitted.

I have reviewed this certification in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this certification are true, accurate and complete.

Please note that the Colorado Statutes state that any person who knowingly, as defined in §18-1-501(6), C.R.S., makes any false material statement, representation, or certification in this document is guilty of a misdemeanor and may be punished in accordance with the provisions of §25-7-112.1, C.R.S.

Printed or Typed Name: __________________________  Title: __________________________

Signature: __________________________  Date Signed: ____________

NOTE: All compliance certifications shall be submitted to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit.
Responsible Official’s Certification

- Certification statement:

I have reviewed the information being submitted in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this submittal are true, accurate and complete.

Please note that the Colorado Statutes state that any person who knowingly, as defined in Sub-Section 18-1-501(6), C.R.S., makes any false material statement, representation, or certification in this document is guilty of a misdemeanor and may be punished in accordance with the provisions of Sub-Section 25-7 122.1, C.R.S.
Is the Responsible Official the Only Person on the Hook?

- The certification requirement “does not require that this certification statement be based on absolute knowledge but rather allows the signer to question other responsible persons within the organization and based on what they relate to him to certify that he believes this information is true. A [RO] would only be held accountable for criminal prosecution for making this certification if he had knowledge .... that what he was certifying was not true, accurate, or reasonably complete.” [EPA RTC at 5-22.]
Example 1: Unofficial Observation

- Baghouse with a 20% opacity limit
- Observation once daily. If any visible emissions, conduct Method 9 measurement.
- Official monitoring observation shows no visible emissions
- Later that day you observe “significant” visible emissions
- I have “other material information” that requires additional action. Conduct a Method 9 observation
Example 2: Continuous Data Available

- Although permit requires that monitoring be performed “once during each day,” data is monitored and logged continuously.
- Permit logged (official) monitoring shows compliance.
- However, data logged by the DAS shows pressure drop is slightly out of range for another hour during the day.
- Report a deviation because the monitoring data constitutes other material information that I cannot ignore. Initiate corrective action.
Example 3: Monthly Observations

• Requirement: “Conduct and record an assessment of the visible emissions ... from the exhaust vent of [the silos] once per month.”

• Operated the silo only on the first day of the month and didn’t conduct an observation

• Include in semi-annual report as a deviation. Adjust schedule of future observations to the 1st of the month
Enforcement

• Noncompliance may result in:
  – Equipment shutdown
  – Compliance Advisory, Notice of Violation (NOV)

• NOV may result in significant $ penalties
  – State: varies
  – Federal: $101,439/day/violation

• Criminal penalties possible for knowingly making false statements, omitting information, altering/tampering
Compliance programs
Compliance Approach
### The End Game

<table>
<thead>
<tr>
<th>Operating Permit Unit ID</th>
<th>Unit Description</th>
<th>Deviations Reported¹</th>
<th>Monitoring Method per Permit²</th>
<th>Was compliance continuous or intermittent³</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insignificant Activities⁴</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Methods for Compliance Success

- Break down Title V permit into individual requirements
- Develop compliance tasks and owners for each requirement
  - Documented responsibilities ensure routine tasks are performed
  - Assigning owners eases the process of transferring duties
Example Tasks – Opacity Condition

1.3 Opacity shall not exceed the standards indicated above.

1.3.1 Opacity of emissions during fire building, cleaning of fire boxes, soot blowing, start-up, process modifications or adjustment of control equipment shall not exceed 30% for a period or periods aggregating more than six (6) consecutive minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4). This provision does not apply to periods of shutdown or malfunction. The source shall perform a Method 9 observation each time the engine start-up period exceeds ten (10) minutes to demonstrate compliance with this standard.

1.3.2 Opacity of emissions from these engines shall not exceed 20% (Colorado Regulation No. 1, Section II.A.1). The source shall perform a Method 9 observation quarterly during normal operations to demonstrate compliance with this standard.
Example Tasks – Opacity Condition


a. Unless otherwise provided in the source specific conditions of this Operating Permit, the permittee shall maintain compliance monitoring records that include the following information:

(i) date, place as defined in the Operating Permit, and time of sampling or measurements;

(ii) date(s) on which analyses were performed;

(iii) the company or entity that performed the analysis;

(iv) the analytical techniques or methods used;

(v) the results of such analysis; and

(vi) the operating conditions at the time of sampling or measurement.
Example Tasks – Opacity Condition

- **Unit Operator:**
  - Perform observation of visual emissions at E001 (diesel-fired internal combustion engine) on the first day of each calendar quarter.
  - Record result on Visible Emissions Form
  - Inform Environmental immediately if visible emissions are observed.

- **Environmental:**
  - Initiate Method 9 testing for any engine startups lasting more than 10 minutes.
  - Determine reporting requirements and corrective actions for any visible emissions > 20% opacity.
Example Tasks - Opacity Condition

- If a deviation occurs, gather information needed for reporting:
  - What was the root cause of the incident?
  - Was there an upset condition or equipment breakdown?
  - Was it beyond the control of the source?
  - Has it happened before?
  - Was it reasonably foreseeable?
  - Has the equipment been properly maintained and operated?
  - How were emissions minimized during the event?
  - Were repairs made as quickly as practicable, or was the equipment shut down?
  - How will you prevent recurrence?
Example Tasks – Opacity Condition

- Ultimately, what does the agency care about?
  - Did you exceed 20% opacity?
  - Did you perform visible emissions checks each quarter?
  - Did you document those visible emissions checks?
  - Did you properly report any deviations with all required information?
Collecting Information

• Utilize electronic records where possible
  – Easier cross-department data collection
  – Verification protocols can be set
  – Misinterpretations of handwritten data can be avoided
  – Data can be immediately transferred and checked
  – Mobile devices can streamline recordkeeping in the field

• Hardcopy logs may still make sense for certain records
Tracking Compliance

- Create or obtain tools to continuously track compliance
- Link compliance calculations to permit requirements
  - Reduces confusion on why certain tasks are needed
  - Improves review process by regulatory agency staff
Selecting Compliance Tools

• What software and systems are already in place at the facility?
• How much manual work is acceptable?
• How much time is there before compliance is required?
• What training is necessary?
• **No shortcuts to creating tasks & procedures**
Summary
How should new major sources proceed?

• Synthetic Minor
  – Determine if synthetic minor limits are a reasonable option if actual and projected actual operations without restrictions are below thresholds
    • Ability to increase operating rates likely outweigh Title V compliance costs and associated risks if limits would restrict operations

• Title V
  – Submit Application
  – Prepare for routine deviation and compliance certification reporting
  – Develop a compliance programs to support certification of compliance
  – Understand when permit modifications are necessary
What Resources are needed to comply with Title V

- Compliance Program
  - Permit Requirements
  - Compliance Tasks
    - Monitoring
    - Recordkeeping
    - Reporting
References

- CDPHE Title V Operating Permits
  - PS Memo
- EPA Title V Operating Permit Policy and Guidance Document Index
- EPA Title V Petition Database
- EPA CAM guidance
- EPA Applicability Determination Index (ADI)
Thank You!

Dawn Meyers
Senior Air Quality Consultant
720.934.2798
dmeyers@barr.com

Tony Widboom, PE
Senior Environmental Engineer / Vice President
720.515.3889
awidboom@barr.com