

Permitting Curriculum

Goal: To help EPA, state, local, and tribal air pollution professionals build their knowledge base and capacity to conduct permitting activities and write permits in compliance with the applicable Clean Air Act requirements.

Audience: The primary audience are professionals assigned to air quality permitting roles at EPA, state, local and tribal air agencies. The curriculum presumes these students will have taken some, or all, of the courses in the Air Pollution Basics curriculum before taking the courses under permitting.

Learning Objectives: Learning objectives in this curriculum follow Bloom's Taxonomy.¹ The learning objectives for the "foundational" level courses are focused on helping students remember and understand key concepts; the "intermediate" level is intended to help students apply and analyze concepts; and the "advanced" level is intended to help students create and evaluate key concepts, as well as master the curriculum.

Foundational materials

Preconstruction Permitting – New Source Review (NSR)

- Identify the role of the NSR permitting program
- Describe the major aspects of NSR Program history
 - Statutory requirements
 - Regulatory requirements
 - Sources and pollutants (including precursors) covered
 - Key guidance documents and policy memos developed by EPA and where to find them
 - The importance of permitting in protecting air quality—success stories, trends
- Outline the types of NSR permits and basic requirements for each
 - Major NSR permits
 - Attainment/unclassifiable (PSD)
 - Non-attainment NSR (NNSR)
 - Minor NSR permits
 - Synthetic minor sources
 - True minor sources
 - Tribal NSR
 - Other permitting options
 - General Permits
 - Permit by rule
 - Plant wide applicability limitations (PALs)

¹ Bloom, B. M., Englehart, E., Furst, E. H., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals*. New York: McKay.

- Outline the NSR permitting processes
 - Pre-application meetings/protocols/consultations
 - Determining Permitting Applicability
 - Permit Application Submittal
 - Permitting Authority Review
 - Include overview of BACT, LAER, use of emission reduction credits (ERCs) as emission offsets, modeling, emission limits to assure compliance with NAAQS
 - Public Participation
 - Opportunities for public comment (e.g., notice and hearing)
 - Permit Issuance
 - Appeals of Permit Decisions
- Describe provisions governing actions occurring after NSR permit issuance
 - Commence Construction
 - Begin Actual Construction
 - Permit rescission
 - Permit revision
 - Permit extension
- Describe regulatory authorities for issuing permits
 - EPA authority: issued by EPA regional office
 - EPA authority on Tribal lands
 - Outer Continental Shelf (OCS) jurisdiction
 - Areas without delegation or SIP approval
 - Authority delegated by EPA to state or local air agency: issued by air agency on behalf of EPA under EPA's rules
 - Authority under an approved SIP: issued by a state or local agency under its rules
- Navigate EPA website to access NSR websites, guidance documents, and other tools, (including EPS and RACT/BACT/LAER Clearinghouse)

Operating Permits – Title V Program

- Describe the statutory history of the operating permits program, from its inception
- Examine the purpose of the Title V Permitting Program
 - Role of compliance demonstration and recordkeeping
 - How Title V drives transparency,
 - Citizens' access to monitoring reports and records
- Identify pollutants covered by the Title V permit program
- Describe conditions requiring a source to obtain an operating permit
- Describe regulatory authorities for issuing permits

- State authority under 40 CFR Part 70
- Federally enforceable state operating permits (FESOP)
- EPA authority under 40 CFR Part 71
 - Circumstances for permitting on Tribal lands
 - Outer Continental Shelf (OCS)
 - Areas where there is no EPA-approved state program (expired/withdrawn)
 - When EPA objects to state-issued permit and state does not fix
- Outline the Title V permitting processes
 - Determining permitting applicability
 - Preparing and submitting permit application
 - General practices for writing a permit
 - Statement of basis
 - Public Participation (include discussion of e-notice / e-access), Comment Period
 - EPA review (under Part 70)
 - EPA objection
 - Petition for EPA objection (under Part 70)
 - Permit issuance
 - Appeal of permit decision
 - EPA Reopens permit for cause (under Part 70)
- Describe types of permit actions
 - Initial application
 - Renewal
 - Modification
 - Administrative amendments
- Provide examples that help students discern what type of Title V permit action is required
- Navigate EPA website to be able to easily access Title V websites, guidance documents, and other tools

Intermediate materials

Preconstruction Permitting – New Source Review (NSR)

- Determine what types of sources are subject to federal NSR permitting
 - Definition of Stationary Source
 - Single source determinations – 3-part test and support facilities
 - Temporary emission sources
 - Vessels emissions
 - Outer Continental Shelf (OCS) sources
 - Deepwater ports
 - Portable sources (e.g., support vehicles or vessels)

- Identify NSR Pollutants and calculate emissions to determine major or minor NSR
 - Regulated NSR Pollutants
 - Secondary Emissions
 - Potential to Emit and Enforceability
 - Quantifying Emissions – estimating techniques, validity/accuracy
 - Emission factors & reliability

- Define major NSR permit applicability requirements
 - Major Source applicability
 - NNSR applicability procedures
 - 100 TPY Major Source Threshold
 - Less than 100 TPY in certain NA areas
 - PSD applicability procedures
 - 250 TPY, unless a 100 TPY source category
 - If major for one pollutant, SER is trigger for other pollutants to be subject to PSD
 - Counting fugitive emissions
 - Reactivation of a permanently shutdown facility
 - Excess Emissions During Periods of Startup, Shutdown, or Malfunction
 - Relaxing Limits to Avoid Major NSR (e.g., 40 CFR 52.21(r)(4); 40 CFR §51.165(a)(5)(ii))
 - Major Modification applicability
 - Significant Emission Rates (SERs)
 - Exclusions from Modification – RMRR, hours of operation, etc.
 - Applicability procedures for modifying existing emission units, adding new emission units, and “Replacement Units”
 - Step 1: Significant Emissions Increase Calculation (Project Emissions Accounting)
 - Baseline Actual Emissions
 - Actual to Projected Actual (ATPA) applicability test
 - Project Aggregation
 - Debottlenecked Emission Units
 - Step 2: Significant Net Emissions Increase (Contemporaneous Netting)
 - Plant-wide Applicability Limitation (PAL) permits
 - Establishing an Actuals PAL – setting the limit; contents of the PAL permit; effective period
 - Other PAL actions: renewing, expiring, reopening, adjusting, increasing, terminating, etc.
 - Monitoring, recordkeeping, reporting

- Define major NSR permit requirements
 - PSD permit requirements
 - Top Down BACT
 - NAAQS and PSD Increment compliance demonstration
 - Ambient air
 - Significant Impact Level (SIL)
 - EPA’s *Guideline on Air Quality Models*
 - Source Impact Analyses

- Cumulative Impact Analyses
 - Class I area impacts analysis and Air Quality Related Values (AQRVs)
 - Federal Land Manager coordination
 - Additional impacts analysis (secondary impacts)
 - Preconstruction or postconstruction monitoring
 - NNSR permit requirements
 - Lowest achievable emission rate (LAER) analysis
 - Emissions offsets
 - Emission reduction credits (ERCs) , generation, banking and use as offsets
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 - CAA compliance certification
 - Alternatives Analysis
- Define minor NSR permit requirements
 - True and synthetic minor sources
 - Regulatory requirements for minor NSR
 - Tribal minor NSR program
 - State and local agency minor NSR programs
- Define procedures and best practices for preparing NSR permits
 - Pre-application meetings with applicant
 - Determining permit applications to be complete
 - Writing clear, unambiguous permit conditions
 - Setting enforceable PTE limits
 - Noticing the draft permit and public participation
 - Preparing a Statement of Basis for the draft permit
 - Responding to public comments on the draft permit
 - Issuing the final permit
 - Appeals of permit decisions

Operating Permits – Title V Program

- Evaluate a source for major source applicability
 - Single source determination
- Determine applicable requirements, e.g.,
 - MACT/NESHAP
 - NSPS
 - SIP limits
 - Limits from NSR permits
 - Synthetic minor limits
 - Why a source might take a synthetic minor limit
 - How to ensure limits are enforceable
- Implement the operating permit issuance process

- Initial application
- Renewal
- Modification
 - Significant, Minor
- Operational Flexibility - 502(b)(10) Changes
- Define best practices for writing title V permits
 - Writing clear, unambiguous permit conditions
 - Enforceability
 - Statement of Basis preparation
 - Public participation
 - Response to comments (RTC) preparation
 - Record keeping and reporting
- Incorporate by reference (IBR) (level of detail needed for incorporating applicable requirements)
 - Federal and state requirements

Advanced Materials

Preconstruction Permitting – New Source Review (NSR)

- Determine Actual-to-projected-actual (ATPA) values for an example scenario
- Determine Best Available Control Technology (BACT) for an example scenario
- Determine Lowest Achievable Emissions Rate (LAER) for an example scenario
- Perform air quality impact analysis
 - Explain how a NAAQS assessment is performed
 - Explain how a PSD Increment analysis is performed
- Perform contemporaneous netting analysis for an example scenario for both PSD and NNSR Perform Inter-pollutant trading (IPT) scenarios
- Write effective NSR permits
 - Required permit content
 - Enforceable permit conditions, including applicable
 - Emission limits/standards
 - Operating limits/standards
 - Testing requirements
 - Compliance Demonstration Methods
 - Emissions monitoring methods
 - Recordkeeping and reporting
 - State or local specific general conditions reporting
 - Public notice and Statement of basis
 - Response to Comments (RTC)

Operating Permits – Title V Program

- Write effective title V permits, per example scenarios
 - Writing clear, unambiguous permit conditions
 - Enforceable permit conditions, including applicable:

- Conditions from consent decrees
 - Federal and state regulations
 - Emission limits/standards
 - Operating limits/standards
 - Testing requirements
 - Monitoring (including CAM to assure compliance)
 - Record keeping and reporting
 - Incorporate by reference (IBR) (level of detail needed for incorporating applicable requirements)
 - General conditions
 - Insignificant emission units
 - State-only (or local-only) permit conditions
 - Compliance schedule
 - Permit shield (optional)
 - Statement of Basis preparation
 - Public participation
 - Response to comments (RTC) preparation
- Apply advanced permitting concepts
 - Permit streamlining
 - Evaluating monitoring adequacy
 - Sufficiency Monitoring
 - Compliance assurance monitoring—applicability and reviewing plans
 - Parametric monitoring
 - Surrogates
 - 3 steps under part 70
 - Gap-filling monitoring