·A·I·R· ·P·O·L·L·U·T·I·O·N·

GENERAL STUFF

- CAA §§ we need to know:
  - §§ 107, 108, 109, 110, 111, 112
    §§ 160, 161, 162, 163, 164, 165
    § 182

- Risk Assessment
  - Isoplasts = lines on a map delineating a given risk level around a given source of toxic air pollutants
  - Methods of assessment: dose–response
    - human epidemiology
    - animal experiments
    - molecular or mechanistic data
  - Best method of testing is human testing, but that's *unethical.*
  - Synergizing test results may enhance findings

- CAA does nothing to address underlying pollution problems.
  - No population, land use, economic growth provisions.
  - Single focus; not holistic.
  - No lifestyle emphases.

- EPA disfavors "intermittent control systems" technology
  - ICS = tall stack + production curtailments

- EPA has the authority ("§ 114 request") to request any kind of info from regulated entities
  - e.g., info on paints and VOCs. *(Navistar)*

- Exceedances & Violations of Ozone Standards: *Navistar* 1345–46
  - Four exceedances at an individual monitoring site over three years establish noncompliance with a NAAQS. 40 CFR pt. 50, app. H; 50 Fed. Reg. 42,375, 42,736 (1985)
    - *but compare* Harris's def of violation (reprinted in "Redesignation" section of Attainment/Nonattainment)

- When there is a MAY not a SHALL in a statute, you can petition the agency to act—denial → FAA subject to judicial review

NAAQS:

- EPA must publish list of pollutants that "may reasonably be anticipated" to endanger pub. health/welfare (**§ 108(a)(1)**)
  - Nondiscretionary duty
    - *NRDC v. Train* (2d Cir. 1976):[1] If a pollutant meets the standard for inclusion, it must be put on the list, despite § 108(a)(1)(C)'s permissive-sounding language

      Inclusion on § 108(a)(1) list triggers § 109 (NAAQS) & § 110 (SIPs).

- EPA must create air quality criteria for each (a)(1) pollutant **(§ 108(a)(2))**
  - CO, Pb, NO_x, O_3, PM, SO_x

- Provide no incentive to reduce pollution in attainment areas
- Failure to implement → poss. loss of fed. hwy & sewer funding
  - really an empty threat
  - extensions of attainment deadlines → deadlines not taken seriously

- **Two kinds of NAAQS (§ 109(a)(1))**
  - **Primary**: public health **(§ 109(b)(1))**
    - cost/feasibility of attainment not considered
    - includes "adequate"[2] margin of safety
      - *Lead Industries Ass'n v. EPA* (D.C. Cir. 1980): margin of safety in NAAQS does not require cost/technical feasibility; only consideration is public health: "precautionary orientation"[3]
  - **Secondary**: public welfare **(§ 109(b)(2))**
    - soils, water, crops, materials, wildlife, climate, visibility
    - in practice, "relatively unimportant" because secondary stds rarely exceed primary stds (which themselves are so often unmet)

  - **NAAQS to be reviewed**, but not necessarily revised, **every five years (§ 109(d))**
    - increased in scientific understanding
    - better measurement tools

[1] Squillace 55
[2] *Cf.* HAPs under § 112 (requiring an *ample* margin of safety).
[3] NAAQS are based purely on science & margin of safety, whereas SIPs do allow cost considerations.

National Ambient Air Quality Standards

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour[(1)]	None	
	35 ppm (40 mg/m^3)	1-hour[(1)]		
Lead	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM_{10})	150 µg/m^3	24-hour[(2)]	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual[(3)] (Arithmetic Mean)	Same as Primary	
	35 µg/m^3	24-hour[(4)]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour[(5)]	Same as Primary	
	0.08 ppm (1997 std)	8-hour[(6)]	Same as Primary	
	0.12 ppm	1-hour[(7)] (Applies only in limited areas)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m^3)	3-hour[(1)]
	0.14 ppm	24-hour[(1)]		

[(1)] Not to be exceeded more than once per year.
[(2)] Not to be exceeded more than once per year on average over 3 years.
[(3)] To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m3.
[(4)] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m3 (effective December 17, 2006).
[(5)] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
[(6)] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
[(7)] (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.

ATTAINMENT/NONATTAINMENT DESIGNATIONS (§§ 107, 175A)

- States have primary responsibility for implementation **(§ 107(a))**
  → *SIPs (§ 110(a)(1))*
    - Establishment of AQ Control Regions **(§ 107(b))**
    - *EPA-est'd AQ Control Regions (§ 107(c))*
    - EPA has authority to modify states' designations **(§ 107(d)(1)(B)(ii))**
- Designations to aid in developing SIPs

- **Designations** to be made by states within one year NAAQS enactment/revision (§ 107(d)(1)(A))
    - **nonattainment (§ 107(d)(1)(A)(i))**
        - may be based on "hypothetical future circumstances" even if an area is currently in attainment, but must still be probable or reasonable (*PPG Indus. v. Costle* (6th Cir. 1980))
            - "Foresight is the key to planning."
    - **attainment (§ 107(d)(1)(A)(ii))**
    - **unclassifiable (§ 107(d)(1)(A)(iii))** (usu. rural areas)
    - EPA has two years to approve or disapprove the designations[4]
        - subj. to review under the APA for A&C (*PPG Indus. v. Costle* (6th Cir. 1980); *Cincinnati Gas & Electric Co. v. Costle* (6th Cir. 1980))
        - designations may be based on modeling data even if assertedly adequate monitoring data is available (*Cincinatti Gas & Electric*)

    - **Ozone nonattainment designations** controlled by § 181, not § 107.
        - *aff'd*, *Whitman v. Amer. Trucking Ass'ns*, 531 U.S. 483 (2001)

- **Redesignation (§ 107(d)(3))**[5]
    - Allowed based on change in air quality *only*
        - i.e., area reaches attainment for ≥1 criteria pollutant *or* area becomes nonattainment for violating NAAQS
        - **violations:**
            - a *violation* is an average of one exceedance per year at any given monitoring site over a three-year period[6]
                - **upwind issue:** If an area claims that exceedances are caused by transport from upwind sources, must be supported by "an adequate technical demonstration, including emissions data and a monitoring analysis" (*SW Penn. Growth Alliance v. Browner* (3rd Cir. 1997)
                - But anyway, attainment is defined as an area "that meets" NAAQS regardless of source. *Id.*

[4] *See* "EPA must approve State SIPs" under "SIPs" *infra*.
[5] Harris expressed surprise that there is no mandatory provision for redesignation if air quality falls.
[6] *But see* NAAQS standards *supra*.

        - *many areas designatved nonattainment are affected by other areas*
    - modeling, in addition to monitoring, must show that there was no problem
- Administrator *may* recommend redesignation **(§ 107(d)(3)(E))**
    - five criteria
        - (i) NAAQS achieved
        - (ii) SIP approved under § 110(k)
        - (iii) AQ improvement is from "permanent and enforceable reductions in emissions" resulting from SIP
        - (iv) maintenance plan approved under § 175a
        - (v) State has met all § 110 and Part D requirements
- EPA can include in a nonattainment area a county that itself meets NAAQS. (*Ohio v. Ruckelshaus* (6th Cir. 1985))—upholding as not A&C

- When a state submits a § 107(d) request for redesignation from nonattainment to attainment, the state must also submit a revised SIP that provides for maintenance of the relevant NAAQS for at least ten years **(§ 175a(a))**

SIPs: STATE IMPLEMENTATION PLANS W/IN 3 YEARS OF NAAQS (§ 110(A)(1))

- **Basic outline**. (1) States determine the existing pool of emissions—everything from paint cans to power plants. (2) Include plans for future growth. (3) Determine amount of reductions needed to reach attainment.[7] (4) Determine methods of reduction.[8]

- SIPs must include:
  - enforceable emissions limitations **(§ 110(a)(2)(A))**[9]
  - provisions for continuous emissions monitoring **(§ 110(a)(2)(B))**
  - enforcement program **(§ 110(a)(2)(C))**
    - penalties, fines, civil/criminal/admin
  - emergency contingency plans[10]
  - revision process
  - PSD and/or NSR
  - permitting fees: avoids "unfunded mandate" problem

  - failure to promulgate a SIP can lead to loss of fed. hwy funding & a moratorium on major new sources, but this has never been done

- EPA must approve or disapprove State SIPs.[11]
  - If § 110(a)(2) requirements are met, EPA has nondiscretionary duty to approve. (*Train v. NRDC* (U.S. 1975))
  - *State of Texas v. EPA* (5th Cir. 1974):[12] EPA **approval/disapproval subject to A&C review**: difficult to overturn EPA's decision.
    - much easier to overturn State's determination of SIP adequacy.
    - SIP cases are rare because they've proven almost impossible to win.
  - *Kennecott Copper Corp v. Costle* (9th Cir. 1978):[13] **"black box" provision in a SIP is OK.**

[7] "Amount of redux needed to reach attainment" is a "soft" requirement, "tough to figure out, a lot of questions to answer . . . it becomes political"
[8] Difficulties arise because different sources emit different amounts of pollutants; different costs for different sources; "becomes political."
[9] See New Source Performance Standards (§ 111)
[10] Harris says: "I have no idea what this really means"
[11] See "EPA has two years to approve or disapprove the designations" under "Designations" *supra.*
[12] Squillace 95
[13] Squillace 193

- **Nonattainment areas**, under 1977 amdts, have extra permit requirements: [14]
  - "no-growth environment" . . . permits required (§ 172(c)(5))
    - § 172(c)(5) reqs permits; § 173 details permits
  - Permit requirements
    - offsets
      - can only be obtained from sources in an area w/ equal or higher NA classification
    - LAER § 173(a)(2)
    - certification that other sources owned/op'd by applicant are in compliance or on schedule for compliance (§ 173 (a)(3))
    - analysis of alternative sites, sizes, processes, ctrl techniques, showing that benefits of the new source "significantly outweigh the envtl & social cost imposed" (§ 173(a)(5))

NONATTAINMENT AREAS

RACT (EXISTING)

LAER (NEW/MODIFIED)

  - major source = E or PTE 100/250 (§ 302(j))
    - Ozone ≥Serious: 100/50/25/10 tpy VOCs/NO_x. (§ 182))

  - minimum of **RACM[15]/RACT[16] for all existing sources (§ 172(c)(1))**
    - Specific control devices *or* numerical standard
      - numerical standards more common:
        allows a variety of means to comply
        flexibility, creativity; possible lower costs
      - economic incentives (fees, marketable permits, auctions of emissions rights) OK (§ 172(c)(6))

    - RACT can differ for similar sources based on site-specific considerations.
      (EPA reg upheld in *Nat'l Steel Corp. v. Gorsuch* (6th Cir. 1983))

    - RACT is "the lowest emissions limitation that a particular source is capable of meeting by the aplication of control technology that is reasonably available considering technological and economic feasibility."(*Navistar Intern. Transp. Corp. v. EPA* (6th Cir. 1991))

    - The rule can be tech-forcing, but in an enforcement axn, company's legitimate defense is infeasibility (at least in CA)

[14] § 172 defines permit requirements for sourcers in nonattainment areas.
[15] RACM = Reasonably available control measures. Harris: "Just something that gets buried in the CAA and doesn't get much use." Used for indirect sources, e.g., fugitive dust. Non-site-specific. Deals with specific *kinds* of pollution.
[16] RACT = Reasonably available control technology. Includes "devices, systems, process modifications, or other apparatus or techniques." Site-specific. 40 C.F.R. § 51.1(o).

- **Reasonable further progress (§ 172(c)(2))**
  - Both RACT and RFP required for site-specific SIP revisions as well as comprehensive SIP revisions.

- **No major new sources** in nonattainment areas **unless they more than offset their new emissions**[17]

- When **major new sources** allowed (permit only),[18] **must implement LAER**[19]
- **Ozone nonattainment areas** have subdesignations and specific time limits for attainment **(§ 181(a)(1))**[20]

OZONE

  - marginal, moderate, serious, severe, extreme
  - "take effect" deadline of § 182(c)(3)(B) means only that the SIPs' I/M[21] programs must take legal effect, not that they be fully implemented (*NRDC v. EPA* (D.C. Cir. 2004))
    - <Serious areas: original I/M
      - only req smog check @ chg of ownership.
    - Serious areas: enhanced I/M
      - yearly; not just tailpipe emissions (corrects for leaks in the emissions system)

VARIANCES

- **Variances** (revisions by States to SIPs relaxing RACT controls or extending compliance dates for particular sources)[22] allowed if will not threaten attainment schedule. **(§ 182(c)(4)(B))?**[23] **(Required for ≥Serious areas)**
  - Variances allow higher short-term emissions at the cost of ultimately greater restrictions
    - may be permanent (relaxations) *or* temporary (extensions)
  - Requires an "Attainment and Reasonable Further Progress Demonstration" **(§ 182(c)(2))**
    - Generally requires showing that SIP will result in at least 3% yearly VOC emissions decrease (3% of baseline emissions). **(§ 182(c)(2)(b)(i))**
    - Attainment demonstration must be up to date. (*Navistar* 1354)

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[17] § 173(a)(1)(A) "ratchets down" pollution by requiring maj. new srcs in NA areas to more than offset their new pollution.
[18] § 173 describes permit requirements.
[19] LAER = most stringent control for the source category contained in any state SIP or most stringent control achieved in practice. § 171(3). Required by § 173(a)(2). See also *Citizens Against Refineries*, Squillace 139.
[20] § 181(a) defines the nonattainment subcategories by 0_3 ppm and establishes attainment deadlines.
[21] I/M = Vehicle Inspection and Maintenance programs req'd under 1990 amdts for serious, severe, & extreme areas.
[22] Applies to VOC Rule only?
[23] Authority for variances originally found in § 110(a)(3)(A), but this was repealed in the 1990 amdts. Only parallel provision in current CAA is § 182(c)(4)(B). But this makes no real sense, since § 182(c) is about Serious Nonattainment Areas only.

        - Applies to site-specific SIPs. *(Navistar* 1355)
    - Criteria for granting RACT compliance date extensions *(CDE) (Navistar Int'l Transp. Corp. v. EPA* (6th Cir. 1991)
        - (1) Expeditiousness
            - Source should show that it "progressed from the time the applicable regs were adopted to [the] presesent with no sig. periods of inaction"
            - Source must look at other sources nationally in the same VOC source category, check their compliance status
            - must still comply with implementation of RACM as expeditiously as practicable
            - If a source-specific SIP revision for a CDE is w/in three years of adoption of the current regulation by the state: presumptively expeditious; otherwise variance is "closely scrutinized" as above (*Navistar* 1356)
        - (2) Likelihood of success
        - RACT-level emission limits must be technically and economically infeasible (need "complete survey")
            - Source must show that SIP timeframe allowed inadequate time for economically and technologically feasible compliance plan to be implemented
            - State should provide evidence that it made "all reasonable efforts" to locate complying RACT technology
                - should consult with the source & regional/nat'l trade assoc & look at their information
    - Criteria for granting RACT relaxation (*Navistar* 1357)
        - Must show state SIP reqmt is technologically and economically infeasible *and* that the variance is RACT, the best that the source can do
            - "must show both that the existing emission limit 'is not RACT' and that its variance 'is RACT.'"
        - (notion of a source as "unique") (*Navistar* 1358–59)

- Attainment demonstrations required for both 24-hour standards and yearly-average standards (*Ober v. EPA*)[24]
    - stds protect different aspects of health *(309)*
    - sources differ (24-hour viols tend to be localized, e.g., construx projs; yearly viols tend to come from dispersed, diverse srcs)
    - control measures differ

[24] *Ober v. EPA* was about PM_{10} standards.

- **Attainment areas**, 1977 amdts: **PREVENTION OF SIGNIFICANT DETERIORATION (PSD)**
  - PSD permitting basics: BACT, AQ analysis, Additional Impacts analysis, public involvement (criteria pollutants only; § 112 still applies)

PSD

  - Classifications
    - Class I areas – int'l parks, nat'l wilderness/mem. parks **(§ 162(a))**
    - Class II areas – all other areas deemed in attainment[25] **(§ 162(b))**
    - Class III areas – only by redesignation **(§ 164(a))**
      - redes II → III raises concerns of violating NAAQS
      - some areas cannot be redesignated II → III
      - allows increases almost up to NAAQS

  - Increments
    - Increments define the amount of pollution by which an attainment area is allowed to exceed its baseline levels.
      - Baseline generally equals ambient concentration at the time that the first complete PSD permit application affecting the area is submitted[26]
    - Class I allow smallest increments; Class III the greatest **(§ 163(b))**

    - NAAQS may never be exceeded, even if not all of an increment is used

NEW SOURCE PERFORMANCE STANDARDS (§ 111)

- apply to both new and modified sources **(§ 111(a)(2),(4))**
  - requires "the best system of emissions reduction . . . **adequately demonstrated**" **(§ 111(a)(1))** *(best demonstrated technology—BDT)*
    - **= best economically achievable system**
    - need not be *presently* achievable. can be tech-forcing. (*Nat'l Asphalt Pavement Ass'n v. Train* (D.C. Cir. 1976))
    - include considerations of cost, environmental impact, energy reqs
  - **existing & unmodified sources grandfathered in**
  - No more major sources if increment is met.
    - Minor sources still OK.

- EPA defines categories or classes of sources **(§ 111(b)(1)(A))**[27]
  - sources that cause or "contribute[] significantly" to AP & "may reasonably be anticipated" to endanger pub health/welfare

[25] Attainment standards are defined in § 107(d).
[26] *See infra* § 169(4).
[27] First question about NSPS: how does the EPA select source categories?

- EPA publishes regulations for source categories **(§ 111(b)(1)(B))**[28]
  - sources can be categorized by class, type, and sizes **(§ 111(b)(2))**
  - standards numerical unless infeasible **(§ 111(b)(5))**
    - exception: § 111(h): "infeasibility"—then tech stds appropriate (e.g., operational stds for coke piles @ ports to manage dust) *(see also Squillace 271)*

- **Modifications (§ 111(a)(4))**

NSPS MODIFICATIONS

  - Any physical change in, or change in the method of operation of, a stationary source that:
    - increases the amount of any air pollutant emitted
    - results in the emission of any air pollutant not previously emitted
    - *measured in lbs/hr; no de minimis exception*
      - *Duke Energy*: change from hourly to annually
  - Includes "reconstruction" (*EPA reg.* 40 C.F.R. § 60.15):[29]
    - (a) An existing facility, upon reconstruction, becomes an affected facility, **irrespective of any change in emission rate**.
    - (b) "Reconstruction" means the replacement of components of an existing facility to such an extent that:
      - (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and
      - (2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

[28] If there are no good control techs available, EPA looks for other measures, e.g., workplace management. Violations of source emissions limits are often caused by sloppy workplace practices.
[29] "Reconstruction" is considered to be different from "modification," but NSPS apply.

NEW SOURCE REVIEW: PSD, NA, NA OZONE—§ 165, § 172/3, § 182

- If a source triggers NSR by size or through modification, will need a preconstruction permit
  - (1) Is it a major source?
  - (2) Is there a physical or operational change?
  - (3) Is there a significant net increase in emissions?
  - (4) Netting

- **PSD NEW SOURCE REVIEW:** major new facilities in **attainment areas (§ 165)**[30]
  - PSD permitting basics: BACT, AQ analysis, Additional Impacts analysis, public involvement (criteria pollutants only; § 112 still applies)

  - **Major facility** = E or PTE ≥100 tpy from any of certain named sources or ≥250 tpy of any particular pollutant **(§ 169(1))**[31]
    - maj. facilities theoretically better able to bear costs of controls

  - Major facilities, as part of their permit application, must:
    - *meet § 111 NSPS & § 112 HAP stds*
    - Not cause or contribute to a violation of NAAQS **(§ 165(a)(3)**
      - pollution contribution determined by reference to **baseline emissions (§ 169(4))**[32]
        (see also *Al. Power Co. v. Costle* (D.C. Cir. 1979))

PSD NSR BACT

    - use **BACT (§ 165(a)(4))**[33]
      - BACT = case-by-case determination
        - considers NRG, envt'l, econ impact

    - complete **Air Quality Analysis**
      - two major components
        - assessment of existing air quality
          - ambient monitoring data **(one year of monitoring data)**
          - AQ dispersion modeling results
        - predictions (modeling) of increase in pollution assoc. w/ the project

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[30] *cf.* NSR for nonattainment areas: § 173.
[31] *But see infra* re: ozone (threshold for what constitutes a "major source" based on VOC emissions is lower).
[32] § 169(4): The term "baseline concentration" means, with respect to a pollutant, the ambient concentration levels which exist at the time of the first application for a permit in an area subject to this part, based on air quality data available in the Environmental Protection Agency or a State air pollution control agency and on such monitoring data as the permit applicant is required to submit.
Harris adds: "This can cause a disproportionate impact on major emitters in an attainment area where many minor source permits have already been granted. There's less increment remaining."
[33] BACT = best available control technology.

- **Additional Impacts Anaysis**
  - impact of greater emissions on air, ground, water pollution; soils, vegetation, visibility
  - impact of associated growth: indus/res/comm growth expected to occur in the area due to the source

- **Class I impacts analysis**
  - FLM/state/tribe AQ Related Values
    - basically protects visibility in Class I areas
  - (FLM dets. proj. → ↓ AQRV) → FLM may recommend against project, but final decision is with the permitting agency
    - FLM can only be overruled for good reason (hard std to meet)
  - "In PSD permits, whether there is a Class I area nearby is a major factor"

- **PSD Modified facilities**:
  - A physical or operational change causing a significant[34] net increase in emissions *in the source being modified* (ozone: 40 tpy)
    - netting:
      - ACTUAL TO PROJECTED FUTURE ACTUAL
        - actual = "baseline actual emissions" = yearly avg based on any consecutive 24-month period in the past 10 years (5 years for power plants?)
        - *under pre-2002 rules, ACT–ACT only for electric utilities (based on WEPCO case); actual = avg emissions from two previous years*
        - under the 2000 rules, ACT–ACT requires post-permit recordkeeping that's avoidable if doing ACT–POT.
          - can also avoid recordkeeping if projected increase ≥ 50% of significant increase.
        - "demand growth exclusion"
          - sources don't have to consider incr in ems from incr in market demand
        - ACT–POT still required for new units
      - contemporaneous emissions changes within the past five years:
        - *minus* creditable[35] *decreases*
        - *plus* creditable *increases*
    - if ≥40 tpy, triggers NSR
  - Routine maintenance, repair, or replacement exception
    - has been construed narrowly in the past

PSD & NA MODIFICATIONS

[34] "significant" net increase defined at **40 CFR § 52.21(b)(23).**
[35] Creditable = above & beyond reqmts of law & will be enforceable

- **NONATTAINMENT NSR** for new & modified major sources:
    - § 172(c)(5) reqs permits; § 173 details permits
  - Permit requirements
    - offsets
      - can only be obtained from sources in an area w/ equal or higher NA classification
    - LAER § 173(a)(2)
    - certification that other sources owned/op'd by applicant are in compliance or on schedule for compliance (§ 173 (a)(3))
    - analysis of alternative sites, sizes, processes, ctrl techniques, showing that benefits of the new source "significantly outweigh the envtl & social cost imposed" (§ 173(a)(5))

  - major source = E or PTE 100/250 (§ 302(j))
    - Ozone ≥Serious: 100/50/25/10 tpy VOCs/NO_x. (§ 182))

  - **NA source Modifications**
    - def from NSPS (§ 111(a)(4)):
      The term "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

NONATTAINMENT MODIFICATIONS

      - "netting out" is possible (see PSD NSR)
      - exemption for "routine maintenance, repair, and replacement"[36]
        - includes exact replacement of small parts
        - *debate over (1) multiple simultaneous small replacements, (2) large, crucial components, e.g., steam generation sections of boilers, (3) replacing components with technically improved versions*
          - *Wisc. Elec. Power v. Reilly* (7th Cir. 1990): whether routine = case-by-case basis; weigh the "nature, extent, purpose, frequency and cost of the work, as well as other relevant factors, to arrive at a common-sense finding."
        - does not include replacement of major parts

      - *for more details on triggers for NSR based on modifications to major facilities, see **PSD NSR**—determining whether a source is "major" or a modification is "significant" is essentially the same for both PSD and nonattainment areas. The difference occurs in how the sources are regulated, but the triggers for regulation are the same.*

[36] See p. 275 for "repair"

NONATTAINMENT NSR THRESHOLDS AND OFFSET RATIOS FOR VOCs & NO_x			
Classification	**Major Source (tpy)**	**Signif. Modif. (tpy)**	**Offsets**[1]
Marginal	100	40	1.1 to 1
Moderate	100	40	1.15 to 1
Serious	50	25[2]	1.2 to 1
Severe	25	25[2]	1.3 to 1
Extreme	10	0[3]	1.5[4] to 1
OTR[5]	50	40	1.15 to 1

[1] Could be increased to 2:1 if EPA imposes sanctions under § 179 for SIP deficiencies.

[2] § 182(c)(6) sets 25 tpy threshold for significant modifications. From Wooley & Morss: "This provision means, in effect, that *any* increase in emissions of VOCs or NO_x resulting from a modification triggers a netting analysis."

[3] Any change at a major stationary source in an extreme ozone NA area resulting in any increase in VOCs or NOx is a "modification" unless the woner offsets the increases elsewhere at the facility at a ration of 1.3 to 1. § 182(e)(2).

[4] The offset ratio drops to 1.2 to 1 if the SIP requires all major sources of VOC/NO_x to use BACT. § 182(e)(1).

[5] OTR = Northeast Ozone Transport Region

HAP REGULATION (§ 112)

from reader:
- NESHAPs (outmoded)
  - foundered on the problem of identifying critical levels of HAPs *(158)*
    - risk-based standard was unwieldy, too time- and resource-consuming; thus the switch to tech-based standards in the 1990 amdts
  - old program stuff *(Squillace 299)*

- Basic process: (1) identify sources. (2) Classify as major or nonmajor [= stationary area source] based on potential to emit. (3) Identify MACT (numerical standards or applicable control technology). EPA can aid this process through a § 114 request for info from industry sources.

- *158:* **HAPs**—tech-based regulations—permits required for major sources
  - Applies to **major sources (§ 112(a)(1))**
    - single sources *or*
      group of sources[37] under common control *that*
      emits or has the potential to emit
      10 tpy of any HAP or 25 tpy of any combination of HAPs.
    - fugitive emissions included in calculation *(Nat'l Mining Ass'n v. EPA)*
    - existing controls included in calculation
    - MACT + monitoring, reporting, record-keeping
  - and to some **area sources (§ 112(a)(2))**
    - area sources = emitters of HAPs that aren't major sources
    - only instance in CAA where area sources are considered stationary sources
    - not all area sources need be listed (§ 112(c)(3))
      - no emission stds for unlisted sources (§ 112(d)(1))
    - GACT or GAMP[38] (§ 112(d)(5))
      - lower standard than MACT
  - substances must be listed as HAPs if they are known or reasonably anticipated to cause adverse effects to human health or the environment, although adverse entl fx alone ≠ sufficient for listing **(§ 112(b)(2))**
    - Phase I: technological stds } *applies*
    - Phase II: health-based stds } *to MACT*

[37] Spacial distance not determinative; question is whether the group operates together. Can be considered together "even if main & support facilities have different SIC codes." Each "facility" can be a *component* of a plant. *Nat'l Mining Ass'n v. EPA* (D.C. Cir. 1995)
[38] GACT = "Generally available control technology"; GAMP = "Generally available management practices."

- **MACT** (attainment/nonattainment desig ≠ impt) *(160)*
  - **Existing souces**: best-controlled 12% ("MACT lite") **(§ 112(d)(3)(A))**
    - comply ASAP but w/in 3 years
  - **New sources**: best-controlled similar source **(§ 112(d)(3)))**
    - comply immediately
  - Methods of implementation
    - process changes, material substitutions, design/equipment mods, enclosure, work-practice changes, installation of control equipment, etc.
- **"MACT Hammer"** *(161)* **(§ 112(j))**
  - If EPA has not provided a MACT standard, major sources of HAPs must apply for emissions permits, issued on a **case-by-case basis**

- **Modifications** provision mirrors § 111(a)(4) but includes *de minimis* exception (§ 112(a)(5))

- *164–209:* National Air Quailty and Emission Trends Rept. Exec. Summary

MOBILE SOURCES OF AIR POLLUTION (§§ 202, 213; §§ 209, 177)

- **Generally**
  - As of the 1990 amdts, CAA standards had resulted in a 90% decrease of hydrocarbon/CO tailpile emissions and a 75% reduction of NOx.
    - *but* these figures only counts light passenger vehicles.
      - too many loopholes in the law
        - doesn't include SUVs/trucks
        - fleetwide averaging
        - CAFE standards weak (DOT sets, not EPA)
        - non-road engines: locomotives, trains, planes
          - *no* regulation on planes
          - *something* exists for locomotives, but only applies to new engines, and locomotives have a long useful life
    - engines are a relic of the late 19th century
    - VMT ever-increasing
    - no. of cars increasing
  - One ship in Port of LA puts out as much NOx as all LA's cars in a day
    - ~700 port calls monthly
  - "We have come up very short in regulating mobile sources"
    - lack of federal leadership
  - States have done everything they can to chip away at preemption

- **Early Action Compacts**
  - Harris doesn't like 'em
  - EPA can allow an enforceable SIP re: compliance with 03;
    EPA defers any non-attainment designation;
    gives states until 2007 to demonstrate attainment
  - Because states are protective of industry, they are unlikely to impoes more stringent controls as long as they are actually in compliance with the CAA
  - Harris says EACs are dying out.

- **Federal Regulation**
  - EPA has power to regulate:
    - emission standards for the useful life of new vehicles **(§ 202(a))**
      - requirements
        - if they "cause or contribute to air pollution" *and* "may reasonably be anticipated to endanger pub. health or welfare"
        - useful life = 10 years or 100k miles, whichever comes first **(§ 202(d)(1))**
        - **"greatest degree of emission reduction achievable"** for hydrocarbons, CO, NOx, PM **(§ 202(a)(3)(A)(i))**
        - *Strict statutory time schedule: "If Congress wanted to leave the Administrator with the flexibility to implement regulation based upon [his] own judgment of the most desirable time schedule, it obvious knew how to do so. Clearly, however, it did not." (NRDC v. Ruckelshaus (D.D.C. 1984))*
      - EPA regulates light duty passenger vehicles, l.d. trucks, hd. vehicles, motorcycles
    - fuel additives **(§ 211(a), (b))**
  - Testing program (**§ 206(a)**):
    - Mfrs must provide samples of each new vehicle to EPA
    - Any emission control device must be tested

- **State Regulation and Preemption Issues (§ 209)**
  - General prohibition against State attempts to "adopt or . . . enforce any standard relating to the control of emissions" for new vehicles **(§ 209(a))**

"STANDARD RELATING TO THE CONTROL OF EMISSIONS"	
What is not a standard?	**What is a standard, and thus preempted?**
CA waiver § 209(b)/opt-in § 177	Numeric limits on emissions *(AAMA v. Cahill: ZEV sales mandate preempted)*
Purchase quotas for public fleets (market participation exception) *(Engine Mfrs v. SCAQMD)*	Sales quota *(Am. Auto Mfrs. v. NY)*
Standards for used vehicles*	Purchase quota for private fleets *(Engine Mfrs v. SCAQMD)*
In-use restrictions**	Non-road under § 209(e)(1) (complete prohibition) *(Engine Mfrs)*
	New and used "other" non-road § 209(e)(2) (subject to CA waiver)[39] *(Engine Mfrs)*

* Not yet tested in court

** E.g., *Allway Taxi*'s requirement of emission-control devices on taxi fleet & low-lead fuel; speed limits; fuel standards; carpool lanes (more controversial = restrix on drive-thrus)

[39] From EMA v. EPA: << Essentially, the EPA concludes that the conferees inadvertently left out the word "new" in § 209(e)(2), and the EPA is, in fact, adhering to what was intended. Without a showing that the text is "demonstrably at odds" with Congressional intent, much less that the regulatory scheme is unworkable or absurd, however, the court must take Congress at its word. We therefore conclude that the EPA's interpretation of § 209(e)(2) is forbidden at *Chevron* step one. >>

- **California exception (§ 209(b), § 177)**[40]
    - Three requirements
        - **(1)** Opt-in state must adopt standards identical to CA's.
            - Other states must adopt CA's stds wholesale, if at all; other states must *mirror* CA's stds. (*MVMA v. NY DEC* (N.D.N.Y. 1997))
            - stds can't result in the need to produce a "third vehicle"
                - high-sulfur gasoline in NY might cause catalytic converters to wear out sooner, but how to deal with this is a marketing problem for industry, not a problem with NY standards; no "third vehicle" issue (*MVMA v. NY DEC*)
        - **(2)** CA must receive a waiver from EPA for its standards.
        - **(3)** Standards must be adopted at least two years in advance of the beginning of the model year to which they apply.

- Nonroad engines (§ 209(e))
    - No "standard or other requirement relating to": **(§ 209(e)(1))**
        - New engines for construction equipment or vehicles **(A)**
        - New engines for farm equipment or vehicles >175 hp **(A)**
        - New locomotives or locomotive engines **(B)**
    - "New" = "showroom new" (*Engine Mfrs Assn v. EPA* (D.C. Cir. 1996))
        - not a date-specific term
        - EPA had been worried about possible coercion in fact if "new" was construed narrowly (cf. *Allway Taxi*'s dicta that "used" could force a higher standard for "new")
- American Automotive Mfrs. v. Cahill, 152 F.3d 196 (2d Cir. 1992)
- MVMA v. New York DEC, 869 F.Supp. 1012 (N.D.N.Y. 1994)
- Reader 407–end
- Reader 406
- Idling regulations
- Pacific Merchant Shipping Ass'n v. Goldstein
- Ass'n of Am. Railroads v. AQMD
    - Proposed new fed. rules

[40] In addition to the § 177 exception for opt-in to CA standards, § 209(b)(1) offers an exception for "compelling and extraordinary conditions" theoretically available to any state, but in practice, only California can meet this standard.

TRANSBOUNDARY DISPUTES & MARKET-BASED SOLUTIONS

- States significantly contributing to nonattainment in other states, or interfering with maintaining attainment in other states, must include provisions in their SIPs requiring additional control measures **(§ 110(a)(2)(D)(i)(II))**

- States can petition the EPA to shut down or impose emission limitations on source sin other states that are contribution to nonattainment or maintenance problems in the petitioning state. **(§ 126(b))**

- International agencies (or the Sec. of State) can petition the EPA to require states emitting pollutants across national boundaries to revise their SIPs if the pollutants "may reasonably be anticipated to endanger public health or welfare in a foreign country" **(§ 115(a))**

- Ozone Transport Commision (OTC) Programs
    - MOU reductions *(outmoded by NOx SIP call, but OTC program revised for consistency with the SIP call)*
        - Phase I: major sources of NOx in the Northeast required to install RACT *(implemented)*
        - Phase II: participating states impose a cap on regional NOx emissions during the five-month periods between May 1 and Sept 30 of 1999–2002 *(implemented)*
        - Phase III: Tightened cap; began May 1, 2003

        - *affects electrical utility power plants and large industrial boilers*

        - implementation: emissions trading program

- **The NOx SIP call & § 126 petitions**
    - Background
        - (1) EPA's 1997 revisions to NAAQS for ozone
            - EPA had expressed intent to rely heavily on a "regional solution"
        - (2) Ozone Transport Assessment Group (OTAG)[41] issued rept
            - confirmed that ozone is transported
            - confirmed that Midwest coal-burning plants contribute to ozone problems in the Northeast, particularly through NOx emissions
        - → eight New England & Mid-Atlantic states issued § 126 petitions to EPA

[41] OTAG = group of midwestern, southern, and eastern states

- EPA proposed draft NOx SIP call in 11/1997; finalized 1998
    - called for reduction of summertime NOx emissions by ~28% (1.2 million tons)
        - allocated emissions reductions among the affected staes

    - *Michigan v. EPA* (D.C. Cir. 2000)
        - Generally upheld the SIP call
        - Rejected **π**'s arguments that:
            - EPA had to establish an ozone transport commission
            - EPA should have done more analysis of indiv. st. contributions to ozone transport to better allocate the burden of reductions
                - ct said petrs were just "quibbl[ing] with state-specific modeling"
            - EPA's cost criteria used to establish the required reductions was flawed
        - Definition of "electric generating unit" remanded to EPA

- The § 126 petitions
    - 1/2000: EPA granted petitions by CT, MA, NY, PA; final action required 392 facilities in 12 states and DC to reduce annual NOx emissions by a total of 510,000 tons from 2007 levels
        - affected facilities must participate in a federal NOx cap-and-trade program

    - *Appalachian Power Co v. EPA* (D.C. Cir. 2001)
        - § 126 rule largely upheld:
            - (1) By cross-reference, EPA incorporated into § 126 the prohibition in § 110(a)(2)(D)(i) against sources emitting pollutants that significantly contribute to nonattainment in another state
            - (2) EPA could make § 126 determs while the NOx SIP call was ongoing
            - (3) EPA's methods for reaching its findings of "significant contribution" to nonattainment were appropriate
        - *But* remanded to EPA to better justify the heat input growth rates used in setting NOx bugets for EGUs, as well as its decision to categorize cogenerators as EGUs
            - In response, EPA explained its rule better but didn't change it. Upheld against court challenge.
                - EPA gave NOx-SIP-call states the option of allocating allowances based on electric output rather than heat input
                    - arguably more efficient

- Reader 260
- Squillace 156–84, Chapter 2
- CAA § 401–405 (skim)
- Reader 217–278 (skip EU §§)

GLOBAL CLIMATE CHANGE

- Squillace Chapter 14
- Cap & Trade Programs & Carbon Taxes (handouts)
- Massachusetts v. EPA
- Envt'l Orgs' Marine Vessel CO2 petition
- Stationary sources
    - Reread CAA §§ 208–10, 211(a)–(h), 112