



Proposed Acid Rain Rules Overview

The U.S. Environmental Protection Agency (EPA) has proposed four rules containing the core acid rain requirements: the Permits Rule (40 CFR Part 72), the Allowance System Rule (40 CFR Part 73), the Continuous Emission Monitoring Rule (40 CFR Part 75), and the Excess Emissions Rule (40 CFR Part 77). EPA will also propose additional rules at a future date. These rules will include requirements for facilities that elect to opt in to the Acid Rain Program (40 CFR Part 74) and for the nitrogen oxide (NO_x) control program (40 CFR Part 76). This fact sheet discusses the interdependence of the core acid rain rules.

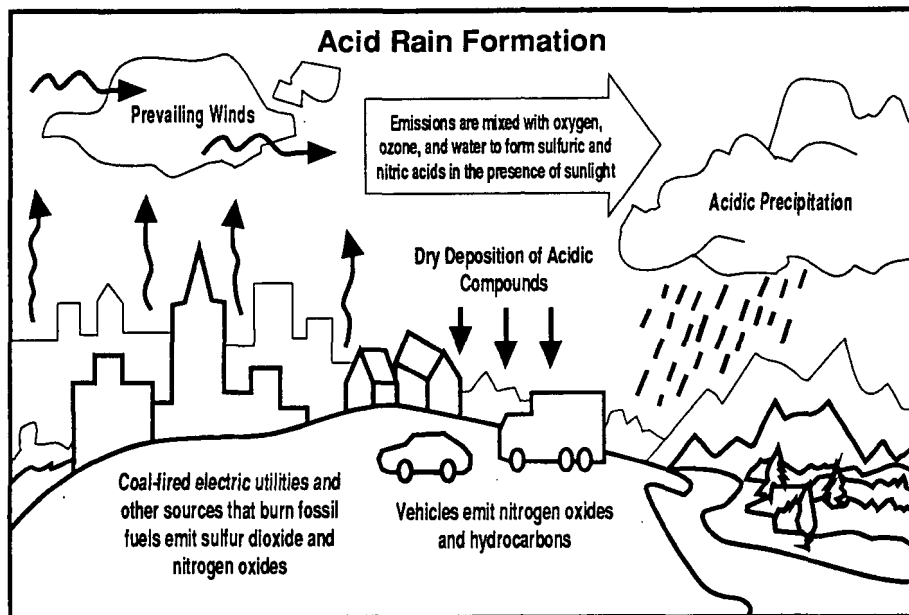
Under Title IV of the Clean Air Act Amendments of 1990, Congress authorized the U.S. Environmental Protection Agency (EPA) to establish the Acid Rain Program. The principal goal of this

program is to achieve significant environmental benefits through reductions in sulfur dioxide (SO₂) and nitrogen oxide (NO_x) emissions, the primary components of acid rain. To achieve this goal at the

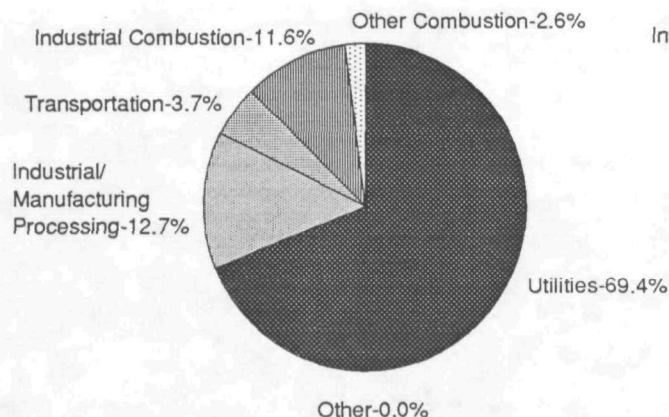
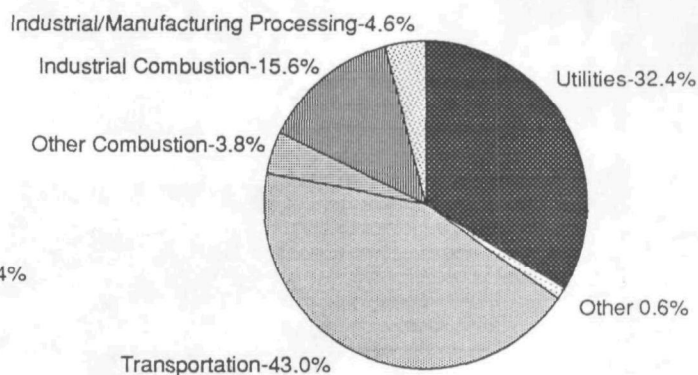
lowest cost to society, the program will employ both traditional and innovative market-based approaches for controlling air pollution. In addition, the program will encourage energy conservation and promote pollution prevention.

The legislation sets as its primary goal the reduction of annual SO₂ emissions by 10 million tons below 1980 levels. To achieve these SO₂ reductions, the law requires a two-phase approach, involving the trading of annual SO₂ emission allowances, that gradually tightens the restrictions placed on fossil fuel-fired power plants.

Phase I begins in 1995 and affects 110 mostly coal-burning electric utility plants located in 21 eastern and midwestern states. Phase II, which begins in the year 2000, tightens the annual emissions limits imposed on these large higher emitting plants and also sets restrictions on smaller cleaner plants fired by coal, oil, and gas. All existing utility units with an output capacity of 25 megawatts or greater and all new utility units will be affected by Phase II.



Sulfur dioxide and nitrogen oxide emissions react with water vapor and oxidants in the atmosphere and are chemically transformed into acidic compounds. These compounds are deposited in rain or snow; the compounds also may join airborne particles and fall to earth as dry deposition.

U.S. SO₂ Emissions Distribution-By Source**U.S. NO_x Emissions Distribution-By Source**

Source: U.S. EPA, November 1989. The NAPAP Emissions Inventory (Version 2 - 1985 Data).

The Acid Rain Program Operating Principles: Workable, Flexible, Accountable

The four core acid rain rules propose an integrated, well-orchestrated system for accomplishing the three primary objectives of the Acid Rain Program:

- Achieve environmental benefits through reductions in SO₂ and NO_x emissions.
- Facilitate active trading of allowances and use of other compliance options to minimize compliance costs, maximize economic efficiency, and permit strong economic growth.
- Promote pollution prevention and energy efficient strategies and technologies.

Each individual rule fulfills a vital function in the larger program. The allowance trading system creates low cost rules of exchange that minimize government intrusion and make allowance trading a viable compliance strategy; the permitting process affords sources maximum flexibility in selecting the most cost-effective approach to reducing emissions; the continuous emissions monitoring system (CEM) provides credible accounting of emissions to

ensure the integrity of the market-based allowance system and the achievement of the reduction goals; and finally, the excess emissions rule provides the incentives to ensure self-enforcement, greatly reducing the need for government action.

Allowance Trading

The proposed Acid Rain Program represents a dramatic departure from traditional "command and control" regulatory methods that establish specific inflexible emissions limitations with which all affected sources must comply. Instead, the program introduces an allowance trading system that harnesses the incentives of the free market to reduce pollution.

Under this system, affected utility units will be allocated allowances annually based on their historic fuel consumption and a specific emissions rate. Each allowance permits a unit to emit 1 ton of SO₂ during or after the year specified on the allowance. For each ton of SO₂ discharged in a given year, one allowance is "retired," that is, it can no longer be used. During Phase II of the Acid Rain Program, the Act will set a permanent ceiling (or "cap") on total yearly allowance allocations to utilities at 8.95 million allowances. This cap firmly restricts emissions and ensures that the

mandated emissions reductions will be achieved and environmental benefits maintained.

Allowances may be bought, sold, or banked. Any person may acquire allowances and participate in the trading system. At the end of the year, utilities are granted a 30-day "true-up" or grace period, during which SO₂ allowances may be purchased, necessary, to cover each unit's emissions for the year. At the end of the grace period, the allowances a unit holds in its compliance account must equal or exceed the annual SO₂ emissions recorded by the monitoring system. Extra allowances may be sold or "banked" for use in future years.

Excess Emissions

If compliance is not achieved, the owners or operators of delinquent units must pay a penalty of \$2,000 per excess ton of emissions. In addition, violating utilities must offset the excess SO₂ emissions with allowances in the following year in an amount equivalent to the excess of the previous year. In essence, by giving up allowances to cover excess emissions, delinquent units will be compelled to reduce emissions of SO₂. These utilities must submit an excess emissions offset plan to EPA that outlines how these cutbacks will be achieved.

Auctions, Sales, and IPP Contingency Guarantee

EPA will hold allowance auctions and sales annually. The auctions will help to send the market an allowance price signal, as well as furnish utilities with an additional avenue for purchasing needed allowances. The sales will offer allowances at a fixed price of \$1,500. Anyone can buy allowances in the direct sale, but independent power producers (IPPs) can obtain written guarantees from EPA stating that they will have first priority. These guarantees, which will be awarded on a first-come, first-served basis, secure the option for qualified IPPs to purchase a yearly amount of allowances over a 30-year span. This provision enables IPPs to assure lenders that they will have access to the allowances they need to build and operate new units.

Impetus to Conserve

The allowance trading system contains an inherent incentive for utilities to undertake conservation measures since for each ton of SO₂ that a utility avoids emitting, one less allowance needs to

be retired. Energy-efficient utilities will be able to sell their surplus allowances at a profit. As provided in the Act, EPA has also set aside an allowance reserve to stimulate energy conservation. Those utilities that either implement demand-side energy conservation programs to curtail emissions or install renewable energy generation facilities may be eligible to receive bonus allowances from this reserve.

The Allowance Tracking System

EPA will institute an electronic recordkeeping and notification system, called the Allowance Tracking System (ATS) to keep track of allowance transactions and the status of allowance accounts. ATS will be the official tally of allowances by which EPA will determine compliance with the emissions limitations. Any party interested in participating in the trading system may open an ATS account by submitting an application to EPA. Accounts will contain information on unit account balances, emissions, account representatives (which must be appointed by each trading party),

and serial numbers for each allowance. ATS will be computerized to expedite the flow of data and assist in the development of a viable market for allowances.

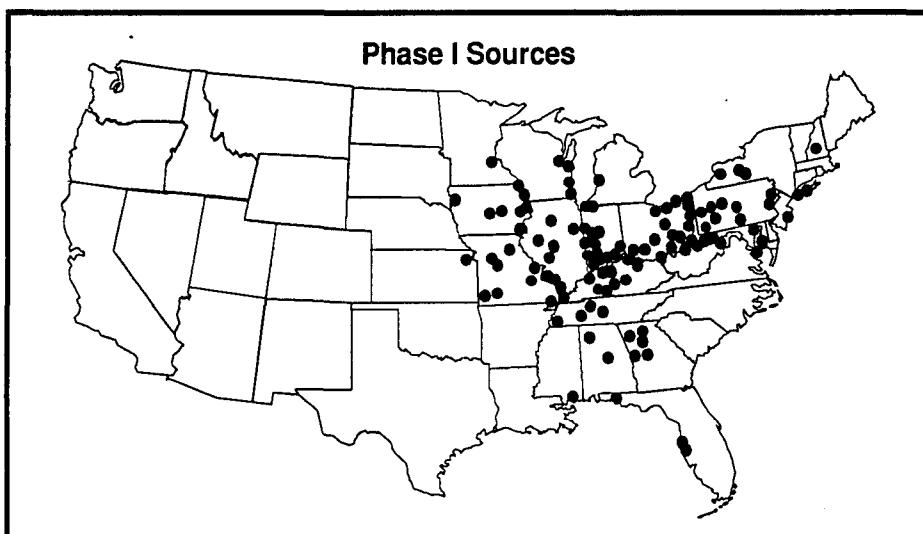
Designated Representatives

Each source must appoint one individual to represent the owners and operators of the source in all matters relating to the holding and disposal of allowances for its affected units. The designated representative also will be responsible for all submissions pertaining to permits, compliance plans, emissions monitoring reports, offset plans, compliance certification, and other necessary information.

Permitting

The designated representative for each source is required to file a permit application for the source and a compliance plan for each affected unit at the source. The permits and compliance plans feature the same flexibility that characterizes the Acid Rain Program as a whole; indeed, they complement the market-oriented allowance system and foster trading. For example, they allow sources to make "real-time" allowance trading decisions through the use of automatic permit amendments. The permits and compliance plans also let sources fashion a compliance strategy that is tailored to their individual needs.

The permit stipulates the initial allowance allocation for each affected unit at a source. The permit application must certify that each unit account will hold a sufficient number of allowances to cover the unit's SO₂ emissions for the year and will comply with the applicable NO_x limit. In addition, the compliance plans may specify alternative measures that will be taken to ensure compliance. Permits will be subject to public comment before approval.



During Phase I, 268 units at 110 sources, located primarily in the Midwest and Northeast, will be affected by acid rain regulations. During Phase II, the number of affected units will increase to 2,200, as smaller cleaner power plants are included in the regulatory network.

Compliance Options: Freedom to Choose

The Acid Rain Program allows sources to select their own compliance strategy. For example, to reduce SO₂ and NO_x emissions, an affected source may repower its units, use cleaner burning fuel, or reassign some of its energy production capacity from dirtier units to cleaner ones.

A source may also elect to install scrubber equipment at one or more units that reduces emissions by 90 percent or more, and possibly receive extra allowances and an extension on Phase I compliance deadlines. Still other sources may decide to reduce electricity generation and compensate for reduced output in one of several ways, including the adoption of conservation or efficiency measures. Some of the options will afford the unit special treatment, such as a compliance extension or extra allowances. Others, like fuel switching, require no special prior approval.

In either case, the Acid Rain Program allows affected utilities to combine these and other options in any way they see fit in order to tailor their compliance plan to the unique needs of each unit or system.

Continuous Emission Monitoring

The Acid Rain Program mandates that each unit be equipped with a continuous emission monitoring (CEM) system that measures and records emissions hourly. The CEM system will be required to monitor emissions of SO₂ and NO_x, as well as measure volumetric flow, opacity, and diluent gas. The CEM system is critical to the Acid Rain Program. It will instill confidence

in allowance transactions by certifying the existence and quantity of the commodity being traded. Monitoring will also ensure, through accurate accounting, that the emissions reduction goals are met. Unlike traditional regulatory programs, which measure specific emissions rates, the Acid Rain Program will focus attention on total emissions.

The proposed rule also contains provisions for initial equipment certification procedures, periodic quality assurance and quality control procedures, and recordkeeping and reporting. Units will electronically report emissions data to EPA on a quarterly basis. The proposed rule also contains procedures for "filling in" for missing periods.

A Model Program

EPA established the Acid Rain Advisory Committee (ARAC) to gain broad input into the development of the Acid Rain Program, to promote collaboration, and to build consensus. ARAC consisted of representatives from various stakeholder groups, including utilities, emissions control equipment vendors, academia, Public Utility Commissions, and environmental groups. ARAC convened six public meetings with hundreds of participants. The input received through this process was critical to the development of the core rules of the Acid Rain Program.

EPA will maintain this open door policy as it implements the program, and will continue to solicit input from the different parties involved. In addition, EPA will evaluate the benefits and effects of the program through economic and environmental studies.

The Acid Rain Program is already being viewed around the

world as the prototype for tackling emerging environmental issues. The allowance trading system capitalizes on the power of the marketplace to reduce SO₂ emissions in the most cost-effective manner possible. The permitting program allows sources the flexibility to tailor and update their compliance strategy based on their individual circumstances.

The continuous emission monitoring system lends the credibility necessary to make the program work, and the excess emissions penalties provide strong incentives for self-enforcement. Each of these separate components contributes to the effective working of an integrated program that lets market incentives do the work to achieve cost-effective emissions reductions.

For More Information

For more information, write to:

U.S. EPA Office of Air and
Radiation
Acid Rain Division
(ANR-445)
Washington, DC 20460

If you would like to receive other fact sheets in this series, call the Acid Rain Hotline at (617) 641-5377 or the EPA Public Information Center (PIC) at 202-260-2080.

Fact sheets are available on the following subjects:

- Allowance System
- Continuous Emission Monitoring
- Environmental Benefits
- Excess Emissions
- Permits