Straight Talk About Electric Utilities and New Source Review

EDISON ELECTRIC INSTITUTE

Overview

New Source Review ("NSR") is a complex program created by various provisions of the federal Clean Air Act. Regulated by the Environmental Protection Agency ("EPA"), NSR requires electric utilities to undergo review for environmental controls if the utilities build new plants or if they make "non-routine" changes to existing power plants that result in a significant increase in emissions.

In 1999 and 2000, the U.S. Department of Justice, acting on behalf of EPA, filed lawsuits against several utilities, alleging that they have engaged in "modifications" of electric generation units without first obtaining NSR permits. EPA's lawsuits came as the agency and utilities were discussing how best to revise the NSR program.

This booklet is designed to provide the reader with an overview of basic facts about the NSR program, EPA's enforcement actions, and what these actions mean for utilities. It is published by the Edison Electric Institute, the association of U.S. shareholder-owned electric utilities, industry affiliates, and associates worldwide. EEI can be contacted at (202) 508-5000, or visit our Web site at www.eei.org.

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How are utility emissions regulated? Which utilities are regulated?

Electric utilities have been subject to strict federal and state air pollution controls for several decades. Among the most important federal regulatory programs, the Clean Air Act of 1970 (the "Act") established "national ambient air quality standards" ("NAAQS") to address particulate matter and sulfur dioxide ("SO_2") emissions, as well as ozone (of which nitrogen oxide, or NO_x, emissions are a principal precursor).

To meet these standards, state governments must devise and regularly update plans, subject to federal approval, that limit utility emissions. In 1990, Congress amended the law to require utilities to further reduce SO_2 and NO_x emissions related to acid rain and ozone.

Electric utilities currently spend several billion dollars each year on clean air compliance. And, since the mid-1970s, electric utilities have spent close to $100 billion on emission controls, their operation and maintenance, and switching to cleaner fuels. Thus far, utilities have exceeded Congress' emission reduction targets, despite increased electricity production. All electric utilities — regardless of age — are regulated under a wide range of federal and state air quality programs. Under the Clean Air Act, older power plants are not exempt (or "grandfathered") from these regulations.

How have utility emissions changed over time?

In 1990, Congress amended the Clean Air Act to require utilities to further reduce SO_2 and NO_x emissions. Electric utilities thus far have exceeded Congress' emission reduction targets, despite increased electricity production.

Utility SO_2 emissions peaked in 1975 at 18.3 million tons; they declined to 13.2 million tons by 1998. Within a decade, utilities will reduce SO_2 to 9 million tons (by over 50 percent), despite a tripling of coal use since 1970. And by 2010, national SO_2 emissions are projected to be at their lowest level in 100 years (except for a few years during the Great Depression), largely due to utility reductions.

Utility NO_x emissions peaked in 1980 at 7.0 million tons. DOE projects that, by 2005, utility NO_x emissions will be reduced to 4.3 million tons, which is less than 20 percent of manmade NO_x emissions in the U.S.

What are the origins of the New Source Review program? What are its basic requirements?

The Clean Air Act was originally passed in 1970, with significant amendments added in 1977 and 1990. Among the Act's various air pollution control measures, two stand out. Most important is the NAAQS program, which is designed to protect public health and welfare, and which applies to new and existing sources of air pollution.

The second measure under the Act is a general control technology program, which is specific to new sources. Under the new source performance standards ("NSPS") program, technology-based emission standards are established for categories of new sources of pollution. The Act requires that new facilities install NSPS or even more stringent state-of-the-art emission controls.

In addition to NSPS, the Act also requires source-specific controls for significantly modified sources of air pollution. These standards are set through the New Source Review (NSR) permitting process that takes place before construction begins. The NSR permitting program imposes control technology requirements of varying stringency, depending on whether the source is located in an area that does or does not meet a NAAQS.

Recognizing that it would be prohibitively expensive to force utilities to retrofit existing facilities, Congress did not require older plants to meet the same control technology requirements that were required for new sources, unless their owners greatly expanded the plant's fuel burning capacity, and, by extension, its ability to emit pollutants.

Under what circumstances are utilities subject to NSR? Are certain activities excluded?

The NSR program requires utility owners or operators to undergo NSR review if they propose to build new electric generating units. NSR also applies if a plant is modified so that there is a physical or operational change that results in an increase in emissions of a regulated pollutant from that source. The NSR process is extensive and costly, and can take a year or even longer to complete.

NSR requirements do not apply to routine maintenance, repair, or replacement of failed or degraded equipment. Likewise, if a utility chooses to use an alternative fuel to generate electricity (for example, if it switches from oil to coal), the utility does not have to undergo NSR. This applies even if the change results in an increase in emissions.

Regarding non-routine changes, the Clean Air Act and EPA's rules specifically require that the non-routine change cause the emissions increase, as opposed to independent factors, such as weather, degraded equipment, or increased electric power demand.

Does the NSR rule apply to "routine maintenance" activities that utilities must undertake to keep their plants operating?

This issue is at the root of recent lawsuits filed by the Government against a number of utilities.

Under state law, electric utilities have an obligation to ensure they can provide adequate electricity to customers. This obligation requires them to perform routine maintenance and repair on their generating units to keep them operational.

Recognizing that utilities have this responsibility, EPA – for over two decades – has interpreted and implemented the NSR rule in a way that has allowed utilities to undertake "routine maintenance, repair, and replacement" as needed to maintain efficient and reliable electricity generation.

While the agency has never explicitly defined what it considers to be "routine," EPA has, until recently, applied a commonsense understanding of the term. Accordingly, for decades, utilities have engaged in activities such as replacement of degraded equipment or failed components (including turbine blades and coal pulverizers, for example), or other repairs needed for the reliable, safe, and efficient operation of their plants — without being subject to NSR permitting requirements.

How can I best understand what "routine maintenance" entails?

To put "routine maintenance" into perspective, consider the types of repairs you might make to your car. If you decide, for example, to upgrade your car from a four-cylinder engine to an eight-cylinder engine, that activity would result in a physical change that would likely increase your car's emissions. That type of activity would be classified as a "major modification." (And, for purposes of this explanation, would require NSR.)

If, however, you replace the tires or the timing belt on your car, both of which are necessary repairs, you would not be engaging in an activity that increases the car's emissions, even though these activities will extend its operating life. These activities are simply part of the "routine maintenance" that car owners must undertake to keep their cars running. It is these types of activities that can best be compared to what utilities have been doing — and what EPA now alleges are violations of the NSR rule.

Given the long lifespan of most power plants, it is a simple fact in power plant operations that parts like tubes that carry steam to make the turbine blades turn, or the turbine blades themselves, are going to wear out under the pressure and stress of the high temperature steam operations that are essential for generating electricity. Replacing these parts — like replacing the tires on your car — is necessary to keep the plants operational. It should not trigger NSR — as it did not for 25 years.

Have utilities ever tried to hide their maintenance and repair activities?

No.

On the contrary, utility maintenance activities are not, and have never been, a secret. The industry routinely discloses its repair and maintenance activities to federal and state agencies. These activities have been the subject of countless EPA and industry articles, as well as public reports to the Federal Energy Regulatory Commission, the Department of Energy, and state Public Utility Commissions. Federal and state officials also have inspected some of the projects during construction, without finding that the changes would in any way require NSR permitting while they were underway.

Is there widespread agreement that the NSR program is complicated and in need of reform?

Yes.

Industries, the states, and even EPA readily admit that the NSR program is confusing and contradictory. The policies that EPA is trying to enforce are based on formal rules supplemented by agency "guidance" documents and discretion.

In a June 22, 2001, press release, EPA stated it "recognizes that the NSR process is complex and burdensome both for affected companies and for state and local agencies responsible for implementing the program."

According to a July 16, 1999, letter sent to EPA by the Mississippi Department of Environmental Quality:

- "The NSR program is considered to be the single most complicated regulatory program administered under the Clean Air Act."
- "The NSR program is widely acknowledged to be broken."
- "Evidence of how the program is broken can be found in the confusion and uncertainty about its implementation by both states and industry. Much of this confusion stems from the very fact that the guidance documents interpreting the actual regulations total more than 4,000 pages."
- "Conflicting and unpublicized guidance from different EPA offices has left states uncertain in their attempts to determine NSR applicability. Inconsistencies exist in the areas of…routine maintenance, repair, and replacement..."

Have utilities sought legal guidance from EPA on how to interpret NSR?

Yes.

Starting in 1997, electric utilities and EPA's Office of Air and Radiation began discussing how the NSR program might be reformed to make it clearer and more certain. As part of these discussions, the electric utility industry has voluntarily proposed a program to achieve further utility emission reductions. Under this program, power plants would be subject to additional emission reductions once they reach a certain age. This proposal goes well beyond existing requirements, and would phase-in additional reductions in a manner that will not jeopardize the safety, reliability, and efficiency of the nation's supply of electricity.

One utility recently asked EPA if it was allowed to install new, state-of-the-art turbine blades to replace its old, worn-out blades. In its response, EPA articulated over 20 factors indicating what were not routine maintenance, repair, or replacement activities. This list could potentially subject nearly every maintenance or repair activity undertaken at a power plant to NSR program requirements.

Following a recommendation included in the May 2001 National Energy Policy report, a 90-day review is being conducted by EPA and other federal agencies of the NSR program and its impact on the nation's energy supply. During this process, there is the potential for continued discussion on how to ensure that the NSR program is implemented in an effective and flexible manner.

Why did EPA recently file enforcement actions against a number of utilities?

Between November 1999 and December 2000, the U.S. Department of Justice, acting on behalf of EPA, filed lawsuits against eight utility companies, affecting 106 generating units. Fourteen generating units of the government-owned Tennessee Valley Authority ("TVA") also received administrative orders. New York state filed separate suits against other facilities. The lawsuits allege that these utilities and TVA plants have engaged in "modifications" of their electric generation units without first obtaining NSR permits. One company has reached a final settlement with EPA, and two others have reached agreements in principle, but have not completed their settlements.

What types of activities does EPA cite in its lawsuits?

The agency is bringing legal actions against the utilities for the very maintenance activities it has approved implicitly for nearly three decades. In fact, EPA has stated that the projects under investigation include:

- "replacements of component parts of electric generation units that do not increase maximum capacity or emission rates," or
- "improvements that increase efficiency of making electricity without increasing maximum hourly fuel consumption or emission rates."

In essence, EPA is saying that any maintenance activity can trigger NSR — even if the activity results in no increase in unit size or emission rates, but only improves the safety, reliability, efficiency, or availability of the generating unit.

What implications do EPA's lawsuits have for utilities, for other industries, and for electricity reliability?

In its lawsuits, EPA is targeting the entire electric utility industry for actions that go back 20 years or more. The agency is threatening to sanction the utilities with heavy fines and is requesting that utilities retrofit their plants by installing new pollution control equipment. Dozens of other utilities and, in fact, other industries not named in the current lawsuits are now wondering when EPA will target them for the same repairs.

Even if utilities sought a permit for every maintenance activity they undertook, each request could take a year or more to resolve. EPA, and the states, would be inundated with hundreds of requests.

So, in light of the lawsuits, utilities are now faced with deciding whether to continue to make routine repairs on their plants – the same kinds of repairs that triggered the enforcement actions — or to forgo this maintenance and risk having their plants shut down.

The bottom line is that if a utility decides not to do routine maintenance for fear of EPA action, units may be put out of commission. With electric demand high, and with transmission constraints in certain parts of the country, electric reliability across the country could be seriously threatened.

Glossary

Clean Air Act: the most important federal air quality law. Congress originally passed the Act in 1970, adding significant amendments in 1977 and 1990, to establish health-based "national ambient air quality standards" administered by the Environmental Protection Agency.

Environmental Protection Agency (EPA): a federal agency created in 1970 to consolidate the federal government's environmental regulatory activities.

Modification: a "non-routine" physical or operational change to a facility that results in an increase in emissions of a regulated pollutant from that source.

New Source Review (NSR): complex permitting programs created by the federal Clean Air Act. NSR requires electric utilities, as well as other industrial facilities, to undergo pre-construction review for environmental controls if the utilities propose to build new plants or if they undertake a "modification" to their existing plants.

Routine maintenance: activities undertaken by electric utilities that are required to maintain and to preserve efficient and reliable generation.