



The EPA quickstep: Part 2

New regulations could have costly implications

By Andrea Blowers

Staying in step with the Environmental Protection Agency (EPA) has gotten more difficult in recent months.

Lyle Witham, Basin Electric manager of environmental services, says the speed at which the agency is proposing rules to regulate emissions on energy generation facilities is unlike any other time in the agency's history.

In the first part¹ of this two-part feature, Witham explained the proposed and final rules and regulations for sulfur dioxide (SO₂), nitrogen oxides (NO_x and NO₂), greenhouse gas emissions including carbon dioxide (CO₂), ozone and coal ash. He also described the challenges and best-guess costs for Basin Electric in meeting the set standards.

Part 2 focuses on EPA regulations, proposed and forthcoming, for hazardous air pollutants (HAPs), fine particulate matter, cooling water intake structures and an update on the new final SO₂ rule explained in Part 1.

Witham says one of the significant challenges is the way EPA is proposing regulations piecemeal, one emission at a time, which makes it very difficult to plan. In most cases, emissions and controls both directly and indirectly affect other emissions. "If EPA addressed all of them together, the process would be easier. Not easy, just easier," he says, "and potentially less costly."

Witham compares it to the choice between adding new equipment to a used car, or buying a new car in the near future. "We would need to know what we're required to replace on our used car before we can make a rational, economic decision.

"Right now we don't know what those parts and components are, or what they are going to cost. EPA is acting like the mechanic who brings out one part at a time and asks if we want to fix or replace it. That's just not the right way to do business," Witham says. "Give us the whole picture, and then allow us to decide. If we need one or two affordable new parts, that's one thing, but if in the end we have to replace everything but the hubcaps, that's another," Witham says.

Following are some of the proposed regulations and the implications they'll have on Basin Electric, member cooperatives and consumers.

HAPs

The EPA is at various stages of implementing maximum achievable control technology (MACT) requirements for different kinds and classes of stationary sources² of HAPs, three of which are likely to have impacts on Basin Electric and its members owners: the MACT for electrical generating units (EGUs); the MACT for industrial boilers; and the MACT for reciprocating internal combustion engines (RICE).

EGU MACT

The EGU MACT will have the biggest impact on Basin Electric's coal-based generation fleet – its largest source of baseload power. Each of the cooperative's power plants had to answer a lengthy questionnaire, and Antelope Valley

¹ "The EPA quickstep: Part 1" was published in the July-August 2010 issue of Basin Today. Read it in www.basinelectric.com's News Center, on the Basin Today page in the Publications section.

² Stationary sources: Any fixed emitter of air emissions, such as fossil fuel-burning power plants, petroleum refineries, petrochemical plants, food processing plants and other heavy industrial sources.

Station conducted emissions testing. The EPA will use the information gathered in its rulemaking to establish emission limitations for HAPs based on the best performing 12 percent of existing plants.

In a settlement with environmental groups, EPA agreed to issue a draft of the EGU MACT rule in March 2011 and publish a final rule by November 2011. Electrical generating units will then have 36 months to specify and install control equipment to meet a compliance deadline of November 2014.

“Our hope is that EPA will look at the differences between coals, boilers and control technologies, and set a standard based on 12 percent of best performing control technologies achievable for each type of coal and boiler,” Witham says.

Industrial boiler MACT

On April 29, 2010, EPA proposed emissions standards and MACT requirements in its rulemaking to control HAPs emissions from different kinds and classes of industrial boilers. Witham says the rule causes concern for Dakota Gasification Company’s Great Plains Synfuels Plant operations because the facility operates three liquid-fired boilers and two superheaters that would be affected by the rule.

“Dakota Gas is a unique facility. The proposed rule underestimates the burden its standards would impose on the operation of the plant. In fact, the standards as proposed for existing liquid-fired boilers may not technically be achievable,” Witham explains. “The rule may also affect electric generation. Some auxiliary boilers at the plants are liquid-fueled.”

Comments on the rule were accepted until Aug. 23, 2010. Dakota Gas submitted comments requesting EPA set standards that are technically achievable, and set standards that give the flexibility to reduce HAPs emissions on a system and facility basis rather than install emissions controls on units that may not be significant sources of HAP emissions.

RICE MACT

On March 3, 2010, EPA finalized National Emissions Standards for Hazardous Air Pollutants (NESHAP) for certain categories of reciprocating internal combustion engines (RICE), including many types of diesel generators used either as emergency generation or as backup generation and load management throughout the system.

“Essentially, the RICE MACT/ NESHAP does two things,” Witham says. “First, it establishes carbon monoxide (CO) emissions limitations for RICE designated as and used for non-emergency power – primarily RICE units between 300 and 500 horsepower and units greater than 500 horsepower located at major and area sources³.

“Second, for RICE classified as ‘emergency’ generators, there are generally no new emissions requirements, but there are reporting, maintenance, and other requirements and restrictions, including limitations on hours of operations in non-emergency situations.”

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³ Major and area sources: As defined by the EPA, major source means any stationary source or group that emits or has the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. Area source means any stationary source of hazardous air pollutants that is not a major source.



SWOT team members include (back row, from left) Mike Fluharty, A.T. Funkhouser, Curtis Jabs, Lyle Witham, (front row, from left) Deb Levchak, and Erin Fox Dukart.

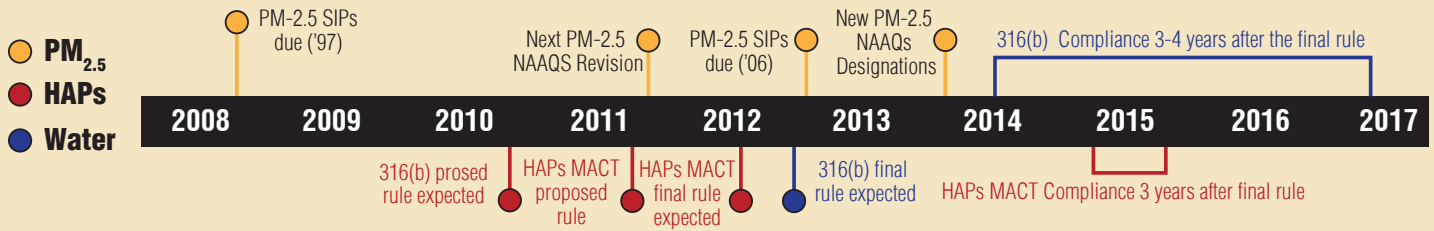
The SWOT Team

On July 1, 2010, Basin Electric CEO and General Manager Ron Harper created an Environmental SWOT (strengths, weaknesses, opportunities, threats) Team to review current and proposed regulatory activities that will impact the cooperative’s energy production facilities and its ability to economically and reliably meet the needs of its members.

The team is charged with analyzing proposed EPA regulations and sharing the information with Harper and senior staff to support the development of near-, immediate- and long-term impact planning.

Members of the team include Lyle Witham, manager of environmental services; Mike Fluharty, vice president of plant operations; Deb Levchak, staff counsel; Curtis Jabs, senior legislative representative; A.T. Funkhouser, Dakota Gasification Company manager of health, safety and environmental; and Erin Fox Dukart, environmental analyst.

Environmental Regulatory Time Line for Coal Units



The most controversial aspect of the new rule is the language that prohibits emergency RICE from being used for peak shaving, Witham says. “This may put some diesel RICE generators in a dilemma where neither option is feasible.”

If an owner or operator chooses to classify its RICE as non-emergency, the cost of the CO controls to meet the new emission standards may be too high to continue to use that RICE for peak shaving and other load management needs. But if a RICE is categorized as emergency, a critical component to load management is lost to distribution systems that have relied on these generators in periods of high demand.

Existing units classified as emergency RICE are restricted under the RICE MACT to operating 50 hours per year in non-emergency situations, like routine maintenance and inspection. Though they can’t be used for peak shaving, they are allowed to generate revenue up to 15 hours a year when a regional transmission authority determines the units are needed, for example, to prevent a potential electrical blackout. However, the 15 hours must then be included as part of the 50 hour annual limit on non-emergency operations. To ensure these restrictions are met, the rules require a non-resettable hour meter be installed on emergency RICE units.

According to Dave Raatz, Basin Electric manager of marketing and power supply planning, Basin Electric and its members must evaluate the

RICE rule relative to the units it owns and its purchase power agreements for potentially impacted generators.

“Most of the impacted generation is owned by member-consumers on the distribution systems, and they are currently being used by members in their load management operations,” Raatz says.

The new RICE rule is forcing small cooperatives, businesses and consumers who own or operate RICE into the complex world of Clean Air Act permitting and compliance. This is because, according to the language of the rule, the owner or operator of the unit is responsible for ensuring the unit remains compliant. The North Dakota Department of Health has put together a guidance document that will help owners and operators of RICE to understand the new requirements and options.

The rule became effective May 3, 2010. Certain RICE were required to submit an initial notification by Aug. 31, 2010. Utilities and others now have until May 3, 2013, to ensure existing RICE units comply.

Cooling water intakes

Through the Clean Water Act, the EPA is also focusing its rulemaking on once-through cooling water intake structures. According to Witham, a number of existing power plants, like Basin Electric’s Leland Olds Station, and nuclear facilities in the United States use once-through cooling

systems to condense steam. Once-through systems withdraw water from surface water bodies to cool the plant. In some cases, fish and other aquatic organisms can get trapped in the process. “Because of this, EPA may be considering a best available technology standard that would no longer allow plants to use once-through cooling,” Witham says.

If that happens, plants like Leland Olds would be required to install recirculating cooling systems like cooling towers. However, Witham says forcing such requirements would create a huge expense, but the changes may have little or no positive impact on the river, the fish or the wildlife that are present. A recent United States Supreme Court opinion said it was appropriate to apply a cost/benefit analysis in determining the appropriate requirements and controls for water intake systems under Section 316(b) of the Clean Water Act.

“In our region, with the extremely cold winters when many streams, rivers and lakes freeze up, the area at the cooling water intake remains open. Because of this, it helps sustain recreation and habitats for some species of fish and wildlife year-round,” Witham says. “Basin Electric hired a consultant to study the impacts of the Leland Olds cooling system. The study identified only minimal impacts to fish and other species. These are things Section 316(b) says are appropriate to consider in evaluating water intake systems for power plants and other uses.”

In July 21, 2010, the EPA submitted a proposed Information Collection Request to the Office of Management and Budget. The agency is requesting public comment on a survey it intends to use to estimate a rulemaking's potential benefits and costs to society. Survey participants will be recruited randomly and asked to complete a voluntary questionnaire. Comments will be accepted until Sept. 20, 2010.

Fine particulate matter

The Clean Air Act requires EPA to set National Ambient Air Quality Standards for particulate matter. As Witham explains, particulate matter forms when SO₂ and NO_x emissions from coal-based generation resources are converted by photochemical reactions (primarily sunlight) from a gas into fine particulate.

According to EPA's website, EPA revised the air quality standards for particulate matter in 2006. But, in February 2009, the U.S. Court of Appeals for the D.C. Circuit remanded significant aspects of the 2006 particulate matter (PM) ambient standards to EPA ordering the agency to reconsider the standards.

"The agency is scheduled to review the PM_{2.5}⁴ standards in late 2010 or early 2011," Witham says. "How EPA will implement the PM_{2.5} standards with Regional Haze is yet to be determined. The likely outcome will be significantly more stringent standards that will require more emission reductions. But, costs for PM_{2.5} could potentially be covered by the same control technologies used to address SO₂ and NO_x."

⁴ PM_{2.5}: According to EPA's designations, PM_{2.5} describes particulate matter that is 2.5 micrometers in diameter and smaller, or 1/30th the diameter of a human hair.

⁵ Non-attainment area: As defined in the Clean Air Act, it is an area where emissions levels persistently exceed National Ambient Air Quality Standards, or that contributes to ambient air quality in a nearby area that fails to meet standards.

SO₂ update

Even as rules are deemed final, it takes time to thoroughly review and assess their implications. As described in Part 1, the final rule for SO₂ was issued June 2, 2010, which adds a one-hour standard for emissions and revokes the 24-hour and annual standards. Witham says modeling will have to be done in both North Dakota and Wyoming to determine if potential exists for these areas to be classified as non-attainment⁵.

In July, Witham and other members of the Basin Electric SWOT team (see sidebar, page 3) sent a memo to Basin Electric CEO and General Manager

Ron Harper explaining a change in the preamble for the rule from its proposed version to its final version. "The proposed rule set forth

monitoring as a way of measuring whether an area is in attainment of the new SO₂ standard. In the final rule, it sets forth 'a hybrid analytic approach that would combine the use of monitoring and modeling to assess compliance,' but expresses intent 'to use modeling as the principle means of assessing compliance for medium to larger sources,'" Witham says.

"This change poses a non-attainment compliance risk for major sources in Basin Electric's service area," he says. The memo states modeling significantly overpredicts ambient air concentrations of SO₂, often by 25 percent or more, when compared to concurrent monitored concentrations at the same grid points in the Class 1 areas in western North Dakota and other locations.

Witham says both a petition for reconsideration with EPA and a challenge in federal court were filed by the Aug. 23 deadline.

Congressional intervention

Beyond petitions and court challenges, Basin Electric staff and others are working with members of Congress in a number of ways to stop EPA from forcing such costly standards so quickly. "We've gotten the delegation in our region engaged in the issue," says Mike Eggl, Basin Electric senior vice president of External Relations and

Communications. "And, they're taking action. From co-sponsoring legislation to signing letters addressed to EPA Administrator Lisa Jackson,

our senators and representatives are becoming aware of the costly implications of these rules and proposed regulations."

Eggl also encourages the public to get engaged by contacting their representatives and commenting on the development of EPA's proposed regulations. "In almost every case, the cost burden of complying with each new rule filters into the pocketbook of every American citizen," he says.

All proposed and final rules can be reviewed at www.regulations.gov. Before any rule becomes final, there is an open comment period where individuals and companies have an opportunity to respond and provide input on a proposed rulemaking.

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