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### In This Issue

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### Defining the Terms in the New Source Review Equation

$$NSR = (P\Delta - RMR^2) + E\uparrow$$

*By R. Bruce Barze, Jr. & Jeffrey H. Wood*

Few provisions in the Clean Air Act (CAA) have spawned more regulation and litigation than New Source Review (NSR). This federal statute requires “new sources,” such as coal-fired power plants, to employ the best available technologies for controlling air pollution. Much of the recent controversy has centered on whether (or when) older power plants must also comply with NSR. In 1999, the United States Environmental Protection Agency (EPA) commenced an enforcement initiative against the nation’s largest utility companies for allegedly failing to comply with NSR when engaging in certain projects intended to maintain or, in some instances, to extend the life of older, coal-fired power plants. This enforcement initiative was unprecedented, targeting over 500 maintenance projects at 56 power plants across the United States. EPA took the position that these projects – some of which occurred over twenty years ago – essentially turned older power plants into new ones, subjecting them to NSR.

The Clean Air Act’s distinction between “new” and “existing” sources originated in 1970, when section 111 of the CAA was enacted to require new power plants to meet emissions standards known as New Source Performance Standards (NSPS). *See* 42 U.S.C. § 7411(e). Unlike new sources, Congress exempted “existing” sources (i.e., sources in existence at the time EPA promulgated the NSPS for power plants) from the requirement to comply with NSPS, due mainly to the immense cost of retrofitting existing power plants with state-of-the-art pollution control technologies, which often costs hundreds of millions of dollars. *Id.* § 7411(a). These existing sources were, to put it simply,

“grandfathered” until the source underwent “modification,” 42 U.S.C. § 7411(a)(2), which was defined as “[a]ny 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 a source or which results in the emission of any air pollutant not previously emitted,” 42 U.S.C. § 7411(a)(4). “Routine maintenance, repair and replacement” (RMRR) activities are excluded from NSPS. 40 C.F.R. § 60.14(e)(1).

Congress continued to distinguish between “new” and “existing” sources when it amended the CAA in 1977 to add the Prevention of Significant Deterioration (PSD) program and its companion Non-Attainment New Source Review (NNSR) program – the CAA programs generally referred to as “NSR.” See 42 U.S.C. § 7470-7479. While NSPS focuses on the pollution control equipment that all new sources must install no matter where the power plant is located, NSR requires installation of pollution controls depending on where the plant is located. See *N. Plains Res. Council v. EPA*, 645 F.2d 1349, 1356 (9<sup>th</sup> Cir. 1981). PSD requires new power plants in so-called “attainment areas” – those areas satisfying the National Ambient Air Quality Standards (NAAQS) – to install the “best available control technology.” NNSR requires new power plants in “non-attainment areas” – those areas that do not meet the NAAQS – to comply with the “lowest achievable emission rate” and to offset any new emissions by reductions in other sources. 42 U.S.C. § 7503. Like NSPS, the requirements of NSR apply to “existing” power plants that undergo a “modification,” as that term is defined in NSPS. 42 U.S.C. § 7479(2)(C); 42 U.S.C. § 7475(a)(1). Likewise, routine maintenance, repair and replacement activities are excluded from NSR. 40 C.F.R. § 52.21(b)(2)(iii)(a).

The NSR enforcement cases filed since 1999 have almost universally focused on the general applicability provisions of NSR, as applied to existing sources. Stated simply, NSR

is triggered when there is “any physical change” ( $\text{PA}$ ) to an existing power plant, except for “routine maintenance, repair and replacement” ( $\text{RMR}^2$ ), that results in a significant net emissions increase ( $\text{E}\uparrow$ ). See 42 U.S.C. § 7411(a)(4). Or, in the form of a mathematical equation:  $\text{NSR} = (\text{PA} - \text{RMR}^2) + \text{E}\uparrow$ . This article provides an update on how the courts, EPA, and proposals in Congress are defining each of these “variables” in the NSR equation.

### **Routine Maintenance, Repair & Replacement ( $\text{PA} - \text{RMR}^2$ )**

The first question when determining whether NSR applies is the easiest to answer: whether the particular project at issue is considered to be a “physical change.” All courts recognize that the statutory phrase “any physical change” encompasses nearly every change to a plant’s operations. As the Seventh Circuit observed fifteen years ago, the definition of “any physical change” is broad: “Even at first blush, the potential reach of these modification provisions is apparent: the most trivial activities—the replacement of leaky pipes, for example—may trigger the modification provisions if the change results in an increase in the emissions of a facility.” *Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 905 (7<sup>th</sup> Cir. 1990) (“*WEPCO*”). Of course, Congress did not intend every maintenance project at existing sources to trigger the costly NSR requirements, so EPA has adopted several pragmatic exclusions. See *Alabama Power Co. v. Costle*, 636 F.2d 323, 401 (D.C. Cir. 1979) (explaining that requiring NSR for “routine alterations” at a power plant was “never intended by Congress”).

The “routine maintenance, repair and replacement” exclusion has received the most notoriety of all the NSR exclusions. See 40 C.F.R. § 52.21(b)(2)(iii) (PSD program); 40 C.F.R. § 60.14(e) (NSPS program). EPA has excluded RMRR from the definition of “physical change” since 1971, but almost 35 years later a uniformly accepted definition of RMRR has yet

to emerge. See 40 C.F.R. § 60.2(h)(1) (1971). The notoriety of the RMRR exclusion is due, in large part, to the longstanding disagreement among EPA, state air pollution control agencies, the regulated industry, and environmental groups over the correct standard for judging whether a particular physical change is “routine.” Some courts have provided for a relatively broad definition of RMRR, focusing on the practical realities inherent in the NSR permit process, while other courts have narrowly construed this exclusion. Adding to the controversy is EPA’s own seemingly inconsistent interpretation and application of the RMRR exclusion. As the Eleventh Circuit explained, the “central disagreement” concerning RMRR is “whether ‘routine’ should be defined relative to an industrial category or to a particular unit.” *Tennessee Valley Auth. v. EPA*, 278 F.3d 1184, 1189 n. 3 (11<sup>th</sup> Cir. 2002). Utilities argue that the proper standard is “routine in the industry,” while environmental groups and, at least during the NSR enforcement initiative, EPA support the “routine at the unit” standard (or some variation thereof).

The issue of what is “routine” maintenance, while part of the CAA since 1971, really did not receive much attention in the courts until the Seventh Circuit’s decision in *Wisconsin Electric Power Co.*, 893 F.2d 901. In that case, a utility challenged EPA’s determination that certain proposed renovations at an existing power plant failed to qualify for the RMRR exclusion. Among other things, the Seventh Circuit upheld EPA’s determination that the replacement of steam drums and air heaters by WEPCO was not “routine” because it was “highly unusual” and “unprecedented,” so much so that “EPA did not find [ ] even a single instance of renovation work at any electric utility generating station.” 893 F.2d at 991. The Seventh Circuit reasoned that the RMRR exclusion should not be interpreted in a way that “would open vistas of indefinite immunity from [NSR].” *Id.* at 909. The *WEPCO* decision raised fears among industry that all existing power plants in the United States would be

required to comply with NSR, and in response to pressure from Congress, EPA promulgated the so-called WEPCO Rule in 1992, which explained in the preamble that “routine” is measured by what “has been repaired or replaced within the relevant industrial category.” 57 Fed. Reg. 32314, 32326 (July 21, 1992). No court substantively addressed the meaning of “routine” again until the NSR enforcement initiative commenced in 1999.

### *Routine in the Industry*

Federal district courts in North Carolina and Alabama have recently adopted an expansive, pragmatic view of RMRR. For example, in *United States v. Duke Energy Corp.*, a federal district court judge held that projects which are “routine in the industry” are excluded from NSR. 278 F. Supp. 2d 619, 629-30 (M.D.N.C. 2003). EPA alleged that Duke Energy violated the CAA when engaging in over two dozen projects between 1988 and 2000 at its coal-fired power plants in North and South Carolina, the majority of which consisted of replacement of boiler tube assemblies, including economizers, portions of waterwalls, superheaters, and reheaters. *Id.* at 623-24. The district court in *Duke Energy* relied on a plain reading of the CAA. *Id.* at 629-32. Specifically, the court explained that, by 1975, EPA had already determined that projects that were “routine for a source category” were excluded from the definition of “modification,” for purposes of NSPS. *Id.* at 631 (quoting 40 C.F.R. § 60.14(e)(1) (1975)). Thus, it was with this regulatory framework in place that Congress defined “modification” under NSR by referring to the NSPS definition of modification. *Id.* at 631-32. Relevant legislative history noted that EPA should “conform” the NSR definition of modification to “usage in other parts of the [CAA],” referring to NSPS. *Id.* (quoting 123 Cong. Rec. H11956, 3665 (daily ed. Nov. 1, 1977)). The court also pointed out that, in 1984, EPA stated that the NSR definition of modification incorporated the NSPS concept of modification, including the NSPS regulatory exclusion for routine maintenance that was in

effect at the time. *Id.* at 629 (citing 49 Fed. Reg. 43211, 43213 (Oct. 26, 1984)). Based on these and other considerations, the *Duke Energy* court concluded that whether a project is routine depends on whether, in light of the nature, extent, purpose, and frequency of the work, the project is routine for the entire source category, not just the individual unit at issue. *Id.* at 638.

Similarly, in *United States v. Alabama Power Co.*, a federal district court in Birmingham, Alabama concluded that the “RMRR exclusion applies to projects that are routine within the industry, by which is meant work of a type performed commonly within the industry, although perhaps infrequently at any specific [power plant].” 372 F. Supp. 2d 1283, 1307 (N.D. Ala. 2005). Like *Duke Energy*, the court in *Alabama Power* relied on a plain reading of the Clean Air Act and its implementing regulations, as buttressed by congressional intent and the historic application of the RMRR exclusion. *Id.* at 1293-97.

In addition, EPA itself has supported the idea that routine maintenance should be judged based on a more flexible, pragmatic approach. For example, as noted above, EPA stated in 1992 that the proper test for determining whether a project is “routine” is whether the project is “routine for a source category.” 57 Fed. Reg. 32314, 32326 (July 21, 1992). Likewise, in 2003, EPA issued new NSR rules, which state categorically that equipment replacement activities that do not exceed twenty percent of the replacement value of the process unit qualify as “routine maintenance, repair and replacement.” 68 Fed. Reg. 61248, 61270 (Oct. 27, 2003). In this “equipment replacement” rule, EPA recognized that the language of the Clean Air Act does not require the agency to narrowly construe the “routine” exclusion, noting that an interpretation of the modification provision which would eventually subject all existing power plants to NSR “cannot be squared with the plain language of the CAA.” 68 Fed. Reg. 61248, 61273 (Oct. 27, 2003). EPA recently reaffirmed the validity of this rule. *See* 70 Fed.

Reg. 33,838 (June 10, 2005). Notably, at least one federal court has recognized that many types of projects subject to the NSR enforcement initiative would have been excluded from NSR if the equipment replacement rule was in effect at the time of the projects. *See Alabama Power*, 372 F. Supp. 2d at 1299-1300. A challenge to the validity of the equipment replacement rule is currently pending before the D.C. Circuit, which has stayed implementation of new rule pending the court’s decision. *See New York v. EPA*, No. 03-1380 and consolidated cases (D.C. Cir.). The D.C. Circuit is expected to issue its ruling in mid- or late-2006. In the meantime, Congress is considering legislation (H.R. 3893, § 106) to codify this exclusion for projects that are routine in the industry.

#### *Routine at the Unit*

On the other hand, federal district courts in Illinois, Indiana and Ohio have adopted a narrow, less-flexible view of RMRR. In *United States v. Southern Indiana Gas & Electric Co.*, the court addressed whether various projects at a coal-fired power plant in Indiana from 1991 to 1997 were excluded as routine maintenance. 245 F. Supp. 2d 994 (S.D. Ind. 2003). Reasoning that the RMRR exclusion must be construed narrowly in light of the broad construction of the phrase “any physical change,” the court in *SIGECO* concluded that “EPA’s interpretation of routine maintenance is reasonable and persuasive and [the court] will defer to it in this litigation.” *Id.* at 1009.

Similarly, in *United States v. Ohio Edison Co.*, the court agreed with EPA that the utility-defendant violated NSR by completing eleven projects, which took from 37 days to eight months to complete, where the costs for the projects ranged from \$1 million to \$28 million. 276 F. Supp. 2d 829 (S.D. Ohio 2003). Deferring to EPA, the court reasoned that EPA’s narrow interpretation of RMRR was “reasonable” in light of the broad scope of the phrase “any physical change.” *Id.* at 862. EPA’s seemingly inconsistent positions on the standard for routine

were, according to the court, indicative of an “abysmal breakdown” in the regulatory process, but were otherwise inconsequential as to whether EPA’s current interpretation was reasonable in light of the CAA. *Id.* at 832. So far, the federal appellate courts have yet to address the proper standard for routine in any of the NSR enforcement initiative cases.

### **Emissions Increase (E↑)**

Another variable in the NSR equation, while less known than RMRR, has often determined the outcome in the NSR enforcement cases. As noted earlier, NSR is triggered if and only if a “physical change” results in a significant “net emissions increase.” *Ohio Edison*, 276 F. Supp. 2d at 854. Like RMRR, however, courts have adopted two diametrically opposed tests for determining whether a project results in a significant net emissions increase. Some courts hold that, similar to NSPS, NSR is only triggered by an increase in the hourly rate of emissions. Other courts, however, conclude that only a total annual increase in emissions is necessary to trigger NSR. Like RMRR, EPA’s position on this issue has varied over the past, so much so that one court recently noted that EPA has failed to speak with “one voice, or a consistent voice, or even a clear voice” on what constitutes an emissions increase. *Alabama Power*, 372 F. Supp. 2d at 1306-07. (Whether an emissions increase is “significant” has yet to be controversial in the NSR enforcement cases, and is not discussed in this article.)

### ***Hourly Emissions Increase Test***

In *Duke Energy*, the district court concluded that a net emissions increase can result only from an increase in the hourly rate of emissions. 278 F. Supp. 2d at 640. This hourly test, the court observed, was mandated by Congress when it expressly incorporated the concept of an NSPS modification, which at that time (i.e., 1977) employed the hourly test, into PSD. *Id.* at 642-44. The court also relied on the “hours of operation” exclusion, which requires

EPA to hold the power plants’ hours of operation constant when calculating whether emissions have increased as a result of a particular project. *Id.* at 640-41. EPA’s interpretation contemporaneous with the adoption of the PSD rules provided further support to the hourly emissions rate test. *Id.* at 641-42 (quoting, among other things, a 1981 applicability determination where a senior EPA official stated that NSR is triggered by “any change in the [hourly] emissions rates”).

On appeal, the Fourth Circuit affirmed the district court, holding that “only a project that increases a plant’s hourly rate of emissions constitutes a ‘modification.’” *United States v. Duke Energy Corp.*, 411 F.3d 539, 550 (4<sup>th</sup> Cir. 2005). Importantly, while the Fourth Circuit relied solely on the statutory language “mandat[ing] that the PSD definition of ‘modification’ be identical to the NSPS definition of ‘modification,’” *id.* at 546-47, the court expressed no opinion on the efficacy of the other reasons underlying the district court’s opinion. *Id.* at 545 n. 2. Since the lack of any emissions increase was outcome determinative, the Fourth Circuit did not address the correct legal test for determining whether a project is routine. *Id.* at 545 n. 2. The Government declined to seek review by the United States Supreme Court of the Fourth Circuit’s ruling, but environmental groups that are parties in the matter have indicated that they will ask the Supreme Court to take up the case.

The court in *Alabama Power* also concluded that “emission increases, for purposes of [NSR] analysis, are calculated only on the basis of ‘maximum hourly emission rates,’ not annual actual emissions.” 372 F. Supp. 2d at 1307. Central to this decision was Congress’ clear intent that EPA was required to “adopt the NSPS emissions increase test [in NSR].” *Id.* at 1298. The *Alabama Power* court also relied, among other things, on the regulatory history of NSR. *Id.* at 1298-99.

Moreover, on October 14, 2005, EPA published a proposed rule under which it would

apply the “maximum hourly emissions rate” test to future projects at existing coal-fired power plants. *See* 70 Fed. Reg. 61081 (Oct. 20, 2005). As the court in *Alabama Power* noted (referring to a separate NSR rulemaking), EPA’s change in NSR tests would result in the “anomaly of utilities ... being prosecuted for conduct that, if engaged in now, would not be prosecuted.” 372 F. Supp. 2d at 1306 n. 44. In fact, on October 13, 2005, EPA issued an NSR enforcement policy to EPA region offices and state air pollution control agencies explaining that, with respect to future projects, enforcement actions should only be filed where the project at issue increases the maximum hourly emissions rate of the facility.

### ***Annual Emissions Increase Test***

Several courts have also sided with EPA’s position in the NSR enforcement initiative that NSR is triggered where a project increases the power plant’s total annual emissions, as opposed to an increase in the hourly emissions rate. In *Ohio Edison*, the court rejected the hourly test as inconsistent with congressional intent. 276 F. Supp. 2d at 875. Furthermore, the court noted that the “hours of operation” exclusion was inapplicable to projects where the increased hours of operation accompanied the physical change. *Id.* at 876-78. Other federal district courts have reached similar conclusions. *See SIGECO*, 245 F. Supp. 2d at 998 (explaining that, in light of congressional intent and with deference to EPA, NSR applies when there will be an increase in the “total annual emissions”); *United States v. Cinergy Corp.*, 384 F. Supp. 2d 1272, 1276-78 (S.D. Ind. 2005). The practical impact of the emissions test adopted by these courts is that NSR becomes a “self-fulfilling prophecy” for virtually any physical change at an existing power plant. *Alabama Power*, 372 F. Supp. 2d at 1297. Since repair projects at power plants are intended to prevent future power plant failures (called “outages”), any repair project will increase the available operating hours of the power plant, thereby increasing the total annual emissions.

*Id.*

While not resolving the emissions increase controversy, the D.C. Circuit recently touched on this issue in a decision involving the validity of the NSR regulations issued by EPA in 2002. *See New York v. EPA*, 413 F.3d 3 (D.C. Cir. 2005). In that case, industry challenged (among other things) the definition of “modification” in the 2002 NSR rules, arguing that EPA unlawfully employed an annual emissions increase test under NSR rather than the NSPS hourly emissions test. *Id.* at 9-11. The D.C. Circuit disagreed, finding insufficient evidence that Congress intended to incorporate the pre-1977 NSPS regulatory definition of “modification” into the NSR statutory definition of “modification.” *Id.* Nonetheless, the court “express[ed] no opinion as to whether Congress intended to require that EPA use identical regulatory definitions of modification across the NSPS and NSR programs,” as the Fourth Circuit previously held in *Duke Energy*. *Id.* at 11. The prior decisions in *Duke Energy* and *Alabama Power* are most likely unaffected by this ruling. In fact, subsequent to the D.C. Circuit’s decision, the Fourth Circuit rejected the Government’s petition for rehearing in light of *New York v. EPA*. *See United States v. Duke Energy Corp.*, No. 04-1763 (4<sup>th</sup> Cir. Aug. 30, 2005) (order denying petition for rehearing and rehearing en banc).

### **The Final Equation**

As with any mathematical equation, how one defines the variables determines the end product. The same is true for the NSR equation. Where courts have defined “routine” by reference to the industry or where courts have found that an increase in the hourly emissions rate is necessary to trigger NSR, the utility has prevailed. In other words, as the courts in *Duke Energy* and *Alabama Power* explained, the proper NSR equation is:

$$\text{NSR} = (\text{P}\Delta - \text{RMR}^2) + \text{E}\uparrow, \text{ where}$$

$$\text{P}\Delta = \text{any physical change, RMR}^2$$

$$= \text{maintenance, repair and}$$

**replacement projects that are “routine in the industry,” and  $E\uparrow$  = increase in the hourly emission rate.**

On the other hand, EPA has prevailed where the courts have defined “routine” by reference to the specific unit at issue and where the courts have concluded that NSR is triggered simply by an increase in total annual emissions. According to the *Ohio Edison* and *Cinergy* courts, the proper NSR equation is:

**$NSR = (P\Delta - RMR^2) + E\uparrow$ , where  $P\Delta$  = any physical change,  $RMR^2$  = maintenance, repair and replacement projects that are “routine at the unit,” and  $E\uparrow$  = increase in total annual emissions.**

Finally, if EPA’s 2002 and 2003 NSR rules are upheld by the D.C. Circuit, and if the 2005 proposed emissions rule is finalized, future projects will be subject to an entirely different NSR equation. For future projects, the NSR equation would be:

**$NSR = (P\Delta - RMR^2) + E\uparrow$ , where  $P\Delta$  = any physical change,  $RMR^2$  = maintenance, repair and replacement projects that do not exceed 20% of the replacement value of the process unit, and  $E\uparrow$  = increase in hourly emissions rate.**

Of course, energy and environmental law practitioners should expect these equations to face further permutations as EPA adds to or subtracts from its regulations and policies in response to judicial decisions or political pressure, or if Congress ever solves the problem by enacting NSR reform legislation.