

Keeping Grandfathered Polluters Alive: EPA's New Equipment Replacement Provision

On August 27, 2003, the EPA released a final rule that creates a new Equipment Replacement Provision (ERP) in the Clean Air Act (CAA), expanding the scope of an existing exemption from New Source Review for Routine Maintenance, Repair, and Replacement (RMRR).¹ The CAA requires major new sources of pollution or modifications to existing major sources to undergo New Source Review, which requires the use of specific pollution-control technology to meet air quality standards.² The existing RMRR exception allows sources to avoid New Source Review for routine maintenance activities.³ The new rule defines and significantly expands this exception, making it easier for polluters to upgrade plants without being required to install pollution-control technologies.⁴ This loophole gives older, dirtier plants an unfair competitive advantage over newer plants that remain subject to the increased cost of New Source Review.⁵ This represents a significant step backward from the goals of the Clean Air Act.

BACKGROUND OF NEW SOURCE REVIEW AND ROUTINE MAINTENANCE, REPAIR, AND REPLACEMENT

New Source Review (NSR) is a key component of the Clean Air Act (CAA), requiring pre-construction review of new and modified major stationary sources of pollution and imposing pollution-control requirements that are usually much more stringent than those applied to

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1. Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review (NSR): Equipment Replacement Provision of the Routine Maintenance, Repair and Replacement

Exclusion, 68 Fed. Reg. 61,248 (October 27, 2003) (codified at 40 C.F.R. pts. 51 and 52) [hereinafter *2003 NSR Regulation*].

2. ROY S. BELDIN, CLEAN AIR ACT 43, 49-52 (2001).

3. 40 C.F.R. § 51.165(a)(1)(v)(C)(1) (2002).

4. See *infra* notes 53–62 and accompanying text.

5. See *infra* notes 64–72 and accompanying text.

unmodified, existing sources.⁶ The regulations implementing the CAA require a permit for "Major Modifications," defined as "any physical change in or change in the method of operation of a major stationary source that would result in" a significant net emissions increase.⁷

While in principle anything down to replacing a leaky pipe could be considered a change in a physical device, and would thus trigger NSR,⁸ the EPA, using a variety of exceptions, has long interpreted NSR as a provision applicable only to significant changes.⁹ The courts have recognized that the EPA has limited discretion to provide exceptions on grounds of de minimis magnitude or administrative necessity.¹⁰ One of the most important exemptions to NSR allows the EPA to exclude from its review changes that amount to Routine Maintenance, Repair and Replacement (RMRR).¹¹

Under the old regulations, RMRR was not defined,¹² and was determined on a case-by-case basis.¹³ Although they were never codified, the EPA did eventually develop a set of rough guidelines for applying the RMRR exception,¹⁴ involving five factors: nature, extent, purpose, frequency, and cost.¹⁵ Nature included the size and importance of the parts being replaced, the need for pre-approval from state agencies, and characterization in internal documents.¹⁶ Extent included time, cumulative considerations,¹⁷ and whether a complete emissions unit was being replaced.¹⁸ Purpose inquired as to whether the project would extend the life of the facility and whether it would allow enhanced

6. BELDIN, *supra* note 2, at 43, 49-52 (2001). Even in areas not exceeding air quality standards, requirements mandate implementation of the "Best Available Control Technology." *Id.* at 50.

7. 40 C.F.R. § 52.21(b)(2)(i) (2002). Although the states may use other definitions, they may do so only if the alternate definition is more stringent. 40 C.F.R. § 51.165(a)(1) (2002).

8. See Requirements for Preparation, Adoption and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans; Standards of Performance for New Stationary Sources, 57 Fed. Reg. 32,314, 32,316 (July 21, 1992) (codified at 40 C.F.R. pts. 51, 52, 60).

9. Environmental Protection Agency, Detroit Edison Applicability Determination Detailed Analysis 5 (2000), at <http://www.epa.gov/Region7/programs/artd/air/nsr/nsrmemos/detedisn.pdf> [hereinafter *Detroit Edison Determination*].

10. Alabama Power Co. v. Costle, 636 F.2d 323, 400 (D.C. Cir. 1980).

11. 40 C.F.R. § 51.165(a)(1)(v)(C)(1) (2002).

12. 2003 NSR Regulation, 68 Fed. Reg. 61,248, 61,249 (October 27, 2003) (codified at 40 C.F.R. pts. 51 and 52).

13. *Id.* at 61,249.

14. *Detroit Edison Determination*, *supra* note 9, at 8-11.

15. *Id.* at 10-11.

16. *Id.* at 10.

17. A collection of activities that would individually be routine might collectively be a modification. *Id.*

18. *Id.*

operation.¹⁹ Frequency asked how often this type of modification would be required.²⁰ The cost consideration explored whether the modification could be paid for out of the operating budget, or whether it was considered a capital expenditure.²¹

The EPA first described these five factors in an internal memorandum, known as the Clay Memorandum, regarding the applicability of NSR to a repair project at a Wisconsin Electric Power Company (WEPCO) facility.²² The Clay Memorandum emphasized the need for individual, fact-specific determinations, and indicated that a decision in one case was not necessarily determinative in other similar cases.²³ In rejecting the WEPCO application, the EPA considered the fact that the parts to be replaced comprised major parts of the facility which apparently had not previously been replaced.²⁴ In addition, the project was to take four years, cost approximately fifteen percent of the replacement cost of the plant, and require approval by the state utility commission.²⁵ The project would also significantly extend the life of the facility.²⁶ Thus, the EPA designated the proposed repairs as physical changes not exempted under RMRR, even though they only replaced deteriorated parts and returned the facility to its original design capacity.²⁷ Despite this designation, the EPA concluded that the repairs would not trigger NSR unless a significant increase in pollution accompanied them.²⁸ The EPA further held that such an increase could be significant even if the only increases in pollution would be due to the ability of the plant to safely operate closer to full capacity.²⁹

The analysis set forth in the Clay Memorandum remained the EPA standard for making applicability determinations for RMRR, as illustrated by the EPA's detailed analysis in a 2000 determination concerning a repair project proposed by Detroit Edison Corporation to

19. *Id.* at 11.

20. *Id.* at 11.

21. *Id.* at 11.

22. Memorandum from Don Clay, EPA Acting Assistant Administrator for Air and Radiation, to David A. Kee, EPA Region V Director of Air and Radiation Division (Sept. 9, 1988), available at <http://www.epa.gov/compliance/planning/data/air/adi.html> [hereinafter *Clay Memorandum*].

23. *Id.* at 3. The permitting authority was asked to "take account of how each of these factors might apply in a particular circumstance to arrive at a conclusion considering the project as a whole." *Detroit Edison Determination*, *supra* note 9, at 11.

24. *Clay Memorandum*, *supra* note 22, at 4.

25. *Id.* at 4-5.

26. *Id.* at 4-5.

27. *Detroit Edison Determination*, *supra* note 9.

28. *Clay Memorandum*, *supra* note 22, at 6-7. The applicable regulations specify that an increase in pollution due only to increased production or hours of operation is not significant. 40 CFR 52.21(b)(2)(iii)(f). However, the EPA held that if increased production or hours results from the physical changes, this exception does not apply. *Id.* at 7.

29. *See id.* at 6-7.

replace turbine blades at a coal-fired steam electrical generating plant.³⁰ Edison had shut down the turbines several times during past operation of the facility to replace damaged blades.³¹ The project for which they sought an applicability determination involved a similar shutdown, but included replacement of all of the blades with an improved, more efficient design.³²

Because the proposal involved replacement of an integral part, the EPA determined that the modification was a physical change.³³ Although replacement of turbine blades was routine, the EPA stated that a complete replacement of all blades with a new design at the same time was not.³⁴ EPA considered it highly relevant that the cost was much greater than past blade replacements and several times the cost of a complete replacement with the old technology.³⁵ Despite this physical change, EPA found that the project was not subject to NSR because it could not dispute Edison's assertion that they would not operate the plant so as to increase actual emissions.³⁶

While the case-by-case approach certainly provided EPA with administrative flexibility, it was criticized for hampering needed maintenance and creating uncertainty.³⁷ Pollution sources could not be sure what projects would be considered major modifications versus RMRR without undergoing an expensive and time-consuming applicability determination process.

THE EQUIPMENT REPLACEMENT PROVISION CREATED BY THE 2003 NSR RULE

The changes in the 2003 NSR rule created the new Equipment Replacement Provision (ERP),³⁸ which exempts projects from NSR if they meet three requirements: (1) replacement of a component with its functional equivalent, (2) at a cost not greater than 20% of the value of the process unit, and (3) without altering the basic design parameters of the unit (to insure that the project is in fact maintenance rather than modification).³⁹ The acceptability of such changes is based on the premise that most functionally equivalent replacements are necessary for safe and

30. *Detroit Edison Determination*, *supra* note 9. The plant had lost 7% of its generating capacity due to deterioration. *Id.*

31. *Id.* at 3.

32. *Id.* at 4.

33. *Id.* at 17.

34. *Id.* at 17.

35. *Id.* at 17.

36. *Id.* at 20.

37. 2003 NSR Regulation, 68 Fed. Reg. 61,248, 61,250 (October 27, 2003) (codified at 40 C.F.R. pts. 51 and 52).

38. *Id.* at 61,251-52.

39. *Id.* at 61,252. The change also must not cause the process unit to violate existing emissions requirements. *Id.*

efficient operation and will improve air quality due to decreased downtime and malfunctions.⁴⁰

Under the new rule, replacement of parts will not require NSR review, because the EPA assumes that such replacements are part of the proper operations of industrial facilities, and thus do not need individual review.⁴¹ In order to provide flexibility, and encourage the upgrading of old technology, the ERP allows replacement with parts that are not identical, but are the functional equivalent of the old part.⁴² Additionally, the costs of the replacement, including both the capital cost of the component and any other costs necessary for the replacement, may not exceed twenty percent of the value of the process unit, which includes any collection of structures or equipment that in any way uses material inputs to produce or store an intermediate or completed product.⁴³ Finally, the requirement that the replacement may not alter the basic design parameters of the process unit or cause any component to exceed any applicable emission standard is intended to insure that the project is in fact maintenance or repair, rather than a modification of the purpose of the unit.⁴⁴ In general, the operator may choose to define the design parameters as either the fuel and material input rates, or product output rates.⁴⁵ Improvements in efficiency are not considered to be a change in the basic design parameters, as the EPA believes that NSR should not be a hindrance to increased efficiency, even if it results in increased output.⁴⁶

EFFECTS OF THE NEW EQUIPMENT REPLACEMENT PROVISION

The 2003 NSR rule alleviates some of the unpredictability problems of the old NSR system.⁴⁷ Under the new rule, when existing pollution sources replace component parts within a single process unit (a discrete part of the production process) with identical components or their functional equivalents, the replacement may fall automatically within the RMRR exception if certain requirements are met.⁴⁸ This allows plants to replace component parts without triggering NSR in more cases than before, and provides industry members with an increased level of

40. *Id.* Commenting on the proposed regulation, industry groups argued that the absence of a clear exception for replacements and repair discouraged necessary maintenance. *Id.*

41. *Id.* at 61,252-53.

42. *Id.* at 61,253.

43. *Id.* at 61,252, 61,259, 61,277. This is intended to reflect the accepted understanding of a discrete part of the production process. *See id.* at 61,259.

44. *See id.* at 61,252-53.

45. *Id.* at 61,252. For example, the basic design parameters of steam powered electric power generation facilities are specified as maximum hourly heat input and fuel consumption rate, however, the operator may chose to use the output based parameters of maximum electric output rate and maximum steam flow rate. *Id.*

46. *Id.* at 61,253-54.

47. *See id.* at 61,251.

48. *Id.* at 61,250-51.

certainty about whether a proposed alteration or replacement will trigger NSR.⁴⁹ The new rule does not eliminate the case-by-case approach entirely.⁵⁰ Operators may still opt for the case-by-case method by requesting an applicability determination from the EPA, which would use the old five-factor method rather than the new rule.⁵¹

It is hard to dispute that the ERP clarifies and defines the RMRR exception. It also significantly broadens the exception, however, as the old rule was consistently interpreted as being very narrow.⁵² The new rule substantially changes this. The ERP allows replacement of a part with either the identical part or an updated version. The phrase "functional equivalent" significantly widens the exception, and allows operators to plausibly classify some modifications as replacements, as long as they serve the same basic function.⁵³ The requirement not to change basic design parameters is not as significant as it appears, since the design parameters are flexibly defined.⁵⁴

Design parameters for any regulated facility may include either the basic inputs or the basic outputs, at the discretion of the operator.⁵⁵ If a more efficient technology is installed, the operator may use input as the design parameter, allowing a greater output than previously.⁵⁶ This could allow for increased production from older plants that can use this exception to upgrade equipment so as to obtain the same efficient technology as newer plants, without having to implement the expensive pollution control required of new plants under NSR.⁵⁷ This will make it even more difficult for newer competitors that meet all of the Clean Air Act's requirements to compete.

Additionally, the ERP actually allows for increased, even substantially increased, emissions.⁵⁸ Thus, if a factory replaces a component part with a "functional equivalent" that is more efficient, it may emit more pollutants than with the older part because of increased fuel consumption or a dirtier fuel, but still be exempted from NSR under

49. *Id.* at 61,251.

50. *Id.* at 61,252.

51. *See id.* at 61,251-52. However, the EPA is considering making changes to clarify that program. *Id.* at 61,252.

52. *See, e.g., Detroit Edison Determination, supra* note 9, at 2. "The statute admits of no exception from its sweeping scope, but EPA's regulations contain some narrow exceptions to the definition of physical or operational change." *Id.*

53. *See 2003 NSR Regulation*, 68 Fed. Reg. at 61,252 (explaining that installing a replacement that allowed production of a new end product would not be "functionally equivalent" component.)

54. *Id.* at 61,258-59.

55. *Id.* at 61,252.

56. *See id.* at 61,259.

57. *See id.* at 61,252-53, 61,259.

58. *See id.* at 61,259 (acknowledging that increased efficiency could lead to increased emissions, and still be excluded from NSR under the ERP).

the ERP.⁵⁹ In other words, the plant would be able to increase both its production and emissions levels without undergoing any new Clean Air Act review.

While the twenty-percent-of-cost cap on the ERP may make it more difficult to avoid NSR for a major project by labeling it as a mere replacement, an operator seeking to completely renovate a facility will simply have to do it piece-by-piece. The failure to limit how often the ERP can be used creates both confusion and a major new loophole.⁶⁰ The only applicable limit applies only to the individual project.⁶¹ There is no indication as to whether two projects can be undertaken so close in time that they should really be considered one project. EPA even suggests, however, that the fact that two activities occur at the same time does not necessarily make them part of the same “activity” for purposes of the ERP.⁶²

Congress unambiguously designed the Clean Air Act to require any major new construction or major modification to undergo NSR when it enacted the broad standard that “*any physical change in . . . a stationary source which increases the amount of any air pollutant emitted*” is subject to NSR.⁶³ The new ERP, however, potentially allows even major rebuilding projects to be carried out without review because of the loopholes it creates in the vague definition of functionally equivalent replacements and the ambiguity of how often the ERP can be used.

CONCLUSION

The ERP is contrary to the purpose of the CAA because it allows existing sources to continue operations without improving pollution-control technology, while potentially increasing both production and pollution levels.⁶⁴ Moreover, it also virtually insures that existing older sources will continue to operate, to the detriment of newer facilities that would have much better pollution controls. Through the new ERP provisions, existing sources have been given more and more ability to continue operating indefinitely without installing updated pollution-control technologies, or otherwise reducing emissions.⁶⁵

59. *See id.*

60. While debating the new regulations, the EPA considered an ERP allowance that would have limited the value that could be replaced over a period of time. That is, it would have prevented operators from avoiding NSR by undergoing their renovations piece-by-piece. Unfortunately, this limitation did not make it into the final version of the rule. *See id.* at 61,258.

61. *Id.*

62. *Id.* Instead, a question of “relatedness” is used. *Id.*

63. 42 U.S.C. § 7411(a)(4) (2000) (emphasis added).

64. 2003 NSR Regulation, 68 Fed. Reg. at 61,259.

65. *See id.* at 61,253 (suggesting that one of the benefits of the new rule is allowing improved technology in older facilities).

Prior to the CAA, it was common practice in the utility industry that old plants would be allowed to expire at the end of their useful lives and be completely replaced with updated technology.⁶⁶ If this trend had continued, NSR requirements would have gradually phased in stringent control requirements for all sources. In the name of keeping facilities in good repair, however, the RMRR exception has cut against this vision and allowed older facilities to continue operating indefinitely, and the ERP will expand this loophole by allowing them to continue to upgrade with the latest technology without having to meet more stringent pollution-control requirements.⁶⁷

Polluters will be able to “completely rehabilitate”⁶⁸ facilities, installing technology that will “substantially enhance the operational capabilities of the affected units, by providing an economic basis for increased utilization.”⁶⁹ Further, because of the failure to limit the use of the ERP, a plant could now be completely rebuilt in a fairly short time without being subjected to NSR.⁷⁰ Because of the high cost of installing pollution control in the power industry—up to twenty-five percent of the cost of a coal-fired plant—utilities are greatly encouraged to extend the life of old facilities that are not subject to NSR as long as possible.⁷¹ A pre-CAA facility’s age is itself a valuable commodity, making it very unlikely that it will ever be shut down. Thus, the ERP actually discourages the building of new facilities with better pollution technology. This is a significant detriment to the goal of cleaner air, as a majority of acid rain precursors come from plants not subject to NSR.⁷²

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66. See *Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 911 (7th Cir. 1990).

67. See *2003 NSR Regulation*, 68 Fed. Reg. at 61,259. Because functionally equivalent technologies may be substituted in, facilities are not bound to old technologies if newer and more efficient ones are developed. *Id.*

68. *Wisconsin Elec. Power*, 893 F.2d at 911 (citing *Clay Memorandum*, *supra* note 22, 4).

69. *Detroit Edison Determination*, *supra* note 9, at 16.

70. See *2003 NSR Regulation*, 68 Fed. Reg. at 61,258 (applying twenty percent cost cap only to each individual “activity”).

71. Todd B. Adams, *New Source Review under the Clean Air Act: Time for More Market-Based Incentives?* 8 BUFF. ENVTL. L.J. 1, 38 (2000).

72. Joskow & Schmalensee, *The Political Economy of Market-Based Environmental Policy: The U.S. Acid Rain Program*, 41 J.L. & ECON. 37, 45 (1998) (stating that in 1990, over two-thirds of atmospheric acid rain precursors came from plants not subject to NSR).