

Mississippi Department of Environmental Quality Environmental Permits Division



Routine Maintenance, Repair & Replacement for Annual Shipbuilders Conference

Biloxi, Mississippi
(March 10, 2005)



Overview Topic

- Routine Maintenance, Repair & Replacement



Routine Maintenance, Repair & Replacement

A major modification is defined as any physical change or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the CAA.

(Ref.: 40 CFR 52.21(b)(2))

The clear intent of the PSD regulations is to construe the term “physical change” very broadly, to cover virtually any significant alteration to an existing plant. However, 40 CFR 52.21 (b)(2)(1) provides for routine maintenance, repair & replacement to be an exclusion to a major modification.

According to a May 11, 1979 memo from EPA Headquarters, Routine Maintenance, Repair & Replacement (RMRR) means the routine replacement of parts, within the limitations of reconstruction, and would not include the replacement of an entire emissions unit (sometimes referred to as a “facility”).

In determining whether a proposed project at an existing facility is “routine,” a case-by-case determination with regards to PSD should be made using the five factors identified in a letter from EPA Region 5 dated May 23, 2000 concerning changes at a Detroit Edison power plant.



Routine Maintenance, Repair & Replacement

Routine Maintenance, Repair & Replacement (RMRR)
Evaluation Criteria:

- Nature
- Extent
- Purpose
- Frequency
- Cost

NOTE: Routineness is assessed by considering the above interrelated factors. Note that none of these factors-standing alone-conclusively determines a project to be routine or not. Instead, an evaluation should 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.



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Nature:

- Whether major components of a facility are being modified or replaced; specifically, whether the units are of considerable size, function, or importance to the operation of the facility, considering the type of industry involved.
- Whether the change requires pre-approval of a state commission in the case of utilities.
- Whether the source itself has characterized the change as non-routine in any of its own documents.
- Whether the change could be performed during full functioning of the facility or while it was in full working order.
- Whether the materials, equipment and resources necessary to carry out the planned activity are already on site.



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Extent:

- Whether an entire emissions unit will be replaced.
- Whether the change will take a significant time to perform.
- Whether the collection of activities taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine.
- Whether the change requires the addition of parts to existing equipment.



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Purpose:

- Whether the purpose of the effort is to extend the useful life of the unit; similarly, whether the source proposes to replace a unit at the end of its useful life.
- Whether the modification will keep the unit operating in its present condition, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization, or fuel adaptability).



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Frequency:

- Whether the change is performed frequently in a typical unit's life based on experience at the same facility or similar facilities in the same industry.



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Cost:

- Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit.
- Whether a significant amount of the cost of the change is included in the source's capital expenses or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain day-to-day operation of the source).
- Costs that have been deemed indicative of non-routine changes in other assessments may be of use, especially for similar changes within the same industry.



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Example: In a guidance memo dated January 28, 2002 from EPA - Region 4 to the Georgia Environmental Protection Division (GEPD), GEPD asked Region 4 for assistance in making an applicability determination regarding whether changes to a No. 3 Recovery Boiler at the Williamette Industries (Williamette) pulp and paper mill in Port Wentworth, GA qualified as RMRR.

Background Information:

- The Williamette mill changes in question pertain to the No. 3 Recovery Boiler and were carried out in the fall of 1996. The changes consisted of adding additional tubes from the upper steam drum to the lower water drum and changing the baffling in the main steam drum; therefore, reducing the amount of water carryover in the boiler's circulation system for safety reasons. The purpose of the project, as stated in the original Authorization Request (AR), was in part to allow the mill to increase the boiler's black liquor firing rate (from 4.2 MMlb/day to about 4.6 MMlb/day). This increase could help justify the economics of the changes through the energy value obtained from increased firing and through cost savings that would result from eliminating the freight charges incurred from shipping the black liquor.



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Background Information (*continued*):

- The amount of time allowed for completion of the Fall 1996 changes was 13 days, to be carried out concurrent with a scheduled outage.
- The estimated cost of the Fall 1996 changes was approximately \$750,000 (\$290,000 for materials and \$460,000 for labor).
- Recovery Boiler No. 3 was installed in 1979 and was therefore 17 years old at the time of the Fall 1996 changes.

EPA's Conclusion:

- EPA concluded that by applying the five RMRR evaluation criteria to the background information, as well as other relevant factors, the project did not appear to be routine.
- A summary of EPA's assessment is provided on the following page.



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EPA's Assessment:

- Nature and Extent: The changes were beyond those of a simple repair activity, included the addition of substantive parts that were not part of the original boiler design, and required several days to accomplish (during a period of time that was concurrent with a planned outage).
- Purpose: At least in part to increasing the firing rate. While the project may not have resulted in an increase in rated capacity and there is no life extension, it did restore lost capacity.
- Frequency: Never performed on this boiler before in its 17-year history and represents a design change. Also, the time required to decide on a remedy to the 1995 tube rupture indicates that this remedy was not a typical and frequent industry practice.
- Cost: The \$750,000 was in addition to typical annual maintenance costs that ranged from \$455,000 to \$729,000 during 1988-95, thus doubling the typical annual maintenance costs.



Helpful Links

- **40 CFR 52.21:** <http://www.epa.gov/epacfr40/chapt-I.info/chi-toc.htm>
- EPA Region 7 NSR/PSD Policy and Guidance Database:
<http://www.epa.gov/epacfr40/chapt-I.info/chi-toc.htm>
- PSD Source Categories:
[http://www.deq.state.ms.us/MDEQ.nsf/pdf/epd_psd_source/\\$File/psd_source.pdf?OpenElement](http://www.deq.state.ms.us/MDEQ.nsf/pdf/epd_psd_source/$File/psd_source.pdf?OpenElement)



Questions?