

the work over a 4-year period, utilizing successive 9-month outages at each unit. The cost of the activity was estimated in 1988 to be \$87.5 million. The Court noted that EPA concluded at the time this activity was unprecedented in that EPA did not find a single instance of renovation work at any electric utility generating station that approached this activity in nature, scope and extent. The Court determined, at our urging, that the changes did constitute a "physical change" under the NSR rules.

In the case of a steam electric generating facility, the process unit definition provided in today's rule is nearly identical to the make-up of the "comparable new facility" that was used in the NSPS evaluation of the WEPCO renovation project. However, under our rule we would not include the cost of pollution control equipment in determining the replacement cost of the WEPCO process units. WEPCO had electrostatic precipitators on each of its 5 process units, which our rule would subtract from the replacement cost. In addition, the WEPCO evaluation dealt with 5 boilers, each with its own turbine-generator set; to be consistent with today's definition of steam electric generating facility, we would likely treat each boiler unit as belonging to a different process unit. However, since all of the boilers underwent similar renovations, for simplicity we can assume that all of the process unit-specific activity costs are equivalent.

Using 1991 dollars, consistent with the timeframe of the Seventh Circuit Court's decision, it appears that the value of the 5 process units at the 400-megawatt WEPCO Port Washington facility would be approximately \$321 million based on 1991 model plant values provided by the International Energy Agency. The 1988 project cost of \$87.5 million scaled up to 1991 dollars would have had an adjusted project cost of \$92.3 million.⁹ Thus, the capital cost percentage for the replacement activities at WEPCO, averaged over its 5 process units, amounted to 29 percent. Alternatively, using the project cost of "at least \$70.5 million" cited in the 1991 decision by the Seventh Circuit, and using the same value for process unit cost, we compute at least 22 percent. The 20-percent threshold is, therefore, beneath the scope of the activities at issue in the *WEPCO* case and hence not inconsistent with that decision.

The 20-percent threshold also is supported by available data for the electric utility sector. We have a robust and detailed set of information available on maintenance, repair and replacement activities for the electric utility sector. Information about the electric utility sector persuades us that we have established the right ERP threshold for this sector.

Information on other industrial sectors beyond electric utilities (as well as general economic theory) further supports our 20 percent bright line test. Case studies performed by an EPA contractor and included in Appendix C of our final regulatory impacts analysis (RIA) estimate the overall impact of the rule on six different industrial sectors (pulp and paper mills, automobile manufacturing, natural gas transmission, carbon black manufacturing, pharmaceutical manufacturing, and petroleum refining). The case studies find that routine equipment replacement activities generally do not cause emissions increases. The case studies also find that equipment replacement activities vary widely within these industries. Likewise, the cost of these activities as a percent of the process unit replacement value varies widely. We recognize that the study addresses specific case examples from only a part of regulated industry and that the project cost information is derived from a limited inquiry of industry representatives. We believe, however, that the study provides a useful scoping assessment that tends to support the proposition that the 20 percent threshold derived for the utility industry (which is based on robust industry data) should be applied to industry as a whole. In short, the study supports our view that it is reasonable to assume that equipment replacement activities in the utility industry are similar enough to replacement practices in other industry that the 20 percent value determined for utilities, is appropriate for industry as a whole. This data indicates that most typical replacement activities will fall within the 20-percent threshold. At the same time, the data indicates that some major replacement activities likely will cross the 20-percent threshold and will require a case-by-case evaluation under the multi-factor RMRR test.

Two comment letters (from the Utility Air Regulatory Group (UARG) and from the American Lung Association (ALA), *et al.*) were particularly helpful in understanding the issues associated with the electric utility sector. The UARG provided as an attachment to its comment letter a document describing

major repair and replacement activities that its members believe must be undertaken at utility generating stations in order to keep those facilities operational. The UARG noted that capital costs incurred for repair and replacement activities at an individual process unit additionally include activities more minor than those addressed in the document. The UARG grouped repair and replacement activities into project families; within each project family were per-component costs (\$/kW) for numerous equipment replacement activities. We have reviewed the list of projects supplied by UARG and have concluded that these types of replacement activities are important to maintaining, facilitating, restoring or improving the safety, reliability, availability, or efficiency of process units. Therefore, generally speaking, these types of individual activities and groups of activities should qualify for the ERP and be excluded from major NSR without case-specific review. We also believe that it is reasonably expected in the electric utility industry for groups of these activities to be implemented at the same time. Such groupings should also be excluded without case-specific review. When we compare the 20-percent ERP cost percentage to the UARG data, we find that individual replacement activities would, in fact, qualify for the ERP and that limited groupings of these activities would qualify. However, larger groupings of these activities—groupings that are not usually seen in the industry—would not qualify for the ERP. This shows that the 20-percent threshold will be effective in distinguishing between activities (and aggregations of activities) that should not require case-specific review to be excluded from major NSR and those that do.

The ALA commenters provided with their comments the results of their analysis of projects at issue in an NSR enforcement case against Tennessee Valley Authority (TVA). As shown in the ALA comment letter, the Clean Air Task Force and the Natural Resources Defense Council looked at costs for 14 projects on a process unit basis, in year 2001 dollars, from the publicly available record for the case. For all but one of the challenged projects, the ALA commenters calculated a cost of less than 4 percent of process unit replacement cost. The ALA commenters submitted results of this analysis with their opposition to a source-wide, 5-percent maintenance allowance. As noted above, we concluded in our 2002 report to the President that the NSR

⁹ Using the Chemical Engineering magazine's Annual Plant Cost Index (composite), \$87.5 million in 1988 dollars is equal in real terms to (361.3/342.5) multiplied by 87.5 million, or \$92.3 million in 1991 dollars.