

The revised costing assumptions are discussed in detail below. EPA notes that the proposed rule includes a compliance option that allows site-specific flexibility in cases where compliance costs for a particular facility significantly exceed those estimated in the analysis for the final rule. EPA is currently considering whether the final rule should provide additional guidance on how to conduct this comparison, including how best to use the costing information in the rule record. EPA requests comment on its costing methodology; its relationship to the proposed site-specific, cost-cost comparison provisions; and what additional guidance, if any, EPA should provide on implementation of these provisions.

3. Permitting and Monitoring Costs

At proposal, the single most costly permitting activity was the "Impingement Mortality and Entrainment Characterization Study," a required element of the "Comprehensive Demonstration Study." See proposed § 125.95(b). The proposed rule did not require facilities with cooling towers to conduct these studies but, inadvertently, EPA included costs for the Impingement Mortality and Entrainment Characterization Study in its cost estimates for facilities projected to have cooling towers in the base case (*i.e.*, those projected to have cooling towers in the absence of the rule). EPA also applied costs for this study to facilities that EPA projected to install cooling towers under certain regulatory options. For the NODA analysis, EPA did not include the cost of the Impingement Mortality and Entrainment Characterization Study for facilities projected to have cooling towers in the base case or the waterbody/capacity-based option.

4. Net Installation Downtime for Compliance Technologies Other Than Recirculating Cooling Towers

In the analysis for the proposed rule, EPA made the assumption that compliance technologies other than recirculating cooling towers would not require facility downtime for installation. EPA has since revised this assumption. EPA expects additional unscheduled downtimes of between two and eight weeks for the installation of the various non-recirculating compliance technologies.

5. Net Installation Downtime and Other Site-Specific Factors for Recirculating Cooling Towers

To support the proposed Phase II rule, EPA assumed that each projected

cooling system conversion would require a net downtime of four weeks. This estimate was based on information that had been previously available to EPA on the downtime needed for fossil-fuel and nuclear power plants. Just prior to proposal, EPA received additional technical information on the amount of operational downtime needed during cooling system conversions from once through to closed-cycle, recirculating with cooling towers at nuclear power plants (*see* DCN 4-2529). For the new analyses, EPA is incorporating the new information which suggests that cooling system conversions at nuclear power plants may take seven months. To the extent that conversions at nuclear power plants take less time to complete, costs for this factor would be lower.

For non-nuclear power plants, EPA's cost estimates at proposal assumed four weeks downtime for the retrofit of wet cooling towers at existing power plants. The Agency requests comment on whether more or less downtime may be required at some plants due to site-specific factors and, if so, whether EPA should use a different estimate of downtime in analyzing the costs of this regulatory option.

6. Energy Penalties

For the proposed Phase II rule, the average annual energy penalty, by region and fuel type, was applied to each facility upgrading to a closed-cycle, recirculating cooling system. Based on comments received, EPA has changed the energy penalty assumption to attempt to account for seasonal, peak effects. For the new analyses, the energy penalty applied is the greater of the peak-summer penalty or the average annual penalty for each facility projected to convert their cooling systems to a closed-cycle, recirculating cooling system. EPA notes that the approach used at proposal might have understated potential impacts of the energy penalty on generating capacity. Conversely, using the greater of the peak summer penalty and the average annual penalty might overestimate potential impacts of the energy penalty on generating capacity. EPA has adopted the latter approach in order to ensure that impacts are not underestimated.

7. Capacity Utilization Rates

For the proposed Phase II rule, the 15 percent capacity utilization determination was based on the generation and capacity of the entire facility, including steam electric and non-steam generators. EPA believes that utilization of the steam electric part of a facility better reflects a facility's potential for adverse environmental

impact because only the steam electric generators use cooling water. As discussed at Section XI below, EPA is considering refining its regulatory definition for "capacity utilization rate" at the proposed § 125.93 to reflect use of the steam electric part of a facility. For the NODA, EPA is using the capacity utilization of only the steam electric generators at Phase II facilities so that its updated economic analyses include this potential refinement.

In addition, at proposal, EPA used the average capacity utilization based on EIA data for 1995 to 1999. This utilization rate was often different from the rate based on the "IPM base case results" EPA used to support its estimates of the economic impacts of the rule (*see* section V for additional description of EPA's economic analysis methodology). For the NODA analyses, EPA used projected capacity utilization rates for 2008 (the first model-run year in EPA's economic analysis), in order to ensure internal consistency in the analysis. For many facilities, this resulted in a lower capacity utilization rate in the baseline. As a result, the compliance requirements and compliance costs for these facilities may be lower, depending on the waterbody type from which they withdraw and the impingement mortality and entrainment technologies they already have in place in the baseline. Facilities with lower projected compliance costs than under the previous assumption may also have lower projected impacts in the analysis, depending on the magnitude of the cost differential and the facilities' operating characteristics in the baseline (*e.g.*, a change in cost for marginal units would have a greater effect than for units that generate electricity well below the cost of the marginal unit). EPA requests comment on this change in assumptions.

8. Compliance Schedule

At the time of proposal, promulgation of the final section 316(b) Phase II rule was scheduled for August 28, 2003. As a result, EPA assumed that facilities would come into compliance with the preferred option between 2004 and 2008 as their existing NPDES permits expired and were reviewed. For regulatory options based on the reductions in impingement and entrainment achievable using a closed-cycle recirculating system, EPA further assumed that facilities costed with a cooling tower would come into compliance between 2005 and 2012. Since proposal, the section 316(b) regulatory development schedule has changed. Promulgation of the final rule is now scheduled for February 16, 2004,