

that continues to rely on site-specific BPJ permit limitations.

C. Options Being Considered for Best Available Technology Economically Achievable (BAT)

BAT effluent limitations guidelines represent the best economically achievable performance of facilities in the industrial subcategory or category. The CWA establishes BAT principally as a means of controlling the direct discharge of toxic and nonconventional pollutants. Generally, EPA determines economic achievability on the basis of total costs to the industry to implement the BAT options and the effect of these costs on overall industry and subcategory financial conditions. As with BPT, where existing performance is uniformly inadequate, BAT may reflect a higher level of performance than is currently being achieved based on technology transferred from a different subcategory or category. BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice.

As discussed in the proposal (67 FR 8619), in recently promulgated effluent guidelines, EPA has relied primarily on the toxic pollutant cost-effectiveness measure for evaluating BAT, however, that measure is less appropriate for evaluating different options to control pollutants from the meat and poultry products industry because this industry's discharges consist of relatively more conventional pollutants and nutrients than toxic pollutants. Therefore, in addition to looking at economic impacts, EPA focused primarily on cost-reasonableness (for total pounds) for BPT, as described above, and nutrient cost-effectiveness in evaluating options for BAT.

EPA calculated the cost-effectiveness of the removal of nutrients for the options considered in the proposal and has done so for the modified options that EPA is considering for the final rule. As a basis of comparison, EPA estimated that the average cost-effectiveness of nutrient removal by POTWs with biological nutrient removal to be \$4/lb for nitrogen and \$10/lb for phosphorus (67 FR 8622). This is a rough average based on a range of removal costs at POTWs, and is not intended to be a bright line CE cutoff. Rather, it provides a general sense of how the BAT options under consideration for the MPP rule perform relative to POTWs in removing nutrients. The sections below described the options being considered for BAT for the final rule.

1. Subcategories A–D (Meat Slaughterhouses)

EPA proposed to establish the BAT level of regulatory control based on Option 3 (complete nitrification). As discussed in Section IX.A, EPA is now giving less consideration to Option 3. After review and evaluation of the revised and new data, EPA is considering establishing BAT for the non-small meat slaughterhouses based on Option 2.5, Option 2.5 + P or Option 4. EPA is also considering not establishing BAT limitations for these subcategories.

EPA evaluated Option 4 as a basis for establishing BAT more stringent than the BPT level of control. EPA estimates that there are no direct discharge facilities in these subcategories currently operating Option 4 technology. However, there is one indirect discharger in these subcategories and 5 poultry slaughtering facilities (Subcategory K) operating Option 4 technology (or more advanced technology). EPA is considering using data from the indirect discharge facility or transferring data (as is allowed by the CWA) from Subcategory K Option 4 facilities as the basis for BAT for Subcategories A–D. EPA notes that commenters raised concerns over the representativeness of the one indirect discharger facility. EPA has performed a comparison of the influent wastewater characteristics of this facility to the direct discharge facilities in these subcategories. This comparison suggests that the wastewater at this facility may be sufficiently similar to the wastewater at the direct discharge red meat facilities in Subcategories A–D to justify transferring data for development of limitations (see DCN 100766). EPA has addressed differences in treatment performance between the indirect discharger and the direct discharge sites in the cost model through its costing methodology. For example, EPA included costs for a lagoon bypass and additional anoxic tanks, mixers, pumps for facilities with a BOD:TKN ratio below 3 (see Section III.B for additional details on the revised cost methodology).

EPA estimates the pre-tax annualized compliance costs for Option 4 to be \$47.6 million (1999\$) (which is \$5.6 million more than Option 2.5 + P and \$35.2 million more than Option 2.5). EPA estimates no closures as a result of BAT based on Option 4, using the closure methodology discussed in Section VI. As a sensitivity analysis, EPA also estimated closures using a less stringent decision rule (closure under 1 out of 5 methodologies rather than at

least 3 out of 5). Using this decision rule, EPA estimates one facility closure under Option 4. EPA notes that these estimates only include the 18 estimated total facilities in these subcategories for which EPA has sufficient data to conduct the closure analysis. There may be additional closures in the remaining 21 facilities.

EPA estimates that Option 4 removes 31.3 million pounds/year of nitrogen (3.7 million more pounds/year than Option 2.5 or Option 2.5 + P) and 5.66 million pounds/year of phosphorus (530,000 more pounds/year than Option 2.5 + P). As discussed above, in Subcategories A–D, there is one indirect discharge facility that currently operates Option 4.

EPA is also considering nutrient removal cost-effectiveness when evaluating potential BAT options for this industry. EPA estimates the nutrient cost-effectiveness (based on pounds of nitrogen removed) for Option 4 to be \$9.68/pound nitrogen removed (incremental to BPT Option 2.5). EPA estimates the nutrient cost-effectiveness (based on pounds of phosphorus removed) for Option 4 to be \$10.59/pound phosphorus removed (incremental to BPT Option 2.5+P). EPA notes that incremental results are presented somewhat differently in this section than in Section X. This section specifically compares the potential BAT option with the potential BPT option(s). EPA solicits comment on the potential selection of Option 4 as the basis of BAT for these subcategories.

EPA is also considering establishing BAT for these subcategories based on Option 2.5 + P. EPA estimates the pre-tax annualized compliance costs for Option 2.5 + P to be approximately \$42 million (1999\$). EPA estimates that no facilities (out of the 18 facilities analyzed) will close as a result of BAT based on Option 2.5 + P in these subcategories. Under the closure sensitivity analysis discussed above, one of the analyzed facilities would close as a result of Option 2.5+P. EPA estimates that Option 2.5 + P removes the same 2.7 million pounds/year of ammonia (as nitrogen) and 27.7 million pounds/year of total nitrogen as Option 2.5 but removes an additional 5.1 million pounds/year of phosphorus. In Subcategories A–D, there are 13 of 39 direct discharge facilities that currently operate Option 2.5 technology (though not necessarily achieving the projected Option 2.5 target effluent concentrations) and there are 6 direct dischargers and one indirect discharger that employ phosphorus removal (under option 2 + P or Option 4). However, EPA notes there are no facilities that