

b. Revised Methodology for Estimating Pollutant Loadings and Reductions: Upgrade Options

EPA developed a methodology to estimate the baseline pollutant loadings at facilities that would be affected by the upgrade: (1) facilities currently regulated by 413 only; and (2) facilities regulated by local limits or general pretreatment standards only (*i.e.*, "local limits" facilities). EPA also performed a sensitivity analyses on facilities regulated by both parts 413 and 433. Facilities "regulated by local limits and general pretreatment standards only" also include facilities regulated by other effluent guidelines except parts 413 or 433. EPA notes that facilities currently regulated by only part 433 would not be affected by the upgrade and EPA did not project pollutant removals or compliance costs for them.

EPA's pollutant loadings methodology also distinguishes between "small" and "large" platers currently regulated by part 413. Part 413 defines small platers as facilities discharging less than 10,000 gallons/day of process wastewater. When the part 413 regulations were promulgated, EPA made provisions to accommodate the economic condition of "small" platers by reducing the numbers of regulated metals and allowing an alternative requirements for cyanide, as amenable to alkaline chlorination instead of total cyanide. Consequently, EPA adjusted its pollutant loadings methodology for the upgrade options to account for the additional parameters that small platers would need to treat (*see* section 9 of the final TDD for details on EPA's methodology for small platers).

For treated streams at affected facilities, EPA revised methodology assumes the facilities operate their wastewater treatment systems to achieve the LTAs from part 413. This is consistent with EPA's guidance that facilities use LTAs (rather than limitations or standards) as a "target" to design their treatment systems. For untreated streams at affected facilities, EPA used the 4-day average limit for part 413. As discussed in the NODA, EPA concludes this is appropriate because these facilities are complying with existing standards at the end-of-pipe. In estimating toxic pollutant reductions for the upgrade options, EPA compared the baseline loadings for affected facilities to the resulting loadings if these affected facilities treated their wastewater to achieve the long-term average concentrations (for existing sources) for part 433.

For facilities in the General Metals subcategory that are not regulated by

either part 413 or part 433 (*i.e.*, "local limits facilities"), EPA altered its NODA methodology to incorporate actual local limits data and to include analysis of other pollutant parameters (*e.g.*, COD). Although EPA could not obtain actual local limits for all facilities, EPA gathered local limits data from 213 POTWs in 7 EPA Regions to develop national median local limit values. *See* DCN 17844, section 24.7, of the record for a listing of the data and the median value for each parameter. EPA used half the national median local limit values to approximate long-term average concentrations for all treated streams. EPA used the national median for all parameters regulated by part 413 in untreated streams. EPA applied the raw waste load based on the subcategory-specific unit operations data for all other parameters in untreated streams. EPA then estimated the pollutant loading reductions as described in the previous paragraph.

In the NODA, EPA considered two different upgrade options for indirect dischargers in the General Metals, Printed Wiring Boards, and Metal Finishing Job Shop subcategories. The first option upgrades all facilities regulated by part 413 (including both large and small platers) to meet part 433 standards. The second option upgrades only large platers regulated by part 413 and facilities not regulated by parts 413 or 433 (regulated by local limits) to meet part 433 standards. EPA rejected these upgrade options for existing indirect dischargers as: (1) Greater than 10% of existing indirect dischargers not covered by part 433 are projected to close at the upgrade option; or (2) the incremental compliance costs of the upgrade options were too great in terms of toxic removals (cost-effectiveness values (in 1981\$) in excess of \$420/PE). *See* section VI for further discussion on these upgrade options for the General Metals, Printed Wiring Boards, and Metal Finishing Job Shop subcategories.

For direct dischargers, EPA also compared the baseline pollutant loadings from the pollutant loading model to available Discharge Monitoring Report (DMR) data reflecting the measured values for the permitted parameters. EPA obtained DMR data for eighteen surveyed direct discharging facilities in EPA's questionnaire database for the General Metals subcategory. The MP&M model approach utilizing the revised baseline method used for the final rule, calculates lower baseline loadings for twelve of these eighteen direct discharging facilities than the loadings reported in DMR data (*see* DCN 17851, section 24.7). Based on this analysis,

EPA has concluded that the MP&M model approach utilizing the revised baseline method used for the final rule does not excessively over- or underestimate baseline pollutant loadings and EPA's use of this model approach for today's final rule is a reasonable and appropriate basis for today's regulatory determinations.

c. TIP Changes for Upgrade

In evaluating the upgrade options analyzed for the final rule, EPA also provided TIP credit for hydroxide precipitation and clarification treatments for metal-bearing facilities that use dissolved air flotation (DAF) for metals removal (*e.g.*, settling). However, EPA notes that TIP credit for hydroxide precipitation and clarification credit to metal-bearing facilities using DAF for metals removal was not provided in evaluating options to achieve the more stringent proposed MP&M limits. EPA is concerned that DAF alone would not achieve the long-term average concentrations associated with the limitations and standards considered for the subcategories discharging metal-bearing wastewaters. Therefore, EPA included costs associated with installing hydroxide precipitation and clarification at these facilities for the final rule.

d. Revised Compliance Cost Estimates for Upgrade Analyses

Based on comments to the NODA and subsequent discussions with industry representatives, EPA revised its analysis for estimating the cost of compliance for upgrading facilities to meet the part 433 existing source limitations and standards. Section 11 of the final TDD describes EPA's final methodology in detail. In addition to the costs included in the NODA analysis, EPA's final methodology also includes costs to:

- Increase the size of the treatment train (*e.g.*, holding tanks, clarifier, gravity thickening, filter press) to treat additional wastewater (which had pollutant concentrations below the part 413 standards but not low enough to meet the option limits without treatment);
- Increase the amount of treatment chemicals to account for treating additional wastewaters and more stringent LTAs;
- Increase sludge handling and disposal costs due to the treatment of additional streams as well as the more stringent long-term averages in part 433;
- Install and operate additional automated controls such as ORP meters and pH meters;
- Provide additional operator training; and