

were inappropriate given the non-water quality environmental impacts that would arguably result from the increased amount of incineration of process wastewater that would need to occur. Commenters also raised concerns about the costs of the proposed zero discharge standard.

Given these set of comments concerning costs and non-water quality impacts, EPA believes that it is appropriate to consider a pollution prevention (P2) alternative to the proposed zero discharge limitations and standards. As described in more detail below, PFPR facilities would generally have a choice of either meeting the relevant zero discharge standard or limitation or choosing to conduct the listed P2 practices as set forth in Tables B-1 and B-2 of this supplemental notice. Two variations in the structure of the P2 alternative are discussed below, they vary in the practices that would be specified in the regulatory text of the final regulation (see Section III.C.3).

For either variation of the pollution prevention alternative chosen for final promulgation, those PFPR facilities which choose to conduct the P2 practices would need to also agree to make the P2 alternative enforceable, *e.g.*, direct dischargers would need to agree to have the P2 practices included in their NPDES permits and indirect dischargers would need to file notices of intent to use the P2 practices with the POTW. (See Part III.C.4 for discussion and solicitation of comment on several approaches that EPA anticipates could be utilized to implement the P2 alternative.)

If a PFPR facility chooses to adopt the P2 alternative by conducting the P2 practices, agreeing to its enforceability, complying with specified record keeping requirements, and, in certain instances, treating the process wastewater, the facility would be permitted to discharge those levels of PAIs and priority pollutants which remain in the process wastewater stream. The Agency believes that the level of PAIs and priority pollutants remaining in the process wastewater should be considerably reduced and, in most cases, should pose no environmental harm.

Direct dischargers of the covered PAIs which choose to adopt the P2 alternative in lieu of meeting the zero discharge limitations may be subject to the establishment by the permitting authority of more stringent effluent limitations based on applicable water quality standards. See 40 CFR 122.44. In addition, those PFPR facilities that are indirect dischargers which adopt the P2

alternative would remain subject to the Pass Through and Interference prohibitions contained in the general pretreatment regulations. 40 CFR 403.5(a)(1). Indirect dischargers which choose to be subject to the P2 alternative could also be subject to local limits established by the pretreatment authority receiving the facility's wastewater. 40 CFR 403.5(d).

A. Authority

EPA believes that promulgation of this pollution prevention alternative is authorized under the Clean Water Act (CWA) for a number of reasons. In promulgating Best Available Technology Economically Achievable (BAT) effluent limitations, EPA is authorized to consider a number of factors, including, among other things, non-water quality environmental impacts (including energy requirements) (CWA section 303(b)(2)(B)). In addition, in establishing BAT limitations, EPA is to identify the degree of effluent reduction attainable, *e.g.*, the level of pollutant removal attained through implementation of the effluent limitation (CWA section 304(b)(2)(A)). While not required under the CWA, EPA also evaluates the cost-effectiveness of the BAT effluent limitations.

Pretreatment Standards for Existing Sources (PSES) under CWA section 307(b) are designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of POTWs. The CWA authorizes EPA to establish pretreatment standards for pollutants that pass-through POTWs or interfere with treatment processes or sludge disposal methods at POTWs. The legislative history of the 1977 Act indicates that pretreatment standards are to be technology-based and analogous to the BAT effluent limitations for removal of toxic pollutants. Thus, in proposing the zero discharge PSES limitation, EPA analyzed the same factors which were assessed for the proposed BAT zero limitation standard.

For example, in proposing the original BAT and PSES effluent limitations and the standards for new sources for PFPR facilities, EPA determined that zero discharge represents the best available and that zero discharge was economically achievable for the PFPR industry (59 FR 17891 and 17898). EPA also estimated the pounds of pollutants removed under a zero discharge limitation and determined that such a limitation option was cost-effective by estimating the cost per toxic pound equivalent removed from PFPR process

wastewaters (59 FR 17894-99). EPA also evaluated the non-water quality environmental impacts by assessing the effects a zero discharge limitation and standard would have on air pollution, solid waste generation, and energy requirements (59 FR 17900). Based upon those evaluations and analyses of the other factors to be considered in promulgating the BAT and PSES effluent limitations, the Agency found zero discharge to be an appropriate limitation for pollutants in wastewater from PFPR facilities.

However, in response to the proposed rule, a number of commenters argued that EPA had underestimated the non-water quality environmental impacts of a zero discharge limitation. In particular, commenters stated that air pollution would increase because of the increased use of incineration as an option for disposal of process wastewater. In addition, commenters argued that energy requirements resulting from BAT and PSES zero discharge limitations would be greater than those estimated by EPA because of the increased consumption of fuel for use in transporting wastewater to incineration facilities or deep well injection sites and the increased fuel needed for burning these dilute wastewaters in an incinerator.

In response to these comments, EPA re-evaluated its position on the degree to which the non-water quality environmental impacts effect this regulation and now recognizes that under a zero discharge BAT or PSES limitation for this industry, significantly increased amounts of process wastewater that cannot be recycled, reused, or treated may be transported to incinerators for disposal (resulting in an increase in air emissions) and that increased amounts of energy may have to be used for such transport and for incineration of these dilute wastewaters.

Neither this revised assessment of non-water environmental quality impacts or the revised economic assessment (see Section V) alter EPA's determination that a zero discharge limitation is an appropriate BAT and PSES limitation for pollutants in PFPR process wastewater. However, in response to concerns raised by commenters about the costs and non-water quality environmental impacts of the zero discharge option, EPA believes it is appropriate to consider the Pollution Prevention (P2) alternative presented by these commenters.

To evaluate economic impact and economic efficiency, EPA has grouped the zero discharge proposal and the P2 alternative as proffered by commenters into the Zero Discharge/P2 Option