

concentration limitations for total suspended solids and five-day biochemical oxygen demand (BOD₅), percent removal requirements (for total suspended solids and BOD₅), as well as a limitation on pH. The regulations require that percent removal requirements for total suspended solids (SS) and the five-day measure of biochemical oxygen demand (BOD₅) be determined according to a 30-day average. The percent removal requirements were originally established to achieve two basic objectives: (1) to encourage municipalities to correct excessive I/I problems in their sanitary sewer systems, and (2) to help prevent intentional dilution of influent wastewater as a means of meeting permit limits. See 50 FR 23382 (June 3, 1985).

For most types of POTWs, the secondary treatment regulations establish a 30-day average percent removal requirement of 85 percent for SS and BOD₅. Facilities eligible for equivalent treatment considerations under section 304(d)(4) are subject to less stringent percent removal requirements. The secondary treatment regulations provide for case-by-case adjustments to the percent removal requirements to address several special considerations. Under § 133.103(a), for treatment works that receive flows from combined sewers, the decision must be made on a case-by-case basis as to whether any attainable percentage removal level can be defined when the plant receives highly dilute influent, e.g., during wet weather flows, and, if so, what the level should be. For treatment works that receive flows from separate sewers, § 133.103(d) authorizes the permit issuing authority to substitute a less restrictive 30-day average percent removal requirement or a mass loading limit for the percent removal requirement if the permittee demonstrates that:

(i) The treatment facility will consistently meet its permit effluent concentration limitations but its percent removal requirements cannot be met due to less concentrated influent,

(ii) to meet the percent removal requirements, the facility would have to achieve significantly more stringent limitations than would otherwise be required by concentration-based standards, and

(iii) the less concentrated influent is not the result of excessive I/I. Excessive I/I is the quantities of I/I that can be economically eliminated from a sewer system as determined by a cost-effectiveness analysis that compares the costs for correcting the I/I conditions to

the total costs for transportation and treatment of the I/I to a treatment facility.

For these separate sanitary sewer systems, the determination of whether the less concentrated wastewater is the result of excessive I/I uses the definition of excessive I/I in 40 CFR 35.2005(b)(16) plus the additional criterion that inflow is deemed nonexcessive if the total flow to the POTW (i.e., wastewater plus inflow plus infiltration) is less than 275 gallons per capita per day. See 40 CFR 133.103(d). The 275 gallons per capita per day figure is only a threshold value, and permittees may determine that even higher values of I/I are nonexcessive through a cost-effective evaluation on a case-by-case sewer system basis. See 50 FR 23384 (June 3, 1985) and 54 FR 4225 (January 27, 1989). Guidance for the cost-effectiveness analysis associated with demonstrating that I/I is not excessive is provided in *Sewer System Infrastructure Analysis and Rehabilitation*, (EPA, 1991, EPA/625/6-91/030).

EPA adopted this approach to provide flexibility to address facilities experiencing various degrees of less concentrated influent that cannot meet the 85 percent removal requirement without significant additional construction, and, at the same time, encourage cost effective I/I reduction. See 40 CFR 133.101(m) and 133.103(d)(3). The approach was based on the following considerations: (1) In general, I/I programs had not been as successful in reducing excessive I/I as expected; (2) many treatment systems without excessive I/I had relatively low concentrations of BOD₅ and SS in the influent; (3) certain treatment technologies could not achieve 85 percent removal under all conditions; and (4) a mandatory requirement of 85 percent removal for all POTWs could have caused overly stringent levels of treatment and use of expensive advanced treatment processes in some cases. See 50 FR 23382 (June 3, 1985).

2. Bypass Provision

The NPDES regulations define standard permit conditions which are to be included in all NPDES permits, except that authorized NPDES States are not precluded from omitting or modifying a standard permit condition to impose a more stringent requirement. 40 CFR 122.41 and 123.25 (note). One of those standard permit condition is the "bypass" provision at 40 CFR 122.41(m).

The bypass provision defines bypass to mean the "intentional diversion of waste streams from any portion of a treatment facility." The regulation

prohibits bypasses except for where necessary for essential maintenance to assure efficient operation. 40 CFR 122.41(m)(2). In such cases, the bypass cannot cause effluent limitations to be exceeded. For all other bypasses, the Director of the NPDES program may take enforcement action against a permittee for a bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(C) The permittee submitted the required notices. 40 CFR 122.41(m)(4)(i).

In order to satisfy the "no feasible alternatives" criterion, adequate back-up equipment should be installed in the exercise of reasonable engineering judgment to prevent a bypass. 40 CFR 122.41(m)(4)(i)(B). The "no feasible alternatives" provision of 40 CFR 122.41(m) requires, among other things, that consideration be given to the feasibility of additional construction to prevent any bypasses that occur because of inadequate capacity. See *United States v. City of Toledo, Ohio* 63 F.Supp.2d 834 (N.D. Ohio 1999).

The regulation at 40 CFR 122.41(m) also provides that the Director of the NPDES program may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in the bypass provision at 40 CFR 122.41(m)(4)(i). As discussed below, EPA provided guidance on approval of anticipated bypasses at POTWs served by combined sewers in the 1994 Combined Sewer Overflow (CSO) Control Policy. An approved anticipated bypass would be a recognition that the permitting authority had considered the adverse impacts of the bypass and has found that the bypass would or does meet the criteria of 40 CFR 122.41(m)(4)(i)(A), (B) and (C), and would not take enforcement action against a permittee for the bypass. Compliance with 40 CFR 122.41(m)(4)(i), in and of itself, would not shield a permittee from citizen suits for conducting a prohibited bypass. *Southern Ohio Coal Company v. Office of Surface Mining, Reclamation and*