

performance standards program. A Large CAFO choosing not to participate in the alternative performance standards program would instead be subject to the baseline effluent guidelines discussed above in Section IV.C.2.c (for Subpart C) or Section IV.C.2.d (for Subpart D). EPA previously used a similar approach in establishing the effluent guidelines regulations for the Pesticide Formulating, Packaging, and Repackaging (PFPR) industry. In that rule, PFPR facilities are subject to effluent guidelines requirements that prohibit all discharges, but they may voluntarily elect to instead adopt certain regulatory requirements (mandatory BMPs and treatment of discharged wastes) and be allowed to discharge a "pollution prevention allowable discharge." (See 40 CFR Part 455. See also 61 FR 57518; November 6, 1996.) In another rulemaking, EPA established effluent guidelines for the pulp, paper, and paperboard (Pulp & Paper) industry that provide incentives for mills to voluntarily implement advanced process technologies. For the Pulp & Paper effluent guidelines, mills accepting more stringent NPDES permit limitations based on the performance of the advanced technologies and other process improvements are granted incentives such as public recognition and substantially extended compliance periods. (See 40 CFR Part 430. Also see 63 FR 18504, 18593–18611; April 15, 1998).

(1) Baseline effluent guidelines. The effluent guidelines regulations promulgated in today's rule for all existing Large CAFOs, and for new source Large beef, dairy and heifer CAFOs, prohibit the discharge of process wastewaters, except when rainfall events cause an overflow from a facility designed, constructed, and operated to contain all manure, litter, and process wastewaters plus the runoff from a 25-year, 24-hour rainfall event. These limitations are based on the use of storage ponds and lagoons to contain the process wastes and runoff, although they do not preclude CAFOs from using alternative technologies. The NSPS requirements for new source Large swine, poultry, and veal CAFOs require zero discharge from the production area, subject to a provision that compliance with the standard can be met if the waste management and storage facilities are designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 100-year, 24-hour rainfall event. The ELGs were established on the basis of factors specified in CWA sections 304(b)

and 306, including the cost of achieving the effluent reductions and any non-water quality environmental impacts. These limitations are referred to in this preamble as the "baseline effluent guidelines" for the purpose of clarifying which effluent guidelines requirements may be replaced by the alternative performance standards provisions included in today's rule.

The effluent guidelines promulgated today also establish BMPs that apply to the production area and land application areas at Large CAFOs. These BMP requirements are applicable to all Large CAFOs (both existing and new sources), regardless of whether their NPDES permit limitations are based on the baseline effluent guidelines or the alternative performance standards. As discussed in Sections IV.C.2.c and IV.C.2.d, the production area BMPs are necessary to ensure that manure storage structures and other production area components associated with controlling process wastewaters (e.g., storm water diversions) are properly designed, operated, and maintained to prevent overflows or catastrophic failure of the system.

(2) Voluntary alternative performance standards for all Large beef/dairy/heifer CAFOs and existing Large swine/poultry/veal CAFOs. The alternative performance standards promulgated today for new and existing sources in Subpart C and existing sources in Subpart D, apply to discharges of manure, litter, and other process wastewaters from the CAFO production area. Under the provisions included in the final rule, these Large CAFOs will be allowed to discharge process wastewater that has been treated by technologies that the CAFO demonstrates will result in equivalent or better pollutant removals than would otherwise be achieved by the baseline effluent guidelines. These regulatory provisions are targeted toward the CAFO's wastewater discharges, but EPA encourages operations electing to participate in the alternative performance standards program to consider environmental releases holistically, including opportunities for achieving improvement in multiple environmental media.

As discussed above, the baseline effluent guidelines, though nominally zero discharge, allow for untreated overflow discharges if the system is designed, constructed, and operated to contain manure, litter, and process wastewater plus the runoff from a 25-year, 24-hour rainfall. (Large swine, poultry, and veal CAFOs that are new sources are subject to a different performance standard.) To demonstrate

that an alternative control technology would achieve equivalent or better pollutant reductions than the baseline effluent guidelines, the CAFO must submit a technical analysis, which includes calculating the pollutant reductions based on the site-specific modeled performance of a system designed to comply with the baseline effluent guidelines (e.g., a storage lagoon designed, constructed, and operated to contain all manure, litter, and process wastewaters plus the runoff from a 25-year, 24-hour rainfall event). For many pollutants (e.g., nitrogen, phosphorus, BOD, metals), the mass of pollutants discharged will usually be the most appropriate measure for assessing treatment system performance and determining whether the alternative control technology will achieve equal or better pollutant reductions. For some pollutants such as pathogens, however, pollutant mass may not be the most appropriate measure of pollutant reductions and alternative measures will need to be used.

One approach for making such a demonstration is to use a computer simulation model to evaluate site-specific or region-specific climate data, along with wastewater characterization data, to determine the pollutant discharge that would be projected for a system designed, constructed, and operated to achieve compliance with the baseline effluent guidelines. The model would evaluate the daily inputs to the storage system, including all process wastes, direct precipitation, and runoff. It would also evaluate the daily outputs from the storage system, including losses due to evaporation, sludge removal, and the removal of wastewater for use on cropland at the CAFO or transport off site. The model would be used to predict the overflow from the storage system that would occur over a 25-year period, and these overflow predictions would be used to determine the median annual predicted overflow over the 25 years evaluated by the model.

Precipitation patterns for a given location are inherently variable from year-to-year. As a result, the volume of water entering the storage system, either through direct precipitation or as collected runoff, will vary substantially from one year to another. The potential for the storage system to overflow and the volume of the overflow is a function of site-specific variables, including the rate and total volume of wastes entering and leaving the storage system. To enable the development of alternative performance standards that achieve pollutant reductions comparable to those that would be achieved by the