

demonstrated as achievable and have been imposed by a number of States and through NPDES permits.

To determine economic achievability, EPA analyzed how many facilities affected by this rule would experience financial stress severe enough to make them vulnerable to closure. As explained in more detail in Section VIII of this preamble and in the *Economic Analysis*, the number of facilities experiencing stress might indicate whether certain regulatory options considered during the rulemaking are economically achievable, subject to other considerations.

For the veal, dairy, turkey, and egg laying sectors, the final regulations are not expected to result in any CAFO-level business closures. In the beef cattle, heifer, swine and broiler sectors, however, the final rule is expected to cause some existing CAFOs to experience financial stress. These operations may be vulnerable to closure as a result of complying with the final rule. Across all sectors, an estimated 285 existing Large CAFOs may be vulnerable to facility closure. This accounts for approximately 3 percent of all Large CAFOs. By sector, EPA estimates that 49 beef operations (3 percent of affected beef CAFOs), 204 hog operations (5 percent of affected hog CAFOs), 10 broiler operations (1 percent), and 22 heifer operations (9 percent) may close as a result of complying with the final rule.

(3) NSPS. NSPS reflect effluent reductions that are achievable based on the best available demonstrated control technology. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. As a result, NSPS represents the greatest degree of effluent reduction attainable through the application of the best available demonstrated control technology for all pollutants (*i.e.*, conventional, non-conventional, and priority pollutants). In establishing NSPS, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements. In addition, EPA evaluates whether the requirements would impose a barrier to entry to new operations.

The technologies upon which the production area NSPS for Large beef, dairy, and heifer CAFOs are ones that are readily applicable to all CAFOs in that subcategory and will provide effective control of discharges of manure, litter, and other process wastewaters to surface water. The containment requirements, in

conjunction with the production area BMPs included in this rule, are widely demonstrated as achievable and represent the level of control demonstrated to be achievable by well-performing Large CAFOs covered by Part 412, Subpart C. The containment requirements included in this rule have been applicable to Large CAFOs since they were promulgated in the 1974 ELGs, and most existing lagoons and other containment structures are built to these standards. Furthermore, USDA and ASAE cite the 25-year, 24-hour rainfall event as part of the standard to which containment structures should be constructed.

EPA has determined that total containment (with a compliance option to design, operate, and maintain the facility to contain the runoff from a 100-year, 24-hour rainfall event) for the production area for new swine, poultry, and veal sources (and the production area BMPs) is technologically feasible and will not pose a barrier to entry for new sources subject to Subpart D. It is common for new poultry, veal, and swine operations to construct facilities that keep the animals in total confinement. In addition, many new operations are based on manure handling systems that greatly reduce or eliminate water use, such as hog and poultry high-rise houses, or that contain manure in covered or indoor facilities, such as underpit storage systems and litter storage sheds. EPA has carefully evaluated the concerns raised in comments regarding the technical feasibility of total containment at swine, poultry, and veal operations. The concerns raised by commenters are primarily associated with operational factors and the effect of climate on the use of lagoon covers. New sources will avoid the design challenges and retrofit costs that existing sources would face with these requirements. Based on the information in the record, and as discussed above, EPA has received data to demonstrate that each of these factors has been successfully handled at CAFOs and other facilities. Therefore, EPA concludes that the total containment requirements of this rule could be met through the use of lagoon covers if facilities choose to do so. However, by retaining all manure and process wastewater within the building (for example, by using underhouse pits) and not using an outdoor liquid impoundment, these operations will avoid the operational challenges posed by covers. Additional compliance flexibility is provided by the provision that allows the zero discharge standard to be met by designing, constructing,

operating, and maintaining waste management and storage facilities to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 100-year, 24-hour rainfall event.

The land application requirements included in this rule for all Large CAFOs that are new sources are identical to those established under BAT for existing sources and are consistent with appropriate agricultural utilization of nutrients. These land application requirements will ensure that CAFOs apply manure, litter, and other process wastewaters at a rate and in the manner necessary to meet the requirements of the crops grown and not exceed the ability of the soil and crop to absorb nutrients. Limits on the rate at which manure can be applied and certain other constraints on application practices, such as setbacks and vegetated buffers, are widely demonstrated as achievable and as the best available demonstrated control technology, and have been imposed by a number of States and through NPDES permits.

EPA evaluated economic impacts to new source CAFOs by comparing the costs borne by new source CAFOs to those estimated for existing sources. That is, if the expected cost to new sources is similar to or less than the expected cost borne by existing sources (and that cost was considered economically achievable for existing sources), then EPA considers the regulations for new sources do not impose requirements that might grant existing operators a cost advantage over new CAFO operators and further determines that the NSPS is affordable and does not present a barrier to entry for new facilities. In general, costs to new sources for complying with a given set of regulatory requirements are lower than the costs for existing sources to comply with the same requirements since new sources are able to apply control technologies more efficiently than existing sources that may incur high retrofit cost. New source CAFOs will be able to avoid the retrofit costs that will be incurred by existing sources. For example, the cost of a model total containment system for swine that would meet the no discharge requirement (*e.g.*, incremental cost of deep pit swine house, including land application) typically is less than the cost for an existing source to retrofit water intensive lagoon-based systems that are exposed to precipitation. Among the primary reasons for the capital cost difference for a new source with total containment is that it does not include an impoundment lagoon,