

making it impossible for facilities to come into compliance in 2004 (the assumption in all economic analyses is that facilities comply in the beginning of the year in which they receive requirements in their permit). As a result, EPA shifted the compliance schedule for the NODA analysis by one year for all Phase II facilities. Facilities costed with a cooling tower are now assumed to have a compliance window from 2005 to 2013, while facilities without a recirculating requirement are assumed to come into compliance between 2005 and 2009 (during the year of their first post-promulgation permit). For purposes of the cost and impacts analysis, EPA used the 2010 model run year instead of the 2008 model run year, as at proposal. Under the preferred option, all facilities are projected to come into compliance by 2009.

9. Number of Facilities Projected To Upgrade to Recirculating Wet Cooling (Waterbody/Capacity-Based Option)

For the proposed Phase II rule, EPA estimated that 51 model facilities would upgrade their cooling systems from once-through to closed-cycle, recirculating cooling systems under the waterbody/capacity-based option. EPA estimates for these analyses that 44 model facilities would upgrade cooling systems for the same option. The requirements of the regulatory alternative have not changed. The change in number of facilities that would be required to upgrade their cooling system is due to: (1) EPA's effort to update, correct, and verify facility design intake flows and (2) the fact that EPA no longer needs to use a statistical methodology to determine the number of short technical questionnaire facilities that withdraw more than one percent of the mean tidal excursion. EPA has updated design intake flows for a number of in-scope facilities. In a few cases, these database flow changes have impacted the determination of whether a facility is projected to upgrade its cooling system because the requirements for the waterbody/capacity-based option, in some instances, hinge on intake flow. Since proposal, EPA has identified those short technical questionnaire facilities whose design intake flow exceeds one percent of the mean tidal excursion. This information was not available for the analyses supporting the proposal, and as such, EPA utilized a statistical method to project which facilities would meet these criteria. For these current analyses, EPA has utilized the actual data in lieu of the statistical method. As a result, a number of changes have been made to the list of short-technical

questionnaire model facilities projected to upgrade their cooling systems.

IV. Engineering Cost Analysis

A. Facility Flow Verifications

In order to ensure the accuracy and quality of the data used for the costing effort, the Agency revisited its database of facility and intake design flows. Flow is an important factor in calculating costs. The Agency first screened the flow data in order to identify facilities with potentially inaccurate flow information. From this first set of facilities, the Agency attempted to identify errors by inspecting the original questionnaires on which the flows were reported. Through this effort, the Agency was able to correct a few flow values by identifying survey reporting errors (such as unit conversion inconsistencies). The remainder of the potentially inaccurate flow data set required outreach to 25 facilities to solve the identified discrepancies. In many cases, the original reported flows were correct. In others, incorrect initial reporting had led to incorrect calculations of design flow rates. The Agency corrected these flows for the master database used to support analyses presented in this Notice of Data Availability (see "Flow Correction and Verification," in the Confidential Business Information portion of the docket).

B. Technology Cost Modules

The Agency developed a new approach to developing compliance costs that includes a broader range of compliance technologies than it used for calculating compliance costs for the proposed rule requirements. In order to do so, the Agency sought to evaluate new and/or additional costs for a wider range of intake technologies identified as having the potential to meet the proposed regulation requirements without the expense and energy penalty associated with capacity-reduction technologies such as cooling towers. In selecting among available technologies, EPA revised its traditional least cost approach, and instead assigned costs based on the projected performance of available technologies on a site-specific basis. This approach is discussed in more detail in section IV.C. below.

The revised and new technology modules analyzed by the Agency include the following:

- Addition of fish handling and return system to an existing traveling screen system,
- Addition of fine-mesh screens (both with and without a fish handling and

return system) to an existing traveling screen system,

- Addition of a new, larger intake in front of an existing intake screen system,

- Addition of passive fine-mesh screen system (cylindrical wedgewire) near shoreline,

- Addition of a fish net barrier system,

- Addition of an aquatic filter barrier system,

- Relocation of an existing intake to a submerged offshore location (with velocity cap inlet, passive fine-mesh screen inlet, or onshore traveling screens),

- Addition of a velocity cap inlet to an existing offshore intake,

- Addition of passive fine-mesh screen to an existing offshore intake,

- Addition or modification of a shoreline-based traveling screen for an offshore intake system, and

- Addition of dual-entry, single-exit traveling screens (with fine-mesh) to a shoreline intake system.

The explanation and derivation of each of these modules is discussed in the public record (see "316(b) Phase II NODA Cost Modules.")

At proposal, EPA based its cost analysis primarily on the addition of fine-mesh traveling screens with fish handling systems. EPA recognized at proposal that some facilities would need to add larger intakes, move intakes, or modify offshore intakes, and included an approximate adjustment factor in its cost estimates to account for these types of modifications, but lacked sufficient data to model them explicitly. In the NODA analysis, EPA has added explicit cost modules for each of these activities. As a result, the per facility costs for adding traveling screens with fish handling systems have gone down significantly, but a significant number of facilities (about 40% of the in-scope universe) have been costed for other technologies, which are significantly more expensive than traveling screens. To help commenters better understand the impacts of these revisions, EPA has placed a summary document in the record that shows modeled costs for a range of flows for each major technology module used at proposal and in this NODA, broken out by salt water versus freshwater and nuclear facility versus non-nuclear facility (see "Comparison of Capital and Net O & M Compliance Costs for Technologies Costed in Proposed Rule and NODA"). As discussed in section III above, EPA also modified its estimate of facility downtime potentially necessary to install these technologies, as well as