

**Information Collection Request: Cooling Water Intake Structures
Phase II Existing Facility (Renewal)**

OMB Control No. 2040-0257, EPA ICR No. 2060.06

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Disclaimer

The 316(b) Phase II rule was signed on February 16, 2004. Industry and environmental groups, and a number of states filed legal challenges to the rule. Several issues were heard by the Second Circuit's Court of Appeals, which issued a decision on January 25, 2007 remanding portions of the rule (see *Riverkeeper, Inc. v. U.S. EPA*, No. 04-6692-ag(L) [2d Cir. Jan. 25, 2007]). EPA subsequently suspended the Phase II rule on July 9, 2007 and directed permit writers to continue to issue permits with 316(b) requirements developed using the permit writer's best professional judgment (BPJ). Industry groups petitioned and were granted certiorari from the Supreme Court, which issued a decision on April 1, 2009 (*Entergy Corp. v. Riverkeeper, Inc.*, No. 07-588). EPA is currently in the process of developing a revised rule for existing facilities and expects to publish the final rule by January 14, 2014.

EPA believes that the burden estimated in this ICR is likely to represent an upper bound on the burden that the public would incur in complying with BPJ-based permitting requirements for cooling water intake structures at large existing power plants over the next three years. EPA will submit a revised ICR with the new rule that reflects its specific requirements. The revised ICR will replace this one when the new rule is promulgated.

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1. Identification of the Information Collection

1a. Title of the Information Collection

TITLE: Cooling Water Intake Structure Phase II Existing Facilities (Renewal)
OMB Control No. 2040-0257, EPA ICR No. 2060.06

1b. Short Characterization/Abstract

The section 316(b) Phase II Existing Facility rule requires the collection of information from existing point source facilities that generate and transmit electric power (as a primary activity) or generate electric power but sell it to another entity for transmission, use a cooling water intake structure (CWIS) that uses at least 25 percent of the water it withdraws from waters of the U.S. for cooling purposes, and have a design intake flow of 50 million gallons per day (MGD) or more. Section 316(b) of the Clean Water Act (CWA) requires that any standard established under section 301 or 306 of the CWA and applicable to a point source must require that the location, design, construction and capacity of CWISs at that facility reflect the best technology available (BTA) for minimizing adverse environmental impact. Such impact occurs as a result of impingement (where fish and other aquatic life are trapped on technologies at the entrance to CWIS) and entrainment (where aquatic organisms, eggs, and larvae are taken into the cooling system, passed through the heat exchanger, and then pumped back out with the discharge from the facility). The 316(b) Phase II rule establishes requirements applicable to the location, design, construction, and capacity of CWISs at Phase II existing facilities. These requirements establish the BTA for minimizing adverse environmental impact associated with the use of CWISs.

Existing electric power generating facilities that do not meet the threshold requirements in § 125.91 of the Phase II rule are not covered by this Information Collection Request (ICR).

All Phase II existing facilities must reduce impingement mortality for all life stages of fish and shellfish by 80 to 95% from the calculation baseline. Some Phase II existing facilities must also reduce entrainment for all life stages of fish and shellfish by 60 to 90% from the calculation baseline. A Phase II existing facility may choose one of the following five compliance alternatives in § 125.94(a) for establishing BTA for minimizing adverse environmental impact at the site:

1. i. Demonstrate that it has reduced, or will reduce, its flow commensurate with a closed-cycle recirculating system. In this case, the facility will not be required to demonstrate further that it meets the impingement mortality and entrainment performance standards; or
ii. Demonstrate that it has reduced, or will reduce, its maximum through-screen design intake velocity to 0.5 ft/s or less. In this case, the facility will not be required to demonstrate further that it meets the performance standards for impingement mortality;
2. Demonstrate that its existing design and construction technologies and/or operational measures meet the performance standards specified in § 125.94(b);

3. Demonstrate that the facility has selected design and construction technologies and/or operational measures that will, in combination with any existing design and construction technologies and/or operational measures meet the performance standards specified in § 125.94(b);
4. Demonstrate that the facility has installed, or will install, and properly operate and maintain an approved design and construction technology in accordance with § 125.99(a) or (b); or
5. Demonstrate that the facility has selected, installed, and is properly operating and maintaining, or will install and properly operate and maintain design and construction technologies and/or operational measures determined to be the BTA for the facility in accordance with § 125.94(a)(5)(i) and (ii). The facility must meet one of two cost tests: (1) demonstrate that costs of compliance under alternatives 2–4 would be significantly greater than costs considered by the Administrator, or (2) demonstrate that costs of compliance under alternatives 2–4 would be significantly greater than the benefits of complying with the applicable performance standards at the facility.

The Section 316(b) Phase II Existing Facility rule requires several distinct types of information collection as part of the National Pollutant Discharge Elimination System (NPDES) application. In general, the information is used to identify which of the performance standard requirements in the rule apply to the facility, how the facility is meeting these requirements, and whether the facility is meeting the performance requirements. Specific data requirements that apply to all facilities regardless of the compliance alternative selected are:

- Source water physical data that shows the physical configuration of all source waterbodies used by the facility, identifies and characterizes the source waterbody's hydrological and geomorphological features, and provides location through maps;
- CWIS data that shows the configuration and location of cooling water intake structures, provides details on the design operation of each CWIS, and diagrams flow distribution and water balance; and
- Cooling water system data that characterizes the operation of the cooling water system and its relationship to the CWIS

Additionally, most Phase II existing facilities must submit a Comprehensive Demonstration Study (CDS) that characterizes the source water baseline in the vicinity of the intake structure(s), characterizes operation of the cooling water intake(s), and confirms that the design and construction technology(ies) and/or operational measures proposed and/or implemented at the CWIS meet the applicable national performance standards specified in § 125.94. The required components of the CDS that a Phase II existing facility must submit are dependent on the compliance alternative selected. Facilities that choose to meet the performance standards under the compliance alternative in § 125.94(a)(1)(i) are not required to submit a CDS. Facilities that choose to meet the performance standards under the compliance alternative in § 125.94(a)(1)(ii) are required to only submit a CDS for the entrainment requirements, if applicable. Facilities that choose to meet the performance standards under the compliance alternative in § 125.94(a)(4) are required to submit only the Technology Installation and Operation Plan and the Verification Monitoring Plan. Facilities that are required to meet only impingement mortality reduction

requirements in § 125.94(b)(1) are required to submit only a CDS for the impingement mortality reduction requirements. The CDS includes the following data requirements.

- Proposal for information collection that describes the proposed and/or implemented technology(ies) and/or operational measures to be evaluated in the study; describes any historical studies that are proposed to be used in the study; summarizes any past, ongoing, or voluntary consultation with fish and wildlife management agencies (including a copy of written comments received as a result of such consultation); and provides a sampling plan for any new field studies proposed to be conducted;
- Source waterbody flow information to support the determination of whether the facility is designed to withdraw more than 5% of the annual mean flow for intakes located in freshwater rivers/streams, and a description of the waterbody thermal stratification for intakes located in lakes or reservoirs to show that the total design intake flow will not disrupt the natural thermal stratification or turnover pattern (where present) of the source water in a way that adversely impacts fisheries;
- Impingement Mortality and/or Entrainment Characterization Study that provides information to support the development of a calculation baseline for evaluating impingement mortality and/or entrainment and to characterize current impingement mortality and/or entrainment;
- Design and Construction Technology Plan and a Technology Installation and Operation Plan that includes technology and compliance assessment information that explains the design and construction technologies and operational measures that are in place or have been selected to reduce impingement mortality and/or entrainment; calculates the reduction in impingement mortality and entrainment that would be achieved by the selected technologies and operational measures; and demonstrates that the location, design, construction and capacity of the CWIS have been selected to reflect BTA at the site;
- Verification monitoring plan that describes the monitoring that will be used to verify the full-scale performance of the proposed or implemented technologies and/or operational measures.

Additional data requirements apply to facilities that choose to request a site-specific determination of BTA for minimizing adverse environmental impact i.e., with the compliance alternative in § 125.94(a)(5)(i) or (ii). Specific data requirements that would apply to such a facility include:

- Comprehensive cost evaluation study that documents the cost of implementing the design and construction technologies and/or operational measures to meet the applicable performance standards and a demonstration that the cost is significantly greater than those costs considered by the Administrator;
- Benefits valuation of reducing impingement and entrainment that uses a comprehensive methodology to fully value the impacts of impingement mortality and/or entrainment at the site and the benefits achievable by compliance with the applicable requirements;
- A narrative description of any non-monetized benefits that would be realized at the facility if it were to meet the performance standards and a qualitative assessment of their magnitude and significance;

- Site-specific technology plan that describes the design and operation of all design and construction technologies and/or operational measures that the facility has selected; demonstrates the efficacy of the technologies; and demonstrates that the design and construction technologies and/or operational measures selected would reduce impingement mortality and/or entrainment to the extent necessary to satisfy the requirements of § 125.94; and includes design calculations, drawings, and estimates to support the plan.

In addition to the information requirements of the NPDES permit application, NPDES permits normally specify monitoring and reporting requirements to be conducted by the permitted entity. Monitoring must be conducted in accordance with the Verification Monitoring Plan required by § 125.95(b)(7) and the Technology Installation and Operation Plan required by § 125.95(b)(4) (ii), and any additional monitoring specified by the Director to demonstrate compliance with the applicable requirements of § 125.94. The results of each facility's monitoring efforts are to be reported to the permitting Director every two years.

Finally, facilities are required to maintain records of all submitted documents, supporting materials, and monitoring results for at least 3 years (or as directed by the Director). Facilities are also required to perform a verification study to demonstrate that they are meeting the required level of impingement mortality and entrainment reduction, as appropriate.

Authorized State Directors are required to review all materials submitted to them by the facilities within the scope of the regulation, confirm their compliance with the Section 316(b) Phase II Existing Facility rule, and issue NPDES permits with appropriate conditions to minimize adverse environmental impact associated with the use of the facilities' CWISs.

As suggested, the primary users of the data collected under the 316(b) Phase II Existing Facility rule are the States authorized to administer the NPDES permitting program, and EPA. Other government agencies, both at the State and Federal level, as well as public interest groups, private companies, and many individuals also use the data.

The 316(b) Phase II rule was signed on February 16, 2004. Industry and environmental groups, and a number of states filed legal challenges to the rule. Several issues were heard by the Second Circuit's Court of Appeals, which issued a decision on January 25, 2007 remanding portions of the rule (see *Riverkeeper, Inc. v. U.S. EPA*, No. 04-6692-ag(L) [2d Cir. Jan. 25, 2007]). EPA subsequently suspended the Phase II rule on July 9, 2007 and directed permit writers to continue to issue permits with 316(b) requirements developed using the permit writer's best professional judgment (BPJ). Industry groups petitioned and were granted certiorari from the Supreme Court, which issued a decision on April 1, 2009 (*Entergy Corp. v. Riverkeeper, Inc.*, No. 07-588). EPA is currently in the process of developing a revised rule for existing facilities.

EPA believes that the burden estimated in this ICR is likely to represent an upper bound on the burden that the public would incur in complying with BPJ-based permitting requirements for cooling water intake structures at large existing power plants over the next three years. EPA will submit a revised ICR with the new rule that reflects its specific requirements. The revised ICR will replace this one when the new rule is promulgated.

During the 3 years covered by this ICR (which correspond to years 10–12 after rule promulgation) the information collection required by the rule will involve responses from an estimated total of 506 facilities and 42 States and Territories and cost approximately \$178 million (including operation and maintenance costs), with an annual average of 514 respondents, 1,010,021 burden hours, and a cost \$59 million per year (for additional detail, see Section 6 and Exhibit A.11 in Appendix A).

2. Need for and Use of the Collection

2a. Need/Authority for the Collection

The following sections describe the need for this information collection and the legal authority under which this information will be collected.

2a(i). Need for the Collection

The information requirements of the 316(b) Phase II Existing Facility rule are necessary to ensure that Phase II existing facilities are complying with the rule’s provisions, and thereby minimizing adverse environmental impact resulting from impingement and entrainment losses due to the withdrawal of cooling water.

2a(ii). Authority for the Collection

Section 316 was included in the Federal Water Pollution Control Act of 1972 for the express purpose of regulating thermal discharges and to address the environmental impact of CWISs. Moreover, Section 316(b) is the only provision in the CWA that focuses exclusively on water intake. Section 316(b) provides that, “[a]ny standard established pursuant to [CWA Section 301] or [CWA Section 306] and applicable to a point source shall require that the location, design, construction, and capacity of CWISs reflect the BTA for minimizing adverse environmental impact.” The requirements of Section 316(b) are closely linked to several of the core elements (e.g., Sections 301, 304, 306 and 402) of the NPDES permit program established under the CWA. Conditions implementing Section 316(b) are and will continue under this rule to be included in NPDES permits issued under Section 402 of the CWA.

2b. Practical Utility/Users of the Data

The 316(b) Phase II Existing Facility rule includes both information that must be submitted to permitting authorities and data that must be collected and maintained on-site by the facility. Each Phase II existing facility maintains facility-level records of the characterization data, plans, measurements, diagrams, and calculations submitted to the Directors, as well as the analytical results of monitoring actions. Facilities could use the data to:

- Characterize environmental conditions and monitor existing CWIS performance;
- Determine appropriate design and construction technologies or operational measures; and/or

- Monitor the performance of design and construction technologies or operational measures.

Permit writers will also use these data to verify that the appropriate compliance actions are selected and implemented. Under the 316(b) Phase II Existing Facility rule, EPA and State Directors are to maintain records compiled from the regulated facilities. Much of the basic information obtained from the NPDES permit application is stored in EPA's Integrated Compliance Information System (ICIS-NPDES). ICIS-NPDES is used to track permit limits, permit expiration dates, monitoring data, and other data, and provide EPA with a nationwide inventory of permit holders.

EPA Headquarters uses the information contained in ICIS-NPDES to develop reports on permit issuance, backlog, and compliance rates. The Agency also uses the information to respond to public and congressional inquiries, develop and guide its policies, formulate its budgets, assist States in acquiring authority for permitting programs, and manage the NPDES program to ensure national consistency in permitting. States can use this initial permit information along with the additional documentation and the bi-annual reports to track facility monitoring, compliance violations, and enforcement activities.

Permittees must reapply for NPDES permits every 5 years. The re-application process is the primary mechanism for obtaining up-to-date and new information concerning on-site conditions. Although under the 316(b) Phase II Existing Facility rule, existing facilities provide data from self-monitoring activities in bi-annual reports to the permitting authority, these reports are a less comprehensive information-gathering process than the permit application process. EPA and States will use re-application data to identify new species at risk or other potential concerns that could lead the permit writers to take the following actions:

- Specify additional permit limitations;
- Assess compliance with applicable standard requirements; or
- Place appropriate special conditions in permits.

Environmental and citizen groups are expected to use the data collected under the 316(b) Phase II Existing Facility rule to independently assess impingement and entrainment rates for affected waterbodies in their location. In addition, the data will be useful for the scientific community for assessing the impact of CWISs on recreational and commercial fisheries productivity and aquatic ecosystem health.

3. Nonduplication, Consultations, and Other Collection Criteria

The following sections verify and affirm that this ICR satisfies the Office of Management and Budget's (OMB) data-collection guidelines, has public support, and does not duplicate another collection.

3a. Nonduplication

Given that the Phase II Existing Facility rule applies to existing facilities, current data sources may already exist for the information required under the rule. Therefore, it was important that EPA review existing data sources to identify currently available information on entities subject to Section 316(b) regulation and to ensure that the data requested by the rule are not otherwise accessible. Data sources reviewed included data collected by offices within EPA; data, reports, and analyses published by other Federal agencies; reports and analyses published by industry; and publicly available financial information compiled by government and private organizations. From this effort, EPA has determined that the information collection and reporting requirements considered in this ICR are not contained or duplicated in other routinely collected documents or reports.

3b. Public Notice Required Prior to ICR Submission to OMB

This ICR was published in the *Federal Register* on September 17, 2013 (78 FR 57150). The notice included a request for comments on the content and impact of these information collection requirements on the regulated community. EPA received no comments on this ICR.

3c. Consultations

EPA finalized the requirements addressed in this ICR after receiving comments from the public and the regulated community. No formal consultations with persons outside EPA have occurred since the original 316(b) Phase II Existing Facility rule and its corresponding ICR were published in 2004. However, the Agency does consider, and act on, the comments it receives in its daily dealings with the public and with the regulated community. EPA Headquarters staff responsible for program oversight in the applicable program areas were contacted to provide revised information and data for this ICR.

3d. Effects of Less Frequent Collection

EPA has concluded that less frequent data collection may fail to identify in a timely manner adverse environmental impact resulting from the operation of existing CWISs. In addition, less frequent collection would also hinder the ability of EPA, States, and facility operators to take advantage of technological improvements in impingement and entrainment technologies as they become available, or to track long-term trends.

3e. General Guidelines

The information collection requirements of the 316(b) Phase II Existing Facility rule are in accordance with the PRA guidelines at Title 5 of the *Code of Federal Regulations* (CFR) 1320.5(d)(2). Requests for supplemental information for the purposes of emergency response or enforcement activities are exempt from the PRA requirements.

3f. Confidentiality

Applications for an NPDES permit may contain confidential business information. However, EPA does not consider the specific information being requested by the 316(b) Phase II Existing Facility rule to be typical of confidential business or personal information. If a respondent does consider this information to be of a confidential nature, the respondent may request that such

information be treated as such. All confidential data will be handled in accordance with 40 CFR § 122.7, 40 CFR Part 2, and EPA's Security Manual Part III, Chapter 9, dated August 9, 1976.

3g. Sensitive Questions

The Section 316(b) Phase II Existing Facility rule does not require respondents to divulge information pertaining to private or personal information, such as sexual behavior or religious beliefs. Therefore, this section is not applicable.

4. The Respondents and the Information Requested

4a. Respondents/SIC/NAICS

The applicability criteria of the 316(b) Phase II Existing Facility rule at § 125.91 define an existing facility as a Phase II existing facility subject to this regulation if it is a point source that uses or proposes to use a CWIS, both generates and transmits electric power or generates electric power but sells it to another entity for transmission, has at least one CWIS that uses at least 25 percent of the water it withdraws from waters of the U.S. (measured on an average annual basis) for cooling purposes, and has a design intake flow of 50 MGD or more. Use of a CWIS includes obtaining cooling water by any sort of contract or arrangement with an independent supplier (or multiple suppliers) of cooling water if the supplier or suppliers withdraw(s) water from waters of the United States. Use of cooling water does not include obtaining cooling water from a public water system or use of treated effluent that otherwise would be discharged to a water of the United States.

Respondents include existing electric power generating facilities. Facilities in the traditional steam electric utility category are classified under Standard Industrial Classification (SIC) codes 4911 and 493, while nonutility power producers are classified under the major code that corresponds to the primary purpose of the facility (e.g., the primary code may be SIC 49 if the primary purpose of the facility is to generate electricity). Nonutility power producers affected by the Phase II Existing Facility rule are anticipated to be classified under SIC 49 (i.e., their primary purpose is to generate electricity); nonutility power producers classified under other SIC codes (i.e., whose primary purpose is not generating electricity) are not 316(b) Phase II existing facilities. SIC and NAICS Codes are provided in Table 1.

Table 1. Industry Categories and SIC Codes for 316(b) Phase II Existing Facility Rule

| Respondent Industry Categories | SIC Codes | NAICS Codes |
|---|------------------------|---------------------------|
| Traditional Steam Electric Utilities | SIC codes 4911 and 493 | 221112, 221113, |
| Steam Electric Nonutility Power Producers: Nonindustrial | SIC Major Group 49 | 221119, 221121, 221122 |

4b. Information Requested

The following sections provide details on data items requested and associated activities that the 316(b) Phase II Existing Facility rule requires respondents to provide in their application. The two principal respondent categories are Phase II existing facilities subject to the rule and NPDES

program Directors (i.e., States and Territories authorized under CWA Section 402(b) to administer the NPDES permit program, and EPA Regional offices). There are currently 46 States and the Virgin Islands authorized under CWA Section 402(b) to implement the NPDES permit program.

Information requirements for Phase II existing facilities will differ depending on the compliance alternative selected by the applicant. As discussed in Section 1, five compliance alternatives are available to an existing facility. Certain information requirements are applicable to all Phase II existing permitted facilities; other information requirements apply on the basis of the compliance alternative selected.

4b(i). Data Items, Including Record Keeping Requirements

Data items required by the 316(b) Phase II Existing Facility rule are gathered for either record keeping or reporting purposes. There are several data items that are collected only during the year(s) before the beginning of each permit cycle and others that are required to be collected on an annual basis. A discussion of all reporting requirements follows below.

Reporting Requirements

The Section 316(b) Phase II Existing Facility rule does not require Directors to prepare or submit any reports beyond what is currently required of them under the NPDES program. However, Directors need to review, maintain records of, and make permitting determinations on the basis of all documents and reports submitted to them by Phase II existing facilities.

Phase II existing facilities must report with their application the information required under § 125.95 and paragraphs (r)(2), (3), and (5) of § 122.21. At the time a Phase II existing facility submits its NPDES permit renewal application (approximately 180 days before expiration of its current permit, in accordance with § 122.21(d)(2)), it must submit information demonstrating that it is employing, or will employ BTA for its CWIS to minimize adverse environmental impact in compliance with Section 316(b) of the CWA. Three types of information are required to be included in the NPDES permit applications for all Phase II existing facilities:

1. Source water physical data, as required under § 122.21(r)(2). Source water information is required to evaluate potential impact to the waterbody in which the intake structure is placed. Typically, intake structures are located offshore, at the shoreline, or at the end of an approach intake canal. The intake structure affects different species or life stages depending on its location in the source water and the source water type. In addition, the proximity of the intake structures to sensitive aquatic ecological areas might result in potential environmental impact.
2. CWIS data, as required under § 122.21(r)(3). Facilities are required to submit information on the intake structure design and operation and the facility's water balance to evaluate the potential for impingement and entrainment of aquatic organisms. Information on the design of the intake structure and its location in the water column allows EPA to evaluate which species or life stages would potentially be subject to impingement and entrainment. Information on the operation of the intake structure and a diagram of the facility's water balance would be used to identify the proportion of intake

water used for cooling, make-up, and process water and to evaluate whether the effects of the intake would be continuous, intermittent, or seasonal. The water balance diagram also would provide a picture of the total flow in and out of the facility.

3. Cooling water system data, per the requirements at § 122.21(r)(5). Facilities are required to submit cooling water system data for the purpose of evaluating the relationship between the cooling water system and the associated intake(s) and determining whether the facility uses at least 25 percent of the water it withdraws for cooling purposes.

Depending on the compliance alternative selected, a facility may also need to conduct a CDS as stipulated at § 125.95(b)(1) through § 125.95(b)(7) as applicable. The CDS is necessary to characterize the source water baseline in the vicinity of the intake, characterize the operation of the cooling water intake, and confirm that the design and construction technology(ies) and/or operational measures proposed and/or implemented at the intake meet the applicable requirements of § 125.94.

The CDS includes the following components:

1. A proposal for information collection [§ 125.95 (b)(1)];
2. Source waterbody flow information [§ 125.95 (b)(2)];
3. An Impingement Mortality and/or Entrainment Characterization Study [§ 125.95 (b)(3)];
4. Technology and compliance assessment information [§ 125.95 (b)(4)];
5. Information to support site-specific determination of BTA for minimizing adverse environmental impact [§ 125.95 (b)(6)]; and
6. A verification monitoring plan [§ 125.95 (b)(7)].

In accordance with § 125.95(a)(2), the facility must submit any applicable portions of the CDS, except for the Proposal for Information Collection, and the information required at 40 CFR 122.21(r)(2), (3) and (5), with the NPDES permit application. The Proposal for Information Collection must be submitted prior to the start of any information collection to support other components of the CDS

The specific requirements of each component of the CDS are detailed under the Respondent Activities section below.

Annual Reporting Requirements

In addition to the one-time reporting requirements, facilities are required to provide the following information to the Director in bi-annual status report:

- Monitoring records as required by § 125.97(a) and § 125.97(b).

Record Keeping Requirements

All operators of Phase II existing facilities are required to keep records and to report information and data to the permitting authority to show compliance with any requirements to which they are subject. Records are required to be maintained for a period of at least 3 years from the date of permit issuance unless extended at the request of the Director. Each operator is required to maintain records of:

- All data used to complete the permit application and show compliance with the requirements
- Any supplemental information developed under § 125.95
- Any compliance monitoring data submitted under § 125.96

4b(ii). Respondent Activities

As mentioned above, respondents include both Phase II existing facilities and NPDES permit program Directors. Their information collection activities are described below.

Permit Application Activities

All facilities will need to perform start-up activities such as reading the rule, planning for the implementation of the rule, and training staff to perform various tasks necessary to comply with the rule. Activities performed during the permit application process are performed only once during each ICR period. However, these application activities are repeated again during the fifth year of the permit cycle as part of the permit renewal process.

A. General Information

Phase II existing facilities must perform several data gathering activities as part of the permit application process. Under the 316(b) Phase II Existing Facility rule, all facilities are required to gather application information as specified at 40 CFR 122.21(r) so that the Director can evaluate the potential impact to the waterbody in which the intake structure is located. The information collected under 40 CFR 122.21(r) includes source water physical data, CWIS data, and cooling water system data.

Activities related to source *water physical data* include: [40 CFR 122.21(r)(2)]

- Describing the physical configuration of the source waterbody where each CWIS is located, including areal dimensions, depths, salinity and temperature regimes and providing other documentation that supports the determination of waterbody type;
- Preparing scaled drawings showing the physical configuration of the source waterbody;
- Characterizing and documenting the hydrological and geomorphological features of the source waterbody;
- Conducting physical studies to determine the intake's area of influence within the waterbody and summarizing the results of such studies (including a description of methods used);
- Preparing locational maps; and
- Maintaining copies of these documents as well as copies of any information used in their development for a period of 3 years after submittal.

Activities related to the report on *cooling water intake structure data* include: [40 CFR 122.21(r)(3)]

- Preparing a narrative description of the configuration of each CWIS and its location within the waterbody and in the water column;

- Measuring and documenting the latitude and longitude of each CWIS in degrees, minutes, and seconds;
- Developing a narrative that describes the operation of each CWIS, including design flows, daily hours of operation, number of days of the year in operation, and seasonal changes, if applicable;
- Developing a flow distribution and water balance diagram for the facility that includes all sources of water to the facility, recirculating flows, and discharges
- Creating engineering drawings and locational maps in support of the CWIS descriptions mentioned; and
- Maintaining copies of these documents as well as copies of any information used in their development for a period of 3 years after submittal.

Activities related to the report of the Phase II existing facility cooling water system data include: [40 CFR 122.21(r)(5)]

- Preparing a narrative description of the operation of each of the facility's cooling water systems, relationship to the CWIS(s), proportion of design flow that is used in the system, number of days of the year in operation, and seasonal changes, if applicable;
- Producing the necessary engineering calculations and supporting data to support the narrative description; and
- Maintaining a copy of the description and information required to support its development for 3 years after submittal.

B. Comprehensive Demonstration Study (CDS) Requirements

As previously discussed, depending on the compliance alternative selected, facilities may need to complete all or portions of the CDS. The specific reporting requirements for each component of the CDS are discussed below.

Proposal for Information Collection

The facility must develop and submit a proposal for the collection of information to support the CDS. In accordance with § 125.95(b)(1), this activity includes:

- Developing a description of the proposed and/or implemented technologies and/or operational measures to be evaluated in the CDS [§ 125.95(b)(1)(i)];
- Developing a list and description of any historical studies characterizing impingement and entrainment and/or the physical and biological conditions in the vicinity of the intakes and their relevance to the proposed CDS. If the facility proposes to use existing source waterbody data, the facility must demonstrate the extent to which the data are representative of current conditions, that existing data are sufficient to develop a scientifically valid estimate of impingement and entrainment at the site, and that the data were collected using appropriate quality assurance/quality control procedures [§ 125.95(b)(1)(ii)];
- Developing a summary of any past or ongoing consultation with appropriate Federal, State, and Tribal fish and wildlife agencies that is relevant to the CDS and providing a copy of any written comments received [§ 125.95(b)(1)(iii)];

- Developing a sampling plan for any new field studies that the facility proposes to conduct. The sampling plan must document all methods and quality assurance procedures for sampling and data analysis. The proposed sampling and data analysis methods must be appropriate for a quantitative survey and must take into account the methods used in other studies performed in the source waterbody. The sampling plan must include a description of the study area (including the area of influence of the CWIS), and provide a taxonomic identification of the sampled or evaluated biological assemblages (including all life stages of fish and shellfish) [§ 125.95 (b)(1)(iv)];
- Maintaining records of all materials used to develop the proposal for a period of 3 years after submittal.

Source Waterbody Flow Information

As part of the CDS, facilities with intakes located on freshwater rivers/streams or lakes/reservoirs must also submit source waterbody flow information as required under § 125.95(b)(2). This includes:

- If the CWIS is located in a freshwater river or stream, the facility must provide the annual mean flow of the waterbody and any supporting documentation and engineering calculations to support the analysis of whether the facility's design intake flow is greater than 5 percent of the mean annual flow of the river or stream for purposes of determining applicable performance standards under paragraph § 125.95(b). Representative historical data (from a period of time up to 10 years, if available) must be used [§ 125.95(b)(2)(i)];
- If the CWIS is located in a lake (other than one of the Great Lakes) or a reservoir and the facility proposes to increase its design intake flow, the facility must provide a narrative description of the waterbody thermal stratification and any supporting documentation and engineering calculations to show that the total design intake flow after the increase will not disrupt the natural thermal stratification and turnover pattern in a way that adversely impacts water quality or fisheries including the results of any consultations with Federal, State, or Tribal fish or wildlife management agencies [§ 125.95(b)(2)(ii)]; and
- The facility must maintain records of all pertinent documents for a period of 3 years after submittal.

Impingement Mortality and/or Entrainment Characterization Study

As part of the CDS, the facility must also perform an Impingement Mortality and/or Entrainment Characterization Study to provide information to support the development of a calculation baseline for evaluating impingement mortality and entrainment and to characterize current impingement and entrainment. Under § 125.95(b)(3), the following activities are required:

- Taxonomic identification of those species of fish and shellfish and their life stages that are in the vicinity of the intake and are most susceptible to impingement and entrainment [§ 125.95(b)(3)(i)];
- A characterization of those species of fish and shellfish and any species protected under Federal, State, or Tribal Law (including threatened or endangered species) identified pursuant to § 125.95(b)(3)(i), including a description of the abundance and temporal/spatial characteristics in the vicinity of the intake, based on sufficient data to characterize annual, seasonal and daily variations in impingement mortality and

entrainment (e.g., related to climate/weather differences, spawning, feeding and water-column migration) [§ 125.95(b)(3)(ii)];

- Documentation of current impingement mortality and entrainment of all life stages of fish and shellfish, and any species protected under Federal, State, or Tribal Law (including threatened or endangered species) identified pursuant to § 125.95(b)(3)(i) and an estimate of impingement mortality and entrainment under the calculation baseline. The documentation may include historical data that are representative of the current operation of the facility and of biological conditions at the site. Impingement mortality and entrainment samples to support the calculations required in paragraph § 125.95(b)(4)(i)(C) and (b)(5)(iii) must be collected during periods of representative operational flows for the intake, and the flows associated with the samples must be documented [§ 125.95(b)(3)(iii)]; and
- Maintenance of a copy of the study and the materials required to produce it for 3 years after submittal.

Technology and Compliance Assessment Information

If the facility chooses to use design and construction technologies and/or operational measures, in whole or in part, to meet the requirements of § 125.94, the facility must submit a Design and Construction Technology Plan and a Technology Installation Operation Plan. Under § 125.95(b)(4)(i), the facility is required to include the following in the Design and Construction Technology Plan:

- The capacity utilization rate for the facility and supporting data (including the average annual net generation of the facility (in MWh) measured over a 5-year period (if available) of representative operating conditions and the total net capability of the facility (in MW)) and underlying calculations, and an explanation of the technologies and operational measures in place or selected, in accordance with § 125.95 (b)(4)(i);
- A narrative description of the design and operation of all design and construction technologies and/or operational measures (existing or proposed), including fish-handling and return systems, that the facility has in place or will use to meet the requirements to reduce impingement mortality of those species expected to be most susceptible to impingement, and information that demonstrates the efficacy of the technology or operational measures for those species [§ 125.95(b)(4)(i)(A)];
- A narrative description of the design and operation of all design and construction technologies and/or operational measures (existing or proposed) that the facility has in place or will use to meet the requirements to reduce entrainment of those species expected to be the most susceptible to entrainment, and information that demonstrates the efficacy of the technologies and/or operational measures for those species [§ 125.95 (b)(4)(i)(B)];
- Calculations of the reduction in impingement mortality and entrainment of all life stages of fish and shellfish that would be achieved by the technologies and/or operational measures the facility has selected on the basis of the Impingement Mortality and/or Entrainment Characterization Study. In determining compliance with the requirements to reduce impingement mortality or entrainment, the facility must first determine the calculation baseline upon which to assess the total reduction in impingement mortality and entrainment. Reductions in impingement mortality and entrainment from this

baseline as a result of any design and construction technologies and/or operational measures already implemented at the facility should be added to the reductions expected to be achieved by any additional design and/or construction technologies that will be implemented. Facilities that recirculate a portion of their flow, but do not reduce flow sufficiently to satisfy the compliance option in § 125.94(a)(1)(i) may take into account the reduction in impingement mortality and entrainment associated with the reduction in flow when determining the net reduction associated with existing technology and/or operational measures. This estimate must include a site-specific evaluation of the suitability of the technologies based on the species that are found at the site, and/or operational measures and may be determined on the basis of representative studies (i.e., studies that have been conducted at CWISs located in the same waterbody type with similar biological characteristics) and/or site-specific technology prototype or pilot studies [§ 125.95(b)(4)(i)(C)];

- Design calculations, drawings, and estimates to support the descriptions required under § 125.95(b)(4)(i)(A) and (B) [§ 125.95 (b)(4)(i)(D)]; and
- Maintenance of records of all materials used to develop the design and construction technology plan for a period of 3 years after submittal.

Under § 125.95(b)(4)(ii), the facilities are required to include the following in the Technology Installation and Operation Plan:

- A schedule for the installation and maintenance of any new design and construction technologies. Any downtime of generating units to accommodate installation and/or maintenance of these technologies should be scheduled to coincide with otherwise necessary downtime (e.g., for repair, overhaul, or routine maintenance of the generating units) to the extent practicable. Where additional downtime is required, the facility may coordinate scheduling of this downtime with the North American Electric Reliability Council and/or other generators in the facility's area to ensure that impacts to reliability and supply are minimized, as required under § 125.95(b)(4)(ii)(A);
- A list of operational and other parameters to be monitored, and the location and frequency that the facility will monitor them, as required under § 125.95(b)(4)(ii)(B);
- A list of activities the facility will undertake to ensure to the degree practicable the efficacy of installed design and construction technologies and operational measures, and the facility's schedule for implementing them, as required under § 125.95(b)(4)(ii)(C);
- A schedule and methodology for assessing the efficacy of any installed design and construction technologies and operational measures in meeting applicable performance standards or site-specific requirements, including an adaptive management plan for revising design and construction technologies, operational measures, operation and maintenance requirements, and/or monitoring requirements if the facility's assessment indicates that applicable performance standards or site-specific requirements are not being met, as required under § 125.95(b)(4)(ii)(D); and
- If a facility chooses the compliance alternative in § 125.94(a)(4), documentation that the appropriate site conditions in § 125.99(a) or (b) exist at the facility, as required under § 125.95(b)(4)(ii)(E).

Information to Support Site-specific Determination of Best Technology Available for Minimizing Adverse Environmental Impact

If the facility chooses to request a site-specific determination of BTA, the facility must provide, as required under § 125.94(b)(6), the following additional information with its application:

- **Comprehensive Cost Evaluation Study.** The facility must perform and submit, in accordance with § 125.95(b)(6)(i), the results of a comprehensive cost evaluation study that includes:
 - Engineering cost estimates in sufficient detail to document the costs of implementing design and construction technologies and/or operational measures at the facility that would be needed to meet the performance requirements in § 125.94(b) [§ 125.95(b)(6)(i)(A)];
 - A demonstration that the costs documented above significantly exceed those considered by the Administrator for a facility in establishing the applicable performance standards [§ 125.95(b)(6)(i)(B)]; and
 - Engineering cost estimates in sufficient detail to document the costs of implementing the design and construction technologies and/or operational measures in the facility's Site-Specific Technology Plan developed in accordance with paragraph § 125.95(b)(6)(iii) [§ 125.95(b)(6)(i)(C)]

- **Benefits Valuation Study.** If the facility is seeking a site-specific determination of BTA for minimizing adverse environmental impact because of costs significantly greater than the benefits of complying with the otherwise applicable requirements of § 125.94(b) and (c) at the site, the facility must prepare a Benefits Valuation Study using a comprehensive methodology to fully value the impacts of impingement mortality and entrainment at the site and the benefits achievable by compliance with the applicable requirements of § 125.94. In addition to the valuation estimates, the benefit study must include the following:
 - A description of the methodology(ies) used to value commercial, recreational, and ecological benefits (including any non-use benefits, if applicable) [§ 125.95(b)(6)(ii)(A)];
 - Documentation of the basis for any assumptions and quantitative estimates, including a determination of entrainment survival at the facility (based on a study approved by the Director) [§ 125.95(b)(6)(ii)(B)];
 - An analysis of the effects of significant sources of uncertainty on the results of the study [§ 125.95(b)(6)(ii)(C)];
 - If requested by the Director, a peer review of the items the facility submitted in the Benefits Valuation Study. The facility must choose the peer reviewers with the concurrence of the Director who may consult with EPA and Federal, State, and Tribal fish and wildlife management agencies with responsibility for fish and wildlife potentially affected by facility's CWIS. Peer reviewers must have appropriate qualifications depending upon the materials to be reviewed [§ 125.95(b)(6)(ii)(D)]; and

- A narrative description of any non-monetized benefits that would be realized at the site if the facility were to meet the performance standards and a qualitative assessment of magnitude and significance of the benefits [§ 125.95(b)(6)(ii)(E)].
- Site-Specific Technology Plan. On the basis of the results of the Comprehensive Cost Evaluation Study and the Benefits Valuation Study, the facility must submit a Site-Specific Technology Plan to the Director for review and approval. The plan must contain the following information:
 - A narrative description of the design and operation of all existing and proposed design and construction technologies and/or operational measures that the facility has selected in accordance with § 125.94(a)(5) [§ 125.95(b)(6)(iii)(A)];
 - An engineering estimate of the efficacy of the proposed and/or implemented design and construction technologies or operational measures. This estimate must include a site-specific evaluation of the suitability of the technologies or operational measures for reducing impingement mortality and/or entrainment (as applicable) of all life stages of fish and shellfish based on representative studies (e.g., studies that have been conducted at CWISs located in the same waterbody type with similar biological characteristics) and, if applicable, site-specific technology prototype or pilot studies. [§ 125.95(b)(6)(iii)(B)];
 - A demonstration that the proposed and/or implemented design and construction technologies and/or operational measures achieve an efficacy that is as close as practicable to the applicable performance standards of § 125.94(b) without resulting in costs significantly greater than either the costs considered by the Administrator for a similar facility in establishing the applicable performance standards, or as appropriate, the benefits of complying with the applicable performance standards at the facility [§ 125.95(b)(6)(iii)(C)]; and
 - Design and engineering calculations, drawings, and estimates prepared by a qualified professional to support the descriptions required above [§ 125.95(b)(6)(iii)(D)].
- Maintain all records and documentation of site specific studies conducted for a period of at least 3 years after submittal.

Verification Monitoring Plan

As part of the CDS, the facility must prepare a plan to conduct, at a minimum, 2 years of monitoring to verify the full-scale performance of the proposed or implemented design and construction technologies, operational measures. As stipulated in § 125.95 (b)(7), the verification study must begin once the technologies and/or operational measures are implemented and continue for a period of time that is sufficient to demonstrate that the facility is meeting the national performance standards of § 125.94(b) or site-specific requirements developed pursuant to 125.94(a)(5).

The plan must provide the following:

- Description of the frequency and duration of monitoring, the parameters to be monitored, and the basis for determining the parameters and the frequency and duration for monitoring. The parameters selected and duration and frequency of monitoring must be

consistent with any methodology for assessing success in meeting applicable performance standards in your Technology Installation and Operation Plan [§ 125.95(b)(7)(i)];

- A proposal on how naturally moribund fish and shellfish that enter the CWIS would be identified and taken into account in determining compliance with the performance standards at § 125.94 [§ 125.95(b)(7)(ii)];
- A description of the information to be included in a bi-annual status report to the Director [§ 125.95(b)(7)(iii)]; and
- The facility must maintain all documentation supporting the verification monitoring plan for a period of at least 3 years.

Annual Activities

A. Biological Monitoring

All Phase II existing facilities, as appropriate to the compliance alternative selected, would need to perform monitoring in accordance with the Technology Installation and Operation Plan, the Verification Monitoring Plan, and any additional monitoring specified by the Director. The facility must follow the monitoring frequencies identified in the permit after the initial permit issuance. After that time, the Director may modify the program based on changes in physical or biological conditions in the vicinity of the cooling water intake structures.

B. Bi-Annual Status Report

All Phase II existing facilities subject to the 316(b) Phase II Existing Facility rule are required to prepare and submit a bi-annual status report that details compliance with requirements set by the rule and with any additional provisions specified within the permit. Preparation of the report requires:

- Compiling biological monitoring records for each CWIS and other information. The other information may include operation and maintenance records, summaries of adaptive management activities, or any other information that is relevant to determining compliance with the terms of the facility's Technology Operation and Installation Plan.
- Maintaining a copy of the report for a period of 3 years after its submission.

Director Activities

NPDES program Directors will act to ensure the implementation of the 316(b) Phase II Existing Facility rule as required under § 125.98. Section 316(b) requirements are implemented for a facility through an NPDES permit. Directors will be involved in reviewing application studies and developing permit conditions.

Following receipt of a permit application, the Director will conduct the following activities as described in § 125.98(a) and (b) and below.

Application Activities

The Director must determine which of the standards specified in § 125.94 apply to the facility. In addition, the Director must review materials to determine compliance with the applicable standards.

If a facility submits a request in accordance with § 125.95(a)(3) to reduce the information about its CWISs and the source waterbody required to be submitted in its permit application (this request is not authorized in the first permit term after promulgation of this rule), the Director must approve the request within 60 days if conditions at the facility and in the waterbody remain unchanged since the facility's previous application.

At each permit renewal, the Director must review the application materials and monitoring data to determine whether new or revised requirements for design and construction technologies or operational measures should be included in the permit to meet the national performance standards in § 125.94 or alternative site-specific requirements established pursuant to 125.94(a)(5).

The Director should review materials submitted by the applicant before each renewal period to determine if there have been any changes in facility operations or physical and biological attributes of the source waterbody. Any changes should be evaluated to determine the need for additional or more stringent conditions in the permit.

Permitting Activities

The Director must determine, using the information submitted by the existing facility in its permit application, the appropriate requirements and conditions, as described in § 125.98(b)(1) through § 125.98(b)(4), to include in the permit on the basis of the compliance alternative in § 125.94(a) selected by the facility. The Director must perform the following in developing permit conditions:

- (1) Develop Cooling Water Intake Structure Requirements. Requirements that implement the applicable provisions of § 125.94 must be included in the permit conditions. The Director must evaluate the performance of the design and construction technologies and/or operational measures proposed and implemented by the facility and require additional or different design and construction technologies and/or operational measure, if needed to meet the applicable impingement mortality and entrainment reduction, or production, requirements.

In determining compliance with the performance standards for facilities proposing to increase withdrawals of cooling water from a lake (other than a Great Lake) or a reservoir in § 125.94(b)(3), the Director must consider anthropogenic factors (those not considered "natural") unrelated to the Phase II existing facility's CWISs that can influence the occurrence and location of a thermocline. Anthropogenic factors may include source water inflows, other water withdrawals, managed water uses, wastewater discharges, and flow/level management practices (e.g., some reservoirs release water from deeper bottom layers). The Director must coordinate with appropriate Federal, State, or Tribal fish and wildlife agencies to determine if any disruption of the natural thermal stratification resulting from the increased withdrawal of cooling water is

beneficial to the management of fisheries. The Director must also determine whether to impose more stringent conditions to comply with the requirements of other applicable State and Tribal law, or other Federal Law.

To develop appropriate requirements for the CWIS(s), the Director must do the following:

- (i) Review and approve the Design and Construction Technology Plan required in § 125.95(b)(4) to evaluate the suitability and feasibility of the design and construction technology and/or operational measures proposed to meet the requirements of § 125.94(b) or alternative site-specific requirements established pursuant to 125.94(a)(5).
- (ii) In each reissued permit, include a condition in the permit requiring the facility to reduce impingement mortality and entrainment (or to increase fish production, if applicable) commensurate with the efficacy at the facility of the installed design and construction technologies and/or operational measures;
- (iii) If the facility implements design and construction technologies and/or operational measures and requests that compliance with the requirements in § 125.94 be measured for the first permit term (or subsequent permit terms, if applicable) employing the Technology Installation and Operation Plan in accordance with § 125.95(b)(4)(ii), the Director must review the Technology Installation and Operation Plan to ensure it meets the requirements of § 125.95(b)(4)(ii). If the Technology Installation and Operation Plan meets the requirements of § 125.95(b)(4)(ii), the Director must approve the Technology Installation and Operation Plan and require the facility to meet the terms of the plan including any revision to the plan that may be necessary if applicable performance standards or alternative site-specific requirements are not being met. In determining whether to approve a Technology Installation and Operation Plan, the Director must evaluate whether the design and construction technologies and/or operational measures the facility has installed, or proposes to install, can reasonably be expected to meet the applicable performance standards in § 125.94(b) and/or alternative site-specific requirements established pursuant to § 125.94(a)(5), and whether the Technology Installation and Operation Plan complies with the applicable requirements of § 125.95(b). In reviewing the Technology Installation and Operation Plan, the Director must approve any reasonable scheduling provisions that are designed to ensure that impacts to energy reliability and supply are minimized, in accordance with § 125.95(b)(4)(ii)(A). If the facility does not request that compliance with the requirements in § 125.94 be measured employing a Technology Installation and Operation Plan or the facility has not been in compliance with the terms of its current Technology Installation and Operation Plan during the preceding permit term, the Director must require the facility to comply with the applicable performance standards in § 125.94(b) and/or alternative site specific requirements developed pursuant to § 125.94(a)(5). In considering a permit application, the Director must review the performance of the design and construction technologies and/or operational measures implemented and require additional or different design and construction technologies and/or operational measures, and/or improved

- operation and maintenance of existing technologies and measures, if needed to meet the applicable performance standards and/or alternative site-specific requirements;
- (iv) Review and approve the proposed Verification Monitoring Plan submitted under § 125.95(b)(7) (for design and construction technologies) and require that the monitoring continue for a sufficient period of time to demonstrate whether the design and construction technology and/or operational measures meet the applicable performance standards in § 125.94(b) and/or site-specific requirements established pursuant to § 125.94(a)(5);
 - (v) If a facility requests requirements on the basis of a site-specific determination of BTA for minimizing adverse environmental impact, the Director must review the application materials submitted under § 125.95(b)(6) and any other information submitted, including quantitative and qualitative benefits, that would be relevant to a determination of whether alternative requirements are appropriate for the facility. If a facility submits a study to support entrainment survival at the facility, the Director must review and approve the results of that study. If the Director determines that alternative requirements are appropriate, the Director must make a site-specific determination of BTA for minimizing adverse environmental impact in accordance with § 125.94(a)(5). The Director may request revisions to the information submitted by the facility in accordance with § 125.95(b)(6) if it does not provide an adequate basis to make this determination. Any site-specific performance standard established on the basis of new and/or existing design and construction technologies and/or operational measures, must achieve an efficacy that is, in the Director's judgment, as close as practicable to the applicable performance standard, but that does not result in costs that are significantly greater than the costs considered by the Administrator or the benefits of establishing the applicable performance standards in § 125.94(b); and
 - (vi) In developing performance requirements to reduce impingement mortality and entrainment for inclusion in a permit, the Director must review information on proposed methods submitted by the facility under § 125.95(b)(4)(ii)(D) and/or (b)(5)(v)(A), evaluate those and other available methods, and specify how assessment of success in meeting the performance standards must be determined including the averaging period for determining the percent reduction in impingement mortality and entrainment and/or the production of fish and shellfish. Compliance for facilities who request that compliance be measured employing a Technology Installation and Operation Plan must be determined in accordance with § 125.98(b)(1)(iv).
- (2) Develop Monitoring Conditions. The permit must require the facility to perform the monitoring in accordance with the Verification Monitoring Plan required by 125.95(b)(7) and the Technology Installation and Operation Plan in § 125.95(b)(4)(ii). The Director must consider the facility's Verification Monitoring Plan and/or Technology Installation and Operation Plan, as appropriate, in determining additional applicable monitoring requirements in accordance with § 125.96. The Director may modify the monitoring program when the permit is reissued and during the term of the permit on the basis of changes in physical or biological conditions in the vicinity of the CWIS.

- (3) Require Record Keeping and Reporting. At a minimum, the permit must require the facility to report and keep records specified in § 125.97.
- (4) Approve a Design and Construction Technology (as appropriate). The Director must conduct the following to approve a design and construction technology:
 - (i) For a facility that chooses to demonstrate that they have installed and properly operate and maintain a design and construction technology approved in accordance with § 125.99, the Director must review and approve the information submitted in the Technology Installation and Operation Plan in § 125.95(b)(4)(ii) and determine whether they meet the criteria in § 125.99;
 - (ii) If a person/facility requests approval of a technology under § 125.99(b), the Director must review and approve the information submitted and determine its suitability for widespread use at facilities with similar site conditions in its jurisdiction with minimal study. The Director must evaluate the adequacy of the technology when installed in accordance with the required design criteria and site conditions to consistently meet the performance requirements in § 125.94. The Director may approve a technology only following public notice and consideration of comment regarding such approval.
- (5) Bi-annual status report. Facilities must specify monitoring data and other information to be included in a status report every 2 years. The other information may include operation and maintenance records, summaries of adaptive management activities, or any other information that is relevant to determining compliance with the terms of the facility's Technology Operation and Installation Plan.

5. The Information Collected Agency Activities, Collection, Methodology and Information Management

The following sections describe EPA activities related to analyzing, maintaining, and distributing the information collected.

5a. Agency Activities

EPA is responsible for overseeing the implementation of the 316(b) Phase II Existing Facility rule. Implementation of reporting and monitoring requirements would rely extensively on State governments in those States that have authorization under CWA Section 402(b) to implement the NPDES permit program. In States that do not have NPDES permitting authority, EPA is responsible for administering the program. Under these circumstances, EPA performs the same activities as those outlined for Directors in Section 4.

EPA typically reviews NPDES permits in the early stages of implementation of new regulations. As such, EPA assumed that it would perform a detailed review, make comments, and follow up on comments for the 316(b) portions of State-issued NPDES permits, during the first 3 years after promulgation. This ICR covers years 10, 11, and 12 after promulgation; therefore, no

burden for EPA review of State-issued NPDES permits is anticipated to occur in this ICR period.

5b. Collection Methodology and Information Management

The 316(b) Phase II Existing Facility rule provides minimum requirements regarding the type of information collected. Directors of NPDES programs are primarily responsible for determining which collection method and information management strategy is most appropriate. EPA will maintain some of the compliance data in ICIS-NPDES. ICIS-NPDES is a national computerized management information systems that provides for entry, updating, and retrieval of NPDES data and track permit issuance, permit limits and monitoring data, and other data pertaining to facilities regulated under NPDES. This technology reduces the burden to the permitting authority of gathering, analyzing, and reporting national permit and water quality data.

Permitting authorities are responsible for reviewing permit applications, permits, monitoring reports, and so on to verify the accuracy of the data. Permitting authorities are also responsible for entering that data into ICIS. Authorities have differing approaches for entering the data into ICIS and for checking data quality. This includes the use of coding forms, direct entry, batch uploads, and so on. Many States have developed State databases that are tailored to their needs; interfaces are being developed for uploads directly to ICIS-NPDES from State systems. Permit data can be accessed by the public in one of three ways:

- Via the Freedom of Information Act (FOIA) by submitting a request to EPA or the State.
- Via an online query using EPA's Envirofacts Data Warehouse and Applications Web site at <http://www.epa.gov/enviro/index.html>. Accessing data via Envirofacts provides a method to combine ICIS-NPDES data with other EPA databases and mapping tools.
- Via some State Web sites.

5c. Small Entity Flexibility

The applicability requirements in § 125.94 exclude most existing small entities from the 316(b) Phase II Existing Facility rule. As a result, the 316(b) Phase II Existing Facility rule affects only a small absolute number of facilities owned by small entities, representing a very small percentage of all facilities owned by small entities in the electric power industry. EPA estimated that 25 in-scope electric generators owned by small entities (out of a total of 543 estimated in-scope electric generators) are regulated by the 316(b) Phase II Existing Facility rule. Of the 25 generators, 16 are projected to be owned by a municipality, 6 by a rural electric cooperative, 2 by a municipal marketing authority, and 1 by a political subdivision. In addition, EPA estimated that only a small percentage of all small entities in the electric power industry, approximately 1.3 percent, are subject to the 316(b) Phase II Existing Facility rule.

EPA considers the information collection and reporting requirements to be the minimum necessary to ensure that the Section 316(b) goal of "minimizing adverse environmental impact" is met. Because small entities constitute a very small share of the potentially affected facilities and because only a small percentage of all small entities in the electric power industry are subject to the rule, providing them greater flexibility such as less frequent data collection and reporting requirements would not have a large effect on the overall burden, but doing so could

have an adverse impact on the effectiveness of the 316(b) Phase II Existing Facility rule. Furthermore, because the reporting requirements differ by source waterbody type and compliance alternative selected, entities of all sizes have the flexibility to minimize the total compliance costs including the costs and burden of information collection requirements.

5d. Collection Schedule

EPA anticipates that 506 Phase II existing facilities will fall within the scope of the 316(b) Phase II Existing Facility rule during the 3 years covered by this ICR. Because of the multiple years of data that must be collected for the Impingement Mortality and/or Entrainment Characterization Study, the permitting process is anticipated to take up to 3 years to complete. Of the 506 facilities projected to fall within the scope of this ICR period, 455 will be performing annual monitoring and reporting of operations by the end of year 3 of this ICR. The other 51 facilities are operations with recirculating cooling towers applying for a permit but not required to perform annual monitoring and reporting of operations. Table 2 provides the estimated implementation schedule for the facilities during the ICR approval period.

Table 2. Number of Facilities Assumed to Comply with Information Collection: Requirements During the ICR Period by Year

| Type of Activity | ICR Period | | |
|--|------------|------|------|
| | 2013 | 2014 | 2015 |
| Facilities performing annual monitoring and reporting of operations | 455 | 455 | 455 |
| Facilities with recirculating cooling towers applying for a permit but not required to perform annual monitoring and reporting of operations | 16 | 19 | 16 |

6. Estimating Respondent Burden and Cost of Collection

The following sections present the proposed rationale and assumptions made and results of EPA’s estimation of burden and costs for the implementation of the Section 316(b) Phase II Existing Facility rule. Specific respondent activities were detailed in section 4b(ii). It is important to note that this ICR covers years 10-12 after promulgation of the rule. Therefore, all activities are related to permits renewals and not first-time permit issuance.

6a. Estimating Respondent Burden

This section describes the burden estimates for facilities and Directors, as well as the methods used and assumptions made to derive them. Respondent activities are separated into those activities associated with the NPDES permit application and those activities associated with monitoring and reporting after the permit is issued. The reason for this is that the permit cycle is every 5 years, while ICRs must be renewed every 3 years. Therefore, the application activities occur only once per facility during an ICR period, and so they are considered one-time burden for the purpose of this ICR. By contrast, the monitoring and reporting activities that occur after

issuance of the permit occur on an annual and bi-annual basis respectively. For estimates of re-permitting burdens, see Exhibits A.1 and A.3 in Appendix A.

Facility Burdens

Information collection would require in-scope facilities to devote time (i.e., as measured by staff hours) and resources (e.g., copies of documents and report mailings) to produce the necessary NPDES permit applications, implementation plans, and bi-annual status reports. EPA expects that facility employees, including managers, engineers, engineering technicians, statisticians, biologists, biological technicians, draftsmen, and clerical staff, will devote time toward gathering, preparing, and submitting the various documents. To develop representative profiles of each employee's relative contribution, EPA assumed burden estimates that reflect the staffing and expertise typically found in manufacturing facilities and power generating plants. In doing this, EPA considered the time and qualifications necessary to complete a variety of tasks: reviewing instructions, planning responses, researching data sources, gathering and analyzing data, typing or writing the information requested, reviewing results, conferring with permitting authorities and expert consultants, and sending documents.

EPA anticipates that facilities will use contracted services to perform many of their required sampling and analyzing tasks. The contracted staff are likely to include project managers, biologists, statisticians, and biological technicians. The work done by these contracted employees will be done on-site on a regular basis. Therefore, the hourly burdens associated with the work are included in the overall burden estimates for each facility.

For each activity burden assumption, EPA selected time estimates to reflect the expected effort necessary to carry out these activities under normal conditions and reasonable labor efficiency rates. EPA assumed that the majority of the actual work performed by facility staff, such as researching, collecting, and analyzing data, as well as writing the documents, will be carried out by junior technical staff. Burdens associated with managerial and senior engineering staff include time for actions such as occasional or seasonal visits to supervise sampling efforts, as well as periodic review of lab results and documentation. EPA assumed that the facilities will employ a drafter to perform computer aided drafting (CAD) operations. For contracted employees, EPA assumed that the majority of the work would be carried out by the biologists and the biological technicians.

Table 3 provides a summary of the hourly burden estimates for facilities performing NPDES permit renewal. Table 4 provides the annual monitoring, and bi-annual reporting activities associated with the 316(b) Phase II Existing Facility rule. For a more detailed presentation of hourly burdens for facilities, see Exhibits A.1 and A.2 in Appendix A.

The activities listed in the first column of both Tables 3 and 4 correspond to the facility respondent activities outlined earlier in Section 4b(ii). All facilities will be subject to the start-up and permit application activities listed in Table 3. For the other listed activities, only a subset of facilities are expected to perform them. The set of activities that each facility is estimated to perform is based on the rule requirements to which the facility is subject and the type of waterbody from which it draws. For a detailed presentation of the number of facilities performing each activity, see Exhibits A.5 and A.6 in Appendix A.

Start-Up Activities

In Table 3, the start-up burdens account for reading the published regulations, sample permits, and any guidance materials associated with the rule; determining the required staff and resources necessary to successfully complete the application process and meet all annual monitoring and reporting requirements; and training staff to perform tasks that they would not be required to conduct if the rule were not implemented. It is assumed for the analysis that facilities will receive their reissued permits at the beginning of the year. Thus, during the first year (2010), facilities will perform permit application activities for their permits that are reissued at the beginning of the second year (2011). It is also assumed that facilities required to conduct Impingement Mortality and Entrainment Characterization Studies will need to begin collecting monitoring data 2 to 3 years before permit renewal. Furthermore, all facilities will begin the other permit application activities in the year just before receiving their reissued permits. These start-up activities, applicable to all facilities, are assumed to be performed by facility management and junior technical staff.

Table 3. Average per Facility Burden for each NPDES Permit Application Activity

| Activities | Burden (hrs) |
|--|---------------------|
| Start-up activities | 13 |
| Permit application activities | 147 |
| Proposal for collection of information for CDS | 78 |
| Source waterbody flow information | 31 |
| Design and construction technology plan | 68 |
| Freshwater impingement mortality and/or entrainment characterization study | 2,919 |
| Marine impingement mortality and/or entrainment characterization study | 5,401 |
| Total* | 8,658 |

* The total does not reflect the average burden for every facility because not all facilities will need to perform every activity listed.

Table 4. Average Burden per Facility for Annual Monitoring and Reporting Activities

| Activities | Burden (hrs) |
|---|---------------------|
| Biological monitoring (impingement, freshwater) | 379 |
| Biological monitoring (impingement, marine) | 482 |
| Biological monitoring (entrainment, freshwater) | 614 |
| Biological monitoring (entrainment, marine) | 776 |
| Bi-annual status report activities | 236 |
| Verification study | 122 |
| Total* | 2,609 |

* The total does not reflect the average burden for every facility because not all facilities will need to perform every activity listed.

Permit Application Activities

Permit application activities refer to the development and submittal of the required elements of the application for reissuance of the NPDES permit.

As part of the permit application process, all Phase II existing facilities will gather source water physical data, CWIS data, and cooling water system data. EPA anticipates that much of the data required to characterize the waterbody and the CWIS has already been gathered by the facility, and that much of the actual facility burden is from deriving the requested information from this data.

To derive the source water physical data, EPA assumes that junior technical staff will work with a CAD operator to develop a description of the physical configuration of the source waterbody where the CWIS is located, including areal dimensions, depths, salinity and temperature regimes. The CAD operator will produce scaled drawings showing the physical configuration of the source waterbody and prepare locational maps of the waterbody. The junior technical staff will use this information and available data to produce a report characterizing and documenting the hydrological and geomorphological features of the source waterbody. Depending on the extent of existing information it might be necessary for some facilities to conduct physical studies to determine the intake's area of influence within the waterbody.

CWIS data will be used to develop a report on the operation of the intake structure. EPA assumes that a CAD operator will assist junior technical staff in preparing a narrative description of the configuration of the CWIS and its location within the waterbody and in the water column, including measurements of the latitude and longitude of the CWIS. In addition, junior technical staff will develop a narrative that describes the operation of the CWIS, including design flows, daily hours of operation, number of days of the year in operation, and seasonal changes, if applicable. Management will review and revise this data.

Junior technical staff will also develop a narrative characterizing the facility's cooling water system, which includes a flow distribution and water balance diagram for the facility depicting all sources of water to the facility, recirculating flows, and discharges. Management will review and revise this characterization. EPA also anticipates that the junior technical staff will perform engineering calculations for the source waterbody and CWIS documents. Management will review and revise these calculations.

In addition, Phase II existing facilities need to comply with CDS requirements depending on the compliance alternative selected. Facilities that already have a closed-cycle recirculating system are not required to submit a CDS and facilities that already have a design intake flow of 0.5 ft/s or less are also exempted from impingement requirements. However, facilities choosing to install new technologies rather than reducing flows to levels commensurate with closed-cycle recirculating systems are required to gather and submit additional information in the form of a CDS to confirm that the technology(ies) and operational measures proposed and/or implemented at the intake meet the applicable performance standards. For additional details, see Section 4b(ii).

The CDS characterizes impingement mortality and/or entrainment, the operation of the CWIS, and confirms that the technologies and/or operational measures the facility has selected and/or implemented at the CWIS meet the applicable requirements. The CDS entails a proposal for information collection, source waterbody flow information, an Impingement Mortality and/or

Entrainment Characterization Study, technology and compliance assessment information, information to support site-specific determination of BTA for minimizing adverse environmental impact, and a verification monitoring plan. The facility hourly burdens for demonstrating compliance with these requirements include developing and submitting narrative descriptions, supporting documentation, and engineering calculations.

Comprehensive Demonstration Study (CDS) Requirements

Proposal for Information Collection

As a first step in the CDS, the facility must develop and submit a proposal for the collection of information to support the CDS. EPA assumes that junior technical staff will develop a list and description of any historical studies characterizing impingement and entrainment and/or the physical and biological conditions in the vicinity of the intakes and their relevancy to the CDS. The facility management will review the collected information to determine the extent to which existing data are representative of current conditions, are sufficient to develop a scientifically valid estimate of impingement and entrainment, and were collected using appropriate quality assurance/quality control procedures. Junior technical staff are assumed to develop a description of the proposed and/or implemented technologies and operational measures to be evaluated in the CDS. Facility management will review and revise this description.

Although some facilities are likely to have sufficient available information to forego an extensive monitoring study, EPA assumes that all facilities performing a CDS will perform an Impingement Mortality and/or Entrainment Characterization Study involving between two and three years of monitoring. Therefore, these facilities will need to develop and submit a source water sampling plan that documents all methods and quality assurance procedures for sampling and data analysis, as well as describes the study area (including the area of influence of the CWIS and at least 100 meters beyond). EPA assumes that the junior technical staff will review source water and CWIS data. They will use this information to write a draft of the source water sampling plan. A CAD operator will assist the junior technical staff in this effort. The facility manager will supervise this effort, review the draft, and consult with the manager of the contracted firm that will perform the monitoring. The contracted manager will review the draft and provide feedback.

Source Waterbody Flow Information

As part of the CDS, facilities with intakes located on freshwater rivers/streams must submit source waterbody flow information. This information is used to determine the impact of the CWIS on the natural flow of the source water and is an important factor in determining the appropriate technologies. Similarly, facilities with intakes on freshwater lakes or reservoirs need to determine the extent to which the CWIS disrupts the thermal stratification of the waterbody. EPA anticipates that most facilities will have ready access to existing flow and thermal stratification information. However, EPA assumes that some facilities will need to take flow or thermal stratification measurements immediately around the intake. Junior technical staff are expected to gather existing information and take measurements for freshwater river and stream flows and for lakes and reservoirs. Junior technical staff will perform engineering calculations and develop a report. Facility management will review and revise this information.

Impingement Mortality and/or Entrainment Characterization Study

The required level of effort for the Impingement Mortality and/or Entrainment Characterization Study is likely to vary considerably depending on the availability of existing data and the complexity of the habitat and waterbody in which the CWIS will be located. For the purpose of developing the ICR cost and burden estimates, it is assumed that each existing facility that is required to perform a CDS will also perform the Impingement Mortality and/or Entrainment Characterization Study. EPA assumes that the sampling required for the Impingement Mortality and/or Entrainment Characterization Study will take 2 years for facilities drawing from freshwater bodies and 3 years for those facilities drawing from marine waters. Therefore, the entire application process can take up to 3 years to complete. The Impingement Mortality and/or Entrainment Characterization Study activities will be performed in years before the reissuance of the NPDES permit.

To accurately characterize the effects of impingement and entrainment on the aquatic communities found in the source water, offshore monitoring must occur at the same time that monitoring for impingement and entrainment is occurring. As a result, EPA assumes that monitoring is performed simultaneously at the facility for impingement and entrainment, and offshore at the edge of the determined zone of influence. Because impingement more often impacts adult organisms, while entrainment affects juvenile organisms, offshore samples must include eggs, juvenile, and adult organisms. Therefore, EPA assumes that three types of sampling will occur, as presented in Table 5.

Table 5. Impingement Mortality and/or Entrainment Characterization Study Sample Types

| Sample Type | Location of Sample |
|--------------------|--------------------------------------|
| Impingement sample | At the intake structure |
| Entrainment sample | Behind the intake screens |
| Offshore sample | At the edge of the zone of influence |

To accurately characterize seasonal and annual fluctuations in aquatic communities impacted by the CWIS, EPA assumes sampling is performed at the facility on a biweekly basis over 2 years for freshwater facilities and 3 years for marine facilities. EPA believes that a sizable majority of the monitoring work will be carried out by the biologists and biological technicians. Over the course of the study, other employees will also spend time contributing to the use of the monitoring data.

Technology and Compliance Assessment Information

EPA assumes that the portion of the Design and Construction Technology Plan (and Technology Installation and Operation Plan, if applicable) associated with evaluation of potential CWIS effects will be conducted during the year before the issuance of the NPDES permit to allow the facility time to incorporate information from the Impingement Mortality and/or Entrainment Characterization Study already underway.

Design and Construction Technology Plan

If the facility chooses to use design and construction technologies or operational measures in whole or in part to meet the requirements of § 125.94, the facility must also submit a Design and

Construction Technology Plan as part of the CDS. EPA assumes that a CAD operator will delineate the hydraulic zone of influence, that junior technical staff will assist the CAD operator, and management will review this work. Junior technical staff will perform engineering calculations to determine anticipated impingement rates—and develop narrative descriptions of the design and operation of all design and construction technologies or operational measures (existing and proposed)—used to meet the requirements to reduce impingement mortality. Management will review the calculations and write-up. Those facilities that need to address entrainment will spend approximately the same amount of time performing engineering calculations and developing a narrative description. Finally, junior technical staff will document that these chosen technologies reflect BTA at the facility's site.

As part of the Design and Construction Technology Plan, facilities must include a site-specific evaluation of the technology(ies) and/or operational measures. This site-specific evaluation can be based on representative studies (i.e., studies that have been conducted at CWISs located in the same waterbody type with similar biological characteristics) and/or site-specific technology prototype studies. EPA assumes that for the site-specific technology prototype studies, the facilities will conduct an on-site pilot study for the technology or operational measure. Pilot studies were all completed in the first issuance of the permit and therefore the costs are not recalculated for the renewal phase of the regulation.

Information to Support Site-Specific Determination of BTA for Minimizing Adverse Environmental Impact

Facilities may choose to request a site-specific determination of BTA in lieu of meeting the performance standards of § 125.94(a). If a facility requests a site-specific evaluation of BTA, it will first need to demonstrate to the Director that it meets one of two cost criteria. The first of the criteria requires the facility to demonstrate that its cost of compliance with the applicable performance standards specified would be significantly greater than the costs considered by the Administrator. The second of the criteria requires a facility to demonstrate that its costs would be significantly greater than the benefits of complying with the performance standards at the facility's site.

For the purpose of developing the ICR cost and burden estimates, EPA assumed that all respondents requesting a site-specific determination of BTA would claim that costs outweighed benefits, and therefore would perform the activities associated with the valuation of monetized benefits of reducing impingement and entrainment in addition to performing the activities associated with the comprehensive cost evaluation study and the site-specific technology plan. Performing the site-specific determination is voluntary, so EPA has not included evaluation of the proposed site-specific measures in developing the ICR cost and burden estimates for facilities. However, for the original ICR developed for the rule, EPA recognized that respondents choosing to perform activities related to site-specific determination of BTA would incur additional ICR costs. It was estimated that facilities implementing activities related to site-specific determination of BTA, including the preparation of comprehensive, cost-evaluation study and site-specific technology plan would incur an average burden of approximately 700 hours at a cost of \$37,000 per facility (2004 dollars). EPA estimated that the average annual burden increases by 13,754 hours and the total average annual ICR costs might increase between 1 and 1.25 million dollars (2004 dollars) if all facilities with impingement and entrainment

requirements choose to perform activities related to site-specific determination of BTA and prepare the comprehensive cost evaluation study and site-specific technology plan. Depending on the number of facilities with both impingement and entrainment requirements choosing to pursue site-specific determination of BTA, the above ICR burden and cost will be reduced accordingly. In addition, EPA believed that some of the above additional cost will be offset by reductions in technology costs for these facilities because these facilities may receive lowered performance requirements.

Though only a small percentage of the facilities are expected to perform activities related to site-specific determination of BTA, EPA estimated the Director burdens for reviewing site-specific studies for all facilities with impingement and entrainment requirements.

Verification Monitoring Plan

As part of the CDS, facilities must include a plan to conduct, at a minimum, 2 years of monitoring to verify the full-scale performance of the proposed or implemented technologies, or operational measures. EPA assumes that the junior technical staff will write a plan that describes the frequency and duration for monitoring, the locations to be monitored, the basis for determining the locations, and the information that will be included in the final report. A CAD operator will assist the junior technical staff with the drawings and diagrams contained in the plan. The facility management will oversee the writing of the plan and review/revise the various drafts of the plan before it is finalized.

In the first 2 years of operation under their reissued NPDES permits, Phase II existing facilities are required to use impingement and entrainment monitoring data to perform verification studies (as described in their verification monitoring plans) to verify the full-scale performance of the proposed or implemented technologies and/or operational measures. It is assumed that facilities begin verification monitoring when they receive their permits, monitor for 2 years, and submit the monitoring results and study analysis at the beginning of the third year.

Annual Facility Activities

The principal annual activity for most facilities will be biological monitoring. Burden estimates for annual biological monitoring are less than those for the Impingement and Entrainment Characterization Study performed by some facilities as part of the permit application process. Biological monitoring is assumed to be performed at one location on a monthly basis for impingement and on a biweekly basis for entrainment. The monitoring results are analyzed and summarized in a bi-annual status report. Those facilities that submitted a verification monitoring plan as part of their permit application will also use the first 2 years of monitoring data to produce a verification study. For a more detailed account of the annual burden for facilities, see Exhibit A.2 in Appendix A.

Director Burdens

The 316(b) Phase II Existing Facility rule will require Directors to devote time and resources to review and respond to the NPDES permit applications; proposal, study and sampling plans; and bi-annual status reports submitted to them.

Director Permit Issuance Activities

EPA expects that State senior technical, junior technical, and clerical staff will devote time toward gathering, preparing, and submitting the various documents. EPA assumed burden estimates that reflect the staffing and expertise used by States for the NPDES permit administration process. In doing this, EPA considered the time and qualifications necessary to complete various tasks such as reviewing submitted documents and supporting materials, verifying data sources, planning responses, determining specific permit requirements, writing the actual permit, conferring with facilities and the interested public, and entering the permit information into the ICIS database. Table 6 provides a summary of the hourly burden estimates for state Directors performing various activities associated with the 316(b) Phase II Existing Facility rule. For a more detailed presentation of State Director hourly burdens, see Exhibit A.3 (state) in Appendix A.

Table 6. Average State Director Burden for Activities

| Activities | Burden (hrs) Renewal Period |
|--|--|
| Director permit issuance activities (per facility) | 246 |
| Verification study review (per Facility)* | 21 |
| Annual director activities (per facility) | 41 |
| Total** | 308 |

* Facilities must monitor for at least 2 years before submitting their verification study for review.

** The total does not reflect the average director burden for each facility because not all facilities will need to perform every activity listed.

Cooling Water Intake Structure Requirements

The Director must review the Design and Construction Technology Plan to evaluate the suitability and feasibility of the technology or operational measures proposed to meet the requirements of § 125.94. For all facilities performing the CDS, the Director must review and approve the proposed Verification Monitoring Plan and require that the monitoring continue for a sufficient period of time to demonstrate that the design and construction technology and/or operational measures meet the requirements of § 125.94 (b). For a facility that requests requirements on the basis of site-specific BTA for minimizing adverse environmental impact, the Director must review the application materials submitted and any other information, including quantitative and qualitative benefits that would be relevant to a determination of whether alternative requirements are appropriate for the facility. In determining the Director burden for review of site-specific determination, it is assumed that all facilities with both impingement and entrainment requirements will choose to pursue the site-specific alternative. In developing performance requirements for impingement mortality and entrainment for inclusion in a permit, the Director must review information on proposed methods submitted by the facility, evaluate those proposed by the facility and other available methods, and specify how compliance with the requirements must be determined including the averaging period for determining the percent reduction required by the performance standards.

EPA assumes that the Directors will spend a significant amount of time reviewing the impingement mortality and entrainment characterization studies and the design and construction technology plans and Technology Installation and Operation Plans. A significant amount of review time is also expected for those facilities that choose to request site-specific

determinations of BTA to review the required supporting studies. The additional effort devoted to reviewing the impingement mortality and entrainment characterization studies is because the studies cover multiple years' worth of data collected at the site. The additional effort devoted to reviewing the information to support site-specific determination of BTA is because of the complexity of the required comprehensive cost evaluation study or valuation of monetized benefits for reducing impingement and entrainment.

Monitoring Conditions

In determining the applicable monitoring requirements, the Director must consider the facility's verification monitoring plan and modify the monitoring program on the basis of changes to the physical or biological conditions in the vicinity of the CWIS. The requirement for modifying the monitoring program may be made during the term of the permit or when the permit is reissued. EPA assumes that junior technical staff will review the facility's verification monitoring plan and make recommendations for modifying the monitoring program. Senior technical staff will review and implement the recommendations.

Record Keeping and Reporting

EPA assumes that clerical and junior technical staff will review the monitoring data and status report from the facilities regarding record keeping. Senior technical personnel will oversee their work.

Design and Construction Technology Approval

For facilities choosing to demonstrate that they have installed and properly operate and maintain a design and construction technology approved in accordance with § 125.99, the Director must review the information submitted to determine if they meet the criteria in § 125.99. EPA assumes that junior technical staff will review the documentation submitted by the facility for compliance as required in § 125.99. Senior technical staff will provide technical oversight for this work. Moreover, if a person requests approval of a technology under § 125.99(b), the Director must review the information submitted and determine its suitability for widespread use at facilities with similar site conditions in its jurisdiction with minimal study. The Director must evaluate the adequacy of the technology when installed in accordance with the required design criteria and site conditions to consistently meet the performance requirements in § 125.94. The Director must approve a technology only following public notice and consideration of comment regarding such approval. EPA assumes that senior technical staff will review the information submitted and evaluate the adequacy of the proposed technology. Junior technical staff will work under the technical direction of senior personnel in this regard and provide assistance in reviewing and compiling the public comments received.

Annual Director Activities

Facilities required to perform annual biological monitoring for impingement and entrainment are required to submit an bi-annual report that details inspection and maintenance records for impingement and technology controls and a detailed analysis of monitoring results. EPA assumes that directors will use these reports to track facility compliance and to determine if a reduction in monitoring frequency is appropriate.

6b. Estimating Respondent Costs

This section describes cost estimates for facilities and Directors, as well as the methods used to derive them. Because of the 5-year permit cycle, facilities and Directors will incur initial permitting costs, re-permitting costs, as well as annual costs.

6b(i). Estimating Labor Costs

The costs to the respondent facilities associated with the ICR activities can be estimated by multiplying the time spent in each labor category by an appropriately loaded hourly wage rate. All base wage rates used for facility labor categories were derived from the Bureau of Labor Statistics (BLS) *Occupational Outlook Handbook 2012–2013*. These reported labor rates were based on data from the year 2010 and are adjusted for inflation. Inflation factor was derived from the BLS Employment Cost Index and was used to adjust the *Occupational Outlook Handbook* labor rates to reflect labor rates for March of 2013.

A compensatory loading factor of 49 percent was used to account for any paid leave, supplemental pay, insurance, retirement and savings, and required and nonrequired benefits received by employees (*Employer Costs for Employee Compensation, Table 6. Employer costs per hour worked for employee compensation and costs as a percent of total compensation: Private industry workers, by major industry group, December 2012*). EPA assumed an additional loading factor of 15 percent to account for general overhead costs directly attributable to facility employees performing work in support of the permit process. Expenses for contracted employees typically include higher overhead costs, as well as a fee to ensure profit for the contracting company. EPA assumes that the overhead for the contracted employees will be 64 percent, and the fee will be 8 percent.

To represent the base labor rate for facility management, EPA used the average national salary for an engineering manager of \$119,260 per year. This figure was divided by 2,080 hours to derive the hourly managerial wage rate of approximately \$57.34 per hour. After adjusting this rate for inflation, compensation, and overhead, the rate is approximately \$99 per hour. The median annual salary of \$50,110 for a mechanical engineering technician was used to represent the base labor rate for junior technical staff. After determining the hourly wage rate and adjusting for inflation and other factors, this labor rate was approximately \$42 per hour. The median annual salary for a drafter performing CAD work was reported to be \$47,880, and, after adjusting and loading the rate, it is approximately \$40 per hour. The reported average annual salary for clerical workers was \$29,990, and the fully adjusted and loaded hourly rate is approximately \$25 per hour.

To represent the base labor rate for a contracted manager of monitoring work done on-site, EPA used the average national salary for a natural sciences manager of \$116,020 per year with a fully loaded rate of \$101 per hour. The median annual salary for a statistician was \$72,830 per year with an adjusted hourly rate of approximately \$60 per hour. Biologists and biological technicians had an average hourly pay of \$45.39 and \$30.84 and a fully loaded rate of \$48 and \$32, respectively.

Director Labor Costs

For Director costs, all the base labor rates and compensation factors were derived from published employment cost trends for State and local government workers for the third quarter of 2009 (*BLS Employment Cost Trends*, September 2009). These labor rates were adjusted to reflect labor rates for March of 2013 (*BLS Employment Cost Index*). EPA chose the BLS labor category of white-collar professional specialist to represent the senior administrative and technical staff that will oversee and manage the NPDES permit program. The base hourly rate for this category was approximately \$29 per hour, and, after adjusting for compensation and inflation, it is approximately \$64 per hour.

Similarly, EPA chose the BLS labor category of white-collar professional technical to represent the junior technical staff that EPA expects to perform the majority of the actual NPDES permitting work. The reported base pay for this category was approximately \$18 per hour, which becomes approximately \$38 per hour after being adjusted for compensation, overhead, and inflation. The hourly wage for State government clerical workers was \$13 per hour before adjustment and approximately \$30 afterward.

6b(ii). Estimating Capital and Operation and Maintenance Costs

A facility incurs capital/start-up costs when it purchases equipment or builds structures that are needed for compliance with the rule's reporting and record keeping requirements and that the facility would not use otherwise. A facility incurs operation and maintenance (O&M) costs when it uses services, materials, or supplies that are needed to comply with the rule's reporting and record keeping requirements and that the facility would not use otherwise. Any costs for the operation and upkeep of capital equipment are considered O&M costs. Another type of O&M cost is for the purchase of contracted services, such as laboratory analyses. The purchase of supplies such as filing cabinets and services such as photocopying or boat rental are also considered O&M costs and are referred to as other direct costs (ODCs). Capital and O&M costs were estimated for the original ICR (EPA ICR No. 2060.02) and were simply inflated to March 2013 dollars using CPI.

In general, the labor costs and O&M costs reported in this analysis are assumed to represent typical average national cost estimates that are likely to be incurred by Phase II existing facilities and by permitting authorities. EPA attempted to take into account various factors such as decreases in labor efficiency that occur during extreme climate conditions, equipment down time, and the occasional sample that might need to be replaced because it was lost or spoiled during transport. Tables 7, and 8 provide a summary of facility-level average labor costs, capital costs, and O&M costs over the 3-year ICR period. For a more detailed presentation of all compliance costs for facilities, see Exhibits A.1 and A.2 in Appendix A.

Table 7. Average per Facility Burden and Costs for each NPDES Permit Renewal Activity

| Activities | Burden (hrs) | Labor Cost (2013) | Capital (2013) | O&M (2013) |
|--|---------------------|--------------------------|-----------------------|-----------------------|
| Start-up activities | 13 | \$888 | \$- | \$61 |
| Permit application activities | 147 | \$8,014 | \$- | \$307 |
| Proposal for collection of information for CDS | 78 | \$4,444 | \$- | \$245 |

| Activities | Burden (hrs) | Labor Cost (2013) | Capital (2013) | O&M (2013) |
|--|--------------|-------------------|----------------|------------|
| Source waterbody flow information | 31 | \$1,364 | \$- | \$123 |
| Design and construction technology plan | 68 | \$3,299 | \$- | \$184 |
| Freshwater impingement mortality and/or entrainment characterization study | 2,919 | \$127,297 | \$- | \$38,282 |
| Marine impingement mortality and/or entrainment characterization study | 5,401 | \$229,511 | \$- | \$74,651 |
| Total* | 8,658 | \$374,817 | \$- | \$113,853 |

* The totals do not reflect the average costs for every facility because not all facilities will need to perform every activity listed.

Table 8. Average Burden and Costs* per Facility for Annual Monitoring and Reporting Activities

| Activities | Burden (hrs) | Labor Cost (2013\$) | O&M (2013\$) |
|---|--------------|---------------------|--------------|
| Biological monitoring (impingement, freshwater) | 379 | \$17,603 | \$614 |
| Biological monitoring (impingement, marine) | 482 | \$22,226 | \$798 |
| Biological monitoring (entrainment, freshwater) | 614 | \$28,773 | \$1,227 |
| Biological monitoring (entrainment, marine) | 776 | \$35,669 | \$1,411 |
| Bi-Annual status report activities | 236 | \$15,361 | \$920 |
| Verification study | 122 | \$7,830 | \$614 |
| Total** | 2,609 | \$127,461 | \$5,584 |

* There are no capital costs associated with the annual monitoring and reporting activities.

** The totals do not reflect the average burden and costs for every facility because not all facilities will need to perform every activity listed.

Director O&M Costs

EPA does not anticipate any O&M costs other than ODCs for state Directors as a result of the 316(b) Phase II Existing Facility rule. Table 9 provides estimates of average state Director labor costs and ODCs. For a more detailed explanation of State Director costs, see Exhibit A.3 (state) in Appendix A.

Table 9. Average State Director Burden and Costs* for Activities

| Activities | Burden (hrs) | Labor Cost (2013\$) | O&M (2013\$) |
|--|--------------|---------------------|--------------|
| Director Permit Issuance Activities (per Facility, renewal period) | 246 | \$14,018 | \$368 |
| Verification study review (per facility)** | 21 | \$946 | \$12 |
| Annual director activities (per facility) | 41 | \$2,282 | \$2,313 |
| Total*** | 308 | \$17,246 | \$2,693 |

* There are no capital costs associated with the annual monitoring and reporting activities.

** Facilities must monitor for at least 2 years before submitting their verification study for review.

*** The totals do not reflect the average director burden and costs for each facility because not all facilities will need to perform every activity listed.

6c. Estimating Agency Burden and Costs

As mentioned previously, 46 States and the Virgin Islands are authorized to administer the NPDES permitting program. For in-scope facilities applying for reissued permits in the 10 unauthorized States and Territories, EPA will incur costs and burdens similar to those incurred by States with permitting authority.

6d. Estimating the Respondent Universe and Total Burden and Costs

During the 3 years covered by this ICR (which correspond to years 10–12 after rule promulgation), there are an estimated 506 facilities along with 42 States that the Section 316(b) Phase II Existing Facility rule could affect. The rule would require each respondent to comply with one or more provisions. In turn, each provision has numerous activities associated with it. Exhibits A.5 and A.6 in Appendix A provide an estimate of the number of respondents and responses expected for each provision of the rule during each year of the ICR approval period. The annual estimates are based on the compliance schedule used to estimate the cost of the final rule. In addition, Exhibits A.7 to A.10 provide a summary of the respondent burdens and costs for each year of the ICR period. These estimates were calculated by multiplying facility and state Director level burden and cost estimates in Exhibits A.1-A.3 by the number of respondents performing each activity in Exhibit A.5 (see Appendix A).

6e. Bottom Line Burden Hours and Costs Tables

This section provides a description of bottom line data collection and record keeping burden and cost estimates for implementation of the 316(b) Phase II Existing Facility rule.

6e(i). Respondent Tally

The bottom line burden hours and costs for facilities and Directors are the total annual hours and costs collectively incurred for all activities during the ICR period. Table 10 provides a summary of the average annual number of respondents, burden hours, and costs. A more detailed summary can be found in Exhibit A.11 in Appendix A.

Table 10. Summary of Average Annual Respondents, Burden, and Costs for Facilities and State Directors for the ICR Period

| | Average Annual Respondents | Average Annual Burden (hours) | Average Annual Labor Costs (2013\$) | Average Annual Capital and O&M Costs (2013\$) | Total Annual Costs (2009\$) |
|-----------------|----------------------------|-------------------------------|-------------------------------------|---|-----------------------------|
| Facilities | 472 | 965,509 | \$46,390,841 | \$10,535,205 | \$56,926,045 |
| State Directors | 42 | 44,513 | \$2,499,485 | \$52,869 | \$2,552,354 |
| Totals | 514 | 1,010,021 | \$48,890,325 | \$10,588,074 | \$59,478,399 |

6e(ii). Agency Tally

The bottom line burden hours and costs for the Federal agency are the total annual hours and costs collectively incurred for all activities during the ICR period. Table 11 provides a summary of the average annual agency burden hours and costs. A more detailed summary can be found in Exhibit A.11 in Appendix A.

Table 11. Summary of Average Annual Agency Burden and Costs for the ICR Period

| | Average Annual Burden (hours) | Average Annual Labor Costs (2013\$) | Average Annual Capital and O&M Costs (2013\$) | Total Annual Costs (2013\$) |
|---------------|-------------------------------|-------------------------------------|---|-----------------------------|
| Agency Totals | 1,829 | \$103,611 | \$1,609 | \$105,220 |

Table 12. Burden Comparison: 2010 vs. 2013 ICR for 316(b) Phase II Existing Facilities

| Facility Activities | 2013 Annual Average | 2010 Annual Average | % Burden Change | Reason for Change |
|--|---------------------------|---------------------------|-----------------------|-------------------------|
| NPDES Permit Application Activities | | | | |
| Start-up Activities | 1,421 | 1,421 | 0% | |
| Permit Application Activities | 15,680 | 16,219 | -3% | adjustment |
| Proposal for Collection of Information for Comprehensive Demonstration Study | 6,272 | 6,455 | -3% | adjustment |
| FW River/Stream Source Water Body Flow Information | 1,110 | 1,300 | -15% | adjustment |
| FW Lake/Reservoir Source Water Body Flow Information | 616 | 571 | 8% | adjustment |
| Design and Construction Technology Plan (Impingement Only) | 2,740 | 2,920 | -6% | adjustment |
| Design and Construction Technology Plan (Impingement & Entrainment) | 2,533 | 2,773 | -9% | adjustment |
| Freshwater Monitoring for Impingement Mortality & Entrainment Characterization Study | 121,765 | 131,166 | -7% | adjustment |
| Marine Monitoring for Impingement Mortality & Entrainment Characterization Study | 170,544 | 170,544 | 0% | adjustment |
| Impingement Mortality & Entrainment Characterization Study Initial Analysis | 9,040 | 9,304 | -3% | adjustment |
| Impingement Mortality & Entrainment Characterization Study Final Report | 9,280 | 10,000 | -7% | adjustment |
| Pilot Study Impingement Monitoring Only (Freshwater) for Pilot Study | 0 | 0 | 0% | |
| Pilot Study Impingement & Entrainment Monitoring (Freshwater) for Pilot Study | 0 | 0 | 0% | |
| Pilot Study Impingement Monitoring Only (Marine) for Pilot Study | 0 | 0 | 0% | |
| Pilot Study Impingement & Entrainment Monitoring (Marine) for Pilot Study | 0 | 0 | 0% | |
| Verification Monitoring Plan | 0 | 0 | 0% | |
| NPDES Permit Application Activity Total | 341,002 | 352,674 | -3% | adjustment |
| Annual Activities | | | | |
| Biological Monitoring for Impingement (Freshwater) | 109,910 | 109,910 | 0% | |
| Biological Monitoring for Impingement (Marine) | 79,464 | 79,464 | 0% | |
| Biological Monitoring for Entrainment (Freshwater) | 178,060 | 178,060 | 0% | |
| Biological Monitoring for Entrainment (Marine) | 128,040 | 128,040 | 0% | |
| Bi-Annual Status Report Activities | 107,380 | 107,380 | 0% | |
| Verification Study | 21,653 | 21,765 | -1% | adjustment |
| Annual Activity Yearly Labor Total | 624,507 | 624,619 | 0% | |
| Facility Yearly Labor Total | 965,509 | 977,293 | -1% | adjustment |
| State Director Activities | | | | |
| Director Start-up Activities | 0 | 0 | - | |
| Director Permit Issuance Activities | 24,583 | 26,319 | -7% | adjustment |
| Verification Study Review | 1,890 | 1,869 | 1% | adjustment |
| Alternative Regulatory Requirements | 0 | 0 | - | |
| Annual Director Activities | 18,040 | 18,040 | 0% | |
| Yearly Total | 44,513 | 46,228 | -4% | adjustment |
| Respondents Total | 1,010,021 | 1,023,521 | -1% | adjustment |

6f. Reasons for Change in Burden

The current approved ICR for the 316(b) phase II existing facilities was developed in 2010. As shown in Table 12, the 2010 ICR estimated an annual average respondent burden of 1,023,521 hours. This ICR estimates an annual average respondent burden of 1,010,021 hours, which represents a 1% decrease in burden. This marginal change is due to the variations of the compliance schedule from year to year.

6g. Burden Statement

The annual average reporting and record keeping burden for the collection of information by facilities responding to the Section 316(b) Phase II Existing Facility rule is estimated to be 2,046 hours per respondent (i.e., an annual average of 965,509 hours of burden divided among an anticipated annual average of 472 facilities). The state Director reporting and record keeping burden for the review, oversight, and administration of the rule is estimated to average 1,060 hours per respondent (i.e., an annual average of 44,513 hours of burden divided among an anticipated 42 States on average per year).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and use technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for EPA's regulations are listed at 40 CFR Part 9 and 48 CFR Chapter 15.

To comment on EPA's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, the Agency has established a public docket for this ICR under Docket ID No. EPA-HQ-OW-2008-0719, which is available for public viewing at the Water Docket in the EPA Docket Center (EPA/DC), WJC West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is 202-566-1744, and the telephone number for the Water Docket is 202-566-2426. An electronic version of the public docket is available at <http://www.regulations.gov/>. Use www.regulations.gov to submit or view public comments, to access the index listing of the contents of the public docket, and to access documents in the public docket that are available electronically. Once in the system, key in the docket ID number identified above. You can also send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget at oir_submission@omb.eop.gov. Please include the EPA Docket ID No. OW-2008-0719 and OMB control number 2040-0257 in any correspondence.