

U.S. Environmental Protection Agency

Information Collection Request for

Cooling Water Intake Structures

Phase III Proposed Rule

November 24, 2004

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1. Identification of the Information Collection

1a. Title of the Information Collection

TITLE: Cooling Water Intake Structures at Phase III Facilities (Proposed Rule)

U.S. EPA ICR NUMBER: 2169.01

1b. Short Characterization/Abstract

The section 316(b) proposed regulations for Phase III facilities would require the collection of information from existing point source manufacturing facilities that employ a cooling water intake structure(s) that uses at least 25 percent of the water withdrawn for cooling purposes and whose design intake flow equals or exceeds one of the three proposed threshold values of 50 million gallons per day (MGD) for all waterbodies; 200 MGD for all waterbodies; or 100 MGD for oceans, estuaries, tidal rivers or one of the Great Lakes (certain waterbodies). The proposed rule also would require collection of information from new offshore oil and gas extraction facilities which use a cooling water intake structure(s) that uses at least 25 percent of the water it withdraws for cooling purposes, and have design intake flows greater than 2 MGD. 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 cooling water intake structure(s) at that facility reflect the best technology available 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 cooling water intake structures) 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 proposed rule establishes requirements applicable to the location, design, construction, and capacity of cooling water intake structures at Phase III existing facilities and new offshore oil and gas extraction facilities. These requirements seek to establish the best technology available for minimizing adverse environmental impact associated with the use of cooling water intake structure(s).

Today's proposed rule would establish requirements consistent with Phase II for existing facilities and requirements under Subpart N for new offshore oil and gas extraction facilities.

EPA chose the three design intake flow thresholds to focus the proposed rule on the largest existing manufacturers. The three thresholds proposed are reasonable because they address a substantial percentage of the cooling water flow withdrawn by existing manufacturers. EPA believes the regulation of existing manufacturers with flows equal to or exceeding the three threshold design intake flows in Phase III will address those existing facilities with the greatest potential to cause or contribute to adverse environmental impact. For new offshore oil and gas extraction facilities, EPA chose to apply requirements under § 125.133 of the proposed rule (consistent with Phase I under § 125.83) to address a substantial percentage of the cooling water flow withdrawn by these new facilities.

As in the Phase II final rule, in today's proposed Phase III rule, an existing facility would be required to choose one of the following five compliance alternatives for establishing best technology available 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. In addition, the facility is not subject to the requirements in § 125.104, § 125.105, § 125.106 or § 125.107. However, the facility may still be subject to any more stringent requirements established under § 125.103(e); or
- ii. Demonstrate that it has reduced, or will reduce, its maximum through-screen design intake velocity to 0.5 feet per second or less. In this case, the facility will not be required to demonstrate further that it meets the performance standards for impingement mortality and is not subject to the impingement requirements in § 125.104, § 125.105, § 125.106 or § 125.107. However, the facility may still be subject to any applicable requirements for entrainment mortality and may still be subject to any more stringent requirements established under § 125.103(e);
2. Demonstrate that its existing design and construction technologies, operational measures, and/or restoration measures meet the performance standards specified in § 125.103(b) and/or the restoration requirements in § 125.103(c);
3. Demonstrate that the facility has selected design and construction technologies, operational measures, and/or restoration measures that will, in combination with any existing design and construction technologies, operational measures, and/or restoration measures, meet the performance standards specified in § 125.103(b) and/or the restoration requirements in § 125.103(c);
4. Demonstrate that the facility has installed, or will install, and properly operate and maintain an approved design and construction technology in accordance with § 125.108(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, operational measures, and/or restoration measures determined to be the best technology available for the facility in accordance with § 125.103(a)(5)(i) and (ii).

For compliance alternative 5, the facility would be required to meet one of two cost tests: 1) demonstrate that costs of compliance under alternatives 1-4 would be significantly greater than costs considered by the Administrator for a similar facility, or 2) demonstrate that costs of compliance under alternatives 1-4 would be significantly greater than the benefits of complying with the applicable performance standards at the facility.

The section 316(b) Phase III proposed rule would require several distinct types of information collection as part of the NPDES application. In general, the information will be used to identify which of the performance requirements in the rule apply to the facility, how the facility plans to meet these requirements, and to assess compliance with the performance requirements. Specific data requirements that would apply to all facilities are:

- Source water physical data which 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.
- Cooling water intake structure data which shows the configuration and location of cooling water intakes structures, provides details on the design operation of each cooling water intake structure, and diagrams flow distribution and water balance.

Specific data requirements that would apply only to existing manufacturers and not be required by new offshore oil and gas extraction facilities are:

- Cooling water system data that characterizes the operation of the cooling water system and its relationship to the cooling water intake structure.
- Comprehensive Demonstration Study (New offshore oil and gas extraction facilities with Track II applications will perform and submit a Comprehensive Demonstration Study)

Most Phase III existing facilities (except those facilities meeting the requirements of compliance alternative (1)(i), would conduct a Comprehensive Demonstration Study (Study) 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 technology(ies), operational measures and restoration measures proposed and/or implemented at the cooling water intake structure meet the applicable national performance standards specified in § 125.103. The proposed rule would require that Phase III existing facilities submit the information required for the Study consistent with

the compliance alternative selected. Facilities that meet the requirements in § 125.103(a)(1)(ii) by reducing their design intake velocity to 0.5 feet per second or less would be required to only submit a Study for the entrainment requirements, if applicable. Facilities that meet the requirements in § 125.103(a)(4) and have installed and properly operate and maintain an approved design and construction technology (in accordance with § 125.108) would be required to submit only the Technology Installation and Operation Plan and the Verification Monitoring Plan. Facilities that would be required to meet only impingement mortality reduction requirements in § 125.103(b)(1) would be required to submit only a Study for the impingement mortality reduction requirements. The Study would include the following data requirements.

- Proposal for information collection that describes the proposed and/or implemented technology(ies), operational measures, and/or restoration 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 exceeds proportional flow thresholds (i.e., whether the facility withdraws more than a certain proportion of source waterbody flow), including 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.
- Impingement Mortality and/or Entrainment Characterization Study that provides information to support the development of a calculation baseline for evaluating impingement mortality and entrainment and to characterize current impingement mortality and entrainment.
- Technology and compliance assessment information that explains the technologies and operational measures that are in place or have been selected to reduce impingement mortality and 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 cooling water intake structure have been selected to reflect best technology available at the site. This information includes a Design and Construction Technology Plan and possibly a Technology Installation and Operation Plan.
- Restoration Plan (if the facility proposes to use restoration measures) that describes the restoration measures that are proposed to be implemented; quantifies the combined benefits from implementing design and construction technologies, operational measures and/or restoration measures; presents a plan for implementing and maintaining the efficacy of the restoration measures; and summaries of consultations with appropriate fish and wildlife management agencies; design and

engineering calculations, drawings and maps; and a final report from an independent peer review of materials submitted.

- Verification Monitoring Plan that describes the monitoring that will be used to verify the full-scale performance of the proposed or implemented technologies, operational measures, and/or restoration measures.

Additional data requirements would apply to facilities that choose to request a site-specific determination of best technology available for minimizing adverse environmental impact. Specific data requirements that would apply to these facilities include:

- Comprehensive cost evaluation study that documents the cost of implementing the Design and Construction Technology Plan and the costs of the alternative technologies and operational measures that the facility proposes to implement at the site.
- Benefits valuation study of reducing impingement and entrainment that uses 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.
- A narrative description of any non-monetized benefits that would be realized at the facility if it was 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, operational measures and restoration measures (existing and proposed) that the facility has selected; demonstrates the efficacy of the technologies; and demonstrates that the technologies, operational measures or restoration measures selected would reduce impingement mortality and entrainment to the extent necessary to satisfy the requirements of § 125.103; and includes design calculations, drawings, and estimates to support the plan.

Under today's proposed rule, new offshore oil and gas extraction facilities would be required to submit the Track I or Track II application requirements consistent with § 122.21(r)(2), (3), and (4) and § 125.136(b) or § 125.136(c), respectively, of the proposed rule. This includes source water baseline biological characterization data, velocity information, source waterbody flow information, and a Design and Construction Technology Plan for Track I applications and Comprehensive Demonstration Study and source waterbody flow information for Track II applications.

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 would be conducted in accordance with the Verification

Monitoring Plan required by § 125.104(b)(7), the Technology Installation and Operation Plan required by § 125.104(b)(4)(ii), if applicable, the Restoration Plan required by § 125.104(b)(5), and any additional monitoring specified by the Director to demonstrate compliance with the applicable requirements of § 125.103. The results of each facility's monitoring efforts would be reported biennially to the Director in a status report.

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

Under today's proposed rule, an authorized State would update programs to be consistent with the final cooling water intake requirements or may demonstrate to the Director that it has adopted alternative regulatory requirements in its NPDES program that will result in environmental performance within a watershed that is comparable to the reductions of impingement mortality and entrainment that would otherwise be achieved under § 125.103. Following review, the Director would approve alternative regulatory requirements. State Directors are required to also review all materials submitted to them by the facilities within the scope of the proposed regulation, confirm compliance with the rule, and issue NPDES permits with appropriate conditions to minimize adverse environmental impact associated with the use of the facilities' cooling water intake structure(s).

As suggested, the primary users of the data collected under the proposed rule would be States authorized to administer the NPDES permitting program, and the EPA. It is anticipated that other government agencies, both at the State and Federal level, as well as public interest groups, private companies, and many individuals will also use the data.

Under the proposed 50 MGD for all waterbodies option for existing manufacturers, during the first three years after rule promulgation of the proposed rule, the information collection required would involve responses from an estimated total of 56 facilities and 46 States and Territories and cost approximately \$35 million (including operation and maintenance costs), with an annual average of 81 respondents, 202,486 burden hours, and \$11.7 million per year (for additional detail see Section 6 and Exhibit A.50MGD.11 in Appendix A).

Under the proposed 200 MGD for all waterbodies option for existing manufacturers, during the first three years after rule promulgation of the proposed rule, the information collection required would involve responses from an estimated total of 13 facilities and 46 States and Territories and cost approximately \$9.5 million (including operation and maintenance costs), with an annual average of 29 respondents, 48,880 burden hours, and \$3.2 million per year (for additional detail see Section 6 and Exhibit A.200MGD.11 in Appendix A).

Under the proposed 100 MGD for certain waterbodies option for existing manufacturers, during the first three years after rule promulgation of the proposed rule, the information collection required would involve responses from an estimated total of 11 facilities and 46 States and Territories and cost approximately \$13.2 million (including operation and maintenance costs), with an annual average of 33 respondents, 72,223 burden hours, and \$4.4 million per year (for additional detail see Section 6 and Exhibit A.100MGD.11 in Appendix A).

For new offshore oil and gas extraction facilities, during the first three years after rule promulgation of the proposed rule, the information collection required would involve responses from an estimated total of 31 facilities and three EPA Regions and cost approximately \$3.7 million (including operation and maintenance costs), with an annual average of 25 respondents, 13,399 burden hours, and \$1.2 million per year (see Section 6 and Exhibit B.11 in Appendix B for additional detail).

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 today's proposed rule are necessary to ensure that existing facilities and new offshore oil and gas extraction facilities would comply with the proposed rule's provisions, and thereby minimizing adverse environmental impact resulting from impingement and entrainment losses due to the withdrawal of cooling water. There is substantial evidence that existing cooling water intake structures have an adverse impact on the nearby environment. There is also evidence that current systems are not using the best technology available to minimize adverse environmental impact, and that a national regulatory approach is justified.

Evidence that Significant Environmental Impact is Occurring as a Result of Cooling Water Intake Structures

EPA estimates that Phase III facilities under the scope of the proposed rule have the potential to withdraw on average more than 28 billion gallons¹ of cooling water a day from waters of the U.S.² The withdrawal of such large quantities of cooling water in turn affects large quantities of aquatic organisms including phytoplankton (tiny, free-floating photosynthetic organisms suspended in the water column), zooplankton (small aquatic animals, including fish eggs and larvae, that consume phytoplankton and other zooplankton), fish and shellfish. Aquatic organisms drawn into cooling water intake structures are either impinged on components of the cooling water intake structure or entrained in the cooling water system itself.

Impingement takes place when organisms are trapped against intake screens by the force of the water being drawn into through the cooling water intake structure. The velocity forces of the water withdrawal by the cooling water intake structure can prevent proper gill movement, remove fish scales, and cause other physical damage. Impingement can

¹ This volume is only from existing manufacturers with a design intake flow of 50 MGD or more.

² EPA 2000. Detailed Industry Questionnaire: Phase II Cooling Water Intake Structures. U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, D.C. OMB Control No. 2040-0213.

causes the physical harm or death of affected organisms through exhaustion, starvation, asphyxiation, and descaling. Death from impingement can occur immediately or subsequently after an organism is returned to the waterbody as it succumbs to physical damage.

Entrainment occurs when organisms are drawn through the cooling water intake structure into the cooling system. Organisms that become entrained are normally relatively small aquatic organisms, including early life stages of fish and shellfish. Many of these small organisms serve as prey for larger organisms higher on the food chain which tend to be commercially and recreationally desirable species. As entrained organisms pass through a facility's cooling system they are subject to mechanical, thermal, and sometimes chemical stress. Sources of such stress include physical impacts in the pumps and condenser tubing, pressure changes caused by diversion of the cooling water into the plant or by the hydraulic effects of the condensers, sheer stress, thermal shock in the condenser and discharge tunnel, and chemical toxic effects from antifouling agents such as chlorine. Like death from impingement, death from entrainment can occur immediately or subsequently after an organism is returned to the waterbody as it succumbs to the damage from the stresses encountered as it passed through the cooling water system. It is EPA's position that the current state of the science indicates that there is little to no chance of survival for organisms which are entrained by cooling water intake structures.³

The environmental impacts attributable to impingement and entrainment at individual facilities may result in appreciable losses of early life stages of fish and shellfish, serious reductions in forage species, reductions in recreational and commercial landings, and extensive losses over relatively short intervals of time. EPA estimates that the current number of age-one equivalent fish and shellfish killed from impingement and entrainment from cooling water intake structures at the facilities potentially covered by this Phase III proposed rule is over 120 million⁴ annually.

The following are among other recent documented examples of impact occurring as a result of cooling water intake structures:

Brayton Point

Pacific Gas & Electric's Brayton Point plant (formerly owned by New England Power Company) is located in Mt. Hope Bay, in the northeastern reach of Narragansett Bay, Rhode Island. To increase electric generating capacity, Unit 4 was switched from closed-cycle to once-through cooling in 1985. The modification of Unit 4 increased cooling water intake flow by 45 percent. Studies designed to evaluate whether the cooling water intake structure was affecting fish species abundance trends found that Mt. Hope Bay

³ EPA. 2004. Chapter A7: Entrainment Survival, Case Study Analysis for the section 316(b) Phase II Existing Facilities Rule.

⁴ This total includes cooling water intakes designed to take 2 MGD or more.

experienced a progressively steady rate of decline in finfish species of recreational, commercial, and ecological importance.⁵ In contrast, species abundance trends were relatively stable in coastal areas and portions of Narragansett Bay that are not influenced by the cooling water intake structure. Further strengthening the evidence that the cooling water intake structure was contributing to the documented declines was the finding that the rate of population decline increased substantially with the full implementation of the once-through cooling mode for Unit 4.

San Onofre Nuclear Generating Station

The San Onofre Nuclear Generating Station (SONGS) is located on the coastline of the Southern California Bight, approximately 2.5 miles southeast of San Clemente, California.⁶ The marine portions of Units 2 and 3, which are once-through, open-cycle cooling systems, began commercial operation in August 1983 and April 1984, respectively.⁷ Since then, many studies evaluated the impact of the SONGS facility on the marine environment.

At SONGS, in a normal (non-El Niño) year, an estimated 57 tons of fish were killed per year when all units were in operation.⁸ Unit 1, which accounted for about 20 percent of total losses, was taken out of operation in November 2002. The fish lost include approximately 350,000 juveniles of white croaker, a popular sport fish; this number represents 33,000 adult individuals or 3.5 tons of adult fish. Within 3 kilometers of SONGS, the density of queenfish and white croaker in shallow-water samples decreased by 34 and 36 percent, respectively. Queenfish declined by 50 to 70 percent in deepwater samples.⁹ In contrast, relative abundances of bottom-dwelling adult queenfish and white croaker increased in the vicinity of SONGS.¹⁰ Increased numbers of these and other bottom-dwelling species were believed to be related to the enriching nature of SONGS discharges, which in turn support elevated numbers of prey items for bottom fish.¹¹

⁵ *Comparison of Trends in the Finfish Assemblages of Mt. Hope Bay and Narragansett Bay in Relation to Operations of the New England Power Brayton Point Station*. Mark Gibson, Rhode Island Division Fish and Wildlife, Marine Fisheries Office, June 1995 and revised August 1996.

⁶ Southern California Edison. 1988. Report on 1987 data: marine environmental analysis and interpretation, San Onofre Nuclear Generating Station.

⁷ Ibid.

⁸ Murdoch, W.W., R.C. Fay, and B.J. Mechals. 1989. Final Report of the Marine Review Committee to the California Coastal Commission. August 1989, MRC Document No. 89-02.

⁹ Kastendiek, J. and K. Parker. 1988. Interim technical report: midwater and benthic fish. Prepared for Marine Review Committee.

¹⁰ Swarbrick, S. and R.F. Ambrose. 1989. Technical report C: entrapment of juvenile and adult fish at SONGS. Prepared for Marine Review Committee.

¹¹ Kastendiek, J. and K. Parker. 1988. Interim technical report: midwater and benthic fish. Prepared for Marine Review Committee.

Additional documented examples of impacts occurring as a result of cooling water intake structures are discussed in the preamble to the proposed Phase III rule and the Technical Development Document.

Evidence That Point Sources Are Not Using Best Technology Available To Minimize Adverse Environmental Impact

The section 316(b) Phase III rule addresses cooling water intake structure(s) at existing manufacturing and new offshore oil and gas extraction facilities. In general and based on available data, most existing manufacturing facilities use conventional traveling screens as a baseline technology. These screens are designed to prevent debris from entering the cooling water system, not to minimize impingement and entrainment. The most common intake designs include front-end trash racks (usually consisting of fixed bars) to prevent large debris from entering the system. They are equipped with screen panels mounted on an endless belt that rotates through the water vertically. Most conventional screens have 3/8-inch mesh that prevents smaller debris from clogging the condenser tubes. The screen wash is typically high pressure (80 to 120 pounds per square inch (psi)). Screens are rotated and washed intermittently and fish that are impinged often die because they are trapped on the stationary screens for extended periods. The high-pressure wash also frequently kills fish or they are re-impinged on the screens. Conventional traveling screens are used by a majority of existing facilities within the scope of this rule.

Evidence that a National Regulatory Approach Is Warranted

NPDES permitting authorities have codified the requirements of section 316(b) in a variety of ways. In 1993, after evaluating State regulations and statutes relating to section 316(b), EPA determined that of the then 40 States with NPDES permitting authority, the majority did not have statutes or regulations specifically addressing cooling water intake structure(s) in any detail. Exhibit 1 below summarizes some of the State authorities EPA identified that did address cooling water intake structure(s).

States such as California and Florida have developed regulatory requirements that closely mirror the statutory language of section 316(b). Additionally, several other NPDES States have included language in their statutes or regulations referencing either section 316(b) or 40 CFR Part 125, Subpart I, which is the section of the Federal NPDES regulations for criteria applicable to new cooling water intake structures. For example, New Jersey's NPDES regulations state, "[T]he criteria applicable to cooling water intake structures shall be as set forth in 40 CFR Part 125, Subpart I when the USEPA adopts these criteria." Other States merely restate the statutory language. For example, New York's NPDES regulations require that "[t]he location, design, construction and capacity of cooling water intake structures, in connection with point source thermal discharges, shall reflect the best technology available for minimizing adverse environmental impact."

Exhibit 1. Selected NPDES State Statutory/Regulatory Provisions: Addressing the Impact from Cooling Water Intake Structures

NPDES State	Citation	Summary of Requirements
Connecticut	RCSA Section 22a, 430-4	Provides for coordination with other Federal/State agencies with jurisdiction over fish, wildlife, or public health, which may recommend conditions necessary to avoid substantial impairment of fish, shellfish, or wildlife resources
New Jersey	NJAC Section 7:14A-11.6	Criteria applicable to intake structure shall be as set forth in 40 CFR Part 125, when EPA adopts these criteria
New York	6 NYCRR Section 704.5	The location, design, construction, and capacity of intake structures in connection with point source thermal discharges shall reflect best technology available for minimizing environmental impact
Maryland	MRC Section 26.08.03	Detailed regulatory provisions addressing best technology available determinations
Illinois	35 Ill. Admin. Code 306.201 (1998)	Requirement that new intake structures on waters designated for general use shall be so designed as to minimize harm to fish and other aquatic organisms
Iowa	567 IAC 62.4(455B)	Incorporates 40 CFR part 401, with cooling water intake structure provisions designated "reserved"
California	Cal. Wat. Code Section 13142.5(b)	Requirements that new or expanded coastal power plants or other industrial installations using seawater for cooling shall use best available site, design technology, and mitigation measures feasible to minimize intake and mortality of marine life

In discussions with State and EPA regional contacts, EPA has found that there are numerous issues associated with the lack of a national regulatory approach to implementing section 316(b) requirements. None of the State programs establish national performance standards for best technology available to minimize adverse environmental impact. EPA believes that such national standards promote consistent application of best technology available to minimize adverse environmental impact. EPA particularly believes that national regulations are needed to ensure consistency in determining which facilities are subject to section 316(b) requirements, what environmental impacts would be addressed, which available technologies are best, and how to determine permit requirements that fulfill section 316(b). In addition, many implementation issues require clarification, including but not limited to what data are sufficient to support 316(b) decisions, what is the appropriate scope and focus of 316(b) studies, and what is the appropriate role of practices such as restoration. The existing case-by-case approach results in high administrative burdens being imposed on applicants and permit writers relative to the final rule. As EPA has discussed at 67 FR 17167, such burdens can be associated with the need to determine in each case whether adverse impacts are occurring, the nature and level of any such impacts, and which design and construction technologies constitute the best technology available to minimize adverse environmental impacts, including consideration of costs and benefits. Further,

these case-by-case approaches increase the likelihood that each significant cooling water intake permitting issue becomes a point of contention between the applicant and permit writer, which experience indicates slows the permitting process, makes it more resource intensive, and makes it less effective and more costly. EPA also is aware of varying practices among States. For example, in discussions with State and EPA regional contacts, EPA has found that there are differences in the manner in which States have implemented their section 316(b) authority through the years. Some States and Regions review section 316(b) requirements each time an NPDES permit is reissued. These permitting authorities may re-evaluate the potential for impact and whether operations or other conditions influencing the potential for impact have changed at the facility. Other permitting authorities were found to have made initial determinations for facilities in the 1970s but not to have revisited the determinations since.

As discussed above, EPA believes that approaches to implementing section 316(b) vary greatly. It is evident that some authorities have regulations and other program mechanisms in place to ensure continued implementation of section 316(b) and evaluation of the potential impact from cooling water intake structures, while others do not. Furthermore, section 316(b) determinations are currently made on a case-by-case basis, based on permit writers' best professional judgment. Through discussions with some State permitting officials (e.g., in California, Georgia, and New Jersey), EPA was asked to establish national standards in order to help ease the case-by-case burden on permit writers and to promote national uniformity with respect to implementation of section 316(b).

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 cooling water intake structures. 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 cooling water intake structures reflect the best technology available 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 National Pollutant Discharge Elimination System (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.

The proposed Phase III rule implements section 316(b) of the CWA as it applies to Phase III existing manufacturing facilities under § 125.101 and new offshore oil and gas extraction facilities as defined in § 125.133. The proposed rule establishes requirements, reflecting the best technology available for minimizing adverse environmental impact, applicable to the location, design, construction, and capacity of cooling water intake

structures at Phase III existing manufacturers and new offshore oil and gas extraction facilities that withdraw cooling water from waters of the U.S.

The proposed Phase III rule is being issued under the authority of sections 101, 301, 304, 306, 308, 316, 401, 402, 501, and 510 of the Clean Water Act (CWA), 33 U.S.C. 1251, 1311, 1314, 1316, 1318, 1326, 1341, 1342, 1361, and 1370. Today's proposed rule partially fulfills the obligations of the U.S. Environmental Protection Agency (EPA) under a consent decree in *Riverkeeper Inc., et al. v. Leavitt*, United States District Court, Southern District of New York, No. 93 Civ. 0314 (AGS).

The proposed rule partially fulfills EPA's obligation to comply with an Amended Consent Decree. The Amended Consent Decree was filed on November 22, 2000, in the United States District Court, Southern District of New York, in *Riverkeeper Inc., et al. v. Leavitt*, No. 93 Civ 0314 (AGS), a case brought against EPA by a coalition of individuals and environmental groups. The original Consent Decree, filed on October 10, 1995, provided that EPA was to propose regulations implementing section 316(b) by July 2, 1999, and take final action with respect to those regulations by August 13, 2001. Under subsequent interim orders and the Amended Consent Decree, EPA has divided the rulemaking into three phases and is working under new deadlines. As required by the Amended Consent Decree, on November 9, 2001, EPA took final action on a rule governing cooling water intake structures used by new facilities (Phase I). 66 FR 65255 (December 18, 2001). The Amended Consent Decree also requires that EPA issue a proposed rule by February 28, 2002, (67 FR 17121, April 9, 2002) and take final action on this rule by February 16, 2004 (Phase II).¹² On February 16, 2004 EPA took final action on a rule governing cooling water intake structures used by existing Facilities (Phase II). 69 FR 41575 (July 9, 2004). The decree requires further that EPA propose regulations governing cooling water intake structures used, at a minimum, by smaller-flow power plants and factories in four industrial sectors (pulp and paper making, petroleum and coal products manufacturing, chemical and allied manufacturing, and primary metal manufacturing) by November 1, 2004, and take final action by June 1, 2006 (Phase III).

2b. Practical Utility/Users of the Data

The proposed rule includes both information that would be submitted to permitting authorities and data that would be collected and maintained on-site by the facility. Each existing facility and as applicable, each new offshore oil and gas extraction facility,

¹² Under the Amended Consent Decree, EPA is to propose regulations in Phase II that are "applicable to, at a minimum: (i) existing utilities (*i.e.*, facilities that both generate and transmit electric power) that employ a cooling water intake structure, and whose intake flow levels exceed a minimum threshold to be determined by EPA during the Phase II rulemaking process; and (ii) existing non-utility power producers (*i.e.*, facilities that generate electric power but sell it to another entity for transmission) that employ a cooling water intake structure, and whose intake flow levels exceed a minimum threshold to be determined by EPA during the Phase II rulemaking process."

would maintain 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 cooling water intake structure performance.
- Determine appropriate design and construction technologies, operational, or restoration measures.
- Monitor the performance of design and construction technologies, or operational or restoration measures.

Permit writers would also use these data to verify that the appropriate compliance actions are selected and implemented. Under the proposed rule, EPA and State Directors would maintain records compiled from the regulated facilities. Much of the basic information obtained from the NPDES permit application is stored in EPA's Permit Compliance System (PCS) database. PCS is used to track permit limits, permit expiration dates, monitoring data, and other data, and provides EPA with a nationwide inventory of permit holders. EPA stores basic notice of intent (NOI) information submitted for coverage under an NPDES general permit in the NOI database housed at the NOI Processing Center.

EPA Headquarters uses the information contained in PCS and the NOI databases 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 annual reports to track facility monitoring, compliance violations, and enforcement activities.

Permittees would reapply for NPDES permits every five years. The re-application process is the primary mechanism for obtaining up-to-date and new information concerning on-site conditions. Although under the proposed rule, existing manufacturing facilities and as applicable, new offshore oil and gas extraction facilities, would provide data from self-monitoring activities in biannual and annual reports, respectively, to the permitting authority, these reports are a less comprehensive information gathering process than the permit application process. EPA and States would 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.

- Place appropriate special conditions in permits.

Environmental and citizen groups are expected to use the data collected under the proposed rule to independently assess impingement and entrainment rates for affected water bodies in their location. In addition, the data would be useful for the scientific community for assessing the impact of cooling water intake structure(s) 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 Information Collection Request satisfies the Office of Management and Budget's data-collection guidelines, has public support, and does not duplicate another collection.

3a. Nonduplication

Given that the Phase III proposed rule applies to existing facilities as well as to new offshore oil and gas extraction facilities, current data sources may already exist for the information required under the today's proposed 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 proposed 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

A summary of the ICR for the proposed Phase III rule will be included in the proposal with a request for comment, which has a projected publication date in the Federal Register of November 24, 2004.

3c. Consultations

EPA worked extensively with stakeholders from the industry, public interest groups, State agencies, and other Federal agencies in the development of this proposed rule. EPA included industry groups, environmental groups, and other government entities in the development, testing, refinement, and completion of the section 316(b) survey, which was used as a primary source of data for the Phase III proposed rule. As discussed in section III of today's preamble, the survey, "Information Collection Request, Detailed Industry Questionnaires: Phase II Cooling Water Intake Structures & Watershed Case Study Short Questionnaire," was initiated in 1997, and was used to collect data during 1998. EPA conducted two public meetings on section 316(b) issues. In June of 1998, EPA conducted a public meeting focused on a draft regulatory framework for assessing potential adverse environmental impact from impingement and entrainment. 63 FR 27958

(May 21, 1998). A second public meeting was held in September of 1998, and focused on technology, cost, and mitigation issues. 63 FR 40683 (July 30, 1998). In addition, in September of 1998, and April of 1999, EPA participated in technical workshops sponsored by the Electric Power Research Institute on issues relating to the definition and assessment of adverse environmental impact. EPA also participated in other industry conferences, and has met with representatives of industry and environmental groups.

In the months leading up to publication of the proposed Phase I rule, EPA conducted a series of stakeholder meetings to review the draft regulatory framework for the proposed rule and invited stakeholders to provide their recommendations. Participants included representatives of the electric power industry, as well as the petroleum refining, pulp and paper, and iron and steel industries. EPA also met with environmental groups, States, and interstate groups. After publication of the proposed Phase I rule, EPA continued to meet with stakeholders. Summaries of these meetings are in the docket. EPA also received many comments on the Phase I proposed rule (65 FR 49059, August 10, 2000) and Notice of Data Availability (NODA). (66 FR 28853, May 25, 2001). These comments informed the development of the Phase II rule and this Phase III proposed rule.

In January 2001, EPA attended technical workshops organized by the Electric Power Research Institute and the Utilities Water Act Group. These workshops focused on key issues associated with different regulatory approaches considered under the Phase I proposed rule and alternatives for addressing section 316(b) requirements.

On May 23, 2001, EPA held a day-long forum to discuss specific issues associated with the development of regulations under section 316(b) of the Clean Water Act. 66 FR 20658 (April 24, 2001). At the meeting, 17 experts from industry, public interest groups, States, and academia reviewed and discussed the Agency's preliminary data on cooling water intake structure technologies that are in place at existing facilities and the costs associated with the use of available technologies for reducing impingement and entrainment. Over 120 people attended the meeting.

On August 21, 2001, EPA participated in a technical symposium sponsored by the Electric Power Research Institute in association with the American Fisheries Society on issues relating to the definition and assessment of adverse environmental impact under section 316(b) of the Clean Water Act.

During development of the Phase I and Phase II rules, EPA coordinated with the Nuclear Regulatory Commission (NRC) to ensure that there would not be a conflict with NRC safety requirements. NRC reviewed the proposed Phase II rule and did not identify any apparent conflict with nuclear plant safety. NRC licensees would continue to be obligated to meet NRC requirements for design and reliable operation of cooling systems. NRC recommended that EPA consider adding language which states that in cases of conflict between an EPA requirement and an NRC safety requirement, the NRC safety requirement takes precedence. EPA added language to address this concern in the Phase II final rule and this proposed rule.

EPA sponsored a *Symposium on Cooling Water Intake Technologies to Protect Aquatic Organisms*, on May 6–7, 2003. This symposium brought together professionals from Federal, State, and Tribal regulatory agencies; industry; environmental organizations; engineering consulting firms; science and research organizations; academia; and others concerned with mitigating harm to the aquatic environment by cooling water intake structures. Efficacy and costs of various technologies to mitigate impacts to aquatic organisms from cooling water intake structures, as well as research and other future needs, were discussed.

EPA also conducted Phase III-specific data collection activities, including a study of entrainment at manufacturing facilities, contacting Phase III facilities to request biological studies and conducting an industry survey of offshore oil and gas extraction facilities and seafood processing vessels.

Finally, EPA formed a Small Business Advocacy Review (SBAR) panel to provide information to small entities and receive feedback during the Phase III rulemaking process. EPA hosted two outreach meetings: the Phase III Cooling Water Intake Structure Outreach Meetings for Small Entities on January 22, 2004, and March 16, 2004. The information gathered from the participating businesses during these outreach meetings and subsequent correspondence was consolidated into a final report on April 27, 2004. Results of the final report were presented to the EPA Administrator, and considered in this proposed Phase III rule.

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 cooling water intake structure(s). 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 occur, or to track long-term trends.

3e. General Guidelines

The information collection requirements of the proposed rule are in accordance with the Paperwork Reduction Act guidelines at 5 CFR 1320.5(d)(2). Requests for supplemental information for the purposes of emergency response or enforcement activities are exempt from the Paperwork Reduction Act 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 proposed 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 proposed Phase III 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

The applicability criteria of the Phase III proposed rule at § 125.101 defines an existing manufacturer as a Phase III existing facility subject to this proposed regulation if it is a point source that uses or proposes to use a cooling water intake structure, is an existing facility other than a Phase II existing facility, has at least one cooling water intake structure that uses at least 25 percent of the water it withdraws (measured on an average annual basis) for cooling purposes, and has a design intake flow equal or in excess one of the three proposed threshold values of 50 MGD for all waterbodies; 200 MGD for all waterbodies and 100 MGD for certain waterbodies. The definitions provided under § 125.133 of the proposed rule (amending the definitions at § 125.83) include new offshore oil and gas extraction facilities. Applicability criteria are found at § 125.134 for new offshore oil and gas extraction facilities. Use of a cooling water intake structure 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.

Typically, respondents under the Phase III proposed rule include existing manufacturers and new offshore oil and gas extraction facilities because they are associated with large cooling water needs. Facilities in manufacturer categories are classified under the following Standard Industrial Classification (SIC) codes: Paper and Allied Products: 2611, 2621, 2631 and 2676; Chemical and Allied Products: 28 (except 2895, 2893, 2851 and 2879); Petroleum and Coal Products: 2911 and 2999 and Primary Metals: 3312, 3313, 3315 through 3317, 3334, 3339, 3353, 3363, 3365, and 3366. Offshore oil and gas extraction facilities are classified under SIC codes 1311 and 1321. SIC Codes are provided in Exhibit 2.

Exhibit 2. Industry Categories and SIC Codes for Phase III Proposed Rule

Respondent Industry Categories	SIC Codes
Manufacturers	SIC Major Groups: 26, 28, 29 and 33
Paper and Allied Products	2611, 2621, 2631 and 2676
Chemical and Allied Products	28 (except 2895, 2893, 2851 and 2879)
Petroleum and Coal Products	2911 and 2999

Primary Metals	3312, 3313, 3315 through 3317, 3334, 3339, 3353, 3363, 3365, and 3366
Offshore and Coastal Oil and Gas Exploration	SIC Major Group 13
Offshore Oil and Gas Extraction Facilities	1311 and 1321

4b. Information Requested

The following sections provide details on data items requested and associated activities that the proposed rule would require respondents to undertake. The two principal respondent categories are facilities subject to the proposed 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).

Information requirements for Phase III existing facilities would differ depending on the compliance alternative selected by the applicant. As discussed in Section 1, five compliance alternatives would be available to an existing facility. Certain information requirements would be applicable to all existing permitted facilities to which the proposed rule applies, other information requirements apply based on the compliance alternative selected. New offshore oil and gas extraction facilities would submit information consistent with § 125.136 of the proposed rule.

Since section 316(b) standards are implemented through NPDES permits, the section 316(b) Phase III proposed rule would affect Directors in a manner similar to other changes to NPDES program requirements. There are currently 45 States and one Territory authorized under CWA section 402(b) to implement the NPDES permit program, these new cooling water intake structure requirements potentially affect authorized State NPDES programs. To be consistent with today’s proposed rule, States would revise their current regulations or may demonstrate to the Administrator that the State has adopted alternative regulatory requirements that will result in environmental performance within a watershed that is comparable to the reductions of impingement mortality and entrainment that would otherwise be achieved by the requirements of § 125.103. Implementation of the Phase III proposed regulations would begin upon promulgation of the final rule.

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

Data items that would be required by today’s proposed rule would be gathered for either record keeping or reporting purposes. There are several data items that would be collected only during the year(s) prior to 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

Phase III existing facilities would report the information required under paragraphs (r)(2), (3), and (5) of § 122.21 and § 125.104 with their application. At the time a Phase III existing facility submits its NPDES permit renewal application (approximately 180 days prior to expiration of its current permit, in accordance with § 122.21(d)(2)), the proposed rule requires the facility to submit information demonstrating that it is employing, or will employ best technology available for its cooling water intake structure to minimize adverse environmental impact in compliance with section 316(b) of the CWA. The information will be used to identify which of the requirements in the rulemaking apply to the facility, how the facility is meeting these requirements, and whether the facility is meeting the goal of minimizing adverse environmental impact. Three types of information are required to be included in the NPDES permit applications for all Phase III 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. For example, intakes located at the shoreline could affect spawning and nursery areas, while intakes located offshore could affect migratory routes. In addition, the proximity of the intake structures to sensitive aquatic ecological areas may result in potential environmental impact.
2. Cooling water intake structure 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, allowing EPA to evaluate compliance with the flow reduction requirements for intakes located on estuaries/tidal rivers or oceans.
3. Cooling water system data, as per requirements under § 122.21(r)(5). Facilities are required to submit cooling water system data in accordance with § 122.21(r)(5) 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.

Like Phase III existing facilities, new offshore oil and gas extraction facilities would also need to submit source water physical data and cooling water intake data. They would

submit data required under § 122.21(r)(2), (3), and (4), and velocity information, source waterbody flow information, and a Design and Construction Technology Plan as required under § 125.136(b) for Track I applications or data required under § 122.21(r)(2), (3), and (4), and Comprehensive Demonstration Study and source waterbody flow information as required under § 125.136(c) for Track II applications.

Depending on the compliance alternative selected, an existing facility may also need to conduct a Comprehensive Demonstration Study (Study) as stipulated under § 125.104(b)(1) through § 125.104(b)(7) as applicable, for the selected compliance alternative. The Study would be 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 technology(ies), operational measures, and restoration measures proposed and/or implemented at the intake meet the applicable requirements of § 125.103.

The Study includes the following components:

1. A proposal for information collection [§ 125.104(b)(1)],
2. Source waterbody flow information [§ 125.104(b)(2)],
3. An Impingement Mortality and/or Entrainment Characterization Study [§ 125.104(b)(3)],
4. Technology compliance and assessment information [§ 125.104(b)(4)],
5. Restoration Plan [§ 125.104(b)(5)],
6. Information to support site-specific determination of best technology available for minimizing adverse environmental impact [§ 125.104(b)(6)]; and,
7. A Verification Monitoring Plan [§ 125.104(b)(7)].

New offshore oil and gas extraction facilities under Track I applications may be required to collect the following information:

1. Data required under § 122.21(r)(2), (3), and (4) (Source Water Baseline Biological Characterization Data (§ 122.21(r)(4)) is not required for mobile offshore drilling units (MODUs)
2. Velocity Information (§ 125.136(b)(1))
3. Source Waterbody Flow Information (§ 125.136(b)(2))
4. Design and Construction Technology Plan (§ 125.136(b)(3))

Although the proposed rule does not specifically require *source water baseline biological characterization data* from MODUs, the Director may request source water physical data from MODUs at his/her discretion.

New offshore oil and gas extraction facilities under Track II applications may be required to collect the following information:

1. Data required under § 122.21(r)(2), (3), and (4) (Source Water Baseline Biological Characterization Data (§ 122.21(r)(4)) is not required for MODUs
2. Source Waterbody Flow Information (§ 125.136(c)(1))
3. Track II Comprehensive Demonstration Study (§ 125.136(c)(2))

For compliance alternative 5, existing facilities that choose to request site-specific determinations of best technology available for minimizing adverse environmental impact, additional information would be required to be included in the NPDES permit application as part of the Study including: (1) a comprehensive cost evaluation study, (2) a benefits evaluation study (as appropriate), and (3) a site-specific technology plan.

New offshore oil and gas extraction facilities would also have an opportunity to conduct a cost-to-cost test and would be required to submit a comprehensive cost evaluation study and a site-specific plan.

In accordance with § 125.104(a)(2), the facility would submit any applicable portions of the Study, except for the Proposal for Information Collection, and the information required in 40 CFR 122.21(r)(2), (3) and (5), with the NPDES permit application. The Proposal for Information Collection is expected to be submitted well in advance of the permit application.

The specific requirements of each component of the Comprehensive Demonstration Study and requirements for new offshore oil and gas extraction facilities are detailed under the Respondent Activities section below.

Annual Reporting Requirements

In addition to the one-time reporting requirements, facilities would be required to provide the following information to the Director in a biennial status report for manufacturers and annual status report for new offshore oil and gas extraction facilities:

- Monitoring records as required by § 125.106(a) and § 125.106(b).

Record Keeping Requirements

All operators of Phase III existing facilities and new offshore oil and gas extraction facilities would be 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 would be required to be maintained for a period of at least three years from the date of permit issuance unless extended by the request of the Director. Each operator would be required to maintain records of:

- All data used to complete the permit application and show compliance with the requirements.
- Any supplemental information developed under § 125.104.
- Any compliance monitoring data submitted under § 125.105.

4b(ii). Respondent Activities

As mentioned above, respondents would include existing manufacturing facilities, new offshore oil and gas extraction facilities and NPDES permit program Directors. Their information collection activities are described below.

Permit Application Activities

All facilities and Directors would need to perform start-up activities such as: reading the proposed 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 would be performed only once during each ICR period. However, these application activities would be repeated again during the fifth year of the permit cycle as part of the permit renewal process.

Facility Activities

Phase III existing facilities would perform several data gathering activities as part of the permit application process. Under the proposed rule, all Phase III existing facilities would be required to gather application information as specified by 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, cooling water intake structure data, and Phase III existing facility cooling water system data.

New offshore oil and gas extraction facilities would be required to submit information consistent with § 122.21(r)(2), (3), and (4) and § 125.136 of the proposed rule. Facility activities for Phase III existing manufacturing facilities and new offshore oil and gas extraction facilities are presented in Exhibits 3 and 4, respectively.

Exhibit 3. Facility Activities for Phase III Existing Manufacturing Facilities

Activity Name	50 MGD DIF All Waterbodies Option	200 MGD DIF All Waterbodies Option	100 MGD DIF Certain Waterbodies Option
Start-up Activities	Yes	Yes	Yes
Permit Application Activities, Including Source Water Physical Data, Cooling Water System Data and Cooling Water Intake Structure Data	Yes	Yes	Yes
Proposal for Collection of Information for Comprehensive Demonstration Study	Yes	Yes	Yes
Source Waterbody Flow Information	Yes	Yes	NA
Design and Construction Technology Plan	Yes	Yes	Yes
Freshwater Impingement Mortality and/or Entrainment Characterization Study	Yes	Yes	Yes
Marine Impingement Mortality and/or Entrainment Characterization Study	Yes	Yes	Yes
Freshwater Pilot Study for Impingement Only Technology	Yes	Yes	Yes
Freshwater Pilot Study for Impingement & Entrainment Technology	Yes	Yes	Yes
Marine Pilot Study for Impingement Only Technology	Yes	Yes	Yes
Marine Pilot Study for Impingement & Entrainment Technology	Yes	Yes	Yes
Technology Installation and Operation Plan	Yes	Yes	Yes
Verification Monitoring Plan	Yes	Yes	Yes
Restoration Plan	Yes	Yes	Yes

Exhibit 4. Facility Activities for Phase III New Offshore Oil and Gas Extraction Facilities (Track I Applications)

Activity Name
Start-up Activities
Permit Application Activities, Including Source Water Physical Data, Velocity Information and Cooling Water Intake Structure Data
Source Waterbody Flow Information
Design and Construction Technology Plan
Source Water Baseline Biological Characterization Data

Activities that would be required to report on *source water physical data* include: [40 CFR 122.21(r)(2)] (For existing manufacturers and new offshore oil and gas extraction facilities)

- Describing the physical configuration of the source waterbody where each cooling water intake structure 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 three years after submittal.

Activities that would be required to report on *cooling water intake structure data* include: [40 CFR 122.21(r)(3)] (For existing manufacturers and new offshore oil and gas extraction facilities)

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

- Measuring and documenting the latitude and longitude of each cooling water intake structure in degrees, minutes, and seconds;
- Developing a narrative that describes the operation of each cooling water intake structure, 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 cooling water intake structure descriptions mentioned; and
- Maintaining copies of these documents as well as copies of any information used in their development for a period of three years after submittal.

Activities that would be required to report under *source water baseline biological characterization data* include: [40 CFR 122.21(r)(4)] (For new offshore oil and gas extraction facilities only and not for existing manufacturers)

- Characterize the biological community in the vicinity of the cooling water intake structure as well as the operation of the cooling water intake structures
- List of species (or relevant taxa) in the vicinity of the cooling water intake structure
- Identification and evaluation of primary period of reproduction, larval recruitment, and period of peak meroplankton abundance for relevant taxa
- A description of the likely impact of the cooling water intake structures on the biological community due to impingement and entrainment.

Although the proposed rule does not specifically require *source water baseline biological characterization data* from MODUs, the Director may request source water physical data from MODUs at his/her discretion.

Activities that would be required to report the Phase II existing facility *cooling water system data* include: [40 CFR 122.21(r)(5)] (For existing manufacturers only and not for new offshore oil and gas extraction facilities)

- Preparing a narrative description of the operation of each of the facility's cooling water systems, relationship to the cooling water intake structure(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 three years after submittal.

Comprehensive Demonstration Study Requirements

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

Proposal for Information Collection (For Existing Manufacturing Facilities Only)

The facility would develop and submit a proposal for the collection of information to support the Study. In accordance with § 125.104(b)(1), this activity includes:

- Developing a description of the proposed and/or implemented technologies, operational measures, and restoration measures to be evaluated in the Study [§ 125.104(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 Study. If the facility proposes to use existing source waterbody data, the facility would 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 [§ 125.104 (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 Study and a copy of any written comments received [§ 125.104(b)(1)(iii)];
- Developing a sampling plan for any new field studies that the facility proposes to conduct. The sampling plan would document all methods and quality assurance procedures for sampling and data analysis. The proposed sampling and data analysis methods would be appropriate for a quantitative survey and would take into account the methods used in other studies performed in the source waterbody. The sampling plan would include a description of the study area (including the area of influence of the cooling water intake structure), and provide a taxonomic identification of the sampled or evaluated biological assemblages (including all life stages of fish and shellfish) [§ 125.104(b)(1)(iv)];

- Facilities seeking a site-specific determination of best technology because of costs significantly greater than the benefits of complying with applicable performance standards at the facility, would prepare a description of the methodologies to be used in the facility Benefits Valuation Study, including a description of potential ecological and non-use benefits categories and whether evaluating them would be done quantitatively or qualitatively. If the facility plans to conduct a stated preference study to evaluate such benefits, a description of the study plan including such information as target population, sampling strategy, approximate sample size, general survey design, and other relevant information should be included [§ 125.104(b)(1)(v)], and
- Maintain records of all materials used to develop the proposal for a period of three years after submittal.

Source Waterbody Flow Information (For Existing Manufacturing Facilities (with 50 MGD for all waterbodies and 200 MGD for all waterbodies options only) and New Offshore Oil and Gas Extraction Facilities)

As part of the Study, existing facilities with intakes located on freshwater rivers/streams or lakes/reservoirs would also submit source waterbody flow information as required under § 125.104(b)(2) for existing manufacturers and under § 125.136(b) or (c) for new offshore oil and gas extraction facilities, this includes:

- If the cooling water intake structure is located in a freshwater river or stream, the facility would 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 five percent of the mean annual flow of the river or stream for purposes of determining applicable performance standards under paragraph § 125.103 (b). Representative historical data (from a period of time up to 10 years, if available) would be used; [§ 125.104(b)(2)(i)]; and
- If the cooling water intake structure 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 would 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 [§ 125.104(b)(2)(ii)], and,
- Maintain records of all pertinent documents for a period of three years after submittal.

For new offshore oil and gas extraction facilities, today's proposed rule would also require submission of source waterbody flow information consistent with the requirements at § 125.136(b)(2). The information would be used to demonstrate to the Director that the facility's cooling water intake structure meets the proportional flow

requirements at § 125.134(b)(3) and § 125.134(c)(2). These requirements include specific provisions for facilities located on estuaries or tidal rivers to provide greater protection for these sensitive waters. Specifically, Phase I requires that the total design intake flow over one tidal cycle of ebb and flow must be no greater than one (1) percent of the volume of the water column within the area centered about the opening of the intake with a diameter defined by the distance of one tidal excursion at the mean low water level. Calculations and guidance on determining the tidal excursion is found in the preamble to the final Phase I rule at section VII.B.1.d

Impingement Mortality and/or Entrainment Characterization Study (For Existing Manufacturing Facilities Only)

As part of the Study, the facility would 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 § 125.104(b)(3), the following activities would be required:

- Taxonomic identifications 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 [§ 125.104(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 § 125.104(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) [§ 125.104(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 § 125.104(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 § 125.104(b)(4)(i)(C) and (b)(5)(iii) would be collected during periods of representative operational flows for the intake and the flows associated with the samples would be documented [§ 125.104 (b)(3)(iii)], and,
- Maintain a copy of the study and the materials required to produce it for three years after submittal.

Technology Compliance and Assessment Information (For Existing Manufacturing Facilities and New Offshore Oil and Gas Extraction Facilities)

If the facility chooses to use design and construction technologies or operational measures in whole or in part to meet the requirements of § 125.103, the existing facility would submit, as stipulated under § 125.104(b)(4)(i), for existing manufacturers and under § 125.134(b)(4) and/or (5) for new offshore oil and gas extraction facilities, a Design and Construction Technology Plan which includes the following:

- The capacity utilization rate for the facility and supporting data (including the average annual net generation of the facility (in Mwh) measured over a five 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 § 125.104(b)(4)(i);
- A narrative description of the design and operation of all design and construction technologies 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 [§ 125.104(b)(4)(i)(A)];
- A narrative description of the design and operation of all design and construction technologies 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 [§ 125.104(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 operational measures the facility has selected based on the Impingement Mortality and/or Entrainment Characterization Study. In determining compliance with the requirements to reduce impingement mortality or entrainment, the facility would 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 already implemented at the facility should be added to the reductions expected to be achieved by any additional design and 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 § 125.103(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 operational measures. This estimate would 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 based on representative studies (i.e., studies that have been conducted at cooling water intake structures located in the same waterbody type with similar biological characteristics) and/or site-specific technology prototype or pilot studies [§ 125.104(b)(4)(i)(C)];

- Design calculations, drawings, and estimates to support the descriptions required under § 125.104(b)(4)(i)(A) and (B) [§ 125.104(b)(4)(i)(D)], and
- Maintenance of records of all materials used to develop the Design and Construction Technology Plan for a period of three years after submittal.

New offshore oil and gas extraction facilities would be required to submit a Design and Construction Technology Plan consistent with requirements at § 125.136(b)(3). The Design and Construction Technology Plan would demonstrate that the facility has selected and will implement the design and construction technologies necessary to minimize impingement mortality and/or entrainment. The Design and Construction Technology Plan would require delineation of the hydrologic zone of influence for the cooling water intake structure; a description of the technologies implemented (or to be implemented) at the facility; the basis for the selection of that technology; the expected performance of the technology, and design calculations, drawings and estimates to support the technology description and performance. The Agency recognizes that the selection of a specific technology or a group of technologies will depend on the individual facility and waterbody conditions.

Technology Installation and Operation Plan

If an existing facility proposes compliance based on the Technology Installation and Operation Plan (§ 125.104(b)(4)(ii)), then the facility would be required to submit both the Design and Construction Technology Plan **and** the following:

- C A list of operational parameters to be monitored and the location of monitoring, and the frequency that they will be monitored, as required under § 125.104(b)(4)(ii)(A);
- C A list of activities to optimize efficacy of installed technology and operational measures, as required under § 125.104(b)(4)(ii)(B); and,
- C A schedule and methodology for assessing the efficacy of any installed design and construction technologies and operational measures in achieving applicable performance standards, including an adaptive management plan for revising design and construction technologies and/or operational technologies if your assessment indicates that performance standards are not being achieved (§ 125.104(b)(4)(ii)(C)).

Restoration Plan (For Existing Manufacturing Facilities Only)

If the facility proposes to use restoration measures, the following information, as required under § 125.104(b)(5) would be submitted:

- A demonstration that the facility has adequately evaluated the use of design and/or construction technologies and operational measures to meet the performance requirements and an explanation on how the determination that restoration would be more feasible, cost-effective, or environmentally desirable was made [§ 125.104(b)(5)(i)];
- A narrative description of the design and operation of all restoration measures (existing and proposed) that the facility has in place or will use to produce fish and shellfish [§ 125.104 (b)(5)(ii)];
- Quantification of the ecological benefits of the proposed restoration measures. The facility would use information from the Impingement Mortality and Entrainment Characterization Study required in paragraph (b)(3) of this section, to estimate the reduction in fish and shellfish impingement mortality and entrainment that would be necessary for the facility to comply with § 125.103(b). The facility would then calculate the production of fish and shellfish that it will achieve with the restoration measures it would or has already installed. The facility would include a discussion of the nature and magnitude of uncertainty associated with the performance of these restoration measures. The facility would also include a discussion of the time frame within which these ecological benefits are expected to accrue [§ 125.104(b)(5)(iii)];
- Demonstration of compliance with performance standards. If the restoration measures address the same fish and shellfish species identified in the Impingement Mortality and Entrainment Characterization Study (in-kind restoration), the facility would demonstrate that the production of these fish and shellfish from the restoration measures meets the requirements of § 125.103(b). If the restoration measures address fish and shellfish species different from those identified in the Impingement Mortality and Entrainment Characterization Study (out-of-kind restoration), the facility would demonstrate that the restoration measures produce ecological benefits substantially similar to or greater than those that would be realized through in-kind restoration. Such a demonstration should be based on applicable multi-agency watershed restoration plans, site-specific peer-reviewed ecological studies, and/or consultation and concurrence of appropriate Federal, State, and Tribal natural resource agencies[§ 125.104(b)(5)(iv)];
- A plan utilizing an adaptive management method for implementing, maintaining, and demonstrating the efficacy of the restoration measures the facility has selected and for determining the extent to which the restoration measures, or the restoration measures in combination with design and construction technologies and operational measures, have met the applicable performance standards under § 125.103(b) and (c).

The plan would include:

A monitoring plan that includes a list of the restoration parameters that would be monitored, the frequency at which the facility will monitor them, and success criteria for each parameter; [§ 125.104(b)(5)(v)(A)]

A list of activities the facility would undertake to ensure the efficacy of the restoration measures, a description of the linkages between these activities and the items in § 125.104(b)(5)(iv)(A), and an implementation schedule [§ 125.104(b)(5)(v)(B)]; and

A process for revising the plan as new information including monitoring data, becomes available, if the applicable performance standards under § 125.103 are not being met [§ 125.104(b)(5)(v)(C)].

- A summary of any past ongoing consultation with appropriate Federal, State, and Tribal fish and wildlife management agencies on the facility's use of restoration measures including a summary of the consultations and a copy of any written comments received as a result of such consultations [§ 125.104(b)(5)(vi)];
- Design calculations, drawings, and estimates to document that the facility's proposed restoration measures in combination with design and construction technologies and/or operational measures, or alone, will meet the requirements of § 125.103(b) and (c)[§ 125.104(b)(5)(vii)]; and
- If requested by the Director, a peer review of the items submitted by the facility under paragraphs (b)(3), (b)(5)(i), (ii), (iii), (iv), (v) and (vi), and (b)(7) of this section. The facility would choose the peer reviewers with the concurrence of the Director and in consultation with EPA and Federal, State, and Tribal fish and wildlife management agencies with responsibility for fish and wildlife potentially affected by the facility's cooling water intake structure(s). Peer reviewers should have appropriate qualifications (e.g., in the fields of geology, engineering, and/or biology) depending upon the materials to be reviewed.[§ 125.104(b)(5)(viii)]; and,
- Maintain documentation of all materials submitted to support the Restoration Plan for a period of three years.

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

If a facility chooses to request a site-specific determination of best technology available, the facility would provide, as required under § 125.104(b)(6), the following additional information with its application:

- Comprehensive Cost Evaluation Study. The facility would perform and submit, in accordance with § 125.104(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, and/or restoration measures at the facility that would be needed to meet the performance requirements in § 125.103(b) [§ 125.104(b)(6)(i)(A)]; and,
 - A demonstration that the costs documented above significantly exceed those considered by the Administrator for a facility in establishing the applicable performance standards [§ 125.104(b)(6)(i)(B)];
- Benefits Valuation Study. (*For Existing Manufacturing Facilities Only*) If the facility is seeking a site-specific determination of best technology available for minimizing adverse environmental impact because of costs significantly greater than the benefits of complying with the otherwise applicable requirements of § 125.103(b) and (c) at the site, the facility would 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 § 125.103. In addition to the valuation estimates, the benefit study would include the following:
 - A description of the methodology(ies) used to value commercial, recreational, and ecological benefits (including any non-use benefits, if applicable) [§ 125.104(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) [§ 125.104(b)(6)(ii)(B)];
 - An analysis of the effects of significant sources of uncertainty on the results of the study [§ 125.104(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 would 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 cooling water intake structure. Peer reviewers should have appropriate qualifications depending upon the materials to be reviewed [§ 125.104(b)(6)(ii)(D)]; and,
 - A narrative description of any non-monetized benefits that would be realized at the site if the facility was to meet the performance standards and a

qualitative assessment of magnitude and significance of the benefits [§ 125.104(b)(6)(ii)(E)].

- Site-Specific Technology Plan. Based on the results of the Comprehensive Cost Evaluation Study and possibly the Benefits Valuation Study, the facility would submit a Site-Specific Technology Plan to the Director for review and approval. The plan would contain the following information:
 - A narrative description of the design and operation of all existing and proposed design and construction technologies, operational measures, and/or restoration measures that the facility has selected in accordance with § 125.103(a)(5) [§ 125.104(b)(6)(iii)(A)];
 - An engineering estimate of the efficacy of the proposed and/or implemented design and construction technologies or operational measures, and/or restoration measures. This estimate would 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 cooling water intake structures located in the same waterbody type with similar biological characteristics) and, if applicable, site-specific technology prototype or pilot studies. If restoration measures will be used, the facility would provide an estimate (where feasible) of the increase in fish and shellfish within the watershed [§ 125.104(b)(6)(iii)(B)]; and,
 - Design and engineering calculations, drawings, and estimates prepared by a qualified professional to support the descriptions required above [§ 125.104(b)(6)(iii)(C)].
- C Maintain all records and documentation of site specific studies conducted for a period of at least three years after submittal.

Verification Monitoring Plan (For Existing Manufacturing Facilities Only)

As part of the Study, the facility would prepare a plan to conduct, at a minimum, two years of monitoring to verify the full-scale performance of the proposed or implemented technologies, operational measures and/or restoration measures. As stipulated in § 125.104(b)(7), the verification study would begin once the technologies, operational measures and restoration 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 § 125.103(b) and (c).

The plan would provide the following:

- C Description of the frequency of monitoring and the parameters to be monitored and the basis for determining the parameters and the frequency and duration for monitoring [§ 125.104(b)(7)(i)];
- C A proposal for methods to be used for determining compliance with the performance requirements to reduce impingement mortality and entrainment, including any applicable averaging periods; representative species; etc.; [§ 125.104(b)(7)(ii)];
- C A proposal on how naturally moribund fish and shellfish that enter the cooling water intake structure would be identified and taken into account in determining compliance with the performance standards in § 125.103 [§ 125.104(b)(7)(iii)];
- C A description of the information to be included in a bi-annual status report to the Director [§ 125.104(b)(7)(iv)], and,
- C The facility would maintain all documentation supporting the Verification Monitoring Plan for a period of at least three years.

Annual Activities

Biological Monitoring

All Phase III existing facilities, as appropriate to the compliance alternative selected, would need to monitor both impingement and entrainment of the commercial, recreational and forage base fish and shellfish species and their life stages identified in the Impingement Mortality and/or Entrainment Characterization Study. The monitoring methods used would be consistent with those used for the Impingement Mortality and/or Entrainment Characterization Study. For the purposes of this ICR costing, EPA is assuming that the facility would follow the monitoring frequencies identified below for at least two years after the initial permit issuance. After that time, the Director may approve a request for less frequent sampling in the remaining years of the permit term and when the permit is reissued, if supporting data show that less frequent monitoring would still allow for the detection of any seasonal and daily variations in the species and numbers of individuals that are impinged or entrained.

New offshore oil and gas extraction facilities would conduct monitoring as required under § 125.137 of the proposed rule.

For Phase III existing manufacturers, monitoring activities would be required to be conducted in accordance with the Verification Monitoring Plan, the Technology Installation and Operation Plan (as appropriate), and the Restoration Plan, if relevant. Additional monitoring requirements may be determined by the Director.

Impingement monitoring involves collecting data on aquatic organisms trapped on the outer part of an intake structure or against screening devices during periods of cooling water withdrawal, to determine the taxa and abundance of impinged organisms. Specific monitoring activities may include:

- Collecting samples to monitor impingement rates for each species over a 24-hour period, no less than once per month when the cooling water intake structure is in operation;
- Enumerating impinged organisms;
- Performing statistical analyses to summarize rates; and
- Maintaining records of impingement monitoring results for at least three years.

Entrainment monitoring involves the collection of data on eggs, larvae, and other plankton incorporated with cooling water flow (entering and passing through a cooling water intake structure and into a cooling water system), to determine the taxa and abundance of entrained organisms. Specific activities may include:

- Collecting samples to monitor entrainment rates for each species over a 24-hour period, no less than biweekly during the primary period of reproduction, larval recruitment, and peak abundance when the cooling water intake structure is in operation;
- Enumerating entrained organisms;
- Performing statistical analyses to summarize entrainment rates; and
- Maintaining records of entrainment monitoring results for at least three years.

Status Report

All Phase III existing manufacturing facilities subject to the proposed rule would be required to prepare and submit a biennial status report that details compliance with requirements set by the proposed rule and with any additional provisions specified within the permit. New offshore oil and gas extraction facilities submit their status report annually. Preparation of the report requires:

- Compiling biological monitoring records for each cooling water intake structure; and
- Maintaining a copy of the report for a period of three years after its submission.

Director Activities

The section 316(b) Phase III proposed rule would not require Directors to prepare or submit any reports, beyond what is currently required of them under the NPDES program. However, Directors would need to review, maintain records of, and make permitting determinations based upon all documents and reports submitted to them by existing facilities.

NPDES program Directors would act to ensure the implementation of the proposed rule as required under § 125.107. Section 316(b) requirements are implemented for a facility through an NPDES permit. To successfully meet their responsibilities, EPA anticipates that Directors will be involved in reviewing application studies and developing permit conditions. Upon rule promulgation, the following activities are expected:

- Reading and understanding the rule;
- Mobilization and planning; and
- Training facility and consultant staff.

Following receipt of a permit application, the Director would conduct the following activities as described in § 125.107(a) and (b) and below.

Application Activities

The Director would determine which of the standards specified in § 125.103 to apply to the facility. In addition, the Director would review materials to determine compliance with the applicable standards. For new offshore oil and gas extraction facilities, the Director would review materials submitted in accordance with § 125.134 of the proposed rule.

If a facility submits a request in accordance with § 125.104(a)(3) to reduce the information about their cooling water intake structures and the source waterbody required to be submitted in their permit application [this request is not authorized in the first permit term after promulgation of this rule], the Director would approve the request within 60 days if conditions at the facility and in the waterbody remain unchanged since their previous application.

At each permit renewal, the Director would review the application materials and monitoring data to determine whether requirements for design and construction technologies, operational measures, and/or restoration measures should be included in the permit to meet the national performance standards in § 125.103.

The Director would review materials submitted by the applicant prior to 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 would determine, based on the information submitted by the existing facility in its permit application, the appropriate requirements and conditions, as described in § 125.107(b)(1) through § 125.107(b)(4) to include in the permit based on the compliance alternative in § 125.103(a) selected by the facility. For new offshore oil and gas extraction facilities, the Director would develop permit conditions following the review of the information submitted under § 125.136 of the proposed rule. The Director would perform the following in developing permit conditions:

- (1) Develop Cooling Water Intake Structure Requirements. Requirements that implement the applicable provisions of § 125.103 would be included in the permit conditions. The Director would evaluate the performance of the design and construction technologies, operational measures, and/or restoration measures proposed and implemented by the facility and require additional or different design and construction technologies, operational measure, and/or restoration measures, 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 § 125.103(b)(3), the Director would consider anthropogenic factors (those not considered “natural”) unrelated to the Phase III existing facility’s cooling water intake structures 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 would 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 would 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 cooling water intake structure(s), the Director would do the following:

- (i) Review and approve the Design and Construction Technology Plan required in § 125.104(b)(4) to evaluate the suitability and feasibility of the design and construction technology and/or operational measures proposed to meet the requirements of § 125.103(b).;
- (ii) If the facility proposes restoration measures in accordance with § 125.103(c), review and approve the Restoration Plan required under § 125.104(b)(5) to

determine whether the proposed measures, alone or in combination with design and construction technologies and/or operational measures, will meet the requirements under § 125.103(c);

- (iii) 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, operational measures, and/or restoration measures, but not less than the performance standards in § 125.103;
- (iv) If the facility implements design and construction technologies and/or operational measures and chooses to measure compliance for the first five years (and second five years if applicable) employing the Technology Installation and Operation Plan in accordance with § 125.104(b)(4), the Director would review and approve the plan and require the facility to meet the terms of the plan. If the facility implements restorations measures and chooses to measure compliance for the first permit term (or subsequent permit terms, if applicable) employing a Restoration Plan in accordance with § 125.104(b)(5), the Director would review and approve the plan and require compliance in accordance with the plan. In considering a permit application, the Director would review the performance of the design and construction technologies, operational measures, and/or restoration measures implemented and require additional or different design and construction technologies, operational measures, and/or restoration measures, if needed, to meet the impingement mortality and entrainment reduction, or production, requirements for all life stages of fish and shellfish;
- (v) Review and approve the proposed Verification Monitoring Plan submitted under § 125.104(b)(7) and require that the monitoring continue for a sufficient period of time to demonstrate whether the design and construction technology, operational measures, and/or restoration measures meet the requirements of § 125.103;
- (vi) If a facility requests requirements based on a site-specific determination of best technology available for minimizing adverse environmental impact, the Director would review the application materials submitted under § 125.104(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 would review and approve the results of that study. If the Director determines that alternative requirements are appropriate, the Director would make a site-specific determination of best technology available for minimizing adverse environmental impact in accordance with § 125.103(a)(5). The Director would request revisions to the information submitted by the facility in

accordance with § 125.104(b)(6) if it does not provide an adequate basis to make this determination. Any site-specific performance standard established based on new and/or existing design and construction technologies, operational measures, and/or restoration measures, would achieve an efficacy that is, in the Director's judgement, as close as practicable to, 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 § 125.103(b);

- (vii) In developing performance requirements to reduce impingement mortality and entrainment for inclusion in a permit, the Director would review information on proposed methods submitted by the facility under § 125.104(b)(4)(i)(D) and/or (b)(5)(iv), evaluate those proposed by the facility and other available methods, and specify how compliance with the requirements would be determined including the averaging period for determining the percent reduction or production required by the performance standards and restoration requirements in § 125.103. Compliance for facilities who choose to comply with the Technology Installation and Operation Plan for the first five years (and second five years, if applicable) after promulgation of this rule, would be determined based on the successful implementation of the plan in accordance with § 125.103(d).
- (2) Develop Monitoring Conditions. The permit would require the facility to perform the monitoring in accordance with the Verification Monitoring Plan required by 125.104(b)(7), the Technology Installation and Operation Plan in § 125.104(b)(4)(ii) as appropriate, and if applicable, the Restoration Plan required by § 125.104(b)(5). The Director would consider the facility's Verification Monitoring Plan, Technology Installation and Operation Plan, and/or Restoration Plan, as appropriate, in determining additional applicable monitoring requirements in accordance with § 125.105. The Director may modify the monitoring program when the permit is reissued and during the term of the permit based on changes in physical or biological conditions in the vicinity of the cooling water intake structure.
- (3) Require Record Keeping and Reporting. At a minimum, the permit would require the facility to report and keep records specified in § 125.106.
- (4) Approve a Design and Construction Technology (as appropriate). The Director would 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 § 125.108, the Director would review and approve the information submitted in the Design and Construction Technology Plan in § 125.104(b)(4)(i) and determine if they meet the criteria in § 125.108;

- (ii) If a person/facility requests approval of a technology under § 125.108(b), the Director would 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 would 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 § 125.103. The Director may only approve a technology following public notice and consideration of comment regarding such approval.

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 promulgating the final rule and overseeing its implementation. 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 would perform the same activities as those outlined for Directors in Section 4.

EPA would also be involved in the review of State-issued NPDES permits for compliance with today's proposed rule. EPA typically reviews NPDES permits in the early stages of implementation of new regulations. As such, EPA assumes 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 three years after promulgation.

5b. Collection Methodology and Information Management

Today's proposed 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 would maintain some of the compliance data in its Permit Compliance System (PCS) database. PCS is the national computerized management information system that automates entry, updating, and retrieval of NPDES data and tracks 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, etc. to verify the accuracy of the data. Permitting authorities are also responsible for entering that data into PCS. Different authorities have different approaches for entering the data into PCS and different approaches for checking data quality. This includes the use of coding forms, double-entry, technical review, etc.

Many States have developed State databases that are tailored to individual State needs with the system formatted for uploads directly to PCS from the State system. Permit data can be accessed by the public in one of two ways:

- Via the Freedom of Information Act (FOIA) by submitting a request to EPA or the State.
- Via an on-line query using EPA's Envirofacts Data Warehouse and Applications website at http://www.epa.gov/enviro/index_java.html. Accessing data via Envirofacts provides a method to combine PCS data with other EPA databases and mapping tools.

5c. Small Entity Flexibility

The minimum design intake flow requirements in today's proposed rule would exclude all but one small entity from the compliance requirements. The affected facility is estimated to have a cost-to-revenue ratio of less than one percent.

EPA considers the proposed 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 affected industries 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 their overall burden, but could have an adverse impact on the effectiveness of the proposed rule. Furthermore, because the reporting requirements differ by source waterbody type and compliance alternative selected, entities of all sizes have the flexibility to minimize their total compliance costs including the costs and burden of information collection requirements.

5d. Collection Schedule

Under the 50 MGD for all waterbodies option, EPA anticipates that 56 Phase III existing manufacturing and 31 new offshore oil and gas extraction facilities would fall within the scope of the proposed rule during the first three years after promulgation. Due to the multiple years of data that would be collected for the Impingement Mortality and/or Entrainment Characterization Study, the permitting process is anticipated to take up to three years to complete. However, of the 56 existing manufacturing and 31 new offshore oil and gas extraction facilities projected to fall within the scope of the proposed rule during the ICR approval period, 65 (46 existing manufacturers and 19 new offshore oil and gas extraction facilities) are scheduled to have permits issued during the three-year ICR approval period; these facilities would be on an accelerated schedule and thus would receive their permits as scheduled. EPA assumes that these facilities would have reopener clauses included in their permits to allow for the results of the Impingement

Mortality and Entrainment Characterization Studies to be submitted after permit issuance and for the permits to be modified based on the results of these studies, if necessary. The remaining 22 (10 existing manufacturers and 12 new offshore oil and gas extraction facilities) would not receive their initial permit renewals until after the ICR approval period, and thus would have sufficient time to perform their Impingement Mortality and Entrainment Characterization Studies prior to receiving their initial permit renewals.

Fifty-six existing manufacturing facilities begin the application process during the ICR approval period. Of these 56 manufacturers, 27 would complete the process and annual monitoring and biannual reporting activities. Of the 31 new offshore oil and gas extraction facilities that begin the application process during the ICR approval period, 20 would begin annual monitoring and reporting activities.

Under the 200 MGD for all waterbodies option, EPA anticipates that 13 Phase III existing manufacturing and 31 new offshore oil and gas extraction facilities would fall within the scope of the proposed rule during the first three years after promulgation. Of the 13 existing manufacturing and 31 new offshore oil and gas extraction facilities projected to fall within the scope of the proposed rule during the ICR approval period, 28 (9 existing manufacturers and 19 new offshore oil and gas extraction facilities) are scheduled to have permits issued during the three-year ICR approval period; these facilities would be on an accelerated schedule and thus would receive their permits as scheduled. The remaining 16 (4 existing manufacturers and 12 new offshore oil and gas extraction facilities) would not receive their initial permit renewals until after the ICR approval period, and thus would have sufficient time to perform their Impingement Mortality and Entrainment Characterization Studies prior to receiving their initial permit renewals.

Thirteen existing manufacturing facilities begin the application process during the ICR approval period. Of these 13 manufacturers, 5 would complete the process and annual monitoring and biannual reporting activities. Of the 31 new offshore oil and gas extraction facilities that begin the application process during the ICR approval period 20 would begin annual monitoring and reporting activities.

Under the 100 MGD for certain waterbodies option, EPA anticipates that 11 Phase III existing manufacturing and 31 new offshore oil and gas extraction facilities would fall within the scope of the proposed rule during the first three years after promulgation. Of the 11 existing manufacturing and 31 new offshore oil and gas extraction facilities projected to fall within the scope of the proposed rule during the ICR approval period, 27 (8 existing manufacturers and 19 new offshore oil and gas extraction facilities) are scheduled to have permits issued during the three-year ICR approval period; these facilities would be on an accelerated schedule and thus would receive their permits as scheduled. The remaining 15 (3 existing manufacturers and 12 new offshore oil and gas extraction facilities) would not receive their initial permit renewals until after the ICR approval period, and thus would have sufficient time to perform their Impingement Mortality and Entrainment Characterization Studies prior to receiving their initial permit renewals.

Eleven existing manufacturing facilities begin the application process during the ICR approval period. Of these 11 manufacturers, 7 would complete the process and annual monitoring and biannual reporting activities. Of the 31 new offshore oil and gas extraction facilities that begin the application process during the ICR approval period 20 would begin annual monitoring and reporting activities.

Exhibit 5 provides the estimated implementation schedule for the existing manufacturing facilities, during the initial ICR approval period. The schedules for the three options proposed are shown separately on Exhibit 5. Exhibit 6 presents the estimated implementation schedule for the 31 new offshore oil and gas extraction facilities, during the initial ICR approval period.

Exhibit 5. Number of Existing Manufacturing Facilities Assumed to Begin Compliance with Information Collection: Requirements During the ICR Approval Period by Year

		ICR Approval Period		
		2010-2011	2011-2012	2012-2013
Type of Activity				
50 MGD All Waterbodies Option	Existing Manufacturers Beginning the NPDES Permit Application Process	31	17	8
	Existing Manufacturers Beginning Annual Monitoring and Biannual Reporting of Operations	0	12	15
200 MGD All Waterbodies Option	Existing Manufacturers Beginning the NPDES Permit Application Process	7	5	1
	Existing Manufacturers Beginning Annual Monitoring and Biannual Reporting of Operations	0	1	4
100 MGD Certain Waterbodies Option	Existing Manufacturers Beginning the NPDES Permit Application Process	8	3	0
	Existing Manufacturers Beginning Annual Monitoring and Biannual Reporting of Operations	0	1	6

Exhibit 6. Number of New Offshore Oil and Gas Extraction Facilities Assumed to Begin Compliance with Information Collection: Requirements During the ICR Approval Period by Year

Type of Activity	ICR Approval Period		
	2010-2011	2011-2012	2012-2013
New Offshore Oil and Gas Extraction Facilities Beginning the NPDES Permit Application Process	31	0	0
New Offshore Oil and Gas Extraction Facilities Beginning Annual Monitoring and Annual Reporting of Operations	0	7	13

6. Estimating Respondent Burden and Cost of Collection

The following sections present the proposed rationale, assumptions made and results of EPA's estimation of burden and costs for the implementation of the section 316(b) Phase III proposed rule. Specific respondent activities were detailed in section 4b(ii).

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 five years, while ICRs would be renewed every three years. Therefore, the application activities occur only once per facility during an ICR approval period, and so they would be considered one-time burden for the purpose of this ICR. By contrast, the monitoring activities that occur after issuance of the permit for both manufacturers and new offshore oil and gas extraction facilities occur on an annual basis, while reporting activities occur on a biennial basis for existing manufacturers and on an annual basis for new offshore oil and gas extraction facilities. For estimates of re-permitting burdens see Exhibits A.(50MGD, 200MGD, or 100MGD).¹² and A.(50MGD, 200MGD, or 100MGD).¹³ in Appendix A for the three options considered for existing manufacturers and Exhibits B.12 and B.13 in Appendix B for new offshore oil and gas extraction facilities.

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 biannual or annual status reports, as required. EPA expects that facility employees, including managers, engineers, engineering technicians, statisticians, biologists, biological technicians, draftsmen, and clerical staff, would 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 oil and gas extraction facilities. 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 would 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 would be done on-site on a regular basis. Therefore, the hourly burdens associated with their 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, would 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 would 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.

Exhibits 7 and 8 provide a summary of the hourly burden estimates for facilities performing the NPDES permit application associated with the proposed rule for existing manufacturers and new offshore oil and gas extraction facilities, respectively. Exhibits 9 and 10 provide a summary of the hourly burden estimates for facilities performing annual monitoring, and annual reporting activities for existing manufacturers and new offshore oil and gas extraction facilities, respectively. Activities performed by existing manufacturers differ somewhat from those performed by new offshore oil and gas extraction facilities. The reason for this is that the Phase III requirements for existing manufacturers are similar to those promulgated for existing electric generators under Phase II, while the Phase III requirements for new offshore oil and gas extraction facilities are consistent with the requirements promulgated for new facilities under § 125.136 of the proposed rule. For a more detailed presentation of hourly burdens for facilities see Exhibits A.(50MGD, 200MGD, or 100MGD). 1 and A.(50MGD, 200MGD, or 100MGD).2 in Appendix A for the three options considered for existing manufacturers and Exhibits B.1 and B.2 in Appendix B for new offshore oil and gas extraction facilities.

Exhibit 7. Average per Facility Burden for each NPDES Permit Application Activity for Existing Manufacturers

Activities	Burden (hrs)		
	50 MGD All Waterbodies Option	200 MGD All Waterbodies Option	100 MGD Certain Waterbodies Option
Start-up Activities	43	43	43
Permit Application Activities	247	247	247
Proposal for Collection of Information for Comprehensive Demonstration Study	272	272	272
Source Waterbody Flow Information	101	100	na
Design and Construction Technology Plan	80	86	92
Freshwater Impingement Mortality and/or Entrainment Characterization Study	9,089	9,089	9,089
Marine Impingement Mortality and/or Entrainment Characterization Study for Existing Manufacturers	16,783	16,783	16,783
Freshwater Pilot Study for Impingement Only Technology*	na	na	na
Freshwater Pilot Study for Impingement & Entrainment Technology	1,556	1,556	1,556
Marine Pilot Study for Impingement Only Technology	1,185	1,185	1,185
Marine Pilot Study for Impingement & Entrainment Technology	1,859	1,859	1,859
Technology Installation and Operation Plan	52	52	52
Verification Monitoring Plan	128	128	128
Total**	31,395	31,400	31,306

* During the initial ICR approval period, no facilities were identified which required pilot study costs for Freshwater Impingement only and these activities were not costed.

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

Exhibit 8. Average per Facility Burden for each NPDES Permit Application Activity for New Offshore Oil and Gas Extraction Facilities

Activities	Burden(hrs)*
Start-up Activities	43
Permit Application Activities	25
Source Waterbody Flow Information	38
Design and Construction Technology Plan	36
Source Water Baseline Biological Characterization Data for New Offshore Oil and Gas Extraction Facilities in Gulf of Mexico	751
Source Water Baseline Biological Characterization Data for New Offshore Oil and Gas Extraction Facilities in Alaska	2,422
Total**	3,315

* Some of the burdens for new offshore oil and gas facilities are based on the hourly burden for a regional study in the Gulf of Mexico, where the burden is shared by all the participants.

** The total does not reflect the average burden for every facility since not all facilities would need to perform every activity listed. EPA assumed that all new offshore oil and gas extraction facilities would pursue Track I application of today's proposed rule because it is unknown how many facilities would select Track I versus Track II application. Hence the actual burden may be different than presented here.

The activities listed in the first column of Exhibits 7 through 10 correspond to the facility respondent activities outlined earlier in Section 4b(ii). All facilities would be subject to the start-up and permit application activities listed in Exhibits 7 and 8. 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 that the facility is subject to and the type of waterbody from which it withdraws water. For a detailed presentation of the number of facilities performing each activity see Exhibits A.(50MGD, 200MGD, or 100MGD).5 and A.(50MGD, 200MGD, or 100MGD).6 in Appendix A for the three options considered for existing manufacturers and Exhibits B.5 and B.6 in Appendix B for new offshore oil and gas extraction facilities.

Exhibit 9. Average Burden per Facility for Annual Monitoring and Reporting Activities for Existing Manufacturers

Activities	Burden (hrs)		
	50 MGD All Waterbodies Option	200 MGD All Waterbodies Option	100 MGD Certain Waterbodies Option
Biological Monitoring (Impingement, Freshwater)	379	379	379
Biological Monitoring (Impingement, Marine)	482	482	482
Biological Monitoring (Entrainment, Freshwater)	614	614	614
Biological Monitoring (Entrainment, Marine)	776	776	776
Biannual Status Report Activities	324	324	324
Verification Study	122	122	122
Total	2,697	2,697	2,697

Exhibit 10. Average Burden per Facility for Annual Monitoring and Reporting Activities for New Offshore Oil and Gas Extraction Facilities

Activities	Burden (hrs)*
Biological Monitoring (Impingement, Marine)**	159
Biological Monitoring (Entrainment, Marine)**	52
Velocity Monitoring	163
Annual Status Report Activities	223
Total***	597

* Some of the burdens for new offshore oil and gas extraction facilities are based on the hourly burden for a regional study in the Gulf of Mexico, where the burden is shared by all the participants.

** The burden for collecting biological monitoring data for impingement and entrainment varies between different operating regions. Therefore the burden reported here is a weighted average for the facility burdens in Alaska and the Gulf of Mexico.

*** The total does not reflect the average burden for every facility since not all facilities would need to perform every activity listed, e.g., MODUs are not required to conduct monitoring except as determined by the Director.

Start-Up Activities

In Exhibits 7 and 8, 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 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 would receive their reissued permits at the beginning of the year. Thus, during the first year (2010), facilities would perform permit application activities for their permits that are reissued at the beginning of the second year (2011). It is also assumed that facilities that become subject to the rule during the first three years would be granted an accelerated permit approval process so that permit reissuance is not delayed. In subsequent years, facilities required to perform Impingement Mortality and Entrainment Characterization Studies would need to begin collecting monitoring data two to three years prior to permit renewal. Furthermore, all facilities would begin the other permit application activities in the year just prior to receiving their reissued permits. These start-up activities, applicable to all facilities, are assumed to be performed by facility management and junior technical staff.

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 III existing manufacturers would gather source water physical data, cooling water intake structure data and cooling water system data. Phase III oil and gas extraction facilities are not required to gather cooling water system data, but they are required to provide information on intake velocity, as well as the source physical data and cooling water intake structure data. EPA anticipates that much of the data required to characterize the waterbody and the cooling water intake structure has already been gathered by the facility, and that much of the actual facility burden is from deriving the requested information from this data.

The Minerals Management Service (MMS) requires offshore oil and gas extraction facility operators to submit information on cooling water intake structures as part of their drilling plans, so much of the information required for the basic permit application requirements (e.g., source water physical data, operational narrative of the cooling water system) would have already been compiled. Offshore oil and gas extraction facility operators are assumed to review the MMS information and apply it as needed for the required permit application information. However, it is also assumed that the MMS information would not be completely sufficient to meet all the application information requirements. As a result of the availability of the MMS information, operators are assumed to spend approximately 75% less time than that incurred by land based facilities.

To derive the source water physical data, EPA assumes that junior technical staff would work with a Computer-Aided Drafting (CAD) operator to develop a description of the physical configuration of the source waterbody where the cooling water intake structure is located, including areal dimensions, depths, salinity, and temperature regimes. The CAD operator would produce scaled drawings showing the physical configuration of the source waterbody and prepare locational maps of the waterbody. The junior technical

staff would 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 may be necessary for some facilities to conduct physical studies to determine the intake's area of influence within the waterbody.

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

Junior technical staff would 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 would review and revise this characterization. EPA also anticipates that the junior technical staff would perform engineering calculations for the source waterbody and cooling water intake structure documents. Management would review and revise these calculations.

In addition, Phase III facilities would be required to comply with Comprehensive Demonstration Study requirements depending on the compliance alternative selected. Facilities that already have a closed-cycle recirculating system are not required to submit a Study and facilities that already have a design intake flow of 0.5 feet per second 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 Comprehensive Demonstration Study to confirm that the technology(ies), operational measures and restoration measures proposed and/or implemented at the intake meet the applicable performance standards. See section 4b(ii) for additional details.

The Study characterizes impingement mortality and entrainment, the operation of the cooling water intake structure, and confirms that the technologies, operational measures and/or restoration measures the facility has selected and/or implemented at the cooling water intake structure meet the applicable requirements prior to each permit renewal application. The Study entails a proposal for information collection, source waterbody flow information, an Impingement Mortality and/or Entrainment Characterization Study, technology compliance and assessment information, Restoration Plan, Design and Construction Technology Plan, information to support site-specific determination of best technology available 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 Requirements

Proposal for Information Collection

As a first step in the Comprehensive Demonstration Study, the facility would develop and submit a proposal for the collection of information to support the Study. EPA assumes that junior technical staff would 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 Comprehensive Demonstration Study. The facility management would 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, operational measures and restoration measures to be evaluated in the Comprehensive Demonstration Study. Facility management would review and revise this description. EPA assumes that the new offshore oil and gas extraction facilities would be able to use the MMS information for parts of their proposal for information collection.

Although some facilities are likely to have sufficient available information to forego an extensive monitoring study, EPA assumes that all existing manufacturers performing a Comprehensive Demonstration Study would perform an Impingement Mortality and/or Entrainment Characterization Study involving between two and three years of monitoring. Therefore, these facilities would 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 cooling water intake structure and at least 100 meters beyond). EPA assumes that the junior technical staff would review source water and cooling water intake structure data. They would use this information to write a draft of the source water sampling plan. A CAD operator would assist the junior technical staff in this effort. The facility manager would supervise this effort, review the draft, and consult with the manager of the contracted firm that would perform the monitoring. The contracted manager would review the draft and provide feedback. EPA assumes that all new offshore oil and gas extraction facilities would not perform an Impingement Mortality and/or Entrainment Characterization Study. Instead these facilities would submit Source Water Baseline Biological Characterization Data.

Source Waterbody Flow Information

As part of the Comprehensive Demonstration Study, facilities with intakes located on freshwater rivers/streams would submit source waterbody flow information. This information is used to determine the impact of the cooling water intake structure 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 cooling water intake structure disrupts the thermal stratification of the waterbody. EPA anticipates that most facilities would have ready access to existing flow and thermal stratification information. However, EPA assumes that some facilities would 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 would perform engineering calculations and develop a report. Facility management would 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 cooling water intake structure would 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 Comprehensive Demonstration Study would 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 would take two years for facilities drawing from freshwater bodies and three years for those facilities drawing from marine waters. Therefore, the entire application process can take up to three years to complete. The Impingement Mortality and/or Entrainment Characterization Study activities would be performed in years prior to the reissuance of the NPDES permit.

This estimate takes into account that some facilities would have access to existing data, which may allow them to reduce the duration of the monitoring period, while other facilities may require additional time due to the confounding effects of other factors such as very dry years or fish kills due to red tides. Facilities that become subject to the rule within the first three years are assumed to provide the Director with preliminary study results, and complete the monitoring after the permit has been issued, to avoid delays in permit reissuance. The monitoring study consists of an extensive sampling effort performed primarily by contracted employees, and then the characterization of the data in the form of a study report that is produced by both facility and contracted employees.

To accurately characterize the effects of impingement and entrainment on the aquatic communities found in the source water, offshore monitoring would 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. Since impingement more often impacts adult organisms, while entrainment affects juvenile organisms, offshore samples would be taken of both juvenile and adult organisms. Therefore, EPA assumes that four types of sampling as presented in Exhibit 11 would occur.

Exhibit 11. Impingement Mortality and/or Entrainment Characterization Study Sample Types

Sample Type	Location of Sample
Impingement Sample*	At the intake structure.
Entrainment Sample	In the facility.
Offshore Sample for Juvenile Organisms	At the edge of the zone of influence.
Offshore Sample for Adult Organisms	At the edge of the zone of influence.

* Impingement sampling for New Offshore Oil and Gas Extraction facilities is accomplished through the use of a remote monitoring device due to the difficulty of taking direct samples at the site of the intake.

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

Source Water Baseline Biological Characterization Data (New Offshore Oil and Gas Extraction Facilities Only)

The data is used to characterize the biological community in the vicinity of the cooling water intake structure and to characterize the operation of the cooling water intake structure. The data includes existing data (if available) supplemented with new field studies as necessary. In an effort to save costs, facilities within a given region may choose to conduct a regional study to collect this information as approved by the Director. EPA recognizes that many offshore oil and gas extraction facilities are regulated under NPDES general permits and that regional studies are often conducted as part of the general permit requirements. MODUs would be exempt from this requirement.

Facilities in the Gulf of Mexico region are assumed to conduct a regional study. Three existing deepwater oil and gas platforms and three MODUs operating in deepwater are assumed chosen for the Gulf of Mexico regional study. There are no new facilities expected in California so there is no California regional study. There is one new facility expected in Alaska, so there is no regional study for Alaska either. Instead the one facility is assumed to perform its own individual monitoring.

For the six Gulf of Mexico facilities and the one Alaska facility, each month a team of biologists and biological technicians is expected to perform the sampling over a two day period. Impingement monitoring is accomplished with the use of a remote monitoring device. The installation of the remote monitoring device is assumed to cost \$20,000 per facility. The team is transported out to the facility by helicopter and picked up the next day. The cost of the helicopter is assumed to be \$12,000 per year in the Gulf of Mexico

and \$18,000 per year in Alaska. Monitoring is expected to take place over a three year period. The results of the regional study would then be used by each in-scope Gulf of Mexico facility to complete their Source Water Baseline Biological Characterization Data requirements.

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 cooling water intake structure effects would be conducted during the year prior to 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 § 125.103, the facility would also submit a Design and Construction Technology Plan as part of the Comprehensive Demonstration Study. EPA assumes that a CAD operator would delineate the hydraulic zone of influence, and that junior technical staff would assist the CAD operator, and management would review this work. Junior technical staff would 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 would review the calculations and write-up. Those facilities that need to address entrainment would spend approximately the same amount of time performing engineering calculations and developing a narrative description.

As part of the Design and Construction Technology Plan, facilities would 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 cooling water intake structures located in the same waterbody type with similar biological characteristics) and/or site-specific technology prototype studies. EPA assumes for the site-specific technology prototype studies, that the facilities would conduct an on-site pilot study for the technology or operational measure.

In general, pilot study costs vary. The variables that affect pilot study costs are regulations, testing protocols, and testing duration. Pilot equipment is either rented or manufactured to suit specific site conditions. Generally, a typical ratio of total pilot study costs to the actual technology costs is less than one to ten for technologies that cost more than one million dollars. Therefore, EPA assumes that facilities would be willing to spend 10% of the technology installation cost on a pilot study to determine if the technology would function properly when installed and operated.

An important cost element in the pilot study is the cost of monitoring. EPA realizes that the amount of monitoring necessary would vary depending on the technology and the biological characteristics of the source water. However, EPA assumes that a typical monitoring effort would involve five samples being collected over a twenty-four hour period, every two weeks for six months. Facilities would need to analyze the data, summarize the results, and use this information as the basis for their site-specific evaluation. EPA estimates that the pilot study monitoring and reporting costs would typically range between \$50,000 and \$110,000 for a facility, depending on the source water type and whether the facility would need to monitor for both impingement and entrainment or just impingement.

The installation costs for the range of proposed and/or implemented technologies vary widely, with the capital costs of the relatively inexpensive technologies being less than \$500,000. EPA assumes that the financial risk to facilities installing relatively low cost technologies (in comparison to a facility's overall cost of operation, revenues, or anticipated benefits) are not likely to warrant conducting a pilot study. In these cases, EPA believes that facilities with low cost technology options would forgo a pilot study and install the proposed technology based on existing performance information or manufacturer's guarantee to cover the cost of dismantling the equipment. The facility would then use the impingement and entrainment monitoring data from the Impingement Mortality and Entrainment Characterization Study to evaluate how well the technology performs. EPA assumes that when the capital cost for the proposed technology is less than \$500,000 the facility would not perform a pilot study. A pilot study may not be practical for some of the proposed technologies, such as widening the opening of the intake structure to reduce intake velocity. EPA assumes that pilot studies would not be practical for all new offshore oil and gas extraction facilities. For those facilities anticipated to install technologies where a pilot study is impractical, EPA assumes, for the purpose of estimating the regulatory economic burden, that they would not perform pilot studies either.

To develop total pilot study cost estimates for facilities, EPA assumes that facilities would spend approximately 10% of the capital costs for installing the proposed technology on a cooling water intake. This cost covers the installation, operation, monitoring, and reporting costs associated with the pilot study. However, EPA assumes that the minimum cost to perform an acceptable pilot study, including monitoring would be \$150,000. Therefore, if 10% of a facility's technology cost was below \$150,000, the facility was automatically assigned a cost of \$150,000. EPA assumes that facilities that choose to demonstrate that they have installed and are properly maintaining and operating an approved technology would provide the Director with the information detailed in the source waterbody flow information and the Technology Installation and Operation Plan and Verification Monitoring Plan. It would be up to the Director's discretion to decide whether they would need to perform a pilot study or the Impingement and Entrainment Characterization Study. However, to be conservative, EPA has assumed that these facilities would perform one or more of these studies.

Technology Installation and Operation Plan

As part of the Comprehensive Demonstration Study, existing manufacturers would include a plan that listed all operational parameters to be monitored, as well as the location and frequency of the annual monitoring efforts. Furthermore, the plan would contain a list of the activities the facility would perform to optimize the efficacy of installed technology and operational measures. Finally, the plan would include the schedule and methodology for assessing the efficacy of any installed design and construction technologies and operational measures in achieving applicable performance standards, including an adaptive management plan for revising design and construction technologies and/or operational technologies if the assessment indicates that performance standards are not being achieved.

EPA assumes that much of the information required for the Technology Installation and Operation Plan overlaps with the information gathered for the Design and Construction Technology Plan and the Verification Monitoring Plan. The Design and Construction Technology Plan requires a very detailed explanation of the design and operation of new technologies and how they will work to reduce impingement and entrainment at the site of the intake. In developing this information facilities will have to consider issues of installation and maintenance, as well as efficacy assessment. Therefore, EPA assumes that the effort required by facilities to gather this information for the Technology Installation and Operation Plan, reduces the effort burden incurred for the Design and Construction Technology Plan.

Similarly, the time and effort required by the facility to develop a description of monitoring parameters and to characterize efficacy assessment activities directly overlaps with the effort to develop the Verification Monitoring Plan. Therefore, EPA assumes that the burden for these activities is accounted for with the burden incurred for the Verification Monitoring Plan.

According to 125.104(b), facilities that operate and maintain an approved design and construction technology only have to submit the TIOP and Verification Monitoring Plan and they can forgo the Design and Construction Technology Plan. So to avoid underestimating costs, we may want to account for the overlap between the Design and Construction Technology Plan and the TIOP by reducing the burden required for the former rather than the latter.

Restoration Plan

Facilities are not required to use restoration measures to maintain fish and shellfish, but may voluntarily choose to use restoration measures to supplement design and construction technologies. EPA thus assumed that facilities would propose to use restoration measures only if additional design and construction technologies and operational measures are not feasible at the facility. Therefore, in order to provide a conservative estimate of burden and costs, EPA has not included evaluation of the

proposed restoration measures in developing the ICR cost and burden estimates for facilities.

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

Under today's proposed rule, facilities may choose to request a site-specific determination of best technology available in lieu of meeting the performance standards of § 125.103(b). If a facility requests a site-specific evaluation of best technology available, it would first need to demonstrate to the Director that it meets one of two cost criteria. The first 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 when the performance standards were established. The second 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 best technology available 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, EPA recognizes that respondents choosing to perform activities related to site-specific determination of best technology available would incur additional ICR costs. It is estimated that facilities implementing activities related to site-specific determination of best technology available, 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 \$35,000 per facility. Depending on the number of facilities with both impingement and entrainment requirements choosing to pursue site-specific determination of best technology available, the above ICR burden and cost would be reduced accordingly. In addition, EPA believes that some of the above additional cost would be offset by reductions in technology costs for these facilities since 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 best technology available, EPA estimated the Director burdens for reviewing site-specific studies for all facilities with impingement and entrainment requirements.

Comprehensive Cost Evaluation Study

EPA assumes that for a facility to demonstrate to the Director that its actual implementation costs would be higher than those determined by EPA in achieving the performance standards, the facility would need to provide the Director with detailed information about the site, along with engineering calculations and cost estimates used to justify this conclusion. Much of the site-specific information would have been gathered during the initial permit application process and the source water baseline biological characterization. Likewise, many of the initial engineering calculations would have been performed for the Design and Construction Technology Plan. Therefore, the main effort for this study would be for the facility to justify the cost estimates it claims that it would incur to install and operate the best technology available to meet the performance standards. EPA assumes that the junior technical staff would develop cost estimates and prepare an initial draft of the study. The facility manager would oversee the work done by the junior staff and revise the initial draft. The junior technical staff would revise and finalize the report for final draft review and preparation of an executive summary by the management. As with the site specific determination, these costs are only incurred by the facility when they voluntarily choose this option. Therefore, they are not included in the aggregate facility cost estimate.

Valuation of Monetized Benefits of Reducing Impingement Mortality and Entrainment

After the detailed list of impacted species is developed, facility and contracted staff would work together to develop estimates of the commercial and recreation value of the impacted species and the other species which depend on them as a food source. EPA assumes the biologists contracted to do the Impingement Mortality and/or Entrainment Characterization Study would take the lead on developing the monetized benefit estimates to develop a comprehensive valuation of the current impacts from impingement mortality and entrainment at the site and the benefits derived from reducing the impact to commercial and recreational species residing in the source water. The junior technical staff would assist the biologist to develop and revise the monetized benefit estimates. A statistician would help with the development of present value estimates for the technology costs and the monetized benefits so that they can be compared. Facility management and the contracted manager would review and revise the work. As with the site specific determination, these costs are only incurred by the facility when they voluntarily choose this option. Therefore, they are not included in the aggregate facility cost estimate.

Identification and Description of Quantitative and non-Monetized Benefits

Facilities choosing to demonstrate that their costs would be significantly greater than the benefits of complying with the otherwise applicable requirements would use 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. To compare benefits to costs, the facility would have cost estimates. EPA

assumes that the facility would use the cost information from Comprehensive Cost Evaluation for this purpose. To begin assessment of potential benefits, the facility would need estimates of impingement and entrainment reductions resulting from use of the proposed technology at the facility. EPA assumes that the facility would use the estimates of impingement and entrainment reductions from the Design and Construction Technology Plan for this purpose. The facility would then estimate the potential recreational and commercial value of these organisms over the same period of time that it would be paying for the proposed technology.

EPA assumes that the junior technical staff would review mortality data derived from the Impingement Mortality and/or Entrainment Characterization Study, and develop a list of species, their impacted life stages, and corresponding mortality and injury reduction estimates. The facility manager would review and revise this list. As with the site specific determination, these costs are only incurred by the facility when they voluntarily choose this option. Therefore, they are not included in the aggregate facility cost estimate.

Site-Specific Technology Plan

This plan is based on the Comprehensive Cost Evaluation Study, and the valuation of monetized benefits if one was performed by the facility. It describes the design and operation of all design and construction technologies, operational measures, and restoration measures selected, and provides information that demonstrates the effectiveness of the selected technologies or measures for reducing the impacts on the species of concern. As with the site specific determination, these costs are only incurred by the facility when they voluntarily choose this option. Therefore, they are not included in the aggregate facility cost estimate.

EPA assumes that the junior technical staff would develop a narrative description of the technologies and measures selected by the facility. The facility manager would review and revise this description. The facility would document the efficacy of the proposed and/or implemented technologies or operational measures for reducing impingement mortality and entrainment of all life stages of fish and shellfish. EPA assumes that the junior technical staff would document the efficacy of the technologies or measures based on the information used to support a site-specific determination of best technology available, and results from representative studies and/or site-specific pilot studies. Facility management would review and revise this document.

Both the narrative description and the documentation of efficacy for the proposed technology or measures would require engineering calculations, design estimates, and drawings. EPA assumes that the junior technical staff would perform this engineering work and facility management would review and revise it. In addition, a biologist would assist the junior technical staff with the efficacy calculations, and the contract manager would review the work. As with the site specific determination, these costs are only incurred by the facility when they voluntarily choose this option. Therefore, they are not included in the aggregate facility cost estimate.

Verification Monitoring Plan (For Existing Manufacturing Facilities Only)

As part of the Comprehensive Demonstration Study, existing manufacturers would include a plan to conduct, at a minimum, two years of monitoring to verify the full-scale performance of the proposed or implemented technologies, operational measures, or restoration measures. EPA assumes that the junior technical staff would 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 would be included in the final report. A CAD operator would assist the junior technical staff with the drawings and diagrams contained in the plan. The facility management would oversee the writing of the plan and review/revise the various drafts of the plan before it is finalized.

In the first two years of operation under their reissued NPDES permits, 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, operational measures and/or restoration 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. Thus, EPA assumes that Directors would not be reviewing any verification studies during the initial ICR approval period.

Annual Facility Activities

The principle annual activity for most facilities would 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. For the new offshore oil and gas extraction facilities in the Gulf of Mexico, annual monitoring is assumed to be included as part of the regional study. Since the initial monitoring for the study occurs over a three year period, annual monitoring does not begin until after the fourth year which is outside of the ICR approval period.

The monitoring results are analyzed and summarized in a yearly status report for new offshore oil and gas extraction facilities. Existing manufacturers submit the status reports biennially. Those facilities that submitted a Verification Monitoring Plan as part of their permit application would also use the first two years of monitoring data to produce a verification study. For a more detailed account of the annual burden for facilities see Exhibit A.(50MGD, 200MGD, or 100MGD).² in Appendix A for the three options considered for existing manufacturing facilities and Exhibit B.2 in Appendix B for new offshore oil and gas extraction facilities.

Director Burdens

The Phase III proposed rule would require Directors to devote time and resources to review and respond to the NPDES permit applications; proposal, study and sampling plans; and biannual or annual status reports submitted to them as required. EPA assumed that all NPDES permit program Directors would also undergo start-up activities in preparation for administering the provisions of the section 316(b) Phase III proposed rule. As part of these start-up activities, Directors are expected to train junior technical staff on how to review materials submitted by facilities, and then use these materials to determine the specific conditions of each facility's NPDES permit with regard to its cooling water intake structure. In addition, EPA assumes that senior and junior technical staff would spend time to study and understand the rule and in planning activities.

Director Permit Issuance Activities

EPA expects that State senior technical, junior technical, and clerical staff would 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 PCS database. Exhibits 12 and 13 provide a summary of the hourly burden estimates for Directors performing various activities associated with the proposed rule for existing manufacturers and new offshore oil and gas extraction facilities, respectively. For a more detailed presentation of Director hourly burdens, see Exhibit A.(50MGD, 200MGD, or 100MGD).3 in Appendix A for the three options considered for existing manufacturers and Exhibit B.3 in Appendix B for new offshore oil and gas extraction facilities. Under today's proposed rule, Directors would need to review information submitted by new offshore oil and gas extraction facilities for consistency with § 125.136 of the proposed rule.

Exhibit 12. Average Director Burden for Activities for Existing Manufacturers

Activities	Burden (hrs)		
	50 MGD All Waterbodies Option	200 MGD All Waterbodies Option	100 MGD Certain Waterbodies Option
Director Start-up Activities (per State/Territory)	100	100	100
Director Permit Issuance Activities (per Facility)	810	716	1,330
Verification Study Review (per Facility)*	21	21	21
Annual Director Activities (per Facility)	50	50	50
Total**	981	887	1,501

* Since facilities would monitor for at least two years before submitting their verification study for review, EPA does not anticipate that Directors would incur burden for this activity during the initial ICR approval period.

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

Exhibit 13. Average Director Burden for Activities for New Offshore Oil and Gas Extraction Facilities

Activities	Burden (hrs)
Director Start-up Activities (per State/Territory)	100
Director Permit Issuance Activities (per Facility)	281
Annual Director Activities (per Facility)	50
Total*	431

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

Cooling Water Intake Structure Requirements

The Director would 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 § 125.103. In addition, if the facility proposes restoration measures, the Director would review the Restoration Plan and determine whether the proposed measures, alone or in combination with design and construction technologies and operational measures, would meet the performance standards. For all facilities performing the Comprehensive Demonstration Study, the Director would review and approve the proposed Verification Monitoring Plan, as applicable and require that the

monitoring continue for a sufficient period of time to demonstrate that the design and construction technology, operational measures, and/or restoration measures meet the requirements of § 125.103(b) and (d). For a facility that requests requirements based on site-specific best technology available for minimizing adverse environmental impact, the Director would 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 would choose to pursue the site-specific alternative. In developing performance requirements for impingement mortality and entrainment for inclusion in a permit, the Director would 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 would be determined including the averaging period for determining the percent reduction required by the performance standards and restoration requirements.

EPA assumes that the Directors would 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 best technology available to review the required supporting studies. The additional effort devoted to reviewing the impingement mortality and entrainment characterization studies is due to the fact that 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 best technology available is due to the complexity of the required Comprehensive Cost Evaluation Study or valuation of monetized benefits for reducing impingement and entrainment.

In addition, EPA assumes that Directors would spend a significant amount of time reviewing restoration measures for roughly 10 percent of the facilities.

Monitoring Conditions

In determining the applicable monitoring requirements, the Director would consider the facility's Verification Monitoring Plan, as applicable and modify the monitoring program based on changes to the physical or biological conditions in the vicinity of the cooling water intake structure. 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 would review the facility's Verification Monitoring Plan and make recommendations for modifying the monitoring program. Senior technical staff would review and implement the recommendations.

Record Keeping and Reporting

EPA assumes that clerical and junior technical staff would review the monitoring data and status report from the facilities regarding record keeping. Senior technical personnel would 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 § 125.108, the Director would review the information submitted in the Design and Construction Technology Plan and/or the Technology Installation and Operation Plan and determine if they meet the criteria in § 125.108. EPA assumes that junior technical staff would review the documentation submitted by the facility for compliance as required in § 125.104(b)(6). Senior technical staff would provide technical oversight for this work. Moreover, if a person requests approval of a technology under § 125.108(b), the Director would 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 would 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 § 125.103. The Director would only approve a technology following public notice and consideration of comment regarding such approval. EPA assumes that senior technical staff would review the information submitted and evaluate the adequacy of the proposed technology. Junior technical staff would 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 annual report, which details inspection and maintenance records for impingement and technology controls and a detailed analysis of monitoring results. EPA assumes that directors would 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. The cost estimates include both initial permitting costs and annual cost for facilities and Directors. Because of the five year permit cycle facilities and Directors would not incur re-permitting costs during the ICR approval period. Therefore, re-permitting costs are not covered in this section. For detailed estimates of re-permitting costs see Exhibits A.(50MGD, 200MGD, or 100MGD).12 and A.(50MGD, 200MGD, or 100MGD).13 in Appendix A for the three options considered for existing manufacturers

and Exhibits B.12 and B.13 in Appendix B for new offshore oil and gas extraction facilities.

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 Statistic's (BLS) *Occupational Outlook Handbook 2004-2005* (BLS, 2004a). These reported labor rates were based upon data from the year 2002, and required adjustment for inflation. Inflation factor were derived from the BLS Employment Cost Index (BLS, 2004b), was used to adjust the *Occupational Outlook Handbook* labor rates to reflect labor rates for June of 2003.

Compensatory loading factors ranging from 35% to 52%, depending on the labor category, were used to account for any paid leave, supplemental pay, insurance, retirement and savings, and required and nonrequired benefits received by employees (BLS, 2004b). EPA assumed an additional loading factor of 15% 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 fee to ensure profit for the contracting company. EPA assumes that the overhead for the contracted employees would be 50% and the fee would be 8%.

To represent the base labor rate for facility management, EPA used the average national salary for an engineering manager of \$89,565 per year. This figure was divided by 2,080 hours to derive the hourly managerial wage rate of approximately \$43 per hour. After adjusting this rate for inflation, compensation and overhead, the rate is approximately \$73 per hour. The median annual salary of \$41,288 for an 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 \$34 per hour. The median annual salary for a drafter performing CAD work was reported to be \$18 per hour, and after adjusting and loading the rate it is approximately \$30. The reported average annual salary for clerical workers was \$22,277, and the fully adjusted and loaded hourly rate is approximately \$19 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 \$82,243 per year, with a fully loaded rate of \$91 per hour. The median annual salary for a statistician was \$57,075 per year, with an adjusted hourly rate of approximately \$61 per hour. Biologists and biological technicians had an average hourly pay of \$24 and \$17, and a fully loaded rate of \$53 and \$38, respectively.

Director Labor Costs

For Director costs, all of the base labor rates and compensation factors were derived from published employment cost trends for State and local government workers for the second quarter of 2003 (BLS, 2004c). EPA chose the BLS labor category of white-collar professional specialist to represent the senior administrative and technical staff that would oversee and manage the NPDES permit program. The base hourly rate for this category was approximately \$32 per hour, and after adjusting for compensation and inflation it is approximately \$50 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 \$19 per hour, which becomes approximately \$32 per hour after being adjusted for compensation, overhead, and inflation. The hourly wage for State government clerical workers was \$14 per hour before adjustment, and approximately \$24 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).

As part of the evaluation of potential cooling water intake structure effects performed under the Design and Construction Technology Plan, EPA anticipates that facilities would perform pilot studies to estimate efficacy for the proposed and/or implemented technologies used to minimize impingement mortality and entrainment. EPA assumes that these facilities would be willing to spend approximately 10% of the anticipated costs of installing and operating the proposed technologies. As part of the economic analysis for the proposed rule, EPA has developed technology cost estimates for those facilities that EPA anticipates would install new technologies. If the efficacy of a proposed technology is well documented for cooling water intake structures located in the same waterbody type with similar biological characteristics, the facility may choose to rely on existing information. EPA considers the effectiveness and reliability of wedgewire screen technology in freshwater environments to be sufficiently well documented. Therefore, those freshwater facilities installing or operating wedgewire screen technology are assumed to rely upon existing information and forego the pilot study.

Average pilot study capital costs are expected to range from \$150,000 to \$900,000, including the cost of monitoring, depending on the technology installed and the waterbody location. However, for a facility to conduct a pilot study, EPA assumed that the minimum pilot study cost, including monitoring, would be \$150,000. EPA assumes the pilot study impingement samples would be analyzed on-site by the biologists, due to the difficulty of preserving impingement samples for shipment to an outside laboratory. Analysis of the pilot study entrainment samples would be performed by an outside laboratory, at a cost of \$6,000 for freshwater facilities and \$7,800 for facilities with cooling water intake structure(s) located in estuaries/tidal rivers or oceans. Pilot study ODC costs are assumed to be approximately \$1,000 for materials and supplies used by facilities conducting pilot studies.

EPA assumes that samples taken for the Impingement Mortality and/or Entrainment Characterization Study would be analyzed by a contracted laboratory. The outside laboratories would perform taxonomic classification, data tabulation, and then deliver the data back to the facility. For the monitoring required by the Impingement Mortality and/or Entrainment Characterization Study, this service is estimated to cost \$78,000 for facilities with cooling water intake structure(s) located in freshwater rivers/streams or lakes/reservoirs, and \$152,100 for facilities with cooling water intake structure(s) located in the Great Lakes, estuaries/tidal rivers or oceans. For facilities with cooling water intake structure(s) located in freshwater rivers/streams or lakes/reservoirs, ODCs are estimated to range from approximately \$4,300 and \$13,000 for facilities with cooling water intake structure(s) located in the Great Lakes, estuaries/tidal rivers or oceans.

For annual O&M costs, EPA again assumes that the analysis of impingement monitoring samples would be done on-site, while entrainment monitoring samples would be performed by an outside laboratory. Laboratory analysis for entrainment samples is estimated to cost \$7,800 per year for facilities with cooling water intake structure(s) located in freshwater rivers/streams or lakes/reservoirs, and an estimated \$10,140 per year for facilities with cooling water intake structure(s) located in estuaries/tidal rivers, the Great Lakes, or oceans. The ODCs associated with biological monitoring in freshwater rivers/streams or lakes/reservoirs are estimated to be approximately \$500 annually and \$650 for facilities with cooling water intake structure(s) located in the Great Lakes, estuaries/tidal rivers or oceans.

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 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. Exhibits 14, 15 and 16 provide a summary of facility level average labor costs, capital and O&M costs for permit application activities for the three options considered for existing manufacturers over the three year ICR period. Exhibit 17 provides a summary of facility level average labor costs, capital and O&M costs for permit application activities for new offshore oil and gas extraction facilities, over the three year ICR period. For a more detailed presentation

of all compliance costs for facilities, see Exhibits A.(50MGD, 200MGD, or 100MGD).1 and A.(50MGD, 200MGD, or 100MGD).2 in Appendix A for the three options considered for existing manufacturers and Exhibits B.1 and B.2 in Appendix B for new offshore oil and gas extraction facilities.

Exhibit 14. Average per Facility Burden and Costs for each NPDES Permit Application Activity for Existing Manufacturers for the 50 MGD All Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	Capital (2003\$)	O&M (2003\$)
Start-up Activities	43	\$2,121	\$0	\$50
Permit Application Activities	247	\$9,951	\$0	\$510
Proposal for Collection of Information for Comprehensive Demonstration Study	272	\$12,344	\$0	\$770
Source Waterbody Flow Information	101	\$3,447	\$0	\$200
Design and Construction Technology Plan - Impingement and Entrainment	80	\$3,118	\$0	\$380
Freshwater Impingement Mortality and/or Entrainment Characterization Study	9,089	\$428,557	\$0	\$84,428
Marine Impingement Mortality and/or Entrainment Characterization Study	16,783	\$782,249	\$0	\$163,834
Freshwater Pilot Study for Impingement Only Technology*	na	na	na	na
Freshwater Pilot Study for Impingement & Entrainment Technology	1,556	\$79,887	\$165,321	\$7,020
Marine Pilot Study for Impingement Only Technology	1,185	\$59,059	\$242,872	\$1,020
Marine Pilot Study for Impingement & Entrainment Technology	1,859	\$93,541	\$469,073	\$8,820
Technology Installation and Operation Plan	52	\$2,372	\$0	\$80
Verification Monitoring Plan	128	\$5,918	\$0	\$410
Total**	31,395	\$1,482,564	\$877,266	\$267,522

* During the initial ICR approval period, no facilities were identified which required pilot study costs for Freshwater Impingement only and these activities were not costed.

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

Exhibit 15. Average per Facility Burden and Costs for each NPDES Permit Application Activity for Existing Manufacturers for the 200 MGD All Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	Capital (2003\$)	O&M (2003\$)
Start-up Activities	43	\$2,121	\$0	\$50
Permit Application Activities	247	\$9,951	\$0	\$510
Proposal for Collection of Information for Comprehensive Demonstration Study	272	\$12,344	\$0	\$770
Source Waterbody Flow Information	100	\$3,381	\$0	\$200
Design and Construction Technology Plan	86	\$3,384	\$0	\$380
Freshwater Impingement Mortality and/or Entrainment Characterization Study	9,089	\$428,557	\$0	\$84,428
Marine Impingement Mortality and/or Entrainment Characterization Study	16,783	\$782,249	\$0	\$163,834
Freshwater Pilot Study for Impingement Only Technology*	na	na	na	na
Freshwater Pilot Study for Impingement & Entrainment Technology	1,556	\$79,887	\$804,252	\$7,020
Marine Pilot Study for Impingement Only Technology	na	na	na	na
Marine Pilot Study for Impingement & Entrainment Technology	1,859	\$93,541	\$183,241	\$8,820
Technology Installation and Operation Plan	52	\$2,372	\$0	\$80
Verification Monitoring Plan	128	\$5,918	\$0	\$410
Total**	30,215	\$1,423,705	\$987,493	\$266,502

* During the initial ICR approval period, no facilities were identified which required pilot study costs for Freshwater Impingement only and these activities were not costed.

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

Exhibit 16. Average per Facility Burden and Costs for each NPDES Permit Application Activity for Existing Manufacturers for the 100 MGD Certain Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	Capital (2003\$)	O&M (2003\$)
Start-up Activities	43	\$2,121	\$0	\$50
Permit Application Activities	247	\$9,951	\$0	\$510
Proposal for Collection of Information for Comprehensive Demonstration Study	272	\$12,344	\$0	\$770
Source Waterbody Flow Information	na	na	na	na
Design and Construction Technology Plan	92	\$3,657	\$0	\$380
Freshwater Impingement Mortality and/or Entrainment Characterization Study	9,089	\$428,557	\$0	\$84,428
Marine Impingement Mortality and/or Entrainment Characterization Study	16,783	\$782,249	\$0	\$163,834
Freshwater Pilot Study for Impingement Only Technology*	na	na	na	na
Freshwater Pilot Study for Impingement & Entrainment Technology*	na	na	na	na
Marine Pilot Study for Impingement Only Technology*	na	na	na	na
Marine Pilot Study for Impingement & Entrainment Technology	1,859	\$93,541	\$221,548	\$8,820
Technology Installation and Operation Plan	52	\$2,372	\$0	\$80
Verification Monitoring Plan	128	\$5,918	\$0	\$410
Total**	28,565	\$1,340,710	\$221,548	\$259,282

* During the initial ICR approval period, no facilities were identified which required pilot study costs for Freshwater Impingement only and these activities were not costed.

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

Exhibit 17. Average per Facility Burden and Costs* for each NPDES Permit Application Activity for New Offshore Oil and Gas Extraction Facilities

Activities	Burden (hrs)	Labor Cost (2003\$)	Capital (2003\$)	O&M (2003\$)
Start-up Activities	43	\$2,121	\$0	\$50
Permit Application Activities	25	\$795	\$0	\$130
Source Waterbody Flow Information	38	\$1,341	\$0	\$75
Design and Construction Technology Plan	36	\$1,051	\$0	\$120
Source Water Baseline Biological Characterization Data for Gulf of Mexico Facilities	751	\$40,445	\$6,000	\$44,397
Source Water Baseline Biological Characterization Data for Alaska Facilities	2,422	\$132,041	\$0	\$176,870
Total**	3,315	\$177,794	\$6,000	\$221,642

* EPA assumed that all new offshore oil and gas extraction facilities would pursue Track I application of today's proposed rule because it is unknown how many facilities would select Track I versus Track II application. Hence the actual burden and cost estimates may be different than presented here.

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

Exhibits 18, 19 and 20 provide a summary of facility level burden, average labor costs and O&M costs for annual monitoring and reporting activities for the three options proposed for existing manufacturers over the three year ICR period. Exhibit 21 provides a summary of facility level burden, average labor costs and O&M costs for annual monitoring and reporting activities for new offshore oil and gas extraction facilities over the three year ICR period. For a more detailed presentation of all compliance costs for facilities, see Exhibits A.(50MGD, 200MGD, or 100MGD).1 and A.(50MGD, 200MGD, or 100MGD).2 in Appendix A for the three options considered for existing manufacturers and Exhibits B.1 and B.2 in Appendix B for new offshore oil and gas extraction facilities.

Exhibit 18. Average Burden and Costs* per Facility for Annual Monitoring and Reporting Activities for Existing Manufacturers for the 50 MGD All Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Biological Monitoring (Impingement, Freshwater)	379	\$18,504	\$510
Biological Monitoring (Impingement, Marine)	482	\$23,564	\$660
Biological Monitoring (Entrainment, Freshwater)	614	\$30,376	\$8,310
Biological Monitoring (Entrainment, Marine)	776	\$38,069	\$10,800
Biannual Status Report Activities	324	\$16,618	\$770
Verification Study	122	\$6,846	\$510
Total**	2,697	\$133,977	\$21,560

* 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 since not all facilities would need to perform every activity listed.

Exhibit 19. Average Burden and Costs* per Facility for Annual Monitoring and Reporting Activities for Existing Manufacturers for the 200 MGD All Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Biological Monitoring (Impingement, Freshwater)	379	\$18,504	\$510
Biological Monitoring (Impingement, Marine)	482	\$23,564	\$660
Biological Monitoring (Entrainment, Freshwater)	614	\$30,376	\$8,310
Biological Monitoring (Entrainment, Marine)	776	\$38,069	\$10,800
Biannual Status Report Activities	324	\$16,618	\$770
Verification Study	122	\$6,846	\$510
Total**	2,697	\$133,977	\$21,560

* 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 since not all facilities would need to perform every activity listed.

Exhibit 20. Average Burden and Costs* per Facility for Annual Monitoring and Reporting Activities for Existing Manufacturers for the 100 MGD Certain Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Biological Monitoring (Impingement, Freshwater)	379	\$18,504	\$510
Biological Monitoring (Impingement, Marine)	482	\$23,564	\$660
Biological Monitoring (Entrainment, Freshwater)	614	\$30,376	\$8,310
Biological Monitoring (Entrainment, Marine)	776	\$38,069	\$10,800
Biannual Status Report Activities	324	\$16,618	\$770
Verification Study	122	\$6,846	\$510
Total**	2,697	\$133,977	\$21,560

* 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 since not all facilities would need to perform every activity listed.

Exhibit 21. Average Burden and Costs* per Facility for Annual Monitoring and Reporting Activities for New Offshore Oil and Gas Extraction Facilities

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Biological Monitoring (Impingement)**	159	\$7,747	\$498
Biological Monitoring (Entrainment)**	52	\$1,353	\$2,230
Velocity Monitoring	163	\$5,692	\$500
Yearly Status Report Activities	223	\$11,304	\$770
Total***	597	\$26,096	\$3,998

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

** The cost of collecting biological monitoring data for impingement and entrainment varies between different operating regions. Therefore the costs reported here is a weighted average for facilities in Alaska and the Gulf of Mexico.

*** The totals do not reflect the average burden and costs for every facility since not all facilities would need to perform every activity listed, e.g., MODUs are not required to conduct monitoring except as determined by the Director.

Director O&M Costs

Under today's proposed rule, EPA does not anticipate any operation and maintenance costs other than ODCs for Directors. Exhibits 22, 23 and 24 provide estimates of average Director labor costs and ODCs for existing manufacturers and new offshore oil and gas extraction facilities. Exhibit 25 provides estimates of average Director labor costs and

ODCs for new offshore oil and gas extraction facilities. For a more detailed explanation of Director costs, see Exhibit A.(50MGD, 200MGD, or 100MGD).3 in Appendix A for the three options considered for existing manufacturers and Exhibit B.3 in Appendix B for new offshore oil and gas extraction facilities.

Exhibit 22. Average Director Burden and Costs* for Activities for Existing Manufacturers for the 50 MGD All Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Director Start-up Activities (per State/Territory)	100	\$3,894	\$50
Director Permit Issuance Activities (per Facility)	810	\$36,282	\$310
Verification Study Review (per Facility)**	21	\$768	\$10
Annual Director Activities (per Facility)	50	\$1,851	\$30
Total***	981	\$42,795	\$400

* There are no capital costs associated with the director activities.

** Since facilities must monitor for at least two years before submitting their verification study for review, EPA does not anticipate that Directors would incur burden and costs for this activity during the initial ICR approval period.

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

Exhibit 23. Average Director Burden and Costs* for Activities for Existing Manufacturers for the 200 MGD All Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Director Start-up Activities (per State/Territory)	100	\$3,894	\$50
Director Permit Issuance Activities (per Facility)	716	\$31,817	\$310
Verification Study Review (per Facility)**	21	\$768	\$10
Annual Director Activities (per Facility)	50	\$1,851	\$30
Total***	887	\$38,330	\$400

* There are no capital costs associated with the director activities.

** Since facilities must monitor for at least two years before submitting their verification study for review, EPA does not anticipate that Directors would incur burden and costs for this activity during the initial ICR approval period.

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

Exhibit 24. Average Director Burden and Costs* for Activities for Existing Manufacturers for the 100 MGD Certain Waterbodies Option

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Director Start-up Activities (per State/Territory)	100	\$3,894	\$50
Director Permit Issuance Activities (per Facility)	1,330	\$60,163	\$310
Verification Study Review (per Facility)**	21	\$768	\$10
Annual Director Activities (per Facility)	50	\$1,851	\$30
Total***	1,501	\$66,676	\$400

* There are no capital costs associated with the director activities.

** Since facilities must monitor for at least two years before submitting their verification study for review, EPA does not anticipate that Directors would incur burden and costs for this activity during the initial ICR approval period.

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

Exhibit 25. Average Director Burden and Costs* for Activities for New Offshore Oil and Gas Extraction Facilities

Activities	Burden (hrs)	Labor Cost (2003\$)	O&M (2003\$)
Director Start-up Activities (per EPA Region)	100	\$3,894	\$50
Director Permit Issuance Activities (per Facility)	281	\$11,668	\$310
Annual Director Activities (per Facility)	50	\$1,851	\$30
Total**	431	\$17,413	\$390

* There are no capital costs associated with the director activities.

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

6c. Estimating Agency Burden and Costs

As mentioned previously, there are 46 States and Territories authorized to administer the NPDES permitting program. For in-scope facilities applying for reissued permits in the 10 unauthorized States and Territories, EPA would incur costs and burdens similar to those incurred by States with permitting authority. This analysis, however, assumes that facilities complying with the rule during the ICR approval period would be in NPDES-authorized States.

EPA typically reviews NPDES permits in the early stages of implementation of new regulations. This review ensures that the key provisions of the rule are implemented properly by the States. Based on historical reports submitted for 316(b) demonstrations, EPA assumes that it would take about 39 hours on average to perform a detailed review, make comments, and follow up on comments for the 316(b) portions of a State-issued NPDES permit. Exhibit 26 summarizes Federal burden and cost estimates for the three options considered for existing manufacturers. The new offshore oil and gas extraction facilities will submit their permit application to the EPA region within which they reside. Therefore, there are no additional costs incurred by the Federal government for these facilities. Further detail is provided in Exhibit A.(50MGD, 200MGD, or 100MGD).4 in Appendix A for the three options considered for existing manufacturers.

Exhibit 26. Estimating Federal Burden and Costs for Activities for Existing Manufacturers

Activities		Burden (hrs)	Labor Cost (2003\$)	O&M(2003\$)
50 MGD All Waterbodies Option	Federal Permit Program Oversight Activities (per Permitted Facility)	39	\$1,422	\$50
200 MGD All Waterbodies Option	Federal Permit Program Oversight Activities (per Permitted Facility)	36	\$1,321	\$50
100 MGD Certain Waterbodies Option	Federal Permit Program Oversight Activities (per Permitted Facility)	48	\$1,782	\$50

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

Under the proposed 50 MGD for all waterbodies option, during the first three years after promulgation, there are an estimated 87 facilities along with 46 States and Territories that the section 316(b) Phase III rule would affect. Under the proposed 200 MGD for all waterbodies option, the proposed Phase III rule would affect 44 facilities with 46 States. The number of facilities and States affected by the proposed Phase III rule would be 42 and 46, respectively under the 100 MGD for certain waterbodies option. 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.(50MGD, 200MGD, or 100MGD).5 and A.(50MGD, 200MGD, or 100MGD).6 in Appendix A (for the three options considered for existing manufacturing facilities) and Exhibits B.5 and B.6 in Appendix B (for new offshore oil and gas extraction facilities) 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 rule. In addition, Exhibits A.(50MGD, 200MGD, or 100MGD).7-A.(50MGD, 200MGD, or 100MGD).10 in Appendix A for the three options considered for existing manufacturers and Exhibits B.7-B.10 in Appendix B for new offshore oil and gas extraction facilities provide a summary of the respondent burdens and costs for each year of the ICR approval period. These estimates were calculated by multiplying facility and Director level burden and cost estimates in Exhibits A.(50MGD, 200MGD, or 100MGD).1-A.(50MGD, 200MGD, or 100MGD).3 by the number of respondents performing each activity in Exhibit A.(50MGD, 200MGD, or 100MGD).5 for the three options considered for existing manufacturers and by multiplying facility and Director level burden and cost estimates in Exhibits B.1-B.3 by the number of respondents performing each activity in Exhibits B.5 for new offshore oil

and gas extraction facilities (see Appendix A for existing manufacturers and Appendix B for new offshore oil and gas extraction facilities).

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 proposed 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 approval period. Exhibit 27 provides a summary of the average annual number of respondents, burden hours, and costs for the three options considered for existing manufacturers and State Directors. Similarly, Exhibit 28 shows a summary of the average annual number of respondents, burden hours, and costs for new offshore oil and gas facilities. The burden and cost for the three EPA regions handling the offshore oil and gas NPDES general permits is also included in Exhibit 28. These EPA regional offices are considered part of the Federal government, and the burden to the Federal government is typically considered separately from the burden to States and Facilities. However, it has been included here because of their role as the NPDES permitting authority. A more detailed summary can be found in Exhibit A.(50MGD, 200MGD,or 100MGD).11 in Appendix A for the three options considered for existing manufacturers and Exhibit B.11 in Appendix B for new offshore oil and gas extraction facilities.

Exhibit 27. Summary of Average Annual Respondents, Burden, and Costs for Facilities and State Directors for the ICR Approval Period for Existing Manufacturers

		Average Annual Respondents	Average Annual Burden (hours)	Average Annual Labor Costs (2003\$)	Average Annual Capital and O&M Costs (2003\$)	Total Annual Costs (2003\$)
50 MGD All Waterbodies Option	Facilities	38	185,514	\$8,713,868	\$2,224,340	\$10,938,208
	State Directors	43	16,972	\$747,981	\$6,823	\$754,804
	Totals	81	202,486	\$9,461,849	\$2,231,163	\$11,693,012
200 MGD All Waterbodies Option	Facilities	8	44,203	\$2,076,359	\$878,723	\$2,955,082
	State Directors	21	4,677	\$198,932	\$2,160	\$201,092
	Totals	29	48,880	\$2,275,291	\$880,883	\$3,156,174
100 MGD Certain Waterbodies Option	Facilities	10	65,695	\$3,083,569	\$1,046,490	\$4,130,059
	State Directors	23	6,528	\$284,624	\$1,973	\$286,597
	Totals	33	72,223	\$3,368,193	\$1,048,463	\$4,416,656

Exhibit 28. Summary of Average Annual Respondents, Burden, and Costs for Facilities and EPA Regional Directors for the ICR Approval Period for New Offshore Oil and Gas Extraction Facilities

	Average Annual Respondents	Average Annual Burden (hours)	Average Annual Labor Costs (2003\$)	Average Annual Capital and O&M Costs (2003\$)	Total Annual Costs (2003\$)
Facilities	22	11,238	\$569,343	\$573,968	\$1,143,311
Directors (EPA Region)	3	2,161	\$88,169	\$2,213	\$90,382
Totals	25	13,399	\$657,512	\$576,181	\$1,233,693

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 approval period. Exhibits 29 and 30 provide a summary of the average annual agency burden hours, and costs. A more detailed summary can be found in Exhibit A.(50MGD, 200MGD, or 100MGD).11 in Appendix A for the three options considered for existing manufacturing facilities and

Exhibit B.11 for new offshore oil and gas extraction facilities.

Exhibit 29. Summary of Average Annual Agency Burden and Costs for the ICR Approval Period for Existing Manufacturers

		Average Annual Burden (hours)	Average Annual Labor Costs (2003\$)	Average Annual O&M Costs (2003\$)	Total Average Annual Costs (2003\$)
50 MGD All Waterbodies Option	Agency Totals	721	\$26,548	\$933	\$27,481
200 MGD All Waterbodies Option	Agency Totals	152	\$5,577	\$217	\$5,794
100 MGD Certain Waterbodies Option	Agency Totals	187	\$6,902	\$183	\$7,085

Exhibit 30. Summary of Average Annual Agency Burden and Costs for the ICR Approval Period for New Offshore Oil and Gas Extraction Facilities

	Average Annual Burden (hours)	Average Annual Labor Costs (2003\$)	Average Annual O&M Costs (2003\$)	Total Average Annual Costs (2003\$)
Agency Totals	2,161	\$88,169	\$2,213	\$90,382

6f. Reasons For Change In Burden

The change in burden results from proposed regulatory changes that require information collection and record keeping activities. These proposed regulatory changes partially fulfill EPA's obligation to comply with the consent agreement entered in *Cronin v. Browner*, 93 Civ. 0314 (AGS) S.D.N.Y., filed Oct. 10, 1995, and amended in *Riverkeeper, Inc. v. Leavitt*, filed November 21, 2000. These agreements require that EPA propose and finalize regulations that implement section 316(b) of the CWA by specified dates. Today's proposed rule is a direct result of the consent agreement requirements.

6g. Burden Statement

50 MGD For All Waterbodies Option

The annual average burden for existing manufacturing facilities is 185,514 hours for an average of 38 facilities (Exhibit A.50MGD.11, Appendix A for existing manufacturers). For new offshore oil and gas existing facilities, the annual average burden is 11,238 hours for an average of 22 facilities (Exhibit B.11, Appendix B). This results in a total of 196,752 hours of burden for an average of 60 facilities. Hence, the annual average reporting and record keeping burden for the collection of information by facilities responding to the section 316(b) Phase III proposed rule is estimated to be 3,279 hours per respondent (i.e., an annual average of 196,752 hours of burden divided among an anticipated annual average of 60 facilities).

Similarly, the annual average burden for Director for the review, oversight, and administration of the rule for existing manufacturing facilities is 16,972 hours for an average of 43 States (Exhibit A.50MGD.11, Appendix A for existing manufacturers). For new offshore oil and gas extraction facilities, the permitting process is handled directly by EPA Regions 4, 6, and 10. Since this burden is incurred by the Federal Government rather than the States, it is not included as part of the burden statement for State Directors. Hence, the Director reporting and record keeping burden for the review, oversight, and administration of the rule is estimated to average 395 hours per respondent (i.e., an annual average of 16,972 hours of burden divided among an anticipated 43 States on average per year).

200 MGD For All Waterbodies Option

The annual average burden for existing manufacturing facilities is 44,203 hours for an average of 8 facilities (Exhibit A.200MGD.11, Appendix A for existing manufacturers). For new offshore oil and gas existing facilities, the annual average burden is 11,238 hours for an average of 22 facilities (Exhibit B.11, Appendix B). This results in a total of 55,442 hours of burden for an average of 30 facilities. Hence, the annual average reporting and record keeping burden for the collection of information by facilities responding to the section 316(b) Phase III proposed rule is estimated to be 1,848 hours per respondent (i.e., an annual average of 55,441 hours of burden divided among an anticipated annual average of 30 facilities).

Similarly, the annual average burden for Director for the review, oversight, and administration of the rule for existing manufacturing facilities is 4,677 hours for an average of 21 States (Exhibit A.200MGD.11, Appendix A for existing manufacturers). For new offshore oil and gas extraction facilities, the permitting process is handled directly by EPA Regions 4, 6, and 10. Since this burden is incurred by the Federal Government rather than the States, it is not included as part of the burden statement for State Directors. Hence, the Director reporting and record keeping burden for the review,

oversight, and administration of the rule is estimated to average 223 hours per respondent (i.e., an annual average of 4,677 hours of burden divided among an anticipated 21 States on average per year).

100 MGD For Certain Waterbodies Option

The annual average burden for existing manufacturing facilities is 65,695 hours for an average of 10 facilities (Exhibit A.100MGD.11, Appendix A for existing manufacturers). For new offshore oil and gas existing facilities, the annual average burden is 11,238 hours for an average of 22 facilities (Exhibit B.11, Appendix B). This results in a total of 76,933 hours of burden for an average of 32 facilities. Hence, the annual average reporting and record keeping burden for the collection of information by facilities responding to the section 316(b) Phase III proposed rule is estimated to be 2,404 hours per respondent (i.e., an annual average of 76,933 hours of burden divided among an anticipated annual average of 32 facilities).

Similarly, the annual average burden for Director for the review, oversight, and administration of the rule for existing manufacturing facilities is 6,528 hours for an average of 23 States (Exhibit A.100MGD.11, Appendix A for the three options considered for existing manufacturers). For new offshore oil and gas extraction facilities, the permitting process is handled directly by EPA Regions 4, 6, and 10. Since this burden is incurred by the Federal Government rather than the States, it is not included as part of the burden statement for State Directors. Hence, the Director reporting and record keeping burden for the review, oversight, and administration of the rule is estimated to average 284 hours per respondent (i.e., an annual average of 6,528 hours of burden divided among an anticipated 23 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 utilize 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 numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

To comment on the Agency'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, EPA has established a public docket for this ICR under Docket ID No. OW-2004-0002, which is available for public viewing the Water Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 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 through EPA Dockets (EDOCKET) at <http://www.epa.gov/edocket>. Use EDOCKET to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. Once in the system, select “search,” then key in the docket ID number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Office for EPA. Please include the EPA Docket ID No. (OW-2004-0002), OMB control number (2040-NEW) and the EPA ICR number (2169.01) in any correspondence.