

Justification of Questions
Detailed Industry Questionnaire: Phase II Cooling Water Intake Structures
August 1999

Traditional Steam Electric Utility, Steam Electric Non-Utility Power Producers and Manufacturers Questionnaires - Parts 1 and 2

[Note: Parts 1 and 2 of these surveys are essentially the same.]

Part 1: Scoping

The scoping section of this document intends to verify name and addresses and determine if the facility is still falls within the scope of the study. In order to verify discrepancies or collect missing data, EPA requires a point of contact be provided. Other information required in this section includes:

- SIC codes - Identify the specific industry groups that have facilities with cooling water intake structures (i.e., facilities that directly withdraw cooling water from surface water). EPA wants to survey representative numbers of facilities within the industry groups identified with facilities that have cooling water intake structures.
- NPDES permit status - identifies facilities directly discharging pollutants to waters of the United States which are considered point sources under the Clean Water Act and are required to have National Pollutant Discharge Elimination System (NPDES) permits. If a facility responds negatively to this question, it can be hypothesized that the facility is an indirect discharger, is a zero-discharge facility, is a new point source not yet permitted, or is a point source missed in the permitting process. These responses reduce the initial target universe to include only permitted and unpermitted sources that use cooling water. These entities are *not* point sources under the CWA and are, therefore, *not* subject to Section 316(b). Zero-dischargers may be considered a point source by some permitting authorities (because they have the potential to discharge), EPA is opting to keep these facilities in the survey using the same logic (i.e., they have the potential to discharge and they use cooling water).
- Cooling water from surface waters - Are the major scoping questions under the survey. Obviously, if a facility does not use cooling water, it does not have cooling water intake structures and is therefore not subject to Section 316(b) requirements or does not obtain any of its cooling water from a surface water source considered waters of the United States (the primary focus of the CWA). If a facility responds negatively, they will be exempted from completing the remaining questions in the survey. EPA is requesting data as far back as three years to account for facilities that may use cooling water on an intermittent basis. Three years was determined to be a reasonable period of time over which to evaluate cooling water use and the potential for use in the future. Moreover, this time period is one that is typically used for evaluating water use practices under the NPDES program.

- Activities requiring cooling water - are primarily for electricity generation when steam is used as the thermodynamic medium, EPA knows less about facilities that use cooling water for other purposes. EPA wants to confirm that it adequately samples facilities that use cooling water for other purposes besides electricity generation under the this phase of the survey process.
- Sources of cooling water - is aimed at identifying the sources of cooling water for those facilities remaining in scope. EPA wants to identify the proportion of facility cooling water intake flow that is derived via withdrawals from surface water. It is this portion of the flow that would make the facility's cooling water intake structure subject to Section 316(b) requirements. The data will enable EPA to evaluate sources of cooling water on a facility as well as industry basis. The data might suggest alternative approaches to regulation for particular industry groups or facilities in particular flow ranges for the purpose of minimizing burden.

Part 2: Section A: Plant Profile Data

Cooling Water Systems

The first portion of the plant profile section requests respondents to identify the total number of cooling water systems withdrawing cooling water from surface waters and will be assigned tracking numbers to be used to identify CWSs throughout the survey. This will allow EPA to compare system configurations and technologies for single versus multiple intake structures. Also requested are the month and year data to identify trends of new CWSs and the operating status to identify the systems on and offline.

EPA is interested in the configurations of a facility's cooling water system which is related, in general, to the total amount of cooling water that must be withdrawn by that facility. In general, recirculating systems require much less cooling water than a once-through system. As such, EPA is trying to ascertain the distribution of in-scope facilities having once-through versus recirculating cooling water systems.

The information is likely to facilitate EPA's development of regulatory approaches that will result in less burden on the regulated universe and permitting authorities. EPA may consider tiering regulatory options based on a facility's potential to cause an adverse impact via its cooling water intake structures. Facilities with recirculating cooling water systems, low to mid-size flow ranges, intake structures extending into a large river or lake, and extensive control technologies might have less requirements than facilities with once-through cooling water systems withdrawing water at a high rate from an estuary and with minimal control technologies.

Cooling Water Intake Structures

EPA is requesting data on the number of intake structures and their basic background information including number of bays, date of installation, exact location, associated cooling water system, design capacity, and percent of capacity apportioned for cooling water flow. The date CWIS first

used data will establish trends. The locations for CWISs are presumed to be a factor in defining environmental impacts and will facilitate GIS mapping of CWISs. The mapping information should provide a visual picture to evaluate cumulative impacts. This information is likely to facilitate EPA's development of regulatory approaches that will result in less burden on the regulated universe and permitted authorities. The flow data will identify the proportion of cooling water used. EPA is considering tiering regulatory options based on a facility's potential to cause an adverse impact via its cooling water intake structures.

Cooling Tower Technologies

A facility's cooling water system type is related, in general, to the total amount of cooling water that must be withdrawn by that facility. Generally, recirculating systems require much less cooling water than a once-through system. Cooling towers are generally used with recirculating cooling water systems to transfer heat added to water from operations to the atmosphere. This question will allow EPA to determine the number and percentage of facilities that use cooling tower technology and the type of cooling tower used (e.g., mechanical draft). Specific information is also requested on the manufacturer name and model number of the cooling tower, the calendar year the cooling tower was installed, and the expected life span. This information will help EPA to assess the availability of the various technologies for facilities across the nation, whether the system designs are generally applicable to different facilities or if the systems have to be designed for a specific site, whether the systems are currently available or if they are an outdated technology, and compatibility with other technologies.

Cooling Water Discharge Outfalls

EPA is requesting discharge outfall data in order to evaluate cumulative impacts. This portion is also requesting basic profile data of the outfalls including zero-dischargers, number of NPDES-permitted outfalls, exact location, and associated cooling water system. EPA needs to characterize facilities that do not have an NPDES permit and are not an indirect discharger and to ascertain why such entities do not have an NPDES permit. There are three possible reasons why a facility might not have an NPDES permit and is not an indirect discharger, including the following: (1) the facility is a zero-discharge facility meaning that it may or may not be a point source under the CWA; (2) the facility is a new point source not yet permitted; and (3) the facility is a point source but was somehow missed in EPA's permitting process. Since some permitting authorities consider zero-discharge facilities to be a point source because they "have the potential to discharge," EPA has opted to keep zero-discharge facilities in the questionnaire (i.e., in scope of Section 316(b)). They are, however, to skip over questions which asks entities to indicate the parties or sources to which it discharges its effluent. The latitude and longitude will be used for GIS mapping of CWDOs. (See justification discussion above)

Flow Distribution/Water Balance Diagram

This portion of the profile is aimed at identifying the proportion of intake water used for cooling, make up, and process water. The water balance diagram gives a complete picture of the total flow in and out of the facility. The water balance diagram is the most effective tool to evaluate all of the water paths.

Part 2: Section B: Sources of Cooling Water and Intake Arrangements

Water Source Data

EPA is requesting the respondents to identify the name of the source water (e.g., non-tidal river, lake, estuary, etc.) information and intake arrangements. The types of surface water bodies from which cooling water is withdrawn and the volume or rate at which that water is withdrawn are both known to influence the degree to which adverse impacts might occur from a specific cooling water intake structure. These are probably two of the most important variables affecting cooling water intake structure impacts.

This data will help EPA characterize the number of facilities using various types of surface water for cooling purposes. This might suggest the magnitude of problems at hand or possible implementation approaches. For example, it is generally accepted that facilities located on estuaries have a greater potential to cause adverse impacts than facilities on lakes. If it is found that 40 percent of in-scope facilities are located on estuaries and have significant intake flows, EPA might need to pursue a more aggressive regulatory approach for existing facilities than if there were only a handful of facilities with such intake locations. The data also provide a means for EPA to evaluate regulatory impacts if proposed regulatory approaches are to be based on types of source water and flow as is the current thinking.

The location of the cooling water intakes are presumed to be a factor in defining environmental impact. Typically, these intake structures are located offshore, at the shoreline, or at the end of an approach intake canal. Therefore, data are required to identify the type of intake, depth of canal/channel, and average distance of intake structure. The distance is an indication of velocity and environmental impact. The distance data will clarify the likelihood of species attraction.

The proximity of intake structures to sensitive aquatic ecological areas may result in potential environmental impacts.

Part 2: Section C: Cooling Water Intake Structure Technology Information

Bar Racks and Screening Technologies

Many cooling water intake structures at electric utilities use bar racks/trash racks (devices consisting of fixed bars that mechanically stop debris and/or organisms) to prevent large debris from entering the water system. This information allows EPA to determine the number and percentage of facilities that use bar racks/trash racks and to determine which control technologies are appropriate for use with certain types of cooling systems and certain water

source types. EPA is trying to ascertain the distribution of facilities using bar racks/trash racks. The Agency wants to correlate this information with the data on: configurations of cooling water systems; sources of cooling water and intake arrangements; and intake flow rates for each cooling water intake structure.

The information will be used in conjunction with the information in the previous section to facilitate EPA'S development of regulatory approaches that will results in less burden on the regulated universe and permitting authorities. As stated previously, EPA may consider tiering regulatory options based on a facilities potential to cause an adverse impact via its cooling water intake structures. Facilities with recirculating cooling water systems, low to mid-size flow ranges, intake structures extending into a large river or lake, and extensive control technologies might have less requirements than facilities with once-through cooling water systems withdrawing water at a high rate from an estuary and with minimal control technologies.

Although many cooling water intake structures use traveling or other intake screen systems to prevent debris from entering the water system, in most cases, these technologies are installed only to prevent debris from entering the cooling water system, not to prevent adverse environmental impacts from occurring. In some cases, traveling or other intake screen systems have been modified to reduce impingement and/or entrainment and so that fish impinged on the screens can be removed with minimum stress and mortality. This section asks whether such technologies have been applied and to determine which modifications are more appropriate for use with certain types of cooling systems, certain water source types, and certain traveling or other intake screen systems. EPA is trying to ascertain the distribution of facilities using modifications to reduce impingement and/or entrainment effects on aquatic organisms.

Passive Intake System Technologies

Passive intake systems screen out debris and biota with little or no mechanical activity. Most passive systems are based on achieving very low withdrawal velocities so that organisms will avoid the intake. There are different types of passive intake systems; this question requests information on six types. This section seeks information that allows EPA to determine the number and percentage of facilities that use passive intake systems and which control technologies are more appropriate for use with certain types of cooling systems and certain water source types.

Fish diversion of Avoidance System Technologies

Fish diversion or avoidance systems are designed to use the natural behavior patterns of fish so that the fish will not enter an intake structure. There are different types of passive intake systems; this question requests information on nine types. This section seeks information that allows EPA to determine the number and percentage of facilities that use these types of fish diversion or avoidance systems and which fish diversion or avoidance systems may be more appropriate for use with certain types of cooling systems, certain cooling water intake structures, and certain water source types.

Fish Handling and/or Return Technologies

Fish handling and/or return systems collect, divert, or transport live organisms and debris away from an intake structure to their final disposition. These data allows EPA to determine the number and percentage of facilities that use these types of fish handling and/or return systems and which fish handling and/or return systems may be more appropriate for use with certain types of cooling systems, certain cooling water intake structures, and certain water source types.

Other Design and Operational Data

The design through-screen velocity of cooling water can have an impact on fish impingement and entrainment. Velocity data will be used to determine the impact if EPA were to set a maximum velocity standard.

The rate at which cooling water is withdrawn influences the degree to which adverse impacts may occur from a specific cooling water intake structure. This question requests information on actual monthly cooling water intake flows (daily maximum, daily minimum, and monthly average) on the basis of each facility's total number of operating days for each intake structure for the years 1996 through 1998. EPA is requesting data as far back as three years to account for facilities that use cooling water on an intermittent (e.g., seasonal) basis as well as on a continuous basis. Three years was determined to be a reasonable period of time over which to evaluate cooling water use and the potential for use in the future. In addition, facilities are only required to retain their data for a three year period under the NPDES program. A distribution of averages can then be evaluated for intermittent and continuous users. Such data might support the development of particular regulatory options based on intake flow rates or operational variables.

Reductions in cooling water intake flow can reduce adverse impacts from a cooling water intake structure (e.g., entrainment and impingement). Once-through cooling water systems have been found to cause higher rates of entrainment because they require the continuous intake of water. The use of recirculating cooling water systems reduces the needed flow of intake water. This question requests information on the installation of recirculating cooling water systems and other technologies, the reduction of flow resulting from these modifications, and the associated flow reduction period (e.g., seasonal). This information will allow EPA to determine the resulting reduction in flow from implementing cooling water intake flow reduction measures and estimate future reductions if other facilities implemented these measures.

The discharge of heated cooling water can cause adverse environmental impacts. This question seeks information that allows EPA to determine the number and percentage of facilities that use dilution pumps to reduce the temperature of its cooling water discharge. The use of dilution pumps may be more appropriate for use with certain types of cooling systems and for certain discharge outfalls. The Agency wants to correlate this information with the data on: configurations of cooling water systems; and cooling water discharge outfalls.

Ice build up can interfere with cooling water intake structures and control technologies. Some facilities use ice control systems at the cooling water intake structure to prevent ice build up. This question seeks information on the number and percentage of facilities that use ice control systems. The need for the use of ice control systems may depend on factors such as the facility's geographic location, type of water source, type of intake structure, and intake flow rate. The Agency wants to correlate this information with data on: configurations of cooling water systems; sources of cooling water and intake arrangements; and intake flow rates.

Ineffective Technologies

This question requests information on technologies that were determined to be ineffective at minimizing impingement and/or entrainment. This information will help EPA identify ineffective technologies and the reason for their ineffectiveness (e.g., whether ineffective in general or due to site specific conditions such as species present or site characteristics). Such information may allow EPA to eliminate some technologies from further consideration during development of regulation and effluent limitation guidelines.

Part 2: Section D. Environmental and Technological Studies and Mitigation Activities

The initial scoping question will identify the extent to which plants in various sectors have performed, or are performing, assessments of the environmental impacts of CWIS. This information is needed to characterize the current regulatory practice related to implementation of the statutory requirements of 316(b). EPA will use these data to evaluate the impacts associated with different categories of location, design, construction, and capacity. If a facility responds negatively to all parts of this question, it will be exempted from completing the remaining questions in Section D of the survey.

Section 316(b) Demonstration Studies

EPA is requesting details on the time, duration, focus, methods, and results of 316(b)-demonstration studies to establish the baseline of efforts that have assessed the impacts of CWIS and how the results were used to change the technology or operations of a facility. If 316(b)-demonstration studies led to changes in CWIS technology and operations, EPA will characterize the range of solutions for avoiding adverse environmental impacts. These data will aid EPA in identifying the range and number of studies available to support regulatory decisions, identifying adverse impacts, determining cost-benefits, and providing industry examples of tested controls and data collection efforts.

Plants that have not completed Section 316(b) Demonstration Studies will be exempted from completing the matrix associated with questions concerning details of the study.

Biological Studies of Impingement and/or Entrainment

These scoping questions will establish if a facility has completed one or more biological studies of impingement and/or entrainment. This information is needed to characterize the breadth of biological studies of impingement and/or entrainment conducted by industry. Knowing the extent of research conducted by the regulated community will assist EPA in determining the level of impact from regulations that may propose biological monitoring as a requirement. If a plant responds negatively anywhere in this question, it will be exempted from completing the remaining questions related to biological studies of impingement and/or entrainment in Section D.

The types of information collected concerning the biological studies of impingement/entrainment conducted include:

- Number, extent, and duration of biological studies of impingement and/or entrainment to support regulatory decisions, identify adverse impacts, determine cost-benefits, and provide industry examples of tested controls and data collection efforts.
- Duration, scope, measurements recorded, and focus of the respondent's most representative biological study of impingement and/or entrainment. EPA will characterize the level and type of biological research on impingement and/or entrainment and determine what studies exist for evaluating impingement and/or entrainment and facilitate EPA in determining the burden (i.e., economic impacts) of any proposed 316(b) regulations that may require industry to assess biological impacts.
- Studies that analyze impingement and/or entrainment measurements over time in relation to natural and seasonal variation and other human activities. Adequately assessing biological impacts of CWIS requires understanding changes in numbers of individual species, size of populations, and community structure relative to natural biological variation and other human activity (e.g., fishing and pollution). This information will be used to determine the extent to which studies attempted to assess the impacts of impingement and/or entrainment relative to natural or anthropogenic stressors besides CWIS in the aquatic environment.
- Characterization of the extent and type of impacts that have been assessed by industry. Adverse impacts may include impacts associated with losses to commercial and recreational fisheries, threatened and endangered species, populations, and community structure and diversity as a result of impingement by CWIS. Also, "adverse impacts" can occur at different levels (i.e., species, population, and community) and may be defined differently depending on species. This information provides EPA with a characterization of the extent and type of impacts that have been assessed by industry.
- Identification of the availability of studies, rather than asking for detailed descriptions of study methodologies and findings, which would impose an excessive burden on the respondents, EPA plans to select a range of studies to investigate more thoroughly. These studies will be used to support regulatory decisions, identify adverse impacts, determine cost-benefits, and provide industry examples of tested controls and data collection efforts.

Statutory requirements of 316(b) direct EPA to minimize “adverse impacts” resulting from the design, location, construction, and capacity of a CWIS. This requires EPA to address the issue of what is an adverse environmental impact. Defining adverse impact requires an understanding of species, populations, and biological communities affected by the CWIS. Because adverse impacts are difficult to define, this response will provide EPA with an understanding of the biological information used to conduct impact assessments. From this, EPA can evaluate the adequacy of assessments, develop guidelines for impact assessment, and review the findings of impact assessments. These responses will also be used to characterize the costs associated with different levels of study.

The types of information collected on findings of biological studies on impingement/entrainment that lead to technological changes include:

- Discrete biological studies of impingement and/or entrainment that led to technological or operational changes. If a plant has not conducted any biological studies of impingement and/or entrainment that resulted in technological or operational changes, the respondent is exempted from completing the associated matrix.
- Duration, scope, methods, and focus of biological studies of impingement and/or entrainment that led to technological or operational change. Because EPA is particularly interested in identifying and evaluating the best technology available (BTA) to minimize adverse impacts, these responses allow EPA to identify technologies currently used by facilities resulting from biological studies of impingement and/or entrainment and assist EPA in developing industry wide options and recommendations on technological and operational controls.
- Annual cost of impingement monitoring. In developing regulatory options for 316(b), EPA will have to consider the reasonableness of costs imposed on industry. Regulations may require regular impingement monitoring from at least a subset of the facilities and cost information will assist EPA in determining appropriate monitoring levels and burden placed on industry due to such requirements. The cost data will allow EPA to appropriately plan and evaluate the economic impact of any monitoring requirements that may comprise a component of a final 316(b) rule. Cost data also will allow EPA to assess study costs in relation to the level of information gathered.
- Monitoring data availability for review. EPA may need to request review of this data to support regulatory decisions, identify adverse impacts, determine cost-benefits, and provide industry examples of tested controls and data collection efforts.

Technological Studies of Impingement and/or Entrainment

EPA is particularly interested in studies that can draw a direct correlation between a CWIS technology (and/or its operations?) and its effectiveness to minimize impingement and/or entrainment of aquatic organisms. Thus EPA will use responses to this question to identify technological options for minimizing impingement and/or entrainment of aquatic organisms.

If a plant has not conducted any discrete studies to evaluate the effectiveness of a technology, the respondent is exempted from completing the associated matrix.

Mitigation Activities

These responses allow EPA to characterize the types of activities that are being employed to offset impacts from CWIS. This information will facilitate EPA's identification of options for mitigating impacts to aquatic resources from CWIS beyond technological or operational changes. Mitigation may be a component of final 316(b) regulations and data from this question will highlight the current mitigation options required by regulators and used by industry.

Part 2: Section E. Planned Cooling Water Intake Structures and Changes to Capacity

EPA is requesting information on planned units to estimate the potential growth in the number of CWIS and their potential impacts to their water sources. EPA is also requesting the technologies for CWIS planned to possibly establish trends in new and emerging technologies and how facilities assess BTA.

With the availability of recent studies, EPA may request review of this data to support regulatory decisions, identify adverse impacts, determine cost-benefits, and provide industry examples of tested controls and data collection efforts.

[**Note:** The following breaks out Part 3 of the detailed questionnaire which is different for each industry segment.]

Traditional Steam Electric Utility Questionnaire - Part 3: Economic and Financial Data

This part of the questionnaire collects data about plants and their steam electric generating units. The data collected in this document will be used to conduct plant-level analyses of §316(b) regulation. Due to the site-specific nature of the §316(b) regulatory process, the plant will be the main level of economic analysis. In addition to plant-level data, EPA requests limited unit-specific data. These data are important to determine unit-level impacts for plants whose units differ in their economic performance and for plants that operate more than one cooling water intake structure. The unit is an important level of §316(b) analysis as the decision to dispatch is made on the unit-level, not the plant-level.

Since electric utilities are currently subject to industry regulation, a substantial amount of plant-level financial and operating data are publicly available. In accordance with nonduplication requirements and to reduce respondent burden EPA will use these public data wherever possible.

Part 3: Section A. General Information about the Plant

Section A requests limited plant-level information. Requested information includes identification of the plant's EIA, RUS, and DUNS identification numbers, the plant contact person, information

on activities carried out at the plant that are not related to electricity generation, and, for plants owned by rural electric cooperatives only, basic balance sheet information.

The identification information requested in this section will help EPA contact the plant in the event that the plant's responses require clarification. The data will also be used to collect information from public sources, reducing the burden on the respondents. Information on other economic activities of the plant is collected to ensure that EPA will be able to take into account in the plant-level economic impact analyses all activities that provide economic value. No plant-level information on electricity related activities is requested in this questionnaire as this information is publicly available. Basic balance sheet information is requested from plants owned by rural electric cooperatives because this information is not publicly available. Balance sheet data will be used in the economic impact analysis to compare capital costs of compliance with the value of existing plant structures. Plants owned by investor-owned and publicly owned utilities do not have to provide this information as it is publicly available, reducing respondent burden.

Section B: Information for Steam Electric Generating Units

EPA requests basic information for each steam electric generating unit located at the plant as of December 31, 1998. Information requested includes EIA identification code, planned retirement date, identification of CWISs associated with the unit, and operational information such as net generation, hours in operation, net peak demand, and quantity and cost of fuel burned. In addition, Section B contains a question that is designed to screen out units that do not use cooling water directly withdrawn from surface sources and are therefore not subject to the §316(b) survey, reducing respondent burden for these plants.

The unit-level data requested in this section are important to determine unit-level impacts for plants whose units differ in their economic performance and for plants who operate more than one cooling water intake structure. In the electricity market, dispatch decisions are made on the unit-level, not the plant-level. In addition, existing energy market models such as the EIA's National Energy Modeling System run at the unit-level, not the plant-level. To be able to use these models and estimate impacts of the regulation, EPA therefore needs basic operating data on the unit-level. The information requested in this section represents the minimum amount of information necessary to do a unit-level analysis.

The data collected in this section are routinely compiled by plants should therefore not be burdensome to respondents.

Steam Electric Non-Utility Power Producers Questionnaire Part 3: Economic and Financial Data

The detailed questionnaire for non-utility power producers collects information necessary in conducting economic analyses of §316(b) regulation. While nonutilities have traditionally played a minor role in the electricity market in terms of market share, the onset of industry deregulation

has led to an increase in the electricity market share held by nonutilities. Furthermore, in a competitive market, the differences between utilities and nonutilities are expected to disappear¹. As a consequence, EPA deems it necessary to conduct economic analyses of nonutilities similar to those anticipated for utilities. The non-utility power producer detailed questionnaire reflects this approach. The information requested from nonutilities mirrors that available for utilities as closely as possible while recognizing differences between the two groups in their operational and structural characteristics as well as their current reporting requirements.

Numerous questions in the non-utility detailed questionnaire contain a reference to Form EIA-867. These references indicate that the information requested is reported by nonutilities to the Energy Information Administration (EIA). However, the EIA was not able to share this CBI declared information with EPA if it was going to be used for regulatory purposes. In order to minimize respondent burden, EPA phrased questions to match the information provided in Form EIA-867 and included the reference to the corresponding page and item in Form EIA-867, allowing respondents to retrieve the requested data from that form, if desired.

Financial information in this part of the questionnaire is generally requested for three years. EPA requires multiple years of data to capture normal business cycle variations and also to reflect the fact that facilities and firms typically do not make operational decisions based on a single year's performance. EPA generally maintains this three-year time span throughout the financial and economic portions of this questionnaire.

Part 3, Section A: General Facility Information

Fiscal year information enables EPA to allow facilities to report data in terms of their fiscal year instead of requiring the respondents to convert their fiscal year to the year selected by EPA. EPA will perform any fiscal year conversions and the resulting adjustments for inflation if necessary, thereby minimizing the burden on respondent facilities.

EPA requests the number of months in each survey year for which the facility has financial information. During other regulatory efforts, EPA has found that respondents had begun or ceased operations during the survey period. The data requested about the number of months reported in each year allows for partial-year data to be collected and used in these cases. EPA requires information about these partial-year respondents to ensure that responses that represent less than a complete 12-month period do not skew results or create inaccuracies.

Part 3, Section B: Information About the Facility's Owner

The name, address, and DUNS number information will allow EPA to gather data about the entity from secondary sources, reducing the need to collect these data in the detailed questionnaire and

¹This is supported by the Energy Information Administration's (EIA) recent decision regarding the collection and publication of utility and non-utility power producer information.

therefore reducing respondent burden. EPA asks about the percentage of the surveyed facility that was owned by the immediate owner. This information will allow EPA to allocate potential compliance costs to the identified owner.

Industry representatives have informed EPA that many non-utility power producers are owned by limited partnerships or subsidiaries which, in turn, are owned by another business entity. For many non-utility power producers, this is the level of ownership at which operational decisions, including regulatory compliance decisions, are made. In addition, this is expected to be the level at which potential impacts from §316(b) regulation may occur as a result of an entity's ownership of multiple facilities subject to §316(b) rulemaking.

For facilities whose ownership structure is set up as a partnership or a subsidiary, EPA requests the name and DUNS number of the business entity that is the largest owner of the partnership or subsidiary. This information will allow EPA to gather additional data about the entity from secondary sources, reducing the need to collect these data in the questionnaire and therefore reducing respondent burden. In addition, the requested share of ownership in the partnership or subsidiary will allow EPA to allocate potential compliance costs to the business entity.

The economic analysis will be conducted for the three year period from 1996 to 1998. Information about changes in the facility's ownership will allow EPA to identify and understand potential changes in the facility's cost and revenue structure over the 3-year period. In addition, this information will serve to identify facilities that nonutilities purchased from utilities over the past three years. Such purchases of utility generating capacity by nonutilities have been frequent in the current process of deregulation.

Nonutilities provide this information in Form EIA-867.

The domestic parent firm is the business entity for which EPA will conduct small business analyses as required under the Small Business Regulatory Enforcement Fairness Act (SBREFA).

Information about the domestic parent firm allows EPA to gather data about the domestic parent firm from secondary sources, reducing the need to collect these data in the detailed questionnaire and therefore reducing respondent burden.

The SIC code of the domestic parent firm is needed to determine which economic test (i.e., full-time equivalent employees, sales revenue, or megawatt hours of electricity sales) will be used to classify the domestic parent firm as a small or large business under Small Business Administration (SBA) guidelines. This determination is necessary to conduct the economic analyses required under SBREFA.

The data requested about the number of months reported in each year allows for partial-year data to be collected and used in cases where the domestic parent firm has begun or ceased operations during the survey period. EPA requires information about these partial-year respondents to

ensure that responses that represent less than a complete 12-month period do not skew results or create inaccuracies.

Depending on the firm's SIC code, either revenue, employment, or electricity sales for the *firm* is used in the small business analyses (the Small Business Administration defines small businesses in terms of firm rather than facility data). Small business analyses are required under the Small Business Regulatory Enforcement Fairness Act (SBREFA). In addition, data on revenues, employment, and electricity sales will be used in the analyses of economic impacts of §316(b) regulation on the firm.

The revenue and cost information requested is routinely tracked by businesses and represents the minimum amount of information needed to conduct cash flow analyses and other economic analyses of potential impacts of §316(b) regulation on the domestic parent firm.

Part 3, Section C: Facility Revenues and Costs

EPA will use income statement data to estimate the number of baseline and post-compliance facility closures and to assess non-closure impacts on facilities and other entities relevant to the economic analysis. The level of detail requested is required to calculate the measures of cash flow and profitability needed for the economic analyses. Cost items that do not appear in any formulas and algorithms used in the economic analysis are aggregated in the residual "Other Costs and Expenses" category to minimize respondent burden.

The facility is a Type S corporation or a non-corporate proprietorship. Information is important, because these types of facilities may not report taxes as a result of their ownership structure. Knowing that a facility is a Type S corporation or a non-corporate proprietorship will indicate that a value of zero even if a positive income was realized.

For facilities that indicate a Type S corporation or a non-corporate proprietorship status and that do not report income taxes, a corporate or other tax rate will be assigned.

Part 3, Section D: Facility Balance Sheet Information

EPA will use balance sheet data to estimate the number of baseline and post-compliance facility closures and to assess non-closure impacts on facilities and other entities relevant to the economic analysis. These analyses will include calculations of financial condition and performance, such as interest coverage ratio and return on assets. EPA requests asset and liability data in a form that closely resembles standard balance sheets already generated by facilities as a normal business practice, minimizing respondent burden.

Part 3, Section E: Miscellaneous Facility Information

EPA requests information on the facility's employment for Fiscal Years 1996, 1997, and 1998 to estimate employment effects of complete termination of the facility's activities.

EPA requests the rate of interest on the line of credit or short-term debt available to support the facility's activities to estimate the facility's cost of debt. The cost of debt is one component needed to calculate the facility's cost of capital. The cost of capital is the total payment by the facility to providers of capital for financing the facility's assets. It will be used in the §316(b) economic analysis for discounting cash flows both in the baseline financial viability analysis and in the analysis of §316(b) compliance investment decisions.

EPA asks for the short-term as opposed to the long-term interest rate because in past regulatory efforts requesting long-term rates has yielded inconsistent responses. While not using the short-term interest directly in estimating cost of capital, EPA will use this rate to assess the premium a facility has to pay on borrowed capital and to determine the differences among the surveyed entities' credit worthiness. This premium will then be used to estimate differentials in the entities' long term cost of capital.

EPA requests information about economic activities of the facility other than electricity generation. Information about other economic activities will be important in assessing impacts of the regulation on the facility's non-electric activities. In addition, this information may be used in partial facility closure analyses.

EPA requests the specific other economic activities carried out by the facility to assess the potential impact of §316(b) regulation on activities that provide an economic value to the facility or its firm but that are not captured in the electricity data routinely reported by facilities. This information will also be used to characterize the regulated industry and surveyed facilities in terms of their non-electricity business activities.

Generating units associated with economic activities will be important in the unit-level analysis to identify which other economic activities will be affected by §316(b) regulation in the case of projected unit closures.

EPA request information on cooling water use in the activities and the cooling water intake structures, if any, associated with each activity. For activities that are not associated with a generating unit but that nevertheless use cooling water subject to §316(b) regulation, this information will provide further information for the assessment of potential impacts from §316(b) regulation on the facility's business activities.

EPA requests information about the revenues and costs of the other economic activities. This information is collected to assess the economic importance of the facility's non-electricity economic activities and the potential impact of discontinuation of these activities as a result of §316(b) regulation.

Part 3, Section F: Facility-Level Electricity Generation and Use Information

EPA requires the facility's Energy Information Administration (EIA) identification code to link data collected in the survey with publicly available EIA information and electricity market models used in the economic analysis.

The information on the facility's nameplate rating will be compared to the nameplate ratings of the facility's units that use cooling water subject to §316(b) regulation (see Section G) and will thus provide an indication of the relative reliance of the facility's electricity generating activities on §316(b) cooling water. In addition, the nameplate rating is one of the characteristics used to classify facilities for use in energy market models.

The total number of generating units information will be compared to the number of units that use cooling water subject to §316(b) regulation (see Section G) and will thus provide an indication of the relative reliance of the facility's electricity generating activities on §316(b) cooling water. In addition, this information will be used to characterize facilities subject to §316(b) regulation.

The facility's sources and disposition of energy data will provide basic information about the facility's electricity transactions, the relative magnitudes of the facility's electricity generation and purchases of electricity, as well as the importance of different customer groups to the facility. EPA will use these data to evaluate the competitive position of facilities and to determine potential impacts from §316(b) regulation. Data on energy sources will be used to determine the relative dependence of the facility on generation activities potentially subject to §316(b) regulation. Data on energy disposition will be important in evaluating potential effects of industry deregulation as well as §316(b) regulation on facilities.

Nonutilities provide some of this information in Form EIA-867.

The information about the facility's electric expenses will be used in determining the facility's current cost of generating electricity and to assess its competitive position in the electricity market. The accounts requested are standard accounts used by electric utilities. While non-utility power producers traditionally did not incur certain types of electric expenses, e.g., transmission and distribution expenses, the recent changes in the market structure as a result of industry deregulation have diluted differences between utility and non-utility generators of electricity, making the collection of this information from nonutilities necessary.

Part 3, Section G: Unit-Level Electricity Generation Information

EPA requests identification of units that did not use cooling water subject to §316(b) regulation during 1998. Units that did not use such cooling water will not be considered subject to the §316(b) survey and will not have to provide any further information.

Information on the month and year of first electricity generation by the unit is collected to determine the age of the unit which is one of the characteristics used to classify units for use in energy market models.

The unit's planned retirement date will determine the expected remaining life of the unit independent of §316(b) regulation. Units scheduled to retire before implementation of §316(b) regulation will be removed from the baseline analysis. Units scheduled to retire soon after §316(b) implementation and estimated to retire as a result of the regulation will be accounted for differently in terms of impacts than units with a long remaining productive life.

The unit's nameplate rating is one of the characteristics used to classify units for use in energy market models.

EPA asks about the facility's status as a non-utility power producer as defined under the Public Utility Regulatory Policy Act (PURPA) of 1978 and the Energy Policy Act (EPACT) of 1992. This status classification allows for a distinction between cogenerators and non-cogenerators as well as between qualifying and non-qualifying facilities. Both distinctions are expected to be important in the facility impact analysis.

In addition, this information will identify nonutilities that qualify as small power producers and exempt wholesale generators. Small power producers, like qualifying facilities, enjoy special privileges under PURPA because electric utilities are required to enter into contractual agreements to purchase power from them. Exempt wholesale generators do not enjoy this privilege; however, they are exempted from the corporate and geographic restrictions imposed by the Public Utility Holding Company Act (PUHCA) and therefore allow utility holding companies to develop and operate independent power projects outside of their established service territories.

The information about the unit's operating status during each of the three survey years will be important in identifying extraordinary operating circumstances of a unit which may skew the data provided for the unit. In addition, this will help identify retired units that should be excluded from the analysis.

Information on the unit's gross electricity generation will be used as a measure of the economic importance of the unit to the facility's operations. Gross electricity generation lost as a result of §316(b) regulation will be one impact measure used in the economic analysis.

Information on the number of days the unit was in operation during the three survey years will determine the relative importance of the unit within the facility and to help qualify the severity of impact in case of a predicted unit closure. Closure of baseload units may be judged as a more severe impact than closure of peaking units. In addition, the information collected in this question will provide insights into unusual circumstances in the unit's operation, e.g., significant down-time during one of the survey years.

A unit's fuel source is one of the characteristics used to classify units for use in energy market models.

Fuel costs are the main expense in generating electricity and consequently the single most important determinant of a unit's competitiveness. Information on fuel costs will be used in the unit-level impact analysis for both the baseline and post-compliance scenarios.

Information about the cooling water intake structures (CWIS) associated with the unit will link each unit to one or more CWIS. §316(b) compliance costs, which are associated with the CWIS, will be allocated to generating units based on this link.

Traditional Steam Electric Non-Utility Power Producers and Manufacturers Questionnaires, Voluntary and Supplemental Information

Note: The *Voluntary and Supplemental Information* is a voluntary supplement that the respondents are not required to complete. The Manufacturers and Nonutility Power Producers questionnaire are the same.

Section A: Information about the Domestic Parent Firm

EPA requires this point-of-contact to resolve questions about the responses to this part of the survey or to resolve issues that may develop in the future.

EPA requests information on the number of additional facilities that may be subject to §316(b) regulation and the number for which the firm will provide supplemental information. This information will be used to estimate how many additional facilities owned by the firm may potentially incur compliance costs as a result of §316(b) regulations.

Section B: General Scoping Data

Section C: Design and Operational Data for Cooling Water Intake Structures and Cooling Water Systems

Please refer to the **Information Collection Request** for the *EPA Industry Screener Questionnaire: Phase I Cooling Water Intake Structures*, October 1998, OMB Control Number 2040-0203.

Section D: Economic Data

The primary and secondary SIC codes for will be used to identify the primary business activities of the facility.

The revenue and cost information requested is routinely tracked by businesses and represents the minimum amount of information needed to conduct economic analyses of potential impacts of §316(b) regulation on the facility. In addition, revenues and after-tax income lost due to potential facility closure will be important when estimating overall impacts of §316(b) regulation on the domestic parent firm.

The full time equivalent employment of the facility will provide insights into the relative importance of the facility to the firm's operations and will be used to estimate the overall impact of §316(b) regulation on the domestic parent firm.

Manufacturers Questionnaire, Part 3: Facility-Level Economic and Financial Data

Financial information in this part of the questionnaire is generally requested for three years. EPA requires multiple years of data to capture normal business cycle variations and also to reflect the fact that facilities and firms typically do not make operational decisions based on a single year's performance. EPA generally maintains this three-year time span throughout the financial and economic portions of this questionnaire.

Part 3: Section A. General Facility Information

EPA requires a point-of-contact to resolve questions about the facility's responses to this part of the survey or to resolve issues that may develop in the future. EPA requires an economic/financial point-of-contact because experience with other EPA regulations has shown that it is generally unproductive to contact technical personnel about the economic and financial portion of the survey.

The facility's fiscal year information enables EPA to allow facilities to report data in terms of their fiscal year instead of requiring the respondents to convert their fiscal year to the year selected by EPA. EPA will perform any fiscal year conversions and the resulting adjustments for inflation if necessary, thereby minimizing the burden on respondent facilities.

During other regulatory efforts, EPA has found that respondents had begun or ceased operations during the survey period. The data requested about the number of months reported in each year allows for partial-year data to be collected and used in these cases. EPA requires information about these partial-year respondents to ensure that responses that represent less than a complete 12-month period do not skew results or create inaccuracies.

Part 3: Section B. Information About the Facility's Owner

The economic analysis will be conducted for the three year period from 1996 to 1998. Information about changes in the facility's ownership will allow EPA to identify and understand potential changes in the facility's cost and revenue structure over the 3-year period.

The domestic parent firm is the business entity for which EPA will conduct small business analyses as required under the Small Business Regulatory Enforcement Fairness Act (SBREFA). This information will allow EPA to gather data about the domestic parent firm from secondary sources, reducing the need to collect these data in the detailed questionnaire and therefore reducing respondent burden.

The SIC code of the domestic parent firm is needed to determine which economic test (i.e., full-time equivalent employees, sales revenue, or megawatt hours of electricity sales) will be used to classify the domestic parent firm as a small or large business under Small Business Administration (SBA) guidelines. This determination is necessary to conduct the economic analyses required under SBREFA.

The data requested about the number of months reported in each year allows for partial-year data to be collected and used in cases where the domestic parent firm has begun or ceased operations during the survey period. EPA requires information about these partial-year respondents to ensure that responses that represent less than a complete 12-month period do not skew results or create inaccuracies.

Depending on the firm's SIC code, either revenue, employment, or electricity sales for the *firm* is used in the small business analyses (the Small Business Administration defines small businesses in terms of firm rather than facility data). Small business analyses are required under the Small Business Regulatory Enforcement Fairness Act (SBREFA). In addition, data on revenues, employment, and electricity sales will be used in the analyses of economic impacts of §316(b) regulation on the firm. (Note that revenue information is requested in Question 6.e.)

The revenue and cost information requested is routinely tracked by businesses and represents the minimum amount of information needed to conduct cash flow analyses and other economic analyses of potential impacts of §316(b) regulation on the domestic parent firm.

Part 3: Section C. Facility Revenues and Costs

Facilities may provide actual facility-level data, or, if actual data are not available, they may elect to report estimated data. Facilities electing to estimate data are instructed to choose any estimation method they feel will provide the best estimates. Alternatively, EPA provides a formula that facilities can use if they do not have a better method. EPA included this question because some firms do not compile the economic and financial data requested in this part of the questionnaire at the facility-level.

EPA will use these data to estimate the number of baseline and post-compliance facility closures and to assess non-closure impacts on facilities and other entities relevant to the economic analysis. The level of detail requested is required to calculate the measures of cash flow and profitability needed for the economic analyses. Cost items that do not appear in any formulas and algorithms

used in the economic analysis are aggregated in the residual “Other Costs and Expenses” category to minimize respondent burden.

Type S corporation or a non-corporate proprietorship is important, because these types of facilities may not report taxes as a result of their ownership structure. Knowing that a facility is a Type S corporation or a non-corporate proprietorship will indicate that a value of zero even if a positive income was realized.

For facilities that indicate a Type S corporation or a non-corporate proprietorship status and that do not report income taxes, a corporate or other tax rate will be assigned.

Part 3: Section D. Facility Balance Sheet Information

EPA will use balance sheet data to estimate the number of baseline and post-compliance facility closures and to assess non-closure impacts on facilities and other entities relevant to the economic analysis. These analyses will include calculations of financial condition and performance, such as interest coverage ratio and return on assets. EPA requests asset and liability data in a form that closely resembles standard balance sheets already generated by facilities as a normal business practice, minimizing respondent burden.

Part 3: Section E. Facility Liquidation Value

The pre-tax liquidation value is needed to estimate potential facility closures. An important test in the facility closure analysis will be a comparison of the facility’s “going-concern-value” (i.e., the present value of future income generated by the facility) and its liquidation value. If the liquidation value is higher than the present value of future income, then the facility is better off liquidating than remaining in business.

The liquidation value requested in this question asks for the revenues from the sale of fixed and current assets as well closure and post-closure costs directly associated with terminating business activities. The resulting amount represents the funds available to total capital, i.e., debt and equity.

EPA has requested information on facility liquidation values in past regulatory efforts and found that the responses received were generally of good quality. Economic analyses using this information have showed a high degree of correlation with other economic measures, refuting commenters’ arguments that responses would be merely speculative.

Part 3: Section F. Miscellaneous Facility Information

EPA requests information on the facility’s employment for Fiscal Years 1996, 1997, and 1998 to estimate employment effects of complete termination of the facility’s activities.

EPA requests the rate of interest on the line of credit or short-term debt available to support the facility's activities and to estimate the facility's cost of debt. The cost of debt is one component needed to calculate the facility's cost of capital. The cost of capital is the total payment by the facility to providers of capital for financing the facility's assets. It will be used in the §316(b) economic analysis for discounting cash flows both in the baseline financial viability analysis and in the analysis of §316(b) compliance investment decisions.

EPA asks for the short-term as opposed to the long-term interest rate because in past regulatory efforts requesting long-term rates has yielded inconsistent responses. While not using the short-term interest directly in estimating cost of capital, EPA will use this rate to assess the premium a facility has to pay on borrowed capital and to determine the differences among the surveyed entities' credit worthiness. This premium will then be used to estimate differentials in the entities' long term cost of capital.

EPA requests information on the facility's most significant source of competition in both the domestic and international markets. This information will be important in the economic analysis of potential effects of §316(b) regulation as it influences an industry's ability to pass on compliance costs to the customer.

EPA requests the percentage of the facility's non-electric revenues that is associated with the use of §316(b) cooling water will provide important insights into the extent to which the facility is dependent on §316(b) cooling water. For facilities where large parts of economic activities are not dependent on §316(b) cooling water, EPA will use this information to apportion other economic variables by cooling water use and conduct a partial closure analysis of the activities that depend on the use of cooling water directly withdrawn from surface water.

Part 3: Section G. General Electricity Generation and Use Information

EPA requests the facility's Energy Information Administration (EIA) identification code. EPA requires this information to link data collected in the survey with publicly available EIA information and electricity market models used in the economic analysis.

EPA asks if the facility generated electricity during its Fiscal Year 1996, 1997, or 1998 using cooling water directly withdrawn from surface water. Facilities that did not generate electricity using cooling water directly withdrawn from surface water during this period are exempt from the remainder of the questionnaire.

EPA asks limited information on facilities that generate electricity using cooling water directly withdrawn from surface water. For many manufacturers, electricity generation is expected to be an important economic activity that is associated with the use of cooling water. This activity could be directly affected by §316(b) regulation.

EPA requests the facility's status as a non-utility power producer as defined under the Public Utility Regulatory Policies Act (PURPA) of 1978 and the Energy Policy Act (EPACT) of 1992. This status classification allows for a distinction between cogenerators and non-cogenerators as well as between qualifying and non-qualifying facilities. Both distinctions are expected to be important in the facility impact analysis.

In addition, this identifies non-utilities that qualify as small power producers and exempt wholesale generators. Small power producers, like qualifying facilities, enjoy special privileges under PURPA because electric utilities are required to enter into contractual agreements to purchase power from them. Exempt wholesale generators do not enjoy this privilege; however, they are exempted from the corporate and geographic restrictions imposed by the Public Utility Holding Company Act (PUHCA) and therefore allow utility holding companies to develop and operate independent power projects outside of their established service territories.

Basic information about the facility's cost of electricity generation will be used to estimate potential impacts of §316(b) regulation on the facility's cost of electricity generation and the effects of §316(b) compliance costs on the facility's ability to compete with alternative sources of electricity.

EPA asks if the fuel burned to generate electricity provided an energy value to activities not related to electricity generation. This information will help EPA determine how integrated the facility's electricity generation activities are with its other economic activities. This information will determine if the effects of §316(b) regulation on electricity generation can be examined independently of the effects of this regulation on other economic activities.

EPA requests basic information on the facility's generation and disposition of electricity. This information, together with data on the costs and revenues from electricity generation will be used to determine the per kilowatt hour costs and revenues of electricity generation. This information will be important in estimating potential impacts of §316(b) regulation on the facility's cost of electricity generation and the effects of §316(b) compliance costs on the facility's ability to compete in the electricity market.

A unit's nameplate rating and the primary fuel source are two of the characteristics used to classify units for use in energy market models. Cooling water directly withdrawn from surface water and used in each of the facility's units will provide information on which of the facility's generating units will potentially be affected by §316(b) regulations.

EPA Short Technical Questionnaire

Section 1: General Facility Information

Section 2: General Scoping Data

Section 3: Design and Operational Data for Cooling Water Intake Structures and Cooling Water Systems

Please refer to the **Information Collection Request** for the *EPA Industry Screener Questionnaire: Phase I Cooling Water Intake Structures*, October 1998, OMB Control Number 2040-0203.