institutional, heating, and/or cooling purposes at one or more host facilities.

Cooling water means water used for contact or noncontact cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes used, or from auxiliary operations on the facility's premises. Cooling water that is used in a manufacturing process either before or after it is used for cooling is considered process water for the purposes of calculating the percentage of a facility's intake flow that is used for cooling purposes in § 125.91(c).

Diel means sample variation in organismal abundance and density over a 24-hour period due to the influence of water movement and changes in light intensity.

Director means the same as defined in 40 CFR 122.2.

Existing facility means any facility that commenced construction before January 17, 2002; and

(1) Any modification of such a facility;

(2) Any addition of a unit at such a facility for purposes of the same industrial operation;

(3) Any addition of a unit at such a facility for purposes of a different industrial operation, if the additional unit uses an existing cooling water intake structure and the design capacity of the intake structure is not increased; or

(4) Any facility constructed in place of such a facility, if the newly constructed facility uses an existing cooling water intake structure whose design intake flow is not increased to accommodate the intake of additional cooling water.

Once-through cooling water system means a system designed to withdraw water from a natural or other water source, use it at the facility to support contact and/or noncontact cooling uses, and then discharge it to a water body without recirculation. Once-through cooling systems sometimes employ canals/channels, ponds, or non-recirculating cooling towers to dissipate waste heat from the water before it is discharged.

Phase II existing facility means any existing facility that meets the criteria specified in § 125.91.

§ 125.94 How will requirements reflecting best technology available for minimizing adverse environmental impact be established for my Phase II existing facility?

(a) You may choose one of the following three alternatives for establishing best technology available for minimizing adverse environmental impact at your site:

(1) You may demonstrate to the Director that your existing design and construction technologies, operational measures, and/or restoration measures meet the performance standards specified in paragraph (b) of this section;

(2) You may demonstrate to the Director that you have 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 paragraph (b) of this section; or

(3) You may demonstrate to the Director that a site-specific determination of best technology available for minimizing adverse environmental impact is appropriate for your site in accordance with paragraph (c) of this section.

(b) *Performance Standards.* If you choose the alternative in paragraphs (a)(1) or (a)(2) of this section, you must meet the following performance standards:

(1) You must reduce your intake capacity to a level commensurate with the use of a closed-cycle, recirculating cooling system; or

(2) You must reduce impingement mortality of all life stages of fish and shellfish by

80 to 95 percent from the calculation baseline if your facility has a capacity utilization rate less than 15 percent, or your facility's design intake flow is 5 percent or less of the mean annual flow from a freshwater river or stream; or

(3) You must reduce impingement mortality of all life stages of fish and shellfish by

80 to 95 percent from the calculation baseline, and you must reduce entrainment of all life stages of fish and shellfish by 60 to 90 percent from the calculation baseline if your facility has a capacity utilization rate of 15 percent or greater and withdraws cooling water from a tidal river or estuary, from an ocean, from one of the Great Lakes, or your facility's design intake flow is greater than 5 percent of the mean annual flow of a freshwater river or stream; or

(4) If your facility withdraws cooling water from a lake (other than one of the Great Lakes) or reservoir:

(i) You must reduce impingement mortality of all life stages of fish and shellfish by

80 to 95 percent from the calculation baseline; and

(ii) If you propose to increase your facility's design intake flow, your increased flow must not disrupt the natural thermal stratification or turnover pattern (where present) of the source water, except in cases where the disruption is determined by any Federal, State or Tribal fish or wildlife management agency(ies) to be beneficial to the management of fisheries.

(c)(1) *Site-Specific Determination of Best Technology Available.* If you choose the alternative in paragraph (a)(3) of this section, you must demonstrate to the Director that your costs of compliance with the applicable performance standards in paragraph (b) of this section would be significantly greater than the costs considered by the Administrator when establishing such performance standards, or that your costs would be significantly greater than the benefits of complying with such performance standards at your site.

(2) If data specific to your facility indicate that your costs would be significantly greater than those considered by the Administrator in establishing the applicable performance standards, the Director shall make a site-specific determination of best technology available for minimizing adverse environmental impact that is based on less costly design and construction technologies, operational measures, and/or restoration measures to the extent justified by the significantly greater cost. The Director's site-specific determination may conclude that design and construction technologies, operational measures, and/or restoration measures in addition to those already in place are not justified because of significantly greater costs.

(3) If data specific to your facility indicate that your costs would be significantly greater than the benefits of complying with such performance standards at your facility, the Director shall make a site-specific determination of best technology available for minimizing adverse environmental impact that is based on less costly design and construction technologies, operational measures, and/or restoration measures to the extent justified by the significantly greater costs. The Director's site-specific determination may conclude that design and construction technologies, operational measures, and/or restoration measures in addition to those already in place are not justified because the costs would be significantly greater than the benefits at your facility.

(d) *Restoration Measures.* In lieu of, or in combination with, reducing impingement mortality and entrainment

by implementing design and construction technologies or operational measures to comply with the performance standards specified in paragraph (b) of this section or the Director's determination pursuant to paragraph (c) of this section, you may, with the Director's approval, employ restoration measures that will result in increases in fish and shellfish in the watershed. You must demonstrate to the Director that you are maintaining the fish and shellfish within the waterbody, including community structure and function, to a level comparable to those that would result if you were to employ design and construction technologies or operational measures to meet that portion of the requirements of paragraphs (b) or (c) of this section that you are meeting through restoration. Your demonstration must address species that the Director, in consultation with Federal, State, and Tribal fish and wildlife management agencies with responsibility for fisheries and wildlife potentially affected by your cooling water intake structure, identifies as species of concern.

(e) *More Stringent Standards.* The Director may establish more stringent requirements as best technology available for minimizing adverse environmental impact if the Director determines that your compliance with the applicable requirements of paragraphs (b) and (c) of this section would not meet the requirements of other applicable Federal, State, or Tribal law.

(f) If the Nuclear Regulatory Commission has determined that your compliance with this subpart would result in a conflict with a safety requirement established by the Commission, the Director shall make a site-specific determination of best technology available for minimizing adverse environmental impact that is less stringent than the requirements of this subpart to the extent necessary for you to comply with the Commission's safety requirement.

(g) You must submit the application information required in § 125.95, implement the monitoring requirements specified in § 125.96, and implement the record-keeping requirements specified at § 125.97.

§ 125.95 As an owner or operator of a Phase II existing facility, what must I collect and submit when I apply for my reissued NPDES permit?

(a) You must submit to the Director the application information required by 40 CFR 122.21(r)(2), (3) and (5) and the Comprehensive Demonstration required by paragraph (b) of this section at least 180 days before your existing permit expires, in accordance with § 122.21(d)(2).

(b) *Comprehensive Demonstration Study.* All facilities except those deemed to have met the performance standards in accordance with § 125.94(b)(1), must submit a Comprehensive Demonstration Study (Study). This information is required to characterize impingement mortality and entrainment, the operation of your cooling water intake structures, and to confirm that the technology(ies), operational measures, and/or restoration measures you have selected and/or implemented at your cooling water intake structure meet the applicable requirements of § 125.94. The Comprehensive Demonstration Study must include:

(1) *Proposal For Information Collection.* You must submit to the Director for review and approval a description of the information you will use to support your Study. The proposal must include:

(i) A description of the proposed and/or implemented technology(ies), operational measures, and/or restoration measures to be evaluated in the Study;

(ii) A list and description of any historical studies characterizing impingement and entrainment and/or the physical and biological conditions in the vicinity of the cooling water intake structures and their relevance to this proposed Study. If you propose to use existing data, you must demonstrate the extent to which the data are representative of current conditions and that the data were collected using appropriate quality assurance/quality control procedures;

(iii) A summary of any past, ongoing, or voluntary consultation with appropriate Federal, State, and Tribal fish and wildlife agencies that is relevant to this Study and a copy of written comments received as a result of such consultation; and

(iv) A sampling plan for any new field studies you propose to conduct in order to ensure that you have sufficient data to develop a scientifically valid estimate of impingement and entrainment at your site. The sampling plan must document all methods and quality assurance/quality control procedures for sampling and data analysis. The sampling and data analysis methods you propose must be appropriate for a quantitative survey and include consideration of the methods used in other studies performed in the source waterbody. The sampling plan must include a description of the study area (including the area of influence of the cooling water intake structure), and provide a taxonomic identification of the sampled or evaluated biological assemblages (including all life stages of fish and shellfish).

(2) *Source Waterbody Flow Information.* You must submit to the Director the following source waterbody flow information:

(i) If your cooling water intake structure is located in a freshwater river or stream, you must provide the annual mean flow of the waterbody and any supporting documentation and engineering calculations to support your analysis of which requirements specified in § 125.94(b)(2) or (3) would apply to your facility based on its water intake flow in proportion to the mean annual flow of the river or steam; and

(ii) If your cooling water intake structure is located in a lake (other than one of the Great Lakes) or reservoir and you propose to increase your facility's design intake flow, you must provide a narrative description of the thermal stratification in the water body, and any supporting documentation and engineering calculations to show that the natural thermal stratification and turnover pattern will not be disrupted by the increased flow in a way that adversely impacts water quality or fisheries.

(3) *Impingement Mortality and Entrainment Characterization Study.* You must submit to the Director an Impingement Mortality and Entrainment Characterization Study whose purpose is to provide information to support the development of a calculation baseline for evaluating impingement mortality and entrainment and to characterize current impingement mortality and entrainment. The Impingement Mortality and Entrainment Characterization Study must include:

(i) Taxonomic identifications of those species of fish and shellfish and their life stages that are in the vicinity of the cooling water intake structure and are most susceptible to impingement and entrainment;

(ii) A characterization of those species of fish and shellfish and life stages pursuant to paragraph (b)(3)(i) of this section, including a description of the abundance and temporal/spatial characteristics in the vicinity of the cooling water intake structure, based on the collection of a sufficient number of years of data to characterize annual, seasonal, and diel variations in impingement mortality and entrainment (e.g., related to climate/weather differences, spawning, feeding and water column migration);

(iii) Documentation of the current impingement mortality and entrainment of all life stages of fish and shellfish at

your facility 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 your facility and of biological conditions at the site. Impingement mortality and entrainment samples to support the calculations required in paragraph (b)(4)(iii) and (b)(5)(ii) of this section must be collected during periods of representative operational flows for the cooling water intake structure and the flows associated with the samples must be documented;

(iv) An identification of species that are protected under Federal, State, or Tribal law (including threatened or endangered species) that might be susceptible to impingement and entrainment by the cooling water intake structure(s).

(4) *Design and Construction Technology Plan.* If you choose to use design and construction technologies or operational measures in whole or in part to meet the requirements of § 125.94, you must submit a Design and Construction Technology Plan to the Director for review and approval. In the plan you must provide the capacity utilization rate for your facility and provide 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 capacity of the facility (in MW)) and calculations. The plan must explain the technologies and operational measures you have in place or have selected to meet the requirements in § 125.94. (Examples of potentially appropriate technologies may include, but are not limited to, wedgewire screens, fine mesh screens, fish handling and return systems, barrier nets, aquatic filter barrier systems, and enlargement of the cooling water intake structure opening to reduce velocity. Examples of potentially appropriate operational measures may include, but are not limited to, seasonal shutdowns or reductions in flow, and continuous operations of screens.) The plan must contain the following information:

(i) A narrative description of the design and operation of all design and construction technologies or operational measures (existing and proposed), including fish handling and return systems, that you have 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 for those species;

(ii) A narrative description of the design and operation of all design and construction technologies or operational measures (existing and proposed) that you have in place or will use to meet the requirements to reduce entrainment of those species expected to be the most susceptible to entrainment, if applicable, and information that demonstrates the efficacy of the technology for those species;

(iii) 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 you have selected based on the Impingement Mortality and Entrainment Characterization Study in paragraph (b)(3) of this section. In determining compliance with any requirements to reduce impingement mortality or entrainment, you must assess the total reduction in impingement mortality and entrainment against the calculations baseline determined in paragraph (b)(3) of this section. Reductions in impingement mortality and entrainment from this calculation baseline as a result of any design and construction technologies and operational measures already implemented at your facility should be added to the reductions expected to be achieved by any additional design and construction technologies and operational measures that will be implemented, and any increases in fish and shellfish within the waterbody attributable to your restoration measures. Facilities that recirculate a portion of their flow 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 must include a site-specific evaluation of the suitability of the technology(ies) 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 studies;

(iv) Documentation which demonstrates that the location, design, construction, and capacity of the cooling water intake structure technologies you have selected reflect best technology available for meeting the applicable requirements in § 125.94;

(v) Design calculations, drawings, and estimates to support the descriptions required by paragraphs (b)(4)(ii) and (iii) of this section.

(5) *Information to Support Proposed Restoration Measures.* If you propose to use restoration measures to meet the performance standards in § 125.94, you must submit the following information with your application for review and approval by the Director:

(i) A list and narrative description of the restoration measures you have selected and propose to implement;

(ii) A quantification of the combined benefits from implementing design and construction technologies, operational measures and/or restoration measures and the proportion of the benefits that can be attributed to each. This quantification must include: the percent reduction in impingement mortality and entrainment that would be achieved through the use of any design and construction technologies or operational measures that you have selected (i.e., the benefits you would achieve through impingement and entrainment reduction); a demonstration of the benefits that could be attributed to the restoration measures you have selected; and a demonstration that the combined benefits of the design and construction technology(ies), operational measures, and/or restoration measures will maintain fish and shellfish at a level comparable to that which would be achieved under § 125.94. If it is not possible to demonstrate quantitatively that restoration measures such as creation of new habitats to serve as spawning or nursery areas or establishment of riparian buffers will achieve comparable performance, you may make a qualitative demonstration that such measures will maintain fish and shellfish in the waterbody at a level substantially similar to that which would be achieved under § 125.94;

(iii) A plan for implementing and maintaining the efficacy of the restoration measures you have selected and supporting documentation to show that the restoration measures, or the restoration measures in combination with design and construction technology(ies) and operational measures, will maintain the fish and shellfish in the waterbody, including the community structure and function, to a level comparable or substantially similar to that which would be achieved through § 125.94(b) or (c);

(iv) A summary of any past, ongoing, or voluntary consultation with appropriate Federal, State, and Tribal fish and wildlife agencies regarding the proposed restoration measures that is relevant to this Study and a copy of any written comments received as a result of such consultation; and

(v) Design and engineering calculations, drawings, and maps documenting that your proposed restoration measures will meet the restoration performance standard at § 125.94(d).

(6) *Information to Support Site-specific Determination of Best Technology Available for Minimizing Adverse Environmental Impact.* If you have chosen to request a site-specific determination of best technology available for minimizing adverse environmental impact pursuant to § 125.94(c) because of costs significantly greater than those EPA considered in establishing the requirements at issue, or because costs are significantly greater than the benefits of complying with the otherwise applicable requirements of § 125.94(b) and (e) at your site, you must provide the following additional information with your application for review by the Director:

(i) *Comprehensive Cost Evaluation Study.* You must perform and submit the results of a Comprehensive Cost Evaluation Study. This information is required to document the costs of implementing your Design and Construction Plan under § 125.95(b)(4) above and the costs of the alternative technologies and operational measures you propose to implement at your site. You must submit detailed engineering cost estimates to document the costs of implementing the technologies or operational measures in your Design and Construction Plan.

(ii) *Valuation of the Monetized Benefits of Reducing Impingement and Entrainment.* If you are 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 § 125.94(b) and (e) at your site, you must use a comprehensive methodology to fully value the impacts of impingement mortality and entrainment at your site and the benefits achievable by compliance with the applicable requirements of § 125.94. The benefit study must include a description of the methodology used, the basis for any assumptions and quantitative estimates, and an analysis of the effects of significant sources of uncertainty on the results of the study.

(iii) *Site-Specific Technology Plan.* Based on the results of the Comprehensive Cost Evaluation Study and the valuation of the monetized benefits of reducing impingement and entrainment required by paragraphs (b)(7))(i) and (ii) of this section, you must submit a Site-Specific Technology Plan to the Director for review and approval. The plan must contain the following information:

(A) A narrative description of the design and operation of all design and construction technologies and operational measures, and restoration measures (existing and proposed) that you have selected in accordance with § 125.94(d), and information that demonstrates the efficacy of the technology for those species;

(B) An engineering estimate of 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. This estimate must include a site-specific evaluation of the suitability of the technologies or operational measures for reducing impingement mortality and entrainment 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/or site-specific technology prototype studies;

(C) Documentation which 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 § 125.94; and

(D) Design calculations, drawings, and estimates to support the descriptions required by paragraphs (b)(6)(iii)(A) and (B) of this section.

(7) *Verification Monitoring Plan.* You must include in the Study 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. The verification study must 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 reducing the level of impingement and entrainment to the levels documented pursuant to paragraphs (b)(4)(iii), (b)(5)(ii), and/or (b)(6)(iii)(B) of this section. The plan must describe the frequency of monitoring and the parameters to be monitored and the basis for determining the parameters and the frequency and duration for monitoring. The plan must also describe the information to be included in a yearly status report to the Director. The Director will use the verification monitoring to confirm that you are meeting the applicable requirements of § 125.94.

§ 125.96 As an owner or operator of a Phase II existing facility, what monitoring must I perform?

As an owner or operator of a Phase II existing facility, you must perform monitoring as specified by the Director to demonstrate compliance with the applicable requirements of § 125.94.

§ 125.97 As an owner or operator of a Phase II existing facility, what records must I keep and what information must I report?

As an owner or operator of a Phase II existing facility you are required to keep records and report information and data to the Director as follows:

(a) You must keep records of all the data used to complete the permit application and show compliance with the requirements of § 125.94, any supplemental information developed under § 125.95, and any compliance monitoring data conducted under § 125.96, for a period of at least three (3) years. The Director may require that these records be kept for a longer period.

(b) You must provide annually to the Director a status report that includes appropriate monitoring data as specified by the Director.

§ 125.98 As the Director, what must I do to comply with the requirements of this subpart?

(a) *Permit Application.* As the Director, you must review materials submitted by the applicant under 40 CFR 122.21(r) and § 125.95 before each permit renewal or reissuance.

(1) After receiving the permit application from the owner or operator of a Phase II existing facility, the Director must determine which of the standards specified in § 125.94 to apply to the facility. In addition, the Director must review materials to determine compliance with the applicable standards.

(2) At each permit renewal, the Director must review the application materials and monitoring data to determine whether requirements, or additional requirements, for design and construction technologies or operational measures should be included in the permit.

(b) *Permitting Requirements.* Section 316(b) requirements are implemented for a facility through an NPDES permit. As the Director, you must consider the information submitted by the Phase II existing facility in its permit application, and determine the appropriate requirements and conditions to include in the permit based on the alternative for establishing best technology available chosen by the facility. The following requirements must be included in each permit:

(1) *Cooling Water Intake Structure Requirements.* The permit conditions must include the performance standards that implement the requirements of § 125.94(b)(2), (3), and (4); § 125.94(c)(1) and (2); § 125.94(d); § 125.94(e); and § 125.94(f). In determining compliance with the flow requirement in § 125.94(b)(4)(ii), the Director must consider anthropogenic factors (those not considered ''natural'') unrelated to the Phase II existing facility's cooling water intake structure that can influence the occurrence and location of a thermocline. These include source water inflows, other water withdrawals, managed water uses, wastewater discharges, and flow/level management practices (e.g., some reservoirs release water from deeper bottom layers). The Director must coordinate with appropriate Federal, State, or Tribal fish or wildlife agencies to determine if any disruption is beneficial to the management of fisheries.

(i) You must review the Design and Construction Technology Plan required in § 125.96(b)(4) to evaluate the suitability and feasibility of the technology or operational measures proposed to meet the requirements of § 125.94. In each reissued permit, you must include a condition requiring the facility to reduce impingement mortality and entrainment commensurate with the implementation of the technologies in the permit. In considering a permit application, the Director must review the performance of the technologies implemented and require additional or different design and construction technologies, if needed, to meet the impingement mortality and entrainment reduction requirements for all life stages of fish and shellfish. In addition, you may consider any chemical, water quality, and other anthropogenic stresses on the source waterbody in order to determine whether more stringent conditions are needed to comply with the requirements of other applicable Federal, State, or Tribal law in accordance with § 125.94(e).

(ii) If you determine that restoration measures are appropriate at the Phase II existing facility, you must review the Information to Support Proposed Restoration Measures required under § 125.95(b)(5) and determine whether the proposed measures, alone or in combination with design and construction technologies and operational measures, will maintain the fish and shellfish in the waterbody at a comparable level to that which would be achieved under § 125.94. If the application includes a qualitative demonstration for restoration measures that will result in increases in fish and shellfish that are difficult to quantify, you must determine whether the proposed measures will maintain fish and shellfish in the waterbody at a level substantially similar to that which would be achieved under § 125.94. You must also review and approve the proposed Verification Monitoring Plan submitted under § 125.95(b)(7) and require that the monitoring continue for a sufficient period of time to demonstrate that the restoration measures meet the requirements of § 125.94(d).

(iii) For a facility that requests requirements based on site-specific best technology available for minimizing adverse environmental impact, you must review the application materials and any other information you may have that would be relevant to a determination of whether alternative requirements are appropriate for the facility. If you determine that alternative requirements are appropriate, you must make a site-specific determination of best technology available for minimizing adverse environmental impact in accordance with § 125.95(c).

(2) *Monitoring Conditions.* The permit must require the permittee to perform the monitoring required in § 125.96. In determining applicable monitoring requirements, the Director must consider the facility's verification monitoring plan, as appropriate. You 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) *Record Keeping and Reporting.* At a minimum, the permit must require the permittee to report and keep records as required by § 125.97.

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