



ADMINISTRATIVE RULES OF MONTANA



17.30.1212 INFORMATION REQUIREMENTS FOR COOLING WATER INTAKE STRUCTURES FOR NEW FACILITIES

- (1) The owner or operator of a new facility with cooling water intake structures shall submit to the department a statement specifying its intent to comply with the technology-based requirements in either (7), (8), or (9) of ARM 17.30.1211.
- (2) The owner or operator of a new facility that chooses to comply with the requirements of either (7) or (8) of ARM 17.30.1211 shall, in addition to meeting the application requirements of 40 CFR 122.21(r), collect and submit to the department the following information, when applying for a new or reissued permit, to demonstrate compliance with (7) or (8) of ARM 17.30.1211. (The information required under (a) applies only to an owner or operator that chooses to comply with (7) of ARM 17.30.1211):
 - (a) flow reduction information demonstrating a reduction in flow to a level that is commensurate with that which can be attained by a closed-cycle recirculating cooling water system, including:
 - (i) a narrative description of the facility's system that has been designed to reduce the facility's intake flow to a level commensurate with that which can be attained by a closed-cycle recirculating cooling water system and any engineering calculations, including documentation demonstrating that make-up and blowdown flows have been minimized; and
 - (ii) if the flow reduction requirement is met entirely, or in part, by reusing or recycling water withdrawn for cooling purposes in subsequent industrial processes, documentation that the amount of cooling water that is not reused or recycled has been minimized;
 - (b) velocity information demonstrating that the facility complies with the requirement to meet a maximum through-screen design intake velocity of no more than 0.5 feet per second at each cooling water intake structure as required in (7)(b) and (8)(a) of ARM 17.30.1211, including:
 - (i) a narrative description of the design, structure, equipment, and operation used to meet the velocity requirement; and
 - (ii) design calculations showing that the velocity requirement will be met at minimum ambient source water surface elevations, based on best professional judgment using available hydrological data, and maximum head loss across the screens or other device;
 - (c) source waterbody flow information demonstrating that the facility's cooling water intake structure meets the flow requirements in (7)(c) and (8)(b) of ARM 17.30.1211, including:

- (i) for cooling water intake structures located in a freshwater river or stream, the annual mean flow and any supporting documentation and engineering calculations to show that the facility's cooling water intake structure meets the flow requirements; and
 - (ii) for cooling water intake structures located in a lake or reservoir, a narrative description of the waterbody thermal stratification and any supporting documentation and engineering calculations to show that the natural thermal stratification and turnover pattern will not be disrupted by the total design intake flow. In cases where the disruption is determined to be beneficial to the management of fisheries for fish and shellfish, supporting documentation and a written concurrence from any fisheries management agency with responsibility for fisheries potentially affected by the facility's cooling water intake structure(s); and
- (d) a design and construction technology plan demonstrating compliance with (7)(d) and (e) or (8)(c) and (d) of ARM 17.30.1211, including:
 - (i) information to demonstrate whether or not the facility meets the criteria of (7)(d) and (e) or (8)(c) and (d) of ARM 17.30.1211;
 - (ii) delineation of the hydraulic zone of influence for the facility's cooling water intake structure; and
 - (iii) new facilities required to install design and construction technologies and/or operational measures must develop a plan explaining the technologies and measures that have been selected based on information collected for the source water biological baseline characterization required by 40 CFR 122.21(r)(3). (Examples of appropriate technologies include, but are not limited to, wedgewire screens, fine mesh screens, fish handling and return systems, barrier nets, aquatic filter barrier systems, and similar technologies. Examples of appropriate operational measures include, but are not limited to, seasonal shutdowns or reductions in flow, continuous operations of screens, and similar measures.) The plan must contain the following information:
 - (A) a narrative description of the design and operation of the design and construction technologies, including fish-handling and return systems, that will be used to maximize the survival of those species expected to be most susceptible to impingement, including species-specific information that demonstrates the efficacy of the technology;
 - (B) a narrative description of the design and operation of the design and construction technologies that will be used to minimize entrainment of those species expected to be the most susceptible to entrainment, including species-specific information that demonstrates the efficacy of the technology; and
 - (C) design calculations, drawings, and estimates to support the descriptions provided in (2)(d)(iii)(A) and (B).
- (3) The owner or operator of a new facility that chooses to comply with (9) of ARM 17.30.1211 shall, in addition to meeting the application requirements of 40 CFR 122.21(r), collect and submit to the department the following information, when applying for a new or reissued permit, to demonstrate compliance with (9) of ARM 17.30.1211:
 - (a) source waterbody flow information to demonstrate that the facility's cooling water intake structure meets the source waterbody requirements in (9)(b) of ARM 17.30.1211:

- (i) for cooling water intake structures located in a freshwater river or stream, the annual mean flow and any supporting documentation and engineering calculations to show that the facility's cooling water intake structure meets the flow requirements; and
 - (ii) for cooling water intake structures located in a lake or reservoir, a narrative description of the waterbody thermal stratification, and any supporting documentation and engineering calculations to show that the natural thermal stratification and turnover pattern will not be disrupted by the total design intake flow. In cases where the disruption is determined to be beneficial to the management of fisheries for fish and shellfish, supporting documentation and a written concurrence from any fisheries management agency with responsibility for fisheries potentially affected by the facility's cooling water intake structure(s);
- (b) a comprehensive demonstration study to characterize the source water baseline in the vicinity of the cooling water intake structure(s), to characterize operation of the cooling water intake(s), and to confirm that the technology(ies) proposed and/or implemented for the facility's cooling water intake structure reduce the impacts to fish and shellfish to levels comparable to those achieved by implementing the requirements of (7)(a) and (b) in ARM 17.30.1211. To meet the "comparable level" requirement, the owner or operator shall demonstrate that:
 - (i) there is a reduction in both impingement mortality and entrainment of all life stages of fish and shellfish to 90 percent or greater of the reduction that would be achieved through (7)(a) and (b) of ARM 17.30.1211; or
 - (ii) if the demonstration includes consideration of impacts other than impingement mortality and entrainment, that the measures taken will maintain the fish and shellfish in the waterbody at a level substantially similar to that which would be achieved through (7)(a) and (b) of ARM 17.30.1211;
- (c) a plan containing a proposal for how information will be collected to support the comprehensive demonstration study required in (3)(b). The plan must include:
 - (i) a description of the proposed and/or implemented technology(ies) to be evaluated in the study;
 - (ii) a list and description of any historical studies characterizing the physical and biological conditions in the vicinity of the proposed or actual intakes and their relevancy to the proposed study. If an owner or operator proposes to rely on existing source waterbody data, it must be no more than five years old, and the owner or operator must demonstrate that the existing data are sufficient to develop a scientifically valid estimate of potential impingement and entrainment impacts and provide documentation showing that the data were collected using appropriate quality assurance and quality control procedures;
 - (iii) any public participation or consultation with federal or state agencies undertaken in developing the plan; and
 - (iv) a sampling plan for data that will be collected using actual field studies in the source waterbody. The sampling plan must document all methods and quality assurance procedures for sampling and data analysis. The proposed sampling and data analysis methods must be appropriate for a quantitative survey and must be based on

consideration of methods used in other studies performed in the source waterbody. The sampling plan must include:

- (A) a description of the study area, including the area of influence of the cooling water intake structure and at least 100 meters beyond;
 - (B) taxonomic identification of the sampled or evaluated biological assemblages, including all life stages of fish and shellfish; and
 - (C) a description of all sampling and data analysis methods; and
- (d) documentation of the results of the comprehensive demonstration study required in (3)(b), including:
- (i) a source water biological study, which must include:
 - (A) a taxonomic identification and characterization of aquatic biological resources including:
 - (I) a summary of historical and contemporary aquatic biological resources;
 - (II) determination and description of the target populations of concern (those species of fish and shellfish and all life stages that are most susceptible to impingement and entrainment); and
 - (III) a description of the abundance and temporal/spatial characterization of the target populations based on the collection of multiple years of data to capture the seasonal and daily activities (such as, spawning, feeding, and water column migration) of all life stages of fish and shellfish found in the vicinity of the cooling water intake structure;
 - (B) an identification of all threatened or endangered species that might be susceptible to impingement and entrainment by the proposed cooling water intake structure(s); and
 - (C) a description of additional chemical, water quality, and other anthropogenic stresses on the source waterbody;
 - (ii) an evaluation of potential cooling water intake structure effects, which must include:
 - (A) calculations of the reduction in impingement mortality and entrainment of all life stages of fish and shellfish that would need to be achieved by the technologies that have been selected to implement and to meet requirements under (9) of ARM 17.30.1211. In order to do the calculation, the owner or operator shall determine the reduction in impingement mortality and entrainment that would be achieved by implementing the requirements of (7)(a) and (b) of ARM 17.30.1211 at the facility; and
 - (B) an engineering estimate of efficacy for the proposed or implemented technologies used to minimize impingement mortality and entrainment of all life stages of fish and shellfish and maximize survival of impinged life stages of fish and shellfish. The estimate of efficacy must include a demonstration that the proposed or implemented technologies reduce impingement mortality and entrainment of all life stages of fish and shellfish to a comparable level to that which would be achieved if the requirements in (7)(a) and (b) of ARM 17.30.1211

were implemented. The efficacy projection must also include a site-specific evaluation of the technology's suitability for reducing impingement mortality and entrainment based on the results of the source water biological study described in (3)(d)(i). The efficacy estimates may be determined based on case studies that have been conducted in the vicinity of the cooling water intake structure or site-specific technology prototype studies;

- (iii) an evaluation of proposed restoration measures, if the owner or operator proposes to use restoration measures to maintain the fish and shellfish as allowed in (9)(a) of ARM 17.30.1211. The evaluation must include the following:
 - (A) information and data to show coordination with the appropriate fishery management agency(ies); and
 - (B) a plan that provides a list of the measures proposed to be implemented and an explanation of how the owner or operator will demonstrate and continue to ensure that the proposed restoration measures will maintain the fish and shellfish in the waterbody to a substantially similar level to that which would be achieved through (7)(a) and (b) of ARM 17.30.1211; and
- (iv) a verification monitoring plan that must include:
 - (A) a plan to conduct, at a minimum, two years of monitoring to verify the full-scale performance of the proposed or implemented technologies and operational measures. The verification plan must begin at the start of operations of the cooling water intake structure and continue for a sufficient period of time to demonstrate that the facility is reducing the level of impingement and entrainment to the level documented in (3)(d)(ii). The plan must describe the frequency of monitoring and the parameters to be monitored. The department will use the verification monitoring to confirm that the facility is meeting the level of impingement mortality and entrainment reduction required in (9) of ARM 17.30.1211; and
 - (B) a plan to conduct monitoring to verify that the restoration measures will maintain the fish and shellfish in the waterbody to a substantially similar level as that which would be achieved through (7)(a) and (b) of ARM 17.30.1211.
- (4) The department shall review the materials submitted by an owner or operator of a new facility with cooling water intake structures and impose appropriate requirements and conditions in permits to ensure compliance with ARM 17.30.1211, in accordance with 40 CFR 125.89.
- (5) The department adopts and incorporates by reference the following federal regulations as part of the MPDES:
 - (a) 40 CFR 125.89 (July 1, 2010), which sets forth procedures and requirements for imposing permit conditions for new facilities with cooling water intake structures; and
 - (b) 40 CFR 122.21(r) (July 1, 2010), which sets forth application requirements for new facilities with cooling water intake structures.
 - (c) Copies of these federal regulations may be obtained from the Department of Environmental Quality, Water Protection Bureau, P.O. Box 200901, Helena, MT 59620.

Authorizing statute(s): 75-5-305, 75-5-401, MCA

Implementing statute(s): 75-5-305, 75-5-401, MCA

History: NEW, 2011 MAR p. 2131, Eff. 10/14/11; AMD, 2024 MAR p. 257, Eff. 2/10/24.