

WORKSHEET 11.0

COOLING WATER INTAKE INFORMATION

This worksheet **is required** for all new, renewal, and amendment TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12.

1. COOLING WATER SYSTEM DATA (Instructions, Pages 1-2)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Total DIF	
Total AIF	
Intake Flow Uses (%)	
Contact cooling	
Non-contact cooling	
Process uses	
Other	

b. Provide the following information as an attachment.

Attachment:

- i. A narrative description of the design and annual operation of the facility’s cooling water system and its relationship to the CWIS(s).
- ii. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.
- iii. A description of water reuse activities, if applicable.
- iv. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.
- v. Previous year (a minimum of 12 months) of AIF data.
- vi. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

2. COOLING WATER INTAKE STRUCTURE(S) DATA (Instructions, Page 2)

- a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID				
DIF				
AIF				
Intake Flow Uses (%)				
Contact cooling				
Non-contact cooling				
Process uses				
Other				
Latitude				
Longitude				

- b. Provide the following information as an attachment

Attachment:

- i. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.
- ii. Engineering calculations for each CWIS.

3. SOURCE WATER PHYSICAL DATA (Instructions, Page 3)

- a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID				
Source waterbody				
Mean annual flow				
Determination source				

- b. Provide the following information as an attachment.

Attachment:

- i. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports your determination of the water body type where each cooling water intake structure is located.
- ii. A narrative description of the source waterbody's hydrological and geomorphological features.
- iii. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. Note: The source

waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.

- iv. A description of the methods used to conduct any physical studies to determine your intake's area of influence within the waterbody and the results of such studies.

4. OPERATIONAL STATUS (Instructions, Pages 3-4)

- a. Is this application is for a power production or steam generation facility?

Yes No

If yes, provide the following information as an attachment; otherwise, proceed to item b.

Attachment:

- i. Describe the operating status of each individual unit, including age of each unit, capacity utilization rate (or equivalent), for the previous five years (a minimum of 60 months), and any seasonal changes in operation.
- ii. Describe any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors.
- iii. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).
- iv. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes to fuel type.

- b. Process Units

- i. Is this application for a facility which has process units that use cooling water other than for power production or steam generation?

Yes No

If **yes**, continue; otherwise, proceed to item c.

- ii. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of 40 CFR 125.94(c)?

Yes No

If **yes**, provide descriptions of the following information as an attachment, otherwise proceed to item c.

Attachment:

- 1. Individual production processes and product lines
- 2. The operating status, including age of each line and seasonal operation
- 3. Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors
- 4. Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

c. Is this an application for a nuclear power production facility?

Yes

No

If **yes**, include a description of completed, approved, or scheduled upgrades and Nuclear Regulatory Commission relicensing status of each unit at the facility as an attachment; otherwise, proceed to item d.

Attachment:

d. Is this an application for a manufacturing facility?

Yes

No

If **yes**, include descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 months) as an attachment; otherwise proceed to Worksheet 11.1.

Attachment:

WORKSHEET 11.1

IMPINGEMENT MORTALITY

This worksheet **is required** for all new, renewal, and amendment TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12. Complete one copy of this worksheet for each individual CWIS the facility uses or proposes to use.

CWIS ID:

1. IMPINGEMENT COMPLIANCE TECHNOLOGY OPTION SELECTION (Instructions, Page 5)

Indicate with a checkmark the method of compliance with the Impingement Mortality Standard selected by the facility.

- Closed-cycle recirculating system (CCRS) [40 CFR § 124.94(c)(1)]
- 0.5 ft/s Through-Screen Design Velocity [40 CFR § 124.94(c)(2)] – Proceed to Worksheet 11.2
- 0.5 ft/s Through Screen Actual Velocity [40 CFR § 124.94(c)(3)]
- Existing offshore velocity cap [40 CFR § 124.94(c)(4)] – Proceed to Worksheet 11.2
- Modified traveling screens [40 CFR § 124.94(c)(5)]
- System of technologies [40 CFR § 124.94(c)(6)]
- Impingement mortality performance standard [40 CFR § 124.94(c)(7)]
- De minimis rate of impingement [40 CFR § 124.94(c)(11)]
- Low capacity utilization power-generation facilities [40 CFR § 124.94(c)(12)]

If you selected 0.5 ft/s Through-Screen Design Velocity [40 CFR § 124.94(c)(2)] or existing offshore velocity cap [40 CFR § 124.94(c)(4)], proceed to Worksheet 11.2. Otherwise, continue.

2. IMPINGEMENT COMPLIANCE TECHNOLOGY INFORMATION (Instructions, Pages 5-7)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [40 CFR § 124.94(c)(1)]

Indicate with a checkmark if the CWS meets the definition of CCRS located at 40 CFR 125.91(c) and provide a response to the following questions.

i. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

Yes No

If **no**, proceed to **item ii**. If **yes**, provide the following information as an attachment and continue.

Attachment:

1. CWIS ID
2. 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.
3. A narrative description of any physical or operational measures taken to minimize make-up withdraws.

Note: You do not need to complete a separate Worksheet 11.1 for a make-up CWIS.

ii. Does the facility use or propose to use cooling towers?

Yes No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- 1. Average number of COCs prior to blowdown:

Table 22 - Average COCs prior to blowdown

Cooling Tower ID				
COCs				

Provide COC monitoring data for each cooling tower from the previous year (a minimum of 12 months) as an attachment.

Attachment:

- 2. Maximum number of COCs each cooling tower can accomplish based on design of the system.

Table 21 - Calculated COCs prior to blowdown

Cooling Tower ID				
COCs				

- 3. Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions.

- b. 0.5 ft/s Through Screen Actual Velocity [40 CFR § 124.94(c)(3)]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment:

- c. Modified traveling screens [40 CFR § 124.94(c)(5)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

Attachment:

- i. A description of the modified traveling screens and associated equipment.
- ii. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
- iii. Biological sampling data from the previous two years (a minimum of 24 months).

- d. System of technologies [40 CFR § 124.94(c)(6)] or impingement mortality performance standard [40 CFR § 124.94(c)(7)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

Attachment:

- i. A description of the system of technologies used or proposed for use by the facility to achieve compliance with the impingement mortality standard.
- ii. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.

iii. Biological sampling data from the previous two years (a minimum of 24 months).

e. De minimis rate of impingement [40 CFR § 124.94(c)(11)]

Provide the following information and proceed to Worksheet 11.2.

1. Include monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation as an attachment.

Attachment:

2. If the rate of impingement caused by the CWIS is extremely low (as an organism or age-one equivalent count), include supplemental information to Worksheet 11.0, item 1.b.vi. to support as an attachment.

Attachment:

f. Low capacity utilization power-generation facilities [40 CFR § 124.94(c)(12)]

Provide monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit as an attachment and proceed to Worksheet 11.2.

Attachment:

WORKSHEET 11.2

SOURCE WATER BIOLOGICAL DATA

This worksheet **is required** for all new, renewal, and amendment TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12. Complete one copy of this worksheet for each source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at 40 CFR §§ 125.94(c)(1)-(7).

Name of source waterbody:

1. SPECIES MANAGEMENT (Instructions, Page 8)

- a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

Yes No

If **yes**, any information submitted in order to obtain that permit may be used to supplement the permit application information requirements of paragraph 40 CFR § 125.95(f). If included, provide the attachment number.

Attachment:

- b. Is the facility requesting a waiver from application requirements at 40 CFR § 122.21(r)(4) in accordance with 40 CFR § 125.95 for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

Yes No

If yes, include a copy of the most recent managed fisheries report to TPWD, or equivalent, as an attachment.

Attachment:

- c. The facility has no knowledge of federally listed threatened or endangered species or critical habitat designations within the source water body.

True False

2. SOURCE WATER BIOLOGICAL DATA (Instructions, Pages 8-9)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, provide a response for any item in this section that is not contained within the most recent TPWD, or equivalent, report as an attachment to the application and enter the attachment number in the space provided. Proceed to Worksheet 11.3.

Attachment:

- a. A list of the data requested at 40 CFR 122.21(r)(4)(ii) through (vi) that are not available and efforts made to identify sources of the data.
- b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
 - i. all life stages and their relative abundance,
 - ii. identification of all species and life stages that would be most susceptible to impingement and entrainment,
 - iii. forage base,
 - iv. significance to commercial fisheries,
 - v. significance to recreational fisheries,
 - vi. primary period of reproduction,
 - vii. larval recruitment, and
 - viii. period of peak abundance for relevant taxa.
- c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure.
- d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at your cooling water intake structures.
- e. Documentation of any public participation or consultation with federal or state agencies undertaken and provide an attachment number.

The following is required for existing facilities only. Include the following information with the above listed attachment.

- f. Identify any protective measures and stabilization activities that have been implemented, and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
- g. A list of fragile species, as defined at 40 CFR § 125.92(m), at the facility. The applicant need only identify those species not already identified as fragile at 40 CFR § 125.92(m).

Note: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

WORKSHEET 11.3

COMPLIANCE WITH ENTRAINMENT MORTALITY STANDARD

This worksheet **is required** for all new, renewal, and amendment TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12. Complete one copy of this worksheet for each individual CWIS the facility uses or proposes to use.

CWIS ID:

1. APPLICABILITY (Instructions, Page 10)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

Yes No

- If **no** or the facility has selected **CCRS** [40 CFR § 124.94(c)(1)] for the impingement mortality compliance method, complete item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with 40 CFR § 125.95 for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance with 40 CFR § 125.95, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

2. EXISTING ENTRAINMENT PERFORMANCE STUDIES (Instructions, Page 10)

Previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies with the application.

Attachment:

3. FACILITY ENTRAINMENT PERFORMANCE STUDIES (Instructions, Pages 10-11)

- a. Provide an entrainment characterization study, as described at 40 CFR § 122.21(r)(9), as an attachment.
Attachment:
- b. Provide a comprehensive feasibility study, as described as 40 CFR § 122.21(r)(10), as an attachment.
Attachment:
- c. Provide a benefits valuation study, as described as 40 CFR § 122.21(r)(11), as an attachment.
Attachment:
- d. Provide a non-water quality environmental and other impacts study, as described as 40 CFR § 122.21(r)(12), as an attachment.
Attachment:
- e. Provide a peer review analysis, as described as 40 CFR § 122.21(r)(13), as an attachment.
Attachment: