

## **INTRODUCTION**

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments (RTC) received on the Draft NPDES Permit (MA0032034, Indeck Power Station). The RTC explains and supports EPA's determinations that form the basis of the final Permit.

The Indeck Power Station draft permit public comment period began on April 7, 2006 on May 6, 2006. Comments were received from:

1. Max Greig, Plant Manager, Indeck Power, and
2. Cindy Delpapa, Stream Ecologist, MA Riverways Programs;

EPA's decision-making process has benefited from the various comments and the additional information submitted. The information and arguments did not result in any substantial new changes to the permit. However, a few improvements and changes are detailed in this document and reflected in the final Permit. A summary of the changes made in the final Permit is listed below. The analyses underlying these changes are explained in the responses to individual comments. Each change is followed by a number that correlates to a specific response.

### **CHANGES TO PERMIT BASED ON COMMENTS:**

1. The final permit requires that all temperature monitoring samples be collected at a depth of one foot below the water surface, are taken at approximately the same time of day, and are collected at the same location (to the maximum extent possible). Additionally, the final permit specifies that the date, time, and location of temperature monitoring be recorded and reported to EPA with the monthly Discharge Monitoring Report (DMR).
2. EPA noted that the number "7" was missing from 8<sup>th</sup> paragraph on page 6. This inadvertent typographical error has been corrected in the final permit.

## **RESPONSE TO COMMENTS ON THE DRAFT NPDES PERMIT**

### **A. M. Greig of Indeck Power**

#### **1. Extension of current permit**

The permittee requests a 1-year extension of the current permit due to a variety of factors including the new conditions contained in the draft permit, the fact that the facility has been off-line for over a year, and the fact that the facility is under new ownership and currently for sale complete or for parts and equipment.

## RESPONSE:

EPA finds this request unacceptable. In conversations with plant personnel during the development of the draft permit, the facility continued to request a new permit rather than terminate the current permit due to the uncertain nature of the facility. Subsequently, during development of the draft permit and final permit, EPA has determined that the facility may discharge wastewater that is subject to NPDES permitting. Therefore, EPA denies this request and the draft permit will be finalized.

Since the permittee states that the facility is currently offline and it is unclear when, if ever, the facility will resume its discharge, the facility will need to comply with the new permit effluent limits only when it has a discharge. In the interim, the facility should report “no discharge” in its monthly Discharge Monitoring Report (DMR). The commenter states that the facility would remain off-line during a “1-year extension period” and that any wastewater discharges would be minimal. If the facility intends to remain off-line and have only minimal wastewater discharges, then no extension is necessary since, as stated above, the facility is only required to comply with the effluent limits when it is discharging wastewater subject to such limits.

The permittee should be aware of several points given the uncertainty of the facility’s future. First, the permittee states that the company is under new ownership. Our records indicate that the current operator is Indeck Pepperell Power Associates. If this is not the current case, the permittee is obligated to submit a request for transfer of ownership (see 40 CFR Part 122.61). Second, the permittee states that it is for sale complete or for parts and equipment. EPA assumes that if parts of the facility are sold, then it would no longer be capable of operating as currently designed. If such is the case, then the permittee should either request a termination of its permit or submit a request for modification (see 40 CFR Part 122.62 and 122.64).

## B. Riverways Program, Massachusetts Department of Fish and Game

### 1. Diffuser operation at low flows

With the loss of the majority of flow **from** the paper company, has there been any concern about the ability of the diffuser system to work as designed at these markedly lower, power company only, flow?

## RESPONSE:

EPA agrees that the diffuser may not operate as designed due to the absence of the majority of flow from the paper company. That is, a dilution factor determined from a model that uses the diffuser design and the higher flow would be different from a dilution factor modeled that uses the diffuser design and the lower flows. However, in this case, rather than determine a dilution factor from a model (CORMIX for example), EPA determined the dilution factor by using the facility design flow and the 7Q10 for the river

(i.e., EPA treated the outfall as a single port). This is a more conservative approach than determining the dilution factor using a model.

Therefore, no changes have been made to the permit.

## 2. Size of mixing zone

Since the goal is to have as small a mixing zone as possible, was the diffuser dynamics considered in the determination of the mixing zone for this facility? Did the paper company discharge any heated effluent and does the loss of the relatively significant paper company flow justify a reassessment of the allowable mixing zone and temperature monitoring locations? Is it possible to have a thermal, or other, impediment to fish passage because the mixing zone extend across all or most of the channel during low or other flow regimes?

RESPONSE:

The temperature compliance monitoring locations were determined during the previous permit issuance and included the flow from the paper company. During the development of this permit, EPA maintained the same sampling locations. Although the current flow from the outfall does not include the paper company flow, EPA is maintaining the same temperature monitoring locations in order to ensure a consistent set of temperature data and also because of the possibility of resumed flows from the paper company discharge in the future. The MassDEP has concurred with the temperature monitoring locations and believes that the size of the mixing zone is sufficiently minimized in this case and will not impede fish passage. Additionally, the permit contains language that prohibits the thermal plume from the impeding fish passage.

The low volume of flow and the high dilution will provide substantial, near-field temperature reduction thus not interfering with fish passage.

## 3. Dissolved Oxygen

Has dissolved oxygen levels ever been a concern – a condition that would be intensified by higher temperatures?

RESPONSE:

Dissolved oxygen levels have not been noted as a concern in this reach of the Nashua River (See Nashua River Basin 1998 Water Quality Assessment Report, MassDEP, 2001).

## 4. Sampling

We would encourage additional sampling guidance for each of the internal outfalls and possibly a reassessment of the single grab sampling methodology and frequency of

sampling in order to craft a sampling regime that would fully characterize the pollutant loads and concentrations in each of the waste streams over a range of operating conditions and effluent flows.

RESPONSE:

EPA believes that the sampling frequency specified in the draft permit will capture the range of operating conditions over the long term. Therefore, no changes in the sampling requirements have been made except for temperature monitoring as discussed in response to comment #12 below.

#### 5. Metal Cleaning Waste Stream

Is there any possibility lubricants or other oils and greases could be present in the waste stream? If there is a likelihood for these sorts of additional pollutants entering the waste stream the addition of an oil and grease monitoring requirement would be beneficial to understanding if there is oils and grease in this internal waste stream.

RESPONSE:

The limits developed in the draft permit for metal cleaning waste (internal outfall 001D) are based on the Steam Electric Power Generating Effluent Limit Guidelines (ELGs) found at 40 CFR Part 423. The guidelines do not specify oil and grease as a pollutant of concern from metal cleaning operations. The ELGs do identify oil and grease as pollutants of concern for other waste streams subject to the ELGs, such as low volume waste streams. Since the ELGs considered oil and grease when they were developed, EPA is prohibiting from independently developing technology-based limits for oil and grease for this waste stream.

The final permit contains a water-quality based narrative condition that requires the discharges from the facility to the Nashua River remain free from visible pollutants (see Part I.A.23). This provision applies to oil and grease from all discharges, including any discharge from a metal cleaning waste operation.

#### 6. Flows

The permitted daily flow limitations for the main outfall (001) is 130,000 gpd though if one was to combine all of the allowed maximum daily flows of the internal outfall (except 001D which has report only requirement for flows) the maximum daily flows add up to 165,000 gpd. Does this difference mean the facility does not find it necessary to discharge the maximum allowable internal outfall daily flows at the same time?

RESPONSE:

The flow from internal outfall 001B, maximum daily permit of 35,000 gallons per day (gpd), is routed to the cooling tower prior to discharge (see Maximum Water Flow

Diagram, attachment 2C to the Fact Sheet). The flow from the cooling tower (60,000 gpd) and the flow from the pH neutralization (70,000 gpd) combine and are discharged through outfall 001. Therefore, the maximum daily flow is 130,000 gpd.

#### 7. Dilution Factor

The dilution factor was calculated using the 7Q10 derived from the USGS in Pepperell and the Fact Sheet noted the now curtailed Pepperell Paper discharge was subtracted from the 7Q10. It appears the Indeck-Pepperell Power discharge was included in the paper company average discharge just not stated in the Fact Sheet, correct?

RESPONSE:

It's unclear if the paper company's flow (subtracted from the 7Q10) includes from the facility. However, EPA believes that either with or without the facility flow included, the dilution factor is approximately the same, since the contribution from the facility is so small versus the 7Q10.

#### 8. More Temperature monitoring

It would also be interesting to have information about the daily maximum temperature of this waste stream (outfall 001A) since this the significant source of thermal pollution from this facility and the wastewater is not actively cooled before release to the outfall. Information on this internal outfall's temperature can be used with the temperature monitoring of the main outfall to better understand the dynamics of the thermal load and would be helpful should changes be made in other aspects of the plant operation, such as additional redirection of wastewater to the cooling tower, with the potential to affect the temperature of the effluent.

RESPONSE:

Since the temperature limits derived in the permit are based on water-quality standards, EPA does not believe that additional internal monitoring to better understand the dynamics of the thermal load is necessary in this case.

#### 9. Engineering Calculations

The draft permit allows for reliable information from a manufacturer as a substitute for actual priority pollutant testing. This approach is less desirable and could be inaccurate since inferences from a manufacturer can not account for the unique conditions in this waste stream. We would also argue feed rates may have to be adjusted to levels other than those recommended or anticipated thus altering expected concentrations of pertinent priority pollutants, chromium and zinc.

## RESPONSE:

The limits developed in the draft permit for internal outfall 001A are based on the Steam Electric Power Generating Effluent Limit Guidelines (ELGs) found at 40 CFR Part 423. These guidelines allow for the use of engineering calculations, at the permitting authority's discretion, instead of monitoring for the 126 priority pollutants. EPA is allowing this type of alternative compliance monitoring in this case because EPA believes that most manufactures of cooling tower treatment chemicals have eliminated the use of the 126 priority pollutants (except chromium and zinc). Even if the chemicals contain small amounts of any of the priority pollutants, the permittee is allowed to demonstrate that none of the priority pollutants are detectable in the final discharge by providing appropriate calculations.

### 10. Monitoring point for outfall 001B

The Fact Sheet indicates internal outfall monitoring is required before flows from a specific internal outfall commingle with other flows. Based on this condition, we conclude the sampling point for outfall 001B includes the contributing flow that bypasses the oil/water separator.

## RESPONSE:

The monitoring point for outfall 001B is specified in the draft permit as "after the building sump and prior to mixing with other waste streams ..." The influent to the building sump includes flows from the oil/water separator and from the heat recovery boiler. The heat recovery boiler blowdown is not treated by the oil/water separator, but EPA would not classify this as a "by-pass."

### 11. Temperature

The Fact Sheet did not indicate the range of percent composition of heated boiler blowdown compared to other process waters in the final discharge. These percentages would be interesting information and pertinent to the temperature discussion. The draft permit limitations are written with the goal of meeting the Massachusetts Class B water quality standard 83° F and a change in temperature of no greater than 5° F. The water quality temperature maximum is intended to be a maximum and not a sustained temperature. Aquatic organisms may be able to survive brief periods of elevated temperature, (possible by seeking out refugia or temporarily migrating out of the thermally stressed area) but have physiological, behavioral or physical stress if exposed to longer periods of the maximum temperature.

## RESPONSE:

It is difficult to assess the composition of the boiler blowdown compared to other process waters in the final discharge since the boiler blowdown flow is routed to the cooling

tower where it is cooled before it is discharged as a component of the cooling tower blowdown.

The draft permit includes water-quality temperature limits that apply to the entire discharge from the plant. Therefore, as long as the permittee meets the permit limits at the specified monitoring locations, it will be in compliance with the Commonwealth's surface water quality regulations.

#### 12. Temperature monitoring location

The permit does not provide detailed guidance on an actual measurement protocol though there can be a great deal of variability in results depending on where, when and at what depth water temperature is measured.

RESPONSE:

EPA agrees that the permit should provide more guidance in order to ensure consistent monitoring. Therefore, the final permit requires that all temperature monitoring samples be collected at a depth of one foot below the water surface (standard sampling depth - also river waters are warmer at top due to solar radiation); are taken at approximately the same time of day; and are collected at the same location (to the maximum extent possible). Additionally, the final permit specifies that the date, time, and location of temperature monitoring be recorded and reported to EPA with the monthly Discharge Monitoring Report (DMR).

#### 13. WET testing schedule

Is June the best month to be representative of the discharge and river conditions or might testing during low flow or peak use months be a better choice? Has there been any consideration to requiring WET or other testing during the annual (approximately) cooling tower maintenance?

RESPONSE:

June was selected for WET testing primarily for ease of sample collection (i.e., warm weather). The draft permit specified that the WET sample must be collected when the facility is in operation. If the facility does not operate in June, then the WET sample must be collected during the next month the facility operates. Since the WET sample is a measure of the effluent, EPA does not believe it is necessary that the sample collection coincide with low flow river conditions. Therefore, no change has been made in the final permit. However, during the review of the draft permit, EPA noted that the number "7" was missing from 8<sup>th</sup> paragraph on page 6. This inadvertent typographical error has been corrected in the final permit.

The permit specifies limits and conditions for internal outfall 001A, cooling tower blowdown as well as 001, combined discharge. Therefore, the permittee must meet these conditions even during any routine cooling tower maintenance.

No change has been made to the WET testing schedule in the final permit.

#### 14. Cooling Water Intake

While the facility may be using acceptable cooling technology, we would hope BAT to prevent or at least reduce entrainment and entrapment would also be required for this facility.

#### RESPONSE:

EPA assumes the commenter meant to state that BTA would be required at the facility, not BAT as stated in their comment. EPA is requiring the facility to meet the Best Technology Available (BTA) for minimizing environmental impacts due to its cooling water intake. In this case, EPA determined that the use of cooling towers by the facility is BTA.