

State Water Resources Control Board

SEP 26 2016

Mr. George Piantka
Director of Regulatory Environmental Services
NRG Energy, West Region
5790 Fleet Street, Suite 200
Carlsbad, CA 92008-4703

Dear Mr. Piantka:

ONCE-THROUGH COOLING INTERIM MITIGATION REQUIREMENTS FOR ENCINA POWER STATION

On May 4, 2010, the State Water Resources Control Board (State Water Board) adopted the Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (Policy). The Policy establishes technology-based requirements to implement federal Clean Water Act section 316(b) provisions to reduce harmful effects on marine and estuarine life associated with cooling water intake structures. Section 2.C(3) of the Policy requires owners or operators of existing power plants to implement measures to mitigate the interim impingement and entrainment impacts resulting from their cooling water intake structure(s). Interim mitigation requirements became effective on October 1, 2015 and are in place until the owner or operator achieves final compliance with Policy requirements.

The Policy provides the following options for power plant owners and operators to demonstrate compliance with interim mitigation requirements:

- Option A: Demonstrate compensation for the interim impingement and entrainment impacts through existing mitigation efforts (Policy, § 2.C(3)(a)).
- Option B: Provide funding to the California Coastal Conservancy (Coastal Conservancy), working with the Ocean Protection Council, to fund an appropriate mitigation project (Policy, § 2.C(3)(b)).
- Option C: Develop and implement a mitigation project for the facility to compensate for interim impingement and compensation impacts (Policy, § 2.C(3)(c)).

On August 18, 2015, the State Water Board adopted Resolution 2015-0057, delegating authority to its Executive Director to approve proposed measures for power plant owners or operators to comply with interim mitigation on a case-by-case basis. Resolution 2015-0057 also includes fee calculation procedures for power plants that implement interim mitigation per Option B. All draft determinations of the Executive Director on mitigation measures are posted for a 20-day public comment period and circulated to persons who have requested public notice on matters related to the Policy.

Encina Power Station (EPS) Implementation Plan

In the 2011 Implementation Plan for Encina Power Station (EPS), Cabrillo Power I LLC (Cabrillo), a subsidiary of NRG Energy, initially proposed to comply with interim mitigation by implementing a combination of Options A and B. Option A consisted of requesting consideration of mitigation credit for existing maintenance dredging provided to maintain tidal flow to the Agua Hedionda Lagoon. However, per correspondence dated February 12, 2016, Cabrillo now proposes to comply with interim mitigation requirements by implementing Options B and C. Under Option C, Cabrillo is requesting State Water Board concurrence that the interim mitigation requirements for OTC flows of up to 304 million gallons per day would be satisfied by Poseidon Resources Corporation's mitigation project for the Carlsbad Desalination Project. The Carlsbad Desalination Project is co-located with EPS and uses EPS' OTC flows as its source water when available. Per Resolution 2015-0057, the State Water Board has evaluated Cabrillo's request and has released a draft determination for a 20-day public comment period with comments due by noon on September 23, 2016. After considering public comments received on the draft determination, the Executive Director shall consider approval of the final determination. (If public comments convey significant controversy, the Executive Director may have the final determination considered by the State Water Board at a public meeting.)

Implementation of Option B provides funding to the Coastal Conservancy, working with the Ocean Protection Council, for mitigation projects directed toward increases in marine life associated with the state's marine protected areas in the geographic region of the facility. State Water Board staff is working with the Coastal Conservancy to determine how interim mitigation fees will be received and how the fees will be applied toward appropriate mitigation projects. As described in Resolution 2015-0057 and its corresponding Information Sheet, the State Water Board will calculate interim mitigation fees based on recommendations from the Expert Review Panel on minimizing and mitigating intake impacts from power plants and desalination facilities (ERP II). The mitigation fee will be calculated to equal the sum of three components: an entrainment fee, an impingement fee, and a management and monitoring fee.

Entrainment Fee

Default Method

Per Resolution 2015-0057, when site-specific entrainment data are available for use by a power plant owner or operator, the Executive Director shall determine whether these data are suitable for calculating a specific habitat production foregone (HPF) for that plant. If no site-specific entrainment data are available, or if the Executive Director determines that the available entrainment data are not suitable for calculating a specific HPF for that plant, the default method of calculating a power plant's annual entrainment fee will apply. The default method considers the average cost estimate for entrainment of \$4.60 per million gallons (MG) and the plant-specific annual intake volume (MG), and as stated in Resolution 2015-0057, the average cost estimate value will be updated annually to account for inflation. The default calculation is as follows:

$$\text{Annual Entrainment Fee} = (\$4.60 \text{ per MG}) \times (\text{annual intake volume in MG})$$

If the Executive Director or the State Water Board approves Option C, the annual intake volume may be reduced by the representative amount that would be applicable under Option C.

Site-Specific HPF Method

If valid entrainment data representative of current operations are available, the power plant may determine that it is more appropriate for the entrainment cost to be based on a cost assessment of the HPF values. Valid entrainment data must meet the following thresholds:

- **Duration:** The duration of the data collection and study must be at least 12 consecutive months of entrainment and source water sampling. Paired samples (i.e., entrainment, source water) of larval concentration should occur at least every month with more frequent sampling being more desirable.
- **Species:** Assessed species should be representative of the suite of species entrained by the power plant's operations. Specifically, studies should include representative life histories for entrained species. Some of the life history attributes include larval duration, habitat associations, and larval size.
- **Spatial design:** The spatial design of the sampling program should include entrainment site(s) (real or proposed) and reference sites that will provide information about larval concentration in the source water body.
- **Oceanographic condition:** The spatial and temporal sampling design should be adequate to capture the typical oceanographic conditions affecting larval abundance and movement.

In addition to ensuring adequacy of entrainment and source water sampling of larval concentration, the power plant must demonstrate how source water bodies for entrained species are determined using an appropriate oceanographic model.

The conditions above ensure consistency with the Policy's requirement for studies to use the HPF method along with an Empirical Transport Model (ETM) for estimating entrainment impacts (Policy, § 2.C(3)(d)). The power plant may use ETM to estimate the source water body and proportional mortality, which are used to estimate HPF. Subsequently, the power plant may convert HPF into an actual cost of entrainment. State Water Board staff will determine whether the entrainment data are suitable for calculating a specific HPF for an individual power plant.

Data Needed for Entrainment Fee

If available, Cabrillo must submit suitable entrainment data, which are representative of current operations at EPS to the State Water Board, and meet the criteria described above. If suitable entrainment data are not available, staff will use the default method to calculate the entrainment fee. EPS's current NPDES Permit CA0001350 Order No. R9-2006-0043 does not require monitoring of intake flows, and therefore, the effluent flow monitoring and the days of operation will be used to represent the intake volume and to calculate the interim mitigation fee. To confirm the volume data submitted in the discharge monitoring reports are complete and accurate, Cabrillo must submit EPS's monthly and total intake volume for the operating period of October 1, 2015 to September 30, 2016 to the State Water Board by December 1, 2016. The report should state the number of days for which data was collected to arrive at the monthly volume, and if data was reported for fewer than 100% of the days in the month, an explanation should be provided for the omission of such data. In addition, Cabrillo must record monthly total intake volumes at EPS for each year of interim mitigation until the compliance date of December 31, 2017 so that these volumes will be

available for use in the annual entrainment fee calculations. Furthermore, it would be appropriate to differentiate the intake flows used by EPS for power generation activities and the intake flows in excess pumped for the Carlsbad Desalination Project. If Cabrillo prefers to report actual intake flows at EPS and not use effluent flows as a proxy moving forward, then it will need to provide the feasibility and timeframe needed for installing an intake flow meter device for monitoring of intake flows.

Impingement Fee

The State Water Board will calculate the impingement fee using each plant's annual estimate of fishes impinged (pounds) together with the value for fishes estimated from catch totals and the average indirect economic value of the fisheries as determined in ERP II's final report (\$0.80 per pound). Calculation of the annual impingement fee is shown below:

$$\text{Annual impingement fee} = (\text{average of annual impingement totals of fishes in pounds}) \times (\$0.80 \text{ per pound})$$

Data Needed for Impingement Fee

Cabrillo must submit estimates of annual impingement of fishes at EPS. Cabrillo must report the estimate of impingement for the operating period of October 1, 2015 to September 30, 2016 to the State Water Board for calculation of the 2015-2016 impingement fee for EPS if the estimate is available. In addition, Cabrillo must report to the State Water Board multiple estimates from previous years if estimates are available. State Water Board staff may take an average of those annual impingement estimates and use the average to calculate annual impingement fees.

Management and Monitoring Fee

After recent discussions with the Coastal Conservancy, State Water Board staff has concluded that a 20 percent management and monitoring fee is appropriate to cover the variability in actual management and monitoring costs. The 20 percent will be based on the sum of the entrainment and impingement fees. Thus, Cabrillo does not need to submit additional data for the calculation of the management and monitoring fee. Calculation of the management and monitoring fee is shown below:

$$\text{Management and monitoring fee} = 0.20 \times (\text{entrainment fee} + \text{impingement fee})$$

Upon the submittal of the data necessary to calculate interim mitigation fees, State Water Board staff will perform the calculations and notify the owners or operators of their 2015-2016 fees and procedures for payment of fees. (The current interim mitigation fees cover the operating period of October 1, 2015 to September 30, 2016.) These fees will be due on **April 1, 2017**. State Water Board staff is resolving details about the payment process with the Coastal Conservancy, and will issue a subsequent letter when the payment process is finalized.

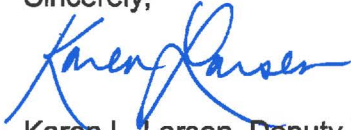
Based on the above, please submit the following information applicable to your facility to the State Water Board by **December 1, 2016**:

1. Valid entrainment data, if available;
2. Monthly and total intake volume for October 1, 2015 thru September 30, 2016;
3. If considering installing an intake flow measuring device for measuring future intakes, feasibility and timeframe needed for completion; and

4. Actual annual impingement data in total pounds of fishes impinged from October 1, 2015 thru September 30, 2016, or the annual total of fishes impinged on previous years.

If you have any questions, please contact Renan Jauregui of our Division of Water Quality NPDES Unit at (916) 341-5505 (Renan.Jauregui@waterboards.ca.gov) or Katherine Faick of our Ocean Unit at (916) 445-2317 (Katherine.Faick@waterboards.ca.gov).

Sincerely,



Karen L. Larsen, Deputy Director
Division of Water Quality

cc: David Gibson, Executive Officer
San Diego Regional Water Quality Control Board
2375 Northside Drive, #100
San Diego, CA 92108