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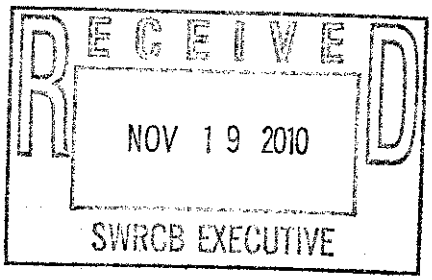
November 19, 2010

Jeannine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814



Re: Comment Letter – OTC Policy Amendment

Dear Ms. Townsend:

RRI Energy (RRI), appreciates the opportunity to submit written comments on the State Water Resources Control Board's (SWRCB or Board) Proposed Amendment (Amendment) to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). RRI owns and operates two electric generation facilities (Ormond Beach and Mandalay) that are subject to the OTC Policy approved by the Board on May 4, 2010.[1] Ormond and Mandalay account for less than 0.20% of the entrainment impacts from OTC.[2]

RRI submits that the Amendment must treat steam boiler units with impacts comparable to or lower than the combined cycle generating facilities (CCs) the same as the CCs. The Amendment would modify Sections 2.A(2)(d) and 2.C(3) of the OTC Policy to provide new compliance flexibility to existing CCs that utilize once through cooling. The Amendment would also allow any facility that can get approval to move its compliance date past the year 2020 to achieve comparable compliance flexibility. The stated rationale for the CC portion of the Amendment is that these units (1) operate more efficiently and thus generally use less intake water for cooling purposes than other OTC facilities, and as a result the CC facilities have fewer OTC impacts relative to electricity generated, (2) produce fewer carbon emissions, and (3) reflect newer technologies.[3]

[1] RRI is challenging the OTC Policy in court. It does not reiterate the bases of that challenge in this letter.
[2] Final SED, Table 2 Page 33.
[3] Draft Staff Report on the Proposed Amendment, Page 3-4. RRI notes that the rationales dealing with carbon emissions and the age of a unit's technology are not relevant considerations for establishing compliance criteria under Clean Water Act section 316(b).

There is no rationale stated for the remainder of the Amendment and no guidelines for how to extend a compliance plan past the year 2020.

RRI submits that the new compliance option applies too narrowly to CC facilities, and that any OTC facilities that are comparable to the CC facilities on appropriate criteria should be eligible for the new compliance option based on the Board's own rationale for the new compliance track. Moreover, the objective of the OTC Policy and any subsequent amendments should not be the elimination of OTC generation, but the minimization of impacts to the marine environment caused by OTC facilities. As such, RRI believes that the new compliance flexibility should, at a minimum, also be available to low capacity utilization rate (CUR) units meeting certain eligibility requirements, as set forth below.[4] RRI supports adding language to the amendment that grants any low CUR facility the same compliance alternative as that available to the CC facilities, based on the fact that such units have comparable impacts as the CC facilities.

OTC Impacts Relative to Technology Generation

The Draft Staff Report states that CC facilities tend to have fewer marine life impacts relative to electricity generated, as compared to steam units, and the Draft Report references Figure 11 of the May 4, 2010 SED to support that conclusion.[5] This figure shows the average ratio of OTC flow to energy generated for OTC power plants over the period 2000-2005. While this figure shows that the CC units to generally use less cooling water per MWh over that timeframe, this metric is not a good representation of a facility's OTC impacts going forward. Indeed, the Final SED itself notes a number of caveats with respect to Figure 11 that make it less than meaningful.[6] In discussing whether CC units deserved special treatment, the Final SED used a better measure of assessing potential impact, i.e., the unit's OTC design intake capacity relative to nameplate output, as shown in Figure 17 of the SED, and shown below (CC plants are in red):

[4] Units with a CUR of 15% or less as defined in the Final SED, Page 52

[5] Figure 11, Final SED, Page 41

[6] Final SED, Pages 40-42 discusses non-generating activities critical to unit operation, age, efficiency, condenser design, source water temperature, pumping capacity, number of pumps per intake structure, and standby operation.

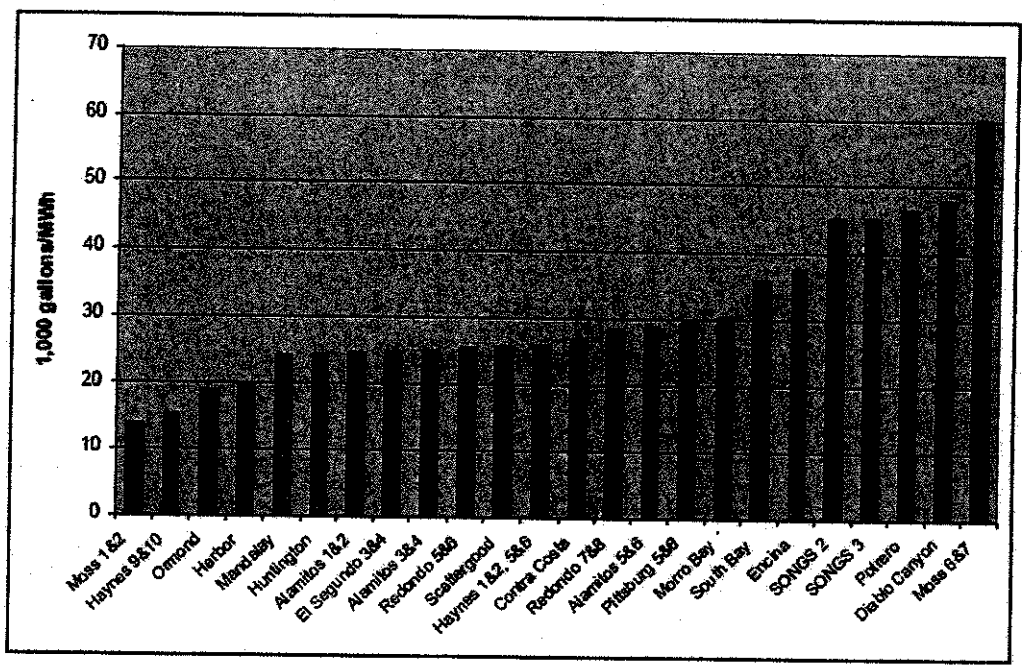


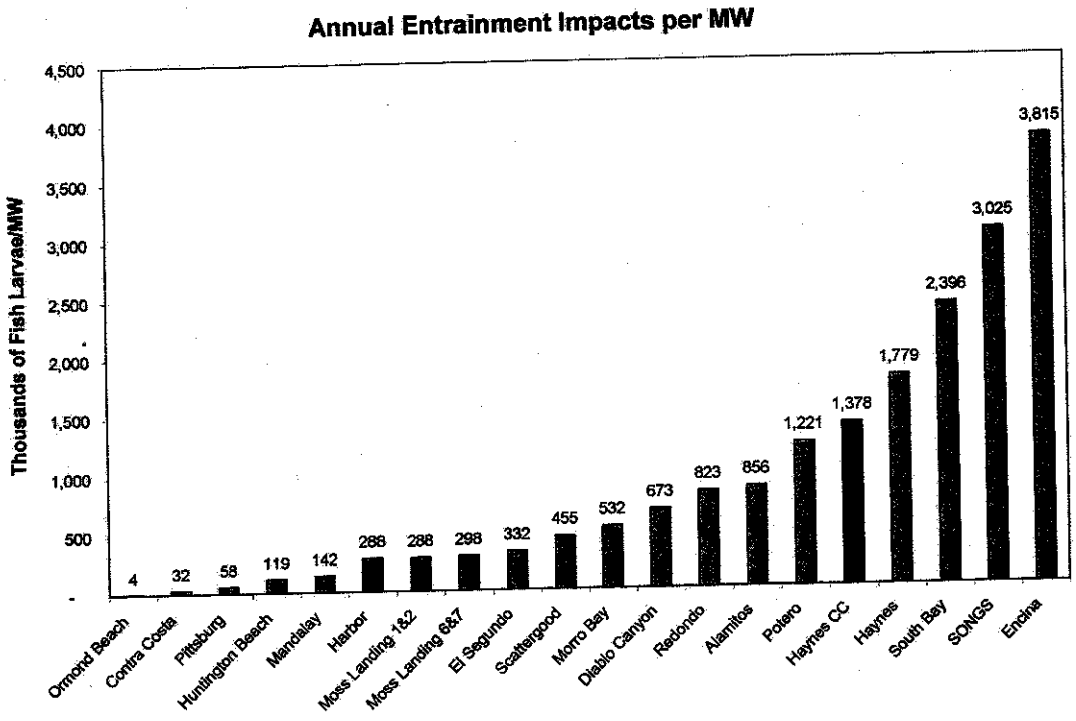
Figure 17. Design Cooling Water Demand

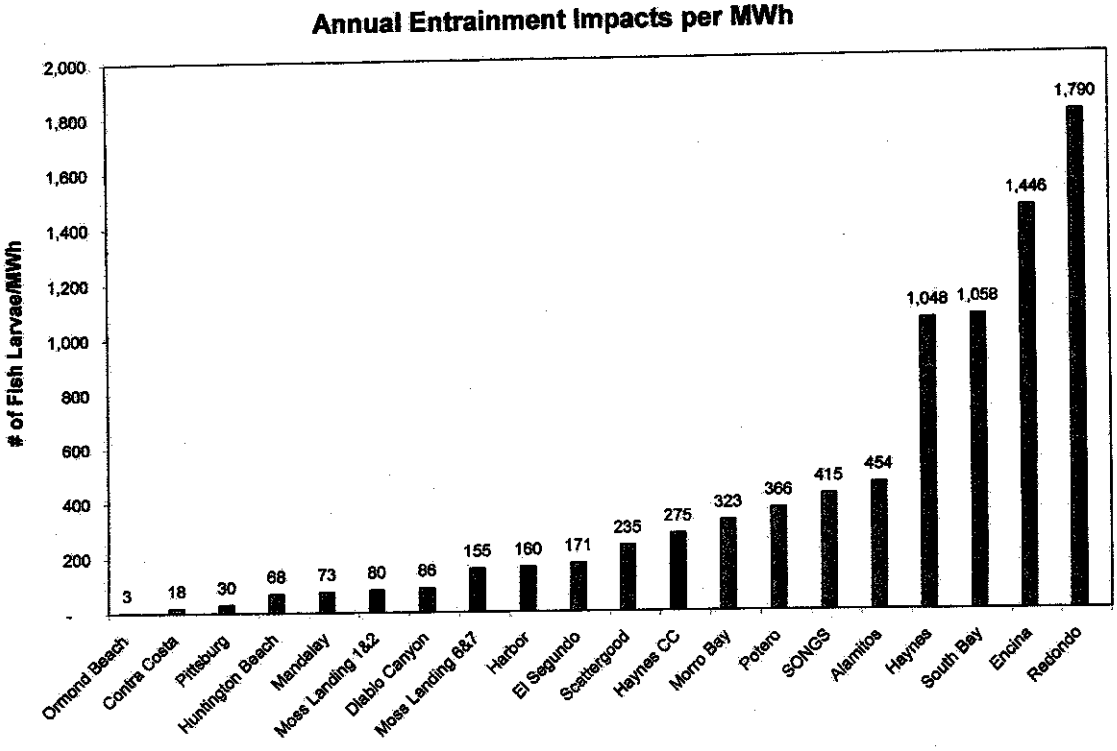
This is a more objective metric, and avoids the issues associated with Figure 11 of the SED. By using this more reasonable and objective metric (i.e., design intake capacity divided by nameplate output), RRI's units, when measured on a water design flow basis relative to electric production (MWh), have comparable efficiency as the CCs.[7] In fact, Ormond Beach is more efficient on this standard than the Harbor CC. Furthermore, other low CUR units also have a design flow relative to electric production measure that is not significantly different than that of the Harbor CC.

In addition to this more reasonable metric than what is discussed in the Amendment, there are other reasonable metrics as well. For instance, one can use data from the Final SED to calculate the *actual* entrainment impacts per MWh and per MW, as shown in the graphs below.[8] Site-specific factors, such as where the intakes are located and the amount of organisms in the water being used, are captured in these metrics.

[7] Figure 17, Final SED, Page 91.

[8] Comparisons on both a MW and MWh basis show that power generating units provide both capacity and energy to the electric system. A focus only on energy output reflects a misunderstanding of the nature of California's power needs and has reliability implications. Annual entrainment from Table 2, Final SED, Page 33; dependable capacity (MW) and capacity utilization rate from Table 4, Final SED, Pages 36-38.





As can be seen from these metrics, both of RRI's units have less of an entrainment impact relative to both capacity and energy than the CC units. In aggregate terms, Ormond Beach's annual entrainment is ten times less than the Moss Landing CC

and about a third of Harbor's.[9] This is true for many of the other steam units as well. RRI believes that any facility which is comparable to the CC units on these metrics should be afforded the same flexibility as the CC units.

Daily Flow Rate Alone Does Not Capture Actual Environmental Impact

Daily flow rate by itself is an inappropriate measure of impingement and entrainment impacts.[10] Comparing low CUR units with higher CUR units on the basis of each unit's 2006 annual operation shows that low CUR units have fewer impingement and entrainment impacts over time. Looking at the annual impingement and entrainment estimates given in the SED shows, for example, that LADWP's Scattergood facility (CUR of 21% in 2006) has considerably higher impingement and entrainment (I&E) projections (365 million entrainment compared to 6 million for entrainment and 13,285 pounds compared to 3,504 pounds impingement) than RRI's Ormond facility (CUR of 4%), despite the higher design flow capability of Ormond.[11] Higher capacity factor units, such as the CCs or the nuclear facilities used even more cooling water on an annual basis in 2006 (Moss Landing 1&2 at 38,212 MGY and San Onofre 2 at 302,556 MGY compared to Ormond at approximately 10,001 MGY) and they operated many more hours.[12] Thus, the higher CUR units have significantly more opportunities to impinge and entrain than the low CUR units because they operate for more hours during the year and use significantly more seawater for cooling when the time period being reviewed is longer than a day. Thus, there is no reason to exclude the low CUR units from the Amendment's new compliance alternative based on other comparisons such as maximum daily cooling water usage or historical cooling water usage relative to their electric production. These other comparisons do not account for the whole picture.

Seasonal Marine Variations is an Incorrect Basis to Exclude Low CUR Units from the Amendment's New Compliance Alternative

Seasonal marine variations is another incorrect basis to deny low CUR units the opportunity to comply with the Policy under the Amendment's new compliance track. There is no evidence that the low CUR units have a greater impact than facilities with higher CURs due to seasonal variations in larval fish. Each facility has its own unique characteristics relative to intake location, physical characteristics, and organism population and their associated seasonal variations. For RRI's units, studies refute the presumption that the risk of potential impacts is higher during the summer months when

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[9] Ormond Beach's annual entrainment is 32 million fish larvae compared to 312 million at Moss Landing 1&2 and 85 million at Harbor. Final SED, Table 2, Page 33.

[10] *See* Final SED, Appendix G, Page G-57 (making comparison on this basis).

[11] Final SED, Pages 33-38 and 53-54; Estimated annual entrainment, Table 2; estimated annual impingement, Table 3; 2006 capacity utilization rates, Table 11.

[12] The annual cooling water usage estimates assume that each unit used their daily maximum flow when generating electricity since none of these units have installed variable frequency drives. Design flow (MGD) from Final SED, Table 2, Pages 33-34; 2006 CUR from Final SED, Table 11, Pages 53-54; VFD information from Final SED, Table 18, Pages 83-84.

low CUR units are most likely to operate. Similarly, larval and egg densities tend to be higher at night, i.e. outside of peak demand periods. For Mandalay, the data show that the majority of the eggs were entrained at night during the months of April, May and June with over 50% occurring during May. Most of the larval fish would be expected to be entrained during the night from February through May with the peak during February when about 25% of the larvae occurred. Larval shellfish were generally more abundant in the entrainment samples from January through March and also in May, with the highest percentage occurring in the night samples in March.[13] For Ormond, more eggs were collected during the night than during the day but the peak in egg densities were different during these two periods. The peak in daytime entrainment densities for eggs was in May while the peak in nighttime densities was in August. The peak in larval fish densities during the day was in April and during the nighttime was in May. The highest density of larval shellfish was observed during April with about 42% of the total occurring during daylight hours.[14] Thus, actual studies show there is no reason to exclude low CUR units, and particularly RRI's units, from the CC Amendment's compliance flexibility based on the concern of seasonal variation.

Second, absent an outage, the high CUR units will be running *at the same time* as the low CUR units. Thus, if there is seasonal variation occurring when the low CUR units are running, that same impact will also be occurring at the high CUR units. There is simply no basis to argue that low CUR units can have a higher impact than high CUR units. In 2006, the higher CUR units used in the example above operated 3-4 times as many hours as Ormond.[15]

The Policy should allow the low CUR facilities to take credit for the reduced I&E impacts as a result of their current and projected operating rates. Furthermore, monitoring requirements will clearly show the true I&E impacts these units have, if any, due to seasonal life cycle patterns of particular organisms during the units' operation. Should monitoring reveal that I&E impacts are greater due to seasonal variations in marine life, the same requirements placed on the CCs under the Amendment would apply to the low CUR units. Therefore, there is no reason to exclude low CUR units from the options given the CCs in the Amendment.

Recent Capital Investments

The CC Amendment is also justified because the CC units are "newer technology."[16] This is a change from the Final SED wherein the discussion was about recent investment.[17] It is worth noting that combined cycle generation is not new

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[13] 316(b) Compliance Review of Mandalay and Ormond Beach Generating Station's IM&E Data, Tenera Environmental, October 11, 2010, Page 23.
[14] *Ibid*, Page 25
[15] Based on 2006 EPA CEMS data
[16] See Draft Staff Report, Pages 3-4.
[17] See Final SED, Page 91.

technology in any meaningful sense – it has existed for approximately 30 years, an amount of time that can hardly result in something being called "new." The Harbor units were put into service in 1994, over 16 years ago. The Amendment allows the CCs to continue to utilize OTC through the "end of their useful life." Yet, the owners of many other units have also made capital investments over the same time frame. RRI made a very large capital investment in purchasing Ormond Beach and Mandalay in 1998 and has made subsequent capital additions to both plants. There is no sound basis to consider the timing and size of investment in the CCs while ignoring the timing and size of investment in other facilities.

MWhs Are Not the Only Measure of a Unit's Electrical Attributes

Low CUR units provide critical reliability services such as reactive power, capacity, and ancillary services that are not captured in a heat rate or capacity utilization measurement. RRI's units have high availability at over 90%, are fully committed to provide Resource Adequacy capacity to meet summer peak demands, and are routinely called on by the CAISO for reliability purposes. Also, RRI's units have a much wider range of load following capability than the combined cycle units which will prove valuable as intermittent resources such as wind and solar generators are integrated into the electric grid.[18] Finally, these facilities provide critical local reliability services. The contribution the low CUR units make to the electric grid are just as important as the higher CUR units.

To conclude, RRI's Ormond and Mandalay units are comparable or better than the CCs on the criteria used in justifying flexibility for CC units, and the RRI facilities have markedly less impact on marine life. RRI submits that the Amendment can accomplish the same policy objective by making comparable facilities eligible for the new compliance track. RRI believes that the low CUR units, and RRI's facilities in particular, should be eligible for the compliance alternatives afforded the CCs and recommends that the following changes be made to Section 2.A(2)(d) and the definition section of the OTC Policy:

Change to Section 2.A(2)(d)

(d) The owner or operator of an *existing power plant** with *combined-cycle power-generating units** installed prior to [the effective date of the Policy] or *low capacity utilization rate units** may, without demonstrating that compliance with Track 1 is *not feasible**, achieve compliance in accordance with either subparagraph (i) or (ii) of this paragraph.

[18] It makes little sense to incur the high capital cost of a new combined cycle facility merely to have that unit serve as back-up to an intermittent renewable generator.

New Definition:

Low capacity utilization rate units - Refers to units whose owners or operators will commit to annual capacity utilization rates of 15% or less. The CUR limit will be included in the NPDES permit for each facility.

RRI believes that the Board can and should make these additional modifications consistent with Clean Water Act §316(b) and CEQA.

Sincerely,

Fred McGuire
Vice President
Engineering, Environment & Safety