

Central Valley Regional Water Quality Control Board
15/16 March 2007 Board Meeting
ITEM #10

Response to Comments for the Sacramento Municipal Utility District
Rancho Seco Nuclear Generating Station, Unit 1 and Rancho Seco Park
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Regional Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (Orders) for the Sacramento Municipal Utility District Rancho Seco Nuclear Generating Station, Unit 1 and Rancho Seco Park. Public comments regarding the proposed Order were required to be submitted to the Regional Water Board by 16 February 2007 in order to receive full consideration.

The Regional Water Board received comments regarding the tentative Order from the Sacramento Municipal Utility District. Many of the comments were regarding factual errors or typographical errors. Regional Water Board staff agree with many of the Discharger's comments and have modified the draft Order as described in Comment Nos. 2, 4, 6, 14-16, 18-25, 27-29, and 31. The remaining comments are summarized below, followed by staff responses.

SACRAMENTO MUNICIPAL UTILITY DISTRICT (Discharger) COMMENTS

COMMENT No. 1: On page 4, **II. Findings. A. Background** the Tentative Order states that the District "...applied for a NPDES permit renewal to discharge up to 14 million gallons per day (mgd)..." On page 13, the Tentative Order applies a flow limit to the discharge for the first time, setting it at 14 mgd (**Effluent Limitation IV.A.1.c**). The District did not request any limitation on its discharge volume. The value of 14 mgd was documented in the Report of Waste Discharge as the average flow volume for the one-year period, simply a figure requested in the renewal application form. It is not indicative of other time periods, nor is it equivalent to a design flow concept or necessary under NPDES regulations. We request that the flow limit VI.A.1.c be deleted and reference to SMUD's request for an authorized discharge of 14 mgd be deleted from the above finding.

RESPONSE:

Staff agree with the Discharger that flow limits are not necessary and have proposed a late revision to remove the limits. For industrial facilities, flow limits are sometimes necessary as a technology-based effluent limit based on an actual measure of production. In this case, however, the flow rate of the discharge is a function of the pumping capacity of the Folsom South Canal pumps and the level of Rancho Seco Lake and it is not necessary to limit the flow.

COMMENT No. 3. On page 12, **Effluent Limitation A.1.a, Table 6**, the District strongly objects to the inclusion of a **new Effluent Limitation for Electrical**

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Conductivity of 110 $\mu\text{mhos/cm}$, a level equal to the highest EC level measured in the discharge during the past three years. As stated in Attachment F, page F-28.n.iii, the discharge has no reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for salinity. Based on this finding, the previous salinity limitation for total dissolved solids was removed from the permit in the Tentative Order. It is inconsistent to now insert a much more stringent salinity limit, many times lower than the prior limit and than any water quality standard. The 110 $\mu\text{mhos/cm}$ value is almost ten times lower than other similar permitted facilities. It is not calculated according to recognized methods for performance-based limits. This new "performance-based" limitation for Electrical Conductivity should simply be removed.

RESPONSE

Staff agree with the Discharger that effluent limitations for electrical conductivity are not necessary and have proposed a late revision to remove the limitations. Based on the relatively low reported salinity in the combined effluent, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. Furthermore, the salinity is sufficiently low so as not to present a water quality threat to downstream beneficial uses or an anti-degradation concern. The permit does require salinity monitoring of the discharge to verify that salinity is not increasing and requires the development and implementation of pollution prevention plan to reduce the salinity of the discharge.

COMMENT No. 5. On page 12, **Effluent Limitation A.1.a, Table 6**, the District objects to the inclusion of an Effluent Limitation for Copper and requests that the final limitations and the associated interim limitation be removed. As explained below, the limitation is not justified because the District is not adding Copper to the discharge and waters of the United States, and because data is currently insufficient to find reasonable potential and to calculate the limits. Further, to the extent the Regional Board decides to include limitations for copper, the interim limit should be recalculated as described below to higher values.

RESPONSE

The inclusion of an effluent limit for copper is consistent with current case law. See *Northern Plains Resource Council v. Fidelity Exploration*, 325 F.3d 1155 (9th Cir. 2003) and *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York*, 451 F.3d 77 (2nd Cir. 2006). The discharger moves water from the Folsom South Canal, which originates in the American River, to an unnamed tributary to Clay Creek to provide for dilution to discharge Rancho

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Seco decommissioning waste water. This industrial discharge results in the addition of pollutants to Clay Creek. See response to COMMENT No. 30, below, for the staff response regarding the interim effluent limits for copper.

COMMENT No. 7. On page 13, **IV. Effluent Limitations and Discharge Specifications. A. Effluent Limitations for Combined Discharge. 1.c** the District requests that the Monthly Average Discharge Flow be removed or modified as described in paragraph 1 above.

RESPONSE

See response to COMMENT No. 1

COMMENT No. 8. On page 13, **Table 7** the mass-based Effluent Limitations for TSS and BOD in the Domestic Effluent should be removed (and this should be reflected in Table F-8 and pages F-16 and F-17 of the Fact Sheet). Federal law requires only monthly and weekly averages and concentration-based limits for BOD and TSS. The Regional Water Board is proposing to add more stringent limits based on maximum daily values and mass limits that are more stringent than required by federal law, as shown by the recitation on Fact Sheet page F-16 of the technology-based limit requirements of federal regulation. As such, the Regional Water Board must perform a CWC section 13263 analyses prior to imposing these limits. Any previous inclusion was simply an error, which can be revised without anti-backsliding constraints.

RESPONSE

Daily maximum effluent limitations for BOD₅ and TSS are included in the proposed Order, in addition to the average weekly and average monthly effluent limitations, to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. BOD₅ and TSS are also appropriately limited by mass in accordance with 40 CFR 122.45(f)(1), which states that, "*All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass...*"

COMMENT No. 9. On page 13, **IV.A.2.c.i Total Coliform Organisms**, the District requests that the limitation be changed to 23 MPN/100ml as a 30-day median. This is consistent with the Current Order No. 5-01-182. Expressing the effluent limitation as a 7-day median is only a recommendation by the Department of Health Services and is not required.

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RESPONSE

Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the receiving stream. Coliform limits are imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways. In a letter to the Regional Water Board dated 8 April 1999, the California Department of Health Services indicated that DHS would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30 day period. The proposed total coliform effluent limitations are appropriate and necessary to ensure the protection of beneficial uses of the receiving water.

COMMENT No. 10. On page 13, **2. Final Effluent Limitations for Domestic Effluent. d. Daily Discharge Flow**, The District requests that the limitation be amended to be “The dry weather daily average domestic discharge flow shall not exceed the facility design flow of 60,000 gallons per day.” This is consistent with the Current Order No. 5-01-182.

RESPONSE

The Discharger currently measures the discharge flow from the domestic wastewater plant only when it discharges to surface waters, which only occurs during wet periods. Therefore, it does not make sense to make the flow limit only applicable during dry weather. No change to the domestic wastewater flow limitation has been made.

COMMENT No. 11. On page 15, **V. Receiving Water Limitations. A. Surface Water Limitations.1 Bacteria**, the District requests that the phrase “... based on a minimum of not less than five samples for any 30-day period...” be removed so that this limitation is consistent with the MRP Table E-7 requirement for monthly sampling.

RESPONSE

The discharge is required to be in compliance with the Basin Plan. The Receiving Water Limitations contained in the proposed Order are numeric and narrative water quality objectives specified in the Basin Plan. Therefore,

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the receiving water limitations are appropriate and should not be modified. We understand that the proposed Order only requires monthly monitoring for fecal coliform in the receiving water, which seems contrary to the receiving water limitation. Compliance with the domestic effluent limitations for total coliform ensures that the discharge does not cause a violation of Receiving Water Limitations V.A.1. for bacteria.

COMMENT No. 12. The District thanks the Regional Board staff for inclusion on page 21 of completion of a Water Effect Ratio study as a re-opener provision. The District agrees that if limitations for copper are retained, it is important to characterize the appropriate site-specific water quality objective for copper accurately to protect the beneficial uses of the receiving water. It is possible that a site-specific objective might resolve concerns over changes in the intake water quality that would result from the Freeport Regional Water Authority Project. However, this is not certain, and the cost of the determination would be better avoided by removal of the limitations.

RESPONSE

See response to COMMENT No. 5

COMMENT No. 13. On pages 21-23, the District also requests that the **special study provision VI.C.2.a relating to chronic toxicity** be deleted or modified. Specifically, the District may not be able to comply with the accelerated monitoring requirements, if needed, since the stream may be dry during all or part of the required monitoring time, and the District is unclear when a TRE would be initiated if the accelerated monitoring cannot be performed. Additionally, the District has already performed monitoring in 2003 and 2004 that was submitted to the Regional Board that indicates that the low chronic toxicity values are due to an “osmotic effect” not to the presence of a toxic substance. The “osmotic effect” results from the very low levels of minerals in the Folsom South Canal (and therefore the effluent discharge). The District believes that the TRE process would reach the same conclusion, but would incur a large amount of District resources, and is unnecessary. The District is willing to discuss this issue with Regional Board staff at a meeting prior to issuance of a final Order.

If the special study provision is retained, the District requests that it be modified in several ways. First, since the method for acute whole effluent toxicity (EPA-821-R-02-012, Fifth Edition) allows for 90 percent survival in test controls when using the species designated (Pimephales promelas), the chronic toxicity test

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should provide for a numeric monitoring trigger of 1/0.90 TUc, or 1.11 TUc. This numeric monitoring trigger of > 1.11 TUc should be allowed as long as three consecutive chronic toxicity tests had results not >1.11 TUc. This would allow for random variation in sampling and testing.

RESPONSE

The chronic whole effluent toxicity (WET) provisions in the proposed Order are necessary to protect the beneficial uses of the receiving stream. Provision VI.C.2.a. requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in the provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. The Discharger has not performed a TRE to determine if past toxicity was due to an osmotic effect. The purpose of this provision is to require the Discharger to take the necessary actions to make that determination.

The chronic toxicity trigger of > 1 chronic toxic unit (TUc) in the proposed Order is appropriate. The toxicity of the effluent is calculated as 100 divided by the no observed effect concentration (NOEC). The NOEC is the highest tested concentration of an effluent that causes no observable effects on the test organisms (i.e. the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls). The Facility discharges to an ephemeral stream that provides no dilution. Therefore, to ensure compliance with the narrative toxicity objective, the discharge cannot cause a significant effect to test species in 100% effluent. Consequently, the NOEC must be 100% effluent, which is equivalent to 1 TUc.

COMMENT No. 17. On page 28, **VII.B Total Coliform Organisms Effluent Limitation** the 7-day median should be changed to a 30-day median as described in paragraph 9 above.

RESPONSE

See response to COMMENT No. 9.

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COMMENT No. 26. On page E-6 and E-7, the District requests that the requirement in section V.B.7 and Table E-5 be modified to require only 100% effluent, not a series of dilutions. The receiving water for Rancho Seco is an ephemeral stream and is dry for much of the year. Using a dilution series with laboratory water as the diluents is of little relevance since the aquatic environment consists entirely of the effluent water for much of the year. Since most of the monitoring will use laboratory water, comparisons to tests using receiving water will be of little value.

RESPONSE

A dilution series is required for the chronic whole effluent toxicity testing to allow the calculation of the level of toxicity of the effluent. Without a dilution series the chronic toxic units could not be calculated. The result would only indicate if the effluent was significantly different from the control. Requiring a dilution series is reasonable and necessary to evaluate the toxicity of the discharge.

COMMENT No. 30. On page F-24, the District requests that the interim copper limit be increased to 20.4 µg/L.

RESPONSE

Staff have re-evaluated the effluent copper data and agree that it is log-normally distributed. Therefore, the interim limit for copper has been recalculated and a late revision has been proposed to change the interim limit to 18.5 µg/L. The evaluation was based on effluent copper data from November 2001 through December 2006.

COMMENT No. 32. On pages F-32-34, revisions should be made to correspond to any changes being made to the whole effluent toxicity testing provisions for Chronic Toxicity, as discussed above.

RESPONSE

See response to COMMENT No. 13.

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COMMENT No. 33. On page F-36, **Table F-15**, the District requests that reference to a discharge **flow limit and footnote 5** be deleted, as the District requested removal of this limit. Any discussion of flow should be changed to reflect the final resolution of this issue.

RESPONSE

See response to COMMENT No. 1.

COMMENT No. 34. On page F-36, **Table F-15**, the basis for the electrical **conductivity limitation** is listed as “AP”, which is not included in footnote 1. As noted above, the electrical conductivity limitation should be eliminated and thus not included on Table F-15.

RESPONSE

See response to COMMENT No. 3 regarding the effluent limitations for EC.

COMMENT No. 35. On page F-37, **Table F-16**, the units for Flow should be “gpd” not “ggd”. The District has requested the removal of mass limits and this would also require amendment of Table F-16.

RESPONSE

The correction to the units for flow have been made in Table F-16. See response to COMMENT No. 8 regarding the removal of mass limits.