

Central Valley Regional Water Quality Control Board
21/22 June 2007 Board Meeting

Response to Comments for the California Department of General Services
Central Plant Operations Heating and Cooling Facility
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 California Department of General Services Central Plant Operations Heating and Cooling Facility. Public comments regarding the proposed Orders were required to be submitted to the Regional Water Board office by 22 May 2007 in order to receive full consideration.

The Regional Water Board office received comments regarding the tentative Order from the California Department of General Services and the California Sportfishing Protection Alliance. The significant comments are summarized below, followed by staff responses.

CALIFORNIA DEPARTMENT OF GENERAL SERVICES (DGS) COMMENTS

DGS - COMMENT No. 1: The DGS is not a Publicly Owned Treatment Works (POTW). Therefore, DGS respectfully requests that any reference to POTWs either be removed from this permit or clearly indicated as “not applicable”. Please remove Sections V.A.1., VI.A.2.b.iv., VI.A.2.l., and VI.A.2.u.

RESPONSE: Staff agree that these sections do not apply to the discharge. However, either it is clear they don't apply or there is no jeopardy of non-compliance. Therefore, these sections have been left in the permit to maintain consistency. Section V.A.1. is a receiving water limitation for bacteria that is based on the Basin Plan. Although the discharge does not contain fecal coliform, it is appropriate to include the Basin Plan's water quality objective as a receiving water limitation. Since the tentative order does not require effluent or receiving water monitoring for bacteria, there is no jeopardy for non-compliance with the receiving water limitation. The remaining sections are part of the Regional Water Board's standard provisions, and it is clear in the tentative order that the provisions do not apply to the discharge.

DGS - COMMENT No. 2: The DGS contends that a final performance-based effluent limitation for copper is appropriate for the Central Plant discharge because there is adequate assimilative capacity in the Sacramento River for copper.

RESPONSE: For incompletely mixed discharges, the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) requires the dilution credits and mixing zones only be allowed after the DGS has completed an independent mixing zone study and demonstrated to the satisfaction of the Regional Water Board that a dilution credit is appropriate. The effluent limitations for copper are based on acute (1-hr) and chronic (4-day) aquatic life criteria. The side river discharge is not completely mixed under these short averaging periods. Since the DGS has not provided a mixing zone and dilution

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study for the determination of dilution credits for acute and chronic aquatic life criteria, no dilution can be allowed.

DGS - COMMENT No. 3: The DGS has formally established the intent to cease river discharge within the term of the renewed permit, most likely during 2010. However, due to the project level of effort and possible construction delays, there is a possibility that the project schedule may be delayed until 2012. Therefore, the DGS requests a 5-year compliance schedule for copper.

RESPONSE: The effluent limitation for copper is based on CTR criteria as required by the SIP. The SIP allows a time schedule in the permit for up to 5-years, but cannot extend beyond 18 May 2010, which is ten years from adoption of the SIP. A compliance schedule that exceeds 18 May 2010 would need to be placed in a separate Time Schedule Order. Therefore, no change to the compliance schedule is proposed.

DGS - COMMENT No. 4: The DGS has evaluated its options for renovating the Central Plant and addressing its NPDES permit compliance issues. The selected course of action is to eliminate the discharge within the term of the renewed permit. Therefore, DGS requests that some study requirements be removed from the permit in light of ceasing river discharge. The study requirements include pollution prevention plans, treatment feasibility studies, salinity evaluation and minimization plan, and best management practice plan (BMPP).

RESPONSE: The treatment feasibility study and pollution prevention plan requirements are required in the tentative permit and time schedule order as part of the compliance schedules for aluminum, copper, and iron. Since the DGS plans to cease its river discharge, the treatment feasibility studies are unnecessary and have been removed from the proposed permit. However, the pollution prevention plan requirements must remain in the proposed permit and time schedule order. For the compliance schedules in the permit (aluminum and copper) the pollution prevention plans are a requirement of the SIP. For the compliance schedule in the time schedule order (iron) the pollution prevention plan is required in order for the DGS to be exempt from mandatory penalties for effluent violations per section 13385(j)(3).

The requirements for a salinity evaluation and minimization plan and BMPP are necessary to prevent the generation and potential release of additional pollutants from the Facility to the waters of the State. These studies are reasonable requirements and have not been removed from the proposed permit.

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DGS - COMMENT No. 5: For assessments of chronic toxicity, the DGS requests the use of inhibition concentration (IC_{25}) to calculate chronic toxic units and a dilution credit.

RESPONSE: Regional Water Board staff have used the No Observed Effect Concentration (NOEC) to calculate chronic toxic units, because the NOEC endpoint represents no toxicity. This is consistent with how staff interpret the Basin Plan's narrative toxicity objective and how it has been implemented in the Regional Water Board's regulatory programs. The point estimate, IC_{25} , assumes that some level of toxicity is acceptable. The selection of an acceptable level of toxicity to ensure compliance with the narrative toxicity objective is not consistent with how staff interprets the narrative toxicity objective. As discussed in the response to DGS - COMMENT No. 2, above, since the DGS has not provided a mixing zone and dilution study for the determination of dilution credits for chronic aquatic toxicity, no dilution can be allowed.

DGS - COMMENT No. 6: The DGS requests a five-year compliance schedule, interim effluent limitation for residual chlorine and removal of dechlorination requirements for the DGS Central Plant discharge.

RESPONSE: A compliance schedule for meeting the chlorine residual effluent limitations is not warranted. The fact that the DGS plans to cease the discharge is not an adequate reason for allowing the discharge of chlorine residual, because dechlorination is a feasible alternative. Staff agrees that it is not necessary to include dechlorination facilities to comply with the chlorine residual effluent limitations. Another alternative is to not use the municipal water supply. Therefore, the requirement to provide dechlorination facilities has been removed from the tentative order.

DGS - COMMENT No. 7: DGS requests that dibromochloromethane and bromodichloromethane monitoring only be required when municipal water is being used (on an emergency basis).

RESPONSE: Staff agrees that the monitoring for dibromochloromethane and bromodichloromethane should only be required when municipal water is being used to supplement the groundwater supply, because these disinfection by-products are only present in the municipal water supply. This was an oversight and will be changed in the proposed Order.

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DGS - COMMENT No. 8: The DGS requests the removal of monitoring requirements for freons and total petroleum hydrocarbons.

RESPONSE: Monitoring data submitted by the DGS during the previous permit term indicated no reasonable potential to exceed water quality criteria for dichlorodifluoromethane, chlorodifluoromethane, and 1,1-difluoroethane. However, since the facility utilizes six packaged chiller units the Facility will be required to continue to monitor these pollutants quarterly.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA - COMMENT No. 1: The proposed Permit contains Effluent Limitations for temperature based on a Thermal Plan exemption that is also presented for Regional Board consideration. The proposed thermal plan exception and the proposed Permit conflict with the requirements of the Clean Water Act (CWA 101(a), 303(d)(4)) Federal Regulations 40 CFR 131.12(a) and the Board's Policy (Resolution 68-16) regarding antidegradation.

RESPONSE: The DGS performed a study to evaluate the thermal impacts of its discharge to the Sacramento River. The study concludes, "*...due to the size, shape, limited distribution within the river, and buoyant nature of the Central Plant's thermal plume throughout the year, this plume would not adversely affect migrating fishes, nor would it cause adverse population- or community-level effects for resident or anadromous fish or BMIs of the lower Sacramento River.*" The thermal impacts study was provided to the National Oceanic and Atmospheric Administration's National Marine Fisheries Services (NMFS) for review and comment. NMFS concluded that, "*Based upon review and evaluation of the modeling approach and fisheries assessment performed from modeling results, NMFS finds that this report adequately addresses our concerns regarding thermal effects of GSHCP discharges on migrating fishes in the Sacramento River.*" Based on the thermal effects study and the comments by NMFS, Regional Water Board staff have proposed a thermal plan exception. The change in temperature requirements will not affect the beneficial uses of the receiving water. The permitted surface water discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Compliance with the proposed Order will result in the use of best practicable treatment or control of the discharge and the impact on existing water quality will be insignificant. Furthermore, the DGS is scheduled to cease the

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river discharge within the term of the proposed Order. The DGS plans to construct closed loop mechanical cooling towers with a thermal storage tank. Installation of these facilities would result in the elimination of the need to discharge condenser effluent directly to the Sacramento River.

CSPA - COMMENT No. 2: The proposed Permit allows a mixing zone for arsenic, dibromochloromethane, dichlorobromomethane and manganese in violation of requirements in the Basin Plan and the SIP. It is inappropriately assumed in the proposed permit that the discharge is completely mixed.

RESPONSE: The following is stated on page F-13 of the tentative Order:

“The decision to allow dilution credits depends upon whether a discharge is completely or incompletely mixed. For constituents where water quality criteria are based on human health objectives, critical environmental impacts are expected to occur far downstream from the source such that complete mixing is a valid assumption. Therefore, for purposes of establishing WQBELs in this Order, dilution credits have been granted for constituents with human health-based criteria using Table F-3. However, for constituents with aquatic life toxicity-based criteria, where impacts can occur over a small spatial scale near the effluent discharge point, complete mixing is not a valid assumption such that dilution credit has not been granted for these constituents. This Order includes a provision that allows the permit to be reopened to allow dilution credits if the Discharger completes a mixing zone and dilution study that demonstrates to the satisfaction of the Regional Water Board that a dilution credit is appropriate.”

The assumption that the discharge is completely mixed for human health-based criteria is a valid assumption, because the criteria are based on long-term exposure (i.e. drinking 2 liters of water per day for 70 years) and there are no downstream drinking water intakes near the discharge. Furthermore, the flow in the Sacramento River is much larger than the discharge flow resulting in a dilution of 1,640:1, based on the harmonic mean river flow.

For arsenic, dibromochloromethane, dichlorobromomethane and manganese a dilution credit of up to 1640:1 is allowed per the SIP. However, granting of this dilution credit could allocate an unnecessarily large portion of the receiving water's assimilative capacity for human health water quality criteria and could violate State Water Board Resolution 68-16 (Antidegradation Policy). For this reason, performance-based effluent limitations were included in the tentative permit for these constituents, which resulted in much lower dilution credits (i.e. less than 60:1).

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CSPA - COMMENT No. 3: The proposed Permit is based on an incomplete Report of Waste Discharge (RWD) and in accordance with Federal Regulations 40 CFR 122.21(e) and (h) and 124.3 (a)(2) the State's *Policy for Implementation of Toxics standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) and California Water Code Section 13377 the permit should not be issued until the discharge is fully characterized and a protective permit can be written.

RESPONSE: The DGS has submitted a complete permit application for their NPDES permit in compliance with all State and Federal requirements (Cal EPA Form 200, U.S. EPA NPDES Form 1 and Form 2C). As stated in 40 CFR § 122.21(e)(1), "The Director shall not issue a permit before receiving a complete application for a permit except for NPDES general permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his or her satisfaction. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity." 40 CFR § 124.3(a)(2) states, "The Director shall not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit. See §§270.10, 270.13 (RCRA), 144.31 (UIC), 40 CFR 52.21 (PSD), and 122.21 (NPDES)." Accordingly, staff has concluded a complete NPDES permit application was submitted by the DGS and the wastewater has been adequately characterized in compliance with the regulations cited above.

The data used in assessing and reviewing past performance by the DGS is complete and representative in accordance with all regulatory requirements. There are no regulatory requirements that stipulate the number of years of data that must be used. The only requirement is that the data be representative of operations at the facility to be permitted. Guidance by the U.S. EPA suggests anywhere from three to five years of representative data be used. In this instance, staff has used three years of data from the receipt of the report of waste discharge.

CSPA - COMMENT No. 4: The proposed Permit fails to include mass based Effluent Limitations in accordance with Federal Regulations and technical advise from EPA.

RESPONSE: 40 CFR SEC 122.25(f) states the following:

"Mass limitations. (1) All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:

(i) For pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass;

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(ii) When applicable standards and limitations are expressed in terms of other units of measurement; or

(iii) If in establishing permit limitations on a case-by-case basis under §125.3, limitations expressed in terms of mass are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation (for example, discharges of TSS from certain mining operations), and permit conditions ensure that dilution will not be used as a substitute for treatment.

(2) Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.”

40 CFR section 122.25(f)(1)(ii) states that mass limitations are not required when applicable standards are expressed in terms of other units of measurement. All pollutants with numerical effluent limitations in this tentative permit are based on water quality standards and objectives. These are expressed in terms of concentration. Pursuant to 40 CFR section 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is expressly allowed and is in no way contrary to Federal Regulations.

CSPA - COMMENT No. 5: The proposed Permit contains an Effluent Limitation for acute toxicity that allows mortality that exceeds the Basin Plan water quality objective and does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

RESPONSE: The tentative permit contains several mechanisms to ensure that effluent discharge does not cause acute or chronic toxicity in the receiving water. Receiving water limits proscribe the discharge from causing toxicity in the receiving water. For effluent limitations included for the protection of the aquatic life beneficial use, the tentative permit includes end-of-pipe effluent limits and were developed based on aquatic life toxicity criteria. Furthermore, the proposed Order requires whole effluent chronic toxicity testing, which identifies both acute and chronic effluent toxicity. If this testing shows that the discharge causes, has the reasonable potential to cause, or contributes to an in stream excursion of the water quality objective for toxicity, the proposed Order requires the DGS to investigate the causes of, and identify corrective actions to eliminate the toxicity.

The acute whole effluent toxicity limits establish additional thresholds to control acute toxicity in the effluent: survival in one test no less than 70% and a median of no less than 90% survival in three consecutive tests. Some in-test mortality can occur by chance. To account for this, the acute toxicity test acceptability criteria

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allow ten percent mortality (requires 90% survival) in the control. Thus, the acute toxicity limits allow for some test variability, but impose ceilings for exceptional events (i.e., 30% mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10%). These effluent limitations are consistent with U.S. EPA guidance. In its document titled "Guidance for NPDES Permit Issuance", dated February 1994, it states the following:

"In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."

The proposed Order protects aquatic life beneficial uses by implementing numerous measures to control individual toxic pollutants and whole effluent toxicity. Both the acute limits and receiving water limits are consistent with numerous NPDES permits issued by the Regional Water Board and throughout the State and are appropriate.

CSPA - COMMENT No. 6: The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the SIP.

RESPONSE: The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region¹ that contained numeric chronic toxicity effluent limitations. As a result of this petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, *"In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works*

¹ In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

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that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.” The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process.

Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, the proposed Order requires that the DGS meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 C.F.R. 122.44(k).

CSPA - COMMENT No. 7: The proposed permit fails to contain an Effluent Limitation for manganese protective of the irrigated Agriculture beneficial use of the receiving stream in violation of Federal Regulations 40 CFR 122.44.

RESPONSE: The California Department of Health Service's Secondary maximum contaminant level (MCL) - Consumer Acceptance Limit for manganese is 50 µg/L. The agricultural water quality goal, based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985), is 200 µg/L for manganese. Since the secondary MCL is more stringent than the agricultural goal, the effluent limitation for manganese is based on the secondary MCL and is fully protective of both the secondary MCL and the agricultural goal.

CSPA - COMMENT No. 8: The proposed Permit contains a compliance schedule for aluminum based on “a new interpretation of the Basin Plan” as detailed in the Fact Sheet, page F-15 and Finding No. k. The Regional Board fails to provide any explanation or definition of the “new interpretation” of the Basin Plan.

RESPONSE: There are a number of Basin Plan narrative standards that are the basis for numeric effluent limits. The two most common narrative standards impacting NPDES Permits are the “No Toxics in Toxic Concentrations” standard, and the “Taste and Odor” standard. Time schedules can be included in permits for effluent limitations based upon “new interpretations” of narrative water quality objectives. An August 2005 Second District California Appeals Court Ruling [CBE v. SWRCB regarding the Avon Refinery (aka, Tosco Refinery)] greatly expanded the

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scope of “new interpretation”. Any effluent limit based upon a narrative water quality objective is a “new interpretation” that will allow a time schedule to be placed in an NPDES Permit when that effluent limit is first applied to that DGS.