

Department of Water and Power



the City of Los Angeles

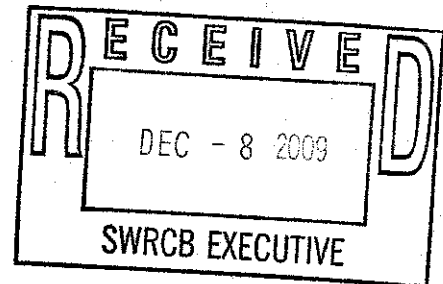
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December 8, 2009

Ms. Jeanine Townsend  
Clerk to the Board  
State Water Resources Control Board  
1001 "I" Street, 24<sup>TH</sup> Floor  
Sacramento, California 95814



Dear Ms. Townsend:

Subject: Comment Letter – Once-Through Cooling (OTC) Policy

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to review and comment on the State Water Resources Control Board's (State Board) revised draft Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (revised draft Policy) dated November 23, 2009.

LADWP shares the State Board's goal in its development of a statewide Once-Through Cooling (OTC) Policy, namely to reduce OTC usage and to minimize impacts on marine life. However, serious dilemmas remain with the revised draft Policy that threaten LADWP's ability to operate its three coastal generating stations, and the corresponding power supply and grid stability that they provide to the City of Los Angeles. LADWP opposes the Policy as currently written. The environmental benefits to be gained in implementing the Policy add no value towards enriching the habitat of marine life at the expense of impacting the State's power supply and grid reliability, in addition to the costs incurred along with their corresponding impacts on California ratepayers. As documented by numerous scientists, including published research papers by EPA scientists<sup>1,2</sup>, reducing or eliminating OTC will not produce any measurable changes in California coastal fish populations. LADWP is not suggesting that OTC systems do not cause marine impacts. However, the solution to minimizing those impacts is not embodied in the current revised draft Policy.

<sup>1</sup> Newbold S. C., R. Iovanna. 2007. Population level impacts of cooling water withdrawals on harvested fish stocks. *Environ. Sci. Technol.* 41:2108-14.

<sup>2</sup> Newbold S. C., R. Iovanna. 2007. Effects of density-independent mortality on populations and ecosystems: application to cooling water withdrawals, *Ecological Applications* 17:390-406.

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In an effort to remediate the serious shortcomings with this Policy, LADWP provides the following comments<sup>3</sup>:

### 1. Compliance Dates

LADWP is very concerned with the compliance dates as published in the revised draft Policy, along with the procedure used to evaluate whether or not these dates can be changed, both in the Policy and in the NPDES permits. LADWP has, and continues to recognize, that repowering efforts require a thorough and thought out replacement strategy. Concurrent repowering efforts do not allow for proper planning, and more importantly would remove needed megawatts (MWs) from the system without a source of replacement. LADWP cannot relinquish any of the MWs provided by the current plants, via repowering or retrofitting, without first installing replacement MWs in place at the site. The reality is that every MW of capacity from these plants is vital to the essential public service of electricity supply to the City and any loss of capacity must be made up by construction of new power generating facilities in essentially the same location.

By 2017, LADWP expects to have removed all but 5 OTC units via repowering. However, additional repowering or the retrofit of the remaining OTC units with impingement/entrainment (IM/E) control technology cannot be accomplished within the time frame set forth in the revised draft Policy. That being said, one of the major problems with the schedule is that LADWP cannot have two of its major in-basin power plants out of service at the same time for major changes to comply with this Policy and still meet the peak energy demand of the Los Angeles service area.

Currently, the revised draft Policy has Harbor and Scattergood with the same compliance date. LADWP provided a suggested compliance schedule in our comments dated September 30, 2009, and believes these time frames are extremely aggressive. The dates that were previously provided by LADWP to the State Board staff via LADWP's letter dated May 26, 2009, and upon which the Policy's compliance dates appear to be based, did not reflect the compliance level as required in the June and November draft Policy documents. Assuming all the necessary licenses, permits and approvals can be obtained, the below listing, for illustration purposes only, shows how sequential repowering and/or installing IM/E controls can be undertaken without jeopardizing energy supply and reliability for the City.

Repower Haynes Units 5 and 6	2013
Repower and/or Install IM/E controls for Harbor Unit 5	2015
Repower Scattergood Units 1 and 2 or alternatively Unit 3	2017
Repower and/or Install IM/E controls Haynes Units 1,2, and 8	2019
Repower and/or Install IM/E controls for Scattergood Unit 3 or alternatively Units 1 and 2	2022

<sup>3</sup> The following list of consultants assisted LADWP in the preparation of these comments, they are as follows: EPRI, MBC, Tenera, and Mautbesh Consulting. Dave Bailey (EPRI) and John Steinbeck (Tenera) participated as part of the State Board's expert review panel for this draft policy.

Haynes requires a compliance date of 2019 and Scattergood requires a compliance date of 2022. The efforts needed to comply with the Policy's provisions and implementation dates for Haynes and Scattergood will require 4 distinct separate phases. As noted above, any repower and/or installation of IM/E controls must be done sequentially or in phases. Phase 1 will be a repower of Haynes Units 5 and 6. Phase 2 will be a repowering at Scattergood of either Units 1 and 2, or alternatively Unit 3. Phase 3 will be either a repower of Units 1 and 2 at Haynes or installation of IM/E controls for Units 1, 2, and 8. The final Phase 4 will be either a repower of Scattergood Unit 3 (alternatively Units 1 and 2) or the installation of IM/E control technology. In addition to the crucial need for having MW replacement in place prior to retirement of any unit, space availability presents another complication in that existing facilities must be demolished to make room for new structures. After Phase 1 and 2 are complete, demolition of some of the retired units and supporting buildings at Haynes and Scattergood will be necessary before Phases 3 and 4 can commence. This demolition will be difficult and time consuming because the new repowered units will need to remain on line during the complete demolition process. In addition, in-service common facilities, such as ammonia storage tanks and electrical switch yards, may need to be relocated. Until demolition, relocation, and site re-grading has been completed, the new units for Phases 3 and 4 cannot be constructed.

LADWP requests that the Policy be modified to reflect the compliance implementation order and the dates given in our September 30, 2009, letter. Alternatively, we would recommend that the Policy present a phased schedule with no specific dates. This approach would provide the individual Regional Boards the authority through the NPDES permits to establish a schedule to meet the Track 1 or Track 2 compliance standards based on the site-specific conditions at each facility. The final compliance dates would be negotiated and determined by the Regional Board and included in the NPDES permit(s). This approach would require oversight by the State Board and close communication between the State and the Regional Boards.

Lastly, the compliance requirements under a future federal 316(b) Rule are unknown and therefore compliance dates may need to be revised if there are major discrepancies between the State Policy and federal mandate. LADWP will need to evaluate the compliance options under both the State Board's Policy and the future 316(b) Federal Rule. Additional time may be required to perform these evaluations and comply. LADWP recommends that this issue be addressed in the findings.

## **2. Wholly Disproportionate Test**

Notwithstanding the need for sufficient time to comply with the Policy, there may be facilities where the elimination of OTC will simply not be possible or environmentally beneficial.

Previously, the draft Policy dated June 30, 2009, provided a mechanism whereby if Track 1 was infeasible, Track 2 could be pursued with the installation of the best performing control technology and mitigation performed to close the gap between the performance level of the IM/E control technology and the Track 2 compliance standard. Removal of the wholly disproportionate test places several facilities, including the new highly efficient repowered facilities, at risk of being unable to comply with the OTC Policy with the only recourse being to shut down.

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To illustrate this point, LADWP provides the following discussion. At the September 16<sup>th</sup> hearing, staff indicated that three facilities currently qualified for the wholly disproportionate demonstration, two of which were LADWP's, Harbor and Haynes. Haynes completed its repowering in 2004, replacing Units 3 and 4 with a combined cycle system (two combustion turbines and one OTC steam turbine [Unit 8]). LADWP expects to complete its second repowering of Units 5 and 6 by 2013. This will result in a total flow reduction of 50 percent. The remaining OTC units that will require IM/E control technology include Units 1, 2, and 8. LADWP anticipates that even with the installation of the best performing IM/E control technology, it will not be able to achieve the Track 2 compliance standard. Under the June 30<sup>th</sup> draft OTC Policy, LADWP would have applied for the wholly disproportionate variance and if successful, mitigated for the difference between the performance level of the best technology and the Track 2 standard. Now, given the current language of the revised draft Policy, which omitted the wholly disproportionate test, LADWP has no recourse for not being able to meet the Track 2 standard. This means that Units 1, 2 and the entire first combined cycle system (Units 9 and 10 cannot operate without the Unit 8 OTC steam turbine) would be in non-compliance with the Policy and would have to shut down. This would eliminate 575 MWs of local generation from the City of Los Angeles' grid.

The same set of circumstances applies to Harbor's combined cycle repowered units. The repower at Harbor reduced flow 73 percent. The Unit 5 OTC steam turbine supports Units 1 and 2. If the retrofit on Unit 5 with the best performing IM/E control technology cannot meet the Track 2 standard, the revised draft Policy would require that the entire plant shut down. This would eliminate 225 MWs of local generation from the City of Los Angeles' grid.

Shutting down Units 1, 2, and 8 at Haynes and Unit 5 at Harbor would result in a combined loss of 800 MW to the City of Los Angeles. With the elimination of the wholly disproportionate test in the revised draft Policy, these units will be treated the same as older less efficient units and there is no recognition of the substantial investment LADWP has made that reduces the level of OTC usage at these units.

LADWP had also interpreted the June 30<sup>th</sup> draft Policy version to allow for the use of the wholly disproportionate test for any future repowering of old inefficient power generating units. Currently, LADWP plans to repower Scattergood Units 1 and 2 with the use of cooling towers. However, once constructed, no additional land space would be available to repower Unit 3. Under LADWP's interpretation of the Policy, LADWP would have installed the best performing IM/E control technology for the Unit 3 OTC usage and, using the wholly disproportionate test, mitigated for the difference between the performance level that could be attained and the Track 2 standard. Absent the wholly disproportionate test, the future of Scattergood Unit 3 (representing 450 MWs) is in jeopardy.

LADWP recommends that the State Board re-instate the wholly disproportionate demonstration for all facilities without regard to heat rate and allow for it to be applied to facilities with repowered units already in place as well as facilities that will conduct future repowerings.

### 3. Track 2 Compliance and Monitoring

The revised draft Policy provides that a Track 2 compliance alternative may be pursued if it can be demonstrated to the satisfaction of the Regional Board that the Track 1 compliance path is infeasible. However, the revised draft Policy as written, still negates a Track 2 compliance by virtue of the fact that compliance is based on a "measured reduction" [Ref., Section 2(A)(2)(b)] in the monitoring performed in Section 4B, and the required monitoring references the reduction of meroplankton (as defined: a subset of zooplankton and zooplankton defined as 200 microns and larger). Thus, the revised draft Policy directly links compliance with reduction in the monitoring performed, and the monitoring includes aquatic life as small as 200 microns.

Currently there is no viable technology that protects any 200 micron aquatic life. Furthermore, no facility within the United States is operating an entrainment reduction technology that is less than 500 microns in size. Therefore, there is no reasonable means of compliance.

There are three fundamental shortcomings associated with Track 2 compliance and are presented in more detail below.

#### 1) Compliance monitoring based on sampling using a 200 micron mesh net

The recent entrainment studies at LADWP and other power plants have data that could be used in establishing baseline levels if the monitoring requirements in the draft policy had a more scientifically sound basis. The current language in the revised draft Policy would require new year-long, multi-million dollar studies at all of these facilities since the sampling for entrainment was done using 333 or 335 micron mesh. The designs for all of these studies were reviewed by scientists and staff of the various resource agencies. At several of the power plants technical advisory groups including resource agency staff and independent scientists from academia were involved in the design of the studies. The work on the design of these studies from these advisory groups is reflected in a 2007 report published by the California Energy Commission<sup>4</sup>. This report, prepared by scientific experts, establishes sampling protocols for 316(b) IM/E characterization studies. In addition, the expert panel to the State Board for the development of this Policy, did not recommend that monitoring include invertebrate meroplankton. The expert panel recommended that the focus for compliance and monitoring be on fish and shellfish eggs and larvae. Therefore the use of a net to capture 200 microns was not necessary and a larger mesh size, such as the 333 micron nets used in the recent studies, could be used for compliance monitoring. It is important to mention that this size mesh still captures larger meroplankton (lobster, crab) and other shellfish larvae of interest to State Board staff.

<sup>4</sup> Steinbeck, J. R., J. Hedgepeth, P. Raimondi, G. Cailliet, and D. L. Mayer. 2007. Assessing power plant cooling water intake system entrainment impacts. Report to California Energy Commission. CEC-700-2007-010. 105 pp plus appendices.

The sampling for the recent studies was focused largely on ichthyoplankton and later stage larvae of select invertebrates such as crabs, lobster, and squid. The sampling techniques used in the studies effectively sampled these later stage invertebrate meroplanktonic larvae. Sampling was not done with smaller mesh nets because they rapidly clog reducing the effectiveness of the net and affecting the quality of the sampling. Also, there is limited taxonomic knowledge of the early larval stages of many invertebrates limiting the ability to determine what is even being collected. There has also been a general recognition that the potential for impacts to invertebrates due to entrainment is very limited due to their large reproductive capacity. In addition, there is probably a high level of entrainment survival for many invertebrate larvae which, unlike delicate, soft-bodied larval fishes, have chitinous or calcareous shells that would protect them from damage while passing through a cooling water system. Finally, the scientists involved in these studies realized that the large abundances of invertebrate larvae in the coastal waters allow the mortality due to entrainment to be estimated based on the volume of cooling water relative to the volume of the source water. Using this assumption there was no need to include sampling for smaller invertebrate meroplankton.

2) No reasonably means of compliance

If compliance is based on achieving the necessary reduction levels of all fish and meroplankton greater than 200 microns then there is **NO** technological basis for compliance under Track 2 other than flow reduction, which essentially will cause facilities to be shut down. Therefore, the current policy compliance requirements effectively eliminate Track 2 as a feasible compliance option.

3) Monitoring must bear a reasonable relationship to the need for the monitoring

The Water Code Section 13267 (b)(1) states that any monitoring must bear a reasonable relationship to the need for the monitoring and the benefits to be obtained. There is no available compliance technology below 500 microns that can reduce entrainment impacts; therefore, the need to monitor for 200 micron aquatic life should not be required. Rather, monitoring (e.g., net mesh size) should be consistent with generally accepted monitoring protocols.

LADWP recommends that the State Board modify the policy on entrainment monitoring and reduction to include only fish and shellfish and eggs and larvae and to remove any reference to organism size. The monitoring requirements should be based on site-specific conditions that are best evaluated by local staff from the Regional Board and other resource agencies. Both the compliance threshold size and monitoring provisions must be modified.

LADWP suggests the following amendment language for 4(B)(1) (a):

"Entrainment...sampling for fish and shellfish, eggs and larvae should be conducted in accordance with generally accepted standard sampling protocols with the review and approval of Regional Board and other resource agency staff and scientists."

#### 4) Definition of "Not Feasible"

The definition of "Not Feasible" fails to include the evaluation of costs. By eliminating the evaluation of costs, it cannot be determined whether: 1) the cost of compliance can reasonably be borne by industry; 2) compliance with Track 1 or Track 2 is achievable without the cost being wholly disproportionate to the benefits to be gained; and 3) violates California state statutes and regulations.

The revised draft Policy has specifically eliminated the ability to evaluate costs when determining feasibility. EPA and the Second Circuit Court of Appeals decision affirmed that costs should be considered in the feasibility analysis in order to evaluate whether or not the industry could reasonably bear the cost of compliance. In order to be able to evaluate feasibility, the analysis needs to include the full scope of the OTC compliance costs as well as other very substantial costs facing the utility industry. The costs which need to be evaluated to assess feasibility are the following: capital costs (these costs do not include the cost of extended outages that may be required at some facilities), replacement power costs during retrofit, the loss of revenue from reduced generating efficiency, the permitting and monitoring costs, and other costs to comply with various mandates and policies. As mentioned in our September 30, 2009 comments, over the next 10 years, LADWP estimates that it will have to expend \$11 billion dollars for things like power plant repowering and transmission upgrades, **neither of which were evaluated in the Substitute Environmental Document (SED)**. The SED devoted only two pages to a cost analysis, clearly not sufficient for a major regulatory undertaking. Ignoring these costs to determine whether or not a project is feasible is a violation of CEQA (Public Resources Code [PRC], Sect. 21061.1). This Section of the PRC, defines feasible and requires costs to be a part of the evaluation, it specifically states:

"feasible" (for CEQA purposes) means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." (Ref., PRC, Sec. 21061.1 and CEQA guidelines Sec. 15364).

There are numerous references in California statute and regulations that clearly establish precedence for an agency, including the State Board, to consider costs in determining feasibility. For the State Board to ignore cost considerations is inconsistent with these precedent setting examples and wholly inappropriate when considering the adoption of a major policy such as the OTC Policy which has wide ranging impacts to the California economy and consumer.

- The California Water Code Section 8307 (c)(4) specifically defines feasibility and states, **"Feasible"** means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."
- The Title 23 of the California Code of Regulations uses the term feasible in numerous locations including:

- Section 421 as it pertains to a feasibility report for a water rights construction project. The Section states that, "The feasibility report should contain sufficient information and data to demonstrate that the proposed project is engineeringly **feasible**, economically justified, and financially sound."
- Section 499.2(h) as it pertains to the Department of Water Resources implementation of a flood protection program under the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Acts, provides a definition of "economic feasibility" as follows: "Economic feasibility" is determined by calculating the ratio of economic benefits to economic costs for a given alternative. A project is "economically feasible" when this ratio is greater than or equal to one."
- Lastly the State Board's own regulations, Section 780, states that no State Board action will be taken on a water rights permit until review of the required water conservation plan has occurred. "No action will be taken pursuant to this paragraph unless the board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially **feasible** and are appropriate to the particular situation.

Clearly, the consideration of costs in the term feasibility has been used throughout state law and regulations. An economic analysis is absolutely necessary to address the full scope of OTC compliance and the feasibility of Track 1 or Track 2. As mentioned earlier, compliance with the revised draft Policy will result in substantial costs for the utility industry. The costs of retrofitting existing cooling water intake systems will be passed on to rate payers at a very difficult economic time. LADWP strongly suggests that the definition of "Not Feasible" allow for the consideration of costs for both Track 1 and Track 2 compliance.

#### 5) Consistency Section 3(D) (7)

In conjunction with the above comment, at the December 1, 2009 workshop, both Chairman Hoppin and Board Member Pettit stated that they wanted to make sure the Policy was consistently administered throughout the document. To this end, LADWP points out that the nuclear power plants are provided an opportunity to present both cost and feasibility information in their special studies for OTC Policy Implementation consideration by the State Board. To ensure the Policy is consistently administered throughout the document, LADWP believes it is essential to allow the fossil fuel power plants the same ability to evaluate cost and feasibility in making compliance alternative decisions.

LADWP recommends that the Policy be changed to allow fossil fuel power plants to investigate compliance alternatives based on costs and feasibility.

#### 6) SACCWIS

As previously noted, LADWP is its own balancing authority and is not a part of the CAISO. Neither the CPUC, the CEC, nor the CAISO have the authority or responsibility to make decisions to ensure or maintain energy supply and reliability for the City of Los Angeles.



Those determinations lie exclusively with the Board of Water and Power Commissioners of the City of Los Angeles. Any advice given to the State Board relative to the compliance dates in the Policy and the continued ability to maintain energy supply and reliability for the LADWP facilities must come from the Board of Water and Power Commissioners and not the SACCWIS. At a minimum, the SACCWIS should forward verbatim, without edits, additions or deletions, any implementation schedule "advice" relative to the LADWP facilities from the Board of Water and Power Commissioners to the State Board.

LADWP requests that the Policy be modified to require the Board of Water and Power Commissioners to advise the State Board on the implementation of the Policy relative to LADWP facilities.

Finally, LADWP also agrees with the language in Section 2 (B)(2) which requires the energy agencies to communicate their recommendations to the State Board via a formal action on the part of their agency. LADWP would commit to communicate its recommendations to the State Board via a formal action by its Board of Water and Power Commissioners who are appointed by the Mayor and confirmed by the 15-member City Council. However, currently, the State Board has one year to take action on the recommendations and to decide on an amendment. This turn around time is too long since the discharger will also be making critical decisions that would depend on the State Board's action. Therefore, LADWP concurs with the recommendation of the CAISO in its December 1<sup>st</sup> Workshop comments for a stay in the compliance deadline pending a decision from the State Board. Alternatively, LADWP would also support a requirement for the State Board to render a decision within 30-60 days of a formal action or resolution issued by the CAISO or the Board of Water and Power Commissioners indicating that power supply or reliability will be impacted if the compliance date is not amended.

#### **7) Overall Benefits of the Policy**

The ramifications of this draft Policy on the utility industry, the California economy, and ratepayers are significant. The actual environmental benefits of implementing this draft Policy have not been fully and properly examined and characterized. The revised draft Policy still focuses on impingement and entrainment numbers which alone provide no meaningful context as to how those losses affect California's coastal fish populations and fisheries. As pointed out in our earlier comment letter dated September 30, 2009, it is important to consider the high natural mortality of both fish eggs and larvae, as well as the dramatic impact that natural climatic forces (such as ocean warming) are having on fish populations. Simply stating the sum total of entrainment losses may be misleading since lumping different life stages (i.e., eggs versus larvae), which have very different natural mortality rates, is not accurate. It also ignores the fact that the vast majority (greater than 99 percent in many fishes) of early life stages do not survive as a result of natural mortality regardless of entrainment. The most important factors for maintaining sustainable, healthy populations of fish and shellfish are suitable oceanographic conditions and the availability of adequate, quality habitat rather than OTC usage. [Ref, LADWP comments dated September 30, 2009, Enclosure 2, Issues 2 and 4]. Climatological ocean warming, oceanographic current and tidal shifts, pollution,

habitat perturbations, stormwater runoff, invasive species, and fishing all have a greater impact on fish and shellfish populations and the health of the marine environment. The only environmental benefit resulting from the implementation of the Policy as written will be the interim restoration measures that may help preserve and restore marine life habitat. As documented by numerous scientists, including published research papers by EPA scientists, reducing or eliminating OTC will not produce any measurable changes in California coastal fish populations. If all OTC were eliminated tomorrow, the benefits to the source water populations and ecosystem would not be evident.

The environmental benefits to be gained from the Policy are negligible and not documented in the SED, raising the question as to the need for a Policy for reducing OTC impacts. LADWP believes the State Board must take additional time to fully evaluate all the comments and modify the SED and revised draft Policy accordingly.

#### **8) Habitat Production Foregone (HPF) Definition**

The example used to illustrate the application of the Habitat Production Foregone (HPF) definition is not correct. Proportional mortality is not applied to the entire source water body or to all species but rather to the actual area of the adult habitat for a specific species of concern. The example used in the definition requires restoration of 17 percent of the entire 2000 acres. However, the calculation should only apply to the actual area of adult habitat in the source water.

While HPF is a viable approach for restoration when used correctly, it is limited in its application to fishes with well defined habitat dependencies as adults. It is not "an estimate of habitat area production that is lost to all entrained species."

LADWP recommends that the definition be modified by removing the example.

#### **9) Interim Mitigation**

The Policy requires interim mitigation beginning five years after the effective date of the Policy. Mitigation is a permanent measure; it cannot be initiated on an interim basis and then withdrawn at a subsequent date once in compliance. Therefore LADWP recommends the following:

- 1) Apply some sort of scaling factor to account for the time period during which interim mitigation will be needed.
- 2) Apply the mitigation performed towards any final mitigation requirement, if any.
- 3) Allow for maximum flexibility in defining the requirements for interim mitigation.

LADWP requests that the Policy be modified to scale the interim mitigation and apply it to any final mitigation that may be required.

#### 10) Feedback on Monthly Flow vs Monitoring

At the December 1, 2009, workshop it was suggested that the monitoring and reporting of actual or generational monthly flow be substituted for IM/E field monitoring. There are several shortcomings with the use of actual flow.

First, this type of measurement discounts the use of other IM/E reduction technologies since compliance would be based solely on flow reduction. Second, utilizing actual flow is troubling since it can vary significantly from one day to the next. Units can be taken off line for various reasons such as maintenance, outages, or tidal changes, etc. For example, if a unit is down for maintenance for three weeks out of a month and then subsequently put back on line the next month, the facility risks being in non-compliance since the monthly flow will show an increase.

A more significant example of variability would occur when a unit or several units are retired and subsequently replaced by repowered units. The period of time during which the outage occurs would not be captured in a compliance evaluation. This can easily be observed in the SED Table 2, page 31, which does not capture the flow fluctuations due to unit outages during the first Haynes repowering project. A comparison of IM/E data from the 2002 repowering outage period with data from the post construction, in-service 2006 period would manifest itself as increased IM/E impacts when, in fact, it merely reflects timeframes with different flow regimes due to prolonged unit outages for construction. Even if flows are used on an annual basis or averaged over a five year period, varying maintenance activities or emergencies may arise which would skew the data giving the appearance of impact reduction non-compliance.

As understood by the members of the Expert Review Panel, the whole intent of flow monitoring was to be based on design flow and not actual or generational flow. As the Policy is currently written, it compares the flow reduction of the intake flows to the design flow. LADWP suggests that if flow monitoring is to be considered, it should only be offered as an option to the IM/E verification monitoring and should be based on design flow.

#### 11) Suggested Definition Edits

- Due to reasons stated above regarding zooplankton and meroplankton and the 200 micron size, LADWP requests that both definitions be deleted.
- Revise the definition of Closed Cycle Wet Cooling to read:

Closed Cycle Wet Cooling – Refers to a cooling system, which functions by transferring waste heat to the surrounding air through the evaporation of water, thus enabling the reuse of a smaller amount of water several times to achieve the desired cooling effect. The only discharge of wastewater is blowdown, which is either boiler water or re-circulating cooling water from periodic blowdown for the purpose of limiting the buildup of concentrations of materials in excess of desirable limits established by best engineering practice.

This revised definition removes the reference to boiler water which is not a component of closed cycle cooling systems.

- Revise the definition of Combined-cycle power-generating units by removing the word "several" and removing the reference to "one or two combustion turbines" to read:

Combined-cycle power-generating units – "Refers to several units within a power plant which combined generate electricity through a two-stage process involving combustion and steam. Hot exhaust gases from one or ~~two~~ more combustion turbines are passed through a heat recovery steam generator to produce steam for a steam turbine..."

Many different scenarios can be designed to take advantage of combined cycle systems and this makes the definition easier to understand. The reference to one or two combustion turbines has also been removed. The definition should not limit the combined cycle systems to only a one or two unit design, since hot exhaust gases from any number of units may be redirected to a heat recovery system.

- Revise the definition of Power Generating Activities by adding the words "cooling system maintenance activities" and removing the words "...running pumps strictly to prevent fouling of condensers and other power plant equipment.", to read:

Power Generating Activities – Refers to activities directly related to the generation of electrical power, including start-up and shut-down procedures, contractual obligations (hot stand-by), hot bypasses, cooling system maintenance activities and critical maintenance activities regulated by the Nuclear Regulatory Commission. Activities that are not considered directly related to the generation of electricity include (but are not limited to) dilution for in-plant wastes, and ~~running pumps strictly to prevent fouling of condensers and other power plant equipment~~, maintenance of source and receiving water quality strictly for monitoring purposes.

The running of pumps to prevent the fouling of condensers and other cooling system equipment is a critical component of power generation. Bio-films, which can affect these systems, can begin to grow and develop in a matter of hours. Without some minimal flow, biofouling organisms begin to decay generating hydrogen sulfide which causes condenser tube corrosion/failure and generates an unsafe work environment for utility workers. If these structures are not maintained and biofouling occurs, increased maintenance costs, extended shut downs and the inability to quickly return idled units to service will result. All of these issues decrease the efficiency of power generating units, which in turn require the combustion of more fuel and the generation of increased air emissions. Minimum flows must be maintained in order to prevent the fouling of these systems. The flow does not need to reflect full production flow, but should be allowed at some reduced level to maintain the fouling control on the system.

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In closing, LADWP opposes the adoption of the revised draft Policy unless the following changes are included:

- Change LADWP compliance dates to reflect, Harbor (2015), Haynes (2019), and Scattergood (2022);
- Eliminate the requirement to sample and monitor IM/E reductions for 200 micron aquatic organisms;
- Reinstate the use of the wholly disproportionate cost-benefit test and apply to all facilities that have repowered in the past and to those that will repower in the future;
- Allow for costs to be considered when evaluating feasibility;
- Allow for a mechanism whereby the Water and Power Board of Commissioners directly advises the SACCWIS regarding LADWP's supply/reliability status and any implementation of the Policy relative to LADWP facilities;
- Eliminate the example in the HPF definition;
- Allow for interim mitigation to be scaled appropriately;
- Either utilize design flow or continue with sampling and monitoring to evaluate IM/E reductions;
- Allow for consistency in the administration of the Policy by allowing fossil fuel power plants, in addition to nuclear plants, to evaluate costs and feasibility for alternative compliance options;
- Delete the definitions of zooplankton and meroplankton;
- Revise the "Not Feasible" definition to include costs; and
- Correct the Closed Cycle Wet Cooling, Combined Cycle, and power generating activities definitions as defined above.

LADWP appreciates the opportunity to provide the above comments and recommendations and looks forward to working with the State Board in developing a final OTC Policy.

If you have any questions with these comments, please feel free to contact Ms. Susan Damron of the Legislative and Regulatory Affairs Division or Ms. Katherine Rubin of the Environmental Affairs Division at (213) 367-0279 or (213) 367-0436, respectively.

Sincerely,

Sincerely,



Aram Benyamin  
Senior Assistant General Manager  
Power System



Mark J. Sedlacek  
Acting Director of Environmental Affairs

KR:rp

Enclosures

c: Mr. Charles R. Hoppin, State Water Resources Control Board (SWRCB), Chair  
Ms. Fran Spivey Weber, SWRCB Vice Chair  
Ms. Tam Dudoc, SWRCB Member  
Mr. Arthur Baggett, SWRCB Member  
Mr. Walt Pettit, SWRCB Member  
Mr. Jonathan Bishop, SWRCB  
Mr. Dominic Gregorio, SWRCB  
Ms. Joanna Jensen, SWRCB  
Ms. Katherine Rubin, LADWP