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RONALD O. NICHOLS
General Manager

December 26, 2012

Mr. Thomas Howard
Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Dear Mr. Howard:

Subject: Submittal to the State Water Resources Control Board (SWRCB) of
Additional Information Pertaining to the Los Angeles Department of
Water and Power's (LADWP's) Implementation of the Water Quality Control
Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling

Enclosed please find a redacted copy of the additional information requested by the
State Water Resources Control Board (SWRCB) (Enclosure 1).

In the letter dated July 20, 2012, from the SWRCB, the SWRCB requested additional
information from the Los Angeles Department of Water and Power (LADWP) pertaining
to LADWP's use of cooling water from coastal and estuarine waters (Once-Through-
Cooling, or OTC). During a meeting held on August 17, 2012, LADWP and the SWRCB
reached an agreement regarding what information LADWP would provide to the
SWRCB. The information to be provided by LADWP was summarized in a September 7,
2012 email from Katherine Rubin of LADWP to Ms. Shuka Rastegarpour of the
SWRCB. Ms. Rastegarpour agreed to this summary in an October 4, 2012 reply email
to Ms. Rubin. LADWP again summarized said email in a November 7, 2012 letter from
Mr. Mark Sedlacek of LADWP to you (Enclosure 2). The enclosure also provides copies
of pertinent email threads.

Due to the sensitive nature of the additional information request, please be advised that
redacted and non redacted copies of the information have been sent to Ms. Marleigh
Wood, Senior Staff Counsel to the SWRCB.

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Mr. Thomas Howard
Page 2
December 26, 2012

If you have any questions regarding this, please contact Ms. Katherine Rubin of my staff at 213-367-0436.

Sincerely,



Mark J. Sedlacek
Director of Environmental Affairs

KR:mt

Enclosures

c: Mr. Charlie Hoppin – Chair, State Water Resources Control Board
Ms. Fran Spivy Weber – Vice Chair, SWRCB
Ms. Tam Doduc – Member, SWRCB
Mr. Steve Moore - Member, SWRCB
Ms. Felicia Marcus – Member, SWRCB
Mr. Jonathan Bishop – Deputy, SWRCB
Ms. Marleigh Wood – Senior Staff Counsel, SWRCB
Ms. Mariela Paz Carpio-Obeso, SWRCB
Ms. Shuka Rastegarpour, SWRCB
Ms. Katherine Rubin

ENCLOSURE 1

LOS ANGELES DEPARTMENT OF WATER AND POWER

**REDACTED VERSION LADWP REPLY TO
SWRCB'S ADDITIONAL INFORMATION REQUEST**

LADWP Reply to the State Water Resources Control Board's Additional Information Request

Request made on July 10, 2012, with clarifications through October 4, 2012

Information due on December 31, 2012

To support the discussion provided herein, 5 documents are being included as Attachments:

1. Attachment 1: 2012 Integrated Resource Plan (2012 IRP) released December 2012; copies are also available at www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning/a-p-irp-documents?_af.ctrl-state=13rc8mj5eu_29&_afLoop=930493061682000
2. Attachment 2: LADWP 2021 Local Capacity Technical Analysis (2021 LCT) released February 2012 – REDACTED VERSION
3. Attachment 3: Transmission Reliability Assessment for Summer 2012 (Summer 2012 Assessment) released June 2012 – ENTIRE CONTENTS REDACTED
4. Attachment 4: 2012 Grid Reliability Report (2012 Grid Report) released December 2012 – REDACTED VERSION
5. Attachment 5: 2012 Ten-Year Transmission Assessment (2012 10Yr Assessment) released December 2012

The 2012 Grid Report references the 2021 LCT, the Summer 2012 Assessment, the 2011 10Yr Assessment, and the resource adequacy information from the 2012 IRP.

Los Angeles Basin is a Load Pocket

A load pocket is a localized area within an electric utility's service territory that cannot be reliably supplied by leveraging that utility's transmission resources but must rely on the generation capacity within the localized area to meet customer demand. As such, LADWP's Los Angeles Basin (Basin) service area is a load pocket. LADWP's Basin thermal generation units, including its OTC units, are required to operate and service customer load for reliability purposes because of transmission bottlenecks that limit the ability to import power to serve 100% of the load. This is typical and inevitable for big cities and metropolises such as the City of Los Angeles where power consumption is highly concentrated.

The 2021 LCT provided in this LADWP Response refers to the LADWP Basin load pocket as its Local Capacity Area and defines the generation needed inside the load pocket as the Local Capacity Requirement (LCR).

Study 1. LADWP Baseline Planning Study

LADWP Response to (a). Both the 2012 10Yr Assessment and the 2012 IRP use the 2012 Retail Electric Sales and Demand Forecast released on March 7, 2012 and provided as an attachment to the 2012 Grid Report. The 2012 10Yr Assessment evaluates the LADWP transmission system's ability to maintain power system reliability as defined by the North American Electric Reliability Corporation (NERC), the Western Electricity Coordinating Council (WECC), and internal standards; the document is audited by WECC for evidence of long-term power system reliability. The 2012 IRP

develops a resource plan for years 2013 through 2032 that ensures adequate supply of electricity in a cost-effective and environmentally-sensitive manner. The 2012 IRP and the 2012 10Yr Assessment are based on the quantitative impact from all known LADWP and state energy policies described as follows:

ACTIONS TAKEN BY LADWP TOWARD STATE POLICY GOALS

Goal 1. 33% of LADWP’s retail load is satisfied with renewable energy by 2020, with interim goals of 20% by 2013 and 25% by 2016 (SBX1 2 chaptered on April 12, 2011).

- LADWP’s renewable portfolio standard target of 20% by 2010 was achieved on time, making LADWP the largest utility in the state to meet the 20% goal in 2010. (Commission Resolution 007-197 adopted on April 17, 2007).
- LADWP’s Commission has established renewable portfolio standard targets of 20% minimum through 2013; 25% by 2016; 33% by 2020; 33% minimum thereafter (Commission Resolution 012-109 adopted on December 6, 2011). These targets modify the renewable portfolio standard target of 35% by 2020 (Commission Resolution 008-247 adopted on May 20, 2008).

Goal 2. Greenhouse gas emissions from LADWP’s power plants are reduced to 1990 levels by 2020 to assist the State of California in reducing overall statewide emissions (AB32 chaptered on September 27, 2006).

Goal 3. The California Energy Commission has established the 1100lb per megawatt-hour CO₂ emissions standard for any new investments in utility-owned base-load generating plants or long-term power purchase agreements for base-load generation (SB1368, chaptered on September 29, 2006).

- Approximately 40% of LADWP’s retail energy is generated from two coal-fired generating stations: Utah’s Intermountain Generating Station (IGS) and Arizona’s Navajo Generating Station (NGS). Although its coal-fired plants provide reliable low-cost energy, LADWP is giving serious consideration to the early divestiture of these assets (Sections 3 and 4 of the 2011 Integrated Resource Plan).
- LADWP’s repowering plans for its coastal plants will replace existing generating units with more efficient, combined-cycle and fast-response simple-cycle turbines to reduce greenhouse emissions while flexibly supporting deliveries of intermittent energy.

Goal 4. LADWP meets annual energy efficiency targets established under AB2021 (chaptered on September 29, 2006) in collaboration with the California Energy Commission such that the statewide goal of 13.2 to 18 terawatt-hours in reductions are met by 2020 (California’s Clean Energy Future dated September 21, 2010).

- LADWP’s Commission has adopted interim targets of 2.5% by FYE2013 and 3.8% by FYE2014, with an overall target of 15% savings by 2020, subject to the results of an updated energy efficiency potential study to be completed by June 30, 2013 (Commission Resolution 012-247 adopted on May 24, 2012).

Goal 5. LADWP makes an acceptable contribution toward California's Clean Energy Future 2020 goal of 5gigawatts of installed localized generation capacity (or Governor Brown's 2020 goal of 12gigawatts).The installed localized generation capacity would include an acceptable contribution toward California's 750 Megawatt Feed-in-Tariff (FiT) Program (SB32 chaptered on October 11, 2009).

- LADWP is phasing in up to 150MW from FiT by 2016. This represents 100% more than the state mandate, which is defined by SB32 as LADWP's proportionate share of the total statewide peak demand. LADWP is also phasing in up to 187MW from its Solar Incentive Program; and 88MW from larger utility-built projects by 2020.

Goal 6. LADWP makes an acceptable contribution toward the California Air Resources Board's (CARB's) AB32 Scoping Plan 2020 goal of 4gigawatts of combined heat and power facility (CHP, aka cogeneration) development (CARB's "Climate Change Scoping Plan" dated December 2008) and Governor Brown's 2030 goal of 6.5gigawatts.

- Footnote 177 in the California Energy Commission's 2011 Integrated Energy Policy Report states the California Public Utility Commission assumes 1871MW of new CHP will be in place by 2020 with 366MW installed within the four California Balancing Authority Areas outside of the California Independent System Operator Balancing Authority Area.

Goal 7. LADWP is interconnecting to its transmission system renewable projects to satisfy the renewable portfolio standard.

- LADWP Open Access Same-time Information System (OASIS) lists 31 renewable resource projects with a total capacity of over 4500MW in its Generator Interconnection Queue as of August 22, 2012. All have in-service dates prior to 2020.
- LADWP's renewable portfolio standard target of 20% by 2010 was achieved on time, making LADWP the largest utility in the state to meet the 20% goal in 2010. (Commission Resolution 007-197 adopted on April 17, 2007).

Goal 8. LADWP implements a high-priority demand response program that, where feasible, relieves transmission thermal overloads and/or system stability consequences of credible contingencies.

- LADWP is designing and phasing in a demand response program that will be built out to 200MW by 2020 and as high as 300MW by 2030 as funds are made available (2011 IRP, an attachment to the 2012 Grid Report).
 - LADWP is currently working with project partners the University of Southern California, the University of California at Los Angeles, and the California Institute of Technology/Jet Propulsion Laboratory to develop, deploy and test advanced smart grid technologies. The five-year program, funded by LADWP, \$60million from the Department of Energy, and \$1million from the California Energy Commission advances LADWP's interests in demand response and three other inter-related areas.

LADWP Response to (b). The 2021 LCT and Summer 2012 Assessment both address the local capacity issue, one in the long-term, the other near-term. In both cases, even with every basin OTC generating unit available for local capacity, customer blackouts are still needed to resolve LCR contingencies.

The 2021 LCT concludes the local capacity requirement for Summer 2021 is [REDACTED].

TABLE 1. MINIMUM LCR FOR SUMMER 2021

Basin Thermal Generation	Capacity	Category B	Category C
Haynes	1619 MW	1440 MW	1600 MW
Harbor	466 MW	227 MW	466 MW
Scattergood	810 MW	600 MW	810 MW
Valley	576 MW	510 MW	510 MW
Total	3471 MW	2777 MW	3386 MW
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

The 2012 Grid Report develops the minimum local capacity requirement for 2012 from the information provided in the Summer 2012 Assessment. The 2996MW LCR finding shown in Table 2, as the 2012 Grid Report emphasizes, can only be considered an estimated minimum when it extracts planning information from an operations document.



TABLE 2. MINIMUM LCR FOR SUMMER 2012

Basin Thermal Generation	Capacity	Category B	Category C
Haynes	1619 MW	1242 MW	1619 MW
Harbor	466 MW	397 MW	466 MW
Scattergood	810 MW	604 MW	604 MW
Valley	576 MW	307 MW	307 MW
Total	3471 MW	2550 MW	2996 MW

The consistency in the results from the 2021 LCT and Summer 2012 Assessment suggest that no studies in the intermediate years are needed. The rationale follows for why the need for OTC generation will not decrease in the years leading up to 2021:

- No additional generation is forecast in the load pocket; and
- Because the full effect of planned generation and transmission projects adjacent to the LADWP load pocket was not included in the 2021 LCT, the need for Basin generation in 2021 was actually underestimated. LADWP knows of 3 such proposed project clusters and has identified but not quantified the LCR impact:
 1. 700MW of additional imports from additional capacity along the Pacific DC Intertie increases LCR at Scattergood, Haynes, and Harbor Generating Stations;
 2. 2000MW of additional wind and solar generation from the Barren Ridge Renewable Energy Area increases LCR at Scattergood, Haynes, and Harbor Generating Stations; and
 3. 500MW of additional injections into the Adelanto/Victorville area from wind and solar energy producers increases LCR at Scattergood, Haynes, and Harbor Generating Stations

LADWP Response to (c). The 2012 IRP investigates resource adequacy for each year through 2032 before proposing recommendations. Table 3, which also appears in the 2012 Grid Report, summarizes resource adequacy information from the 2012 IRP. In both the 2011 IRP and the 2012 IRP, LADWP aims to divest its interests in coal-fired Navajo Generating Station as early as 2015. Basin OTC units being repowered within the next decade (Haynes Units 5&6 in 2013 and Scattergood Unit 3 in 2015) will not result in capacity increases.



TABLE 3. TEN-YEAR RESOURCE ADEQUACY PROJECTION (MW)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Large Hydro	1657	1682	1682	1682	1682	1682	1682	1682	1682	1682
Nuclear	383	383	383	383	383	383	383	383	383	383
In-Basin Thermal	3179	3179	3179	3267	3267	3267	3267	3267	3303	3303
Existing Renewables	353	349	333	327	291	291	291	291	291	283
IPP Coal	1191	1191	1191	1191	1191	1191	1191	1191	1191	1141
Navajo Coal	451	451	451	0	0	0	0	0	0	0
Navajo Coal Replacement	0	0	0	300	300	300	300	300	300	300
New Renewables	36	87	223	286	347	393	440	540	547	600
Demand Response	10	20	40	75	100	150	200	250	300	350
Energy Efficiency	37	58	79	99	116	131	144	155	166	175
Term Purchases	175	0	0	0	0	0	0	0	0	0
Others	16	16	16	16	16	16	16	16	16	16
Total Resources	7488	7416	7577	7626	7693	7804	7914	8075	8179	8233
EE/Solar Rooftop Adjustment ¹	180	247	317	386	449	463	468	472	474	478
Reserve Margin	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090
1-in-2 Peak	5577	5604	5591	5590	5597	5658	5725	5791	5881	5942
Adjusted 1-in-2	5757	5851	5908	5976	6046	6121	6193	6263	6355	6420
Resource Margin	641	475	579	560	557	593	631	722	734	723
Adjusted 1-in-5	6045	6143	6203	6274	6348	6427	6502	6576	6672	6741
Resource Margin	353	183	284	262	255	287	322	409	417	402
Adjusted 1-in-10	6218	6319	6380	6454	6529	6610	6688	6764	6863	6933
Resource Margin	180	7	107	82	74	104	136	221	226	210

¹ LADWP's Resource Planners consider contributions from energy efficiencies and the production from solar rooftops energy resources. Energy Efficiency is declared as a line item in the table; Solar Rooftop production is declared in the line items for New Renewables and Existing Renewables, as appropriate.

LADWP Response to (d). The 2012 IRP identifies flexible resources needed to firm renewable development. These resources are necessarily located within the LADWP Balancing Authority Area. Of the existing resources, Castaic Power Plant is located in Castaic, a small community north of the Los Angeles Basin. Its 7 units provide 1250MW of pumped storage to firm and shape the intermittent renewable resources interconnecting along the Owens Valley Transmission Corridor. The Intermountain Generating Station in Delta, Utah is a 2-unit, 1800MW coal-fired plant that firms and shapes the intermittent renewable resources imported via the Intermountain Power Project HVDC line. Repowering the OTC units will install peaker units at Haynes and combined-cycle units at Scattergood Generating Stations with fast ramp rates enabling them to respond to power system fluctuations and disturbances.

Study 2. Planning Using State Energy Policy

LADWP Response. The 2012 IRP is the most current of any of the relevant plans satisfying this information request. It most fully incorporates the state policy goals described earlier in this document. The 2021 LCT’s Mid-Load Case is also helpful in that it identifies the LCR with energy efficiency, distributed generation, combined heat and power facilities, and demand response programs considered. Contributions from central station renewable developments such as Adelanto Solar Farm and Pine Tree Solar Farm are also included.

It is important to note even with all generation in the Basin load pocket, including OTC units, running at maximum output, customer blackouts are still needed for reliability purposes in 2021’s Mid-Load Case. The Mid-Load Case is modeled with the following attributes that effectively reduces the Basin load by more than 400MW:

- 373MW of new demand reductions from Energy Efficiency programs, an estimate furnished by the California Energy Commission (CEC) based on its programs for San Diego Gas & Electric but having no basis in-house.
- 74MW of new demand reductions from Distributed Generation, primarily Rooftop Solar PV.
- 0MW of new Combined Heat and Power projects were assumed.

TABLE 4. MINIMUM GENERATION FOR 2021

Basin Thermal Generation	Capacity	Category B	Category C
Haynes	1619 MW	1440 MW	1600 MW
Harbor	466 MW	227 MW	466 MW
Scattergood	810 MW	600 MW	810 MW
Valley	576 MW	510 MW	510 MW
Total	3471 MW	2777 MW	3386 MW

Qualitatively, the size and location of customer blackouts is a rough indicator of the size and location of Direct Load Control needed to meet NERC reliability standards. LADWP-coordinated customer blackouts, aka load shedding or load



tripping events, are deliberately carried out to meet power system reliability. Typically, such deliberate blackouts happen near the overloaded element. At this time it is believed Direct Load Control cannot be considered a reasonable alternative to LADWP-coordinated blackouts for the following reasons:

- Sufficient Direct Load Control opportunities are unlikely to occur at the locations identified for LADWP-coordinated customer blackouts, so the size of the Direct Load Control program must necessarily be larger than the size of its alternative, an LADWP-coordinated customer blackout.
- The 2012 Grid Report shows that in 2013, LADWP expects to count as a dependable resource only 10MW from its Direct Load Control programs, aka Demand-Side Management programs. This is an order of magnitude less than what is needed to overcome the speculative Mid-Load Case described in Table 3. The amount of load shedding called for to resolve the High-Load Case is almost 3 times that of the Mid-Load Case.
- If even one OTC unit is removed from service, the amount of Direct Load Control needed increases. And the magnitude of that need is substantially greater than the size of the OTC unit removed from service.

Study 3. Transmission Planning

LADWP Response to (a) and (b).

As would be expected when operating and maintaining a mature power system, LADWP is actively modifying and changing its system in order to continue to reliably provide electricity to its customers while complying with regulations pertaining to its operating as a vertically integrated municipal electric utility. Recommendations from the 2012 10Yr Assessment provided in Table 6 address vulnerabilities identified when credible contingencies occur, even with the power system improvements planned and identified in Table 5. The planned power system improvements are being undertaken as a result of past 10Yr Assessments or to comply with regulations such as California’s OTC Policy and Renewable Portfolio Standard targets.

TABLE 5.PLANNED POWER SYSTEM UPGRADES

In-Service	Category	Enhancement
June 2013	Supply	Haynes Generating Station Phase2, repowering
March 2015	Transmission	RS-C Bypass, reconfiguration
June 2015	Transmission	Scattergood-Olympic 230kV Cable A, new
December 2015	Supply	Scattergood Generating Station Unit3, repowering
April 2016	Transmission	Barren Ridge-Haskell 230kV Lines 2&3, new
December 2016	Transmission	Barren Ridge-Rinaldi 230kV Line1, upgrade



TABLE 6. RECOMMENDED SCHEDULE FOR TRANSMISSION ASSESSMENT FINDINGS

Scheduled Year	Concern	Recommendation
Summer 2013- Summer 2014	Northridge-Tarzana 230kV Line1 Terminal Equipment Overload	Selectively shed load @ RS-U (Tarzana) until circuit breakers and disconnects are upgraded
Summer 2013- Summer 2015	Scattergood-Olympic 230kV Line2 Overload	Selectively shed load @ RS-K (Olympic) and RS-U (Tarzana) until Scattergood-Olympic Cable A is in service
Summer 2014 onward	Voltage Collapse @ Canoga Station	Under-Voltage Load Shedding @ RS-T (Canoga)
Winter 2015	High Voltage near Scattergood, Olympic, Hollywood Stations	Install variable 90MVAR shunt reactor banks @ Scattergood and Olympic Stations, 2 total
Summer 2018	Low Voltage @ Cottonwood Station	Install 4-25MVAR capacitor banks and one spare at a new substation in Owens Valley
Summer 2018	Low Voltage @ Hollywood Station	Selectively shed load @ RS-H (Hollywood)
Summer 2018	Haskell Canyon-Sylmar 230kV Line1 Overload	Relocate 230/115kV banks from Olive Switching Station to Haskell Canyon Switching Station; Convert PP1-Olive 115kV Line1 and PP2-Olive 115kV Line2 to PP1-Haskell Canyon 115kV Line1, PP2-Haskell Canyon 115kV Line2, Haskell Canyon-Olive 230kV Line2 and Sylmar-Haskell Canyon 230kV Line2 along the existing right-of-ways

LADWP Response to (c). LCR is reduced with transmission upgrades/additions if the improvements will:

- eliminate the plausible threat of customer blackouts when all OTC units are in-service, and
- not threaten to result in any plausible customer blackouts because one OTC unit is removed.

Transmission upgrades that could reduce LCR at Haynes, Harbor and Scattergood are challenged by the fact that the Basin load pocket is a metropolis with existing transmission corridors being boxed in by commercial and residential property. Because of this condition, the space required to widen these transmission corridors or create new ones does not exist within the metropolitan footprint. Total reconstruction of the existing lines and towers, if an option at all, would come at a tremendous cost and would place the power system at risk during the construction period of long-duration outages when an adjacent circuit or local generator is lost.

Community support is vital to the success of any such projects. Any transmission projects must schedule time to address any neighborhood and stakeholder concerns for the projects. It took LADWP 15 years to start construction of underground Scattergood-Olympic 230kV Cable A; it is expected to be placed in service by June 2015. As was learned

through Southern California Edison’s experience with its Tehachapi Renewable Transmission Project (TRTP), unaddressed stakeholder concerns may stop transmission projects mid-construction.²

Haynes and Harbor Generation – transmission projects to decrease customer blackouts

Haynes and Harbor Generating Stations, located in adjacent port cities, are essentially electrically similar. Informal demonstrations have shown if one Haynes or Harbor generating unit was decommissioned, the loss of any one of no less than 6 critical transmission lines have the potential to trigger controlled customer blackouts to resolve LCR contingencies. Conceptually, the need for customer blackouts can be reduced by transmission upgrades/additions. The opportunity for such improvements is limited for the following reasons:

- Construction of new transmission lines in this case is not feasible because there is no available right-of-way in the densely urbanized immediate vicinity of the 6 heavily loaded lines.
- Reconductoring the 6 lines is constrained by several issues:
 - a. Reconductoring any line requires that line to be taken out of service to be reworked. Since these reconductoring candidates are important to the power system, having any one of them out weakens the electric system. To maintain reliability, LADWP allows only 3-months a year for such work and would reconductor only one of these lines at any given time.
 - b. Segments of these 6-230kV lines are strung on double-circuit 138kV towers. Reconductoring the lines would require the under-sized towers to be rebuilt, placing both circuits on the towers out-of-service during construction. Such an undertaking may compromise reliability even with attentive scheduling.
 - c. All 6 of these lines would need to be reconducted to potentially mitigate the need for customer blackouts; customer blackouts are expected following LCR contingencies if any one of the 6 circuits is not reconducted.
 - d. The need for customer blackouts may still exist even after all 6 circuits are reconducted. This would happen if removing these 6 bottlenecks cause new bottlenecks to surface.

Scattergood Generation – transmission projects to decrease customer blackouts

Scattergood Generating Station, northwest of Haynes and Harbor Generating Stations, supports load that is currently constrained by insufficient capacity from the circuits feeding West Los Angeles, including the Tarzana-Olympic 138kV circuit. Converting the Tarzana-Olympic 138kV circuit to 230kV would increase capacity, thereby decreasing the customer blackouts needed to resolve LCR contingencies.

LADWP is currently installing new Scattergood-Olympic 230kV Cable A which is an underground 11.4 mile transmission cable. Because of extensive community involvement and the desire to assuage community concerns, the project broke ground 15years after it was first planned. The effort to convert the Tarzana-Olympic lines from the 138kV to 230kV system could reasonably expect a similar protracted lead time.

² On November 15, 2012 in “Amended Scoping Memo and Ruling of Assigned Commissioner (Peevey)”, the California Public Utilities Commission (CPUC) granted a motion by the City of Chino Hills and ordered Southern California Edison (SCE) to pause construction on Segment8 of the Tehachapi Renewable Transmission Project (TRTP). SCE started constructing TRTP in 2009 and had anticipated completing the project in 2015.

Study 4. Comparison Study

LADWP Response. Study 1, Study 2, and Study 3 individually suggest that all existing OTC units will be needed for each year from 2012 through 2021 for the local capacity they provide. Study 2 shows that with demand reductions, the magnitude of customer blackouts is reduced but not eliminated. Study 3 shows that even with more than 400MW of demand reductions and the completion of transmission upgrades, customer blackouts following LCR contingencies would only be reduced and not eliminated.

LCR cannot be reduced because the demand reductions and transmission improvements:

- do not eliminate the plausible threat of customer blackouts when all OTC units are in-service, and
- do threaten to result in a plausible customer blackout because one OTC unit is removed

This based on studies that likely over-represented the effectiveness and durability of speculative demand response programs and that included transmission improvements that are challenging if not infeasible to install. Moreover, the findings from both Study 2 (demand reduction) and Study 3 (transmission upgrades) are likely understated because they are based on the Mid-Load Case and so may not fully account for the increased stress on Basin transmission due to increased loading from imported renewable energy flowing from an uprated Pacific DC Intertie and a reconfigured Owens Valley Transmission System.

It is important to be aware that the findings from the studies herein are indifferent to the different technologies available: simple cycle turbines, flexible combined cycle plants, or base-load combined cycle plants. Collectively, the 3 studies affirm that the capacity from all OTC units must be replaced in place if the existing OTC units are permanently removed from service.

ENCLOSURE 2

**LOS ANGELES DEPARTMENT OF WATER AND POWER
LADWP RESPONSE LETTER DATED NOVEMBER 7, 2012**



ANTONIO R. VILLARAIGOSA
Mayor

Commission
THOMAS S. SAYLES, *President*
ERIC HOLOMAN, *Vice President*
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BARBARA E. MOSCHOS, *Secretary*

RONALD O. NICHOLS
General Manager

November 7, 2012

Mr. Thomas Howard
Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Dear Mr. Howard:

Subject: Agreement and Clarification on State Water Resources Control Board's Information Request to the Los Angeles Department of Water and Power (LADWP) Regarding the Implementation of the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling

LADWP wants to thank the State Water Resources Control Board (State Board) and its staff for inviting LADWP to the Inter Agency Working Group (IAWG) meeting on August 17, 2012. As stated in your letter (request letter), dated July 10, 2012, that requests additional information pursuant to the Policy and Water Code section 13383, the IAWG meeting was to discuss and establish clear expectations about the information request.

As we stated during the meeting, LADWP had a concern with the request letter: as discussed in your request letter, the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) was convened by the State Board to ensure that compliance dates, and any changes to these dates, would not disrupt the electrical power supply. Although the request letter also stated that SACCWIS recommended deferring a decision on modifying LADWP's compliance dates to a later date, it did not mention SACCWIS' conclusion that LADWP's implementation plan to comply with the State Water Board's Cooling Water Policy did not appear to negatively impact the local area and grid reliability, as compared with the existing compliance schedule in the Cooling Water Policy. (Ref.: SACCWIS Resolution No. 2011-0001 dated July 5, 2011, page 2, paragraph #4).

With regards to the additional information request, State Board staff and LADWP staff have agreed that the information required is as stated in LADWP's email dated September 7, 2012 (Enclosure 1). However, in the response email from your staff,

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dated October 4, 2012, (Enclosure 2) while State Board staff agreed with LADWP, there was one significant exception noted, which reads as follows:

“...there would not be anything to discuss if LADWP did not do a quantitative analysis of the impacts of Study 2 differences resulting from energy policies. CAISO does not seem to hold the same position on your argument for the Study 2 requirement. CEC has agreed to hold this requirement until it is requested for the end of 2013 for SACCWIS to review in 2014.”

LADWP respectfully disagrees with this statement. First, CAISO does not disagree with LADWP's argument regarding Study 2 as stated in our September 7 email and as discussed at the IAWG meeting. The discussion at the meeting regarding Study 2 focused on the energy policies such as Demand Response, Combined Heat and Power (CHP), Energy Efficiency (EE), Distributed Generation (DG), and renewables (wind and solar), and why these policies do not provide dependable capacity or meet the NERC and FERC grid reliability requirements. CAISO has mentioned that these programs may lower demand, but that the effect cannot be adequately forecasted at this time for locational planning purposes because of the severe locational requirements and the uncertainty of the characteristics of these programs.

CAISO agreed with LADWP that the energy programs do not provide dependable capacity and also stated that studies with DG, wind, solar, CHP, and EE integrated into a capacity study are considered “sensitivity studies and uncommitted” and that DG, wind, solar, CHP and EE do not provide dependable local capacity and voltage support for the grid system. This is also LADWP's stated position and why a quantitative analysis cannot be done and only a qualitative analysis should be provided for Study 2. Secondly, the statement that a quantitative analysis will be done in 2013 for SACCWIS to review in 2014 was not agreed upon at the meeting. LADWP will not provide information that will in any way compromise or risk its grid system. LADWP discussed this at the IAWG meeting, and at the close of the meeting it was agreed that the qualitative analysis would suffice. The policy requires the additional information request to be completed by December 31, 2012 to enable the State Board to make any determinations by 2013. LADWP is complying with this requirement.

LADWP believes that the current (and long-standing) outage of the San Onofre Nuclear Generating Station (SONGS) which provides power to the Orange County/San Diego area of the Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E) systems is an excellent example of why existing transmission system configurations and generation locations are critical to system reliability. CAISO's local capacity in the Orange County/San Diego area was drastically reduced when the SONGS plant was unexpectedly shut down in January 2012. The shortage of capacity was most critical this past summer and in order to make up for the lost capacity, mothballed OTC units located at the AES Huntington Beach plant were brought back on line. Even with these units back in service CAISO's local capacity was marginal. CAISO and LADWP

discussed if LADWP could provide assistance; however, since CAISO had a locational capacity deficiency in its southern area, LADWP was not able to meaningfully assist. This is because the only way to deliver the energy to those areas where CAISO's locational energy supply was marginal, was through existing interconnections to CAISO's already congested transmission paths. LADWP may be able to assist with a general capacity shortage on the CAISO system but not for a locational shortage in the CAISO southern portion. The areas where LADWP can deliver power to meet SCE or SDG&E territory needs from the north end of the LADWP system ultimately relies on the same congested transmission paths that limit the CAISO from relying extensively on power supplies from other locations outside of the SDG&E and SCE systems that are otherwise served by SONGS.

SONGS illustrates the type of emergency that reinforces the need to maintain local capacity, including some additional reserve capacity to compensate for an unexpected outage in order to meet grid reliability as required by FERC. This same situation of limited ability to rely broadly upon other generation sources exists within LADWP. This is why energy efficiency within our system, non-dispatchable renewable energy, demand response, and even generation from our nearest other in-basin gas-fired plants cannot meet the same locational supply purpose as each of our coastal generating plants. LADWP has factored its worst case contingencies into its planning process as required by FERC and NERC standards. The Amended OTC Policy 2029 dates are absolutely necessary, as these dates provide for the time needed to integrate the energy policies and allow for the elimination of OTC without sacrificing locational capacity and grid reliability.

As stated by Mr. Nichols at the July 19, 2011 hearing, LADWP has agreed upon a compliance schedule that fulfills its responsibility toward its rate payers, allows for a sustainable path forward, and maintains grid reliability. This schedule is the most aggressive and as short as possible, provided that all elements proceed as planned.

In closing, LADWP has no disagreement with supplying the additional information as agreed upon at the IAWG meeting and confirmed in the enclosed emails from LADWP and State Board staff. However, it will not supply information that it considers to be fictitious or that may be misconstrued or taken dangerously out-of-context by an interested public and result in a commitment that sacrifices the reliability of power supply to the 4 million residents of Los Angeles. The request for a quantitative analysis from the CEC IAWG staff member for Study 2 does just that - creates information that can be dangerously misconstrued. Dr. Mohammed Beshir of LADWP explained at the IAWG meeting, the conceptual difference between dependable capacity and energy which is not readily understood to non-utility professionals. After his discussion, it appeared that all those present at the meeting understood why LADWP could only put forth a qualitative analysis.

Mr. Thomas Howard
November 7, 2012
Page 4

LADWP looks forward to working with you and your staff, as it moves forward with complying with the Policy.

If you have any questions, please feel free to contact Ms. Katherine Rubin of my staff at 213-367-0436.

Sincerely,



Mr. Mark J. Sedlacek
Director, Environmental Affairs

Enclosures

- c: Mr. Charlie Hoppin – Chairman, State Water Resources Control Board (SWRCB)
- Ms. Fran Spivy Weber – Vice-Chair, SWRCB
- Ms. Tam Doduc – Member, SWRCB
- Mr. Steve Moore - Member, SWRCB
- Ms. Felicia Marcus – Member, SWRCB
- Mr. Jonathan Bishop – Deputy, SWRCB
- Ms. Marleigh Wood – Senior Staff Counsel, SWRCB
- Mr. Neil Millar – SACCWIS member, CAISO
- Mr. David Peterson – IAWG, CAISO
- Mr. David Le – IAWG, CAISO
- Mr. Robert Oglesby – SACCWIS member, CEC
- Mr. Mike Jaesky – IAWG, CEC
- Ms. Mariela Paz Carpio-Obeso - SWRCB
- Ms. Shuka Rastegarpour - SWRCB
- Ms. Katherine Rubin

Enclosure 1

Email dated September 7, 2012 from LADWP staff to State Board staff

Rubin, Katherine

From: Rubin, Katherine
Sent: Friday, September 07, 2012 4:24 PM
To: 'Rastegarpour, Shuka@Waterboards'
Cc: 'Carpio-Obeso, MarielaPaz@Waterboards'; Sedlacek, Mark; Beshir, Mohammed; Lyman, Michelle; Minassian, Vaughn
Subject: RE: update

Tracking: Recipient	Read
'Rastegarpour, Shuka@Waterboards'	
'Carpio-Obeso, MarielaPaz@Waterboards'	
Sedlacek, Mark	Read: 9/7/2012 4:43 PM
Beshir, Mohammed	
Lyman, Michelle	
Minassian, Vaughn	

Hi Shuka,

LADWP appreciated meeting with the Inter agency working group (IAWG) on August 17, 2012, in regards to the information request letter dated July 2012. It is LADWP's understanding that the following information listed below will fulfill the information request and will be submitted by December 31, 2012 to the State Board:

Study 1 items a, c, and d – are included in the 2011 IRP which will be provided.

Study 1 item b – the AB1318 report will suffice with adjustments made by LADWP staff to address 2012.

Study 2 – As the same with CAISO who treats these programs as highly sensitive and uncommitted, LADWP will provide a qualitative analysis since these programs do not provide dependable capacity and the information is sensitive and should not be used for any type of load capacity analysis or be used out of context.

Study 3 items a and b – will be an explanation of the transmission 10-year plan, that has been submitted.
 Study 3 item c – LADWP will add a discussion to its 10-year plan on additional upgrades.

Study 4 – LADWP will provide conclusions/observations

Please let me know if your notes are consistent with my list above. If you have any questions please feel free to contact me,

Thank you,
 Katherine

Katherine Rubin
 Manager Wastewater Quality and Compliance
 Los Angeles Department of Water and Power
 111 North Hope Street, Rm. 1213
 Los Angeles, CA 90012
 Ph: 213-367-0436
 Fx: 213-367-3297
 krubin@ladwp.com

From: Rubin, Katherine

11/8/2012

Sent: Tuesday, September 04, 2012 11:26 AM
To: 'Rastegarpour, Shuka@Waterboards'
Cc: Carpio-Obeso, MarielaPaz@Waterboards
Subject: RE: update

Hi Shuka,

Yes I owe this to you, I will draft an email and send to you right away and follow with the letter.

Thanks,
Katherine

Katherine Rubin
Manager Wastewater Quality and Compliance
Los Angeles Department of Water and Power
111 North Hope Street, Rm. 1213
Los Angeles, CA 90012
Ph: 213-367-0436
Fx: 213-367-3297
krubin@ladwp.com

From: Rastegarpour, Shuka@Waterboards [mailto:Shuka.Rastegarpour@waterboards.ca.gov]
Sent: Tuesday, September 04, 2012 11:13 AM
To: Rubin, Katherine
Cc: Carpio-Obeso, MarielaPaz@Waterboards
Subject: update

Hi Katherine,

I would like an update from you since our meeting last month. From what I recall, I was to wait until I received a letter confirming LADWP'S understanding of the study requirements of the information request letter. Please let me know of the status, and when we at Water Board should expect to receive it so that we can continue with the process.

Thanks so much,

- Shuka

Shuka Rastegarpour
Environmental Scientist
Ocean Standards Unit/ Division of Water Quality
State Water Resources Control Board
California Environmental Protection Agency
(916) 341-5576

Enclosure 2

Email dated October 4, 2012 from State Board staff to LADWP staff

Rubin, Katherine

From: Rastegarpour, Shuka@Waterboards [Shuka.Rastegarpour@waterboards.ca.gov]
Sent: Thursday, October 04, 2012 3:47 PM
To: Rubin, Katherine
Cc: Carpio-Obeso, MarielaPaz@Waterboards; Gregorio, Dominic@Waterboards; Jaske, Mike@Energy
Subject: RE: update

Hi Katherine,

Coming back from my meeting with Dominic and Mariela, it's been decided that LADWP will submit the work according to the information request exactly as you've stated below in this email thread. A qualitative analysis of Study 2 may be completed. As mentioned in the letter sent from the Water Board on July 10, 2012 this information is due by December 31, 2012.

As agreed, please submit your response letter as soon as possible.

It has been discussed, that there won't be anything for SACCWIS to use if LADWP doesn't do a quantitative analysis of the impacts of Study 2 differences resulting from energy policies. CAISO does not seem to hold the same position on your argument for the Study 2 requirement. CEC has agreed to hold this requirement until it is requested for the end of 2013 for SACCWIS to review in 2014.

- Shuka

Shuka Rastegarpour
Environmental Scientist
Ocean Standards Unit/ Division of Water Quality
State Water Resources Control Board
California Environmental Protection Agency
(916) 341-5576

From: Rubin, Katherine [mailto:Katherine.Rubin@WATER.LADWP.com]
Sent: Friday, September 28, 2012 3:28 PM
To: Rastegarpour, Shuka@Waterboards
Cc: Carpio-Obeso, MarielaPaz@Waterboards; Sedlacek, Mark; Beshir, Mohammed; Lyman, Michelle; Minassian, Vaughn; Gregorio, Dominic@Waterboards; Bishop, Jonathan@Waterboards
Subject: RE: update

Hi Shuka,

It was good to speak with you today, as we agreed, I will either call you or you will call me within two weeks. By that time, you will hopefully have had a chance to speak with Dominic and Jonathan, as I mentioned on the phone, LADWP has begun to work on the additional information request and will have the information that I have listed in my email below, ready for submittal to the State Board by December 31, 2012.

Best,
Katherine

10/22/2012

Katherine Rubin
Manager Wastewater Quality and Compliance
Los Angeles Department of Water and Power
111 North Hope Street, Rm. 1213
Los Angeles, CA 90012
Ph: 213-367-0436
Fx: 213-367-3297
krubin@ladwp.com

From: Rastegarpour, Shuka@Waterboards [<mailto:Shuka.Rastegarpour@waterboards.ca.gov>]
Sent: Monday, September 10, 2012 8:20 AM
To: Rubin, Katherine
Cc: Carpio-Obeso, MarielaPaz@Waterboards; Sedlacek, Mark; Beshir, Mohammed; Lyman, Michelle; Minassian, Vaughn
Subject: RE: update

Thanks Katherine, I'll get back to you.

- Shuka

Shuka Rastegarpour
Environmental Scientist
Ocean Standards Unit/ Division of Water Quality
State Water Resources Control Board
California Environmental Protection Agency
(916) 341-5576

From: Rubin, Katherine [<mailto:Katherine.Rubin@WATER.LADWP.com>]
Sent: Friday, September 07, 2012 4:24 PM
To: Rastegarpour, Shuka@Waterboards
Cc: Carpio-Obeso, MarielaPaz@Waterboards; Sedlacek, Mark; Beshir, Mohammed; Lyman, Michelle; Minassian, Vaughn
Subject: RE: update

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10/22/2012

Thanks so much,

- Shuka

Shuka Rastegarpour
Environmental Scientist
Ocean Standards Unit/ Division of Water Quality
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(916) 341-5576

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