STATE OF CALIFORNIA

Public Utilities Commission
San Francisco

M e m o r a n d u m

Date: April 7, 2009

To: The Commission
(Meeting of April 16, 2009)

From: Pamela Loomis, Director
Office of Governmental Affairs (OGA) — Sacramento

Subject: **SB 42 (Corbett) – Coastal Resources: Sea Water Intake.**
As amended March 18, 2009

LEGISLATIVE SUBCOMMITTEE RECOMMENDATION: OPPOSE

SUMMARY OF BILL:
This bill would: 1) prohibit an existing power plant or industrial facility with a capacity factor of 20% or less from using a once-through cooling system on or after January 1, 2015; 2) prohibit a state agency from approving a new power plant or industrial facility from using an open ocean intake; 3) require the State Water Resources Control Board (SWRCB) to develop a plan to phase out other power plants using once-through-cooling, and 4) would impose a fee (to be determined) on a power plant or industrial facility using once-through cooling, based on the amount of seawater used.

SUMMARY OF SUPPORTING ARGUMENTS FOR RECOMMENDATION:

- Closing low capacity factor once-through cooling (OTC) power plants by January 1, 2015 would significantly diminish the reliability of the electrical system, almost certainly causing blackouts. Replacement power plants can not be permitted, constructed, and connected to the grid in the allowed timeframe. In addition, the cost of replacing needed OTC plants by 2015 could significantly increase electric rates.

- The implementation of this bill may be impacted by a recent Superior Court ruling that effectively prevents new gas-fired power plants from being sited in the South Coast Air Basin. The South Coast Air Quality Management District had amended its Priority Reserve Rules to make air quality offsets for particulates available to power plants. Several planned power plants in the Los Angeles area relied on the Priority Reserve rules to obtain air permits. As a result of the court's ruling, there are no longer sufficient offsets to build new power plants in the South Coast Air Basin. Even generators that already have contracts with utilities cannot begin construction until this issue is resolved. In addition, the South Coast Air Quality Management

District has announced that it is not appealing the court's ruling as it applies to power plants. It is unclear how this issue will ultimately be addressed.

SUMMARY OF SUGGESTED AMENDMENTS:
None.

DIVISION ANALYSIS (Energy Division):

- The SWRCB has jurisdiction over water use permits for power plants and is presently developing once-through cooling (CWA 316(b)) regulations. In May 2008, the SWRCB created an Inter-Agency Working Group to advise it on the development of an implementation plan for proposed OTC regulations. That group, including representatives from the California Independent System Operator (CAISO), California Energy Commission (CEC), and the California Public Utilities Commission (CPUC), is focused on eliminating OTC system use in power plants without disrupting the reliable delivery of electric power.

- There are currently nineteen power plants using OTC systems. These plants provide approximately 20,800 megawatts of electric capacity. This represents approximately one third of the capacity the state needs during times of peak electric load. Most of these power plants are located close to population centers, meaning replacing the OTC power plants with power plants using renewable fuels (wind, solar, etc) would require significant new transmission lines. Planning, permitting, designing/engineering, and constructing major transmission lines takes approximately 7 years if not delayed or cancelled because of the California Environmental Quality Act or local concerns.

- The CEC has authority to permit new power plants with a capacity of 50 MW or more. The last power plant project to be constructed using OTC initiated service in 2000, Moss Landing Units 1 and 2 provide 1080 MW of capacity. The CEC has indicated it will not permit any new power project using OTC and has not done so in recent years.

- The CAISO is responsible for operating the transmission grid that serves most of California. The CAISO performs transmission studies, identifying power plants that are needed to maintain system reliability under Western Electricity Coordinating Council standards. The CAISO has performed studies identifying transmission and generation projects that would be needed to close two power plants using OTC, Potrero and South Bay. CAISO preliminary studies indicate to replace OTC power plants in the Los Angeles Basin with transmission to resources outside the Los Angeles Basin would require the construction of a major transmission line and two major substations at a cost of over $4.5 billion. It is anticipated that there will be major opposition to new transmission construction within the Los Angeles Basin, which will require a great deal of public outreach and time to inform the local population about these issues.

- Based on the CAISO's transmission study for 2009, the CPUC has determined that the LA Basin needs 10,500 MW of in-basin electric generation to meet reliability standards. Currently there is 12,000 MW of generation in the LA Basin of which 7,800 MW uses OTC. Of that group, approximately 4,500 MW have capacity factors less than 20 percent. Not considering the operational capabilities of the generation, closing generation with capacity factors of 20 percent or less that use OTC requires over 3,000 MW of new transmission or replacement generation to be built. Unfortunately, grid operations require generation that can follow changes in load. This need has greatly expanded as more wind and solar generation is added to the system.[1] Most of the generation using OTC is quickly able to adjust to changes in electric demand, requiring more flexible resources if the OTC plants are to close.

- In the alternative, plants using OTC could replace their cooling systems. The Ocean Protection Council commissioned Tetra Tech to study the cost and feasibility of replacing cooling systems. Plant owners have not universally supported the feasibility and cost numbers of the study, and have stated that the cost of replacing cooling systems exceeds the benefits on older plants. It should be noted that 11 of 13 low capacity factor units in the LA Basin were built before 1970.

- The South Coast Air Quality Management District oversees an air management plan to limit the air pollutants in the Los Angeles Basin. Current litigation concerning South Coast Air Quality Management District's air permits will prevent the construction of new gas-fired generation for the next few years.

- With the long lead times and the probability of strong opposition, building transmission to replace OTC generation is unlikely by 2015. Further, with the problems in obtaining air permits, building new generation to replace OTC is also unlikely by 2015. Therefore, if this measure passes as currently written, it is highly likely that the grid will not be able to meet demand in the Los Angeles basin and rotating outages will be necessary.

- In addition, the CPUC recently approved steam turbine replacement for California's two nuclear generation stations. San Onofre and Diablo Canyon provide over 4,000 MW of reliable, GHG emissions-free power. A conservative estimate is that to replace the two nuclear power plants with the most efficient natural gas combined cycle plants would increase GHG emissions by approximately 16 million tons per year.

- Southern California Edison Company does not believe it is feasible to engineer a cooling system to replace the current OTC system at the San Onofre Nuclear Generating Station. It is on a small plot of land between the ocean, Interstate Highway 5, and protected beach/United States Marine Corps Base. If space was available, Southern California Edison estimates the cost would be over $2.3 billion.

---

[1] Wind and solar generation can not be easily adjusted up and down to follow changes in demand and actually increase the need for flexible resources to firm production variations inherent with wind and solar generation.

- Similarly, Pacific Gas and Electric Company does not believe the Diablo Canyon Nuclear Power Plant can be easily retrofitted with a replacement cooling system. Their preliminary estimates for a system are over $2.4 billion.

PROGRAM BACKGROUND:

- The CPUC, through its procurement process required by Public Utilities Code Section 454.5, has been pursuing policies to reduce the need for older electricity generation using OTC.

- The CPUC is required by Public Utilities Code Section 380 to establish and maintain a program to ensure resource adequacy is maintained at the planning reserve and reliability criteria of the Western Electricity Coordinating Council. The CPUC, in coordination with the CAISO and CEC, evaluates the resource needs of the Investor Owned Utilities and authorizes the utilities to contract for new resources in order to maintain minimum reliability standards. As part of this process, the CPUC has authorized the state's independently owned utilities to contract for new power plants that would reduce the need for old, inefficient power plants, including those using OTC. At the same time, the CPUC has been facilitating the development of energy efficiency programs, renewable generation, and demand response programs.

- The CPUC's Long Term Planning Process requires analysis of the reliability in the utilities' service territories. The analysis of Southern California Edison's service territory indicated a need to plan for retirements of 5,350 MW by 2013 in order to maintain reliability.

- Currently, Southern California Edison has contracted for 2,550 MW of new gas-fired generation in addition to renewable generation, demand response resources, and energy efficiency. Of that, 1,750 MW has been stalled by an inability to obtain air permits in the South Coast Air Quality Management District. Pending litigation concerning South Coast Air Quality Management District's air permits will prevent the construction of new gas-fired generation that would have allowed some of the older generation using OTC to retire.

- In 2004, the CPUC authorized Pacific Gas and Electric Company to construct 2,000 MW of new generation and in 2007 authorized the construction of 1500 MW of new generation. Pacific Gas and Electric Company contracted to construct seven power plants in response to the 2004 authorization, two in the City of Hayward. If constructed, these power plants would have reduced the need for the Contra Costa and Pittsburg power plants using OTC. One proposed 116 MW plant failed to obtain a CEC permit and was cancelled. A second 600 MW plant was significantly delayed in permitting, but is expected to be complete by 2013. A third plant, Gateway (580 MW), began operation in February 2009, reducing the need for the Contra Costa Power plant. Pacific Gas and Electric Company is currently in the process of contracting for up to 1500 MW of new generation.

- As part of the 2004 authorization, Pacific Gas and Electric Company has entered a contract to repower the Humboldt power plant and eliminate its use of OTC. It is also constructing the trans-bay transmission cable that will eliminate the need for the Potrero unit using OTC.

- San Diego Gas and Electric Company is finishing construction of the Otay Mesa power plant and is beginning construction of the Sunrise transmission project. When these two projects are complete the South Bay plant, using OTC, will no longer be needed for reliability.

- In short, the relevant agencies for electricity generation and transmission in the state are working together on a transition away from OTC use. This transition needs to go well beyond 2015, if the state wishes to maintain reliable electricity service to millions of consumers, especially in the Los Angeles Basin.

LEGISLATIVE HISTORY:
The Federal Environmental Protection Agency has been struggling for years to develop a fair policy to deal with OTC. The US EPA has been sued twice, with both cases going before the United States Supreme Court. The most recent, Riverkeeper II, is scheduled for a decision this year.

STATUS:
This bill is scheduled to be heard in the Senate Energy, Utilities and Communications Committee on April 21, 2009.

SUPPORT/OPPOSITION:

Support:	American Federation of State, County and Municipal Employees California Coastkeeper Defenders of Wildlife Greenspace-the Cambria Land Trust Heal the Bay Monterey Bay Aquarium Monterey Coastkeeper Ocean Conservancy Orange County Coastkeeper Pacific Coast Federation of Fishermen's Associations Planning and Conservation League Ratepayers for Affordable Clean Energy Residents for Responsible Desalination San Luis Obispo Coastkeeper San Francisco Baykeeper Santa Monica Baykeeper Sierra Club California SLO Coast Alliance Surfrider Foundation 2 Individuals
Opposition:	American Council of Engineering Companies Association of California Water Agencies

California Building Industry Association
California Business Properties Association
California Chamber of Commerce
California Council for Environmental and Economic Balance
California League of Food Processors
California Manufacturers & Technology Association
California Taxpayers' Association
Chemical Industry Council of California
City of Carlsbad
Greater Fresno Area Chamber of Commerce
Independent Energy Producers
Industrial Environmental Association
Milpitas Chamber of Commerce
Olivenhain Municipal Water District
Pacific Gas and Electric Company
Rincon del Diablo Municipal Water District
San Diego County Water Authority
Santa Fe Irrigation District
Sempra Energy
Southern California Edison
Southern California Water Committee
Sweetwater Authority
The Chamber - San Diego East County
Vallecitos Water District
Valley Center Water District
Western Electrical Contractors Association, Inc.

STAFF CONTACTS:

Michael Poe, Legislative Liaison, OGA (916) 327-7788 mdp@cpuc.ca.gov

Date: April 7, 2009

BILL LANGUAGE:

BILL NUMBER: SB 42 AMENDED
BILL TEXT

AMENDED IN SENATE MARCH 18, 2009

INTRODUCED BY Senator Corbett

JANUARY 6, 2009

An act to add Division 20.6 (commencing with Section 30970) to the Public Resources Code, relating to coastal resources ~~, and making an appropriation therefor~~ .

LEGISLATIVE COUNSEL'S DIGEST

SB 42, as amended, Corbett. Coastal resources: seawater intake.

(1) Under the Warren-Alquist State Energy Resources Conservation and Development Act, the State Energy Resources Conservation and Development Commission (energy commission) has the exclusive authority to certify a site for the construction of a new thermal powerplant or the modification of an existing thermal powerplant and related facilities.

The California Coastal Act of 1976 provides for the planning and regulation of development, under a coastal development permit process, within the coastal zone, as defined. The act regulates various types of developments within the coastal zone, including industrial developments and thermal electric generating plants.

This bill would prohibit a state agency, as defined, from authorizing, approving, or certifying a new powerplant or industrial facility, as defined, that uses ~~an open ocean intake~~ *once- through cooling* , as defined, ~~a new open ocean intake,~~ or the expansion of an existing open~~ ocean~~ *seawater* intake *at a powerplant that uses a once-through cooling system unless necessary to connect to an alternative system* . The bill ~~also~~ would, on and after January 1, 2015, prohibit a powerplant from using once-through cooling, as defined. *The bill would also prohibit a state agency from authorizing, app roving, or certifying the use of a new, expanded, or existing open seawater intake for the purpose of desalination, unless certain findings are made during a public hearing. The bill would require the State Water Resources Control Board (state board) to adopt and implement a schedule to phase out once-through cooling at all powerplants other than those specified. The bill would also require each regional water board to review and issue a powerplant's national pollutant discharge elimination system (NPDES) permit for its once-through cooling system within 6 months of the expiration of that permit.*

(2) Under existing law, the ~~State Water Resources Control Board (state board)~~ *state board* and the 9 California regional water quality control boards regulate water quality in accordance with the Porter-Cologne Water Quality Control

Act (act) and the federal Clean Water Act. Under the act, the state board is required to adopt specified state policies with respect to water quality as it relates to the coastal marine environment, including a policy requiring coastal powerplants and other industrial installations using seawater for cooling, heating, or industrial processing to use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life.

Existing law establishes the State Coastal Conservancy in the *Natural* Resources Agency and authorizes the conservancy to acquire, manage, direct the management of, and conserve specified coastal lands and wetlands in the state. Existing law establishes the Coastal Trust Fund *(fund)* in the State Treasury to receive and disburse funds paid to the conservancy in trust. Existing law authorizes the conservancy to expend the moneys in the fund for purposes of the San Francisco Bay Area Conservancy Program and for other specified purposes.

This bill would require ~~, from January 1, 2011, to December 31, 2014,~~ a powerplant that uses once-through cooling, as defined, to pay a specified fee. *The bill would also require an industrial facility that uses open seawater intake to pay a fee.* The bill would require the state board to collect the fee and to deposit the revenues from the fee in the Marine Life Restoration Account, which the bill would establish in the fund. The bill would require the conservancy to administer the account and ~~would continuously appropriate the moneys in the account~~ *expend the money in the account only upon appropriation by the Legislature* to the conservancy and the *state* board to reimburse their costs of administering the fee *,* ~~and~~ to the conservancy for specified projects and activities that address the impacts of once-through cooling processes ~~, thereby making an appropriation~~ *, and to the s tate board to provide grants to powerplants currently using once-through cooling, as specified* .

Vote: majority. Appropriation: ~~yes~~ *no* . Fiscal committee: yes. State-mandated local program: no.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares all of the following:

(a) Nineteen coastal powerplants located in California use once-through cooling water intake systems. The majority of those powerplants are located on bays and estuaries where there are sensitive fish nurseries and populations of many important species, including species important to the commercial and recreational fishing industries.

(b) Coastal powerplants in California collectively withdraw up to 16.3 billion gallons of water per day.

(c) The United States Environmental Protection Agency has determined that there are multiple undesirable and unacceptable environmental impacts associated with once-through cooling technology.

(d) The Ocean Protection Council and the State Lands Commission have passed resolutions expressing concern about the devastating

impacts of the once-through cooling process on California's aquatic ecosystems and calling for *an* expeditious ~~phaseout~~ *phasing out* of once-through cooling systems.

(e) Various studies have documented the harm caused by once-through cooling processes, and it is estimated that once-through cooling systems kill over 79 billion fish and other marine organisms annually in California waters.

(f) Once-through cooling systems needlessly kill fish, larvae, plankton, and other marine organisms as they are drawn into once-through cooling water intake structures. Once-through cooling systems also kill larger marine species such as sea lions, seals, and turtles as they become trapped by those structures.

(g) In enclosed bays and estuaries, such as Alamitos, Santa Monica, San Diego, and Elkhorn Slough, the environmental harm of once-through cooling systems is often more pronounced due to the cumulative impacts caused by the concentration of several powerplants in biologically critical areas.

(h) The environmental devastation caused by once-through cooling systems is counterproductive to the California Ocean Protection Act (Division 25 (commencing with Section 35500) of the Public Resources Code), the Marine Life Protection Act (Chapter 10.5 (commencing with Section 2850) of Division 3 of the Fish and Game Code), and other state efforts to ensure healthy aquatic ecosystems and productive fisheries.

(i) Steam boiler plants using once-through cooling systems tend to be less efficient and have higher rates of greenhouse gas emissions than new generation sources.

(j) Protection of marine life in California's coastal waters, prompt ~~phaseout~~ *phasing out* of once-through cooling systems, and restoration of damage caused to California's aquatic environment ~~is~~ *are* in the best interest of the state.

SEC. 2. Division 20.6 (commencing with Section 30970) is added to the Public Resources Code, to read:

DIVISION 20.6. SEAWATER INTAKE

CHAPTER 1. DEFINITIONS

30970. The following definitions govern the interpretation of this division:

(a) "Account" means the Marine Life Restoration Account established pursuant to subdivision (c) of Section 30972.

(b) "Capacity utilization rate" means the ratio between the average annual net generation of power, in megawatthours, and the total net capability of the facility to generate power, in megawatts, multiplied by the number of hours during the year.

~~(b)~~

(c) "Conservancy" means the State Coastal Conservancy established pursuant to Section 31100.

~~(c)~~

(d) "Fund" means the Coastal Trust Fund established pursuant to subdivision (a) of Section 31012.

~~(d)~~

(e) "Industrial facility" includes, but is not limited to, a desalination facility. "Industrial facility" does not include a scientific research facility or a recreational facility *, such as an aquarium* .

~~(e)~~

(f) "Once-through cooling" means a system that uses an open ~~ocean~~ *seawater* intake to pump seawater from an ocean *, estuary,* or bay and then discharges the water after only one cycle of cooling.

~~(f)~~

(g) "Open ~~ocean~~ *seawater* intake" means a conduit for seawater intake that is above the seafloor. "Open ~~ocean~~ *seawater* intake" does not include a well, gallery, or any other subseafloor seawater intake.

~~(g)~~

(h) "Powerplant" means an electrical generating facility, including a nuclear thermal powerplant.

~~(h)~~

(i) "Seawater" means saltwater that resides in the ocean *, an estuary,* or a bay within the waters of the state.

~~(i)~~

(j) "State agency" means the state or any agency or department of the state.

~~(j)~~

(k) "State board" means the State Water Resources Control Board established pursuant to Section 175 of the Water Code.

CHAPTER 2. OPEN ~~OCEAN~~ SEAWATER INTAKE

30971. Notwithstanding any other provision of law, a state agency shall not authorize, approve, or certify any of the following:

(a) A new powerplant or a new industrial facility that first commences operation on and after January 1, 2010, if that powerplant or industrial facility would use ~~an open ocean intake.~~

~~(b) A new open ocean intake that first commences operation on and after January 1, 2010.~~

~~(c)~~ – ~~The expansion of an existing open ocean intake.~~ *once-through cooling.*

(b) The expansion of an existing open seawater intake at a powerplant, unless the expansion is necessary to convert a once-through cooling system to an alternative cooling system.

30971.1. A state agency shall not authorize, approve, or certify the use of a new, expanded, or existing open seawater intake for the purpose of desalination unless it has made, during a public hearing, supported by substantial evidence in the record, the following findings: ____.

~~30971.5. (a) On and after January 1, 2015, a powerplant shall not use a once-through cooling system that uses an open ocean intake.~~

~~(b) An open ocean intake, the use of which is prohibited pursuant to subdivision (a), shall not be used for any other purpose, including desalination.~~

30971.5. (a) On and after January 1, 2015, a powerplant with an

average annual capacity utilization rate of 20 percent or less from the year 2006 to the year 2008, inclusive, shall not use a once-through cooling system.

(b) The state board shall expeditiously, and no later than March 1, 2010, adopt and implement a schedule to phase out once-through cooling at all powerplants other than those described in subdivision (a).

(c) Each regional water board shall review and reissue a powerplant's national pollutant discharge elimination system (NPDES) permit for that powerplant's once-through cooling system within six months of the expiration of that permit, or by July 1, 2010, for those permits expired as of January 1, 2010. The permit shall address only the following:

(1) The use of open seawater intake for cooling purposes by a powerplant.

(2) The incorporation of the phaseout dates for once-through cooling pursuant to this section.

(3) The full implementation of cooling water intake structure requirements in Section 316(b) of the federal Clean Water Act (33 U.S.C. Sec. 1344 et. seq.), as that section read on October 18, 1972, and consistent with the best professional judgment of the regional water boards, until applicable final regulations are adopted and implemented by the United States Environmental Protection Agency.

CHAPTER 3. SEAWATER INTAKE FEE

30972. (a) ~~From January 1, 2011, to December 31, 2014, inclusive, each~~ *Each* operator of a powerplant ~~or industrial facility~~ using a once-through cooling system shall pay to the state board a fee that is based on the amount of seawater, as determined by the state board, that is removed by the powerplant ~~or industrial facility~~ for purposes of once-through cooling.

(b) An industrial facility, approved by a state agency after January 1, 2010, using an open seawater intake shall pay to the state board a fee that is based on the amount of seawater, as determined by the state board, that is removed by that facility's open seawater intake.

~~(b)~~

(c) The fee for seawater *taken by an open seawater intake or* used for once-through cooling shall be ~~fifteen one hundred thousandths dollars ($0.000015)~~ ____ *($____)* per gallon.

~~(c)~~

(d) The state board shall collect the fee in a manner determined by the state board and, after payment of its administrative costs of collection, deposit the revenue from the fee in the Marine Life Restoration Account, which is hereby created in the fund.

(e) The fees required pursuant to this division shall not be considered as a mitigation for the impact associated with once-through cooling or open seawater intake, and shall not diminish an obligation to account for or mitigate the impact pursuant to any other law.

30973. (a) The account shall be administered by the conservancy.

(b) ~~Notwithstanding Section 13340 of the Government Code,~~

~~the~~ *The* moneys in the account ~~are continuously appropriated, without regard to fiscal year,~~ *shall be expended, only upon appropriation by the Legislature in the annual Budget Act,* as follows:

(1) ~~To~~ *By* the conservancy and the state board, to reimburse the costs of administration and implementation of this division.

(2) ~~To~~ *By* the conservancy, for direct expenditure and award of grants for projects and activities, as authorized by the Ocean Protection Council, that address the negative impacts of once-through cooling systems on the mortality of all forms of marine life and marine habitat.

(3) By the state board to provide grants to powerplants currently using once-through cooling if the powerplant can certify that it is repowering for more efficient, cleaner generating equipment that does not use once-through cooling.