

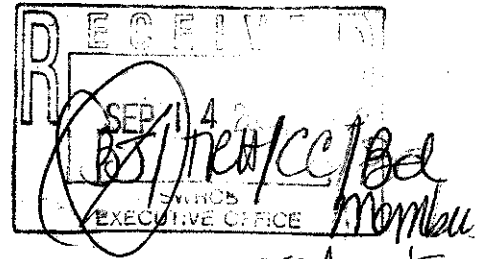
Environmental Health Coalition

COALICION de SALUD AMBIENTAL

401 Mile of Cars Way, Suite 310 ♦ National City, CA 91950 ♦ (619) 474-0220 ♦ FAX: (619) 474-1210
ehc@environmentalhealth.org ♦ www.environmentalhealth.org

September 11, 2006

Chairwoman Tam Dudoc and State Water Board Members
State Water Resources Control Board
PO Box 100
Sacramento, CA 95812



RE: Environmental Health Coalition Support for Strong phase-out policy for OTC

Dear Chairwoman and Board Members:

Environmental Health Coalition (EHC) is a 26-year old, grassroots, environmental justice organization based in the San Diego/Tijuana region. We work to protect human health and the environment from the impacts of industrial pollution. The issue of once through cooling is an issue of great significance to us and we urge that swift action be taken to ensure the phase out of this destructive and archaic technology by the State Water Board.

EHC has worked to cleanup, restore, and protect San Diego Bay since 1987. We have been involved in every major action related to the Bay's environmental health and we were the leader in establishing protection of South Bay as a National Wildlife Refuge in 1999.

By far, the largest and most acute and devastating impact to marine life in the Bay is the cooling system of the South Bay Power Plant. The South Bay Power Plant is a 65 year old generation facility that utilizes San Diego Bay as much as 600 million gallons a day of water for its once-through cooling system. This water is chlorinated, de-chlorinated, heated to very high temperatures then discharged back into the Bay. The intake and discharge are located in the most sensitive shallow water and mudflat habitats in San Diego Bay and the results are devastating. That is could continue with no end in site is unconscionable.

The concerns over OTC are real. For decades, study after study has shown a myriad of serious impacts from this cooling system on the Bay ecosystem. It is well established that once-through cooling processes are devastating to marine life in the shallow bays and estuaries like San Diego Bay and in the near-shore zones in the ocean. These areas are the most biologically productive marine zones and absolutely the worst place to allow these impacts to continue. Many studies, even those conducted by the power plant owners themselves, have demonstrated massive impacts to the marine life in the Bay. Here are just a few examples:

IMPACTS ON FISH AND BIRD USE

The most recent study of entrainment impacts, (and we must note this was funded and conducted by the discharger) demonstrated very significant entrainment of larval stages of three species of gobies, anchovies (a critical prey species for endangered California Least terns),

silversides, blennies, and mudsuckers. These losses were reported to be between 13% of the adult anchovy population to losses of 50% for larval populations of some species. The Regional Water Board, the Dept. of Fish and Game, and the National Marine Fisheries Service **have all determined that these impacts are significant.**

In one assessment, the hundreds of thousands of fish lost were impinged and 93% of the fish impinged were anchovies. While the discharger dismissed this as insignificant because anchovies are not a commercially or recreationally caught fish, they missed the point entirely. The anchovy is a critically important species in the food web for South San Diego Bay. The anchovy and the silverside are key prey species for all of the fish eating birds in South San Diego Bay. This includes endangered, threatened, and sensitive species that live and nest in South San Diego Bay. South San Diego Bay is a very important place if you are a tern of any kind. It is the only site in North America supporting a variety of tern species and has provided nesting activity for up to eight species of terns at a time and it is one of only six nesting sites in the world for the Elegant tern.

Loss of a prey base for these species can be significant. To understand the relevance of this of this one only needs to look at the nesting records on the salt levees which are located directly adjacent to the discharge channel. For example, in the same year the most recent impingement study occurred there were 10,000 Elegant tern nests, 500 Black Skimmer nests, 62 Least Tern nests, and over 300 Caspian tern nests. These fish are necessary to the nesting and fledging success of these species.

The past information on the cooling was no better. In 1979, the plant killed 8 million gobiids (goby-type fishes) in 1979, 240,000 anchovies, and 42,000 topsmelt.

EHC works with a number of local recreational and sportfishers who have considerable experience in and around San Diego Bay. When asked how important anchovies as a prey fish to fish in San Diego Bay, one of the owners of a large sportfishing fleet had this to say "*...every fish in the south bay eats Anchovies. In fact it is the primary forage fish for most species. There has been a shortage of Anchovies the last 10 years. To all fish in San Diego bay the desire to eat Anchovies is similar to a humans interest in breathing oxygen.*" Further, he shared that one of the men who works for him had documented that in past years that workers at the power plant reported the following species are regularly sucked up against the grate:

- (1) Blue crabs
- (2) Green sea turtles
- (3) Brown ridge back shrimp (endangered)
- (4) Lobsters
- (5) Anchovies and Anchovettas
- (6) Halibut
- (7) Mullet
- (8) Juvenile sharks, rays, etc.

These highly impinged species are also a significant prey fish for other fish. The impacts to the Bay fishery are largely unquantified.

THE OTC IN THE BAY SIGNIFICANTLY IMPACTS THE BENTHOS AS WELL.

- In a recent permit renewal, the local Regional Water Quality Control Board staff found that benthic invertebrates have been degraded due to the once-through cooling water. Among other impacts, the Regional Board also found that, because of the power plant discharge, up to 104 acres of the critical eelgrass habitat has been precluded in the South Bay. This habitat is important as turtle foraging and fish habitat.
- An independent assessment by the Pisces Conservation Ltd in July of 2004, reaffirmed the significant impacts of the cooling system on the Bay fishery and marine life. We are submitting this report into the record.
- Our own local marine ecology expert, Dr. Richard Ford, Professor Emeritus of Biology of San Diego State University reported in April, 2003 that the thermal impacts of the power plant discharges had adverse effects on several major groups of benthic invertebrates by reducing the number and diversity of species. We are submitting this report into the record.

NEGATIVE IMPACT TO FISH NURSERY VALUE OF SOUTH SAN DIEGO BAY

Many species of fish depend on the shallow water estuarine habitat for a portion of their reproductive cycle. One impact that is seldom discussed in the case of South Bay is the impact to the juvenile halibut nursery in South San Diego Bay. The California halibut is important to the ecology and fisheries of southern California. It appears that temperature, turbulence, and sediment characteristics (related to turbulence) are important factors determining whether juvenile halibut will settle in an area. Juveniles tend to be found in areas with higher oxygen concentrations and settlement of halibut has been found to decrease rapidly above 72°F. The power plant discharge water is as high as 104 degrees F.

A study of the distribution of juvenile halibut revealed that there were about half as many in San Diego Bay as compared to Mission Bay even though San Diego Bay is approximately five times the area of Mission Bay. The density in shallow water habitats (less than 1 meter in depth) was found to be 21 per hectare in Agua Hedionna, 66 per hectare in Mission Bay, and **less than 1 per hectare in San Diego Bay**. The impacts of the power plant cooling system and the turbulence created by it are clearly impacting the early life stages of this species. This impact has never been acknowledged much less mitigated.

The list of impacts from just this one cooling system goes on and on including the impacts of the heat, chlorination, sloughing of zinc and copper from the pipes, recirculation and re-chlorination of the discharger water, reproduction and growth rates, and more.

All of these impacts are well documented in numerous studies. We are also submitted into the record the San Diego Bay Council's *Deadly Power* that collated much of the data on the South Bay power plant in 2003.

SAN ONOFRE FISH KILL

Looking at other plants elsewhere in our region, consider the recent fish kill due to entrainment into the SONGS cooling system reported in the North County Times on August 22 of this year. More than **5 tons of anchovies** were wiped out in a single event in the SONGS cooling system. This power plant processes **2.5 billion** gallons a day of ocean water. We will provide this news article for the record.

Last, the cumulative impacts of these cooling systems statewide are having an impact of huge proportions. The June 2005 staff report issued by the California Energy Commission states that cumulative impacts of impingement at Southern California Coastal Power Plants may be as **high as 30%** of the fish caught in the Southern California recreational fishery. This did not even include impacts from Encina or the South Bay power plant.

We feel compelled to point out that at the same time the state is considering potentially significant restrictions on recreational fishing, the state is allowing these massive, and avoidable, "taking" of thousands of species and untold billions of individuals that are important links in the marine ecosystem of our waterways.

Technology is readily available, like dry cooling, that can eliminate this impact altogether. Dry cooling technology has been easily incorporated in many other facilities across the country, including one proposed plant that is 10 miles from the South Bay power plant. All new plants should be required to implement dry cooling technology and old plants that intend to remain operational for 5 more years should be required to retrofit this technology.

Continuation of these significant and avoidable impacts are no longer acceptable and the State Board should act to bring this era of excessive damage to sensitive resources to a close. We urge the State Board in strongest possible terms to develop and implement an aggressive policy to rid the state of this destructive technology and allow us to take this major step toward restoration of our marine ecology and fishery.

We have attached for your review a Fact Sheet that we contributed to and have filed with the State Board that includes the citations and resources we discuss here. We strongly urge the State Board to take aggressive action on this issue.

Thank you very much for your consideration.

Sincerely,



Laura Hunter, Director
Clean Bay Campaign

**OTC Facility Fact Sheet
South Bay Power Plant, Chula Vista**

Power Plant Name: South Bay Power Plant

Power Plant Location: Chula Vista, California

Location of Discharge: South San Diego Bay directly adjacent to a National Wildlife Refuge

SLC Lessee/Operator and Lease Term:¹

Plant Operator and Legislative Grantee Info.:² The Port District owns the land. The power plant is currently owned by Duke Energy but has recently been sold to LS Power

Type of habitat discharged into and special features: Shallow subtidal, mudflats, very sensitive marine ecosystem, juvenile halibut nursery

Environmental impacts of discharge:

Several studies done on the OTC impacts of the South Bay Power Plant have demonstrated significant impacts to the marine life in the Bay.

- The most recent study of entrainment impacts, (and we must note this was funded and conducted by the discharger) demonstrated very significant entrainment of larval stages of three species of gobies, anchovies (a critical prey species for endangered California Least terns), silversides, blennies, and mudsuckers. These losses were reported to be between 13% of the adult anchovy population to losses of 50% for larval populations of some species. The Regional Water Board, the Dept. of Fish and Game, and the National Marine Fisheries Service **have all determined that these impacts are significant.**
- Findings in a recent permit renewal for the by the local Regional Water Quality Control Board staff found that biotic communities near the discharge point and in the discharge channel have been degraded due to the once-through cooling water. The Regional Board also found that, because of the power plant discharge, up to 104 acres of the critical eelgrass habitat has been precluded in the South Bay. This habitat is important as bird and turtle foraging and fish habitat.
- An independent assessment by the Pisces Conservation Ltd in July of 2004, reaffirmed the significant impacts of the cooling system on the Bay fishery and marine life.

¹ For facilities operating under SLC lease.

² For facilities operating under legislative grant.

- SDSU Professor Emeritus of Biology, Dr. Richard Ford, reported in April, 2003 that the thermal impacts of the power plant discharges had adverse effects on several major groups of benthic invertebrates by reducing the number and diversity of species.
- Studies of halibut in the region show that South San Diego Bay is underproducing halibut as compared to what would be expected for a habitat its size. As you may be aware, the power plant discharge heats the habitat where juvenile halibut would be expected to thrive to temperatures that exceed their tolerance for heat.
- Loss of a prey base for these species can be significant. To understand the relevance of this of this one only needs to look at the nesting records on the salt levees which are located directly adjacent to the discharge channel. For example, in the same year the most recent impingement study occurred there were 10,000 Elegant tern nests, 500 Black Skimmer nests, 62 Least Tern nests, and over 300 Caspian tern nests. These fish are necessary to the nesting and fledging success of these species.

Citations to studies of impacts:

NPDES Order No. R9-2004-0154 for Duke Energy South Bay, LLC, South Bay Power Plant, Adopted November 10, 2004

Ford, R.F. 2003. Recommended Options for Maximum Water Temperature Limits and Minimum Dissolved Oxygen Limits at a Compliance Point for Discharges from the South Bay Power Plant in San Diego Bay, Necessary to Protect Beneficial Uses. Prepared for San Diego Bay Council, April 4, 2003.

Ford, R.F. and R.L. Chambers. 1973. Biological Studies at the South Bay Power Plant. Final Report, Vols. 5A & B Biological Studies. Prepared for San Diego Gas & Electric Company by Environmental Engineering Laboratory, San Diego CA.

Ford, R.F. and R.L. Chambers. 1973. Biological Studies at the South Bay Power Plant. Final Report, Vols. 5A & B Biological Studies. Prepared for San Diego Gas & Electric Company by Environmental Engineering Laboratory, San Diego CA.

Ford, R.F. and R.L. Chambers. 1974. Thermal Distribution and Biological Studies for the South Bay Power Plant. Sept. 1972-Aug. 1973. Final Report. Volume 5C, Biological Studies. Prepared for San Diego Gas & Electric Company by Environmental Engineering Laboratory, San Diego, CA.

R.M.H Seaby, *Notes on South Bay Power Plant (SBPP) 316 (a) & (b)*, Pisces Conservation Ltd. IRC House, The Square, Pennington Lymington SO41 8GN, England. Prepared for San Diego Bay Council. (July 29, 2004) ("Pisces Report")