

Mounting State Criticisms of Nuclear Power Stations Fish Kills and Habitat Destruction
By Paul Gunter, NIRS
August 18, 2003

While the Nuclear Energy Institute, the industry lobby group, continues to tout nuclear power as environmental friendly, the once-through cooling system used by the majority of U.S. nuclear power stations has again come under increased criticism by two different state authorities. Both the New York State Department of Environmental Conservation and the California Regional Water Quality Control Board Central Coastal Region criticized the use of coastal and river water to cool nuclear power stations. State authorities concluded that the routine operation of nuclear power stations is killing billions of fish and destroying marine and aquatic habitats by sucking in tremendous amounts of water each day and spewing it out as hot water. Nuclear power stations like Entergy's Indian Point on the Hudson River in New York and Pacific Gas & Electric's Diablo Canyon on the central coast of California take in over 2.5 billion gallons of water each day per site in order to quench the atomic power-generated steam used to spin turbines for electricity production.

A study performed by the New York Department of Environmental Conservation and publicly released on July 11, 2003 looked not only at Entergy's two atomic units at Indian Point, representing the Hudson River's number one largest thermal polluter, but also the river's sixth and the seventh largest fossil fueled units using once-through cooling systems. The electrical power facilities combined take in 1.69 trillion gallons of water annually, more than three times the water used each year by New York City's 9 million residents and two neighboring counties. The study found that the greatest harm came from billions of fish and larvae being sucked in (entrained) into the station cooling condensers and killed upon discharge to the river with the heated water (up to 35° hotter than the intake water temperature). The state study further concluded that there was greater harm from the heated water being discharged back into the Hudson's tidal estuary than previously assumed. The three electrical generating facilities' combined thermal discharge, 220 trillion BTUs per year, is the equivalent amount of heat generated by the detonation of a Hiroshima-size nuclear bomb approximately every two hours.*** As a result entire species of fish and vegetation are disappearing from larger reaches of the river, victims of the hot water discharge.

On July 10, 2003, the California Regional Water Quality Control Board for the Central Coast regarded the same destruction to the coastal marine environment of Diablo Cove from the two 1000 megawatt units of the Diablo Canyon nuclear generating station. The coastal water commission withdrew its support from an earlier proposed settlement which would have required PG&E to conserve 2000 acres of land north of the reactor and pay out \$4 million toward marine restoration projects, including abalone breeding and repopulation of coastal waters. In the end, the water board rejected the proposal after environmental groups, including Earth Corp, Mothers For Peace, and NIRS, along with a state team of marine biologists criticized that the settlement would not offset the ongoing marine damage from the continued operation of the cooling system. The coastline thermal impact zone was found to be larger than predicted. Field's Cove, intended as a

coastline control zone for studying the station's discharge impact on Diablo Cove, is periodically thermally polluted by the reactors nearly two miles away. The actual discharge impacts include major reductions of fish species and habitat, including the almost complete loss of some marine species and major increases of "bare rock" in Diablo Cove. The state authority and PG&E now must go back to the drawing board for a solution which could include a state issued Cease and Desist Order on the operation of Diablo Canyon.

In both cases, under the Clean Water Act state authorities could order the nuclear power stations to cease using river and coastal water as their primary source to cool the reactors and switch to cooling towers. Such enforcement is highly unlikely without the presence of significantly more public pressure. While cooling towers use an order of magnitude less water resources (30 million gallons per day) nuclear power companies vehemently argue that their construction and reduced cooling efficiency is economically prohibitive. Such financially-driven opposition through "cost/benefit analyses" has repeatedly blocked environmental efforts to upgrade stations that rely upon the wasteful and harmful system. However, the growing destruction of the marine and aquatic environment is potentially irreversible if the operation of once-through cooling is allowed to continue unchecked. More reason to call for the abolition of nuclear power, altogether.