

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE (415) 904-5200
FAX (415) 904-5400
TDD (415) 597-5885



November 30, 2010

Dr. David Kay
Southern California Edison Company
P.O. Box 800
Rosemead, CA 91770

Re: Compliance with Condition B of the SONGS Permit No. 6-81-330-A:
SCE's 2009 Annual Marine Environmental Analysis Report

Dear David:

On October 12, 2000, the California Coastal Commission concurred with the Executive Director's determination regarding the fish behavioral barriers required by Condition B of the coastal development permit for the San Onofre Nuclear Generating Station Units 2 and 3 (No. 6-81-330-A, formerly 183-73). (See staff report entitled *Executive Director's Determination that Fish Behavioral Barriers Tested at SONGS are Ineffective*, dated September 22, 2000.) As part of that permit compliance action, the Executive Director specified continuing monitoring requirements, which included submission of a written report of the Fish Chase procedure used at the plant.

As required, SCE submitted the 2009 Annual Marine Environmental Analysis Report for the San Onofre Nuclear Generating Station. Chapter 4 of the report contains an assessment of in-plant fish, which includes data and analysis of the Fish Chase procedure.

We have reviewed the 2009 report and specifically we note the following:

- 1) The impingement for the year was about 58,978 kg (2,064,517 individuals), which was more than double the long term average of 27,495 kg (figure 1).

[SCE suggested that higher than typical impingement may have been due to a one day normal operation sample from May 2009.]

- 2) The Fish Chase procedure resulted in 2436 kg of fish returned live to the ocean, which was much less than the long term average of 5842 kg (Figure 1).
- 3) For the year 2009, the Fish Chase effectiveness relative to impingement was 4.13% (Figure 1), which is considerably below the 10% target value, and was the lowest value ever recorded for the procedure (since 1992).

[SCE provided no explanation of possible causes for the fish chase procedure not attaining the target value of 10% (relative to impingement).]

- 4) Species of special interest were impinged in 2009 (which is typical). [Note: numbers for fish are based on extrapolation of sampled impingement during normal operation + actual impingement during heat treatments. This was not done in reports earlier than 2007]. Species included:

Species	Status	Impinged and killed	Returned alive
California halibut	Important sport and commercial fish	145	0
Cabazon	Species of special concern	54	3
Bocaccio	Species of special concern	164	0
Giant seabass	Protected in CA	1	11
Kelp bass	Important recreational fish	61	44
White seabass	Import sport and commercial fish	1489	9

Mammals and turtles affected by operations

Species	Mammals and Turtles	Found Dead	Returned Alive
California sea lion	Marine mammal protection act	19	1
Harbor seal	Marine mammal protection act	9	4
Green sea turtles	Endangered species act	0	1
Olive Ridley Sea Turtle	Endangered species act	0	1

- 5) Mortality rates (defined as “the biomass of fish killed during a heat treatment divided by the biomass of fish entrained (fish impinged plus fish returned alive via the FRS)) during the fish chase procedures were unusually high during 2009. Higher than normal mortality is defined as (1) a sequence of three or more heat treatments where the mortality rate exceeds 50%, (2) more than 50% of heat treatments in a given year have more than a 50% mortality rate, or (3) mortality rate

for the year exceeds 50%. For Unit 3, 6 of the 8 heat treatments (including a sequence of 5 consecutive heat treatments) had a mortality rate >50%.

Hence, the results of Chapter 4 indicate that the operation of the Fish Chase procedure during 2009 was not consistent with the standards enumerated in the Executive Director's determination.

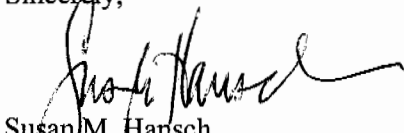
Commission staff continues to be concerned about the sampling change that occurred during 2007. As SCE noted, the accuracy of the impingement assessment increased over 2006-2007 because of the increased sampling that occurred as part of the 316B study. We note that in the 2 years preceding 2006-2007, estimated impingement was higher than normal and the estimated effectiveness of the Fish Chase Procedure was lower than 10%. This is the same result attained in 2009. We previously expressed concern that SCE's return to a reduced sampling design may lead to inaccuracies in future assessments and potentially spurious conclusions concerning the effectiveness of the Fish Chase Procedure. That concern is heightened by the results for 2009.

SCE has contended that the current sampling is adequate. By accepting this contention, Commission staff must conclude that the fish chase procedure was ineffective in 2009. We also conducted further analysis to investigate the relationship between impingement and the effectiveness of the fish chase (Figure 2) and the results of this analysis indicate that the efficiency decreases with increasing impingement, a result that is of great concern. We believe that the result is consistent with inadequate sampling because single events have such potential to produce inaccurate and high estimates of impingement.

Based on the results for 2009, staff recommends that SCE provide an update that addresses: (1) any changes that are either envisioned or required to reduce entrainment and impingement based on changes to federal and state law regulating once-through cooling, and (2) a new assessment of the adequacy of the current sampling program. In addition, CCC contract scientists and scientific advisory panel will review the current industry standard for "technologies or techniques for fish protection" with respect to decreasing impingement and entrainment.

Thank you for your continuing cooperation with the Commission staff in addressing the Commission's behavioral barriers permit condition.

Sincerely,



Susan M. Hansch
Chief Deputy Director

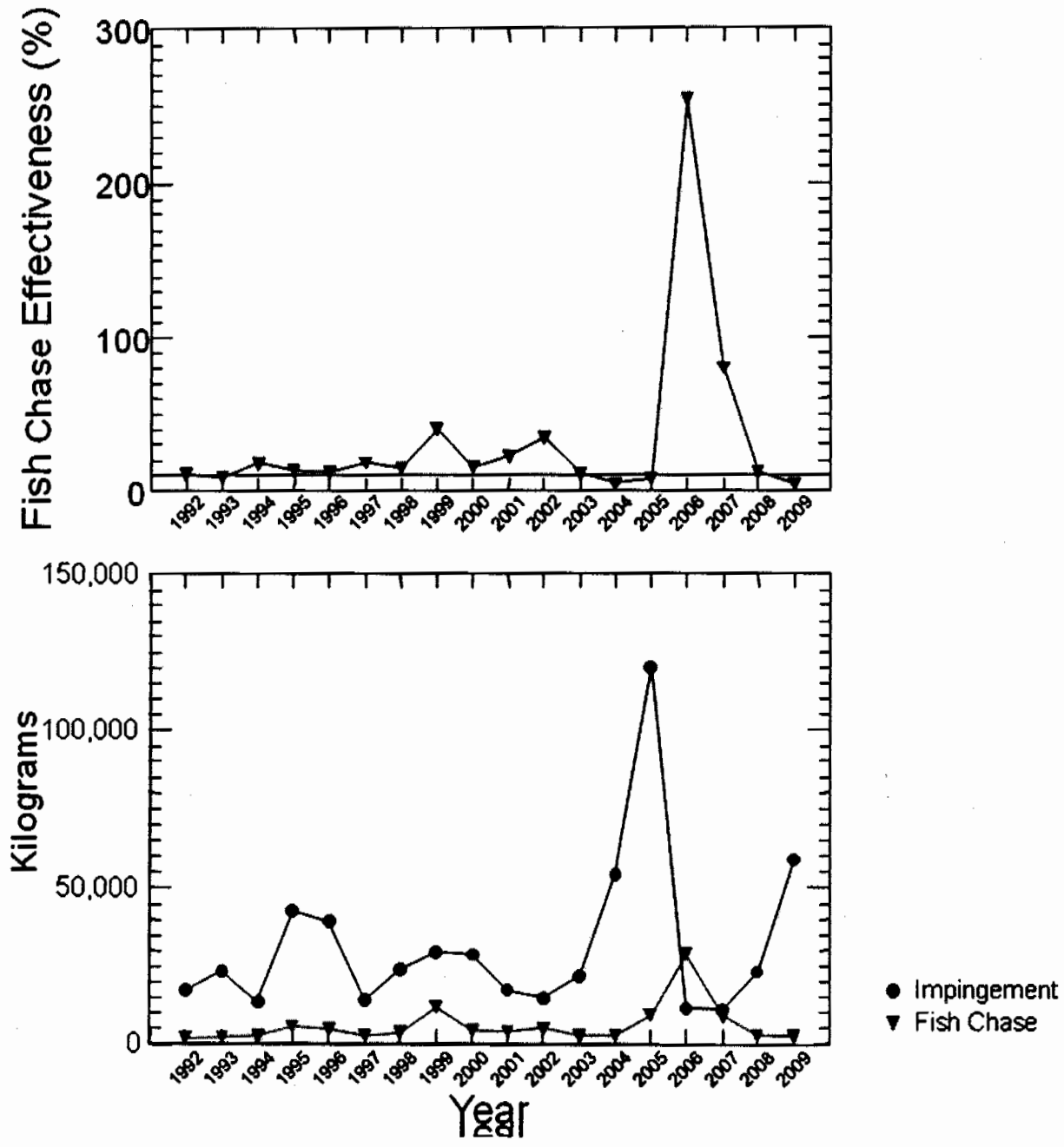


Figure 1. Top: Effectiveness of fish chase procedure for the period 1992-2009. Bottom: Impingement and Fish Chase (returns) for the period 1992-2009.

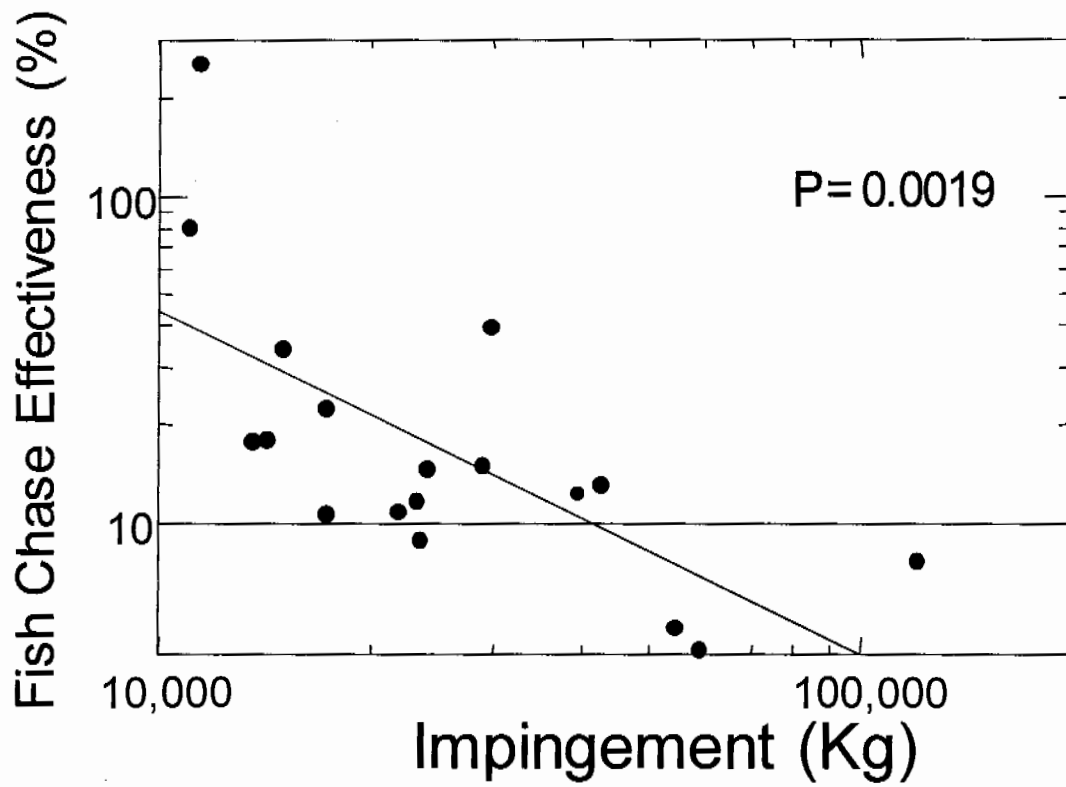


Figure 2. Relationship between impingement and the effectiveness of the fish chase procedure.