

R. L. Dean, Director
Division of Reactor Licensing

June 6, 1966

J. F. Newell, Chief, Site-Environmental
Branch, Division of Reactor Licensing

STACK EMISSION RATE FOR HUMBOLDT BAY - DOCKET NO. 50-133

To describe the basis upon which the presently authorized stack emission rate for the PG&E Humboldt Bay reactor facility was established I requested Bob Waterfield to prepare a memorandum setting forth the detailed analysis that was made in setting this value. Attached hereto is a copy of the memorandum that Bob prepared to describe the calculations that were made.

As indicated by Mr. Waterfield's memorandum the stack emission rate of 50,000 uc/sec. was established only after a very detailed analysis of the information that was available. This emission rate was coupled with other requirements, i.e., the requirements for operating at least thirty off-site monitoring stations to measure radiation levels in the Humboldt Hill area, the requirement for reducing power level or taking other preventive measures for reducing the emission rate to the authorized level if this level is exceeded for more than a week, the requirement that the maximum instantaneous level shall not exceed 10 times the authorized annual average rate, and the automatic shutdown if the maximum instantaneous rate is exceeded for 10 minutes.

In addition to Mr. Waterfield's memorandum I requested Irwin Spickler to make an independent calculation of the stack emission rate for this facility utilizing the same data that was used by Bob Waterfield and which was contained in the Final Hazards Summary Report provided by PG&E. At my request Mr. Spickler did not attempt to make a detailed analysis but rather to make a set of calculations that would be adequate to serve as an independent check on the validity of the licensed value. A copy of Mr. Spickler's memorandum is also attached.

Attachments
As stated above

OFFICE ▶					
SURNAME ▶		8602240481	851212		
DATE ▶		PDR	FOIA		
		FIREST085-665	PDR		

UNITED STATES GOVERNMENT

Memorandum

TO : L. Kornblith, Jr., Assistant Director for Reactors, Division of Compliance, Headquarters

DATE: June 8, 1966

FROM : R. H. Engelken, Senior Reactor Inspector
Region V, Division of Compliance

SUBJECT: COMPLIANCE INQUIRY MEMORANDUM
PACIFIC GAS & ELECTRIC CO.
HUMBOLDT BAY REACTOR
DOCKET NO. 50-133

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RECEIVED
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J.S. ATHERTON
PACIFIC GAS & ELECTRIC CO.
HUMBOLDT BAY REACTOR
DOCKET NO. 50-133

The attached memorandum report by A. G. Johnson, Radiation Specialist, Region V, Division of Compliance, titled "Zinc-65 in Oysters" is forwarded for information.

You will recall that OO Report No. 133/6-2 contained information concerning the concentration of zinc-65 activity in oysters grown by Pacific Gas & Electric Co. in the outfall canal of the Humboldt Bay Reactor. Although our preliminary evaluation indicated that the situation did not present a hazard to the health and safety of the public, we considered it appropriate to study the matter further in view of the commercial oyster industry which operates in the vicinity of the reactor.

Two independent analyses of available data were performed, one by H. R. Denton, CO, Headquarters and the attached analysis by A. G. Johnson. Results of Denton's analysis were reported to the writer in a memorandum dated May 12, 1966. Denton concluded that consumption of oysters from the Humboldt outfall canal at the rate of one meal per week would result in a whole body exposure of about 0.007 rem/yr. Results of Johnson's analysis are in very close agreement with this conclusion. In addition, Johnson's report includes a number of different values which correlate zinc-65 intake and annual exposure at various rates of oyster consumption for three selected zinc-65 concentrations in Humboldt area oysters.

It is important to note that Denton's conclusion is based on the highest observed zinc-65 concentration (100.0 pc/gram), i.e. from oysters grown in beds under the direct control of the licensee. These oysters, of course, would not be available to the public. Average concentrations in oysters from unrestricted waters in the Humboldt Bay would be substantially lower, i.e. approximately 3.0 pc/gram. This would indicate that these oysters could be consumed at the rate of one meal per week with an estimated annual whole body exposure of only 0.00021 rem.

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L. Kornblith, Jr.

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June 8, 1966

Based on the data presented in the attached report, we conclude that zinc-65 concentrations in Humboldt Bay oysters present no health and safety problems at this time and that substantial increases in zinc-65 concentration could be tolerated without exceeding recommended limits.

Attachment:

As stated

cc: B. Grier, CO:HQ
E. G. Case, DRL:HQ (2)
R. S. Boyd, DRL:HQ
R. G. Page, SLR
CO:HQ file
J. P. O'Reilly, CO:I
M. L. Ernst, CO:II
H. D. Thornburg, CO:III
J. W. Flora, CO:IV

