

J. P. O'Reilly, Chief, Reactor Inspection  
and Enforcement Branch, Division of Compliance, HQ

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G. S. Spencer, Senior Reactor Inspector  
Region V, Division of Compliance

ORIGINAL SIGNED BY  
G. S. SPENCER

DIABLO CANYON AEC PUBLIC HEARING

CO:V:GSS

Messrs. G. S. Spencer and A. D. Johnson attended the public hearing held by the Atomic Safety and Licensing Board on February 20 and 21, 1968, at San Luis Obispo, California. The purpose of the hearing was to consider PC&E's application for a provisional construction permit for a pressurized water reactor, to be located at the applicant's Diablo Canyon site near San Luis Obispo, California.

In summary, the hearing moved forward without undue delay or unexpected developments. The Scenic Shoreline Preservation Conference, an intervenor opposing the application, was primarily represented by Dr. Nash, a History Professor at the University of California, Santa Barbara. His approach was one of opposing construction of the plant on the general proposition that nuclear reactors were inherently ultrahazardous and, therefore, should not be constructed or operated on the face of the earth. He admitted, however, that his knowledge of nuclear energy was limited and that the true purpose of opposition was based on motives related to the organization's true purpose of conservation.

In addition to Dr. Nash, a Mr. Porter, an abalone diver, made a limited appearance to protest against thermal pollution. However, since the subject was not within the jurisdiction of the proceedings, his main item of concern was directed toward the effect that radioactivity in the liquid effluent discharged from the plant into the ocean might have on the local abalone. The Board followed through with questions to the applicant, the answers to which appeared to satisfactorily answer Mr. Porter's concerns.

The Board's main line of questioning, spearheaded by Dr. Pigford, concerned the research and development programs pertaining to the reactor design criteria, identified in the application (i.e., design of emergency core cooling system; final core thermal-hydraulic, nuclear and mechanical design parameters; and details of the containment spray system). The main purpose of this line of questioning appeared to be centered around the requirement that the Board must find that reasonable assurance exists at this time that the proposed development programs will produce satisfactory results and that acceptable alternate courses of action are available if the results were found to be unsatisfactory.

OFFICE ▶	CO:V	8209100096 820802		
SURNAME ▶	Spencer:vj	PDR FOIA		
DATE ▶	3/8/68	EISSLER82-286 PDR		

Notes jotted down during testimony and/or cross-examination involving representatives of the Scenic Shoreline Preservation Conference Incorporated are presented below. This organization was represented by Professor Roderick Nash, of the University of California, Santa Barbara, and a Dr. Isaac Farfel. According to Nash, the membership numbers approximately 250.

- A. Opening Statement by Professor Nash. Professor Nash indicated that he felt the Board should expect answers from the applicant regarding the following:
1. The Health, Education and Welfare task force finding regarding "Nuclear power plants being built without adequate knowledge of the facts by the population."
  2. Palladin's ACRS letter to Seaborg referencing the "large" earthquakes anticipated at the Diablo site. Also the ACRS belief that isolation of the site is essential to the health and safety of the public.
  3. PG&E's preliminary safety analysis report pertaining to wind data which shows that the wind is from the northwest 40 to 50 percent of the time. In view of the low level temperature inversion encountered south of the site, would areas such as Santa Maria, Lompoc, and Vandenberg Air Force Base be affected by release of effluents during an accident?
  4. What affect would an accidental release, caused for example by submarine sabotage, have on the missile defense capability of Vandenberg Air Force Base?
- Nash then quoted from Teller's 1965 paper in which Teller states that in principle reactors are dangerous - they won't blow up but they contain a much higher fission inventory. In addition, the reactor inventory would be distributed at a low level versus the high dispersion of the bomb. He also quoted Teller's statement and belief that reactors belong underground and referenced Sweden as an example. Connors and Phil Crane, PG&E, both interrupted at this point to object to what Nash was doing. They pointed out to the Chairman that if the questions were merely rhetorical and required no answer they had no problem. However, if Nash expected answers to these questions and was presenting them as a basis for cross-examination they should be considered improper as opening remarks.
5. Application of the Brookhaven Report to the Diablo Canyon facility (deaths, losses, etc.).

6. The Fish and Wildlife letter to Harold Price which stated that although the gaseous and liquid wastes which would be discharged to the atmosphere and ocean would not exceed the MPC, may be all right for man, but not necessarily for animals. The letter also apparently touched on the concentration and storage of isotopes by animal organisms - food chain problem - migratory animals and birds. Nash specified the chain problem involved with Diablo which includes the kelp, abalone (kelp eaters), and the human being at the end of the chain.

B. Nash Cross-examination of PG&E.

1. Would radioactive wastes be released in the effluents to the ocean?

Answer: Yes, but will be small quantities and well under 10 CFR 20 concentration limits.

2. Were these (environmental effects) studies done by PG&E or by others?

Answer: By PG&E and reviewed by consultants, Dr. Salo and Dr. Goldman.

3. Did these consultants do independent work or just review the PG&E work?

Answer: Primarily review of PG&E work.

4. Does PG&E feel that their studies answered the food chain concern uncertainties expressed in the Fish and Wildlife letter to Harold Price?

Answer: Yes.

5. What radionuclides will be released from the plant?

Answer: PG&E referred to volume 2 of their preliminary analysis safety report.

6. Is kelp a heavy concentrator of radioiodine?

Answer: Yes.

7. What do you mean when you say the reactor is located on an "isolated" site?

Answer: Westinghouse had to come to Schuyler's rescue at this point. Schuyler appeared to be somewhat ineffective in coping with the questions thrown at him by Nash. Westinghouse representatives indicated that they considered an isolated site to be one with low population densities.

8. Nash tried to get PC&E to admit that underground plant would have been safer. He continued to quote Teller on this. After much haggling Connor finally went on record that Nash was not reading all of Teller's paper and that it would be helpful if he did.

- C. Testimony by Dr. Ernest Salo. Dr. Ernest Salo, Associate Professor of Fisheries, University of Washington, offered the following information during his testimony.

1. The controlling isotope in the plant discharge water will be iodine-131 since it sets the lower limit on man's consumption of abalone. A concentration of  $10^{-9}$  uc/ml is anticipated at the present in the cooling water. This will be diluted to  $10^{-13}$  uc/ml in the discharge canal.
2. The Isaacs Committee Report indicates  $1.6 \times 10^{-6}$  uc/ml as the maximum allowable concentration in sea water.
3. The passage of time will not affect levels of concentration in organisms because once the level of concentration becomes constant the organism retains an equilibrium status which remains constant until the concentration in the environment changes. That is, the organism and the environment reach an equilibrium ratio (concentration factor) relative to one another.

- D. Cross-examination of Salo by Isaac Farfel (Scenic Shoreline).

1. In view of the finding that DDT has no concentration level ceiling in organisms, is this also true of radionuclides?

Answer: No.

2. Would organisms with a longer life span tend to concentrate higher levels of isotopes?

Answer: No.

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3. How about the final factor in the food chain (man)? If man eats the abalone, doesn't he ingest all the concentrated radionuclides?

Answer: Salo responded that this question had been answered by Dr. Goldman on the previous day (i.e., a man would have to eat 30 pounds of abalone per day for 365 days per year in order to reach the maximum allowable body burden limit).

cc: R. H. Engelken, CO:HQ