

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
UNITED STATES ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

April 18, 1963

Honorable Glenn T. Seaborg  
Chairman  
U. S. Atomic Energy Commission  
Washington 25, D. C.

Subject: REPORT ON BODEGA BAY ATOMIC PARK - UNIT #1

50-205  
suppl

Dear Dr. Seaborg:

At its forty-seventh meeting, April 11-13, 1963, the Advisory Committee on Reactor Safeguards considered the application by the Pacific Gas and Electric Company for approval of construction of a nuclear power unit at Bodega Bay Atomic Park, on Bodega Head, Sonoma County, California. The Committee had the benefit of discussions with representatives of the Pacific Gas and Electric Company, the General Electric Company, and the AEC Staff and their consultants. The application had also been reviewed with the applicant at a subcommittee meeting on March 20, 1963, and in a preliminary form at a subcommittee meeting on July 31, 1962. Members of the Committee viewed the site at an earlier date. In its deliberations, the Committee made use of the documents listed.

The site of the proposed nuclear power unit is on the Pacific coast, about fifty miles northwest of the City of San Francisco. Areas nearby are used for camping and picnicking, agriculture, and some commercial fishing. An adjacent tract of land is being acquired by the University of California as a field station for marine biology and other scientific studies. The reactor site proposed is about one thousand feet west of the San Andreas fault zone. The surrounding population density is relatively low. The plant will incorporate engineered safeguards.

The 1008 Mw(t) reactor plant proposed is of the forced-circulation, boiling water type. Pressure suppression confinement is to be used, with the reactor located in a dry well that is rated at 62 psi internal pressure, and is connected to a toroidal suppression chamber rated at 35 psi internal pressure. As proposed, the turbine and some associated primary piping as well as some other parts of the primary system, such as feed-water pumps and the primary water cleanup system, are not to be confined. All piping penetrations through the dry well wall are to be provided with isolation valves. The applicant states that all major lines that penetrate the dry well wall and open into the dry well or the nuclear steam

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are to be provided with two valves, one being remotely operated. Consideration should be given to the inclusion of additional operation valves in some of the primary system piping and to back a strainer before the main steam line isolation valve to prevent foreign matter from interfering with proper valve action.

Consideration should be given to providing the emergency system with pump back-up beyond that provided by the auxiliary power pump.

The Committee believes that the dry well and the suppression pool should be designed and built to permit leak testing at design pressure for the installation of all penetrations, and that design and construction should permit periodic leak testing at the suppression chamber design pressure. In the initial tests of the dry well, the leak rates should be determined as a function of the internal pressure, so that the results of subsequent tests at lower than dry well design pressure can be extrapolated with confidence.

In the unlikely event of a reactor accident, the emergency ventilation system is relied on to reduce the consequences. The Committee believes that this system should also be designed and constructed to permit frequent testing of the ability of the filtration and iodine removal units to meet their specified efficiency levels.

The requirements that are imposed on plant design because of location in an active seismic area have been considered by the applicant, and the referenced documents contain the recommendations of seismologists who have been consulted on this question. Tentative exploration indicates that the reactor and turbine buildings will not be located on an active fault line. The Committee believes that if this point is established, the design criteria for the plant are adequate from the standpoint of hazards associated with earthquakes. Careful examination of the quartz-diorite rock below should be made during building excavation, to confirm this point. Furthermore, the Committee suggests that, during design, careful attention should be given to the ability of emergency shutdown systems to operate properly during and subsequent to violent earth shocks, and to the stress effects that might be introduced because the reactor building and the turbine building are to be anchored in different geological formations. The need for earthquake-induced shutdown and isolation of the primary system can be considered at a later time.



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A meteorological tower has been erected on the site and analyses of the observations will be used to establish atmospheric dispersion coefficients, and as one of the bases for determining the height of the off-gas stack.

The applicant has submitted evidence to establish that the anticipated temperature changes in the ocean near the condenser coolant discharge point will not be great enough to cause appreciable influence on the local marine life. The expected release of radioactive effluent by the condenser coolant water will be at rates well below the 10 CFR 20 limits. In addition, the applicant has made arrangements to obtain environmental data on marine and land life in the neighborhood of the proposed plant both before and after reactor operation. These measures seem adequate to insure that the plant can be operated so as not to alter the local ecology or cause undesirable concentration of radioactivity in marine life.

The ACRS believes that, subject to the above conditions, the proposed reactor can be designed and built at the proposed location on Bodega Head with reasonable assurance that it can be operated without undue hazard to the health and safety of the public.

Sincerely yours,

/s/ D. B. Hall

D. B. Hall  
Chairman

References:

1. Preliminary Hazards Summary Report, Bodega Bay Atomic Park - Unit Number 1, dated December 28, 1962.
2. Amendment Number 1, Answers to Questions Raised by the Division of Licensing and Regulation Relative to Construction Permit Application, dated March 4, 1963.