

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

UNITED STATES ATOMIC ENERGY COMMISSION

WASHINGTON 25, D. C.

October 12, 1962

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

Subject: REPORT ON CITY OF LOS ANGELES WATER AND POWER DEPARTMENT
BOILING WATER AND PRESSURIZED WATER REACTOR PROPOSALS

Dear Dr. Seaborg:

At its forty-third meeting August 23-25, 1962 at Idaho Falls, Idaho, and at its forty-fourth meeting in Washington, D. C., October 4-6, and 12, 1962, the Advisory Committee on Reactor Safeguards reviewed the proposed, approximately 1600 MW(t), boiling water and pressurized water reactors one of which may be constructed and operated by the Department of Water and Power of the City of Los Angeles at a site designated as the "western site". The Committee had the benefit of several subcommittee meetings, the references listed below, and discussions with representatives of the Department of Water and Power of the City of Los Angeles, the General Electric Company, Westinghouse Electric Corporation, Stone and Webster Corporation, and the AEC staff.

The Committee in its reviews has focused its attention on the adequacy of engineered safeguards for the containment of any significant potential releases that might affect the health and safety of the public.

The large pressurized water reactor has, as a proposed engineered safeguard concept, a double containment vessel which completely encloses the primary system. Back pumping and monitored leakage of a porous "popcorn" concrete filled space between the containment walls and of all penetrations are provided. The system depends to some extent on keeping the space between the membranes at negative pressure. Redundancy in the pumping equipment is used to insure against failure. The containment membranes are independent as to leakage, but depend on the porous concrete for strength. The reinforced concrete on the outside augments containment vessel strength and provides shielding. The proposal includes holdup of routine radioactive gaseous release. In the opinion of the Advisory Committee on Reactor Safeguards this containment system is adequate.

The proposed large boiling water reactor has a pressure suppression system surrounded by an additional containment of the dry well and suppression pool. The primary steam line extends beyond this double containment to the turbine building. Containment of fission product release from an accident thus depends upon rapid closure of isolation valves. In view of the stringent requirements imposed by the site, it is the Committee's opinion that the containment as proposed is not adequate in some respects for this reactor at this site. The Committee also believes that holdup of routine gaseous releases will be necessary during unfavorable meteorological conditions.

The Advisory Committee on Reactor Safeguards believes that either reactor if provided with adequate containment of the primary system can be located at the western site with reasonable assurance that such reactor can be operated without undue risk to the health and safety of the public. It is believed also that this site may be adequate for multiple reactors assuming that suitable containment and confinement are provided.

Sincerely yours,

/s/
F. A. Gifford, Jr.
Chairman

References Attached (1 page)

References:

1. Letter dated April 25, 1962 from Los Angeles Department of Water & Power with attachment, NSS-1, Sketch of Proposed Changes.
2. Letter dated May 28, 1962 from Los Angeles Department of Water & Power transmitting Addendum to Preliminary Report - Proposed Nuclear Power Plant Ocean Sites, October 1961.
3. Letter dated June 13, 1962 from Los Angeles Department of Water & Power with attachments as indicated.
4. Preliminary Report on Safety Features of the Reactor and Its Containment for a Single Cycle, Forced Circulation Boiling Water Reactor, Addendum No. 1, dated June 15, 1962.
5. Letter dated August 9, 1962 from Los Angeles Department of Water & Power with attachment, Guillotined Main Steam Line.
6. Letter dated August 10, 1962 from Los Angeles Department of Water & Power with attachment dated August 8, 1962, Memorandum - Pressure Suppression - Nuclear Plant for the City of Los Angeles.
7. Letter dated August 16, 1962 from Los Angeles Department of Water & Power transmitting report, Safety and Site Considerations of a Large Closed Cycle Water Reactor Power Plant for the City of Los Angeles, dated August 8, 1962.