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ORIGINAL

Decision No. 82483

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

THE PEOPLE'S LOBBY,

Plaintiff,

vs.

SOUTHERN CALIFORNIA EDISON COMPANY and SAN DIEGO GAS and ELECTRIC COMPANY,

Defendants.

Case No. 9291
(Filed November 9, 1971; rehearing granted November 14, 1972)

Roger Diamond, Attorney at Law, Daniel F. Ford, Henry W. Kendall, and Edwin A. Koupal, for The People's Lobby, complainant.
Charles R. Kocher, Attorney at Law, for Southern California Edison Company; and Gordon Pearce and Friedman, Heffner, Kahan & Dysart, by Vincent P. Master, Jr., Attorney at Law, for San Diego Gas & Electric Company; defendants.
Janice E. Kerr, Attorney at Law, for the Commission staff.

O P I N I O N

On May 5, 1964, following five days of hearing, the Commission issued Decision No. 67180 (62 CPUC 651) authorizing Southern California Edison Company (Edison) and San Diego Gas & Electric Company (SDG&E) to construct and operate a nuclear plant at San Onofre.

On November 9, 1971 this complaint was filed by The People's Lobby (Lobby) alleging that defendants' San Onofre nuclear plant has basic flaws in the design of the emergency core cooling system demonstrated by recent tests conducted by the National Reactor Testing Station at Idaho Falls, Idaho, and that continued operation of this plant constitutes a threat of extreme harm to life and property within the State of California. Pending public hearing and resolution of the question of whether or not defendants' San Onofre nuclear generating plant may be operated as presently engineered without endangering the public safety, health, and welfare, Lobby requested the Commission to issue an order requiring Edison and SDG&E to cease and desist operation of the San Onofre nuclear generating plant.

Edison and SDG&E filed answers and also motions to dismiss the complaint on the ground that the Commission had no jurisdiction over the subject matter of the complaint. On January 26, 1972 the parties argued the motion and on July 18, 1972 the Commission issued Decision No. 80242 dismissing the complaint.

On August 7, 1972 Lobby filed an application for rehearing. Responses were filed by Edison on August 15, 1972 and by SDG&E on August 17, 1972. By Decision No. 80713 dated November 14, 1972 the Commission granted rehearing limited to the issues relating to the alleged new evidence claimed by Lobby and the jurisdiction of the Commission with respect to such evidence.

On January 9, 1973 a prehearing conference was held, and on February 15, 1973 a presiding officer's report of the prehearing conference was issued in which he ruled that a hearing would be held at which Lobby might introduce evidence to show that a failure of an emergency core cooling system in the event of a rupture of the primary reactor core cooling system may result in significant danger to the public health, welfare, and safety, other than radiation hazards, and that the defendants Edison and SDG&E might introduce evidence to refute the evidence of Lobby and to show that the operation of the emergency core cooling system at San Onofre Unit 1 is exclusively concerned with the protection against radiation hazards. The phrase "the alleged new evidence claimed by The People's Lobby" was defined to be evidence which has arisen subsequent to the Commission's Decision No. 67180 dated May 5, 1964 in Application No. 45231 which granted defendants Edison and SDG&E the certificate of public convenience and necessity to construct and operate the San Onofre nuclear power plant.

Two days of hearing were held before Examiner Cline with Commissioner Moran in attendance at Los Angeles on May 2 and 3, 1973. The matter was taken under submission upon the filing of the concurrent closing briefs on August 1, 1973.

On November 30, 1973 Lobby filed an application requesting the Commission to reopen the matter for the limited purpose of eliciting testimony on the subject of the damage to defendants' San Onofre nuclear plant which is alleged to have occurred on October 21, 1973, the alleged failure of the Atomic Energy Commission to file appropriate reports concerning the damage, and defendants' alleged failure to publicize the occurrence causing the damage and to publicize the shutting down of the plant. Lobby contends that this Commission is in a better position than the Atomic Energy

Commission to assess the economic consequences of a shutdown of the San Onofre nuclear generating plant. Lobby refers to and attaches to the application an article which appeared in the Los Angeles Times on November 22, 1973, the first paragraph of which states: "The San Onofre nuclear power plant has been shut down for the last month because of mechanical problems that damaged the plant's most controversial and most important single safety feature--the emergency core cooling system." Opposition to the application to reopen was filed jointly by defendants Edison and SDG&E on December 10, 1973.

Issue

The issue to be resolved in this proceeding is whether this Commission has jurisdiction to inquire into and make a determination with respect to the adequacy of the design, fabrication, installation, and operation of the emergency core cooling system of Unit 1 of the defendants' San Onofre nuclear generating plant, or whether such inquiry and determination are matters exclusively within the jurisdiction of the Atomic Energy Commission of the United States.

Positions of the Parties

1. Lobby's Position

Lobby points out in its opening brief that the limitation, if any, on the jurisdiction of the Commission over the emergency core cooling system stemsfrom the Atomic Energy Act of 1954, as amended, which establishes the Atomic Energy Commission and in general imposes federal control over the development and use of atomic energy.

Section 274(k) of the Atomic Energy Act of 1954, as amended [42 U.S.C. Section 2021(k)], is the key to the resolution of the issue in this proceeding. This section provides as follows:

> "Nothing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards."

Lobby introduced evidence to show that defects in the design and operation of the emergency core cooling system could affect the reliability and availability of the electric generating capacity of the San Onofre nuclear plant of defendants, and that a serious loss-of-primary-coolant accident followed by a failure of the emergency core cooling system could result in the destruction of the generating capacity of the nuclear plant.

Lobby contends that the loss of capacity resulting from such a failure of the emergency core cooling system at the San Onofre plant is a hazard other than a radiation hazard and argues that a defective emergency core cooling system can lead to nonradiation hazard which could substantially affect the public. Lobby contends that this position is consistent with the decision of the California Supreme Court in Northern California Association to Preserve Bodega Head and Harbor, Inc. v Public Utilities Commission (1964) 61 C 2d 126 where the court examined 42 U.S.C. Section 2021(k), and stated:

> "In view of subdivision (k) of Section 2021, respondent Commission unquestionably has authority to inquire into safety questions apart from radiation hazards. Accordingly, since the location of an atomic reactor at or near an active earthquake fault zone involves safety considerations in addition to radiation hazards, it is clear that the Federal Government has not pre-empted the field, at least with respect to the phase of protecting the public from hazards other than radiation hazards, and that the State's powers in determining the locations of atomic reactors are not limited to matters of zoning or similar local interest other than safety." (61 C 2d at 133.)

Lobby argues that, if this Commission determines that the defective design and operation of an emergency core cooling system can result in hazards to the public, other than radiation hazards, the decision in Northern States Power Company v State of Minnesota (8th Cir 1971) 447 F 2d 1143, aff'd (1972) 405 US 1035, 31 L ed 2d 576 is not applicable to this proceeding. In the Northern States Power Company case the court, in holding that the United States has the sole authority under the doctrine of preemption to regulate radioactive waste releases from nuclear power plants to the exclusion of the states, recognized that the case dealt exclusively with radiation matters.

In its closing brief Lobby contends that an ineffective or defective emergency core cooling system can result in the shutdown of the plant, and seeks to prevent that by requiring a more effective emergency core cooling system. Lobby asks this Commission to issue an order directing defendants either to improve the emergency core cooling system or cease operating the San Onofre plant.

2. Position of Edison and SDG&E

Edison and SDG&E assert that the definition of the term "hazard" most appropriate to the term in the context of this proceeding is as follows:

> ". . .2a: an adverse chance (as of being lost, injured, or defeated): DANGER, PERIL [the discovery of atomic fission brought into ~ the industrial potential of any state which could not destroy its enemy before it was itself destroyed - H. J. Laski] b: a thing or condition that might operate against success or safety: a possible source of peril, danger, duress, or difficulty [a coast visited by frequent dense fogs and mountains subject to violent storms constitute ~ s to air travel - Amer. Guide Series: Calif.] c: a condition that tends to create or increase the possibility of loss. . . ." (Webster's Third New International Dictionary (1961).)

The defendants point out that the foregoing definition of the term "hazard" articulates a "cause" as opposed to an "effect". The "possible source" is the "hazard," not the "peril, danger, duress, or difficulty" which may result from the "source".

The evidence introduced on behalf of Lobby and on behalf of defendants shows that in the event of a loss-of-coolant accident a reactor core continues to generate heat even though the fission process is terminated by a shutdown of the reactor. This is because the fission process creates unstable radioactive fission products which continue to decay and thereby generate heat after the fission process itself has terminated. The purpose of an emergency core cooling system is to remove this decay heat and thus prevent overheating and resultant damage to the reactor core.

Defendants contend that the "hazard" is the generation of excessive decay heat caused by radiation and that the exclusive function of the emergency core cooling system is to protect against this radiation hazard.

Defendants admit the case of Northern California Association to Preserve Bodega Head and Harbor, Inc. v Public Utilities Commission (1964) 61 Cal 2d 126 suggests that this Commission is vested with jurisdiction to consider hazards other than radiation hazards, such as the hazard of an earthquake. However, they contend that the physical damage to a nuclear plant or the loss of generating capacity which might result from the failure of an emergency core cooling system are not "hazards" within the meaning of the Bodega Head decision, but that they represent nothing more than effects or consequences of a radiation hazard. Hence they may not serve as a basis for jurisdiction under the Bodega Head decision.

Defendants admit that under Section 274(k) of the Atomic Energy Act of 1954, as amended [42 U.S.C. Section 2021(k)], which is set forth above, an argument can be made that this Commission is vested with jurisdiction to regulate the design, fabrication, installation, and operation of emergency core cooling systems so long as the purpose of the regulation is, for example, to minimize the risk of loss of utility investment or to enhance electric system reliability.

Defendants, however, contend that such an interpretation would be inconsistent with the objectives of Congress to foster and encourage development and utilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public. (Atomic Energy Act of 1954, Sections 2 and 3; 42 U.S.C. Sections 2011 and 2012.)

Defendants point out that the case of Northern States Power Company v State of Minnesota (8th Cir 1971) 447 F 2d 1143, aff'd (1972) 405 US 1035, 31 L ed 2d 576 has held that the regulation of nuclear generating plants for the purpose of protection against radiation hazard has been preempted by the Federal Government.

Defendants also point out that an inquiry by this Commission concerning the adequacy of the design, fabrication, installation, and operation of the emergency core cooling system of Unit 1 of the San Onofre nuclear plant would be meaningless unless this Commission is authorized to prescribe and enforce corrective changes in the event this Commission determines the design, fabrication, installation, and operation to be inadequate in some respect. They contend that prescription and enforcement of changes to a system designed to protect against radiation hazards by this Commission in order to effect purposes of lesser importance to the public health and safety, such as to minimize risk of loss of utility investment or enhance electric system reliability, would impair and in all likelihood conflict with federal regulation of the design, fabrication, installation, and operation of such systems.

The defendants conclude that the design, fabrication, installation, and operation of the emergency core cooling system of Unit 1 of the San Onofre Nuclear Generating Station may not be regulated by this Commission for purposes other than protection against radiation hazards because the hazards related to defects in the design, fabrication, installation, and operation of such system are radiation hazards and the Atomic Energy Act of 1954, as amended, grants exclusive jurisdiction to the Atomic Energy Commission over these matters.

3. Position of the Commission Staff

The staff supports the position taken by defendants in this proceeding and contends that the record indicates that emergency core cooling systems are primarily if not solely designed to control radiation hazards and thus flaws in design are not within the scope of this Commission's jurisdiction. The staff further contends that any impact on generating capacity by failure of the emergency core cooling system is inextricably intertwined with safety regulations promulgated by the Atomic Energy Commission pursuant to its exclusive safety jurisdiction over radiation hazards and that this Commission is without authority to consider the possible tangential impact on plant operability because of this federal preemption. Hence this Commission in an effort to preclude such tangential impact cannot require a different emergency core cooling system design than that authorized by the Atomic Energy Commission.

Discussion

This Commission must agree with defendants' conclusions as supported by the Commission staff. Lobby seeks an order which would direct defendants either to improve the emergency core cooling system or, in the alternative, cease operating the San Onofre nuclear power facility. It is clear from the court's ruling in Northern States Power Company that the aspects of the operation of a nuclear power plant which concern radiological health and safety are matters over which the Atomic Energy Commission has exclusive authority under the doctrine of federal preemption. The emergency core cooling system is designed and made a part of nuclear generating plants for the purpose of removing radioactive heat decay in the event of a loss-of-coolant accident. The system is designed to prevent overheating and resultant damage to the reactor core. While the operation of a nuclear generating facility, and, therefore, its output, could well be affected by defects in such a system, the primary purpose and function of the emergency core cooling system is to protect against radiation hazards.

As advocated by the Commission staff, any resulting impact on generating capacity caused by failure of the emergency core cooling system is inextricably intertwined with regulation by the Atomic Energy Commission pursuant to its exclusive regulatory powers over radiation hazards. Although the Bodega Head decision does suggest, as Lobby asserts, that this Commission has authority to inquire into safety questions apart from radiation hazards, the holding, in light of the opinion in Northern States Power Company, cannot be extended to the instant case.

In discussing Section 274(k) of the Atomic Energy Act of 1954, as amended (42 U.S.C. Section 2021(c)), cited by Lobby as the key to the resolution of the issue in this proceeding, the court in Northern States Power Company stated at 447 F 2d 1149-1150:

> "In our view, this provision further illustrates Congressional recognition and intention that the states possess no authority to regulate radiation hazards unless pursuant to the execution of an agreement surrendering federal control over the three categories authorized under Section 2021(b). The only logically acceptable reason for inclusion of subsection (k) within Section 2021 was to make it clear that Congress was not, by subsection (c) of the 1959 amendment, in any way further limiting the power of the states to regulate activities, other than radiation hazards, associated with those areas over which the AEC was forbidden by that subsection to relinquish its control. Unless the federal government possessed exclusive authority over radiation hazards, the inclusion of the italicized portion of subsection (k) quoted above would have been meaningless and unnecessary."

In Florida Lime and Avocado Growers, Inc. v Paul (1963) 373 US 132, 142; 10 L ed 2d 248, 256-57, a case cited by the court in Northern States, the Supreme Court held that the scope of preemption ultimately turns on the question of whether both federal and state regulations can be enforced without impairing federal superintendence of the field. In so finding, the court noted:

> "...it is suggested that the coexistence of federal and state regulatory legislation should depend upon whether the purposes of the two laws are parallel or divergent. This Court has, on the one hand, sustained state statutes having objectives virtually identical to those of federal regulations [citations] and has, on the other hand, struck down state statutes where the respective purposes were quite dissimilar [citations]. The test of whether both federal and state regulations may operate, or the state regulation must give way, is whether both regulations can be enforced without impairing the federal superintendence of the field, not whether they are aimed at similar or different objectives." (373 US at 142.)

The Commission must conclude that any attempt by it to impose additional, more stringent regulatory requirements with respect to the adequacy of design, fabrication, installation, or operation of the emergency core cooling system at defendants' San Onofre facility would without question conflict with and impair Atomic Energy Commission superintendence of the facility. While an impact on generating capacity could result from a failure of the emergency core cooling system, regulation based merely on this consequential effect would directly conflict with safety regulations promulgated by the Atomic Energy Commission pursuant to its exclusive jurisdiction over radiation hazards. This Commission is therefore without authority to consider this consequential impact on plant operability, and cannot require a different emergency core cooling system than that already authorized by the Atomic Energy Commission.

Findings

1. On June 29, 1971 the Atomic Energy Commission (AEC) published in the Federal Register "Interim Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Power Reactors".

2. On November 30, 1971 the AEC published in the Federal Register a "Notice of Hearing" for a prehearing conference for January 18, 1972 and hearing on January 27, 1972 regarding the Acceptance Criteria.

3. Numerous days of hearing were held before the AEC regarding the Acceptance Criteria, resulting in 22,000 pages of transcript. A final decision has not yet been issued by the AEC.

4. Daniel Ford and Henry Kendall, appearances for Lobby herein, were active participants in the Acceptance Criteria hearings. There was considerable disagreement among the parties at the Acceptance Criteria hearings regarding the performance of emergency core cooling systems and the efficacy of the proposed Acceptance Criteria. Mr. Ford and Dr. Kendall believe deficiencies exist in both areas and do not have confidence in the ability of the AEC staff to analyze the performance of the emergency core cooling system or the Acceptance Criteria.

5. The Idaho tests on which Lobby's allegations are based herein were considered in the Interim Acceptance Criteria and were discussed at length at the Acceptance Criteria hearings.

6. A loss-of-coolant accident is a postulated accident that results from the loss of reactor coolant at a ratio in excess of the capability of the reactor coolant makeup system from breaks in the reactor coolant pressure boundary, up to and including a break equivalent in size to the double-ended rupture of the largest pipe of the reactor coolant system.

7. In the event of a loss-of-coolant accident a reactor core continues to generate heat even though the fission process is terminated by shutdown of the reactor. This is because the fission process creates unstable radioactive fission products which continue to decay and thereby generate heat after the fission process itself has terminated.

8. The purpose of an emergency core cooling system is to remove radioactive heat decay in the event of a loss-of-coolant accident and thus prevent overheating and resultant damage to the reactor core.

9. One example of a loss-of-coolant accident consists of the expulsion of cooling water through a broken or ruptured pipe. The cooling water is contained under high pressure in the reactor, and if a large pipe carrying this water should rupture, in a matter of 10 or 20 seconds the entire reactor cooling water would be expelled through the break.

Although the reactor shuts down, there is continued heating in the reactor which cannot be controlled without cooling water. The heat-up rates can approach 100 degrees Fahrenheit per second. If the emergency systems that are installed in all reactors do not operate successfully, in a few minutes after the pipe rupture there will be melting of elements of the reactor core and the supporting structure. The entire mass will melt and fall to the bottom of the reactor pressure vessel.

Chemical explosions can occur during this melt-down further aggravating the accident and raising the possibility of rupture of the outer containment structures.

The resulting mass of material will reach temperatures of over 5,000 degrees, and will melt downward through all man-made structures, hundreds or thousands of feet into the earth. The mass will come to rest some months or weeks after the accident entombed well below the ground.

10. The consequences of emergency core cooling system failure in a nuclear reactor can include not only total destruction of a major facility for generating power, but many additional consequences resulting from the loss of electricity to the region supplied. If the reactor is part of a cluster of reactors, it might render the undamaged reactors inaccessible and unusable for the generation of power. Other consequences of this total destruction would be a widespread public reaction to this unconventional, uncontrollable accident of a kind and nature presently unknown in the nation.

11. The inaccessibility related to plants associated with the one having the accident would be primarily dependent on radiological consideration.

12. The definition of the term "hazard" in Webster's Third New International Dictionary (1961) articulates a "cause" as opposed to an "effect". The "possible source" is the "hazard," not the "peril, danger, duress, or difficulty" which may result from the "source".

13. The physical damage to a nuclear power plant or loss of generating capacity which might result from emergency core cooling system failure is not a hazard but is the effect or consequence of the radioactive heat decay described in Finding 7 above.

14. An emergency core cooling system is a system concerned exclusively with protection against radiation hazard.

15. Reactor safety, reliability, and economics are closely interrelated. Because of the magnitude of the catastrophe that could result from accidental release into the environment of even a portion of the radioactivity contained in a large commercial nuclear power station, reactor safety must be an important and major controlling factor in reactor purchase, construction, and operation.

16. Prescription and enforcement of design changes to an emergency core cooling system, which is a system designed to protect against radiation hazards, in order to effect purposes of lesser importance to the public health and safety, such as to minimize risk of loss of utility investment or enhance electric system reliability, would impair and in all likelihood conflict with federal regulation of the design, fabrication, installation, and operation of such system.

Conclusions

1. Under the Atomic Energy Act of 1954, the Atomic Energy Commission has exclusive jurisdiction over those aspects of the operation of nuclear power plants which primarily involve matters of radiation hazards.

2. The emergency core cooling system, as a system which is designed to protect against radiation hazards, is a device concerned primarily with radiation hazards.

3. The design, fabrication, installation, and operation of the emergency core cooling system for Unit 1 of the San Onofre Nuclear Generating Station of defendants may not be regulated by this Commission for purposes of preventing harm to the nuclear generating plant caused by radiation hazards, even though such harm may result in reduction or loss of generating capacity and economic loss and inconvenience to the utilities, their customers, and the public, because the Atomic Energy Act of 1954, as amended, grants exclusive jurisdiction to the Atomic Energy Commission over the design, fabrication, installation, and operation of such emergency core cooling system.

4. The application for an order reopening the hearing re jurisdiction filed by Lobby on November 30, 1973 should be denied.

5. The complaint should be dismissed.

O R D E R

IT IS ORDERED that:

1. The application for an order reopening hearing re jurisdiction filed by The People's Lobby on November 30, 1973 is denied.

2. The complaint is dismissed.

This decision shall be served by certified mail on each of the appearing parties. The effective date of this order as to each party shall be twenty days after the date of service thereon.

Dated at San Francisco, California, this 20th day of FEBRUARY, 1974.

President

Commissioners