UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	}
PUBLIC SERVICE ELECTRIC AND GAS COMPANY, et al.) Docket No. 50-272) (Proposed Issuance of) Amendment to Facility
(Salem Nuclear Generating Station, Unit 1)) Operating License) No. DPR-70)

LICENSEE'S OBJECTIONS TO CERTAIN PROFERRED TESTIMONY

By Order dated March 21, 1980, the Atomic Safety and Licensing Board required that objections to testimony proferred with regard to its Question 5 be filed by April 21, 1980. Question 5 is to be considered at an evidentiary hearing scheduled to begin on April 28, 1980. Besides the Licensee, Public Service Electric and Gas Company, et al., the NRC Staff and Lower Alloways Creek Township ("LACT") have submitted testimony. As discussed below, Licensee objects to a portion of the Staff's testimony and all of the proferred testimony of LACT; the Commission's absolute prohibition against inquiry into Class 9 accidents without

The LACT testimony was not submitted in accordance with the Board's order in that parts were sent by regular mail, other parts were not sent to counsel for Licensee but had to be obtained from the Office of the Secretary and from the NRC Staff in Bethesda, Maryland. A complete copy of the testimony was not available to counsel until several days after it should have reached him if it had been sent in accordance with the Board's order.

that body's explicit approval would be violated by consideration of such testimony by this Licensing Board.

Furthermore, Licensee objects to the LACT testimony for a number of additional reasons, e.g., the proferred witnesses have not been shown competent to sponsor it, and it is cumulative, irrelevant and immaterial to the Board's latest question.

Background

In ALAB-588, the Atomic Safety and Licensing Appeal
Board ("Appeal Board") denied the Licensee's motion for
directed certification regarding the Licensing Board's Question 5 dealing with the consequences of a "gross loss of
water" accident as being premature. In that decision, the
Appeal Board defined the term "Class 9 accident" and discussed
the Commission decision in Black Fox which had been decided
subsequent to this Board's February 22, 1980 Memorandum and
Order which set forth the statement of Question 5.

The Appeal Board defined its usage of the term "Class 9 accident" as follows:

We use the term "Class 9 accident" in the sense that the Commission ascribed

^{2/} Public Service Electric and Gas Company (Salem Nuclear Generating Station, Unit 1), ALAB-588, 11 NRC (April 1, 1980).

^{3/} Id. at _ (slip op. at 8).

^{4/} Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), CLI-80-8, 11 NRC (March 21, 1980).

to it in Offshore Power Systems (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 258 (1979). Briefly, such accidents "involve sequences of postulated successive failure more severe than those postulated for the design basis of protective systems and engineered safety features." Because of their very low probability of occurrence, "nuclear power plants need not be designed to mitigate their consequences, and, as a result, discussion of such accidents in applicants' Environmental Reports or in staff's environmental impact statements [is] not required. 5/

In discussing the impact of the Commission's <u>Black Fox</u> decision, the Appeal Board recognized the clear message of the Commission to its trial and appellate panels that:

the staff to advise the Commission whether Class 9 accidents should be considered in that case, the Commission ruled in unmistakable terms that "the existing policy on Class 9 accidents was not displaced in Offshore Power and would not be displaced pending generic consideration of Class 9 accident situations in policy development and rulemaking. 6/

The Appeal Board recognized the sole exception to the hard and fast rule that Class 9 accidents were not to be considered in individual proceedings was an instance in which the Commission had given its prior explicit direction to do so:

^{5/} ALAB-588, supra, 11 NRC at ___ (slip op. at 3 n.2).

^{6/} ALAB-588, supra, 11 NRC at __ (slip op. at 9) citing CLI-80-8, supra, 11 NRC at __ (slip op. at 3) (footnote omitted).

The Commission went on to explain that it had "envisioned that the staff would bring an individual case to the Commission for decision only when the staff believed that such consideration was necessary or appropriate prior to policy development." Thus, it is now settled that the Commission has reserved for itself the right to decide whether the consequences of Class 9 accidents at land-based reactors are to be considered in any given case. 7/

In this regard, the final point made by the Appeal Board in its Salem opinion was that "it is entirely the staff's responsibility to apprise the Commission whether such accidents should be addressed in individual cases."

In its Black Fox decision, the Appeal Board recognized the Commission's decision in CLI-80-8 as "telling us we were mistaken in ALAB-573 in not leaving entirely in the staff's discretion when to alert the Commission to the need to take up Class 9 events in individual cases."

Therefore, the Appeal Board in ALAB-588 made it clear that interlocutory relief was denied only because of some uncertainty with regard to the type of "accident" that the Board had in mind in formulating Question 5:

^{7/} Id. (footnote omitted).

^{8/} Id. (emphasis supplied) (footnote omitted).

^{9/} Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), ALF3-587, 11 NRC __, __ (March 28, 1980) (slip op. at 3).

We are uncertain about precisely what "accident" the Licensing Board had in mind, whether it be the postulated "gross loss" of pool water, the underlying events (such as an explosion or meltdown) that might somehow lead to that loss of pool water, a sequence of events similar to that which occurred at TMI, a Class 9 accident, or some other accident. 10/

In denying the Licensee's request for certification the Appeal Board opined that to that point in time "the Board below has marked a path of inquiry that stops short of considering a Class 9 accident" and that, in light of the Commission's unambiguous instruction to its boards in Black Fox, it was unwilling to presume that the Licensing Board would act erroneously.

Discussion

Permitting the testimony proferred by LACT, and as detailed below, a portion of the Staff's testimony to be introduced in evidence would move this Board into the realm of Class 9 accidents and their consequences in direct conflict with the specific directive of the Commission to the contrary. It should be noted that, as is entirely within its discretion, the NRC Staff has not nominated this case as one warranting

^{10/} ALAB-588, supra, 11 NRC at __ (slip op. at 6 n.7).

^{11/} Id. at 8.

Commission consideration under the criteria set forth by the Commission in Black Fox.

To the contrary, the Staff concludes in its proferred testimony, after considering the case of the spent fuel pool at Salem and the Commission's criteria, "that there are no site-specific peculiarities with respect to the Salem site which would invalidate our conclusions concerning liquid releases stated in the Environmental Impact Appraisal."

In the next paragraph, the Staff presents its conclusions regarding initiating mechanisms for the "gross loss of water:"

In our attempt to define the meaning of a "gross loss of water" we have also considered a hypothetical, non-mechanistic, instantaneous loss of all cooling water in the present and expanded spent fuel pool combined with an inability, for unspecified reasons, of refilling the pool, or providing

^{12/} See CLI-80-8, 11 NRC at ____ (slip op. at 3), wherein the Commission outlined the criteria to be utilized by the Staff in determining whether to recommend consideration of Class 9 accidents to it in exceptional cases:

The Commission did not expect that such discretion was to be exercised without reference to existing staff guidance on the type of exceptional case that might warrant additional consideration: higher population density, proximity to man-made or natural hazard, unusual site configuration, unusual design features, etc., i.e., circumstances where the environmental risk from such an accident, if one occurred, would be substantially greater than that for an average plant. [footnote omitted][emphasis in original].

any other mode of cooling other than natural (convective) air cooling. In view of the thorough review of the integrity of the spent fuel pool, even under design basis earthquake conditions, such an event is considered incredible, and clearly exceeds all design bases. Accordingly, such an event should be classified as a "class 9 accident." 13/

Thus, in the absence of an affirmative recommendation by the Staff to the Commission and a directive by that body to the Board, the consideration of Class 9 accidents here is prohibited. We submit that the determination of the Staff with regard to the nature of the postulated nonmechanistic occurrence of a "gross loss of water" as a Class 9 accident is sufficient to alert the Board that the prohibited border-line has now been crossed.

Even were the Board not to consider the position of the Staff binding on it, a brief examination of the proferred testimony of Dr. Webb should be sufficient to reveal that the initiating scenarios discussed therein are absolutely and inexorably associated with Class 9 accidents. Dr. Webb's original testimony (hereinafter "Webb testimony")

^{13/} Staff Testimony filed on April 10, 1980 at 3.

^{14/} The testimony of Dr. Fankhauser regarding postulated dose consequences is based upon the accident scenario proposed by Dr. Webb (Fankhauser Testimony at 1); its admissibility in this hearing is, in the first instance, entirely dependent on the Board's determination on the testimony of Dr. Webb.

^{15/} The other portions of Dr. Webb's testimony (hereinafter referred to as the "Webb Supplemental Testimony") present no further elaboration with regard to initiating mechanisms, but are directly tied to the initiating scenarios discussed in Dr. Webb's original testimony.

dated April 18, 1979, contains the most complete exposition regarding the initiating events postulated to cause the "gross loss of water" accidents discussed by him in his three-part testimony. Dr. Webb asserts that "[t]he most likely cause of a breakdown in the pool water cooling system is a severe reactor accident." It is clear that Dr. Webb is postulating accidents which involve sequences of postulated successive failures more severe than those postulated for the design basis of protective systems and engineered safety features. This meets the very definition of Class 9 accidents approved by the Appeal Board in this proceeding.

A few examples confirm this conclusion. Dr. Webb would consider multiple control rod ejection accidents including chain reaction ruptures of control rod drive mechanism 18/ housings, and loss-of-coolant accidents without SCRAM.

Dr. Webb's own words best make the case against the admissibility of his testimony when he states that "[t]he Nuclear Regulatory Commission's 'single failure criterion' to judge accidents worse than the design basis accident as 'incredible'

^{16/} Webb Testimony at 16 (emphasis in original) (reference deleted).

^{17/} See discussion at pages 6-7, supra.

^{18/} Webb Testimony at 23.

^{19/} Id.

is wholly inadequate to assure safety, and should not be a basis to deny the full investigation of all accident possibilities " $\frac{20}{}$

Thus, to the extent that the Board's Question 5 left open the possibility that an initiating event other than a Class 9 accident could initiate a "gross loss of water" accident, the testimony of Dr. Webb and the Staff makes it clear that in actuality no such event exists and that any postulated "gross loss of water" is uniquely associated with a Class 9 event.

Thus, utilizing the Appeal Board's definition of a Class 9 accident, the "serious reactor accidents" described by Dr. Webb in his testimony all fall within the bounds of the prohibited Class 9 accident category. As such, this Board would be overstepping its jurisdiction should it permit Dr. Webb's testimony to be introduced into evidence. It is also important to note that Dr. Webb's call for consideration of multiple sequences of failures in accident analysis is generic in scope. He points to nothing at the Salem Nuclear Generating Station that would set it apart

^{20/} Id. at 26.

This Board has already given extensive consideration to the events which have occurred at Three Mile Island Unit 2 and the effect of such a postulated accident on the Salem Unit 1 spent fuel pool. Certainly there is no evidence of record that even this accident would interfere with the ability to maintain the spent fuel in a safe condition. Thus, the possibility of a TMI-type accident causing a "gross loss of water" has been eliminated.

from other light water reactors of the type presently operating in the United States, let alone make it unique or extraordinarily different, such that any multiple sequential failures must be considered in this proceeding.

Having negated the initiating mechanism which Dr. Webb asserts is the "most likely cause of a loss-of-water incident $\frac{22}{2}$ the other possible initiating scenarios suggested by Dr. Webb must also be rejected as similarly falling within the Class 9 category. First, Dr. Webb suggests that a shipping cask could fall from its crane into the storage pool. As the Board has already observed during its inspection of the Fuel Handling Building and as already discussed in the Application, the design of the building and cask handling crane precludes the travel of a spent fuel cask over the spent fuel pool. Thus, for this facility, the scenario has no application.

Dr. Webb next raises the spectre of some undefined $\frac{25}{}$ criticality accident. In reality, this is merely a belated attempt to raise matters already considered by the $\frac{26}{}$ Board. Nothing specific is asserted which brings into

^{22/} Webb Testimony at 20.

^{23/} Id. at 17.

^{24/} See, for example, Exhibit 7 at p. 2-6.

^{25/} Webb Testimony at 18-19.

^{26/} Inasmuch as LACT has no contention related to criticality, Dr. Webb's testimony would be improper in any event.

question the safety of the new racks from a criticality standpoint. Licensee has already been committed to the "controlled insertion" experiment which Dr. Webb indicates \$\frac{27}{}\$ should be done. Dr. Webb has raised nothing which bring his "criticality accident" outside the scope of a Class 9 event.

Dr. Wabb would have this Board consider "sabotage and terrorism" as being the initiating events for a "gross loss of water accident." With regard to the requirements for industrial security, the Commission's regulations, particularly 10 C.F.R. §73.55, define the threat and measures to be taken against the defined threat level for a nuclear power reactor. An industrial security plan has been developed by the Licensee and approved by the NRC to assure that Commission requirements are met in this regard and that, at the defined threat level, vital areas are protected. To the extent that Dr. Webb seeks to explore matters beyond the scope of 10 C.F.R. §73.55(a), this attempt must be rejected as either a national defense matter against which the facility need not be designed to withstand (see 10 C.F.R. §50.13), or as posing a threat beyond the level for which a licensee is

Exhibit 1D at 10. The elaborate precautions taken to assure that there are no missing Boral plates and that there is a sufficient amount of Boral-10 in the plates has already been extensively discussed on the record of the proceeding. See, for example, Tr. 576.

^{28/} Webb Testimony at 18-19.

required to provide. Again, nothing specific is brought forward that would distinguish the Salem facility from any other licensed facility. The attempt to interpose "sabotage and terrorism" scenarios into the Board's question must be rejected.

As a final matter under the heading of "Others,"

Dr. Webb postulates "earthquakes breaking open the pool" and "large airplane crashes." This catch-all category is commetely without specificity as regards Salem and should be rejected. The Board has, in this proceeding, previously considered and rejected an attempt to challenge and change the design basis of the facility against these phenomena. In rejecting a contention which would have required reconsideration of the design criteria of the pool, the Board stated:

[T]he Petitioner contends that the Licensee should reconsider the design [of the spent fuel pool] with respect to tornadoes, hurricanes, turbine missiles, and seismological events.

When the Licensee's construction permit was considered, Licensee was required to satisfy the design criteria set forth in Criterion 2 of Appendix A of Fart 50 of the Commission's regulations (10 CFR 50). Criterion 2 provides

Pennsylvania Power & Light Company (Susquehanna Steam Electric Station, Unit 1 and 2), LBP-79-6, 9 NRC 291, 318-19 (1979). See also Long Island Lighting Company (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 851 (1973).

^{30/} Webb Testimony at 18.

that the design of elements such as the spent fuel pool shall be sufficient to:

". . . withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their fety functions. The design bases . . . shall reflect . . . the most severe of the natural phenomena that have been historically reported for the site . . . "

Because the Licensee's design for the spent fuel pool was approved, that necessarily meant that the pool satisfied the criteria established for the most severe external phenomena reported in the vicinity of the Salem site. The probability of failure of the design to withstand these phenomena cannot be affected by the presence of additional fuel assemblies in the pool. The design is a function of the phenomena and not a function of the number of assemblies stored. 31/

There is no reason given by Dr. Webb to raise the bogeyman of a large earthquake or large airplane crashes other than a desire to play the "what if" game. Once started, there is absolutely no end to this; even were one to design to some more conservative criteria, Dr. Webb could always postulate a larger earthquake or bigger airplane. Since there is no basis to challenge the established design basis for the facility, either advanced in the Webb testimony or other-

^{31/} Order Following Special Prehearing Conference at 5-6 (May 24, 1978).

wise, these hypothesized events must be deemed Class 9 accidents and rejected.

Thus, all of the scenarios developed by Dr. Webb fall within the category of Class 9 accidents as defined by the Commission and its boards. Having gone from an abstract consideration of a "gross loss of water" accident to the specific events and sequences posited by Dr. Webb, the Board must stop short of considering the consequences of Class 9 accidents in order to avoid a collision course with Commission policy. It may not permit the proferred testimony of Dr. Webb (and the supportive testimony of Dr. Fankhauser) to be introduced into evidence.

For the same reason, to the extent that the Staff recognizes that the event it discusses must be the result of a Class 9 accident as an initiating mechanism, but goes on to treat it any way, the ensuing discussion appearing at page 4 of its testimony and, with the exception of the first sentence, item (2) appearing on page 5 should be stricken.

The LACT Testimony Is Otherwise Defective

Even were the Board to determine that for some reason the proferred testimony is not totally and inexorably tied

^{32/} See discussion at pages 6-7, supra.

^{33/} ALAB-588, supra, 11 NRC __, __ (1980) (slip op. at 8 n.10).

^{34/} See Staff Testimony at 3.

to Class 9 accidents and thus defective, the testimony is otherwise deficient.

First, the testimony is not responsive to the Licensing Board's Question 5. Inasmuch as Dr. Webb has admittedly not completed his calculations with regard to the present pool, there is no comparison of the consequences of a "gross loss of water" for the old and new racks. In this respect, Dr. Webb should not be permitted to supplement his testimony; to allow this would defeat the entire intent of ordering prefiled written testimony and would prejudice the rights of other parties.

The Webb testimony is pervaded with legal conclusions which are improper as testimony for this proposed witness. For example, paragraph (d) on page 2 and paragraph (f) on page 3 of the Webb testimony is an attempt to attack the manner in which the Commission has interpreted the "health and safety" standard of Section 103 of the Atomic Energy Act.

The Webb Testimony has no probative value because it merely discusses matters which are "conceivable." In the sense that Dr. Webb uses this term throughout his testimony, anything is conceivable; such testimony therefore has no useful evidentiary value as far as any issue before this Board.

 $[\]frac{35}{(g)}$ See, for example, Webb Testimony, paragraphs (e), (f),

The reasons for striking Sections 5, 6 and 7 of the Webb Testimony have already been discussed. In sum, there has been no showing that the initiating scenarios discussed therein should be considered as design basis events. Consideration of the bases utilized by the Commission for the issuance of an operating license for the facility by this Board would go completely beyond its delegated authority. Policy decisions regarding such generic matters must be left to the discretion of the Commission. Section 7 on pages 20-33, which discusses "severe reactor accidents" and their consequences as an end in itself, apart from the Board's Question 5 and the issues under review in this proceeding, is immaterial to the issues before this Board and should be stricken. Whatever Dr. Webb has in the way of ideas on the regulation of nuclear reactors should be directed to the Commission by way of rulemaking or avenues other than a hearing such as this of limited scope.

Section 8 deals entirely with a permanent spent fuel repository at Salem and therefore goes clearly beyond the issues before this Board. Sections 9 and 10 are merely conclusory, without foundation and raise issues irrelevant to those before this Board, e.g., shutting down of the reactors at Salem. These sections of proferred testimony should be stricken.

^{36/} See Memorandum and Order at 1-3 (February 22, 1980).

Throughout Dr. Webb's supplementary testimony, assumptions, calculations and conclusions are made with regard
to dispersion and transportation of fission products, meteorological and depositional assumptions. It has not been shown
that Dr. Webb has any expertise in these matters and should
not be permitted to sponsor testimony with regard to transport, doses or dose effects associated with his hypothesized
releases. Similarly, Dr. Webb has not been shown to have
any specific expertise or direct knowledge with regard to
the Salem spent fuel pool, Salem site or the surrounding
area and therefore should not be permitted to make any
conclusions with regard to the Salem facility or any hypothesized releases from it.

Dr. Webb's testimony with regard to doses caused by his hypothesized accidents and their consequences are completely speculative and without any supporting foundation. Much of the information is hearsay and, as Dr. Webb concedes, much is "non-scientific, un-expert, layman thoughts."

Dr. Webb's apparent desire to supplement his testimony is contrary to the requirement that testimony be pre-filed and should not be permitted.

^{37/} This discussion applies to Section 3 of the Webb Testimony at 13-15 as well as parts one and two of the Webb Supplemental Testimony.

^{38/} Webb Supplemental Testimony at 37.

^{39/} See page 48 of Webb Supplemental Testimony wherein he states, "I shall have an answer for this soon!"

Dr. Fankhauser's Testimony

Dr. Fankhauser has not demonstrated that he has sufficient expertise to sponsor any of his proferred testimony. There is no evidence that he has any training regarding transport mechanisms of radioactive materials, meteorological considerations, deposition, the calculation of doses, or associated health effects. He certainly has no expertise to discuss the dispersion of any fission products from the spent fuel pool. His comparison of the postulated accident scenario to the radioactivity resulting from the atomic bomb dropped on \frac{40}{Hiroshima} confirms that he has no expertise in this matter. Neither has he demonstrated expertise with regard to carcinogenics, genetic effects or projected population dose effects. Thus, his entire testimony should be stricken.

Conclusion

Inasmuch as the entire testimony of Drs. Webb and
Fankhauser and the noted portion of the Staff testimony is
based entirely upon Class 9 accidents scenarios which are
matters beyond the Board's jurisdiction, they should not be
permitted to be introduced in evidence. Moreover, the
sponsors of the LACT testimony have not demonstrated they
have sufficient expertise to sponsor it. Also, the testimony

^{40/} Fankhauser Testimony at 4.

is immaterial and demonstrably lacks probative value. For these reasons, the testimony should not be admitted into evidence.

Respectfully submitted,

CONNER & MOORE

Mark J. Wetterhahn Counsel for the Licensee

April 21, 1980

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In the Matter of

PUBLIC SERVICE ELECTRIC AND GAS

COMPANY, et al.

(Salem Nuclear Generating Station, Unit 1)

Docket No. 50-272

(Proposed Issuance of Amendment to Facility

Operating License

No. DPR-70)

CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Objections to Certain Proferred Testimony," dated April 21, 1980, in the captioned matter, have been served upon the following as indicated below this 21st day of April, 1980:

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