

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of
FLORIDA POWER AND LIGHT COMPANY
(St. Lucie Nuclear Power Plant
Unit 2)

Docket No. 50-389

1981 JAN 13 AM 10 00

RECEIVED DISTRIBUTION
SERVICES UNIT

NRC STAFF'S RESPONSE TO COMMISSION'S
DECEMBER 12, 1980 MEMORANDUM AND ORDER

William J. Olmstead
Assistant Chief Hearing Counsel

January 12, 1981

DS07
S0//

8101140956

G

SECRET

SECRET

01/12/81

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)

FLORIDA POWER & LIGHT COMPANY)

(St. Lucie Nuclear Power Plant)
Unit 2))

Docket No. 50-389

NRC STAFF RESPONSE TO COMMISSION'S
DECEMBER 12, 1980 MEMORANDUM AND ORDER

I. INTRODUCTION

On December 12, 1980 the Commission issued a Memorandum and Order in which it indicated that it had decided to reconsider its previous determination not to review the decision of the Atomic Safety and Licensing Appeal Board in ALAB-603.^{1/} The Commission directed the Staff to file a brief concerning two generic issues which it felt were raised by the Appeal Board's decision. Those issues are:

- (1) What are the generic implications of using the threshold probabilities in Section 2.2.3 of the Standard Review Plan as guidelines in determining the design basis events to be used for plant design and operation?
- (2) Granting the need for protective measures against loss of all AC power for some reasonable period of time, is designation of station blackout as a design basis event the appropriate regulatory framework in which to consider such measures pending completion of the Staff generic study TAP-A-44?

^{1/} Florida Power & Light Co. (St. Lucie Unit 2), ALAB-603, 12 NRC 30 (1980).

The Staff will address the two identified issues in this brief.

II. BACKGROUND

The Appeal Board affirmed the Licensing Board's Initial Decision authorizing issuance of a construction permit for St. Lucie Unit 2 in October of 1977.^{2/} However, the Board retained jurisdiction over allegations which were made by Robert D. Pollard in a letter to the Attorney General of the United States. Those allegations concerned the reliability of the offsite power grid serving the St. Lucie facility. As a part of its review of those allegations, the Appeal Board posed a number of questions concerning the design of the St. Lucie facility. Subsequently, the Appeal Board determined that an evidentiary hearing would be held to explore the stability of Florida Power and Light's electrical grid and the reliability of AC power for St. Lucie Unit 2.

The Appeal Board summarized its concerns as involving St. Lucie's compliance with General Design Criterion 17 (dealing with offsite and onsite power system requirements); an analysis of the probability of and consequences that might result from a loss of offsite power with a simultaneous failure of onsite power; whether that sequence of events should be guarded against in designing the plant ("that is, whether it should be a 'design basis' event"); the measures that might be taken to assure or increase a system reliability; and any ongoing or planned improvements that might enhance the reliability of the FP&L system. (ALAB-603, 12 NRC 34.) In the course of its decision the Appeal Board recognized that the Office of Nuclear Reactor

^{2/} ALAB-435, 6 NRC 541 (1977), affirming LBP-77-27, 5 NRC 1038 (1977).

Regulation had designated station blackout as an "unresolved safety issue" and had taken a number of actions in connection with this issue. The Board noted however that no final plan for resolution of the matter had been arrived at and that a final plan was not estimated for completion until 1982. (12 NRC 46, fn. 55.) The Appeal Board was of the opinion that its resolution of the issue for St. Lucie Unit 2 could not wait the completion of the Staff's generic review.

The Appeal Board found that St. Lucie Unit 2 met GDC-17 but that loss of offsite power at St. Lucie was not a highly improbable event and that the redundant emergency diesels were not themselves highly reliable. This led the Board to the conclusion that a complete loss of AC power (station blackout) must be considered a design basis event for St. Lucie Unit 2. The Board required that the Applicant's Final Safety Analysis Report include an analysis demonstrating the ability of St. Lucie to operate through station blackout and a description of training programs and procedures for station operation during a blackout transient and for the restoration of AC power.

Neither the Staff nor the Applicant has sought Commission review of the Appeal Board's decision. However, as a part of the Commission's review of materials related to TAP-A-44, certain memoranda from members of the Staff concerning ALAB-603 came to the Commission's attention. In a memorandum for Harold R. Denton, Director, Office of Nuclear Reactor Regulation, from Robert M. Bernero, Director, Division of Systems and Reliability Research, Office of Nuclear Regulatory Research, Mr. Bernero suggests certain impacts which could occur if ALAB-603 is interpreted to endorse the use of Standard Review Plan Section 2.2.3 as a numerical basis for determining what kind of

accident sequences Boards should look at. The Commission was concerned in its December 12 Memorandum and Order that this raised generic issues regarding the impact of the Appeal Board's decision on the regulatory process and called for the brief herewith being filed. On December 22, 1980 two of the Administrative Judges who participated in the decision rendered by the Appeal Board in ALAB-603 issued a Memorandum expressing their concern that the Commission was interpreting the ALAB-603 decision to be grounded upon the use of the "threshold probabilities" in Section 2.2.3 of the Standard Review Plan. In the Memorandum the Board indicates that its determination that station blackout should be considered a design basis event at St. Lucie Unit 2 did not rest on any particular SRP probability value but rather upon the Board's independent assessment of the probability of this event as established by the evidentiary record.

To properly context the Staff's discussion in the remainder of this brief of the issues presented by the Commission's Memorandum and Order another adjudicatory decision should be mentioned. The station blackout event which is under consideration in the St. Lucie docket is an unresolved safety issue. In Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977), the Appeal Board established a standard of evidence which must be met concerning unresolved generic safety issues which have implications for the particular reactor being reviewed by a Board. The River Bend Appeal Board found that unresolved issues could not be disregarded in individual licensing proceedings because they had generic applicability but that there must be some explanation concerning why operation or construction could proceed even though an overall solution had not been found.

The explanation furnished must be sufficient to enable a licensing board to determine whether (1) the problem has already been resolved for the reactor under study; (2) there is a reasonable basis for concluding that a satisfactory solution will be obtained before the reactor is put in operation; or (3) the problem would have no safety implications until after several years of reactor operation and, should it not be resolved by then, alternative means will be available to insure that continued operation (if permitted at all) would not pose an undue risk to the public.^{3/}

Task Action Plan A-44 (Station Blackout), approved in July 1980, states the technical issue to be: (a) whether the probability of station blackout may be too high, and (b) what the consequences of station blackout are; that is, whether severe core damage may result. Thus, to properly resolve the station blackout issue in St. Lucie, consistent with the River Bend decision, the Appeal Board had to determine the applicability of TAP A-44 to St. Lucie.^{4/} Of course, by its own terms TAP A-44 requires an examination of probability of occurrence before a conclusion can be reached concerning the applicability of the issue to a particular reactor.

III. ARGUMENT

A. Section 2.2.3 of the SRP Should Not Be Used as a Guideline in Determining Design Basis Events and Is Not Required by ALAB-603

The first issue designated by the Commission for discussion in the context of ALAB-603 is the use of Section 2.2.3 of the Standard Review Plan.

^{3/} See Summary of River Bend at n.6, Virginia Electric and Power Co. (North Anna Units 1 & 2), ALAB-491, 8 NRC 245, 248 (1978).

^{4/} The Staff had presented the status of TAP A-44 to the Appeal Board as a part of its evidentiary case at the hearings in December 1979.

The Commission's December 12, 1980 Memorandum and Order specifically affirms ALAB-603 for the St. Lucie construction permit proceeding. At issue is whether ALAB-603 and by implication ALAB-444 (River Bend) have generic implications warranting Commission direction or clarification. Given the Appeal Board's clarification, it is clear that ALAB-603 should not be interpreted to mandate use of Section 2.2.3 of the Standard Review Plan to establish threshold probability numbers for determining design basis events.

However, if Section 2.2.3 were to be used as a basis for determining the design basis events to be used for plant design and operation, it would have a severe impact on the regulatory process. There are a large number of accident sequences with estimated probability of occurrence (frequency) greater than 10^{-7} /reactor year which could produce or result in core melt or severe core damage. If Staff resources were to be used to evaluate each of these sequences, particularly those at the lower end of this range, substantial additional staff personnel would be required without achieving a proportional reduction of risk to the public health and safety due to their low likelihood of occurrence. Unless Staff resources were significantly augmented, diversion of current resources to carry out such evaluations could actually result in an increase in risk to public health and safety. Systematic efforts to identify the risk dominance sequences for evaluation are underway by the Staff.

- B. Station Blackout Should Be Considered as Part of the Design Basis of Nuclear Power Plants and Designating TAPA-44 a Design Basis Event. Is an Appropriate Regulatory Framework in Which to Consider It.

The second issue raised by the Commission's Order is whether designating station blackout as a design basis event is the appropriate regulatory

framework in which to consider protective measures against loss of all AC power for some reasonable period of time. ALAB-603 does not specifically define design basis event, although it is evident that the Appeal Board only used the term to denote those events which if not dealt with, made less probable or mitigated could pose undue risk to the public and were sufficiently probable that they should be considered in evaluation of plant safety.

"Design basis events" are not defined in the regulations. The term "design basis" is defined in 10 CFR § 50.2(a):

"Design basis means that information which identifies the specific functions to be performed by a structure, system, or component of a facility, and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be (1) restraints derived from generally accepted "state-of-the-art" practices for achieving functional goals, or (2) requirements derived from analysis (based on calculation and/or experiments) of the effects of a postulated accident for which a structure, system, or component must meet its functional goals."

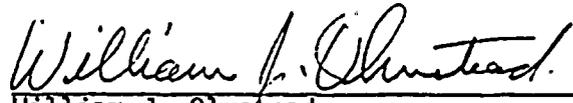
Thus, the Appeal Board's disposition of TAP A-44 in St. Lucie was consistent with the treatment given sequences required to be considered part of a facility's design basis. In view of the logic of River Bend it was appropriate for the Appeal Board to impose the conditions it did to provide for adequate protection at St. Lucie for the station blackout scenario. Nothing in ALAB-603 requires those particular mitigative measures at other facilities nor precludes them if circumstances warrant. The Staff believes it is appropriate to provide reasonable assurance that station blackout can be accommodated at a particular facility pending the generic resolution of TAP A-44, and is taking steps to do so. Consequently, the Appeal Board's treatment (i.e. designating station blackout a design basis event) is, in the Staff's view, the appropriate regulatory framework in which to consider

such measures in light of what the Board ordered to be done.

IV. CONCLUSION

In accordance with the foregoing discussion, the NRC Staff recommends that the Commission affirm ALAB-603 and accept the clarification issued by the Appeal Board. Section 2.2.3 of the Standard Review Plan should not be used to determine design basis events to be used for plant design and operation. The measures required by the Appeal Board to accommodate station blackout at St. Lucie are appropriate and are consistent with the designation of the event as one which should be considered within the design basis of the facility pending completion of the Staff generic study, TAP A-44.

Respectfully submitted,



William J. Olmstead
Assistant Chief Hearing Counsel

Dated at Bethesda, Maryland
this 12th day of January, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of

FLORIDA POWER & LIGHT COMPANY

(St. Lucie Nuclear Power Plant,
Unit 2)

}
}
}
Docket No. 50-389

CERTIFICATE OF SERVICE

I hereby certify that copies of NRC STAFF RESPONSE TO COMMISSION'S DECEMBER 12, 1980 MEMORANDUM AND ORDER in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 12th day of January 1981.

* Richard S. Salzman, Esq., Chairman
Atomic Safety and Licensing Appeal
Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

* Dr. W. Reed Johnson
Atomic Safety and Licensing Appeal
Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Martin Harold Hodder, Esq.
1131 N.E. 86th Street
Miami, Florida 33138

Terrance J. Anderson, Esq.
University of Miami
School of Law
Coral Gables, Florida 33134

Dr. David L. Hetrick
Professor of Nuclear Engineering
University of Arizona
Tucson, Arizona 85721

Dr. Frank Hooper
Resource Ecology Program
School of Natural Resources
University of Michigan
Ann Arbor, Michigan 48104

Harold F. Reis, Esq.
Lowenstein, Newman, Reis & Axelrad
1025 Connecticut Avenue, N.W.
Washington, D. C. 20036

Norman A. Coll, Esq.
Steel, Hector & Davis
1400 S.E. First National Bank Bldg.
Miami, Florida 33131

* Atomic Safety and Licensing Board
Panel
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

* Atomic Safety and Licensing Appeal
Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

* Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Samuel J. Chilk
Office of the Secretary
of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Leonard Bickwit, Esq.
General Counsel
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



William J. Olmstead
Assistant Chief Hearing Counsel