

BEFORE THE UNITED STATES  
ATOMIC ENERGY COMMISSION

In the Matter of ) 1-11-72.  
Consolidated Edison Company ) Docket No. 50-247  
of New York, Inc. )  
(Indian Point Station, Unit No. 2) )

BEFORE THE ATOMIC SAFETY  
AND LICENSING APPEAL BOARD

APPLICANT'S BRIEF RESPECTING  
QUESTIONS CERTIFIED TO  
ATOMIC SAFETY AND LICENSING APPEAL BOARD  
AND RELATED ISSUES

On June 29, 1971 the Atomic Energy Commission published in the Federal Register (36 Fed. Reg. 12247) interim acceptance criteria for emergency core cooling systems for light water reactors ("interim criteria"). On December 7, 1971 the Atomic Safety and Licensing Board ("Licensing Board") certified two questions regarding the interim criteria to the Atomic Safety and Licensing Appeal Board for determination and guidance.

The first question certified was basically whether the Commission in promulgating the criteria without prior notice and opportunity for public comment acted within the requirements of the Administrative Procedure Act ("APA"). The second question, one of interpretation of the interim criteria, was whether acceptance of the Westinghouse evaluation model under Section IV of the criteria means that the phenomenon of fuel clad swelling and rupture and flow channel blockage need not be considered

further on a case-by-case basis by the Licensing Board in evaluating the performance of the emergency core cooling system for Indian Point Unit No. 2 ("Unit No. 2"). Applicant's position on these points is presented below under headings I. and II.

There is also presented under heading III. Applicant's position regarding the relationship of the public rulemaking hearing on acceptance criteria for emergency core cooling systems, which was noticed on November 30, 1971, to the present proceeding for consideration of an operating license for Unit No. 2.

I. The interim criteria for emergency core cooling systems were validly promulgated.

There is no question that the interim criteria are in effect and binding upon the Licensing Board.<sup>1/</sup> The criteria were made effective immediately when they were published in June.<sup>2/</sup>

---

<sup>1/</sup>See statement by Chairman Jensch at Tr. 3411.

<sup>2/</sup>Since publication of the interim criteria, the Commission has published three additional documents pertaining directly to them. The first was a notice of a public rulemaking hearing on "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water-Cooled Nuclear Power Reactors" (36 Fed.Reg. 22774, November 30, 1971); the second was an amendment of the interim criteria to add acceptable new evaluation models proposed by two reactor vendors (36 Fed.Reg. 24082, December 18, 1971); and the third was a supplemental notice concerning the public rulemaking hearing (37 Fed.Reg. 288, January 8, 1972). None of these documents suggested that the interim criteria were not presently in full force and effect. To the contrary, the notice of the public rulemaking hearing commences with the following statement:

"On June 29, 1971, the Atomic Energy Commission published a notice in the FEDERAL REGISTER of an immediately effective interim statement of policy

They are stated in the introductory paragraph to the Interim Policy Statement to "have been adopted by the Commission for use in the licensing of light-water power reactors." Similarly, in the second paragraph of Section IV the statement is made that "These criteria are applicable to all light-water power reactors except as otherwise provided." The criteria represent the Commission's view as to what is acceptable for the performance of emergency core cooling systems.<sup>3/</sup>

---

2/ (continued)

establishing interim acceptance criteria for emergency core cooling systems for light-water-cooled nuclear power reactors ..." (emphasis supplied)

The supplemental notice states:

"Notice should also be taken that the conduct of a rule making hearing on the subject matter of this notice will not affect the orderly resolution, under the Commission's existing regulations, of the matter of emergency core cooling, in hearings on applications for light water-cooled power reactors pending before atomic safety and licensing boards."

3/ Paragraph 3 of Section IV of the Interim Policy Statement states:

"The Commission believes that these criteria for emergency core cooling systems provide reasonable assurance that such systems will be effective in the unlikely event of a loss-of-coolant accident."

The interim criteria were validly promulgated under exceptions to the notice and publication requirements of the APA. Under that Act, general notice of rule making does not apply "to interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice."<sup>4/</sup> An exception to general notice also exists "when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefor in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest."<sup>5/</sup>

The exceptions to the requirement of publishing a substantive rule 30 days prior to the date of effectiveness include:

- "(1) a substantive rule which grants or recognizes an exemption or relieves a restriction;
- "(2) interpretative rules and statements of policy; or
- "(3) as otherwise provided by the agency for good cause found and published with the rule."<sup>6/</sup>

The language of the Interim Policy Statement indicates that the Commission proceeded under the exceptions found in Sections 553(b) and 553(d)(3) of the APA:

"In view of the public health and safety considerations discussed above, the Commission has found that the interim acceptance criteria

---

<sup>4/5</sup> U.S.C.A. §553(b) (A).

<sup>5/5</sup> U.S.C.A. §553(b) (B).

<sup>6/5</sup> U.S.C.A. §553(d). See also 10 CFR §2.807.

contained herein should be promulgated without delay, that notice of proposed issuance and public procedure thereon are impracticable, and that good cause exists for making the statement of policy effective upon publication in the FEDERAL REGISTER."7/

In doing so the Commission complied with the requirement of the APA that it find good cause and that it incorporate the finding and a brief statement of reasons for the finding in the rules issued.

The Commission's statement of reasons for immediate effectiveness of the criteria are set forth in Section II of the Interim Policy Statement, where the history of the AEC emergency core cooling system review is summarized and reference is made to the LOFT semiscale blowdown experiments which raised questions about some of the codes then used to predict ECCS performance. Hence there was in the Commission's view an immediate need for modified analysis and other measures to assure the health and safety of the public. The interim criteria apply to all light water reactors including those in operation and those nearly ready to operate. With respect to operating reactors, it certainly would not have been in the public interest to delay promulgation of the criteria pending public proceedings. Similarly, for reactors such as Unit No. 2, for which hearings on operating

---

7/36 Fed. Reg. at 12250.

licenses were in progress, there was a need to provide immediate guidance to Licensing Boards to assure that any licensing would reflect the new safety requirements.

Courts have consistently upheld agency rulemaking without prior notice or public proceeding in comparable situations. Dighton v. Coffman<sup>8/</sup> involved review of a regulation of the Secretary of Agriculture dealing with wheat acreage allotments. The regulation stated that it was being made immediately effective without the public notice, procedure and 30-day effective date provisions of the APA because farmers in many areas were preparing to seed for the 1955 crop. The Court upheld this action as complying with the "good cause" exception of the APA. Similarly, in Allegheny Airlines v. Village of Cedarhurst<sup>9/</sup> the Civil Aeronautics Board, in promulgating a regulation concerning a traffic pattern for an airport, stated that the amendment was being adopted without the usual procedures "in order to promote safety of the flying public."<sup>10/</sup> The Court upheld this action as satisfying statutory requirements. In Durkin v. Edward S. Wagner Co., Inc.<sup>11/</sup> an amendment to the "homework" regulations under

---

<sup>8/</sup>179 F. Supp. 682 (E.D.Ill. 1959), aff'd 279 F.2d 497 (7th Cir.1960).

<sup>9/</sup>132 F. Supp. 871 (E.D.N.Y. 1955), aff'd 238 F.2d 812 (2d Cir.1956).

<sup>10/</sup>132 F. Supp. at 884.

<sup>11/</sup>115 F. Supp. 118 (E.D.N.Y. 1953), aff'd Mitchell v. Edward S. Wagner Co., 217 F.2d 303 (2d Cir.1954); cert. den. Edward S. Wagner Co. v. Mitchell, 348 U.S. 964 (1955).

the Fair Labor Standards Act was issued without advance notice and without deferred effective date. The regulation stated that it was intended to safeguard the wage standards of the industry, to eliminate the unfair competitive situation, and to provide for adequate enforcement of the "homework" restrictions. This was held to constitute "good cause." Finally, in Buckeye Cablevision, Inc. v. F.C.C.<sup>12/</sup> a claim that the FCC lacked "good cause" for making a rule immediately effective was rejected by the Court. The rules in question were "distant signal" rules under which community antenna television systems could not operate within certain areas. The FCC was held to have properly sought to minimize the disruption in service to CATV subscribers that would result when the rules became effective.<sup>13/</sup>

In this connection we believe the Licensing Board, in its statement of the first certified question, has misconstrued the requirements of the APA. Applicant is unaware of any requirement that the immediate effectiveness of a regulation be justified by "reliable, probative and substantial evidence, reflected in the policy statement ..." As stated above, the applicable requirement is for a "brief statement of reasons."<sup>14/</sup> This

---

<sup>12/</sup>387 F.2d 220 (D.C. Cir. 1967).

<sup>13/</sup>Id. at 228, Fn. 34.

<sup>14/</sup>In fact, for rules and regulations in general there is also no such requirement. The requirement is that notice of adoption of a regulation be accompanied by a concise general statement of the basis and purpose of the rule being adopted. 5 U.S.C.A. §553; 10 CFR §2.806. See American Airlines, Inc. v. CAB,

requirement is not the equivalent of findings based upon record evidence which are required in adjudications. To say that an adjudicatory test applies to reasons for emergency rules is not logical since the intention of the APA was to give agencies the flexibility to act quickly where necessary.

II. The interim criteria reflect full consideration by the Commission of the matters of fuel clad swelling and rupture and flow channel blockage in Westinghouse pressurized water reactors, and the Licensing Board need not consider these matters further in evaluating the performance of the emergency core cooling system for Unit No. 2.

The interim criteria, in setting forth what the Commission considers acceptable for emergency core cooling performance, require each reactor to be evaluated in accordance with a suitable evaluation model. One of the evaluation models identified in Appendix A to the interim criteria as being acceptable to the Commission is the Westinghouse evaluation model, found in Part 3 of Appendix A. An examination of Part 3 indicates that it does not set forth the analytical techniques of the evaluation model but rather refers to those described in the topical report "Westinghouse PWR Core Behavior Following a Loss-of-Coolant Accident," WCAP 7422-L, January, 1970 (Proprietary), the supplementary proprietary Westinghouse report "Emergency Core Cooling Performance," received

---

14/ (continued) 359 F.2d 624, 629 (D.C. Cir. 1966). For additional authority on this point and for the degree of specificity required for statements in support of regulations, see Section III of Applicant's "Memorandum of Law in Support of Applicant's Answer in Opposition to Motion of Hudson River Fishermen's Association and Environmental Defense Fund, Inc., for Discovery" filed in this proceeding on April 22, 1971.

June 1, 1971, and an appropriate non-proprietary report.<sup>15/</sup> The Appendix states that the techniques described in these documents are to be used with certain listed exceptions and restraints, which comprise the bulk of Part 3.

WCAP 7422-L, in Section 4.1.1.3, Core Cooling, p. 4-14, states:

"The maximum clad temperature vs. time transient on the rods in the core was calculated assuming no change in core geometry."<sup>16/</sup>

The "Additional Testimony" referred to in Footnote 15 states (p. 3):

"... the peak clad temperature calculated without geometry distortion will be limited to 2300°F."

The supplementary proprietary Westinghouse report, "Emergency Core Cooling Performance," received June 1, 1971, the Additional Testimony and the exceptions listed in Part 3 in no way qualify the clear statement in WCAP 7422-L that the maximum clad temperature is calculated assuming no change in core geometry.

Both WCAP 7422-L (Section 3.4.3, p. 3-13) and the Additional Testimony (p. 3) discuss evaluations of the effect of geometry distortion on peak clad temperature. It is evident that the Commission, in its review leading to promulgation of the

---

<sup>15/</sup>In response to the requirement of Part 3 two non-proprietary reports were submitted: the "Additional Testimony of Applicant Concerning Emergency Core Cooling Performance" dated July 13, 1971 (hereinafter "Additional Testimony"), and WCAP-7422, submitted on October 8, 1971.

<sup>16/</sup>The same statement is found (at the same section number and page number) in WCAP-7422.

interim criteria, had available to it a large amount of information relating to the possibility of fuel clad swelling and rupture and flow channel blockage. In the attachment to its letter to Mr. Roisman of August 25, 1971,<sup>17/</sup> the Staff listed the documents which were considered by the ECCS Task Force during the course of its review. At least eleven of these documents contain a substantial amount of information on the subject of geometry distortion and flow blockage, and of these eleven at least five<sup>18/</sup> have those as their central subjects. It would not have been

---

<sup>17/</sup>Filed in Docket No. 50-247.

<sup>18/</sup>The five documents are:

1. R. A. Lorenz, et al, Preliminary Evaluation of the First Fuel Rod Failure Transient Test of a Zircaloy-Clad Fuel Rod Cluster in TREAT, (November 26, 1969).
2. P. L. Rittenhouse, Failure Modes of Zircaloy-Clad Fuel Rods, Part 3: Description of the ORNL Program, ORNL-TM-2742 (January 1970).
3. P. L. Rittenhouse, Progress in Zircaloy Cladding Failure Modes Research, ORNL-TM-3188 (December 1970).
4. Westinghouse Electric Corporation, "Performance of Zircaloy Clad Fuel Rods During a Simulated Loss-of-Coolant Accident, Single Rod Tests," WCAP 7379-L, Vols. 1 and 2, (September 1969).
5. Westinghouse Electric Corporation, "Performance of Zircaloy Clad Fuel Rods During a Simulated Loss-of-Coolant Accident Multi-Rod Tests, Volume I - Test Setup and Results; Volume II - Analyses of Results," WCAP 7495-L (July 1969).

logical for these documents to have been considered by the ECCS Task Force without the information in them being taken into account by the Commission in the promulgation of the criteria and the determination that maximum clad temperature is calculated assuming no change in core geometry. See also "Testimony of the AEC Regulatory Staff at a Public Rulemaking Hearing on Interim Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Power Reactors" dated January 27, 1972 and issued December 28, 1971, Section 2, with particular reference to pp. 2-11 through 2-25.<sup>19/</sup>

In its statement of the second certified question the Licensing Board stated:

"The Westinghouse evaluation model provides for calculation of the number of fuel rods that will have rupture [sic] cladding, but the amount of channel blockage is not calculated and the phenomenon is not included in the calculation of the temperature transient. The Applicant contends that any adverse effects of the channel blockage expected will be more than compensated by conservative assumptions used in the model. The Intervenors contend that the channel blockage can be much more severe than is assumed by the Applicant. Both cite experimental data in support of their contentions."

This quotation incorrectly represents the state of the evidence in this proceeding and Applicant's contentions. Westinghouse has calculated the potential adverse effect on peak clad temperature of fuel rod deformation (channel blockage and rod-to-rod contact)

---

<sup>19/</sup>AEC Docket No. RM-50-1.

and has demonstrated that this effect is limited to less than a 100°F increase.<sup>20/</sup> Westinghouse has shown that fuel rod integrity is maintained for peak clad temperatures up to 2700°F and local metal water reaction up to 16%.<sup>21/</sup> This is based on experimental data developed by Westinghouse and others. The interim criteria limit of 2300°F where conformance is calculated without distortion would therefore yield a maximum of 2400°F with distortion, well below the experimental threshold limit.

The reference to conservative assumptions which compensate for channel blockage incorrectly characterizes Applicant's testimony. Applicant stated that the calculated channel blockage effects were conservative, and that a more reasonable analysis of blockage effects would show tolerance of even greater blockage while still limiting the adverse effect of fuel rod deformation to the less than 100°F increase over the peak clad temperature calculated assuming no change in core geometry.<sup>22/</sup> In other words, Applicant's

---

20/The references in this footnote and in footnotes 21 and 22 are to evidence received in the Unit No. 2 hearing.

Additional ECCS Testimony, page 3 (follows Tr. 1931); FSAR, page 14B-11; Tr. 2117-19, 2138-39, 2148-49, 2157-62, 2733-39, 3050, 3054-60, 3846; Tr. 13-14, 55-59 (Nov. 10, 1971, in camera).

21/Additional ECCS Testimony, page 3 (follows Tr. 1931); Tr. 2115-17, 2364, 2369, 2395; Tr. 24-25 (Nov. 8, 1971, in camera).

22/ASLB--Jan. 19, 1971, Part II, Question 16, pp. 3-4 (follows Tr. 665); Additional ECCS Testimony, page 30 (follows Tr. 1931); Tr. 2119, 2128, 2237, 2240-41, 3044-45, 3884, 4114-15.

position is that conservatism in the 2300°F figure chosen by the Commission, rather than the conservatism of the assumptions in the Westinghouse analysis, compensates for any potential adverse effect of fuel rod deformation on peak clad temperature.

In summary the Commission understood the treatment of fuel clad swelling and rupture and flow channel blockage inherent in the Westinghouse evaluation model and determined that model to be acceptable for use in showing compliance with the interim criteria. Accordingly, the Atomic Safety and Licensing Appeal Board should direct the Licensing Board not to consider fuel clad swelling and rupture and flow channel blockage in evaluating the performance of the emergency core cooling system for Unit No. 2 in determining whether Applicant has demonstrated compliance with Criterion 3 of Section IV.A of the interim criteria.

III. The Licensing Board should proceed to issue an Initial Decision in the Indian Point No. 2 proceeding notwithstanding the pending rulemaking proceeding.

As already indicated, the interim criteria were validly promulgated and made immediately effective. Insofar as the performance of the Unit No. 2 emergency core cooling system is concerned, the Licensing Board should issue an operating license for Unit No. 2 if it determines that these criteria have been satisfied. Questions raised by the Licensing Board at the December 14, 1971 hearing indicate that there is a need for guidance by the Appeal Board as to the overall relationship of

the public rulemaking proceeding announced on November 30, 1971 to the Indian Point 2 hearing.<sup>23/</sup>

Applicant considers that the Licensing Board should not await developments in the rulemaking proceeding in reaching an Initial Decision on an operating license for Unit No. 2. This is particularly so with respect to the Licensing Board's consideration of Applicant's pending motion for a license to operate Unit No. 2 for testing purposes at up to 50% of full power, since Applicant has shown that for operation at the 50% power level the maximum fuel element cladding temperature for the largest break would be less than 1200°F.; that no swelling or bursting of fuel rods would occur; that the high head safety injection system is not needed for large breaks; and that operation of the low head safety injection system could be delayed approximately five minutes without temperatures exceeding 2300°F.<sup>24/</sup>

The Commission's regulations require the Licensing Board to proceed with the radiological aspects of this hearing as expeditiously as possible.<sup>25/</sup> There is no certainty as to the

---

<sup>23/</sup>See transcript pp. 4310-4313.

<sup>24/</sup>See evidentiary references cited in support of proposed findings 69 and 78, submitted by Applicant to the Licensing Board in this proceeding on December 23, 1971.

<sup>25/</sup>See the provision in the supplemental notice of the public rulemaking hearing on emergency core cooling systems criteria, quoted in footnote 2, supra; and 10 CFR 50, Appendix D, Section D.1.

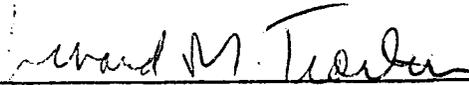
duration of the rulemaking proceeding. Finally, if any changes in the interim criteria are ordered by the Commission such changes may be taken into account at the time, just as with any changes in Commission regulations.

The Atomic Safety and Licensing Appeal Board should therefore direct the Licensing Board to proceed expeditiously to the conclusion of the Indian Point 2 hearing notwithstanding the pendency of the rulemaking proceeding.

Respectfully submitted,

LeBoeuf, Lamb, Leiby & MacRae  
Attorneys for Applicant

By



Leonard M. Trosten  
Partner

Dated: January 11, 1972

BEFORE THE UNITED STATES

ATOMIC ENERGY COMMISSION

In the Matter of )  
Consolidated Edison Company ) Docket No. 50-247  
of New York, Inc. )  
(Indian Point Station, Unit No. 2) )

CERTIFICATE OF SERVICE

I hereby certify that I have served a document entitled "Applicant's Brief Respecting Questions Certified To Atomic Safety and Licensing Appeal Board and Related Issues" by mailing copies thereof first class and postage prepaid, to each of the following persons this 11th day of January, 1972:

Algie A. Wells, Esq.  
Chairman  
Atomic Safety and Licensing  
Appeal Board  
U. S. Atomic Energy Commission  
Washington, D.C. 20545

Dr. Lawrence R. Quarles  
Dean, School of Engineering and  
Applied Science  
University of Virginia  
Charlottesville, Va. 22901

Mr. R. B. Briggs  
Molten Salt Reactor Program  
Oak Ridge National Laboratory  
P. O. Box Y  
Oak Ridge, Tenn. 37830

Dr. John A. Buck  
Vice Chairman  
Atomic Safety and Licensing  
Appeal Board  
U. S. Atomic Energy Commission  
Washington, D.C. 20545

Samuel W. Jensch, Esq.  
Chairman  
Atomic Safety and Licensing Board  
U. S. Atomic Energy Commission  
Washington, D.C. 20545

Dr. John C. Geyer  
Chairman, Department of Geography  
and Environmental Engineering  
The Johns Hopkins University  
513 Ames Hall  
Baltimore, Md. 21218

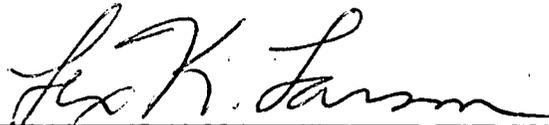
Myron Karman, Esq.  
Counsel, Regulatory Staff  
U. S. Atomic Energy Commission  
Washington, D.C. 20545

Angus Macbeth, Esq.  
Natural Resources  
Defense Council, Inc.  
36 West 44th Street  
New York, New York 10036

The Honorable Louis J. Lefkowitz  
Attorney General of the  
State of New York  
80 Centre Street  
New York, New York 10013

J. Bruce MacDonald, Esq.  
New York State Atomic  
Energy Council  
112 State Street  
Albany, New York 12207

Anthony Z. Roisman, Esq.  
Berlin, Roisman & Kessler  
1712 N Street, N.W., 4th Floor  
Washington, D.C. 20036



---

Lex K. Larson

LeBoeuf, Lamb, Leiby & MacRae  
Attorneys for Applicant