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UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	3-8-71.
	)	
THE TOLEDO EDISON COMPANY AND	)	Docket No. 50-346
THE CLEVELAND ELECTRIC ILLUMINATING	)	
COMPANY	)	
	)	
(Davis-Besse Nuclear Power Station)	)	

AEC REGULATORY STAFF'S REPLY BRIEF TO INTERVENOR LIFE'S BRIEF CHALLENGING 10 CFR PART 20 OF THE COMMISSION'S REGULATIONS

Introduction

On February 26, 1971, pursuant to the posthearing briefing schedule established by the presiding atomic safety and licensing board (board), joint intervenors Living In A Finer Environment and William E. Reany (hereinafter referred to as LIFE) filed a brief in which they contended that 10 CFR Part 20 of the Commission's regulations was "outmoded and inadequate, representing an abuse of the AEC's administrative discretion to implement safety objectives." Appended to the brief were LIFE's proposed findings of fact and conclusions of law with respect to its challenge of 10 CFR Part 20 and a proposed form of board order which would direct that the construction permit for the Davis-Besse Nuclear Power Station not be issued because the provisions of the National Environmental Policy Act of 1969 were not complied with and 10 CFR Part 20 represents "an unreasonable exercise of the Commission's discretion."

With respect to its challenge of 10 CFR Part 20, LIFE specifically contends that Part 20 is invalid because (1) the Commission permits certain economic considerations to influence the setting of radiation standards without "congressional authority"; (2) it is outmoded as evidenced by the fact that the recommendations of Report No. 39 of the National Council on Radiation Protection (NCRP) issued January 15, 1971, have not been factored into the regulation; and (3) it establishes exposure limits which are too high because inadequate consideration is given to the effects of reconcentration, the cumulative effects of releases from nuclear facilities and the low dose effects of radiation.

Discussion

A. Authority to Challenge a Commission Regulation

In a Memorandum issued by the Commission on August 8, 1969, at the conclusion of its review of an Initial Decision in the Calvert Cliffs proceeding[1/] the Commission pointed out that the Commission's licensing regulations, which are general in their application and which are considered and adopted in public rule making proceedings, are not subject to amendment by atomic safety and licensing boards in individual cases. The Commission did, however, recognize in this Memorandum that a challenge

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1/ In the Matter of Baltimore Gas and Electric Company (Calvert Cliffs Nuclear Power Plant Units 1 and 2), Docket Nos. 50-317 and 50-318.

could be made in a licensing proceeding to the validity of a Commission regulation, on limited grounds, if the regulation related to an issue in the proceeding. In the Calvert Cliffs proceeding, as is the case in this proceeding, the question of a challenge to a Commission regulation arose in connection with 10 CFR Part 20. The Commission defined these limited grounds as follows:

> "By limited grounds, we mean, whether the regulation was within the Commission's authority; whether it was promulgated in accordance with applicable procedural requirements; and as respects the Commission's radiological safety standards, whether the standards established are a reasonable exercise of the broad discretion given to the Commission by the Atomic Energy Act for implementation of the statutes radiological safety objectives."

In its Memorandum the Commission further stated:

> "/T/hat, if a board believes there is a substantial question presented on the record as to the validity of a challenged regulation, the board should certify that question to the Commission for guidance prior to rendering an initial decision."

LIFE has stated in its brief that its challenge of the validity of 10 CFR Part 20 is authorized by this Memorandum of the Commission. The LIFE challenge of the validity of 10 CFR Part 20 is, however, limited to only one of the three limited grounds permitted by the Commission, namely, that the 10 CFR Part 20 standards are not allegedly a "reasonable exercise of the broad discretion given to the Commission by the Atomic

Energy Act for implementation of the statutes radiological safety objectives." As the following discussion will indicate LIFE in this proceeding has made no showing that the Commission has failed to reasonably exercise its broad statutory discretion in promulgating and implementing the radiation standards set forth in 10 CFR Part 20 or, in fact, raised any substantial question as to the validity of 10 CFR Part 20 which would warrant the certification of that question to the Commission.

B. Source of Commission Authority to Promulgate 10 CFR Part 20

The Atomic Energy Act of 1954, as amended (Act) authorized the Commission, among other things, to issue licenses for production and utilization facilities (largely nuclear reactors and nuclear fuel reprocessing facilities) The Act contemplated that all licenses would be subject to safety standards to protect health imposed by the Commission. 2/ The Commission was given general authority to

> "prescribe such regulations or orders as it may deem necessary...to govern any activity authorized pursuant to this Act, including standards and restrictions governing the design, location, and operation of facilities used in the conduct of such activity, in order to protect health and minimize danger to life and property." 3/

2/ Secs. 103 and 104, 42 USC 2133, 2134.

3/ Sec. 161 i., 42 USC 2201(i).

Pursuant to this broad statutory mandate, the Commission has adopted radiation protection standards as part of its regulations. These standards are incorporated in 10 CFR Part 20. These standards have not, of course, been developed in a vacuum. As the record in this proceeding clearly shows, these standards are based on a considerable body of expertise and experience which has been accumulated on the subject from various sources.[4/] The radiation protection standards set forth in 10 CFR Part 20 reflect the recommendations of various expert groups with respect to both control of exposures to the general public and control of exposures of employees of licensees who may receive occupational exposures.[5/]

The radiation protection standards set forth in 10 CFR Part 20 together with the requirements of 10 CFR Part 50 establish the effective controlling mechanisms relating to releases of radioactivity to the environment. They are designed to provide reasonable assurance that the resultant exposures of individual members of the public generally and of the population as a whole from nuclear activities from all important pathways of exposure are well within recommended radiation protection guides.[6/]

4/ Tr. pp. 1722-1726 and 1773-1805.

5/ Tr. pp. 1723 and 1773-1805.

6/ Tr. pp. 1726-1746.

In its brief, LIFE argues that economic considerations have influenced the setting of the radiation standards set forth in 10 CFR Part 20 and this has been done without "congressional authority." In effect LIFE is alleging that economic considerations have unduly influenced the setting of radiation standards. There is no basis in fact or in the record of this proceeding to support this allegation. In recent amendments to 10 CFR Parts 20 and 50 [7/] a new section 20.1(c) was included which set forth the extent to which economics may be considered in maintaining radiation exposures and releases of radioactive materials in effluents to unrestricted areas as far below the limits of 10 CFR Part 20 as practicable. The Statement of Considerations published with the amended regulations sets forth the matters taken into account by the Commission in promulgating the amendments. This statement and the amendments involved make clear that the amended regulations were for the purpose of clarifying a course of action which the Commission has consistently followed in promulgating radiation protection standards, namely, following the recommendations and guidance of various expert standards groups.

There is also no basis in fact for the LIFE allegation that the radiation standards are established without "congressional authority."

7/ 35 F.R. 18385, December 3, 1970.

The Congress of the United States through the Joint Committee on Atomic Energy is kept fully informed by the Commission of all proposed and effective amendments to 10 CFR Part 20 as well as all other Commission regulations, as is required by section 202 of the Act. In accordance with this requirement the new amendments as well as the earlier proposed amendments of 10 CFR Part 20 were submitted by the Commission to the Joint Committee. In Power Reactor Development Co. v. Electrical Union, 367 U.S. 396, 409 (1961), the Supreme Court recognized that section 202 of the Act vests in the Joint Committee a peculiar responsibility in the statutory scheme and knowledge by the Joint Committee of actions taken by the Commission can fairly be read, in the absence of objection, "as a de facto acquiescence in and ratification of the Commission's licensing procedure by Congress." In Siegel v. Atomic Energy Commission, 400 F.2d 778, 783 (U.S.D.C.A. 1968), this unique status of the Joint Committee was further recognized in connection with the Commission's rule making functions.

C. Applicability of NCRP Report No. 39

LIFE contends that Part 20 is outmoded as demonstrated by the fact that the recommendations of NCRP Report No. 39 have not been factored into the standards. NCRP Report No. 39,[8/] dated January 15, 1971, recommended retention of the general standards for population dose limits and the whole body dose for individuals in the public and recommended only

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8/ Applicants' Exhibit No. 8.

adjustments in the dose limits to certain organs of individuals in the public and workers employed in the radiation industry. Although the Report recommended a reduction of the permissible dose to fertile women employed in the radiation industry to assure that the maximum dose equivalent to the fetus from occupational exposure to the expectant mother does not exceed 500 millirem, it recommended retention of the genetic population dose limit. The preface to the Report also states with respect to the suggested changes in the occupational dose limits that:

> "...with the exception of fetal exposure...any numerical changes in the dose-limiting recommendations of this report reflect the urge for simplification rather than biomedical necessity."

The Federal Radiation Council (FRC), with the assistance of the National Academy of Sciences and the NCRP, has recently initiated a review of current radiation standards.[9/] Under the President's Reorganization Plan No. 3, which became effective on December 2, 1970, the functions of the FRC were transferred to the new Environmental Protection Agency (EPA). Under this Reorganization Plan, that part of the Commission's authority to develop and set generally applicable environmental radiation standards for the protection of the general environment were also transferred to EPA. The Commission maintains the responsibility for the

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9/ Tr. pp. 1798-1800.

implementation and enforcement through its licensing and regulatory authority of the environmental radiation standards developed by EPA

Since NCRP Report No. 39 has been available only since January 15, 1971, it would be unreasonable to expect either EPA or the Commission to have implemented any of the recommendations. Furthermore, the recommendations will be subject to further study by the group reviewing the radiation standards noted above and such other review as EPA and the Commission determine necessary. The fact that the limited number of recommendations for changes in exposure limits contained in NCRP Report No. 39 has not yet been implemented cannot reasonably be construed as a valid argument to support LIFE's contention that 10 CFR Part 20 is outmoded.

D. Adequacy of 10 CFR Part 20

Finally, LIFE argues that 10 CFR Part 20 establishes exposure limits which are too high because inadequate consideration is given to the effects of reconcentration, the cumulative effects of releases from nuclear facilities and the low dose effects of radiation. In support of its allegations, LIFE relies essentially on the testimony of Drs. Sternglass and Tamplin.

The testimony and evidence presented by the AEC regulatory staff and the applicants in this proceeding made clear that Drs. Sternglass' and Tamplin's testimony was based on unsound assumptions or inadequate or

incomplete studies. For example, (1) the studies of Dr. Sternglass alleging casual relationships between fallout and deposition and fetal mortality utilized statistical and analytical methods which were deficient in a number of respects;[10/] (2) conclusions of Dr. Sternglass in his studies of the relationship of deposition and infant mortality are unfounded and unsubstantiated;[11/] (3) studies by Dr. Sternglass of the relationship between emissions from the Dresden Nuclear Power Station and infant mortality are based on incorrect calculations;[12/] (4) the alleged effects of tritium and strontium on humans postulated by Dr. Sternglass on the basis of certain studies were shown to be unsupportable;[13/] (5) Dr. Tamplin's assertions that present standards for whole body exposure are high by a factor of ten is not supported by scientific groups nor by any acceptable mechanism to show how the total population can be exposed to an average dose of 170 millirems per year.[14/]

The testimony of the witnesses for the AEC regulatory staff in this proceeding made clear that 10 CFR Part 20 is based upon and fully

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10/ Tr. pp. 1821-1853, 1950-1957, 2014-2017.

11/ Tr. pp. 1228-1229.

12/ Tr. pp. 1854-1871.

13/ Tr. pp. 1673-1675, 1871-1888.

14/ Tr. pp. 1676, 1681-1687, 1691-1692, 1696-1699, 1728-1732.

consistent with the recommendations of the FRC[15] and that they are compatible with the recommendations of the NCRP and ICRP.[16] The provisions of 10 CFR Part 20 coupled with the provisions of 10 CFR Part 50 and the license conditions applicable to the specific facility are designed to provide reasonable assurance that resultant exposures of individual members of the public generally and of the population as a whole from all nuclear activities and from all important pathways of exposure are well within recommended radiation protection guides.[17] This is achieved in Part 20 by provisions for concentration and/or quantity limits on radioactive materials in effluents from nuclear power plants released to unrestricted areas.[18] Section 20.106(e) of 10 CFR Part 20 is specifically included in the regulation to take into account reconcentration of radionuclides in the food chain and cumulative exposures from radioactive material taken into the body through all pathways of exposure (air, food and water).[19] This regulation also

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15/ Tr. pp. 1717-1753.

16/ Tr. pp. 1717-1726.

17/ Tr. p. 1727.

18/ Tr. pp. 1727-1728.

19/ Tr. pp. 1676-1677, 1730, 1893, 1904-1908.

provides that Commission licensees maintain radiation exposures and releases of radioactive materials in effluents to unrestricted areas as far below 10 CFR Part 20 limits as practicable. 20/ The low dose effects of radiation have also been considered in setting the radiation standards. As FRC Report No. 1 states:

> "There are insufficient data to provide a firm basis for evaluating radiation. There is particularly uncertainty with respect to the biological effects at very low-dose rates. It is not prudent therefore to assume that there is a level of radiation exposure below which there is absolute certainty that no effects may occur. This consideration, in addition to the adoption of the conservative hypothesis of a linear relation between biological effect and the amount of dose, determines our basic approach to the formulation of radiation protection guides." 21/

In our view LIFE's contentions concerning the alleged inadequacies of 10 CFR Part 20 reflect a basic misunderstanding of the Commission's regulations. LIFE would appear not to understand that the release limits specified in 10 CFR Part 20 are upper release limits beyond which the reactor is not permitted to operate. These release limits are not levels at which power reactors are permitted to routinely operate as LIFE appears to believe. Power reactor licensees under the regulatory scheme established by the Commission for controlling radioactive releases are required to hold these release limits to a level

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20/ 10 CFR Sec. 20.1(c) and Sec. 50.36a(b); Tr. pp. 1731-1732, 1735-1740, 1744-1746, 1893.

21/ Tr. pp. 1788-1789. FRC Report No. 1 can also be found at 25 F.R. 4402.

as low as practicable. Experience with operating reactors has shown that it is practicable to keep release limits to a small percentage of the upper release limits set by 10 CFR Part 20. 22/ LIFE has not shown that the Davis-Besse Nuclear Power Station will not also hold radioactive releases to such limits.

The record in this proceeding, as discussed above, does not support the contentions of LIFE that the exposure limits set forth in 10 CFR Part 20 are too high. LIFE's witnesses were unable to support these contentions nor did LIFE's cross-examination of our witnesses cast any doubt as to the reasonableness of the radiation standards in 10 CFR Part 20 and the basis upon which they were formulated. Furthermore the applicants' and AEC regulatory staff's witnesses clearly established that the present radiation standards have taken into consideration those matters which LIFE would argue have not been properly considered.

Conclusion

For the reasons set forth above, it is our view that LIFE's brief fails to support its contentions that 10 CFR Part 20 standards are not a "reasonable exercise of the broad discretion given to the Commission by the Atomic Energy Act for implementation of the statutes radiological

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22/ Tr. pp. 1726-1746 and 1890-1895 in which regulatory staff's witness, Rogers, discusses the interrelation between sections 20.1(c), 20.106 and 50.34a.

objectives." Moreover LIFE has not raised any substantial question as to the validity of 10 CFR Part 20 which would warrant the certification of that question to the Commission in accordance with the Commission's Memorandum in the Calvert Cliffs proceeding. For the same reasons, LIFE's proposed findings and conclusions of law and its proposed form of order should be rejected since both rely for viability on the discredited arguments presented in the LIFE brief and lack support on the record.

Respectfully submitted,

Thomas F. Engelhardt

Thomas F Engelhardt
Trial Counsel

Dated at Bethesda, Maryland,
this 8th day of March, 1971