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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSIONERS:
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Lando W. Zech, Jr.

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In the Matter of)	
_____)	
CONSOLIDATED EDISON COMPANY OF)	Docket Nos.
NEW YORK, INC.)	50-247 SP
(Indian Point, Unit No. 2))	50-286 SP
_____)	
POWER AUTHORITY OF THE STATE OF)	
NEW YORK)	August 13, 1984
(Indian Point, Unit No. 3))	
_____)	

POWER AUTHORITY'S RESPONSE TO THE
COMMISSION'S ORDER OF JULY 30, 1984

The Power Authority of the State of New York (Power Authority), licensee of Indian Point Unit No. 3, hereby responds to the Nuclear Regulatory Commission's (Commission's) Order of July 30, 1984, which permitted comments from parties to the Indian Point Special Proceeding regarding the dissent by Chairman James Gleason to the Atomic Safety and Licensing Board's (Board's) Recommendations to the Commission.

The Board majority recommended that the Commission consider the potential consequences of low probability accidents at sites such as Indian Point, Zion, Limerick, and Salem, where the consequences of a severe accident would be greater than at most other sites, and . . . require that the risk decrease as potential consequences increase. Therefore, we recommend that the Commission factor

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into its deliberations the potential consequences of a low probability accident at Indian Point

Recommendations to the Commission at 105 (Oct. 24, 1983) (Recommendations). This proposal constitutes a new, undefined standard for the Indian Point plants, and a limited number of other plants, that was not examined or litigated during the Indian Point Special Proceeding.

Chairman Gleason dissented from this recommendation because it "singles out the Indian Point facilities to the exclusion of many other sites similarly situated [and] in effect raises again the question of considering consequences without their associated probabilities."

Recommendations at 433 (Dissenting Views of Judge Gleason).¹

The Board majority's new standard ignores the Commission's focus when this Special Proceeding was initiated: the Commission in January 1981 directed the Board to assess the risk of the Indian Point plants and stated that it "intend[ed] to compare Indian Point to the spectrum of risks from other nuclear power plants." Memorandum and Order, 13 N.R.C. 1, 6 (1981).

As Judge Gleason recognized, the Commission repeatedly "restricted" the Board from considering consequences without probabilities.

Recommendations at 433. When the Commission directed the reconsideration of each contention in July 1982, it was because the Board had not required that contentions and subsequent testimony discussing a "release scenario must include a discussion of the probability of such a release

1. The Power Authority initially commented upon Chairman Gleason's dissent included in Licensees' Comments on the Recommendations of the Indian Point Special Proceeding Licensing Board at 29-32 (Feb. 6, 1984).

for the specific Indian Point plants." Memorandum and Order at 16 (July 27, 1982) (emphasis added) (July Order), quoting Order at 3-4 n.5 (Sept. 18, 1981). "[I]n direct contradiction to the Commission's direction," the Board had not applied this instruction to "the preparation and filing of parties' testimony." July Order at 16.

Because an assessment of risk requires examination of both the probability and consequences of an accident, see Recommendations at 26, special consideration of low probability high consequence accidents does what the Commission refused to permit the parties to do -- it considers site-specific consequences without relating them to any probability, site specific or otherwise.

The Board majority proposes unlawfully and unconstitutionally to single out Indian Point, and a limited number of other plants,¹ for special treatment despite its own finding that "[t]he chance of a severe release here is probably no greater, and may be less, than elsewhere." Recommendations at xi (emphasis added).² No basis exists in the record of the Special Proceeding for such singling out of Indian Point. As Chairman Gleason observed, "even the expert witness for Intervenor, Union of Concerned Scientists, conceded on cross-examination, that twenty-five (25) sites listed in his testimony had the potential for

1. While the Board majority referred to the Zion, Limerick, and Salem nuclear power plants, it is clear that other plants also may be included in its proposed new standard.

2. In addition, licensees identified numerous design features which "could lead to lower frequencies of major releases from the Indian Point containment than from some others." Recommendations at 340-42.

severe consequences." Id. at 435.

Chairman Gleason properly noted that the Board's proposed new standard "seems to suggest an absolute and not the adequate protection called for by the Atomic Energy Act." Id. at 433. Congress authorized the Commission to license a nuclear power plant upon a finding that the facility "will provide adequate protection to the health and safety of the public." 42 U.S.C. § 2232(a) (emphasis added). As the Commission has stated regarding this standard,

Congress did not elaborate further on the meaning of "adequate protection," but it is reasonable to conclude that such a standard, as distinguished for example from "absolute" protection, left room for some degree of health impact on the public commensurate with the benefits of having a nuclear power program. "Adequate" protection implies a realistic judgment."^[1]

Any consideration of the role of low probability-high consequence accidents should be in a generic administrative proceeding. In its May 30, 1980 Order establishing the Special Proceeding, the Commission stated that it would conduct "generic consideration of the question of

1. 46 Fed.Reg. 39,573, 39,580 (1981) (emphasis added).

While the Commission brings its best judgment to the task of applying the phrases "adequate protection" or "no undue risk" to individual cases, we do not do so in a vacuum. A country that builds highways, that licenses airplanes, that regulates coal mines, has clearly not established "zero risk" or "zero deaths" as a legal or moral absolute.

Id. at 39,580; accord Citizens for Safe Power, Inc. v. NRC, 524 F.2d 1291, 1297 (D.D.C. 1975) ("[a]bsolute or perfect assurances are not required [by the Atomic Energy Act], and neither present technology nor public policy admit of such a standard").

operation of reactors in areas of high population density." Order at 2, (May 30, 1980) (emphasis added). Thus, the singling out of Indian Point without generic consideration is inappropriate.

Both the licensees and the NRC Staff presented extensive testimony at the Special Proceeding on the results of their probabilistic risk assessments (PRAs). The record shows that the risk of the Indian Point plants is extremely low and well within the range of risk at other operating nuclear plants. Staff testified during the Special Proceeding that, although PRA has weaknesses as well as strengths, it is the best means available to evaluate the risk of nuclear power plants. Tr. 7225-26 (Staff witnesses Rowsome, Blond); see Memorandum and Order, 13 N.R.C. at 6. Robert K. Weatherwax, witness for intervenors UCS/NYPIRG, noted that PRAs afford the best models for deriving estimates of risk. UCS/NYPIRG Testimony of Robert K. Weatherwax on the Indian Point Probabilistic Safety Study at 4. Additionally, the Commission has required PRAs of new plants and is using PRA methodology in its Interim Reliability Evaluation Program and its Reactor Safety Study Methodology Applications Program.

Acceptance of the new standard proposed by the Board majority could result in the implementation of such mitigative features as a filtered vented containment system (FVCS)¹ and, thus, ensure the continuation of

1. A filtered vented containment system is a design intended to relieve excess pressure in the containment by using filtration and steam condensation systems deliberately to release gases to the environment.

the Indian Point litigation. This could occur despite the results of both Staff and licensees' risk analyses,¹ and the Board's conclusion that "[t]he chance of a severe release here is probably no greater, and may be less, than elsewhere."

Imposition of such a mitigative system at this time would conflict with the Commission's current backfitting regulation, which requires a showing of "substantial, additional protection which is required for the public health and safety" before the addition of any new "system" may be ordered at an operating plant. 10 C.F.R. § 50.109 (1983). Addi-

1. The licensees' use of Bayes' Theorem in the Indian Point Probabilistic Safety Study (IPPSS) was appropriate because it is a mathematical formula that provides a method for combining generic industry data, plant specific data, and judgments based upon expert opinion in a mathematically rigorous way. Staff's estimates are based in part on IPPSS as well as upon a different mathematical approach. As the Board noted, Staff's results "did not differ markedly" from those of IPPSS. Recommendations at 44; see Tr. 8797-98 (Staff witness Rowsome).

Moreover, during the initial preparation of IPPSS, and in the period following its initial publication, the Power Authority has made many improvements to Indian Point Unit 3 based upon the analyses in IPPSS. In addition, research presented by licensees during and subsequent to the hearings has shown that the WASH-1400 source terms are overly conservative by at least a factor of 1000, and that consequence analyses using revised source terms show that there are no early fatalities by virtue of the low amount of fission products released to the environment at containment failure and that latent fatalities are a factor of 1000 smaller than those calculated with WASH 1400 source terms. Licensees' Testimony of William R. Stratton, Walton A. Rodger, and Thomas E. Potter on Question One (Stratton, et al., Testimony on Question One). Ongoing research supports these conclusions. See, e.g., Risk Management Associates and New York Power Authority, Source Term Safety Assessment, Indian Point 3 Nuclear Power Plant (July 10, 1984) (presented to the Advisory Committee on Reactor Safeguards, Subcommittees on Class 9 Accidents and on Indian Point, July 23, 1984). Use of more realistic source terms has a great impact on the low probability/high consequence accident because the maximum number of consequences is directly related to the amount of fission products that can reach the environment.

tionally, in its backfitting policy statement, the Commission signaled an intention to move away from the present backfitting regulation and to implement interim rules relating to "each staff-proposed requirement that involves a new staff position or a change in an existing Staff position" with respect to the licensee. 48 Fed.Reg. 44,173, 44,174 (1983). A draft NRC Manual Chapter 0514 on backfitting states that Staff must prepare, on a plant-specific basis, a description of each proposed new requirement, including "a statement of how the requirement would improve safety." 49 Fed. Reg. 16,900, 16,902 (Apr. 20, 1984). Objections by licensees to the imposition of backfits would require that Staff assess the costs and benefits of the proposed requirements. Id. at 16,904.

Testimony by Staff and licensees' witnesses, with which the Board concurred, showed that mitigating features such as a FVCS are not necessary because of the already low risk of the Indian Point plants.¹ No FVCS exists in any American commercial nuclear power plant. Tr. 6841 (Staff witness J. Meyer); Bley/Richardson Testimony on Contentions

1. Licensees' Testimony of Dennis C. Bley and Dennis C. Richardson on Contentions 2.1(a) and 2.1(d) at 26 (Bley/Richardson Testimony on Contentions 2.1(a) and 2.1(d)); Direct Testimony of Frank Rowsome and Roger Blond Concerning Commission Question Five [C] at 13-15; Recommendations at v, 151.

Additionally, overestimation of source terms results in overstatement of early fatality risk, disproportionately so for densely populated sites. Tr. 12,611 (Staff witness Bernero); Licensees' Testimony of Thomas E. Potter on Commission Question Five at 11. Using realistic source terms, there would be no early fatalities from an accident at Indian Point, even if no one evacuates or takes shelter for 24 hours. Stratton, et al., Testimony on Question One at 62, 64a (Figure 2); see Licensees' Testimony on Commission Question One and Board Question 1.1 and Contention 1.1, at 125-27.

2.1(a) and 2.1(d) at 9. The relevance to the Indian Point plants of the FVCS at two non-commercial test reactors in the United States and to the future installation of an FVCS at several European reactors was not established in the extensive record of this proceeding. See Tr. 6402-03; 6841-42, 6874 (Staff witness J. Meyer). It is clear that a proposed FVCS could not withstand the scrutiny of the cost benefit analysis which would be necessary.¹ Mitigative devices, such as a FVCS, will not reduce the maximum consequences of a postulated accident; rather, a FVCS would merely lower the already low probability of that level of consequence occurring.

Intervenor UCS/NYPIRG identified Barseback, a Swedish boiling water reactor, as being scheduled for installation of a FVCS by 1986, and recommended this type of FVCS for the Indian Point plants.² However, no plant-specific analysis has been performed applying this concept to Indian Point, see Bley/Richardson Testimony on Contentions 2.1(a) and 2.1(d) at 9, 19; Tr. 6192 (UCS/NYPIRG witness Thompson), and even UCS/NYPIRG admitted that such application could require more research.³ Tr. 6224 (Thompson). Significantly, no FVCS design has been

1. The cost of this mitigating device, which has not been shown to reduce the already low risk of the Indian Point plants, has been estimated at as much as \$100 million. Power Authority's Proposed Findings of Fact (Commission Questions One and Two) No. 449.

2. UCS/NYPIRG Testimony of Gordon R. Thompson and Steven C. Sholly on Commission Question Two, Contentions 2.1(a) and 2.1(d) at 12, 15-16.

3. There are significant differences between Barseback and the Indian Point plants. Barseback is a boiling water reactor with a pressure suppression type of containment while the Indian Point plants are pressurized water reactors with large, dry containments. The Indian

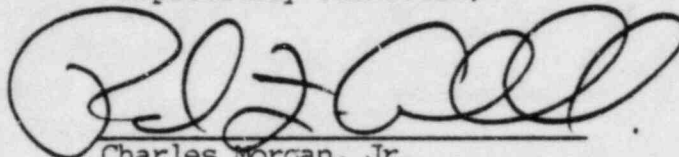
perfected to the point that the potential for it causing containment failure has been evaluated successfully or even evaluated as to the amount of engineering effort necessary to eliminate the failure potential of a FVCS system. Tr. 6388 (Licensees witness Bley). From an engineering perspective, therefore, it is not presently clear that such mitigating devices are feasible. These and other problems will have to be explored further if such devices are actually proposed.

CONCLUSION

For the foregoing reasons, the Commission should adopt Chairman Gleason's dissent and reject the Board majority's proposed new standard, which was not examined or litigated during the Indian Point Special Proceeding.

Point plants, therefore, have totally different containment pressures and volumes from Barseback. Tr. 6380 (Licensees witness Richardson). The volume of the Barseback containment was estimated to be less than one-half that of the Indian Point containments, which is particularly significant because, for a given containment strength, the smaller the containment, the earlier the containment is likely to fail. Tr. 6199-200 (UCS/NYPIRG witness Thompson). Moreover, the decision to install a FVCS at Barseback was made without an adequate assessment of its risk reduction capability. Tr. 6391 (Licensees witness Richardson).

Respectfully submitted,



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Dated: August 13, 1984

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August 13, 1984

CERTIFICATE OF SERVICE

I hereby certify that on the 13th day of August, 1984,
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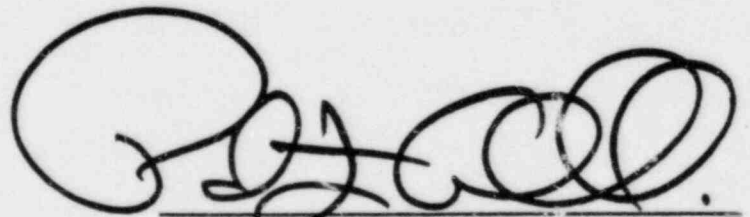
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