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Docket Nos. 50-387

50-388

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

PENNSYLVANIA POWER & LIGHT COMPANY

and

ALLEGHENY ELECTRIC COOPERATIVE, INC.

(Susquehanna Steam Electric Station, Units 1 and 2)

> APPLICANTS' REPLY TO THE PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW OF THE OTHER PARTIES

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December 22, 1981

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of PENNSYLVANIA POWER & LIGHT COMPANY and

Units 1 and 2)

and) Docket Nos. 50-387) 50-388 ALLEGHENY ELECTRIC COOPERATIVE, INC.) (Susguehanna Steam Electric Station,)

APPLICANTS' REPLY TO THE PROPOSED FINDINGS OF FACT

AND CONCLUSIONS OF LAW OF THE OTHER PARTIES

I. INTRODUCTION

1. Pursuant to 10 C.F.R. §2.754(a)(3), Applicants submit herein their reply to the proposed findings of fact and conclusions of law filed by the Commonwealth of Pennsylvania ("Commonwealth") ("Commonwealth of Pennsylvania's Proposed Findings of Fact and Conclusions of Law", served on December 7, 1981), the NRC Staff ("NRC Staff Proposed Findings of Fact and Conclusions of Law", dated December 14, 1981), and intervenor Environmental Coalition on Nuclear Power ("ECNP") ("Intervenor Environmental Coalition on Nuclear Power's Findings of Fact and Conclusions of Law", dated December 3, 1981).¹ Intervenors

¹ ECNP's introductory comments are complaints of procedural irregularities, allegations of denial of due process, and other

Susquehanna Environmental Advocates, Citizens Against Nuclear Dangers, and Colleen Marsh filed no proposed findings of fact or conclusions of law.

3. Applicants' reply is set forth in the form of a section of a proposed initial decision in which the Licensing Board addresses the proposed findings of fact and conclusions of law filed by the parties. Proposed findings of fact are cited as "PF [paragraph number]."

II. PROPOSED FINDINGS

A. Contention 1 (Health Effects of Nuclear Fuel Cycle)

4. Applicants, ECNP and the NRC Staff filed proposed findings on the technetium-99 ("Tc-99") part of Contention 1. The NRC Staff's and Applicants' proposed findings are consistent with each other and are in accord with the Licensing Board's views. ECNP PF 10 concludes that the quantity and health effects of all Tc-99 associated with operation of Susquehanna have not been properly factored into the cost-benefit balance for the operation of the plant. This conclusion is based on the alleged "absence of a summation of the doses and health effects of all technetium-99 associated with the operation of Susquehanna 1 and 2 for the full

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similar charges against the Licensing board and Applicants. See ECNP Proposed Findings 1, 2, 3 and 5. These accusations have no merit, have been rejected on several occasions, see, e.g., ALAB-613, 12 NRC 317 (1980), and need not be refuted again here.

-2-

detoxification period, and...the absence of certainty concerning the permanent disposal of Tc-99 bearing wastes."

5. As to the first alleged shortcoming, the lack of a summation of the doses and health effects (also expressed in ECNP PF 9), witnesses for both Applicants and the NRC Staff computed the annual doses and health effects of Tc-99 attributable to Susquehanna for the full period of Tc-99 activity. See Englehart Testimony, paras. 41-42; Branagan-Struckmeyer Testimony, pp. 5-7 and Table 2; Tr. 1908-1911 (Branagan). The reason these doses and health effects were not summed over periods of hundreds of thousands or millions of years is that predictions of health effects over such long periods of time are subject to great uncertainties resulting from, among other things, political and social considerations, population size and competing health risk characteristics, and geologic and climatological changes. Branagan-Struckmeyer Testimony, p. 5; Tr. 1909 (Branagan). In view of these great uncertainties, to perform the summation demanded by ECNP would be meaningless.2

6. ECNP also points out that the geological medium in which the Tc-99 bearing wastes will be permanently buried

-3-

² ECNP cited no legal authority for the proposition that a summation of the doses and health effects for the "full detoxification period" is necessary. The only known source for this position is a footnote (which is in any event dictum) in a case subsequently reversed by the U.S. Supreme Court. <u>Natural</u> <u>Resources Defense Council v. U.S. Nuclear Regulatory Commission</u>, 547 F.2d 633, 639 n. 12 (D.C. Cir. 1976), rev'd and remanded sub nom. <u>Vermont Yankee Nuclear Power Corp. v. Natural Resources</u> <u>Defense Council</u>, 435 U.S. 519 (1978).

has not been chosen (ECNP PF 7), and that no waste disposal repository can be guaranteed to provide perfect containment for the one million year period of toxicity of Tc-99. ECNP PF 6. From these facts, ECNP concludes that there is a lack of "certainty concerning the permanent disposal of Tc-99 bearing wastes", the second alleged shortcoming in the evaluation of the health effects of Tc-99 releases associated with Susquehanna. However, for the purposes of this proceeding, there is no need to specify the precise geological medium in which the Tc-99 bearing wastes will be placed. It suffices to have reasonable assurance that the Tc-99 will remain isolated for long periods of time. Both the evidence on the record (Englehart Testimony, para. 12; Tr. 1855, 1858-59 (Englehart)), and the existence of proposed Commission regulations on disposal of high level radioactive waste (10 CFR Part 60) provide such assurance.

7. On the question of whether perfect containment of the Tc-99 for one million years can be guaranteed, the evidence in the record is that the minimum repository stability period and maximum release rates established in proposed 10 CFR Part 60 can be achieved and are conservative estimates of long range repository performance. Englehart Testimony, para. 12; Tr. 1882 (Fisher).³ The record also contains conservatively

³ ECNP observes that proposed 10 CFR Part 60 is not based upon demonstration, but rather on experimental or theoretical research. ECNP PF 8 (p. 4). There is, however, no evidence that such research is invalid, and nothing was said at the hearing to

high estimates of the doses and health effects that will result if these maximum release rates occur. Branagan-Struckmeyer Testimony, p. 7 and Tables 1, 2. These doses and health effects are insignificant. Branagan-Struckmeyer Testimony, pp. 8-9; Englehart Testimony, para. 44. Therefore, even in the absence of perfect containment of Tc-99 for one million years, the health effects of the release of <u>all</u> the Tc-99 attributable to the Susquehanna fuel cycle will still be negligible.

B. Contention 6a (Evacuation Plan)

8. Proposed findings on this contention were filed by Applicants, the Commonwealth and the NRC Staff. The NRC Staff's and Applicants' proposed findings are consistent with each other and in accord with the Licensing Board's views. The Commonwealth's proposed findings focus not on the issues identified in the contention (the effect on evacuation of narrow roads and adverse weather conditions), but on the availability of buses to carry out evacuation of school children and the absence of written emergency plans for school districts within the plume exposure EPZ.⁴ The Commonwealth

(continued)

controvert the testimony that these regulatory limits can be met and that, in fact, "[i]t is expected that real [repository] performance will be much better." Tr. 1882 (Fisher).

4 The Commonwealth states that its proposed findings also deal with Contention 20[7][a], [7][d] and [7][f]. See Comm. PF 1, n.*. These contentions concern the compliance of state and Luzerne County plans with specific recommendations of NUREG-0654 relating to evacuation, rather than with the means to carry out that evacuation. proposes that the Licensing Board impose a condition on the operating licenses that no full power license be issued until the Director of Nuclear Reactor Regulation, in consultation with FEMA, finds that all school districts in the plume exposure EPZ have completed adequate emergency plans to cope with a fixed nuclear facility accident. The Licensing Board agrees with the NRC Staff's and Applicants' views that the proposed license condition is not warranted.

9. Before proceeding to discuss the substance of the Commonwealth's proposed findings, we would first point out that the Commonwealth is misinterpreting the purpose of license conditions. License conditions (like Technical Specifications) are not to be imposed for every conceivable issue. Rather, they are

> reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

Portland General Electric Company (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979); see also Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-578, 11 NRC 189, 217 (1980); Commonwealth Edison Co. (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 423 (1980) (matters not of "immediate importance to the safe operation of the facility" should not be incorporated into operating licenses). For the reasons that follow, we do not think that the plans for school districts fall within that definition.

-6-

10. We note at the outset that all parties favor the preparation of written emergency plans for school districts within the plume exposure EPZ and that these plans will be prepared. <u>See</u> Applicants' PF 85; NRC Staff PF 20.82. Applicants' witness testified that the school districts intend to prepare these plans. Tr. 2336 (Carroll). The Commonwealth's witness testified that he had no reason to believe that such plans would not be prepared prior to late 1982. Tr. 2654 (Hippert). The Licensing Board does not agree with the Commonwealth's implication that the development of school plans is somehow in question. <u>See</u> Comm. PF 14. In fact, the Commonwealth's own emergency plan charges the Department of Education with the responsibility to

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require the preparation of school district and college plans and their coordination with the county emergency management coordinator to ensure that they are in consonance with county plans.

App. 11 (Schools and Colleges Emergency Plans) to Commonwealth Emergency Plan, Comm. Ex. 7 at E-11-2. While there may not be "absolute assurance" that school plans will be prepared prior to full power operation,⁵ such "absolute assurance" is not required.⁶ The Licensing Board finds ample support in the

5 While Applicants do not project a date for "full power operation", they predict that "commercial operation" of Unit 1 should occur by the second quarter of 1983.

6 Comm. PF 14 states that there may not be "absolute assurance that the plans will be developed prior to plant operation". The appropriate standard for emergency planning is not absolute assurance but reasonable assurance. See 10 CFR §50.47(a)(1). record to conclude that school plans will be prepared prior to full power operation.⁷ See, e.g., Tr. 2609-10 (Belser); 2336 (Carroll); 2654 (Hippert).

11. The Commonwealth is correct to point out that the Licensing Board's jurisdiction does not extend to other nuclear plants in Pennsylvania. Comm. PF 18. However, in determining whether the issue of school plans rises to the level of an "immediate threat to the public health and safety" so as to justify imposition of a license condition, it is appropriate for the Licensing Board to take note of the fact that no school districts in the state have as yet prepared such plans, including those around currently operating nuclear plants. <u>See</u> App. PF 85. The Licensing Board also finds support in the judgment of the Luzerne County's Director of Civil Defense that evacuation of the plume exposure EPZ can be successfully carried out in a reasonably short period, even without written school plans. Tr. 2718, 2720-21 (Townend).

12. In rejecting the Commonwealth's arguments on the need for a license condition, the Licensing Board rejects the Commonwealth's conclusion that written school plans are a prerequisite for a finding of reasonable assurance that

⁷ The situation is thus distinguishable from the TMI Restart proceeding where the licensing board imposed a condition for the completion of school plans prior to restart. <u>Metropolitan</u> <u>Edison Co.</u> (Three Mile Island Nuclear Station, Unit No. 1), Partial Initial Decision, vol. 2, p. 795 (December 14, 1981). If authorized, the restart of TMI-1 would be considerably more imminent than full power operation of Susquehanna's Unit 1.

adequate protective measures can be taken for school children and the non-auto-owning population. We must first point out that PEMA has accepted the evacuation time estimates prepared by Applicants' consultants, HMM Associates, Inc., notwithstanding the fact that school district emergency plans have yet to be prepared. Tr. 2604-05 (Hippert). These estimates included the time to evacuate school children and other nonauco-owning members of the population. The only apparent qualification on PEMA's acceptance was whether the time estimates should include an allowance for two bus runs to evacuate individuals without automobile transportation, or whether a single run would be sufficient. In the absence of written school plans, PEMA assumed that two bus runs would be needed. Id. With a single bus run, the HMM estimate for normal week day evacuation was 6 hours. McCandless Testimony, p. 8. For two bus runs, HMM estimated that an additional hour and forty minutes would be added to allow for the second run. Tr. 2260 (McCandless).⁸ Thus, the Commonwealth's emergency management personnel are using the seven hour and forty-five minute estimate for their planning purposes even in the absence of school plans.

⁸ The Commonwealth's proposed findings imply that PEMA would not accept the HMM time estimates. Comm. PF 16. In fact, both the six hour estimate and the seven hour and forty-five minute estimate are HMM estimates. <u>Compare</u> Tr. 2260 (McCandless) with PEMA Testimony, p. 27.

13. The Commonwealth appears to misunderstand HMM's role and its methodology. Contrary to the implication of the Commonwealth's proposed findings,⁹ HMM's study was complete and its methodology straightforward. HMM took the road network specified in the state and county plans, Tr. 2252 (McCandless), the populations as determined from census data and state and county emergency management personnel, McCandless Testimony, p. 4, conservatively determined the number of cars and buses needed to evacuate the population,¹⁰ Tr. 2253 (McCandless), physically inspected each roadway link, <u>id</u>., applied evacuation mobilization and preparation times based on discussions with county officials, McCandless Testimony, p. 7, and used the computer simulation model to determine the resulting evacuation

9 For example, the Commonwealth states, HMM "assumed that surplus buses will be available", "...the HMM study merely assumes that plans to evacuate the non-auto-owning population will be implemented adequately", "to fill these voids in the analysis, HMM relied on assumptions made by other PP&L consultants...." Comm. PF 9 (original emphasis).

10 A good example of the conservative nature of these estimates was HMM's estimate that the entire non-auto-owning population of 9679 would require evacuation by bus. McCandless Testimony, p. 6. The Commonwealth turns this conservatism into a prediction that all these people "will require bus transportation". Comm. PF 5. The Commonwealth ignores the uncontradicted evidence that during evacuations there is, in fact, little demand for public transportation. Tr. 2260 (McCandless); 2719 (Townend). The Commonwealth also mischaracterizes the HMM analysis by stating that HMM "assumed that surplus buses will be available to evacuate the non-autoowning population simultaneously with the school population". Comm. PF 9 (original emphasis). As already observed, HMM calculated evacuation times both for simultaneous and sequential evacuation of non-auto-owners. Tr. 2260 (McCandless).

times, McCandless Testimony, p. 4. Rather than relying on "mere assumptions" and "filling voids in the analysis", HMM used the best information available, much of it from state and county emergency management personnel. McCandless Testimony, p. 4. The entire HMM time estimate report was reviewed with PEMA in late August 1981; PEMA did not take exception to the school mobilization times used by HMM. Tr. 2295 (McCandless).

14. Information on availability of buses and mobilization times were provided to HMM by another consultant to Applicants, Emergency Management Services ("EMS"). EMS personnel discussed with each affected school district the availability of buses to carry out the evacuation and the time needed to mobilize the buses. Tr. 2311-2314. A ninety-minute period for mobilizing the buses was viewed by the districts' transportation officers as a reasonable time estimate and is the estimate that they use for mobilizing buses on other occasions where schools must be cleared on an unscheduled bases. Tr. 2313-14 (Carroll). Although some bus drivers may have to return home from their places of employment to get their buses, 11 Tr. 2332 (Carroll), the same situation would occur where schools are closed early due to snow. Although threatening weather would alert bus drivers to the possibility of an early bus mobilization when schools are closed early due

11 In other cases, the wife would drive the school bus where the husband was at work. Tr. 2326 (Carroll).

-11-

to snow conditions, <u>see</u> Tr. 2325 (Carroll), the siren system and radio broadcasts would have the same effect in the event of a nuclear emergency. <u>See</u> Tr. 2719-20 (Townend).

15. The Commonwealth's emergency planning witnesses themselves made clear that the primary question which school plans would resolve is whether enough buses can be mobilized soon enough to avoid a second run.

> (3) An adequate response to the issue as to whether all school children can be evacuated without buses making a return run can only be made after the school districts have developed their respective plans. There are obviously sufficient buses that could be moved in from areas surrounding the plume exposure pathway EPZ to effect the evacuation of school children by using only a single run. There is, however, the time factor that must be considered as well as the period needed to notify drivers and their availability whether within or outside the EPZ. This is an item that can only be resolved after school district superintendents complete their plans and coordinate them with the Luzerne County Civil Defense Agency. This should be accomplished prior to full operation of the Susquehanna Steam Electric Station.

PEMA Testimony, p. 25.¹² Even if two bus runs are necessary, there is no evidence in the record even to suggest that evacuation would not be carried out in a timely manner.

12 The Commonwealth's proposed findings cite this testimony to support the argument that "there can be no reasonable assurance that school children will be evacuated in a timely fashion until school plans have been prepared and coordinated with the county plans." Comm. PF 13. The testimony does not support this argument. It merely states PEMA's opinion that school plans are needed to determine whether one or two bus runs will be required. In any event, neither Commission regulations nor guidance establishes maximum time allowances for evacuation. App. PF 78; NRC Staff PF 6.2. 16. Recognizing that the Commonwealth's concern is with an evacuation requiring two bus runs (7 hours and 45 minutes) as compared to an evacuation based on a single bus run (6 hours), the Licensing Board cannot find that a license condition is necessary.

C. Contention 20 (Emergency Evacuation Plans)

17. Contention 20 alleges that the Commonwealth and Luzerne County emergency plans fail to meet specified recommendations and guidance set forth in NUREG-0654. Proposed findings on Contention 20 were filed by Applicants, the Commonwealth and the NRC Staff. The proposed findings by the Applicants and the NRC Staff are consistent with each other and in accord with the Licensing Board's views. The Commonwealth's findings address two specific issues -- dosimetry and public information -- and argue that license conditions are required. Although each issue is discussed separately below, the observations concerning the appropriateness of license conditions set forth above (see para. 9, supra) apply in these cases as well.

Dosimetry

18. The Commonwealth asks the Licensing Board to impose, as a condition to full power operation, the requirement that the Director of Nuclear Reactor Regulation (in consultation with FEMA) find that

> adequate numbers of self-reading and permanent record (thermoluminescent) dosimeters, consistent with applicable

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federal guidance, are available for distribution to all offsite emergency wor)ers identified in the state and county emergency plans as requiring dosimetry.

The Commonwealth and Luzerne County plans call for each emergency worker to receive two self-reading dosimeters and a thermoluminescent dosimeter (TLD). Comm. Ex. 8, App. 16, § V.B.; Comm. Ex. 9, Annex M, IV.C.5. The dosimetry will be predistributed, as available, by the Commonwealth to the counties. PEMA Testimony, p. 19. Since the supplying of dosimetry is the Commonwealth's responsibility, the Licensing Board believes it inappropriate that the <u>Commonwealth</u> is seeking to impose the license condition on Applicants.

19. Even if it were appropriate for the Licensing Board to grant the Commonwealth's request and condition Applicants' operating licenses for something within the Commonwealth's own control, the Commonwealth has not justified the substance of the proposed condition. It should first be noted that there is no shortage of one of the two types of self-reading dosimeters. Tr. 2678-79. Thus, the proposed condition is presumably intended to require the availability of adequate numbers of TLD's and the second type of self-reading dosimeter. NUREG-0654 does not require that each emergency worker have a TLD and two kinds of self-reading dosimeters.¹³ The FEMA

¹³ Planning Standard K (NUREG-0654, p. 66) requires that "[m]eans for controlling radiological exposures, in an emergency, are established for emergency workers". Evaluation criteria 3a and b (NUREG-0654, p. 67) require that provisions be made "to determine the doses received by emergency personnel....",

witness testified that the shortage in TLD's could be met by distributing the existing TLD's among the emergency workers to provide an approximate coverage. Tr. 2672 (Swiren). While the Commonwealth's proposed findings state that the providing of two self-reading dosimeters is based on a FEMA document, ¹⁴ the FEMA witness testified that there is no requirement that emergency workers have two self-reading dosimeters. Tr. 2698-99 (Swiren).¹⁵

20. For all these reasons, the Licensing Board does not believe that a license condition is necessary. There is nothing to support the view that the dosimetry issue rises to the level of an "immediate threat to the public health and safety." <u>See para. 9, supra</u>. In this regard, the Licensing Board would again note that unmet dosimetry needs exist with respect to nuclear facilities already operating in the Commonwealth.¹⁶

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that there be "provisions for distribution of dosimeters, both self-reading and permanent record devices", that "dosimeters are read at appropriate frequencies", and that dose records are maintained.

14 "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 - Airborne Release" (FEMA-REP-2, Sept. 1980), see Comm. PF 27. That document is not in the record. The FEMA witness could not recall what guidance that document included concerning the amount of dosimetry. Tr. 2699-2700 (Swiren).

15 While the dosimetry recommendation in the Commonwealth's plan is consistent with FEMA guidance, Tr. 2700 (Swiren), it would also be consistent with FEMA guidance if the Commonwealth's plan called for each emergency worker to have one self-reading dosimeter. Tr. 2698-99 (Swiren).

16 The PEMA testimony indicates that the shortages of TLD's and self-reading dosimeters are state-wide and not unique to Susquehanna. PEMA Testimony, p. 19; Tr. 2625 (Belser).

Public Information

21. The third condition which the Commonwealth would have the Licensing Board impose deals with distribution of a public information brochure. The proposed condition would require that, prior to issuance of a full power operating license, the Director of Nuclear Reactor Regulation, in consultation with FEMA, would have to find that:

> the Applicant has distributed to members of the public within the plume exposure pathway emergency planning zone for the Susquehanna Stea. Electric Station, public information brochures containing general information on radiation exposure and specific instruction on actions to take in the event of a nuclear accident.

The Licensing Board finds no reason why such a condition is necessary.

22. The Licensing Board would first point out that the proposed condition does not appear to relate to any portion of Contention 20. <u>See</u> NRC Staff PF 6.11 n. 4. Several portions of Contention 20 deal with public information. <u>See</u> Contention 20[1][a], [2][b] and [4][a]. As the Commonwealth concedes, the evidence demonstrates that the plans concerning public information are adequate. Comm. PF 31. The Commonwealth's proposed findings then go on to raise an issue concerning the implementation of the plans. However, the Commonwealth has identified no contention on point. Nor is there one. Neither did the Commonwealth identify the implementation of public information plans as an issue which it sought to raise or one on which it had a position.¹⁷ While the Commonwealth is

-16-

¹⁷ See Commonwealth of Pennsylvania's Statement of Positions Based on Information Available as of August 10, 1981, dated

entitled to file proposed findings, 10 CFR §2.715(c), those findings are properly restricted to the matters in controversy.

23. Furthermore, the record reflects no dispute on the preparation or distribution of public information brochures. The state and county plans both provide for preparing and disseminating pre-emergency educational materials concerning the emergency plans. Comm. Ex. 8, Appendix 15; Comm. Ex. 9, Annex D. This information is to be distributed prior to plant operation. Tr. 2605-06 (Comey); Tr. 2616, 2633 (Hippert); Tr. 2674 (Swiren). There is nothing in the record to suggest that brochures will not be distributed prior to issuance of full power operating licenses. Nor do the Commonwealth's proposed findings indicate any problem or dispute as to the brochures.

24. The Licensing Board can therefore see no justification for imposing a condition on Applicants in the absence of some showing that a condition is needed.

> Respectfully submitted, SHAW PITTMAN POTTS & TROWBRIDGE

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Dated: December 22, 1981

(continued) August 12, 1981; Commonwealth of Pennsylvania's Revised Statement of Positions Based on Information Available as of October 5, 1981, dated October 5, 1981.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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CERTIFICATE OF SERVICE

This is to certify that copies of the foregoing "Applicants' Reply To the Proposed Findings Of Fact And Conclusions Of Law Of The Other Parties", were served by deposit in the U. S. Mail, First Class, postage prepaid, this 22nd day of December 1981 to all those on the attached Service List.

Jay E. gilberg

Dated: December 22, 1981

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(Susquehanna Steam Electric Station, Units 1 and 2)

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