UNITED STATES OF AMERICA NUCLEAF. REGULATORY COMMISSION

August 28, 1981

50-388

Docket Nos. 50-387

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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' STATEMENT OF MATERIAL FACTS AS TO WHICH THERE IS NO GENUINE ISSUE TO BE HEARD (CONTENTION 1) (FUEL CYCLE DOSES)

Pursuant to 10 C.F.R. § 2.749(a) Applicants state, in support of their Motion for Partial Summary Disposition of Contention 1 (Fuel Cycle Doses) in this proceeding, that there is no genuine issue to be heard with respect to the following material facts:

1. The doses resulting from the post-irradiation ("back-end") management of the spent fuel generated in operating a nuclear plant may vary depending upon whether or not the spent fuel is reprocessed (<u>i.e.</u>, whether one assumes a "reprocessing mode" (with reprocessing) or a "once-through" mode (with no reprocessing). Affidavit of Morton I. Goldman in Support of Partial Summary Disposition of Contention 1 (Fuel Cycle Poses) ("Goldman Aff."), para. 4.

8109020314 810828 PDR ADDCK 05000387 G PDR 2. A dose assessment was performed by the NRC Staff in 1976/1977 on the back end of the fuel cycle. The NRC Staff reported its results in man-rem (and fatal cancers), per reference reactor year ("RRY"), where an RRY is defined as a 1000 MW(e) power plant operated for one year at 80% capacity. The Staff gave a dose assessment for those long-lived nuclides potentially released during the back-end of the fuel cycle which yield total body doses, and for I-129 which is potentially most significant as a source of thyroid doses. The Staff's estimates are applicable to the reprocessing mode. Goldman Aff., para. 5 and Table 1.

3. A very recent dose commitment estimate is presented by the NRC in its proposed "10 C.F.R. Part 51 Appendix A--Narrative Explanation of Table S-3, Uranium Fuel Cycle Environmental Data", 46 Fed. Reg. 15154 (March 4, 1981) ("Narrative"). The Narrative uses a 100 year dose commitment period and obtains a world population "risk equivalent" total body dose commitment of 650 man-rem, of which 100 represent the higher dose commitments to certain organs (lung, bone and thyroid). Id., para. 6.

4. The 650 total body risk equivalent man-rem/RRY estimate in the Narrative represents a conservative upper bound to the doses due to reprocessing activities, particularly since that estimate does not take into account the effects of any regulatory agency limits on discharges. To this amount one must add 10 man-rem/RRY as the NRC's estimate of the doses resulting from solidification and disposal of reprocessing plant high level waste. The total body upper-bound risk equivalent dose to the world

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population attributable to the reprocessing mode is, therefore, 660 man-rem/RRY. Id., para. 7.

5. With respect to the once-through mode, the NRC has made an assessment of the collective dose commitment, which comes from high level waste disposal activities, and has projected a world population dose of 260 man-rem (total body)/RRY for the disposal of spent fuel. In the spent fuel disposal dose estimate, NRC has conservatively assumed the release of all fission product gases contained in the fuel. <u>Id</u>., para. 8. A U.S. Department of Energy estimate of the population doses attributable to the interim storage and disposal of un-reprocessed spent fuel, which does not assume the release of all gases contained in the fuel, is 1.2 man-rem/RRY. Id., para. 8, n.4.

6. In summary, the conservative upper limit risk equivalent dose commitment values for long-lived radionuclides potentially released from the back-end of the nuclear fuel cycle are:

Reprocessing Mode 660 total body man-rem/RRY Once-Through Mode 260 total body man-rem/RRY Id., para. 9.

7. Since the Susquehanna facility will require 64 RRY during the term of its operating licenses, the upper limit risk equivalent total body doses to the world population from the fuel cycle for Susquehanna will be 660 x 64 = 42,240 man-rem

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for the reprocessing mode, and $260 \ge 64 = 16,640$ man-rem for the once-through mode. Id., para. 10.

Dated: August 28, 1981.

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

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